November 17, 2025 CITY COUNCIL MEETING AGENDA

THE STATE OF TEXAS §
COUNTY OF BRAZORIA §
CITY OF MANVEL §

KEITH BONNER, COUNCIL PLACE 1
DAVID LANDS, COUNCIL PLACE 2
HARRY OPLIGER, COUNCIL PLACE 3
CARMYN ROBEY-ROBINSON, COUNCIL PLACE 4
CRYSTAL SARMIENTO, COUNCIL PLACE 5
GARRETT ROSSI KNOX, COUNCIL PLACE 6

DAN DAVIS, MAYOR
DAN JOHNSON, CITY MANAGER
TAMMY BELL, CITY SECRETARY

NOTICE OF A CITY COUNCIL MEETING OF THE CITY OF MANVEL
November 17, 2025

NOTICE IS HEREBY GIVEN
5:00 P.M. WORKSHOP – 6:00 P.M. REGULAR SESSION

Taxpayer Impact Statement
This statement shows the estimated annual property tax bill for a **median-valued homestead in Manvel** ($359,719), comparing the **previous FY tax rate**, the **no-new-revenue rate**, and the **adopted tax rate for FY 2025-2026**.

Tax Rate Scenario	Tax Rate per $100 Valuation	Estimated Annual Tax Bill	Difference from Previous FY
FY 2024-25	$0.560000	**$2,014.43**	—
No-New-Revenue Rate	$0.539339	**$1,940.10**	-$74.33
Adopted Rate FY 2025-26 – $0.56	$0.560000	**$2,014.43**	No change

Adopted Budget
A physical copy is available at City Hall and online at https://cityofmanvel.news/AdoptedBudgetFY25-26

QR to Budget

Pursuant to Chapter 551, Title 5 of the Texas Government Code, the Texas Open Meetings Act, notice is hereby given that the Manvel City Council will convene a regular meeting at the Manvel City Hall, located at **20031 Hwy 6, Manvel Tx 77578** for the purpose of discussing and if appropriate, take action with respect to the following items:
NOTE: The City Council of the City of Manvel reserves the right to discuss any items in Closed Session whenever authorized under the Texas Open Meetings Act, Chapter 551, of the Texas Government Code. The City Council may discuss the items on this agenda in any order.

This facility is wheelchair accessible, and accessible parking spaces are available. Requests for accommodation or interpreter services must be made 48 hours prior to the meeting. Please contact the City Secretary at 281- 489-0630 x6 for further information.

The City of Manvel is a safe and responsible community, embracing the values of our past, present, and future citizens.

CITY OF MANVEL MISSION STATEMENT

Workshop Session

Executive Session

City Council will convene into Executive Session pursuant to Texas Government Code, Sec. 551.087 – *deliberation regarding economic development negotiation, and Texas Government Code, Sec. 551.071 – Consultation with Attorney, to discuss the following:*

Discuss 380 agreement with BCS Capital Group

Workshop Continued

Discussion on any topic as listed on the current agenda.

Regular Session

Call To Order

Invocation

Inspirational Reading - Councilmember Garrett Rossi-Knox

Pledge

Pledge of Allegiance and Texas Pledge: "Honor the Texas flag; I pledge allegiance to thee Texas, one state under God, one and indivisible.

Staff Presentation on Public Hearing Item(s)

Public Hearing

*(PUBLIC HEARING CONTINUED FROM THE 11-3-2025 CITY COUNCIL MEETING) TO HEAR INPUT FROM THE PUBLIC REGARDING THE INTENTION OF THE CITY OF MANVEL, TEXAS, TO ANNEX CERTAIN TERRITORY BEING AN APPROXIMATE 47.3156 ACRES OF LAND, PROPOSED FOR ANNEXATION INTO CITY OF MANVEL'S CITY LIMITS AND SUBSEQUENT DEVELOPMENT AS A RETAIL CENTER; LOCATED AT THE NORTHWEST CORNER OF STATE HIGHWAY (SH) 6 AND KIRBY DRIVE INTERSECTION; CONTAINING A 34.2791 ACRE TRACT AND A 11.3999 ACRE TRACT SEPARATED BY A 40-FOOT-WIDE (0.844 ACRE) UNIMPROVED RIGHT-OF-WAY; SITUATED IN H.T. & B. RAILROAD COMPANY SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, AND A 1.6366 ACRE TRACT BEING A PORTION OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION OF IOWA COLONY H.T. & B. RAILROAD COMPANY SURVEY NO. 71 (ALSO REFERRED TO AS THE IMMIGRATION LAND COMPANY SUBDIVISION OF SECTION 71, H.T. & B.R.R. COMPANY SURVEY) ABSTRACT 291, BRAZORIA COUNTY, TEXAS).

Public Hearing

*(PUBLIC HEARING CONTINUED FROM THE 11-3-2025 CITY COUNCIL MEETING) TO HEAR INPUT FROM THE PUBLIC REGARDING AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, TO ESTABLISH PLANNED UNIT DEVELOPMENT (PUD) ZONING DISTRICT AND ADOPTING A PUD DOCUMENT PROVIDING FOR ZONING AND DEVELOPMENT RELATED PROVISIONS AND REQUIREMENTS IN ACCORDANCE WITH SECTION 77-79.(A) OF CITY OF MANVEL'S ZONING ORDINANCE; FOR AN APPROXIMATE 47.3156 ACRES OF LAND, PROPOSED FOR ANNEXATION INTO CITY OF MANVEL'S CITY LIMITS AND SUBSEQUENT DEVELOPMENT AS A RETAIL CENTER; LOCATED AT THE NORTHWEST CORNER OF STATE HIGHWAY (SH) 6 AND KIRBY DRIVE INTERSECTION; CONTAINING A 34.2791 ACRE TRACT AND A 11.3999 ACRE TRACT SEPARATED BY A 40-FOOT-WIDE (0.844 ACRE) UNIMPROVED RIGHT- OF-WAY; SITUATED IN H.T.& B. RAILROAD COMPANY SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, AND A 1.6366 ACRE TRACT BEING A PORTION OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION OF IOWA COLONY H.T. & B. RAILROAD COMPANY SURVEY NO. 71 (ALSO REFERRED TO AS THE IMMIGRATION LAND COMPANY SUBDIVISION OF SECTION 71, H.T. & B.R.R. COMPANY SURVEY) ABSTRACT 291, BRAZORIA COUNTY, TEXAS); PROVIDING FOR THE AMENDMENT OF THE CITY'S OFFICIAL ZONING MAP; PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF.

November 17, 2025 CITY COUNCIL MEETING AGENDA

Public Comments: "Comment Card" Required

o Members of the public with business before the board, NOT scheduled on the agenda as a public hearing (that have submitted a public comment card) may have three (3) minutes to address the board. o The board may not participate in any discussion and cannot vote on the subject you present unless it is listed on the agenda as an action item.

City Manager Update

Update on current events and city issues.

Update on Capital Projects.

Consent Agenda

1. Acceptance of the meeting minutes to date.

Items Removed from Consent Agenda

Regular Agenda

1. Consideration and possible action to approve a Subdivision Variance and authorize the Mayor to execute the Development Agreement;
   BEING A SUBDIVISION VARIANCE REQUEST SEEKING TO VARY THE REQUIREMENTS OF (1) CHAPTER 62, SECTION 111 - ADDITIONAL STREET REQUIREMENTS AND SECTION 113 – SIDEWALKS, TO ALLOW ESCROWING OF FUNDS IN LIEU OF PERIMETER ROAD AND SIDEWALK CONSTRUCTION, AND (2) SECTION 104.11 - STREETS, RIGHTS-OF-WAY WIDTHS, TO ALLOW REDUCED RIGHTS-OF-WAY WIDTH OF 50 FEET INSTEAD OF MINIMUM REQUIRED 60 FEET, FOR TWO LOCAL STREETS WITHIN PRIMROSE, A PROPOSED RESIDENTIAL SUBDIVISION WITH AN APPROXIMATE 174.8 ACRES OUT OF THE H.T. & B.R.R. CO. SURVEY, SECTION 71, A-291, BRAZORIA COUNTY, TEXAS, LOCATED ALONG THE SOUTHERN SIDE OF RODEO PALMS PARKWAY, EAST SIDE OF COUNTY ROAD 48, ABUTTING AVELLINO SUBDIVISION TO THE EAST AND NORTH.

2. Consideration and possible action to approve the Primrose Master Plan Amendment as recommended by the Planning Development and Zoning Commission.

3. Consideration and possible action to approve the first of two readings of Ordinance 2025-O-34;
   AN ORDINANCE TO ANNEX CERTAIN TERRITORY BEING AN APPROXIMATE 47.3156 ACRES OF LAND, PROPOSED FOR ANNEXATION INTO CITY OF MANVEL'S CITY LIMITS AND SUBSEQUENT DEVELOPMENT AS A RETAIL CENTER; LOCATED AT THE NORTHWEST CORNER OF STATE HIGHWAY (SH) 6 AND KIRBY DRIVE INTERSECTION; CONTAINING A 34.2791 ACRE TRACT AND A 11.3999 ACRE TRACT SEPARATED BY A 40-FOOT-WIDE (0.844 ACRE) UNIMPROVED RIGHT-OF-WAY; SITUATED IN H.T. & B. RAILROAD COMPANY SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, AND A 1.6366 ACRE TRACT BEING A PORTION OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION OF IOWA COLONY H.T. & B. RAILROAD COMPANY SURVEY NO. 71 (ALSO REFERRED TO AS THE IMMIGRATION LAND COMPANY SUBDIVISION OF SECTION 71, H.T. & B.R.R. COMPANY SURVEY) ABSTRACT 291, BRAZORIA COUNTY, TEXAS). (ACTION POSTPONED AT 11/3/2025 CITY COUNCIL MEETING)

4. Consideration and possible action to approve the first of two readings of Ordinance 2025-O-33;
AN ORDINANCE TO ESTABLISH PLANNED UNIT DEVELOPMENT (PUD) ZONING DISTRICT AND ADOPTING A PUD DOCUMENT PROVIDING FOR ZONING AND DEVELOPMENT RELATED PROVISIONS AND REQUIREMENTS IN ACCORDANCE WITH SECTION 77-79.(A) OF CITY OF MANVEL'S ZONING ORDINANCE; FOR AN APPROXIMATE 47.3156 ACRES OF LAND, PROPOSED FOR ANNEXATION INTO CITY OF MANVEL'S CITY LIMITS AND SUBSEQUENT DEVELOPMENT AS A RETAIL CENTER; LOCATED AT THE NORTHWEST CORNER OF STATE HIGHWAY (SH) 6 AND KIRBY DRIVE INTERSECTION; CONTAINING A 34.2791 ACRE TRACT AND A 11.3999 ACRE TRACT SEPARATED BY A 40-FOOT-WIDE (0.844 ACRE) UNIMPROVED RIGHT- OF-WAY; SITUATED IN H.T. & B. RAILROAD COMPANY SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, AND A 1.6366 ACRE TRACT BEING A PORTION OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION OF IOWA COLONY H.T. & B. RAILROAD COMPANY SURVEY NO. 71 (ALSO REFERRED TO AS THE IMMIGRATION LAND COMPANY SUBDIVISION OF SECTION 71, H.T. & B.R.R. COMPANY SURVEY) ABSTRACT 291, BRAZORIA COUNTY, TEXAS). (Tabled by PD&Z on 10/27/25)

5. Consideration and possible action to approve the second and final reading of Ordinance 2025-O-36;
AN ORDINANCE REGARDING THE CITY OF MANVEL'S TEXAS MUNICIPAL RETIREMENT SYSTEM BENEFITS AUTHORIZING: (1) ANNUALLY ACCRUING UPDATED SERVICE CREDITS AND TRANSFER UPDATED SERVICE CREDITS; (2) ANNUALLY ACCRUING ANNUITY INCREASES, ALSO REFERRED TO AS COST OF LIVING ADJUSTMENTS (COLAS) FOR RETIREES AND THEIR BENEFICIARIES; AND (3) REMOVAL OF THE STATUTORY MAXIMUM CONTRIBUTION LIMIT.

6. Consideration and possible action to approve the first of two readings of Resolution 2025-R-47;
A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS, APPROVING AS A PROJECT OF THE MANVEL ECONOMIC DEVELOPMENT CORPORATION CERTAIN PROJECT NUMBER 2025-03 – RICH'S CAR WASH, MANVEL TX – SITE IMPROVEMENTS LOCATED AT 19212 HIGHWAY 6, MANVEL TEXAS TO APPROVE AN EXPENDITURE OF UP TO $20,000.00 FOR REIMBURSEMENT FOR SITE IMPROVEMENTS/UTILITIES FOR CAR WASH COMMERCIAL BUSINESS IN A COMMERCIALLY TARGETED AREA, WHICH WILL FURTHER ECONOMIC DEVELOPMENT, CREATE COMMERCIAL INVESTMENT, AND CREATE AND/OR RETAIN JOBS; CONTAINING FINDINGS AND OTHER PROVISIONS RELATING TO THE SUBJECT; PROVIDING THAT THIS RESOLUTION SHALL BECOME EFFECTIVE FROM AND AFTER ITS PASSAGE AND ADOPTION.

7. Consideration and possible action to approve Resolution 2025-R-48;
A RESOLUTION OF THE MANVEL CITY COUNCIL OF THE CITY OF MANVEL APPROVING THE OFFICIAL BALLOT AND ITS CASTING VOTES FOR THE CANDIDATE(S) FOR A POSITION ON THE BOARD OF DIRECTORS OF THE BRAZORIA COUNTY APPRAISAL DISTRICT.

8. Consideration and possible action to direct staff on the following:
   A) Artificial Intelligence (AI) Governance and Ethics Policy.
   B) Street and Sidewalk Fund Policy.

Mayor and Council Comments

Update on current events and city issues.

Additionally, pursuant to Texas Government Code § 551.0415, City Council Members and city staff may make a report about items of community interest during a meeting of the governing body without having given notice of the report.

Items of community interest include:

- Expressions of thanks, congratulations, or condolence;
- Information regarding holiday schedules;
- An honorary or salutary recognition of a public official, public employee, or other citizen, except that a discussion regarding a change in the status of a person's public office or public employment is not an honorary or salutary recognition for purposes of this subdivision;
- A reminder about an upcoming event organized or sponsored by the governing body;
- Information regarding a social, ceremonial, or community event organized or sponsored by an entity other than the governing body that was attended or is scheduled to be attended by a member of the governing body or an official or employee of the municipality; and
- Announcements involving an imminent threat to the public health and safety of people in the municipality that has arisen after the posting of the agenda.

Adjourn

CERTIFICATION

I, Tammy Bell, City Secretary for the City of Manvel, do hereby certify that the foregoing Agenda of the Manvel City Council is true and correct and that I posted such notice on the bulletin board at the Manvel City Hall; a place convenient and readily accessible to the public on November 10, 2025 in accordance with the Texas Open Meetings Act (Tex. Gov't. Code §551.001 et.seq). Said notice remained posted for at least 3 business days preceding the scheduled day of the meeting.

TAMMY BELL, CITY SECRETARY
CITY OF MANVEL, TEXAS

MANVEL CITY COUNCIL DATA SHEET

MEETING DATE: November 17, 2025

TOPIC: Subdivision variance request for Primrose Development (an approximate 174.8-acre tract of land with an approved Master Plan), seeking to vary the following requirements of Chapter 62, Section 111 *Additional Street requirements (c),* Section 113 *Sidewalks, and* Section 104.11 *Streets, Rights-of-way widths* to allow for an amendment to the approved Master plan.

BACKGROUND:

- The Primrose Master Plan was approved by City Council in July 2025.
- Located within the City of Manvel's Extraterritorial Jurisdiction (ETJ), along the south side of Rodeo Palms Parkway, east of County Road 48, and adjacent to the Avellino Subdivision to the east and north.
- Proposes approximately 174.8 acres of residential lots (minimum 60 ft width, 6,300 sq ft area).
- Includes detention areas, thoroughfare, and collector Right-of-Way (ROW) dedications, parkland, pipeline easements, landscape buffers, and open spaces.
- Located in Brazoria County MUD No. 29.

PROJECT HISTORY

- There is an existing 40-foot unimproved ROW extends from the south side of Rodeo Palms Parkway (west of future Kirby Drive), along the east side of proposed residential Sections 1 & 2 and Detention Pond A, continuing south along proposed Section 6.
- At the time of Master Plan approval, the developer planned to abandon this ROW in coordination with the abutting property owner, prior to final platting.
- Preliminary plats for Sections 1, 2, and Detention Pond A were approved in August 2025.
- The applicant (Brad Sweitzer, EHRA Engineering, representing KL LB BUY 5 LLC) has since indicated that ROW abandonment is no longer feasible and now seeks to proceed with a Master Plan Amendment and dedicate the additional right-of-way for the existing 40' right-of-way.
- Since the approval of the Master Plan, there have been discussions on considering a realignment of Kirby Drive as part of the Major Throughfare Update process to align with the existing ROW as much as possible to reduce negative impact of development.

VARIANCE JUSTIFICATION

Under current ordinance requirements (Sections 62-111 & 62-113):

- Developers must construct one-half of all abutting roads (concrete, curb, gutter, and sidewalk) per City standards.
- Because the ROW abandonment will not occur, a 10-foot ROW dedication along the existing 40-foot corridor is also required.

The applicant states this dedication reduces the effective width of the property, impacting lot depth and home design flexibility.

VARIANCES REQUESTED

The applicant requests relief as follows:

1. Waive immediate construction of the existing ROW and sidewalks, allowing escrow of funds in lieu of construction.

2. Reduce ROW width from 60 feet to 50 feet for two north-south streets in Sections 1 and 2.

To ensure no adverse impact to public health, safety, or welfare, the applicant proposes to:

- Dedicate 10-foot public utility easements (PUEs) on both sides of the reduced ROWs, providing a 70-foot total utility corridor (wider than required).
- Construct all streets within the 50-foot ROWs to the same standards as the rest of the development.
- Require garage setbacks of at least 36 feet from back-of-curb (25 feet from ROW line) for adequate driveway space.
- Increase lot depth and backyard space, allowing larger homes and higher taxable values.
- Have BCMUD No. 47 maintain all roads within these ROWs, eliminating City maintenance responsibility.
- Limit the variance strictly to the two identified streets (Please see Exhibits).

Note: The Master Plan Amendment for Primrose is included as a separate agenda item. Approval of the requested variances is required to approve the Master Plan Amendment (Approved Master Plan and Proposed Master Plan Amendment Attached).

STAFF FINDINGS: Under Section 62-5, *Variance*, staff reviewed the request and found the following:

- **ROW Improvements:**
  - There are special circumstances associated with the subject site due to its location, ETJ jurisdiction, and relationship to the City's Major Thoroughfare Plan. Only one half of the unimproved 40-foot-wide ROW is located on the subject site, so the applicant is dependent on abutting property owners for abandonment. Additionally, since the approval of Primrose Master Plan, there have been discussion on realigning Kirby Drive with the existing right-of-way to minimize development challenges for properties on both sides.
  - Strict enforcement of the ordinance would require immediate construction of full concrete roadway and sidewalk improvements. Escrowing the required funds allows deferring construction until such time as roadway connectivity is practical. Abutting property is not currently proposed for development. However, construction of Kirby Drive to achieve connectivity is a priority for the City and construction is anticipated in the near future. Therefore, the amount of escrow must be determined upon ensuring that there is no significant cost burden on the City at the time of construction.
  - Granting the variance in lieu of immediate road and sidewalk improvements, with escrow of funds for future construction, is not anticipated to be detrimental to public welfare or injurious to neighboring properties.

- **Reduced ROW Widths:**
  - The need for considering reduced ROW width arises from the unique circumstances associated with the existing ROW and potential realignment of Kirby Drive. Reducing the ROW from 60 feet to 50 feet could result in the need for utility easements to be within the front yards instead of all utility lines being within the public right-of-way. However, The ROW width reduction applies only to two interior streets in Sections 1 and 2, not the entire development.
  - Please note that this development is within City of Manvel's ETJ and some of the street standards of the County will apply too. Additionally, limited allowance of 50-foot-wide right-of-way has been considered in the past for Master Planned development.
  - It will not impair an adequate supply of light or air to adjacent property, will not substantially increase the congestion, fire danger, endanger the public health, safety and well-being of the neighborhood.

Note: City staff requested confirmation of coordination with Brazoria County regarding the variances. The applicant responded that, under the interlocal agreement, subdivision regulation within the ETJ is deferred to the City and that the proposed 50-foot ROWs will meet County roadway standards and be maintained by the MUD. However, County staff indicated the proposed variances do not meet County requirements and must be approved by Commissioners Court. At the PD&Z meeting, the applicant indicated that the street width would not change and that a condition pertaining to County approval is not relevant.

STAFF RECOMMENDATION: Staff recommends approval of this variance request to Chapter 62*,* Section 111 - *Additional Street Requirements,* Section 113 – *Sidewalks, and* Section 104 Streets (11), *Rights-of-way widths,* with the following conditions:

1. Funds shall be escrowed for the construction of road and sidewalk for an amount approved by the City Engineer. The fund shall be escrowed prior to submittal of final plat;
2. The Master Plan Amendment No.1 for the Primrose shall include a note indicating the variance approval and escrow arrangement;
3. Approval is contingent upon formal approval by Brazoria County Commissioners Court for the proposed variance or a letter of no objection from the County Engineer's office;
4. Master plan shall not be amended in the future to include non-residential use along the existing 40' wide right-of-way/ Kirby Drive.

PD&Z RECOMMENDATION: PD&Z recommends approval of this variance request to Chapter 62*,* Section 111 - *Additional Street Requirements,* Section 113 – *Sidewalks, and* Section 104 Streets (11), *Rights-of-way widths,* with the following conditions:

1. Funds shall be escrowed for the construction of road and sidewalk for an amount approved by the City Engineer. The fund shall be escrowed prior to submittal of final plat;
2. The Master Plan Amendment No.1 for the Primrose shall include a note indicating the variance approval and escrow arrangement;
3. Approval is contingent upon formal approval by Brazoria County Commissioners Court for the proposed variance or a letter of no objection from the County Engineer's office;
4. Master plan shall not be amended in the future to include non-residential use along the existing 40' wide right-of-way/ Kirby Drive.

ATTACHMENTS: Application Forms, Approved Master Plan, Letters of Requests, Proposed Master Plan Amendment, Vicinity Aerial Map, Zoning Map, Major Thoroughfare Plan Map.

FUNDING ISSUES

_X_ Not applicable
___ Not budgeted
___ Full amount already budgeted
___ Funds to be transferred from Acct.#

SUBMITTING STAFF MEMBER Ellie Roohbakhsh, Senior Planner	**FINANCE DIRECTOR APPROVAL _____** **CITY MANAGER APPROVAL _____**

Application Form

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
PHONE: 281-489-0630
FAX: 281-489-0634

SUBDIVISION VARIANCE APPLICATION

SITE INFORMATION

Project Name: Primrose Perimeter Road & Sidewalk Variance

Site Address or Legal Description: East of C.R. 48, south of Rodeo Palms Parkway, and north of S.H. 6

Parcel/Tax ID# (s): N/A Property Platted: YES ☐ NO ■ N/A

Current Zoning: N/A Total Acreage: 174.8 Total Lots: 412

Project Description: Request to not construct perimeter street to its ultimate required criteria (with sidewalk) based on surrounding site conditions and developer proposed alternative.

OWNER & APPLICANT INFORMATION

Applicant Name: Brad Sweitzer Company Name: EHRA

Address: 10011 Meadowglen Lane City: Houston State: TX Zip: 77042

Phone #: _____ Email: _____

Owner Name: KL LB BUY 5, LLC Company Name: KL LB BUY 5, LLC

Address: 850 New Burton Road, Suite 201 City: Dover State: DE Zip: 19904

Phone #: _____ Email: _____

SUBDIVISION VARIANCE INFORMATION

The subdivision variance requested is (cite section from Chapter 62, *Subdivisions*, in the *Code of Ordinances*):

Sec. 62-111. – Additional street requirements. (c) The developer shall be responsible for construction of necessary improvements on all perimeter streets in order to bring the pavement and curbing up to minor street standards for the one-half of the street abutting the development.

Sec. 62-113. – Sidewalks. Sidewalks shall be constructed at a minimum of four feet wide or as determined by the city's thoroughfare plan and in accordance with the city's design criteria profile. Sidewalks shall be installed in accordance with the city's design criteria manual.

Are there special circumstances or conditions affecting the property?

Yes - see variance request letter for complete details.

Will enforcement of the provisions of Chapter 62, *Subdivisions*, deprive the owner/applicant of a substantial property right?

No, but enforcement of the provisions of Chapter 62 will result in a worse outcome for the owner and City of Manvel. See variance request letter for complete details.

Application Form

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
PHONE: 281-489-0630
FAX: 281-489-0634

If a subdivision variance is granted, will it be detrimental to the public welfare or injurious to other property or property rights in the vicinity?

No, to the contrary, granting of the variance will be of benefit to the public welfare.
See variance letter for complete details.

DISCLAIMER & SIGNATURE

I certify that I am the owner or owner's representative of the property (with signed letter of authorization) and that the foregoing statements and answers herein made all data, information, and evidence herewith submitted are in all respects, to the best of my knowledge and belief, true and correct.

Brad Smeltzer — October 14, 2025

Applicant Signature — Date

Application Form

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
PHONE: 281-489-0630
FAX: 281-489-0634

SUBDIVISION VARIANCE APPLICATION

SITE INFORMATION

Project Name: Primrose Right-of-Way Variance

Site Address or Legal Description: East of C.R. 48, south of Rodeo Palms Parkway, and north of S.H. 6

Parcel/Tax ID# (s): N/A Property Platted: YES ☐ NO ■ N/A

Current Zoning: N/A Total Acreage: 174.8 Total Lots: 412

Project Description: Request to construct streets with a right-of-way width of 50 feet.

OWNER & APPLICANT INFORMATION

Applicant Name: Brad Sweitzer Company Name: EHRA

Address: 10011 Meadowglen Lane City: Houston State: TX Zip: 77042

Phone #: Email:

Owner Name: KL LB BUY 5, LLC Company Name: KL LB BUY 5, LLC

Address: 850 New Burton Road, Suite 201 City: Dover State: DE Zip: 19904

Phone #: Email:

SUBDIVISION VARIANCE INFORMATION

The subdivision variance requested is (cite section from Chapter 62, *Subdivisions*, in the *Code of Ordinances*):

Sec. 62-104. – Streets. (11) Rights-of-way widths. The minimum right-of-way width for all streets in the city and its extraterritorial jurisdiction is 60 feet or otherwise specified in the city's thoroughfare plan, as amended from time to time.

Are there special circumstances or conditions affecting the p

Yes - see variance request letter for complete details.

Will enforcement of the provisions of Chapter 62, *Subdivisions*, deprive the owner/applicant of a substantial property right?

No, but enforcement of the provisions of Chapter 62 will result in a worse outcome for the owner and City of Manvel. See variance request letter for complete details.

Application Form

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
PHONE: 281-489-0630
FAX: 281-489-0634

If a subdivision variance is granted, will it be detrimental to the public welfare or injurious to other property or property rights in the vicinity?

No, to the contrary, granting of the variance will be of benefit to the public welfare.
See variance letter for complete details.

DISCLAIMER & SIGNATURE

I certify that I am the owner or owner's representative of the property (with signed letter of authorization) and that the foregoing statements and answers herein made all data, information, and evidence herewith submitted are in all respects, to the best of my knowledge and belief, true and correct.

Brad Smeltzer — October 14, 2025

Applicant Signature — Date

Application Form

DEVELOPMENT SERVICES DEPARTMENT
20025 HIGHWAY 6
MANVEL, TX 77578
PHONE: 281-489-0630
FAX: 281-489-0634

SUBMITTAL CHECKLIST

So that we may efficiently review your request in a timely manner, it is important that all required documents and fees listed on the "Submittal Checklist" below are submitted with your application. One or more of the required documents may be waived due to the nature of the request; however, it is incumbent upon the applicant to inquire about these exceptions **before** submitting an application. Answers to subdivision variance applications can be obtained by attending a pre-development meeting with our Development Review Committee (DRC) prior to submitting a complete application. Please call the phone number on the application to schedule an appointment. Submit the application and accompanying documents to the Permits Department at the address above Monday through Thursday between the hours of 7:30 a.m. and 5:30 p.m. and Friday between the hours of 7:30 a.m. and 11:30 a.m.

ZONING VARIANCE APPLICATION SUBMITTAL CHECKLIST ITEMS	REQUIRED (PLEASE CHECK)
Completed Subdivision Variance Application (with all signatures)	X
One (1) paper copy of site/plot plan and/or site plan (including vicinity map), measuring 8 ½" x 11', 11" x 17" or 24" x 36" (scaled/dimensioned drawing showing location of proposed structures)	X
Two (2) Copies of Recorded Plat (if platted)	N/A
Two (2) Copies of Legal Description (metes & bounds if not platted)	N/A
Two (2) Copies of Proposed Plat	N/A
Letter of Authorization (if applicable)	N/A
PDF format on disc containing all application documents rotated and formatted	N/A
Paid Application Fee of $500.00 (non-refundable)	X

APPLICANT CERTIFICATION

By signing below, I acknowledge that I have reviewed the Submittal Checklist and have included the required submittal items and reviewed them for completeness and accuracy. I also acknowledge that my application will be rejected if it is deemed incomplete.

Brad Smeltzer — October 14, 2025

Applicant Signature — Date

Application Form

DEVELOPMENT SERVICES
20025 HIGHWAY 6
MANVEL, TX 77578
P: 281-489-0630

LETTER OF AUTHORIZATION

Have property owner complete and sign, if applicant differs from property owner.

KL LB BUY 5, LLC
Owner Name

6900 E Camelback Rd., Suite 800
Owner Address

Scottsdale, AZ 85251
Owner City, State Zip

October 14th, 2025
Date

Development Services Department
20025 Highway 6
Manvel, TX 77578

Dear City of Manvel Development Services,

I, Ed Hadley, Authorized Signatory of KL LB BUY 5, LLC, certify that I am the owner of the project property located at East of C.R. 48, south of Rodeo Palms Parkway, and north of S.H. 6 and that the forgoing statements and answers made and all data, information, and evidence herewith submitted are in all respects to the best of my knowledge and belief, true, and correct. I appoint Jacey Neuberger with the company EHRA Engineering (if applicable) to act as my representative for this project. I agree to be responsible for payment of bills due to the City of Manvel related to this application. Furthermore, I understand that any material misrepresentation of this application, failure to comply with ordinances, and /or failure to remit payment for services can lead to delays in this project – up to and including rejecting the project and forfeiting any fees paid.

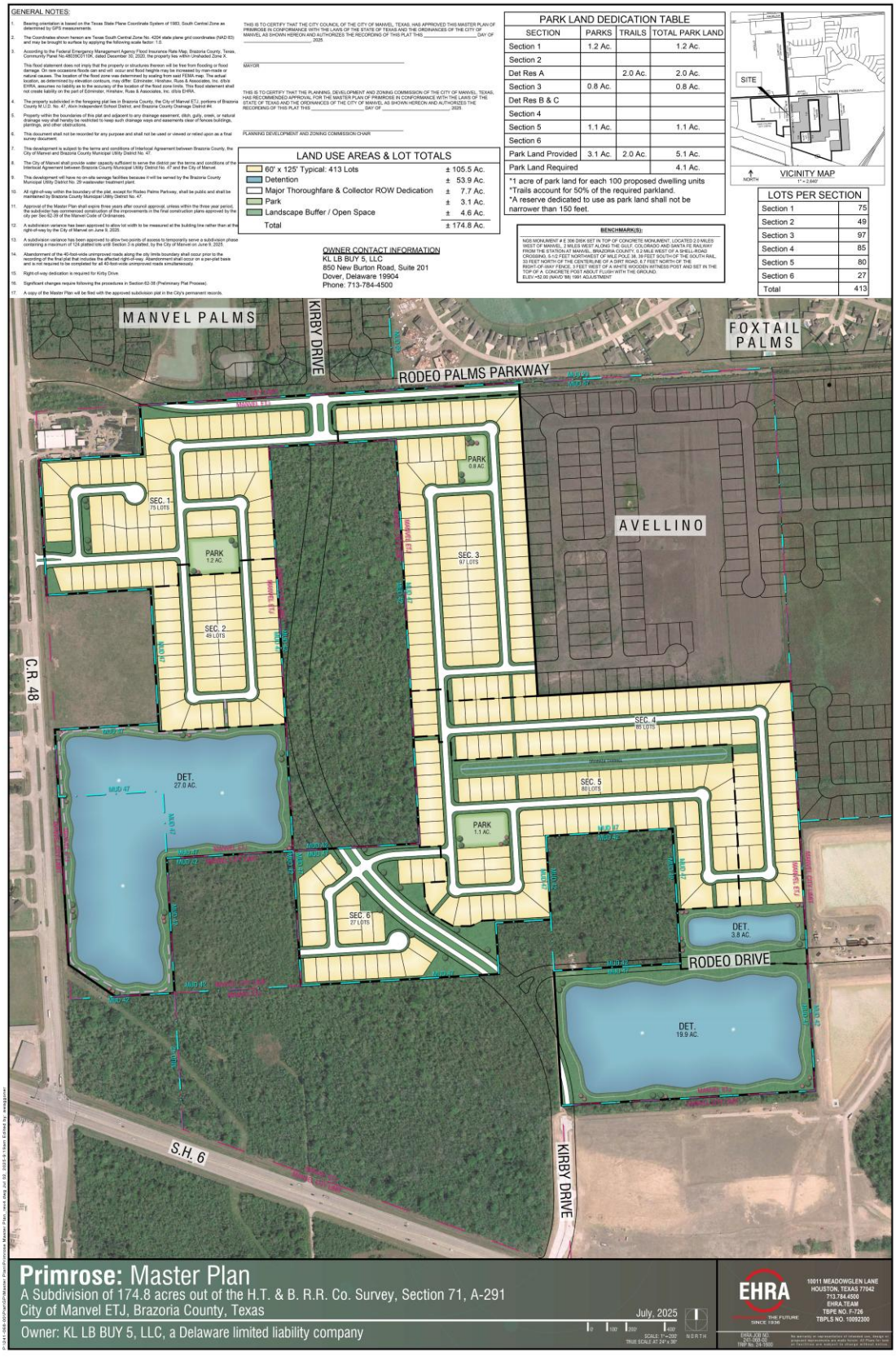
Please contact me directly at _____ if you have any questions.

Sincerely,

Owner Name Ed Hadley, Authorized Signatory of KL LB BUY 5, LLC

Owner Signature _____

Approved Master Plan



Letter of Requests

EHRA
ENGINEERING THE FUTURE
SINCE 1936

TBPE No. F-726
TBPLS No. 10092300

November 4, 2025

Mr. Jose Abraham
Director of Development Services - City of Manvel
20031 Highway 6
Manvel, Texas 77578

Re: **Primrose Subdivision Variance Request -** To allow monetary contribution to the City of Manvel for the future development of a sidewalk and local street in lieu of street and sidewalk development.

Mr. Abraham,

On behalf of KL LB Buy 5, and Beazer Homes (the owner and developer of Primrose), a variance is requested from the City of Manvel's subdivision ordinance, Sec. 62-111 and Sec. 62-113 to allow for monetary contribution in lieu of sidewalk and street pavement construction based on the standards established in Section 62.5(a) of Chapter 2 of the City of Manvel Code of Ordinances.

> ***Sec. 62-111 – Additional street requirements****. (c) The developer shall be responsible for construction of necessary perimeter streets in order to bring the pavement and curbing up to minor street standards for the one-half of the street abutting the development.*
>
> ***Sec. 62-113. – Sidewalks.*** *Sidewalks shall be constructed at a minimum of four feet wide or as determined by the city's thoroughfare plan and in accordance with the city's design criteria profile. Sidewalks shall be installed in accordance with the city's design criteria manual.*

Primrose is a 175-acre single-family development on Manvel's northwest side, outside city limits. The City approved the master plan and variances in early 2025, with conditions tied to abandoning certain ROW strips before final plat approval. However, part of the ROW cannot be abandoned, and road construction is infeasible due to special circumstances.

The special circumstances involve a 100+ year-old, 40' undeveloped ROW along Primrose's eastern boundary (Sections 1 & 2), split across multiple owners and extending beyond the site. The developer purchased the property based on the 2021 Major Thoroughfare Plan showing Kirby Drive 200' east of this ROW. Since approval, City staff has proposed using portions of the 40' ROW for Kirby Drive instead. This would impose financial hardship upon the developer. Furthermore, construction of this road would be impractical due to grading and construction easements that would be necessary from an

adjacent property owner. Lastly, the financial impact of this construction would be greater than what is required per the City's major thoroughfare plan. However, the developer recognizes the City's need to find a solution for the Kirby alignment and is willing to work with the City as much as is possible.

Granting the variance will not harm public welfare or adjacent properties. The developer proposes a solution using the existing ROW, dedicating an extra 10' (total 50') and contributing funds for half a local street and a 5' sidewalk along the west side of future Kirby Drive. These funds can support full Kirby Drive construction once the City acquires additional ROW.

The variance request from Sections 62-111 and 62-113 includes:

1. Realigning Kirby Drive through developer property using existing ROW (Exhibit B).
2. Dedicating an additional 10' ROW along the west side of the new alignment.
3. Funding ~2,825' of 5' sidewalk per City standards.
4. Funding ~2,825' of half a local street per City standards.
5. Eligibility for ~1,063' of 5' sidewalk funding reimbursement, if ROW is abandoned by the City.
6. Eligibility for ~1,063' of half a local street funding reimbursement, if ROW is abandoned by the City.

Please let me know if you need more details or support for presenting this to PD&Z or City Council.

Thank you,

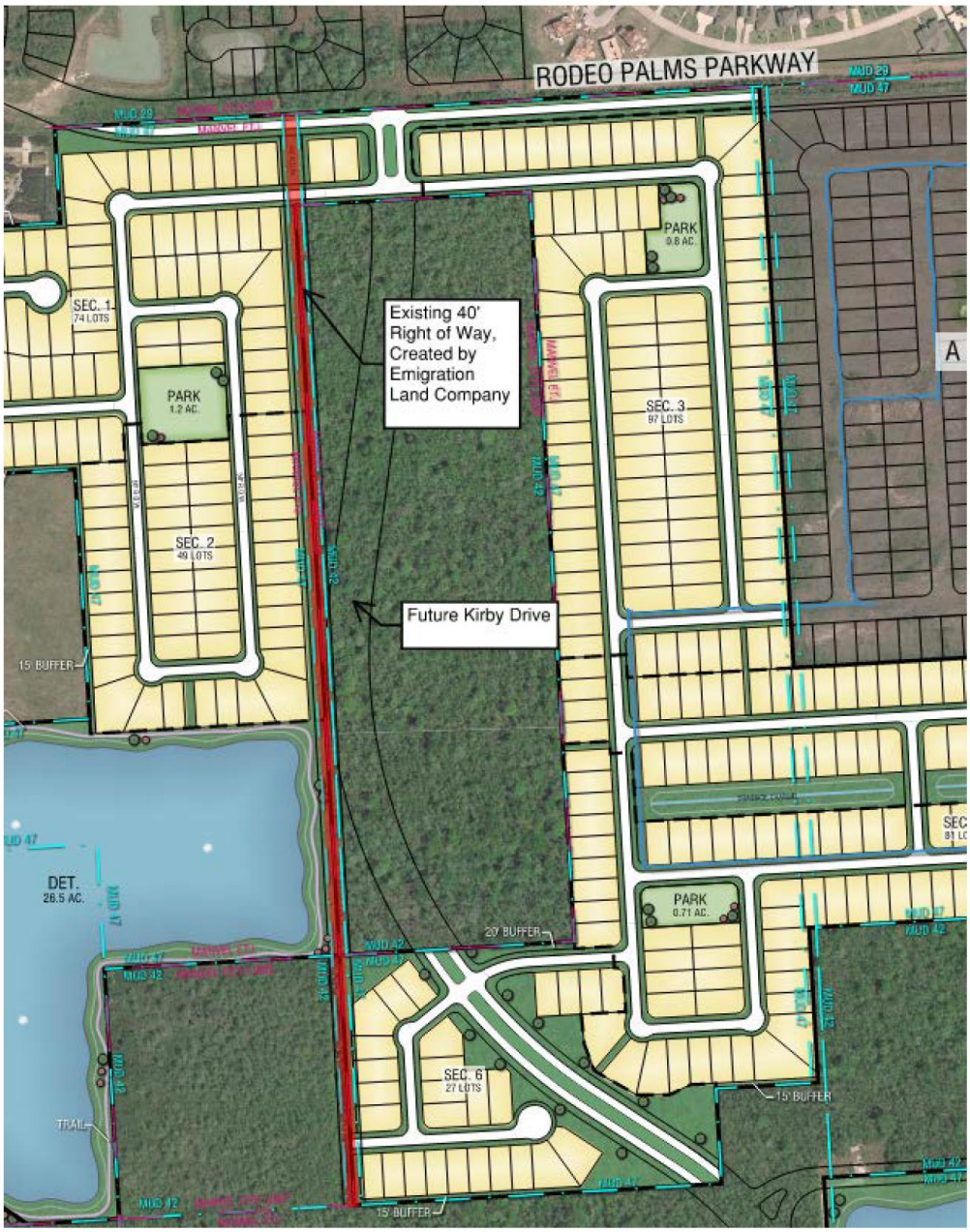
Brad Sweitzer

Brad Sweitzer, PLA, AICP
Associate | Director of Planning & Visioning
EHRA

Letter of Requests

Exhibit 'A'

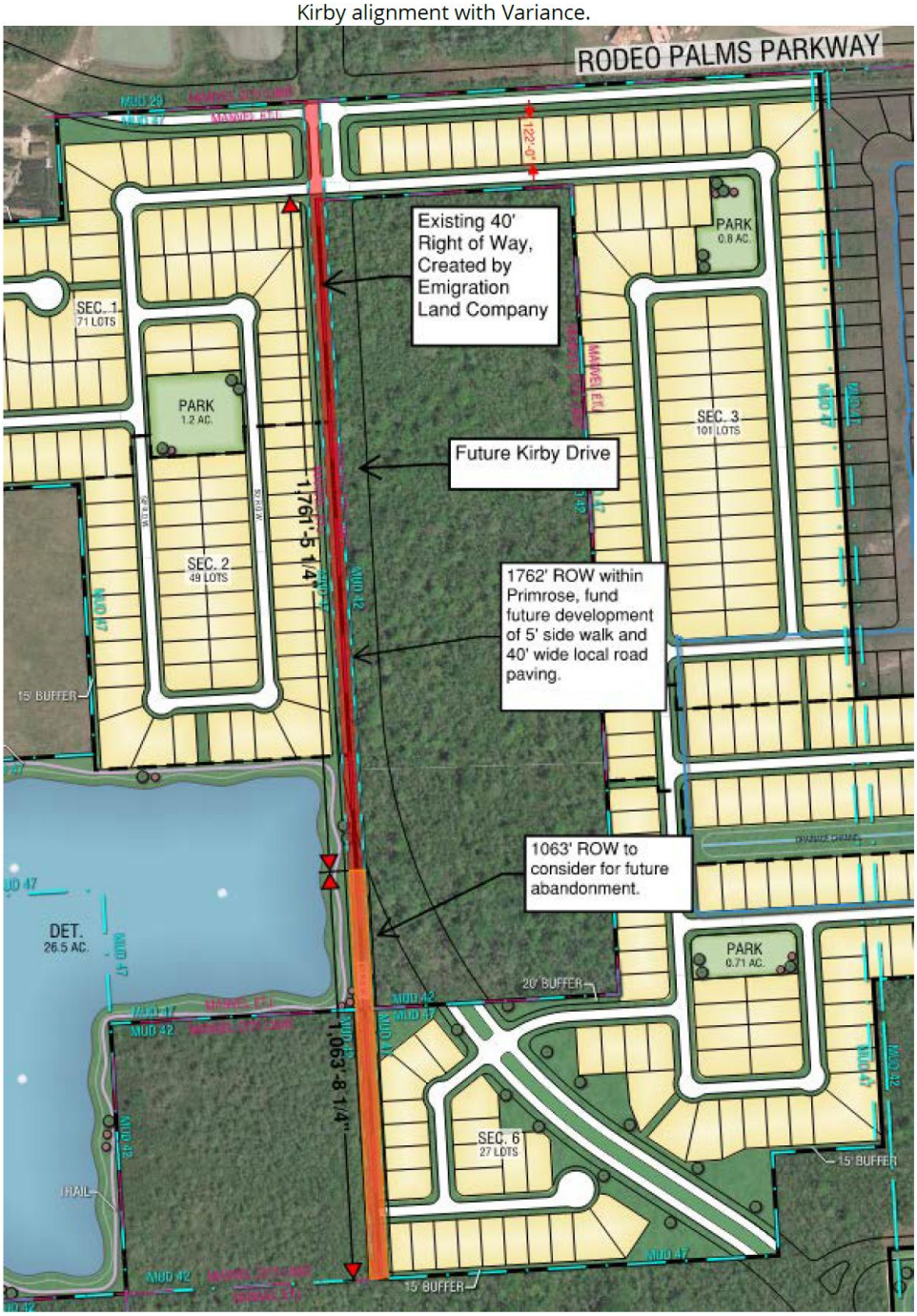
Current Kirby alignment and property identified in this variance request.



Letter of Requests

Exhibit 'B'

Kirby alignment with Variance.



Letter of Requests

EHRA
ENGINEERING THE FUTURE
SINCE 1936

TBPE No. F-726
TBPLS No. 10092300

September 14, 2025

Mr. Jose Abraham
Director of Development Services - City of Manvel
20031 Highway 6
Manvel, Texas 77578

Re: **Primrose Subdivision Variance Request -** To Allow Two (2) Streets to be 50' Wide Public Rights-of-Ways with 10' Public Utility Easements on Each Side instead of 60'

Mr. Abraham,

On behalf of KL LB Buy 5, and Beazer Homes (the owner and developer of Primrose), I respectfully submit this variance request for a variance from the City of Manvel's subdivision ordinance requirement for public rights-of-way to be a minimum of 60' wide.

Introduction

> ***Sec. 62-104. – Streets. (11) Rights-of-way widths.*** *The minimum right-of-way width for all streets in the city and its extraterritorial jurisdiction is 60 feet or otherwise specified in the city's thoroughfare plan, as amended from time to time.*

Primrose is a proposed 175-acre single family development on the northwest side of Manvel, just outside the corporate city limits. A master plan was previously approved along with a handful of subdivision variances earlier in 2025, but that master plan was approved with the condition that certain right-of-way strips be abandoned prior to final plat approvals. However, since the original master plan approval, it has become apparent that a portion of those right-of-way strips cannot be abandoned.

Thus, a hardship is created by the shape of the Primrose property and the surrounding constraint of one of the existing, undeveloped rights-of-ways. Along the eastern boundary of proposed Sections 1 and 2, there is existing 40' "paper" right-of-way that was created over 100 years ago. It is considered a "paper" right-of-way because it was never utilized and there are no improvements within this right-of-way (no roadway and no utilities).

However, this "paper" right-of-way is unable to be abandoned, despite the extremely limited chance that it will ever be utilized by the City or County as a roadway or utility corridor due to its close proximity to future Kirby Drive, because it is split upon a property line. The County requires both property owners to agree to abandon a right-of-way that is split upon a property line before it will proceed with the abandonment process. Unfortunately the adjacent property owner has not agreed

to abandon their portion of the unimproved right-of-way strip, so therefore the developer must work under the assumption that the right-of-way will remain. Thus, the developer is forced to proceed to not only work around the existing 40' strip of right-of-way, but it must also dedicate an additional 10' of right-of-way on the west side of the right-of-way to comply with the City's subdivision ordinance requirement that all rights-of-ways be a minimum of 60' wide (the adjacent property owner will need to dedicate an additional 10' as well when they proceed with development in order to bring the right-of-way to its ultimate width).

The existence and required right-of-way dedication of this strip squeezes the property boundary down in a way that is unfavorable for developing the property to its fullest potential. Complying with the current regulations would result in many of the proposed lots in Sections 1 and 2 being shallower. This would create smaller homes or smaller backyard than are desired by the developer.

Therefore, to address the hardship created by the unusual conditions imposed by the existing right-of-way and required widening of said right-of-way, we hereby request that two of the north-south streets in Sections 1 and 2 of Primrose be allowed to be reduced from 60' wide rights-of-ways to 50' wide rights of ways.

Below are the benefits of agreeing to this variance and the terms that the developer is willing to commit to ensure that the results of this change will not harm public health, safety, or welfare.

1. The developer will provide 10' public utility easements along each side of the proposed 50' public rights-of-ways. This will in essence allow dry and wet utilities to be placed in a 70' wide corridor centered on the 50' public rights-of-ways (greater than the 60' standard corridor created by the City's subdivision ordinance.)
2. The roads within these new 50' rights-of-ways will be the same size and be constructed the same way as all other roads within the Primrose development.
3. Garages will be setback at a minimum of 36' from the back of curb of the streets (25' from the right-of-way line). This more than ensures adequate distances for cars to park in driveways without sticking out into traffic.
4. The reduction of public-right-way will give homeowners the ability to have larger home sizes or larger sized back yards. Either one of those alternatives creates more taxable value for the public.
5. Brazoria County Municipal Utility District No. 47 has an agreement in place with the City and County to perpetually maintain the roads within these rights-of-ways. The City will not have to spend one additional penny if this variance is approved.
6. The variance shall only apply to the two roads as highlighted in Exhibit 'A'.

As an aside, there are many sections with this type of configuration in the Meridiana development. To date, there have been no reports of any issues created by this right-of-way design.

Letter of Requests

Please let me know if I can answer any questions or provide any additional information to support Staff's efforts to present this to the Planning, Development, and Zoning Commission or the City Council.

Thank you,

Brad Sweitzer

Brad Sweitzer, PLA, AICP
Associate | Director of Planning & Visioning
EHRA

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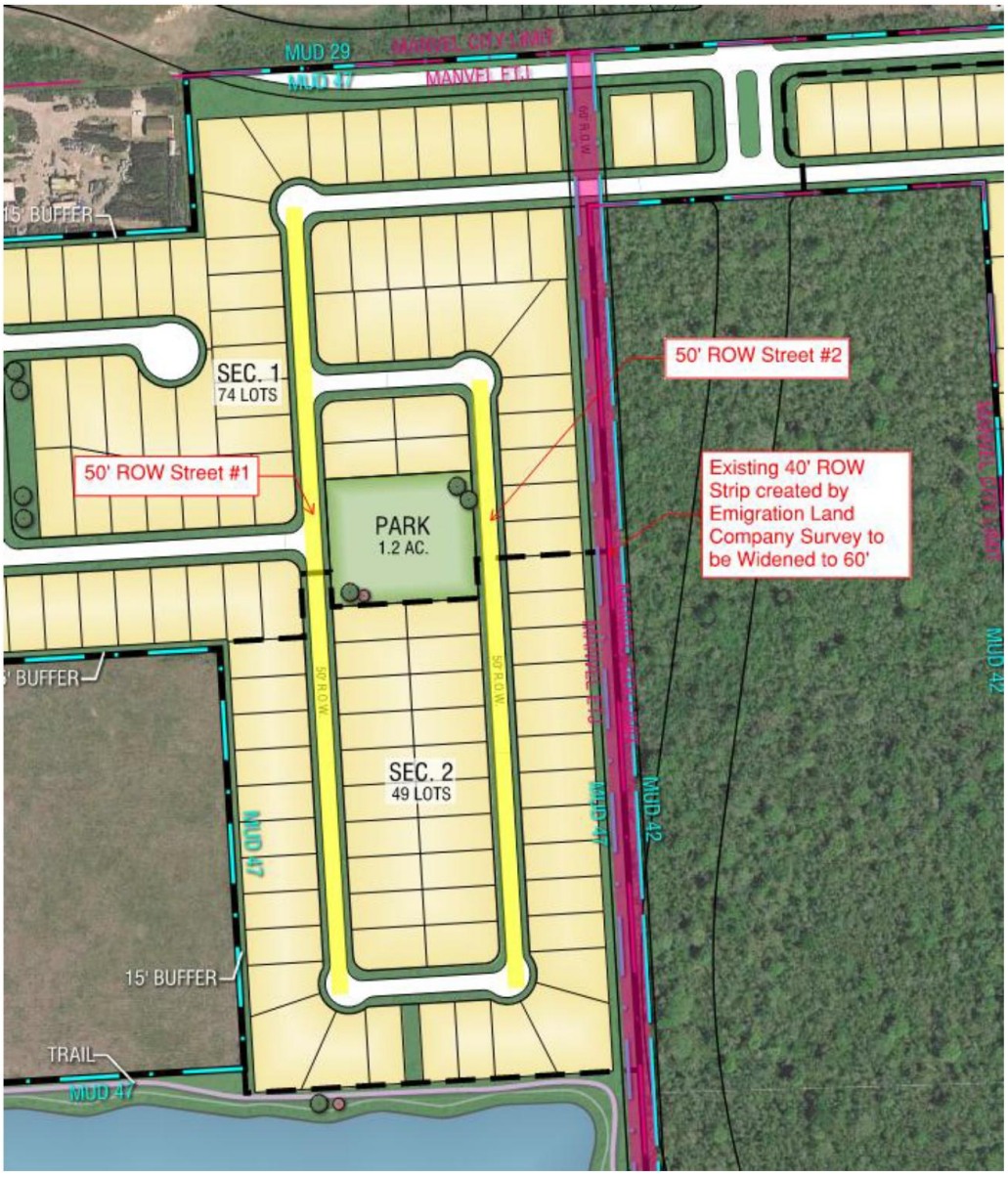
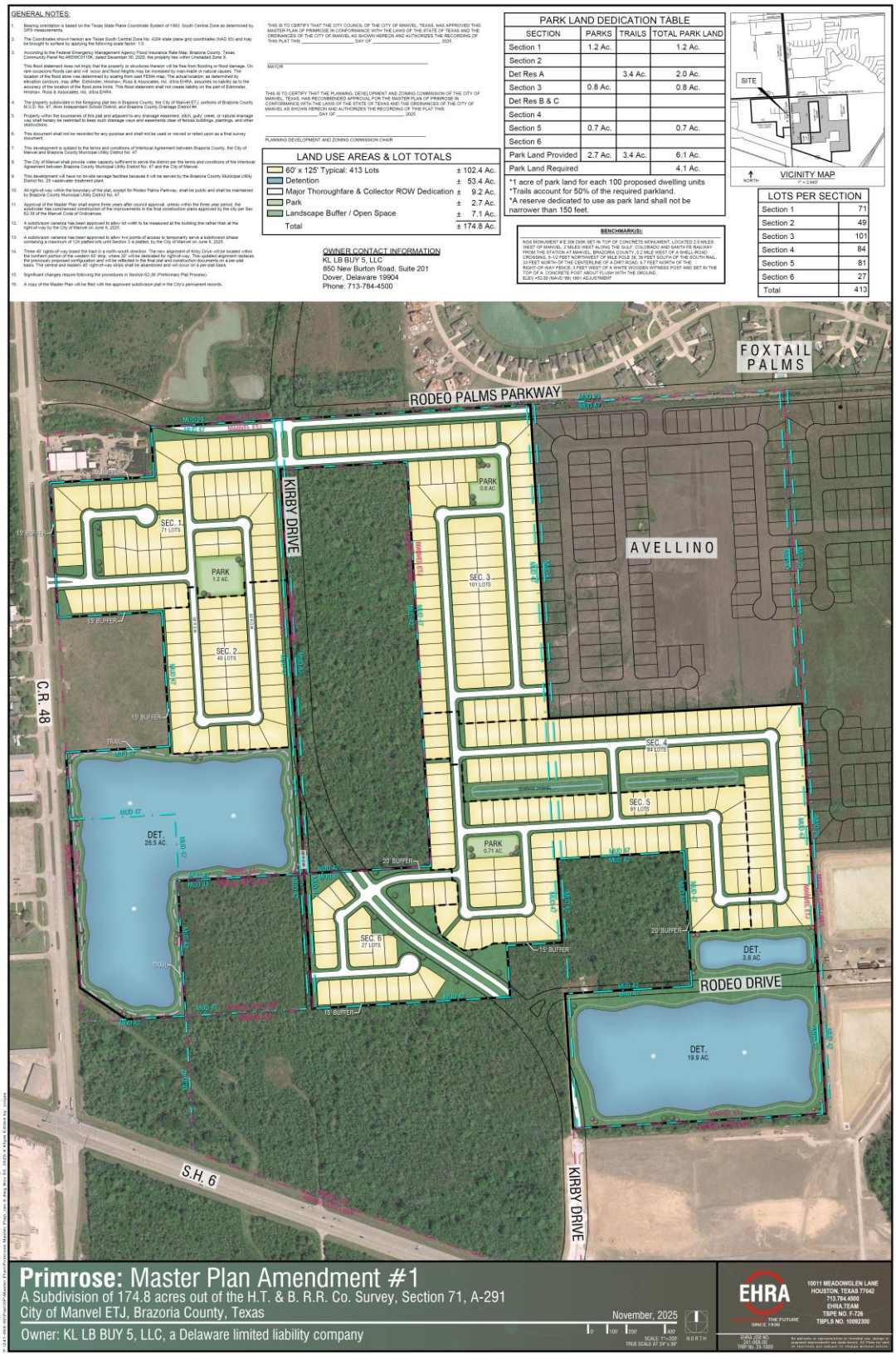
Letter of Requests

Exhibit 'A'

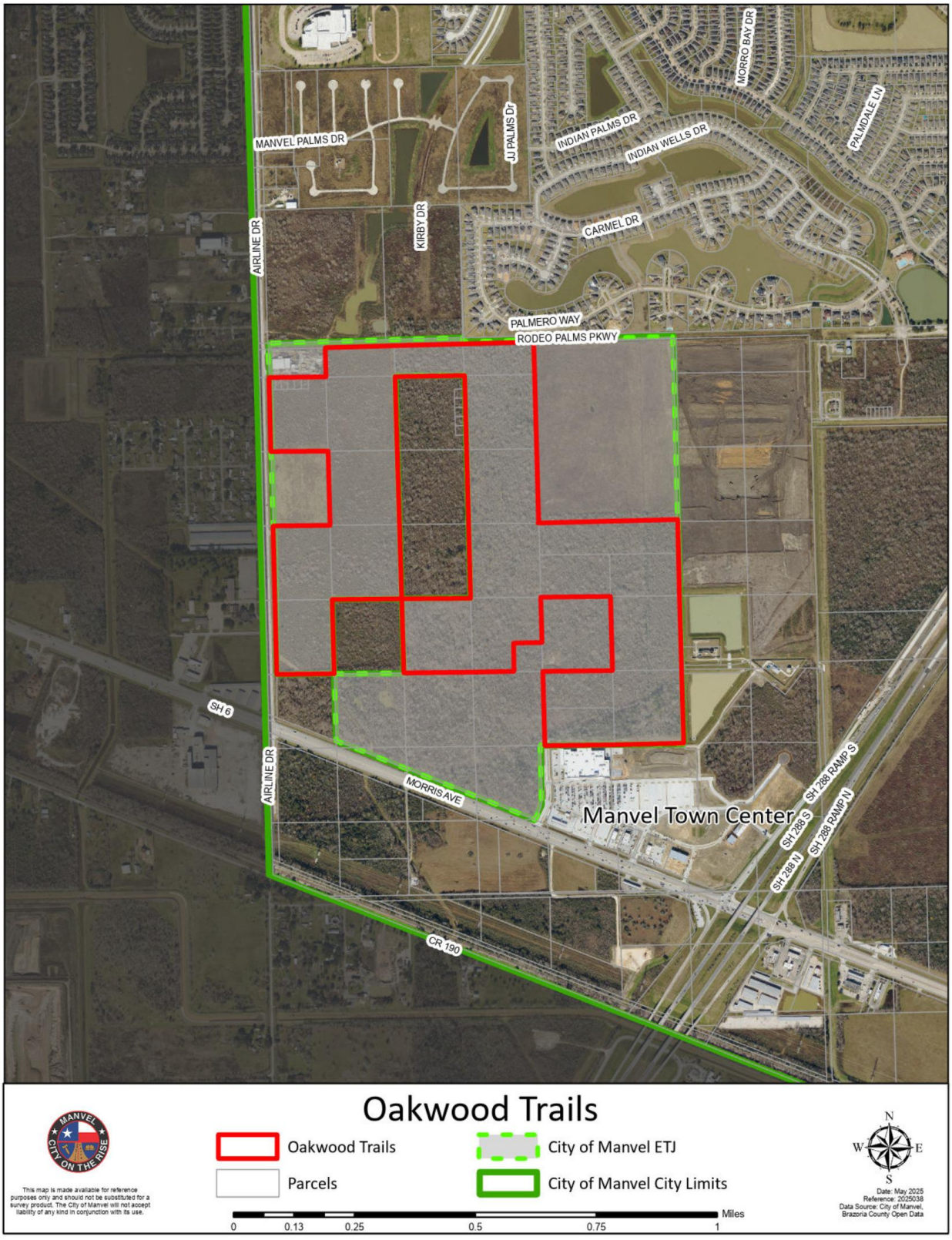
Extent of Variance Application



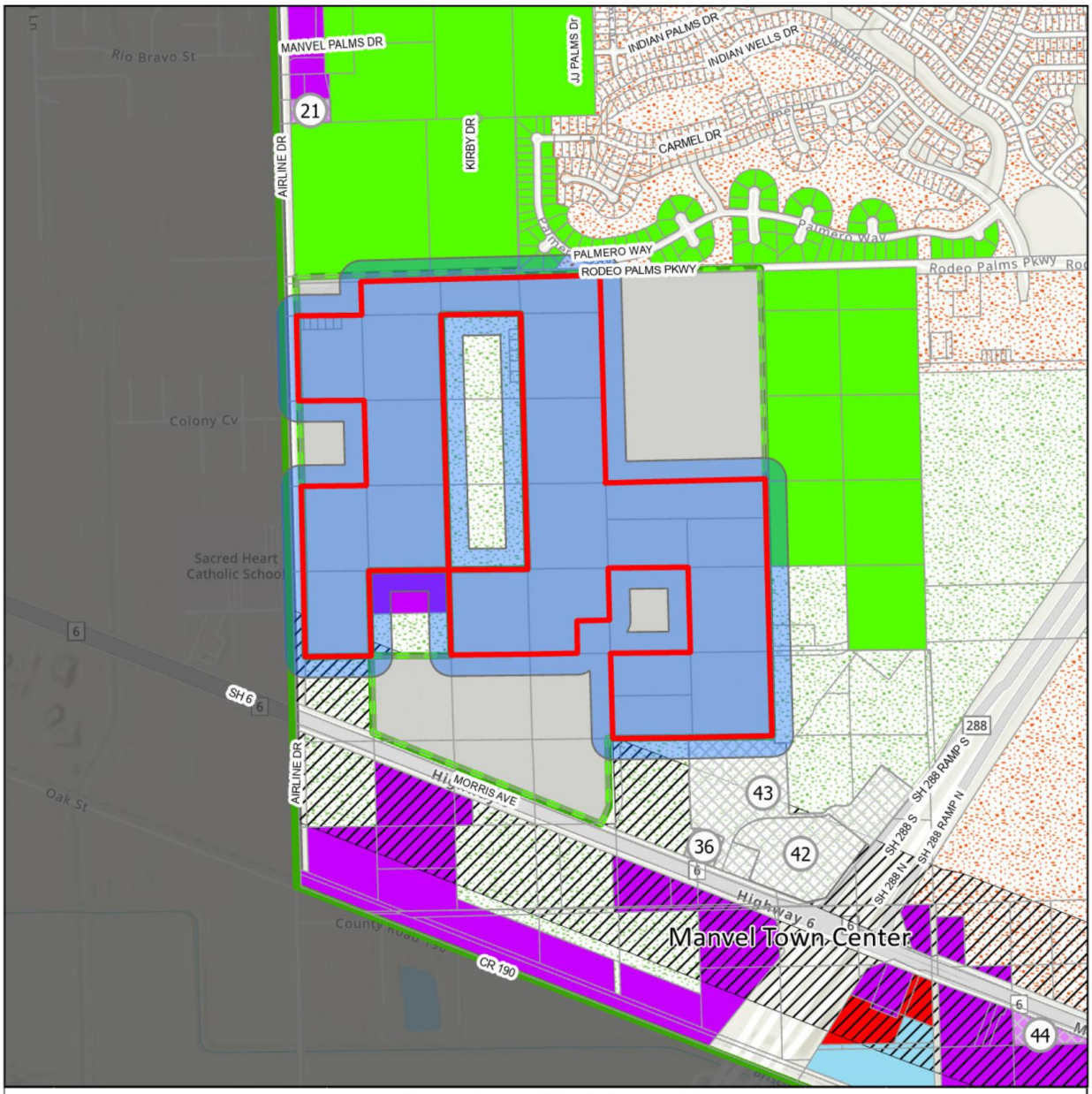
Proposed Master Plan Amendment



Vicinity Aerial Map

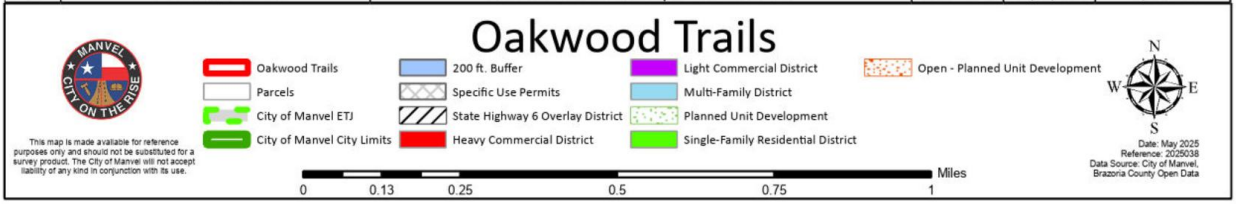


Zoning Map

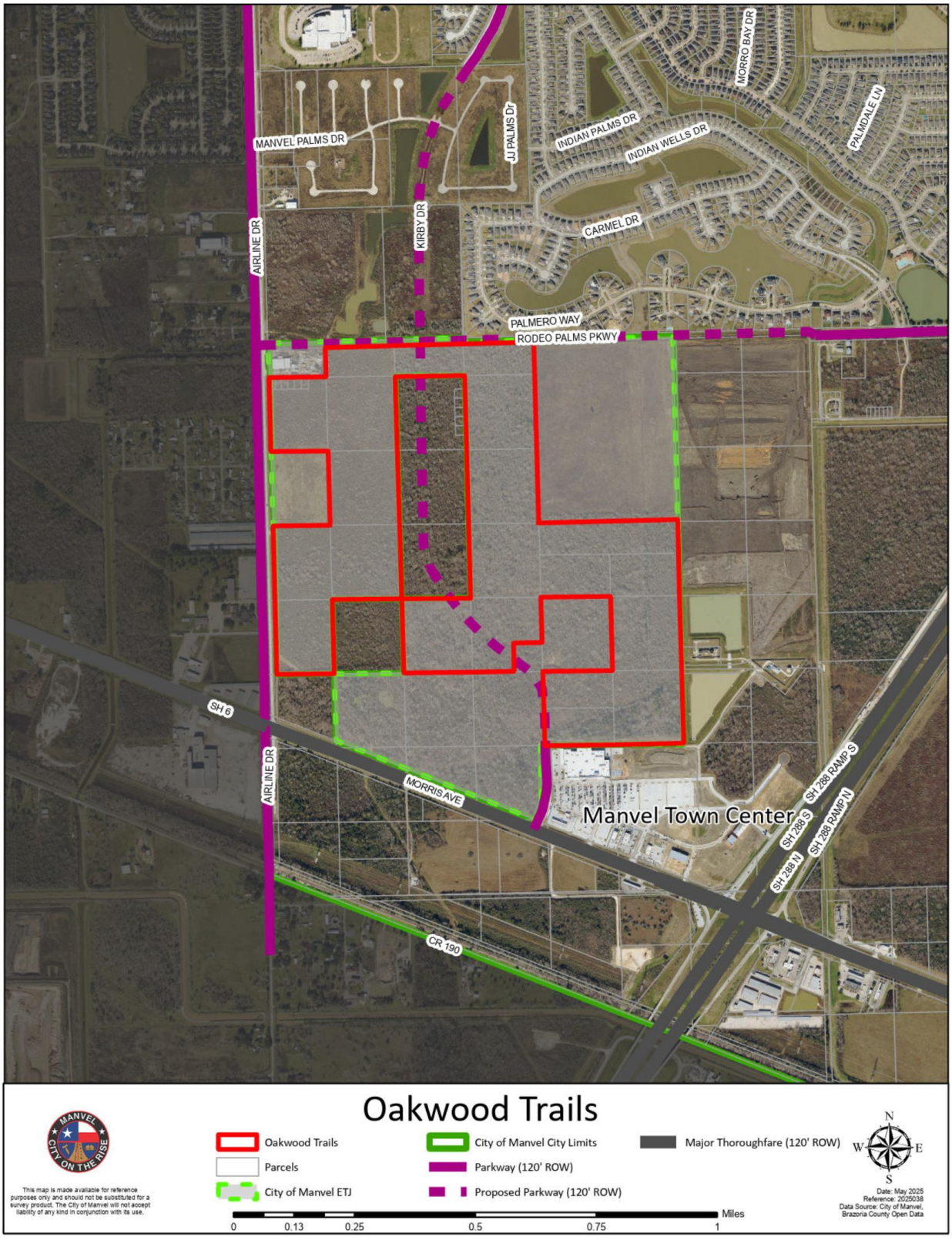


SPECIFIC USE PERMITS LEGEND

Label No	Address	Specific Use Description	Ordinance No	Effective Date	Zoning Classification
21	5725 COUNTY ROAD 48	NAICS USE 8111111 GENERAL AUTOMOTIVE REPAIR AND USE 811121 AUTOMOTIVE BODY PAINT AND INTERIOR REPAIR AND MAINTENANCE	2018-O-27	8/6/2018	LC
36	17205 Highway 6/ Morris Ave	NACIS USE OFFICE OF DENTISTS	2023-O-15	3/20/2023	PUD/SH6-SUP
42	21708 Highway 288	NAICS USE 621493 "Ambulatory Health Care Services"	2024-O-17	5/6/2024	PUD/SH6-SUP
43	17221 State Highway 6, Suite 103	NAICS USE 812113 "Nail Salon"	2024-O-25	7/1/2024	PUD/SH6-SUP
44	17518 Morris Avenue	NAICS use 621493 "Ambulatory health Care Services"	2024-O-26	10/21/2024	LC/SH6-SUP



Major Thoroughfare Plan Map



FINAL REPORT TO CITY COUNCIL
PLAT APPLICATION

Plat Name:	Primrose Master Plan Amendment No. 1
Applicant:	Brad Sweitzer – EHRA Engineering
PD&Z Meeting Date:	November 10, 2025
City Council Meeting Date:	November 17, 2025
Submitted By:	Ellie Roohbakhsh, Senior Planner
Report Approved by:	Dan Johnson, City Manager/ City Engineer Jose Abraham, Director of Development Services
Recommendation:	Conditional Approval

BACKGROUND/ REVIEW NOTES

- *The applicant is proposing the First Amendment to the Primrose Master Plan, originally approved by City Council on July 7, 2025.*
- *The subject site is located within the City of Manvel's Extraterritorial Jurisdiction (ETJ), along the southern side of Rodeo Palms Parkway, east side of County Road 48, abutting Avellino Subdivision to the east and north.*
- *The Primrose Master Plan subdivides an approximately 174.8-acre tract into residential lots with a minimum width of 60 feet and a minimum area of 6,300 square feet.*
- *The amendment includes the following revisions:*
  - *Incorporates the 40-foot unimproved Right-of-Way (ROW) extending from the south side of Rodeo Palms Parkway (west of future Kirby Drive), along the east side of proposed residential Sections 1 and 2 and Detention Pond A, continuing south along proposed Section 6.*
  - *Provides for a 10-foot ROW dedication along the existing 40-foot corridor, as required under current ordinance provisions.*
  - *Reduces the width of two north-south rights-of-way in Sections 1 and 2 from 60 feet to 50 feet.*
  - *Revises the access point from Rodeo Palms Parkway on the north side to align with the future Kirby Drive.*
  - *Introduces a new north-south street between Sections 4 and 5 to address excessive block lengths and enhance overall connectivity.*
  - *Adjusts park and trail dedications by reducing the overall parkland area while increasing trail dedication, ensuring that the total parkland dedication continues to meet the City's minimum ordinance requirements.*
- *The approved Primrose Master Plan and the proposed Primrose Master Plan Amendment are both attached for reference.*
- *Resolution No. 2025-R-16 for the Primrose Master Plan was approved by City Council in July 2025, and an amendment to the resolution will be considered once all conditions have been addressed.*

continued on next page

STAFF RECOMMENDATION

City staff recommends approval of the *Primrose Master Plan Amendment No.1* with the following conditions:

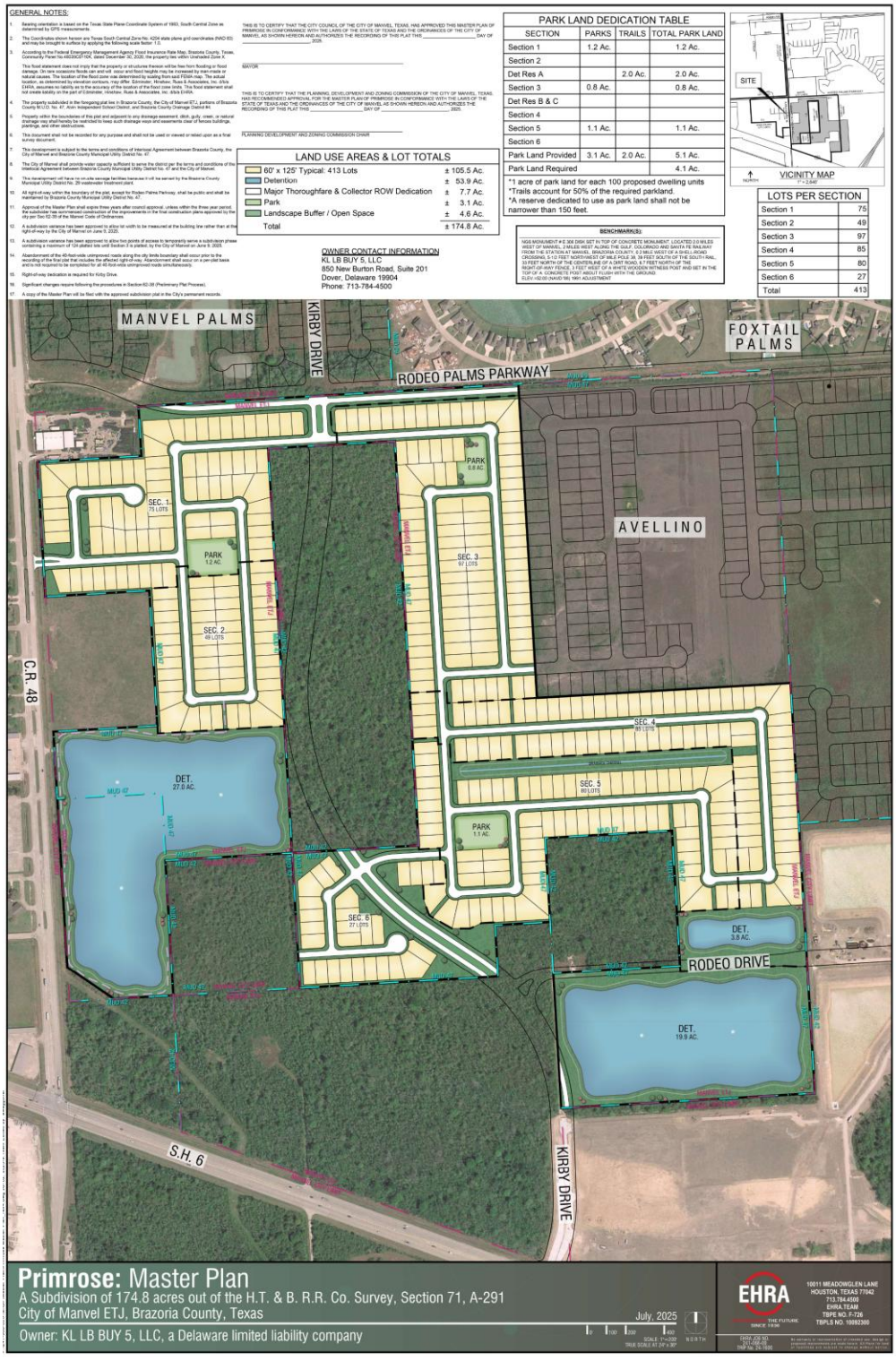
1. Please revise note 14 to be consistence with the requested variances (Section 62-38(a)(9)).
2. Please revise the Municipal Utility District (MUD) No. 47 boundaries to be accurate (Section 62-38 (a)(11)).
3. Please provide updated Traffic Impact Analysis (TIA) and Drainage Impact Analysis (DIA) reports to reflect the changes proposed in the Master Plan Amendment. Additionally, provide proof of their submittal to the County and Drainage District (Section 62-38(a)(13)).
4. Approval of the requested variances shall be obtained prior to approval of this Master Plan Amendment (Section 62-111, 62-113, & 62-104.11).
5. Revise notes 12 and 13 from "June 9, 2025" to "July 21, 2025".

PLANNING, DEVELOPMENT, AND ZONING COMMISSION RECOMMENDATION

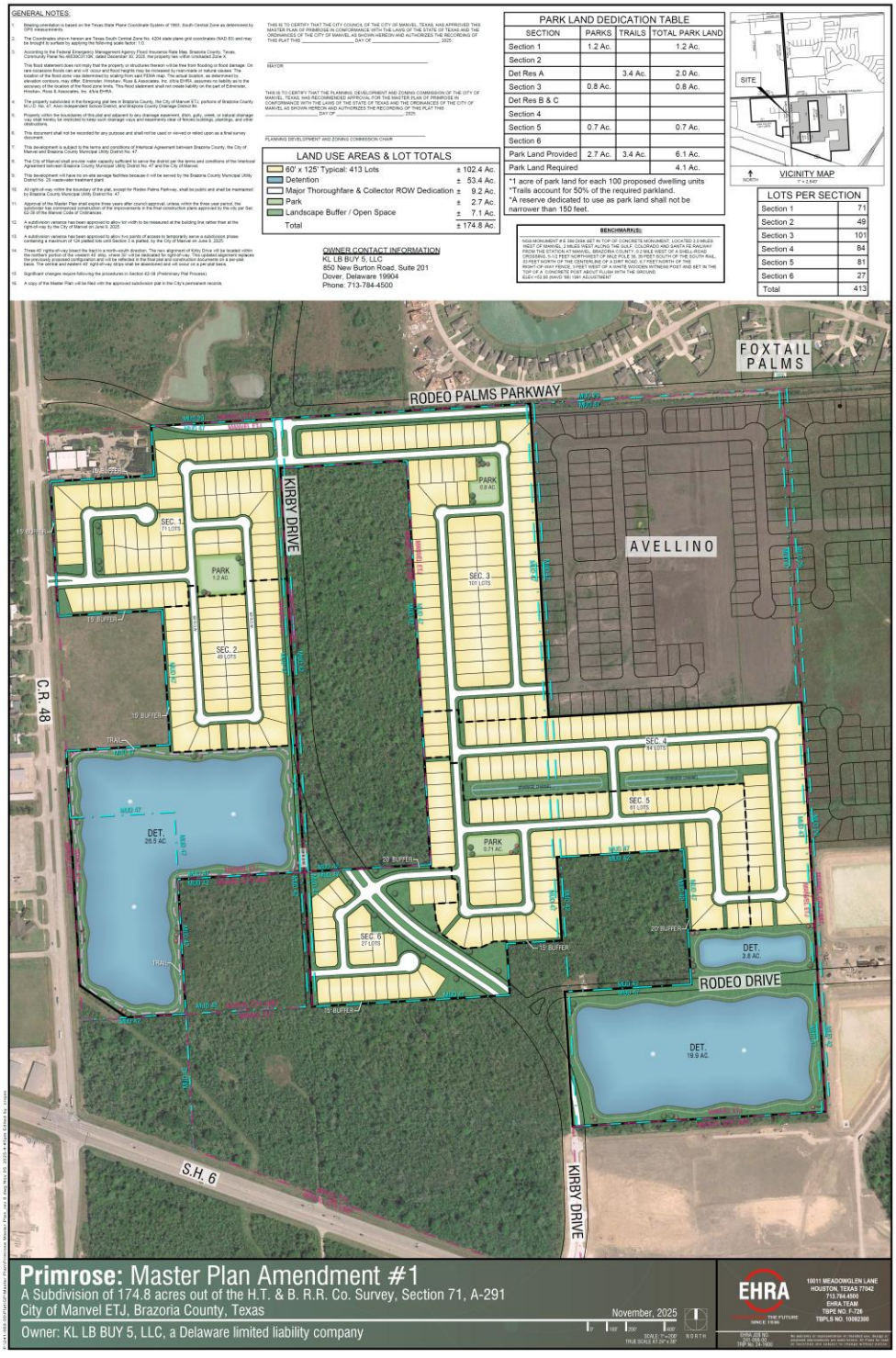
The Planning, Development and Zoning Commission voted five (5) "Yeas" to Zero (0) "Nays" to recommend approval of the Primrose Master Plan Amendment No.1 with the following conditions; therefore, the Commission is forwarding a recommendation to Conditionally Approve the *Primrose Master Plan Amendment No.1* to the City Council. The conditions include:

1. Please revise note 14 to be consistence with the requested variances (Section 62-38(a)(9)).
2. Please revise the Municipal Utility District (MUD) No. 47 boundaries to be accurate (Section 62-38 (a)(11)).
3. Please provide updated Traffic Impact Analysis (TIA) and Drainage Impact Analysis (DIA) reports to reflect the changes proposed in the Master Plan Amendment. Additionally, provide proof of their submittal to the County and Drainage District (Section 62-38(a)(13)).
4. Approval of the requested variances shall be obtained prior to approval of this Master Plan Amendment (Section 62-111, 62-113, & 62-104.11).
5. Revise notes 12 and 13 from "June 9, 2025" to "July 21, 2025".

(Current) Primrose Master Plan



(Proposed) Primrose Master Plan Amendment No. 1



GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, South Central Zone as determined by GPS measurements.
2. The Coordinates shown hereon are Texas South Central Zone No. 4204 state plane grid coordinates (NAD 83) and may be brought to surface by applying the following scale factor: 1.0.
3. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No.48039C0110K, dated December 30, 2020, the property lies within Unshaded Zone X.

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.
4. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel ETJ, portions of Brazoria County M.U.D. No. 47, Alvin Independent School District, and Brazoria County Drainage District #4.
5. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of fences buildings, plantings, and other obstructions.
6. This document shall not be recorded for any purpose and shall not be used or viewed or relied upon as a final survey document.
7. This development is subject to the terms and conditions of Interlocal Agreement between Brazoria County, the City of Manvel and Brazoria County Municipal Utility District No. 47.
8. The City of Manvel shall provide water capacity sufficient to serve the district per the terms and conditions of the Interlocal Agreement between Brazoria County Municipal Utility District No. 47 and the City of Manvel.
9. This development will have no on-site sewage facilities because it will be served by the Brazoria County Municipal Utility District No. 29 wastewater treatment plant.
10. All right-of-way within the boundary of the plat, except for Rodeo Palms Parkway, shall be public and shall be maintained by Brazoria County Municipal Utility District No. 47.
11. Approval of the Master Plan shall expire three years after council approval, unless within the three year period, the subdivider has commenced construction of the improvements in the final construction plans approved by the city per Sec 62-39 of the Manvel Code of Ordinances.
12. A subdivision variance has been approved to allow lot width to be measured at the building line rather than at the right-of-way by the City of Manvel on June 9, 2025.
13. A subdivision variance has been approved to allow two points of access to temporarily serve a subdivision phase containing a maximum of 124 platted lots until Section 3 is platted, by the City of Manvel on June 9, 2025.
14. Abandonment of the 40-foot-wide unimproved roads along the city limits boundary shall occur prior to the recording of the final plat that includes the affected right-of-way. Abandonment shall occur on a per-plat basis and is not required to be completed for all 40-foot-wide unimproved roads simultaneously.
15. Right-of-way dedication is required for Kirby Drive.
16. Significant changes require following the procedures in Section 62-38 (Preliminary Plat Process).
17. A copy of the Master Plan will be filed with the approved subdivision plat in the City's permanent records.

THIS IS TO CERTIFY THAT THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS, HAS APPROVED THIS MASTER PLAN OF PRIMROSE IN CONFORMANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE ORDINANCES OF THE CITY OF MANVEL AS SHOWN HEREON AND AUTHORIZES THE RECORDING OF THIS PLAT THIS _____ DAY OF _____, 2025.

_____
MAYOR

THIS IS TO CERTIFY THAT THE PLANNING, DEVELOPMENT AND ZONING COMMISSION OF THE CITY OF MANVEL, TEXAS, HAS RECOMMENDED APPROVAL FOR THE MASTER PLAN OF PRIMROSE IN CONFORMANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE ORDINANCES OF THE CITY OF MANVEL AS SHOWN HEREON AND AUTHORIZES THE RECORDING OF THIS PLAT THIS _____ DAY OF _____, 2025.

_____
PLANNING DEVELOPMENT AND ZONING COMMISSION CHAIR

LAND USE AREAS & LOT TOTALS

60' x 125' Typical: 413 Lots	± 105.5 Ac.
Detention	± 53.9 Ac.
Major Thoroughfare & Collector ROW Dedication	± 7.7 Ac.
Park	± 3.1 Ac.
Landscape Buffer / Open Space	± 4.6 Ac.
Total	± 174.8 Ac.

OWNER CONTACT INFORMATION
KL LB BUY 5, LLC
850 New Burton Road, Suite 201
Dover, Delaware 19904
Phone: 713-784-4500

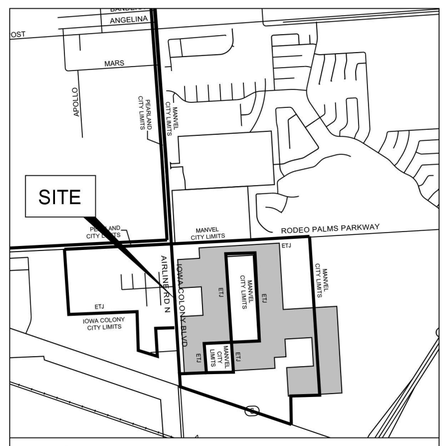
PARK LAND DEDICATION TABLE

SECTION	PARKS	TRAILS	TOTAL PARK LAND
Section 1	1.2 Ac.		1.2 Ac.
Section 2			
Det Res A		2.0 Ac.	2.0 Ac.
Section 3	0.8 Ac.		0.8 Ac.
Det Res B & C			
Section 4			
Section 5	1.1 Ac.		1.1 Ac.
Section 6			
Park Land Provided	3.1 Ac.	2.0 Ac.	5.1 Ac.
Park Land Required			4.1 Ac.

*1 acre of park land for each 100 proposed dwelling units
*Trails account for 50% of the required parkland.
*A reserve dedicated to use as park land shall not be narrower than 150 feet.

BENCHMARK(S):

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT



NORTH — VICINITY MAP
1" = 2,640'

LOTS PER SECTION

Section 1	75
Section 2	49
Section 3	97
Section 4	85
Section 5	80
Section 6	27
Total	413

Primrose: Master Plan

A Subdivision of 174.8 acres out of the H.T. & B. R.R. Co. Survey, Section 71, A-291
City of Manvel ETJ, Brazoria County, Texas

Owner: KL LB BUY 5, LLC, a Delaware limited liability company

July, 2025

0' 100' 200' 400'
SCALE: 1"=200'
TRUE SCALE AT 24" x 36"
NORTH

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
EHRA.TEAM
TBPE NO. F-726
TBPLS NO. 10092300

EHRA JOB NO. 241-068-00
TRIP No. 24-1600

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

P:\241-068-00\Plat\GP\Master Plan\Primrose Master Plan_rev4.dwg Jul 02, 2025-8:19am Edited by: awaggoner

GENERAL NOTES:

1. Bearing orientation is based on the Texas State Plane Coordinate System of 1983, South Central Zone as determined by GPS measurements.
2. The Coordinates shown hereon are Texas South Central Zone No. 4204 state plane grid coordinates (NAD 83) and may be brought to surface by applying the following scale factor: 1.0.
3. According to the Federal Emergency Management Agency Flood Insurance Rate Map, Brazoria County, Texas, Community Panel No.48039C0110K, dated December 30, 2020, the property lies within Unshaded Zone X.

   This flood statement does not imply that the property or structures thereon will be free from flooding or flood damage. On rare occasions floods can and will occur and flood heights may be increased by man-made or natural causes. The location of the flood zone was determined by scaling from said FEMA map. The actual location, as determined by elevation contours, may differ. Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA, assumes no liability as to the accuracy of the location of the flood zone limits. This flood statement shall not create liability on the part of Edminster, Hinshaw, Russ & Associates, Inc. d/b/a EHRA.
4. The property subdivided in the foregoing plat lies in Brazoria County, the City of Manvel ETJ, portions of Brazoria County M.U.D. No. 47, Alvin Independent School District, and Brazoria County Drainage District #4.
5. Property within the boundaries of this plat and adjacent to any drainage easement, ditch, gully, creek, or natural drainage way shall hereby be restricted to keep such drainage ways and easements clear of fences buildings, plantings, and other obstructions.
6. This document shall not be recorded for any purpose and shall not be used or viewed or relied upon as a final survey document.
7. This development is subject to the terms and conditions of Interlocal Agreement between Brazoria County, the City of Manvel and Brazoria County Municipal Utility District No. 47.
8. The City of Manvel shall provide water capacity sufficient to serve the district per the terms and conditions of the Interlocal Agreement between Brazoria County Municipal Utility District No. 47 and the City of Manvel.
9. This development will have no on-site sewage facilities because it will be served by the Brazoria County Municipal Utility District No. 29 wastewater treatment plant.
10. All right-of-way within the boundary of the plat, except for Rodeo Palms Parkway, shall be public and shall be maintained by Brazoria County Municipal Utility District No. 47.
11. Approval of the Master Plan shall expire three years after council approval, unless within the three year period, the subdivider has commenced construction of the improvements in the final construction plans approved by the city per Sec 62-39 of the Manvel Code of Ordinances.
12. A subdivision variance has been approved to allow lot width to be measured at the building line rather than at the right-of-way by the City of Manvel on June 9, 2025.
13. A subdivision variance has been approved to allow two points of access to temporarily serve a subdivision phase containing a maximum of 124 platted lots until Section 3 is platted, by the City of Manvel on June 9, 2025.
14. Three 40' rights-of-way bisect the tract in a north–south direction. The new alignment of Kirby Drive will be located within the northern portion of the western 40' strip, where 30' will be dedicated for right-of-way. This updated alignment replaces the previously proposed configuration and will be reflected in the final plat and construction documents on a per-plat basis. The central and eastern 40' right-of-way strips shall be abandoned and will occur on a per-plat basis.
15. Significant changes require following the procedures in Section 62-38 (Preliminary Plat Process).
16. A copy of the Master Plan will be filed with the approved subdivision plat in the City's permanent records.

THIS IS TO CERTIFY THAT THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS, HAS APPROVED THIS MASTER PLAN OF PRIMROSE IN CONFORMANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE ORDINANCES OF THE CITY OF MANVEL AS SHOWN HEREON AND AUTHORIZES THE RECORDING OF THIS PLAT THIS _____ DAY OF _____, 2025.

_____
MAYOR

THIS IS TO CERTIFY THAT THE PLANNING, DEVELOPMENT AND ZONING COMMISSION OF THE CITY OF MANVEL, TEXAS, HAS RECOMMENDED APPROVAL FOR THE MASTER PLAN OF PRIMROSE IN CONFORMANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE ORDINANCES OF THE CITY OF MANVEL AS SHOWN HEREON AND AUTHORIZES THE RECORDING OF THIS PLAT THIS _____ DAY OF _____, 2025.

_____
PLANNING DEVELOPMENT AND ZONING COMMISSION CHAIR

LAND USE AREAS & LOT TOTALS

60' x 125' Typical: 413 Lots	± 102.4 Ac.
Detention	± 53.4 Ac.
Major Thoroughfare & Collector ROW Dedication	± 9.2 Ac.
Park	± 2.7 Ac.
Landscape Buffer / Open Space	± 7.1 Ac.
Total	± 174.8 Ac.

OWNER CONTACT INFORMATION
KL LB BUY 5, LLC
850 New Burton Road, Suite 201
Dover, Delaware 19904
Phone: 713-784-4500

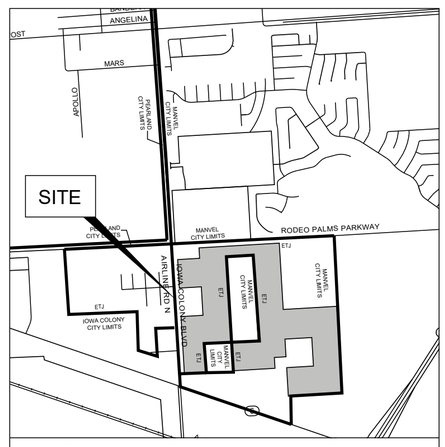
PARK LAND DEDICATION TABLE

SECTION	PARKS	TRAILS	TOTAL PARK LAND
Section 1	1.2 Ac.		1.2 Ac.
Section 2			
Det Res A		3.4 Ac.	2.0 Ac.
Section 3	0.8 Ac.		0.8 Ac.
Det Res B & C			
Section 4			
Section 5	0.7 Ac.		0.7 Ac.
Section 6			
Park Land Provided	2.7 Ac.	3.4 Ac.	6.1 Ac.
Park Land Required			4.1 Ac.

*1 acre of park land for each 100 proposed dwelling units
*Trails account for 50% of the required parkland.
*A reserve dedicated to use as park land shall not be narrower than 150 feet.

BENCHMARK(S):

NGS MONUMENT # E 306 DISK SET IN TOP OF CONCRETE MONUMENT, LOCATED 2.0 MILES WEST OF MANVEL, 2 MILES WEST ALONG THE GULF, COLORADO AND SANTA FE RAILWAY FROM THE STATION AT MANVEL, BRAZORIA COUNTY, 0.2 MILE WEST OF A SHELL-ROAD CROSSING, 5-1/2 FEET NORTHWEST OF MILE POLE 38, 39 FEET SOUTH OF THE SOUTH RAIL, 33 FEET NORTH OF THE CENTERLINE OF A DIRT ROAD, 6.7 FEET NORTH OF THE RIGHT-OF-WAY FENCE, 3 FEET WEST OF A WHITE WOODEN WITNESS POST AND SET IN THE TOP OF A CONCRETE POST ABOUT FLUSH WITH THE GROUND.
ELEV.=52.00 (NAVD '88) 1991 ADJUSTMENT



NORTH
VICINITY MAP
1" = 2,640'

LOTS PER SECTION

Section 1	71
Section 2	49
Section 3	101
Section 4	84
Section 5	81
Section 6	27
Total	413

Primrose: Master Plan Amendment #1

A Subdivision of 174.8 acres out of the H.T. & B. R.R. Co. Survey, Section 71, A-291
City of Manvel ETJ, Brazoria County, Texas

Owner: KL LB BUY 5, LLC, a Delaware limited liability company

November, 2025

0' 100' 200' 400'
SCALE: 1"=200'
TRUE SCALE AT 24" x 36"
NORTH

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
EHRA.TEAM
TBPE NO. F-726
TBPLS NO. 10092300

EHRA JOB NO. 241-068-00
TRIP No. 24-1600

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

P:\241-068-00\Plat\GP\Master Plan\Primrose Master Plan_rev 6.dwg Nov 05, 2025-4:45pm Edited by: crojas

RESOLUTION NO. 2025-R-16

A RESOLUTION OF THE CITY OF MANVEL, TEXAS, APPROVING A MASTER PLAN AND A PHASING PLAN FOR THE PRIMROSE DEVELOPMENT, (PREVIOUSLY NAMED OAKWOOD TRAILS), A SUBDIVISION OF 175.5 ACRES OUT OF THE H.T.& B.R.R. CO. SURVEY, SECTION 71, A-291, LOCATED IN BRAZORIA COUNTY MUD 47.

WHEREAS, KL LB BUY 5 LLC ("Owner") is the owner of an approximate 175.5-acre tract ("Site"), a subdivision of 175.5 acres out of the H.T.&B.R.R. CO. Survey, Section 71, A-291, located within the City of Manvel's extra-territorial jurisdiction (ETJ) and Brazoria County Municipal Utility District No. 47; and

WHEREAS, the Owner intends to develop the Site as a residential subdivision with 60' x 125' typical lots and associated infrastructure; and

WHEREAS, Chapter 62, § 62-39 (d) of the City Code requires a master plan to be approved by a council resolution, unless council approves an amended planned unit development (PUD) or development agreement; and

WHEREAS, Chapter 62, § 62-39 (b) of the City Code requires a phasing schedule to be submitted as part of the master plan. The phasing schedule shall indicate the timing of each phase of development. All lands to be dedicated for public right-of-way, public park land, public use, trails, or school site purposes shall be dedicated in the first phase of the development; and

WHEREAS, on April 14, 2025, Ashley Waggoner with EHRA Engineering (the Applicant), on behalf of the Owner, submitted a plat application requesting approval of a proposed Master Plan and Phasing Plan for the subject site identified as "Oakwood Trails" with a total of 413 lots; and

WHEREAS, the applicant also requested variances to the requirements of Chapter 62, Section 108 (b)(4), to allow measurement of lot width at front setback line and Chapter 62, Section 104 (5), to allow fewer access points than the minimum requirement, for the approval of Oakwood Trails Master Plan; and

WHEREAS, the Planning, Development, and Zoning Commission recommended approval of the proposed Oakwood Trails Master Plan and the associated variances with conditions on May 27, 2025, to City Council; and

WHEREAS, the City Council approved the proposed Oakwood Trails Master Plan and the associated variances with conditions on June 2, 2025; and

WHEREAS, the applicant has addressed all the conditions of approval for the Oakwood Trails Master Plan; and has requested to change the name of the development to "Primrose" for all future development related applications. Exhibit A and Exhibit B show the approved Master Plan and Phasing Plan respectively.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS THAT:

SECTION 1: The City of Manvel approves the Master Plan for the Primrose development (previously called Oakwood Trails) attached as Exhibit A. This Master Plan shall be used for subsequent platting and development of the subject site as a 416 residential lot subdivision with associated infrastructure and amenities in accordance with all applicable codes and ordinances of the City.

SECTION 2: The City of Manvel approves the Phasing Plan for the Primrose development (previously called Oakwood Trails) attached as Exhibit B. The Phasing Plan shall satisfy the requirements of City Code § 62-39 and shall indicate the timing of each phase of development. All lands to be dedicated for public right-of-way, public park land, public use, trails, or school site purposes shall be dedicated in the first phase of the development.

PASSED AND ADOPTED this 7th day of July, 2025.

CITY OF MANVEL CORPORATE SEAL 1960 TEXAS

Dan Davis, Mayor
City of Manvel, Texas

ATTEST:

Tammy Bell, City Secretary

APPROVED AS TO FORM:

Robert Gervais, City Attorney

MANVEL
CITY COUNCIL
DATA SHEET

MEETING DATE: November 17, 2025

TOPIC: Public Hearing *(continued from 11.03.25)* to hear input on a request for annexation of approximately 47.3156 acres of land, located at the northwest corner of Kirby Drive and State Highway 6/Morris Avenue (Property IDs: 1676950 & 167695), into City of Manvel City Limits,

BACKGROUND:

- The subject site is generally bounded by Manvel Town Center to the east and State Highway 6/Morris Avenue to the south. The property, approximately 47.3156 acres, is currently undeveloped and located within the City of Manvel Extraterritorial Jurisdiction (ETJ).
- In addition to the annexation, potential developer is requesting the establishment of a Planned Unit Development (PUD) district and consideration of a 380 agreement.
- The proposed PUD, titled "Manvel Crossing," is proposed as a master-planned, mixed-use commercial development, including retail, office, hotel, and restaurant uses. Required public hearing for the consideration of the PUD is included on tonight's agenda.
- The requirements of notice of public hearing have been met, and staff is not aware of any opposition.
- The approval of the PUD and 380 agreement is dependent on the annexation of the subject site. For the applicant, this annexation is beneficial only if the City Council approves the requested PUD and 380 agreements.
- Please note that PD&Z Commission is forwarding a recommendation of approval for the proposed PUD with a condition that deficiencies and comments provided at the 11.03.2025 meeting are addressed.

STAFF RECOMMENDATION: Staff is in support of this proposed annexation and recommends that action is taken in conjunction with the action on proposed PUD document and 380 agreement.

ATTACHMENTS:

FUNDING ISSUES

_X_ Not applicable
___ Not budgeted
___ Full amount already budgeted
___ Funds to be transferred from Acct.#

SUBMITTING STAFF MEMBER Jose Abraham, Director of Development Services	**FINANCE DIRECTOR APPROVAL** __NA___ **CITY MANAGER APPROVAL** ___YES___

ORDINANCE NO. 2025-O-34

AN ORDINANCE EXTENDING THE CORPORATE LIMITS OF THE CITY OF MANVEL, TEXAS, TO ANNEX CERTAIN TERRITORY INTO THE CITY OF MANVEL, SAID TERRITORY BEING APPROXIMATELY 47.3156 ACRES OF LAND, PROPOSED FOR DEVELOPMENT AS A RETAIL CENTER, LOCATED AT THE NORTHWEST CORNER OF STATE HIGHWAY (SH) 6 AND KIRBY DRIVE INTERSECTION; SAID TERRITORY CONTAINING A 34.2791 ACRE TRACT AND A 11.3999 ACRE TRACT SEPARATED BY A 40-FOOT-WIDE (0.844 ACRE) UNIMPROVED RIGHT-OF-WAY, SITUATED IN H.T. & B. RAILROAD COMPANY SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, AND A 1.6366 ACRE TRACT BEING A PORTION OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION OF IOWA COLONY H.T. & B. RAILROAD COMPANY SURVEY NO. 71 (ALSO REFERRED TO AS THE IMMIGRATION LAND COMPANY SUBDIVISION OF SECTION 71 , H.T. & B.R.R.COMPANY SURVEY) ABSTRACT 291, BRAZORIA COUNTY, TEXAS), SAID TERRITORY BEING MORE SPECIFICALLY DESCRIBED IN EXHIBIT "A" ATTACHED HERETO; FIRST APPROVING A SERVICE AGREEMENT FOR ALL OF THE AREA WITHIN SUCH TERRITORY AS REQUIRED BY TEXAS LOCAL GOVERNMENT CODE § 43.0672; MAKING FINDINGS; CONTAINING OTHER PROVISIONS RELATED TO THE SUBJECT; AND PROVIDING A SAVING AND A SEVERABILITY CLAUSES.

WHEREAS, the **Texas Local Government Code**, Subchapter C-3. *Annexation of Area On Request of Owners,* Sec. 43.0671. et seq. provides a legal mechanism and procedure for the voluntary annexation of certain Territory into the city limits of a home-rule municipality; and

WHEREAS, on or about October 2, 2025, the City of Manvel received request(s) for voluntary annexation of certain Territory into the City by BCS and the corresponding property owners of said Territory; and

WHEREAS, said Territory is approximately 47.3156 acres generally located at the Northwest Corner of SH 6 and Kirby Drive, in the City of Manvel, Texas; and

WHEREAS, the land use for the Territory proposed for annexation is intended to be commercial (retail center), with land use being more definitely defined by a Planned Unit Development zoning district and document; and

WHEREAS, it is the intent that this annexation and related Service Agreement only be approved along with the approval of the Planned Unit Development zoning district and other related agreements mutually agreed to by the property owner(s)/designee and City of Manvel; and

WHEREAS, pursuant to receipt of said request(s) for voluntary annexation, a public hearing was held at 6:00 p.m. on November 3, 2025; and

WHEREAS, the public hearing was convened at in the City Council Chambers, located at 20031 Morris Avenue, Manvel, Texas, and all interested parties were given an opportunity to be heard; and

WHEREAS, notice of such public hearing was given by publication on the City of Manvel's internet website, and in the *Alvin Sun* on October 19, 2025, said newspaper having general circulation within the City and within the Territory proposed to be annexed. Such notices and hearings were all in conformity with the Chapter 43, **Texas Local Government Code**, as amended; and

WHEREAS, the City Council of the City of Manvel, Texas (the "City") now finds, determines and declares that the Territory is described as being approximately 47.3156 acres of land, located at the Northwest Corner of SH6 intersection, said Territory containing a 34.2791 acre tract and a 11.3999 acre tract separated by a 40-foot wide (0.844 acre) unimproved right-of-way, situated in H.T. & B. Railroad Company Survey, Section 71, Abstract No. 291, Brazoria County, Texas, and a 1.6366 acre tract being a portion of Lot 29 of Emigration Land Company Subdivision

of Iowa Colony H.T. & B. Railroad Company Survey No. 71 (also referred to as the Immigration Land Company Subdivision of Section 71, H.T. & B.R.R. Company Survey) Abstract 291, Brazoria County, Texas; said Territory is more particularly described herein and more particularly described and shown in Exhibit "A," attached hereto and made a part hereof (the "Territory").

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANVEL:

Section 1. The facts and recitations set forth in the preamble of this Ordinance are hereby found to be true and correct. The City Council hereby finds that all laws of the State of Texas and the City Charter and ordinances of the City of Manvel regulating annexation of areas into the City of Manvel have been met.

Section 2. As a prerequisite required by **Texas Local Government Code** § 43.0672, the "Service Agreement" for the extension of municipal services into the Territory to be annexed into the City by the provisions of this Ordinance is hereby approved first. The Service Agreement is attached hereto as Exhibit "B" and made a part hereof for all purposes. Such Service Agreement sets forth the list of each service the City will provide, and a schedule. The City Manager is authorized to execute the Service Agreement upon approval as to form by the City Attorney, and upon full adoption of this Ordinance.

Section 3. The boundary limits of the City of Manvel, Texas, are hereby extended to embrace and include all of the Territory described as being approximately 47.3156 acres of land, located at the Northwest Corner of SH6 intersection, said Territory containing a 34.2791 acre tract and a 11.3999 acre tract separated by a 40-foot wide (0.844 acre) unimproved right-of-way, situated in H.T. & B. Railroad Company Survey, Section 71, Abstract No. 291, Brazoria County, Texas, and a 1.6366 acre tract being a portion of Lot 29 of Emigration Land Company Subdivision of Iowa Colony H.T. & B. Railroad Company Survey No. 71 (also referred to as the Immigration Land Company Subdivision of Section 71, H.T. & B.R.R. Company Survey) Abstract 291, Brazoria

County, Texas; said Territory is more particularly described and shown in Exhibit "A" attached hereto, and such Territory is hereby annexed to and made a part of the City for all purposes.

Section 4. The City Council officially finds, determines, recites, and declares that a sufficient written notice of the date, hour, place, and subject of this meeting of the City Council was posted at a place convenient to the public at the City Hall of the City for the time required by law preceding this meeting, as required by Chapter 551, Texas Government Code; and that this meeting has been open to the public as required by law at all times during which this Ordinance and the subject matter hereof has been discussed, considered, and formally acted upon. The City Council further ratifies, approves, and confirms such written notice and the contents and posting thereof.

Section 5. The city secretary is hereby directed to file a certified copy of this ordinance with the County Clerk of Brazoria County, and such other appropriate officials and agencies as may be required by law.

Section 6. Savings Clause. If any section or part of this Ordinance be held unconstitutional, illegal, or invalid, or the application thereof ineffective or inapplicable as to any territory, such unconstitutionality, illegality, invalidity, or ineffectiveness of such section or part shall in no wise affect, impair, or invalidate the remaining portion or portions thereof, but as to such remaining portion or portions, the same shall be and remain in full force and effect; and should this Ordinance for any reason be ineffective as to any part of the Territory hereby annexed to the City of Manvel, such ineffectiveness of this Ordinance as to any such part or parts of any such Territory shall not affect the effectiveness of this Ordinance as to all of the remainder of such Territory or area, and the City Council hereby declares it to be its purpose to annex to the City of Manvel every part of the Territory described in Section 2 of this Ordinance, regardless of whether any other part of such described Territory is hereby effectively annexed to the City. Provided, further, if there is included in the general description of the Territory set out in Section 3 of this Ordinance to be hereby annexed to the City of Manvel any territory which is already a part of and included within the general limits of the City of Manvel, or which is presently part of and included in the limits or extraterritorial jurisdiction of any other city, town, or village, or which is not within the City of Manvel's jurisdiction to annex, the same is

hereby excluded and excepted from the Territory to be annexed hereby as fully as if such excluded and excepted territory were especially and specifically described herein.

Section 7. This Ordinance shall be effective upon its final adoption by City Council.

PASSED AND APPROVED on first reading this _____ day of _____, 2025.

PASSED, APPROVED, AND ADOPTED on second and final reading this _____ day of _____, 2025.

CITY OF MANVEL, TEXAS

_____
Dan Davis, Mayor

ATTEST:

_____
Tammy Bell
City Secretary

APPROVED AS TO FORM:

_____
Robert Gervais, City Attorney

EXHIBIT A

TERRITORY DESCRIPTION/MAP

EXHIBIT B

SERVICE AGREEMENT

MANVEL
CITY COUNCIL
DATA SHEET

MEETING DATE: November 17, 2025

TOPIC: Public Hearing (continued from 11.03.2025) followed by discussion and action on a request to establish a Planned Unit Development (PUD) with State Highway 6 Overlay (PUD/SH6) zoning district, for approximately 47.3156 acres of land, proposed for annexation into City of Manvel City Limits, located at the northwest corner of Kirby Drive and State Highway 6/Morris Avenue (Property IDs: 1676950 & 167695).

BACKGROUND:

- The subject site is generally bounded by Manvel Town Center to the east and State Highway 6/Morris Avenue to the south. The property, approximately 47.3156 acres, is currently undeveloped and located within the City of Manvel Extraterritorial Jurisdiction (ETJ). The applicant, EHRA Engineering, on behalf of property owner, is requesting annexation of the site into the City of Manvel City Limits and the establishment of a Planned Unit Development (PUD) district with a potential 380 agreement.
- The proposed PUD, titled "Manvel Crossing," is proposed as a master-planned, mixed-use commercial development, including retail, office, hotel, and restaurant uses. The project is intended to incorporate coordinated architecture, a comprehensive land use table, landscaping requirements, pedestrian-friendly amenities, and internal circulation, including multiple access points from SH6 and Kirby Drive. Surrounding properties are primarily undeveloped, agricultural, or commercial along SH6. The applicant has provided a PUD document that will govern the land use allowances and development standard for the development. The proposed PUD document includes certain provisions that deviate from the current City standards but are necessary for the development according to the applicant. Staff has provided input and comments on the PUD document for the applicant to consider prior to the meeting. (The applicant has provided a revised PUD document addressing staff comments)
- The Notice of Public Hearing was published in the newspaper of general circulation and all property owners within 200 feet of the property were notified. At the time of writing this report, no information inquiries have been received, and staff is not aware of opposition.
- <u>The applicant has submitted a revised PUD document since Nov 10, 2025, PD&Z meeting which staff has not had a chance to review in detail. Staff will be prepared to discuss the changes at the meeting.</u>

PD&Z PUBLIC HEARING (October 27, 2025): No Public comments were received. The applicant addressed the Commission to explain the proposed project. The Commission expressed the need for additional time to review the PUD document.

STAFF RECOMMENDATION: Staff supports the establishment of a PUD for the subject site being proposed for annexation. The proposed project aligns with the goals of the Comprehensive Plan, however, some of the details included in the PUD document need reconsideration. These details that need reconsideration include landuse allowances, general clarifications, revising or adding exhibits, reorganizing sections, and possible typographic errors.

PD&Z RECOMMENDATION: The PD&Z Commission voted to table the item

PD&Z MEETING (November 10, 2025): The applicant made a quick presentation highlighting the proposed project and the changes made to the PUD document since the initial submittal. Staff discussed the PUD document and explained several deficiencies (listed in the report). Staff recommended approval of the PUD with the condition that the deficiencies discussed at the meeting were addressed.

PD&Z RECOMMENDATION: The PD&Z Commission is recommending approval with the condition that deficiencies identified by staff and additional comments provided by PD&Z Commission are addressed.

ATTACHMENTS: Staff report to PDZ Commission, PUD document (revised since the PD&Z Commission meeting), Traffic Impact Analysis, and Application material.

FUNDING ISSUES

_X_ Not applicable
___ Not budgeted
___ Full amount already budgeted
___ Funds to be transferred from Acct.#

SUBMITTING STAFF MEMBER Jose Abraham, Director of Development Services	**FINANCE DIRECTOR APPROVAL** __NA___ **CITY MANAGER APPROVAL** ___YES___

MANVEL
CITY COUNCIL
DATA SHEET

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___ Not budgeted
___ Full amount already budgeted
___ Funds to be transferred from Acct.#

SUBMITTING STAFF MEMBER Jose Abraham, Director of Development Services	**FINANCE DIRECTOR APPROVAL** __NA___ **CITY MANAGER APPROVAL** ___YES___

Manvel Crossing Planned Unit Development District

The City of Manvel

Ordinance #XXXXXX
Submitted: November 12, 2025

Prepared for:
BCS Capital Group
5847 San Felipe, Suite 2030
Houston, TX 77057
214.905.1505

EHRA
ENGINEERING THE FUTURE
SINCE 1936

10011 Meadowglen Lane
Houston, Texas 77042
EHRAinc.com | 713.784.4500
TBPE No. F-726 | TBPLS No. 10092300

TABLE OF CONTENTS

TABLE OF CONTENTS **2**

APPENDICES 5

I. INTRODUCTION **6**

A. Summary 6

B. Purpose of the PUD 6

C. Project Location 6

D. Site History 6

E. Existing Zoning 7

F. Surrounding Land Use 7

G. Existing Site Conditions 7

II. DEVELOPMENT PLAN **8**

A. Purpose & Intent 8

B. Goals & Objectives 8

1. Ensure Quality Development 8

2. A Broader Deeper Tax Base and Employment Opportunities 8

3. Guide and Manage Development Along Highway 6 9

4. Providing a Wider Range of Community Amenities and Commercial Services 9

C. Transportation 9

1. Existing Access 9
2. Future Access 9
3. Site Internal Circulation Plan 10
D. Infrastructure 11
1. Water & Wastewater 11
2. Storm Drainage & Detention System 11
3. Other Utilities 12
III. DEVELOPMENT REGULATIONS 12
A. Purpose & Intent 12
B. General Provisions 12
1. Applicability 12
2. Existing Utilities 13
C. Development Standards 13
1. Permitted Land Use Table 14
2. Automotive Uses 16
3. Restaurant Uses 16
4. Non-Permitted Land Use Table 16
5. Special Events 17
6. Additional Uses 17
7. Site Standards 17
8. Architectural Standards: 17
9. Parking 19

10. Sidewalks 20

11. Landscaping 21

12. Signage 22

13. Lighting 24

14. Design Criteria Manual 25

15. Definitions 25

IV. GENERAL ADMINISTRATION & AMENDMENTS 35

A. Purpose 35

1. Changes to the Zoning Ordinance 35

2. Variances from the Zoning Ordinance 35

3. Variances from the Design Criteria Manual 35

B. Interpretation 36

C. Appeal to the Zoning Board of Adjustments 36

D. Substantial Change 36

E. Fees 36

EXHIBITS

Exhibit 1 Vicinity Map

Exhibit 2 Highway 6 Overlay District

Exhibit 3 Internal Circulation Plan and Proposed Right-of-ways

Exhibit 4 Preliminary Drainage and Detention Plan

Exhibit 5 Approximate Sign Locations

Exhibit 6 Multi-tenant Pylon Sign Elevation

Exhibit 7 Single-tenant Monument Sign Elevation

TABLES

Land Use	26
Shared Parking Schedule	36
Zoning and Subdivision Variances	46
Design Criteria Manual Variances	48

APPENDICES

Site Survey

Approved Tree List

PUD Ordinance

Annexation Ordinance

I. INTRODUCTION

A. Summary

The Planned Unit Development District (PUD) establishes comprehensive guidance and regulations for Manvel Crossing Commercial Development. Manvel Crossing is comprised of approximately 49 acres of privately owned land. The entirety of the property currently lies in the Extraterritorial Jurisdiction (ETJ) of the City of Manvel but is intended to be annexed into the City.

The PUD will offer flexibility to encourage the most appropriate uses and amenities, providing access to more diversified options for citizens and visitors alike. The PUD will achieve this by providing a means by which development may occur in an orderly and responsible manner and establishing guidelines that ensure quality development and specifically address the goals of both the city and the developer.

B. Purpose of the PUD

The City of Manvel is growing at an exponential rate. The Census Bureau predicts that by the end of 2025, there will be double the number of residents documented in the 2020 Census. With such a fast-paced rate of growth, commercial development is pivotal for the development to maintain its independence without needing to travel out of town for goods or services. This PUD will allow the Manvel Crossing site to develop in a way that will achieve this goal.

C. Project Location

The Project is located generally east of Old Airline Road (County Road 48), north and adjacent to State Highway 6, and abutting Kirby Drive to the east. The property is currently wholly located in Brazoria County and will be annexed into the City of Manvel.

D. Site History

Based on a review of historical information, the site consisted of undeveloped and/or agricultural land starting around 1938 through the 1960's. In the 1960's an on-site pipeline easement was established, and throughout this time up to the 1980's, the land appears to have been utilized for rice farming. The site has remained undeveloped to present day.

E. Existing Zoning

The entirety of the site is located in the ETJ of the City of Manvel and therefore has no zoning district classification. Upon annexation and approval of the PUD, the site will be assigned a base zoning designation of Light Commercial with a PUD overlay.. In addition to the applicable base zoning classification and PUD, the requirements of the Highway 6 Overlay District will apply to approximately 33 acres of the site along Highway 6 frontage at a depth of 700 feet, subject only to those requirements that are not superseded by the PUD. Should the PUD expire, the land will revert back to the Light Commercial zoning district and the Highway 6 Overlay District.

F. Surrounding Land Use

The property is situated along State Highway 6, which forms its southern boundary, and is surrounded by a mix of developed properties and agricultural or undeveloped land planned for future single-family communities. To the east is Manvel Town Center, which contains a mix of commercial uses, and to the north several single-family residential communities—including Rodeo Palms, Yanni Palms, Foxtail Palms, and Primrose—are under active development.

G. Existing Site Conditions

There are no major natural features on the site, however, there is a clearing where agricultural activity took place on the western portion of the property. A thirty (30') foot pipeline easement starts at the west property line and turns to the south into Highway 6. There appear to be a small number of manmade drainage canals close to Kirby Drive, but aside from this, the property is generally flat with little topography. A Phase One environmental site assessment was conducted for the entire property, and no significant environmental conditions or endangered species were found.

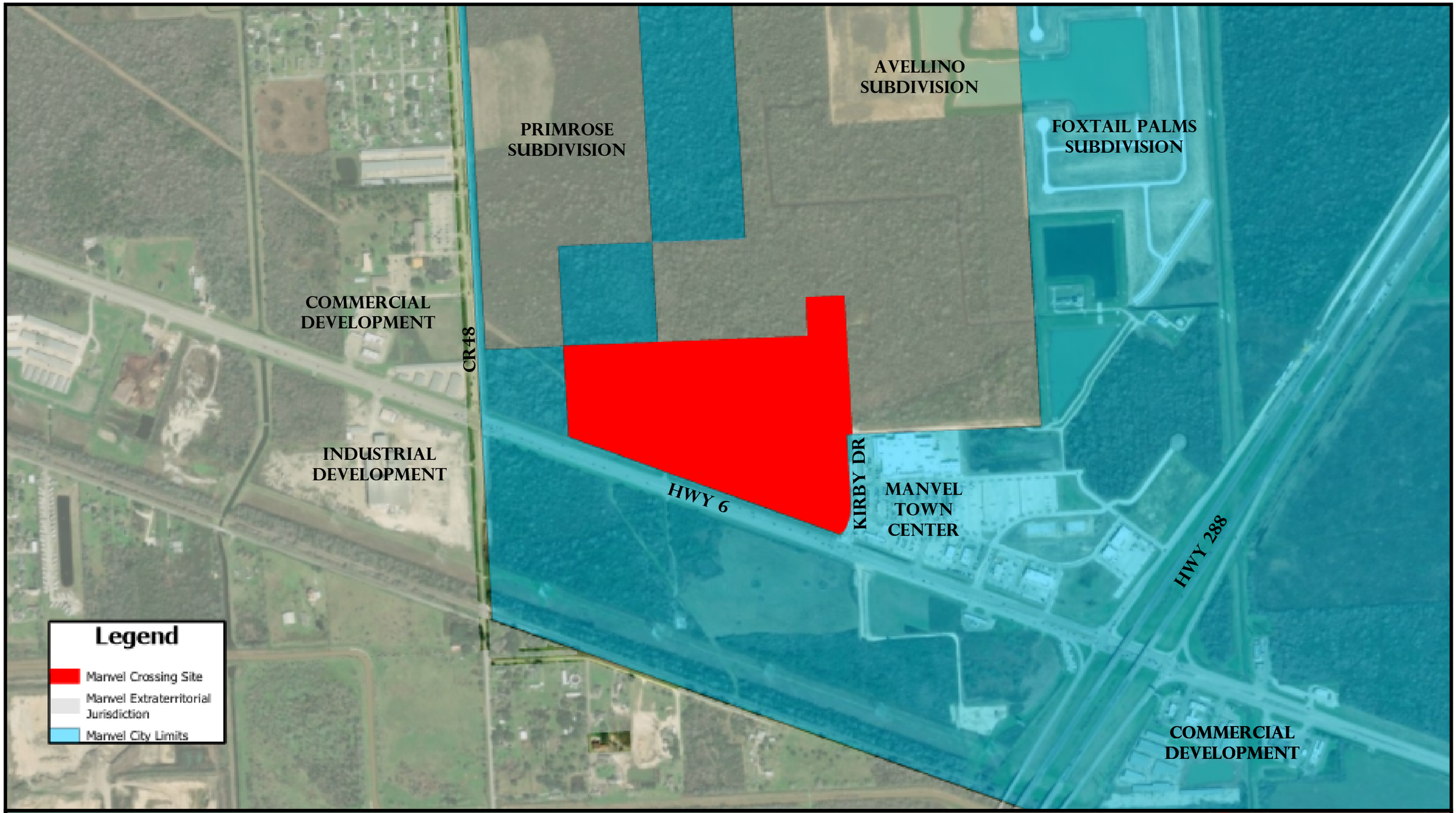

Exhibit 1 - Manvel Crossing Vicinity Map

A ± 49 acre tract located in Brazoria County, Texas.

November, 2025

0 200 300 600

SCALE: 1"=600'

NORTH

EHRA JOB NO.
231-085-00

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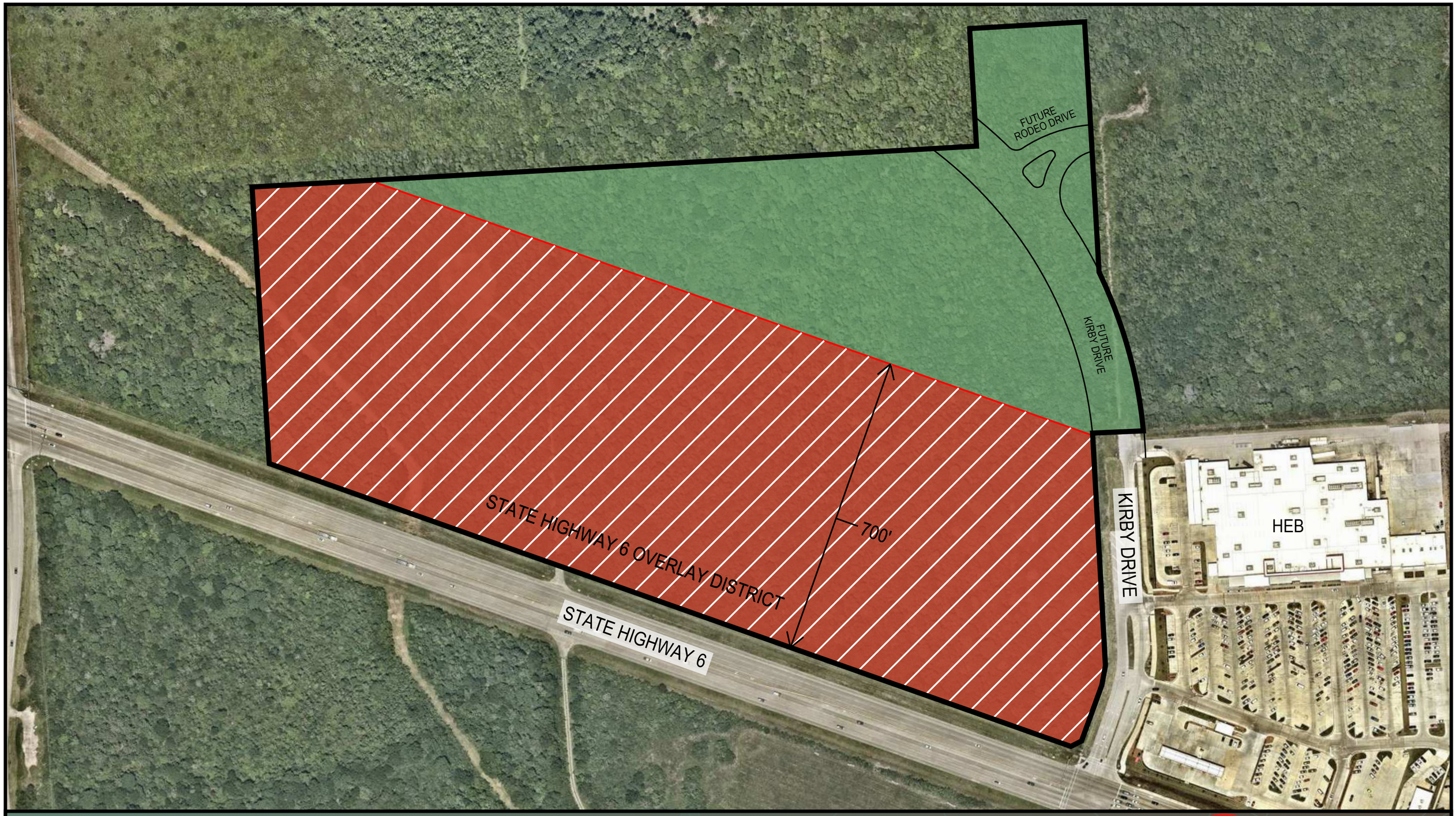

Exhibit 2 - State Highway 6 Overlay District

October 2025

0 50' 100' 200'

SCALE: 1"=200'
TRUE SCALE AT 11" x 17"

NORTH

EHRA JOB NO.
231-085-00

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II. DEVELOPMENT PLAN

A. Purpose & Intent

The purpose of the Development Plan is to clarify planning considerations within the plan area and guide the implementation of the vision for the development in addition to establishing a framework for Manvel Crossing by establishing standards that address the many aspects of a successful commercial development that not only responsibly achieves the vision of Manvel Crossing, but also enhances the City of Manvel and supports its exceedingly fast growth.

This section contains a description of the goals, objectives, and policies of the PUD combined with various plan components intended to guide the design principles of the development.

B. Goals & Objectives

The primary goal of the Manvel Crossing Planned Unit Development District is to create a master planned commercial development that will assist the City in implementing its vision by annexing into the City and increasing the area's tax base which in turn will fund public services and improvements. Additionally, the development will provide more access to goods and resources.

In order to achieve this goal, key objectives have been established to guide development and provide direction for the overall vision of the community. These objectives are consistent with the vision statement contained in the 2045 Strategic Plan adopted by the City and are as follows:

1. Ensure Quality Development

Manvel Crossing will ensure the quality of development through the establishment of design guidelines that regulate architectural standards, robust landscaping, attractive signage, adequate parking, and other common elements of the development.

2. A Broader Deeper Tax Base and Employment Opportunities

The addition of Manvel Crossing to the City of Manvel will not only increase the tax-base, which in turn will provide funding for needed infrastructure improvements, but will also provide employment opportunities for the citizens of Manvel.

3. Guide and Manage Development Along Highway 6

The location of the development is west of Highway 288 which acts as a boundary line for transition into the country feel of the City of Manvel. This location is best suited for commercial development, that is easily accessible by those further into town. Being located at the edge of the city limits and surrounded by other commercial uses, it is an ideal location for commercial development that will support the residential growth happening in the city.

4. Providing a Wider Range of Community Amenities and Commercial Services

This development is designed to bring a broader range of high-quality restaurants and commercial services to Manvel Crossing. More shopping means more tax revenue, which can in turn be used to improve local amenities for the citizens to enjoy.

C. Transportation

Manvel Crossing will establish a transportation network consisting of internal circulation and other forms of transportation that will comply with the City's Major Thoroughfare Plan (the Transportation Corridor Plan contained within the adopted Comprehensive Plan) adopted by City Council August 2, 2021, and meet the mobility needs of the community along Highway 6, and to the north and surrounding lands as they develop.

This proposed transportation network is in compliance with the City's Major Thoroughfare Plan as amended on August 2, 2021, and there are no anticipated issues with the ongoing update efforts.

1. Existing Access

Manvel Crossing currently has access directly from Highway 6 and from Kirby Drive to the east. In addition, Old Airline Road (County Road 48) is in close proximity to the site, which gives direct north south access to Pearland. Highway 288 is to the east for direct access to the City of Houston and the Gulf Coast.

2. Future Access

With the construction of the eventual continuation of Kirby Drive to the north, and its planned connection to Rodeo Drive, Manvel Crossing will become an easily accessible shopping area for the surrounding neighborhoods. This planned connectivity will lessen the congestion from the surrounding area and improve the local street network. There are no anticipated issues with ongoing update efforts.

Rodeo Drive shall be classified as a local street and constructed within a 60-foot right-of-way. This section of Rodeo Drive will be limited to the property within the PUD and will serve as. It will be a tertiary entry point to the Foxtail Palms single-family development. The roadway will consist of a 28-foot-wide pavement section with 5-foot sidewalks on both sides to support pedestrian connectivity and accessibility.

Kirby Drive shall be classified as a Parkway and constructed within a 120-foot right-of-way. This section of Kirby Drive, limited to the property within the PUD, will serve as the primary access point to the eastern portion of the site. If City Council take action to reduce the required right-of-way width for Kirby Drive throughan update to the City's Major Thoroughfare Plan, the reduced width shall supersede the requirements of this PUD.

The intersection of Kirby Drive and Rodeo Drive shall be designed and constructed in accordance with the recommendations outlined in the Traffic Impact Analysis (TIA), which has been submitted to and subject to approval by the City of Manvel. Dedication of both sections of road for property within the PUD shall occur with the recording of the final plat.

3. Site Internal Circulation Plan

Internal circulation throughout the Manvel Crossing development will consist of an interior east/west oriented road located in a parallel access easement that will grant access to all the businesses, including the proposed businesses at the rear of the site. There are four (4) possible entrances from Highway 6 per TxDOT spacing requirements, however only three (3) are proposed per the TIA. If a fourth access point from Highway 6 is approved by TxDOT, a fourth access point shall be permitted. Additionally, there are three (3) entrances to a currently proposed from Kirby Drive. Additional access points from Kirby Drive may be permitted if allowed per City ordinance.

The City agrees that the PUD may provide "satisfactory access" to certain parcels that may not have physical frontage on an abutting public road from a twenty-five (25) foot wide cross-access easement(s) which will provide for public access and be noted on a subdivision plat after being filed for record. The subdivision plat will show the recorded cross access easement(s) and/or notate the cross-access easement agreement on the face of the plat.

Additionally, there is an existing forty (40) foot right-of-way dividing the western 1/3 of the site that runs north/south and provides access to the out parcel to the north. This right-of-way will be widened and improved, if required by the City, to meet the

standards of the City of Manvel Design Criteria Manual and will continue to provide access through a portion of the site; however, the right-of-way may be rerouted or abandoned in the future with further action by City Council. Should City Council proceed with this option, this PUD shall not be required to be amended.

D. Infrastructure

1. Water & Wastewater

The water distribution system within the Manvel Crossing development will be designed to meet or exceed applicable requirements. Once annexed into the city limits, the site will be served by city water and wastewater services.

2. Storm Drainage & Detention System

The drainage plan and storm sewer system will be designed in accordance with City of Manvel and Brazoria County Drainage District #4 regulations. The storm water runoff within the Manvel Crossing site will be routed to storm sewer lines that will outfall into detention ponds located at the rear of the site. The internal detention ponds will provide storage volume for the increased storm water runoff resulting from development of the property. The storm water from the detention ponds will outfall in a controlled fashion to an offsite wet drainage channel and tie into storm sewers to the east.

The drainage collection systems will be designed to convey the 100-year sheet flow either in the collection system near the outfall point or by sheet flow drainage through the curb and gutter streets with maximum ponding per agency requirements. The proposed internal detention pond system will be sized to contain the excess run-off resulting from a 24-hour 100-year frequency rainfall event for developed and undeveloped conditions with a minimum freeboard of one (1') foot before out falling into the receiving stream. The storm sewer system will consist of reinforced concrete pipe and box culverts sized per agency requirements. Concrete channelization will be minimized.

Detention facilities intended to serve Manvel Crossing may be located off-site. Any off-site detention capacity shall be recorded with the County and provided to the City of Manvel so long as the off-site property owner grants their written acknowledgement and approval.

Should detention footprints be reduced in size or otherwise create additional usable acreage, such acreage may be developed for commercial purposes and shall be

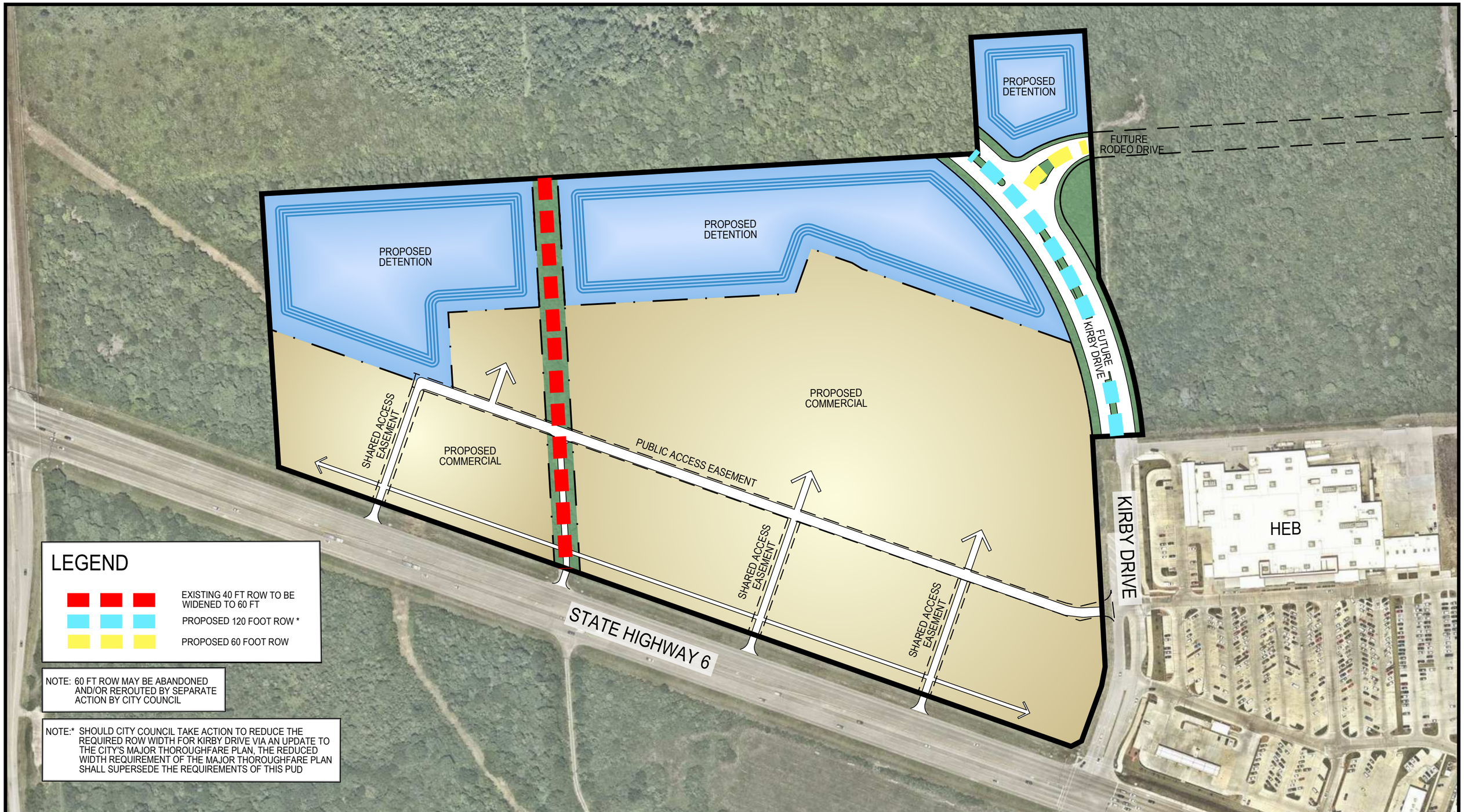

Exhibit 3 - Internal Circulation Plan

October 2025

0 50' 100' 200'

SCALE: 1"=200'

TRUE SCALE AT 11" x 17"

NORTH

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Exhibit 4 - Preliminary Drainage Plan

October 2025

0 125 250

SCALE: 1"=250

TRUE SCALE AT 11" x 17"

NORTH

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incorporated into the overall PUD uses and requirements.

3. Other Utilities

Electricity, natural gas, telecommunications, and cable services will be provided to the Manvel Crossing site through agreements with private or public (CenterPoint Energy Gas and Power) utility companies as development occurs. When determined by the utility provider as physically possible, all new three-phase (primary) overhead power lines will be located at the rear of new developed property.

III. DEVELOPMENT REGULATIONS

A. Purpose & Intent

The purpose of the development regulations is to serve as the primary means of achieving the goals and objectives of the Development Plan.

They are designed to establish clear minimum development standards, promote productive and streamlined processes that facilitate the timely delivery of tax-generating development, and provide a reasonable degree of flexibility to accommodate future needs.

B. General Provisions

1. Applicability

The regulations contained herein shall apply to all property located within the boundaries of the Manvel Crossing PUD. Appendix 1 contains the legal description of the property.

All construction and development within the PUD area shall comply with applicable provisions of the City of Manvel codes and ordinances as they exist on the date of adoption of this PUD and the laws of the State of Texas for 3 (three) years from the

acceptance of this PUD, except as modified within this PUD. Applicable International Code Council Codes adopted by the City of Manvel shall apply as amended from time to time.

If specific development standards are not established or if an issue, condition, or situation arises or occurs that is not clearly addressed or understandable in the PUD, then those regulations and standards of the City of Manvel codes and ordinances that are applicable for the most similar issue, condition, or situation shall apply as

determined by the City's Zoning Official. Appeal of any determination regarding applicability may be made to the Zoning Board of Adjustments.

This PUD may be amended by the same procedure as it was adopted, by ordinance. Each amendment shall include all sections or portions of the PUD that are affected by the change.

2. Existing Utilities

Existing utilities and all uses allowed by existing easements shall continue to be in all designations within the PUD.

C. Development Standards

The development standards outlined herein are intended to guide a high-quality, thoughtfully planned project that delivers meaningful value to the community. These standards set clear expectations, support efficient implementation, and ensure that the project is positioned for long-term success.

The following tables list permitted uses and non-permitted uses as part of this development. The uses are classified in the North American Industry Classification System (NAICS) format, which is a number code assigned by the NAICS Association to simplify the process of identifying what category a specific land use falls under.

1. Permitted Land Use Table

	NAICS Code	Classification
1	5412	Accounting, tax preparation, bookkeeping and payroll services
2	541611	Administrative Support Services
3	541810	Advertising agency
4	621493	Ambulatory Health Care Services
5	459510	Antique store
6	459920	Art gallery; Studio (art, music or photo)
7	459999	Arts and crafts store
8	811111	Automobile repair and maintenance - *Subject to Section 2
9	441330	Automotive part and accessory retailers - *Subject to Section 2
10	441320	Automotive Tire Dealers - *Subject to Section 2
11	311811	Bakery (Retail)
12	522110	Banks and financial institutions, including drive-through and outdoor ATM
13	812111	Barber or beauty shop
14	459210	Bookstore; Record and tape store
15	444	Building material, garden equipment, and supplies dealers
16	722514	Cafeteria
17	722320	Catering
18	449210	Cellular phone sales and repair store, Computer sales and repair store; Home appliance store
19	624410	Child care facility
20	621111	Clinic
21	458110	Clothing store (no re-used clothing)
22	561440	Collection agency
23	711120	Dance studio
24	492110	Delivery service
25	621210	Dental clinic
26	455110	Department store, Personal or Household Goods Store
27	541340	Drafting service
28	722410	Drinking Places (Alcoholic Beverages), Taverns - *Subject to Section 4
29	456110	Pharmacy, Drug store, with or without liquor or beer and wine sales
30	812320	Dry cleaning storefront, but not dry-cleaning plant
31	611710	Educational Support Services
32	811412	Electronic sales and repair store
33	713940	Fitness and Recreational Sports Centers (including martial arts, dance studios, ballet, etc.)
34	459310	Florist shop
35	445298	Food and Beverage Store
36	722511	Full-service restaurant - *Subject to Section 3
37	449110	Furniture store

38	455219	General Merchandise Retailers
39	459420	Gift shop
40	445110	Grocery store
41	444140	Hardware store
42	444110	Home improvement store
43	423220	House wares and linens store
44	451120	Hobby, Toy, and Game Store
45	531130	Lessor of mini-warehouse and self-storage (climate controlled only)
46	561622	Locksmith
47	622110	Medical and healthcare services
48	423450	Medical supply store
49	312120	Micro-Brewery, Restaurant with micro-brewery - *Subject to Section 4
50	926130	Minor utilities
51	522310	Mortgage company
52	721110	Motels and hotels
53	512131	Motion picture theaters and dinner theaters
54	459140	Musical instrument store
55	444240	Nursery, Garden center, and farm supply retailers
56	459410	Office supply store
57	621320	Optician or optometrist
58	491110	Postal Service
59	531120	Professional office
60	92	Public facilities
61	922120	Public safety site
62	334220	Radio sales and repair
63	516110	Radio studio (excluding tower)
64	531210	Real Estate
65	722513	Restaurants (limited service and quick service), with or without drive-thru.
66	455211	Retail warehouse clubs and supercenters
67	541990	Scientific and Technical Services
68	448210	Shoe store and repair shop
69	459110	Sporting goods store, Gun Shop
70	315250	Tailor
71	541191	Title Abstract and Settlement Offices
72	459120	Toy store
73	561510	Travel agency
74	541940	Veterinary Services
75	713120	Video arcade

2. **Automotive Uses** - Only one (1) nationally or regionally recognized automotive-oriented use shall be permitted for each of the following categories:

   - **811111 Automotive Service/Repair:** Includes, but is not limited to, Take 5, Valvoline, Firestone, Jiffy Lube, or other similar nationally recognized vehicle maintenance or repair concepts.
   - **441330 Automotive Tire Dealer:** Includes, but is not limited to, Discount Tire, Mavis, NTB, or other similar nationally recognized tire retail concepts primarily engaged in the sale of tires and related accessories.
   - **441330 Automotive Parts/Accessories:** Includes, but is not limited to, Advance Auto Parts, AutoZone, O'Reilly Auto Parts, NAPA Auto Parts, or other similar nationally recognized retail concepts primarily engaged in the sale of automotive parts and accessories.

   All approved automotive-related uses shall be restricted to locations within the westernmost 800' of Highway 6 frontage.

3. **Restaurant Uses** – Specific restaurant concepts/franchises shall not locate or operate a site within Manvel Crossing if they own, lease, or control another site within a two-mile radius of the Project.

4. **Permitted Uses Subject to Specific Use Permit** – the uses listed in the Permitted Use table- specifically Drinking Places, Bars, Taverns, Micro-Breweries- are subject to Specific Use Permits to be reviewed and approved by city staff and city council.

5. **Non-Permitted Land Use Table**

1. 455219 - Auction only	9. Gas Stations with Convenience Stores
2. 493190 - Automobile repair, major, with outside work or storage	10. 522299 - Pawn shop
3. 238990 - Billboards	11. Sexually oriented businesses
4. 811192 – Car Wash	12. 454390 - Swap meet
5. 812220 - Cemeteries	13. 812199 - Tattoo shops
6. 512132 - Drive-in theater	14. 115210-17 - Taxidermist
7. 424910 - Feed store	15. 811121 - Upholstery only
8. 812910 - Kennel (Commercial)	16. 459991 - Vape shop
	17. 336390 – Car Dealerships

6. Special Events

Temporary events shall follow the requirements of Article XII. – Special Events, of the City of Manvel Code of Ordinances.

7. Additional Uses

In the event that a proposed use has not specifically been listed or determined to be similar and compatible to a permitted use in a particular land use category within the PUD, an amendment to the PUD will be necessary to add the unlisted use.

8. Site Standards

Minimum Setbacks:

Along Major Roads:

- Front: 25 feet
- Rear: 15 feet
- Side: 15 feet

Along collector or internal streets/drives:

- Front: 10 feet
- Side: 10 feet
- Rear: 10 feet
- Corner Side: 10 feet

Adjacent to Residential and undeveloped land:

- Side: 10 feet
- Rear: 10 feet

An additional one (1) foot setback per ten (10) feet in height above sixty (60) feet is required from residential zoning districts.

Architectural features may encroach into the setback area a maximum of three (3) feet.

Fences constructed on the site shall comply with Sec. 77-43. - Fences, of the City of Manvel Code of Ordinances.

9. Architectural Standards:

1. Maximum Building Height:

Pad Sites:

- Maximum 35 feet

Commercial Anchor Tenants:

- Maximum 60 feet

Commercial Mixed-use (Office/Medical/Retail):

- Maximum 150 feet

2. Building Materials:

To encourage architectural flexibility and meaningful façade articulation, all commercial buildings shall incorporate a variety of high-quality exterior materials. Buildings must include a minimum of 75% masonry on front and side façades and 50% masonry on rear and service façades, exclusive of windows, doors, and other transparent materials. The following materials shall qualify as masonry for the purposes of this requirement:

- Stone
- Brick
- Concrete
- Hollow clay tile
- Glass block
- True Stucco
- Insulated Concrete Forms

Non-masonry materials may not exceed the remainder of the building's elevation.

Additional permitted non-masonry materials (with proof of compliance to ICC and Texas Windstorm standards):

- Cementitious fiber
- EIFS
- Architectural metal panels

Nationally or regionally recognized chains may incorporate company-specific materials—such as metal roofing or siding and wood siding—that would not ordinarily be permitted under the standard ordinance or PUD, provided such materials are approved by the Zoning Official.

Secondary power connections for new development from existing power poles located within the right-of-way of State Highway 6 will be placed underground.

Electrical panel boxes will not be located on a building façade facing State Highway 6 and be located on the rear of the buildings.

3. Parking Requirement: Shall comply with the parking standards established in this

section.

4. *Open Storage:* Open storage is permitted within the parking lot for temporary seasonal sales or temporary promotional events. Additionally, NAICS code 4441 – Building Material and Supplies Dealers and 455211 – Superstores or Big Box Retailers, located in buildings with 80,000 square feet of gross leasable floor area or more are permitted to use off-street parking spaces required by the City of Manvel's parking standards and PUD for permanent, long-term, or seasonal storage of inventory, equipment, vehicles, or other business-related property, provided that required parking is preserved and the use does not result in cross-parking impacts or deficiencies. Such storage shall not exceed twelve percent (12%) of all parking spaces provided for that building. No permits are required for temporary storage.

10. Parking

Parking within the Manvel Crossing site shall be provided according to Sec. 77-45. of The City of Manvel Zoning Ordinance, with the addition of a reduction in the required number of parking spaces from 5.0 spaces to 4.0 spaces per 1,000 square feet of gross leasable floor area for NAICS code 4441 – Building Material and Supplies Dealers, , plus an additional 2.0 parking spaces for each 1,000 square feet of the floor area designated as an outdoor garden center.

The City's PD&Z shall determine the minimum number of parking spaces required for any use not specified. Appeals to the interpretation may be made to the Zoning Board of Adjustments within thirty (30) days of the date of the determination.

Shared parking should be encouraged where appropriate. Adjustment of the minimum number of parking spaces required to serve a combination of occupancies shall be determined according to the following formula:

1. Determine the parking requirement for each occupancy as though it were a separate use;
2. Multiply each amount by the corresponding percentage for each applicable time period shown in the following schedule:

	Weekdays			Weekends		
	8am-5pm	6pm-12am	12am-6am	8am-5pm	6pm-12am	12am-6am
Commercial	90%	80%	5%	100%	70%	5%
Food & Beverage	70%	100%	10%	70%	100%	20%
Entertainment	40%	80%	10%	80%	100%	10%
Industrial & Manufacturing	100%	20%	5%	5%	5%	5%
Institutional	100%	20%	5%	10%	10%	5%
Convention	100%	100%	5%	100%	100%	5%
Performing Arts	40%	80%	10%	80%	100%	10%
Religious	10%	5%	5%	100%	50%	5%
Lodging	70%	100%	100%	70%	100%	100%
Residential	60%	100%	100%	80%	100%	100%

(Table from SmartCode V10.0, created by Center for Applied Transect Studies)

3. Calculate the column total for each time period;

4. The column with the highest value shall be the parking requirement.

The intent of shared parking is to allow uses that are more intense at certain times of the day to utilize an adjacent use's available parking at a time in the day that their need for parking is less intense. The result is a reduction in the need to park farther away when unexpected situations arise, in turn reducing potential for pedestrian harm.

11. Sidewalks

Sidewalks shall be installed per Sec. 62-113. – Sidewalks, of the City of Manvel Code of Ordinances. Any internal sidewalks must meet American Disability Act (ADA) and Texas Accessibility Standards (TAS). Sidewalks must be a minimum of 5 feet wide and 4.5 inches thick with steel reinforcement, unless otherwise required in the City's approved Master Thoroughfare Plan.

12. Landscaping

1. Landscaping for the Manvel Crossing development will adhere to Sec. 77-44. - Tree preservation, landscaping, fencing and screening of the City of Manvel Code of Ordinances.

2. Minimum 10% of site (excluding building footprint) must be landscaped. Minimum 5% of the site must be distributed as street, building, and parking lot landscaping. Specific tree and shrub spacing and screening requirements apply.

3. Manvel Crossing shall design, construct, and install a detention and drainage system that incorporates landscaping, pedestrian trails, and other complementary amenities where feasible. These enhancements shall be integrated into the detention areas to improve connectivity, promote aesthetic quality, and create a welcoming and enjoyable environment for the community. The berms and areas with aesthetic improvements in these areas shall count toward the 10% landscaping requirement.

4. Landscaping and/or decorative fence shall screen outside storage areas, loading docks, garbage collection bins and delivery entrances from adjacent property and public street right of way.

5. A ten (10) foot wide landscaping buffer will be provided between commercial and residential zoning districts.

6. Street Trees

    i. A minimum of one (1) street tree is required for every thirty (30) feet of street frontage.

    ii. No street tree shall be less than two and a half (2.5) inch caliper

7. Parking lot landscaping

    i. In addition to the Street Trees noted above, a tree of minimum one and a half (1.5) inch caliper shall be provided within or adjacent to the parking area at tree islands that:

        a. Are at least nine feet (9') wide (back of curb to back of curb).

        b. Each have a square footage of minimum 180.

        c. Are located so that no parking space is further away than one hundred feet (100') from a tree island.

ii. Shrub planting shall be placed along the perimeter of a parking lot in order to screen the parking lot. The shrubs shall be maintained at a maximum height of 36 inches.

iii. At entrance and exits, shrubs shall be no higher than twelve (12) inches in height.

8. Trees Along Highway 6

i. Trees along Highway 6 will be staggered, with small and ornamental trees closest to Highway 6, and shade trees set back per distances listed below for a more natural look, as well as a precaution from unnecessary trimming near the power line.

a. Small and Ornamental Trees: May be planted up to 10 feet from any power lines and may constitute up to 60% of the site's landscaping.

1) Of small or ornamental trees, crape myrtles may constitute up to 30% of the trees planted.

b. Shade trees: May be planted up to 20 feet from the powerline.

1) Evergreen trees shall constitute a minimum of 40% of trees planted.

See "Appendix 3" below for a list of approved trees.

13. Signage

All signage must be composed of materials and colors compatible with the associated use and the overall development. LED signage is permitted throughout the development so long as they do not flash or pulse, move at a fast pace, or use blue and red lights that mimic emergency vehicles. All signage will comply with the City of Manvel Lighting Standards. See "Exhibit 6" for an example of multi-tenant signage (subject to change). The following regulations shall apply:

a. General Signage Requirements
   i. All signage shall be located a minimum of ten (10) feet from the property line.
   ii. All signage must be perpendicular to the right of way.
   iii. Directional/informational signs within the Manvel Town Center project indicating the location of a business, street or facility within the project are permitted up to one (1) sign, four (4) feet in height and six (6) square feet in area per side.
   iv. Temporary Signage: Temporary signage shall be subject to the regulations listed in Section 53-10 of the City of Manvel Code of Ordinance in effect January 16,

2024 as amended.

v. Prohibited Signage: Unless specifically permitted in the above regulations, all signage listed in 53-11 of the City of Manvel Code of Ordinances in effect January 16, 2024, is prohibited.

b. *Multi-Tenant Monument/Pylon Signs* - A multi-tenant sign is defined as a freestanding sign with signage panels for multiple tenants within a single development.
   i. Multi-tenant signs may be constructed up to forty (40) feet with a maximum width of twenty-five (25) feet.
   ii. The bottom of such multi-tenant pylon sign message area shall not be less than ten feet (10') feet above the surrounding finished grade level.
   iii. Each multi-tenant monument tenant sign may not exceed five (5) feet in height or fifty (50) square feet in area.
   iv. In some instances, a multi-tenant sign may be considered off-premises if included within the Manvel Crossing development.
   v. Two (2) total multi-tenant pylon signs are permitted along Highway 6 and one (1) along Kirby Drive.

c. *Single-Tenant Monument* – A single-tenant sign is defined as a freestanding sign advertising a single use.
   i. Single-tenant signs may be constructed up to twelve feet (12') in height and sixty (60) square feet in area.
   ii. One single tenant monument sign is permitted for each platted of otherwise designated tract or parcel. If a parcel has frontage on two public roadways/highways, thoroughfares, one monument sign is permitted on each street frontage.

d. *Wall Mounted Signage* – A Wall sign is defined as a sign anchored to a wall elevation of a business.
   i. Buildings thirty (30') feet or less in height.
      - Wall signs are limited to 15% of the elevation they are placed on not to exceed 200 square feet. All parts of the elevation are used in this calculation.
      - Maximum Letter Height – thirty-six (36") inches for one line of text, eighteen (18") inches for two lines of text.
      - Maximum Overall Height – thirty-six (36") inches for one line of text, forty-two (42") inches for two lines of text.
      - The signage face shall not exceed 80% of storefront width.

   ii. Buildings over thirty (30') feet in height.

- Wall signs are limited to 25% of the elevation they are place on not to exceed 400 square feet. All parts of the elevation are used in this calculation.
- For every additional six (6') feet in height over thirty (30') feet, an additional twelve (12") inches of letter height is permitted, up to a maximum overall height of seventy-two (72") inches.
- The signage face shall not exceed 80% of the storefront width.

iii. No wall sign can extend above the parapet.

iv. For individual uses greater than 80,000 square feet in gross floor area, up to one hundred twenty inches (120") of letter height is permitted.

v. For buildings over 120,000 square feet of gross floor area , up to one-hundred thirty inches (130") in overall height is permitted.

vi. Wall mounted logos, symbols, and related branding shall not exceed one-hundred ninety-eight inches (198") in height.

14. Lighting

LED signage is recommended within the development for all business types and must comply with the Outdoor Lighting Standards and Regulations listed within the City of Manvel Ordinance No. 2024-O-36, as amended from time to time.

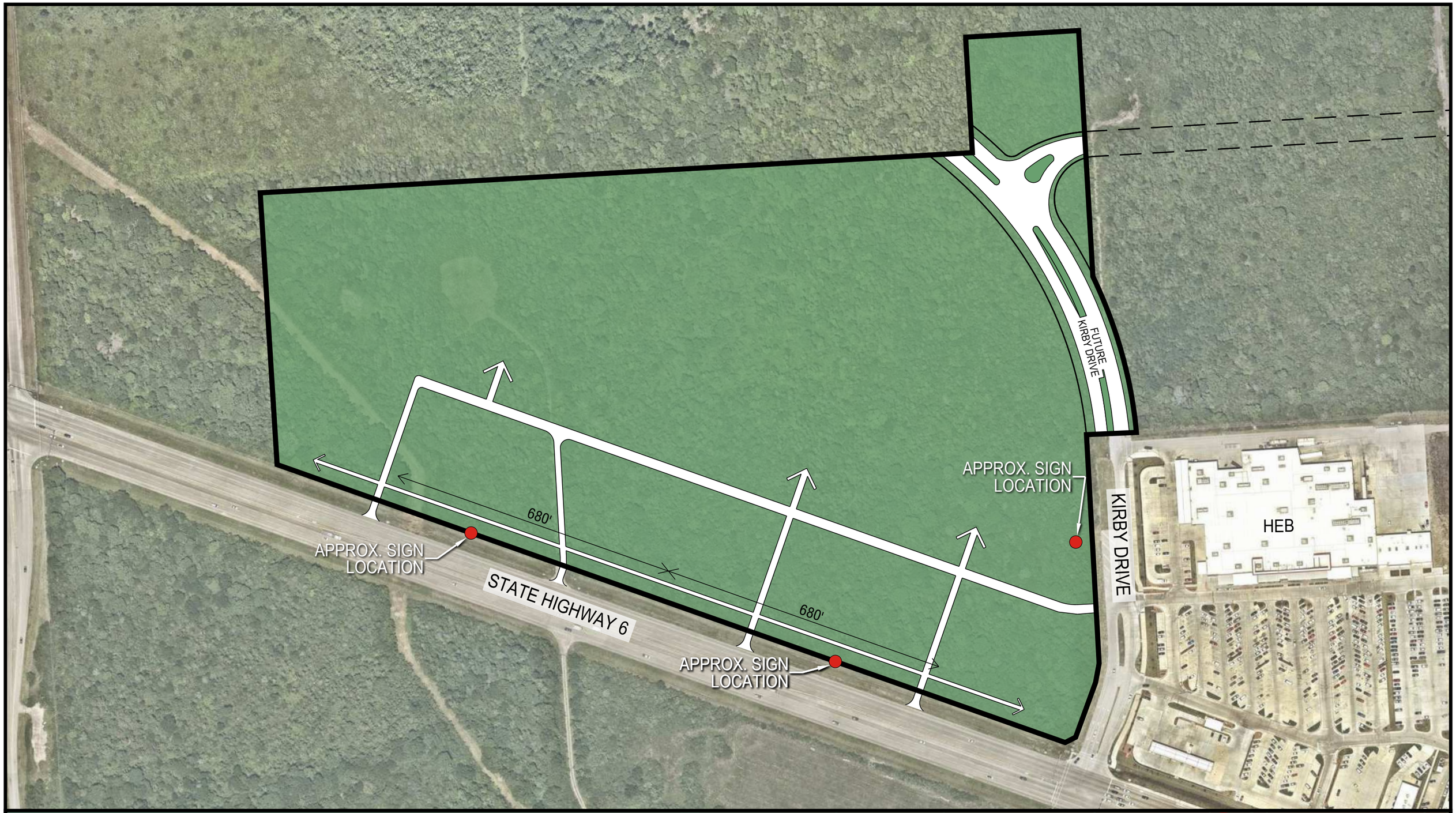

Exhibit 5 - Approximate Sign Locations

October 2025

0 50' 100' 200'

SCALE: 1"=200'

TRUE SCALE AT 11" x 17"

NORTH

EHRA JOB NO.
231-085-00

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

EHRA
ENGINEERING THE FUTURE
SINCE 1936

10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRA.TEAM
TBPE NO. F-726
TBPLS NO. 10092300

P:\231-085-00\LandPlan\BCS PUD\Exhibits\CAD\2nd Iterations\Exhibit 5- Approximate Sign Locations.dwg Nov 10, 2025-2:23pm Edited by: bmex

This sign elevation is conceptual in nature and subject to change.

Exhibit 6 - Multi-tenant Pylon Sign Elevation

October, 2025

EHRA JOB NO. 231-085-00

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HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRA.TEAM
TBPE NO. F-726
TBPLS NO. 10092300

Single-tenant Monument Sign - Elevation

This sign elevation is conceptual in nature and subject to change.

Exhibit 7 - Manvel Crossing Single-tenant Monument Sign

October 2025

NORTH

EHRA JOB NO.
231-085-00

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

EHRA
ENGINEERING THE FUTURE SINCE 1936

10011 MEADOWGLEN LANE
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15. Design Criteria Manual

The Project shall abide by the version of the City of Manvel Design Criteria Manual dated May 6, 2024 for a period of three (3) years, at which time it will abide by the most recently amended iteration.

16. Definitions

Abstract or title company – an establishment that examines historical records to create a summary of a piece of real estate, showing ownership, liens, mortgages, or other encumbrances, and often will issue title insurance to protect against ownership disputes.

Accounting, tax preparation, bookkeeping and payroll services – a business that functions to perform financial analysis and strategic advising, performs tax preparation for individuals or businesses, and may handle employee compensation for payroll related responsibilities.

Administrative support services – an establishment that handles day-to-day operations for other businesses or entities, including but not limited to office operations, information management, internal and external communication, scheduling, documenting, and other forms of support.

Advertising agency – a business that prepares strategies and products meant to seek the attraction, or to direct the attention, of the public to any goods, services, merchandise, purpose or cause.

Ambulatory Health Care Services – medical services performed on an outpatient basis, without admission to a hospital or other facility.

Antique store – a retail business that buys and sells old items, sch as furniture, art, and collectible, which are considered valuable due to their age, historical significance or rarity.

Architectural feature – an ornamentation or decorative feature attached to or protruding from the exterior wall of a building. Architectural features may include, but are not limited to windows (e.g. bay windows), chimneys, columns, awnings, marquees, façade or facia.

Art gallery – a room or building used for the display or sale of works of art.

Arts and crafts store – a retail store selling a wide variety of supplies, materials, and tools for artistic creativity.

Auction - a public or private sale where goods or property are sold to the highest bidder.

Automobile parts and accessory retailers This industry comprises establishments primarily engaged in retailing new, used, and/or rebuilt automotive parts and accessories, with or without repairing automobiles; and/or establishments primarily engaged in retailing and installing automotive accessories.

Automotive repair and maintenance - a facility used for the repair or replacement of engines, transmissions, differentials, drivetrains, or any parts thereof, in addition to the replacement of parts, service, and incidental repairs to private passenger vehicles. A private passenger vehicle is defined as automobiles, motorcycles, station wagons, vans, SUVs, or pickup trucks reserved for personal use.

Bakery (retail) – an establishment that produces and sells baked goods to the public in a storefront setting.

Banking or financial institution – a chartered financial institution that engages in deposit banking and closely related functions such as making loans, investments and other fiduciary activities. Drive-up windows and drive-thru automated teller machines (ATM) are permitted as an accessory use.

Barber or beauty shop – a business that offers hairdressing, cosmetology, and personal grooming services.

Billboards – large outdoor advertising structures typically found along highways or in high-traffic areas.

Bookstore - means a retail establishment that engages in the sale, rental, or other charge-for-use of books, magazines, newspapers, greeting cards, postcards, videotapes, computer software, or any other printed or electronically conveyed information or media, excluding any "adult bookstore," "adult theater," "theater," or "studio theater."

Building – a structure used for or supporting any use or occupancy that requires a building permit.

Building material, garden equipment, and supplies dealers - retail establishments that sell building materials (like lumber, paint, hardware) and lawn and garden products (such as plants, tools, and outdoor power equipment) to consumers and contractors.

Cafeteria - a restaurant or dining room located in part of a business in which customers serve themselves or are served from a counter and pay before eating.

Candy store – a specialized retail business that provides sweet treats as their primary inventory.

Catering – a business that provides food and beverage for an event at a location other than a traditional restaurant, handling everything from menu planning to food preparation, set-up, serving, and cleanup.

Cellular phone sales and repair store - a business that provides small-scale electronic repair services for items of the general public, including, but not limited to cellphone repair and other related minor repairs.

Childcare facility – a commercial or non-profit facility that provides shelter, care, activity, and supervision of children for periods of less than 24 hours a day and is licensed by the state.

Clinic - a building, other than a hospital as herein defined, used by one (1) or more licensed physicians for the purpose of receiving and treating patients.

Clothing store (no re-used clothing) - a small retail establishment that sells fashionable clothing or accessories.

Collection Agency – an business that attempt to collect past-due or unpaid debts on behalf of a creditor or lender, or purchases the debt itself to collect.

Collector street – a public street designated as a "minor corridor" on the City's Major Thoroughfare Plan.

Computer sales and repair store - a business that sells and provides computer electronic repair services for items of the general public.

Council – Shall mean the City Council of the City of Manvel.

Dance studio - a facility in which students are instructed and educated on the particulars of a physical art form. This does not include adult uses such as adult cabaret.

Delivery service – a commercial service that transports goods, parcels, or prepared food from a point of origin to a customer-specified destination.

Dental Clinic – a healthcare facility where dental services are provided.

Department store – a retail establishment that conducts business under a single owner's name wherein a variety of unrelated merchandise and services are housed and are exhibited and sold directly to the customer for whom the goods and services are

furnished.

Drafting service – a business that provides technical drawings and plans used in architecture, engineering, or manufacturing.

Drinking places (alcoholic beverages) - establishments primarily serving alcoholic drinks, such as bars, pubs, and lounges.

Drug store, with or without liquor or beer and wine sales – an establishment that sells prescription medications, health products, and may also offer alcoholic beverages depending on licensing.

Dry-cleaning storefront, but not dry-cleaning plant - A retail location where customers drop off and pick up garments for cleaning; the actual cleaning is done off-site.

Educational support services - non-instructional services that assist educational institutions, such as curriculum development, testing, or tutoring.

Electronic sales and repair store - sells and repairs electronics including but not limited to, appliances, air-conditioners, refrigerators, dishwashers, and clothing washers and driers.

Fitness and recreational sports center - facilities offering exercise equipment, fitness classes, and wellness programs.

Florist shop – a business that sells flowers, floral arrangements, and related decorative items

Food and beverage store – a store that sells perishable goods for human consumption, and includes grocery stores, convenience stores, and specialty food retailers.

Frontage – Frontage shall mean that portion of any lot or tract that abuts a street or approved common area. A lot or tract abutting more than one (1) street shall have frontage on only one (1) street which shall be deemed to be the side having the shortest dimension unless otherwise indicated on the subdivision plat.

Full-service restaurants - a restaurant where meals are primarily prepared individually for the customer and are served to customers at their table by wait staff. A restaurant which is a fast-food restaurant, or which has drive-thru facilities is not considered a full-service restaurant.

Furniture store – a store that sells household or office furniture such as sofas, tables, and beds.

General merchandise retailers - stores offering a wide variety of goods, such as

department stores or big-box retailers.

Gift shop – a store that sells novelty items, souvenirs, and small gifts.

Grocery store – A retail establishment primarily selling prepackaged and perishable food as well as other convenience and household goods. The sale of alcohol is permitted as an accessory use.

Gross floor area - Gross floor area (GFA) shall be defined as the sum in square feet of all floors of the building measured from the exterior face of the exterior walls. The gross floor area shall include all enclosed habitable space, including elevators, hallways, and stairwells on stories containing habitable space.

Gun shop – a store that sells firearms, ammunition, and related accessories.

Hardware store – a store that sells tools, building materials, and home repair supplies.

Home appliance store – a store that sells large and small appliances like refrigerators, washers, and microwaves.

Home improvement store – a store that offers products for remodeling, construction, and DIY projects.

House wares and linens store – a store that sells kitchenware, bedding, towels, and other household items.

Institutional use – A use designated for public facilities including, but not limited to major and minor utilities, public safety sites, libraries, schools (both public and private) and other civic uses.

Landscaping – Planting and related improvements for the purpose of beautifying and enhancing a portion of land and for the control of erosion and the reduction of glare, dust and noise. Rocks and/or gravel, by itself shall not constitute landscaping.

Locksmith - services related to locks, keys, and security systems, including installation and emergency access.

Lodging facilities – A building in which lodging is offered for compensation for a period of less than seven (7) days. This use includes hotels, motels, inns, and bed and breakfast residences, but does not include group homes and boarding houses.

Lot – An undivided tract of land having frontage on a public or private street which is designated as a separate and distinct tract and identified by numerical identification on a duly and properly recorded subdivision plat.

Maintenance facility – A facility intended to store equipment related to the maintenance, upkeep, or repair of the parks, open space, and detention/drainage areas inside the Project.

Medical and health care services - a healthcare facility offering inpatient services such as diagnosis, treatment, and preventive care. Examples of such a use are multi-specialty medical group practices providing outpatient care, offices of physicians, and general medical and surgical hospitals.

Medical supply store – a store that sells medical equipment and supplies like wheelchairs, bandages, and diagnostic tools.

Micro-brewery, with or without food service - a small-scale brewery producing limited quantities of beer, often with an on-site tasting room or restaurant, that has the necessary permits per the Texas Alcoholic Beverage Code.

Minor utility – Small scale facilities that are necessary to support development and that involve only minor structures. Minor utilities include, but are not limited to facilities such as power lines, water and sewer lines, storm drainage facilities, transformers, hydrants, switching boxes, wastewater lift stations, and similar structures.

Commercial Mixed-use – A tract of land, building, or structure developed for two or more different uses such as, but not limited to, office, retail, public, or entertainment. The mix of uses may occur either on the same tract of land, but compartmentalized into separate buildings, or located within the same building (e.g. retail on the first floor and office on the floors above the retail).

Mortgage Company – a business that provides loans for purchasing real estate and may offer refinancing or financial consulting services.

Motels and Hotels - lodging establishments offering overnight accommodations, with varying levels of amenities and services.

Motion picture theater companies and dinner theaters (with or without food service or alcoholic beverage sales) - a venue for screening films to the public, which may include concessions or full dining options.

Musical instrument store- a store that sells instruments, sheet music, and accessories; may also offer rentals or repairs.

Nursery, garden center, and farm supply retailers – a business that primarily sell plants, such as trees, shrubs, and flowers, as well as garden and farm supplies like seeds,

fertilizers, tools, and animal feed.

Office supply and machinery store and repairs – a store that sells office equipment and supplies and may provide repair services for items like printers or copiers.

Optician or optometrist – Provides vision care services including eye exams, prescriptions, and eyewear fittings.

Parkway – A right-of-way with a total width of 120 feet, designed for higher traffic transportation.

Personal and household goods store - services that sell, fix, or maintain items like appliances, furniture, electronics, or clothing.

Personal services – a business that includes but is not limited to salons, spas, dry cleaners, and other businesses that cater to individual needs and grooming.

Pharmacy – an establishment that dispenses prescription medications and offers health-related products and advice.

Postal Service – an establishment that offers mail and package delivery, shipping, and related services, either publicly or privately operated.

Private utilities – Utilities other than water and wastewater. Other utilities may be public and/or private in nature and may include, but are not limited to electrical power, gas, telephone, wireless communication, internet, and cable television.

Professional office- A room or group of rooms used for conducting the affairs of a business, medical, professional or service industry.

Project – The approximately 49 acres of land which is the subject of this PUD, the legal description of which is contained in the appendix of this document.

Public facilities – Any non-commercial land use (whether publicly or privately owned) which is to be used and/or allocated for the general good of the public. These uses include, but are not limited to governmental offices, libraries, parks, and major and minor utilities.

Public safety site – a location dedicated to emergency services such as police stations, fire departments, or emergency response centers

Public utilities – Any utilities that are provided by the city, county or municipal utility district which may include, but are not limited to water and wastewater.

Radio sales and repair - businesses that sell and/or repair radio equipment and related electronics.

Radio Studio (excluding tower) - a facility for producing and broadcasting radio programs, not including transmission towers.

Real estate - services related to buying, selling, leasing, or managing property.

Record and tape store – a store that sells music in physical formats such as vinyl records, cassette tapes, and CDs.

Recreational facilities – Any structure or building intended for active recreational use. Recreational uses shall include, but are not limited to clubhouses, tennis courts, basketball courts, sports fields, pools, playground equipment, bleachers, etc.

Restaurant - limited service (LSR) and quick service - a dining establishment emphasizing speed and convenience, where customers typically order and pay before eating and often help themselves to drinks, cutlery, and table maintenance. Quick Service Restaurant (QSR) is a specific type of LSR, a subset that is synonymous with "fast food," prioritizing very fast, efficient service, often with a consistent, streamlined menu and limited table service or a drive-thru window.

Restaurant with micro-brewery - a restaurant where meals are primarily prepared individually for the customer and are served to customers at their table by wait staff, where malt liquors or beer are produced on-site, as permitted by the Texas Alcoholic Beverage Code.

Retail – Retail sales of any article, substance, or commodity within a building or structure.

Retail warehouse clubs and supercenters – a business that sells goods directly to consumers (retail) or in bulk to other businesses (wholesale).

Scientific and technical services - professional services involving research, engineering, consulting, or specialized technical expertise.

School (public or private) – An institution for the teaching of children or adults including primary and secondary schools, colleges, professional schools, art schools, trade schools, and similar facilities.

Sexually oriented Businesses - Establishments that provide adult entertainment or sell adult products, such as strip clubs, adult bookstores, or adult video stores.

Shade Tree - A shade tree is a tree planted or valued primarily for the shade it provides,

rather than for fruit, beauty, or other purposes.

Shared parking – the use of the same off-street parking stall or stalls to satisfy the off-street parking requirements for two or more individual land uses without significant conflict or encroachment.

Shoe store and repair shop – a store that sells footwear and provides shoe repair services.

Small or ornamental tree - a tree that is grown for its aesthetic appeal, such as attractive flowers, fall foliage, or unique bark, rather than for practical purposes like fruit or wood

Sporting goods store – a store that sells equipment, apparel, and accessories for sports and outdoor activities.

Studio (art, music or photo) - a space used for creating or teaching visual arts, music, or photography.

Subdivision – the division of a lot, tract, or parcel of land into two or more lots, plats, sites or other divisions of land for the purpose of industrial, office, and business development or other uses.

Tailor – an establishment that alters, repairs, or customizes clothing to fit individual clients.

Tattoo shop – a business where licensed artists perform body modification, including but not limited to applying permanent body art using ink and needles, and piercings.

Tavern – an establishment that primarily serving alcoholic beverages, often with food and entertainment.

Taxidermist - A professional who prepares, stuffs, and mounts the skins of animals for display.

Toy store – a store that sells toys, games, and educational items for children.

Travel agency – a business that offers travel planning, booking, and tourism-related services.

Upholstery shop - a business that repairs or replaces fabric, padding, and springs on furniture or vehicle interiors.

Veterinary services - medical care and treatment for animals, including surgeries and vaccinations.

Video arcade – a venue offering coin-operated or digital games for public entertainment, including pinball machines, racing simulators, shooting games, and other interactive amusements. These establishments are designed for recreational play and social engagement, often catering to families and youth. Gambling activities, including games of chance with monetary payouts or betting mechanisms, are strictly prohibited in video arcades to maintain compliance with state law.

Warehouse and storage – ancillary to primary use - facilities for storing goods, either for distribution, safekeeping, or inventory management, located on the same site as a compatible use.

Zoning and Subdivision Deviations

Ordinance reference	Requirement	Proposed	Difference	Justification
Sec. 77-31. – Light-commercial (LC) district (c)	*Setbacks.* (1) Minimum front yard setback is 25 feet. (2) Minimum rear yard setback is ten feet. (3) Minimum side yard and corner side yard is five feet.	*Minimum Setbacks:* *Along Major Roads:* Front: 25 feet, Rear: 15 feet, Side: 15 feet *Along collector or internal streets:* Front: 10 feet, Side: 10 feet, Rear: 10 feet, Corner Side: 10 feet *Adjacent to Residential and Undeveloped Land:* Side: 10 feet, Rear: 10 feet Landscape buffer of 10 feet required between commercial and residential zoning districts. Architectural features may encroach into the setback area a maximum of three (3) feet.	15-foot reduction for front setbacks along collector or internal streets 5-foot reduction for side setbacks along collector or internal streets 10-foot reduction for rear setbacks adjacent to commercial 5-foot reduction for side setbacks adjacent to commercial	With the intended design of the site and pad placements, the setbacks will be reduced for adequate use of the property, as it is a larger site not fronting on Highway 6 directly.
Sec. 77-31. – Light-commercial (LC) district (d)	*Maximum building height*. The maximum height of any building in the light commercial district may not exceed 60 feet measured from the finished grade to the highest point of the roof, not including ancillary structures such as chimneys.	*Commercial Mixed use/Office/Medical:* Maximum 150 feet Additional setback of 1 foot per 10 feet in height exceeding 60 feet in height.	90-foot increase in height specifically for Mixed use/Office/Medical	This type of use will likely incorporate several stories.
Sec. 62-108. – Lots (a) (8)	*Any subdivision of land shall provide each lot with access to a public street as specified in the design criteria manual. The public street shall have a minimum width of 60 feet, or the proposed plat must dedicate the necessary additional rights-of-way to provide a minimum width of 30 feet from the centerline of the existing or original right-of-way.*	*Parcels without public road frontage may use **recorded cross-access easements** to meet access requirements*	Cross-access easements for access to properties	This is a typical course of action for sites with multiple tenants along major highways
Sec. 77-36. State Highway 6 overlay (SH-6) district. (c)	*Exterior building materials.* *(1) All building façades must be constructed of a minimum of 90 percent masonry materials on all non-transparent portions of all exterior walls. The percentage of masonry materials is calculated on a per façade basis. Permitted masonry materials include:* *a. Stone;* *b. Brick;* *c. Concrete;* *d. Hollow clay tile;* *e. Decorative concrete block or tile;* *f. Glass block;* *g. True stucco.* *The use of any material that is not specified on the above permitted masonry materials list is prohibited.* *(2) Up to the remaining ten percent of all exterior walls on non-transparent portions of the building may be constructed of materials not listed in the permitted masonry materials list but under no*	All commercial buildings must be composed of a **minimum of 75% on fronts and sides and 50% on rears and service facades** masonry, exclusive of windows, doors, or other transparent materials. The following materials shall meet the masonry requirement: • Stone • Brick • Concrete • Hollow clay tile • Glass block • True Stucco • Insulated Concrete Forms Non-masonry materials **may not exceed the remainder** of the building's elevation. **Additional permitted non-masonry materials** (with proof of compliance to ICC and Texas Windstorm standards): • Cementitious fiber • EIFS • Architectural metal panels **Nationally or regionally recognized chains** may use **company-specific materials** (e.g., metal roofing/siding, wood siding), which are **not typically allowed** under standard ordinance.	Insulated concrete forms added as approved, the addition of non-masonry materials approved for the remainder nof the elevations utilizing cementious fiber, EIFS, or architectural metal panels, nationally or regionally recognized chains may use company specific materials	This will allow the developer more freedom to build with more contrast in materials for different locations within the site

	circumstances will the following prohibited materials be allowed: *a. Sheet metal material; coated, galvanized, or uncoated with a metal thickness less than one-quarter inch;* *b. Smooth concrete masonry units (CMU) or block, painted or un-painted;* *c. Exterior insulation finish systems (EIFS);* *d. Plywood or oriented strand board (OSB).* *(3) No more than 75 percent of any façade may consist of glass.*			
Sec. 77-45. – Parking. (a)	Use not listed in table	Reduce the required number of parking spaces from 5.0 spaces to 4.0 spaces per 1,000 square feet of gross leasable floor area for any building with 80,000 square feet or more, plus an additional 2.0 parking spaces for each 1,000 square feet of the floor area designated as an outdoor garden center	Reduced parking for store area with the addition of 2 spaces per 1,000 square feet for outdoor shopping	Reduced parking will lower the impervious coverage, and remove unneeded spaces for some uses
Sec. 77-45. – Parking. (c) & (d)	*(c) Shared Parking.* *(1) Shared parking is encouraged and intended to make use of parking areas that are not used during certain parts of the day. Shared parking is permitted only with a written agreement between the subject landowners. Such agreement shall be maintained in the office of the city secretary.* *(2) Property on which shared parking is proposed shall be no further than 300 feet from the boundary of the principal property, as measured along public rights-of-way, such as streets or sidewalks.* *(3) No more than 75 percent of the total amount of parking spaces required for the principal use shall be shared parking spaces.* *(4) Required handicapped parking spaces shall not be used in the calculation for shared parking spaces.* *(d) Parking space dimensions.* *(1) The minimum size of a car parking space shall be ten feet wide and 20 feet long for residential or commercial land uses.* *(2) The minimum size of a handicapped parking space shall be as required by the Americans with Disabilities Act.* *(3) Compact car parking spaces shall not be credited to the overall parking calculation requirement.*	Shared parking allowed and shall satisfy the minimum parking ratio requirements.	Allowed Shared parking to satisfy all required parking when necessary.	Changes will allow for a reduction of unused parking
Sec. 77-52. – Open storage and display of items	Open storage of items not for sale and for sale is permitted when incidental to principal land use on the same property.	Open storage is permitted within the parking lot for temporary seasonal sales or temporary promotional events. No permits are required for temporary storage. Buildings with 80,000 square feet of gross leasable floor area or more are permitted to use off-street parking spaces provided to comply with the City of Manvel's parking requirements for permanent, long-term or seasonal storage of inventory, equipment, vehicles, or other business-related property, not to exceed twelve percent (12%) of all parking spaces provided for that building.	Temporary outdoor sales can occur in the parking areas, and buildings of 80,000 square feet of GLA are permitted to use off-street parking for storage of various business related equipment, not exceeding 12% of the parking	This allows flexibility to the businesses to utilize a small portion of their parking lot for business purposes

Sec. 77-44. - Tree preservation, landscaping, fencing and screening. (c) (1) & (2)	Landscaping is required for street frontage as well as for parking lots at a rate of one street tree per 30 feet of frontage, and one parking lot tree per 10 parking spaces.	Minimum **10% of site** (excluding building footprint) must be landscaped. Specific tree and shrub spacing and screening requirements apply. All pervious area shall be counted toward the total landscape area, including the maintenance berm of detention ponds, if the maintenance berms incorporate landscaping and pedestrian trails where feasible, to enhance connectivity and visual appeal. Landscaping within these areas shall be consistent with the overall development standards and contribute to the cohesive character of the site. Street Trees ii. One street tree is required for every thirty (30) feet of street frontage. iii. No street tree shall be less than two and a half (2.5) inch caliper No more than 30% of street trees may be crape myrtle along Highway 6. A minimum percentage of evergreens is required. Staggering of trees along the highway is required adjacent to powerlines. Examples of tree types are given.	The addition of a minimum of 10% landscaping, maintenance berms and detention ponds can count towards pervious area. Landscaping will be included with maintenance berms where feasible, but half of the required landscaping must be evenly distributed across the parking areas, pad sites, and street frontages. Maximum of 45 feet spacing for single trees. A limit on the number of crape myrtles allowed to be planted. A minimum percentage of evergreens planted.	More diversity in tree types will enhance the streetscape, and the addition of landscaping around detention ponds will accomplish a similar outcome
Sec. 53-16. – Shopping center and integrated business developments (2)	*Sign district B.* a. Each shopping center or integrated business development is permitted one single or double-faced monument sign not exceeding 100 square feet in area plus an additional ten square feet for each business establishment located in such shopping center or integrated business development, or 150 square feet, whichever is less, and not exceeding 15 feet in height above the surrounding finished grade level. Additionally, each monument sign shall not exceed 22 feet in width. b. The location of a monument sign is subject to the approval of the sign administrator to ensure that such location does not create hazards to traffic or pedestrians; provided, however, all monument signs shall be located outside of the sight distance triangle corresponding to the nearest street intersection. c. An additional monument sign may be permitted for each shopping center or integrated business development that is on the corner of an intersection of two public streets. One sign shall face each adjacent street. Such additional sign shall not exceed 15 feet in height above the surrounding finished grade level. The total sign area of both signs combined shall not exceed 250 square feet.	*Multi-Tenant Monument/Pylon Signs* - A multi-tenant sign is defined as a freestanding sign with signage panels for multiple tenants within a single development. Multi-tenant signs may be constructed up to fifty (40) feet when located on Highway 6. The bottom of such sign message area shall not be less than ten feet (10') feet above the surrounding finished grade level. Each tenant sign may not exceed five (5) feet in height or fifty (5) square feet in area. In some instances, a multi-tenant sign may be considered off-premises if included within the Manvel Crossing development. Two multi-tenant signs along Highway 6 and one along Kirby Dr allowed.	Increased height and area for multi-tenant monument signs, and to provide rear property tenants visibility from Highway 6. Number of signs: 2 on Highway 6, 1 on Kirby Dr	These deviations are requested to provide more flexibility in placement and design of the multi-tenant signs.
Sec. 53-10. – Allowed Signs (b)(8)	*(8) Wall signs. Each business establishment is allowed wall signage not exceeding the total square feet of the facade to which it is affixed:* *a. Fifteen percent of the business frontage or a maximum 200 square feet for the side with the principal entrance;* *b. Ten percent of the business frontage or a maximum 150 square feet for the side(s) fronting*	*Wall Mounted Signage* – A Wall sign is defined as a sign anchored to a wall elevation of a business. Wall signs are limited to 25% of the elevation they are placed on. All parts of the elevation are used in this calculation. No wall sign can extend above the parapet. For individual uses greater than 8,000 square feet in gross floor	An increase in the allowable size of wall signs.	This request is similar to that of the neighboring development, and varying business sizes and locations may require larger signs for street visibility.

	on a public street; *c. Ten percent of the business frontage or a maximum 150 square feet for all other sides;* *d. Ten percent per side for canopies related to a business;* *e. A maximum of 32 square feet for freestanding menu boards in addition to wall signs; or* *f. Wall signage may not project above the lower edge of the roof line or parapet of a building.*	area, up to one hundred twenty inches (120”) of letter height is permitted. For buildings over one 120,000 square feet of gross floor area Wall mounted signage lettering may not exceed one-hundred thirty inches (130") in overall height. Wall mounted logos, symbols, and related branding shall not exceed one-hundred ninety-eight inches (198”) in height.		

IV. GENERAL ADMINISTRATION & AMENDMENTS

A. Purpose

This section establishes guidelines regarding the administration and future amendments to the PUD.

1. Changes to the Zoning Ordinance

The Development Regulations section of the PUD addresses only those areas that differ from the City of Manvel Zoning Ordinance. In the event that an issue, condition, or situation arises that is not specifically addressed in the PUD, the City of Manvel Zoning Ordinance in place at the time of the adoption of this document shall be used by the City's Zoning Official as the basis to resolve the issue.

2. Variances from the Zoning Ordinance

The criteria established in this PUD require variances from the City of Manvel Subdivision Ordinance as amended on May 6, 2023. These variances are necessary to achieve the community vision established in the City's Comprehensive Plan. The table below describes the requested variances and their corresponding section of the subdivision ordinance. These variances shall apply to all property within the PUD. Should any additional variances be sought in the future, this document will be amended with City Council approval.

3. Variances from the Design Criteria Manual

The criteria established in this PUD require variances from the City of Manvel Design Manual as adopted on May 6, 2024. These variances are necessary to achieve the community vision established in the City's Comprehensive Plan. Table 8 describes the requested variances and their corresponding section of the design manual. These variances shall apply to all property within the PUD.

B. Interpretation

The City's Zoning Official shall be responsible for interpreting the provisions of the PUD. Appeals to the Zoning Official's interpretation may be made to the Zoning Board of Adjustments within thirty (30) days of the date of the interpretation. Appeals shall be heard by the Zoning Board of Adjustments a maximum of sixty (60) days after receipt by City staff.

C. Appeal to the Zoning Board of Adjustments

Decisions by the Zoning Official or PD&Z regarding administrative changes shall be subject to appeal by the Zoning Board of Adjustments. The following categories shall be considered administrative changes, but are not limited to:

- The addition of new information to the PUD, including maps or text that does not change or affect any of the regulations or guidelines contained therein.
- Changes to the development infrastructure phasing and alignment, such as roads, drainage, water and sewer systems, excluding water and sewer plant locations.
- The determination that a use may be allowed which is not specifically listed as a permitted use, but may be determined to be analogous and/or accessory to a permitted use as determined by the City's PD&Z.

D. Substantial Change

The PUD may be substantially amended by the procedure outlined in the City of Manvel Zoning Ordinance, Section 7 of the City of Manvel Zoning Ordinance.

E. Fees

All fees associated with the entitlement process shall be assessed as indicated by the City's adopted fee schedule that is in place at the time of Council approval, as amended from time to time. All fees shall be fair and reasonable.

Appendix 1
Metes & Bounds Description and Boundary Map

WINDROSE
LAND SURVEYING | PLATTING

DESCRIPTION OF
34.28 ACRES OR 1,493,196 SQ. FT.

A TRACT OR PARCEL CONTAINING 34.28 ACRES OR 1,493,196 SQUARE FEET OF LAND SITUATED IN THE H. T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, SAME BEING CALLED "PART ONE, TRACT ONE" OR 35.905 ACRES OF LAND DESCRIBED IN DEED TO TH PROPERTY, INC., RECORDED UNDER BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.) NO. 2022037379, AND BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2002056335, WITH SAID 34.28 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, WITH ALL BEARINGS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (NAD 83):

BEGINNING, AT BEGINNING AT A CAPPED 5/8 INCH IRON ROD STAMPED "BGE" FOUND MARKING THE SOUTH END OF A CUTBACK CORNER OF THE INTERSECTION OF THE NORTH RIGHT-OF-WAY (R.O.W.) LINE OF SAID STATE HIGHWAY NO. 6 (200' WIDE) AS RECORDED UNDER MAP OR PLAT NO. 2022037379, B.C.P.R. AND THE WEST R.O.W. LINE OF KIRBY DRIVE (120' WIDE) AS RECORDED UNDER MAP OR PLAT NO. 2022037379, B.C.P.R., SAME BEING THE MOST SOUTHERLY SOUTHEAST CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 70 DEG. 28 MIN. 31 SEC. WEST, ALONG THE SOUTH LINE OF SAID 35.905 ACRES AND NORTH LINE OF SAID HWY NO. 6, A DISTANCE OF 1,248.34 FEET TO A 5/8 INCH IRON ROD FOUND ON THE SOUTHEAST CORNER OF A 40 FEET R.O.W. (UNIMPROVED), AS RECORDED UNDER MAP OR PLAT VOL. 2, PG. 81-82, B.P.C.R., AND THE SOUTHWEST CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 03 DEG. 15 MIN. 50 SEC. WEST, ALONG THE EAST LINE OF SAID 40 FEET R.O.W. AND WEST LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 927.47 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET ON THE EAST LINE OF SAID 40 FEET R.O.W. AND THE SOUTHWEST CORNER OF CALLED LOT 21 BEING A PART OF CALLED 201.0164 ACRE TRACT OF LAND DESCRIBED IN DEED TO NEW RODEO 288, LTD., AS RECORED UNDER MAP OR PLAT VOL. 2, PG. 81. B.C.P.R. AND BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2006043836., AND THE NORTHWEST CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 86 DEG. 53 MIN. 57 SEC. EAST, ALONG THE SOUTH LINE OF SAID 201.0164 ACRE TRACT AND NORTH LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 1,280.25 FEET TO A CORNER FOR THE SOUTHEAST CORNER OF CALLED LOT 29, BEING A PROTION OF SAID 201.0164 ACRE TRACT OF LAND AND ON THE WEST LINE OF CALLED 40 FEET R.O.W., AS RECORDED UNDER MAP OR PLAT VOL. 2, PG. 81-82 B.C.P.R. AND B.C.C.F. NO. 2019057985, AND B.C.C.F. NO. 2019057983, AND SAME BEING THE NORTHEAST CORNER OF SAID 35.905 ACRE AND OF THE HERIEN DESCRIBED TRACT FROM A 5/8 INCH IRON ROD BEARS SOUTH 16 DEG. 18 MIN. 34 SEC. WEST FOR A DISTANCE OF 0.366 FEET;

THENCE, SOUTH 03 DEG. 15 MIN. 50 SEC. EAST, ALONG THE WEST LINE OF SAID 40 FEET R.O.W. AND EAST LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 681.87 FEET TO CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET ON THE WEST LINE OF SAID 40 FEET R.O.W., AND MARKING THE MOST NORTHEASTERLEY CORNER OF SAID KIRBY DRIVE AND THE MOST EASTERLY CORNER OF SAID 35.905 ACER TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 86 DEG. 39 MIN. 32 SEC. WEST, ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, A DISTANCE OF 36.57 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "BGE INC." FOR THE NORTHWEST CORNER OF SAID KIRBY DRIVE AND THE EAST CORNER OF SAID 35.905 ACRE TRACT, AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 03 DEG. 20 MIN. 28 SEC. EAST, ALONG THE WEST R.O.W. LINE OF SAID KIRBY DRIVE AND THE EAST LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 499.85 FEET, TO A POINT STARTING A NONTANGENT CURVE TO THE RIGHT FROM WHICH A FOUND 5/8 INCH IRON ROD BEARS SOUTH 46 DEG. 58 MIN. 53 SEC. WEST FOR A DISTANCE OF 0.267 FEET;

THENCE, CONTIUNING ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, WITH A CURVE TO THE RIGHT, HAVING A RADIUS OF 270.05 FEET, A CENTRAL ANGLE OF 22 DEG. 51 MIN. 57 SEC., AN ARC LENGTH OF 107.77 FEET, AND A CHORD BEARING AND DISTANCE OF SOUTH 08 DEG. 05 MIN. 31 SEC. WEST, - 107.06 FEET TO A FOUND 5/8 INCH IRON ROD ON THE SAME SAID COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 19 DEG. 31 MIN. 29 SEC. WEST, CONTINUING ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, A DISTANCE OF 119.23 FEET TO A 5/8 INCH IRON ROD FOUND MARKING THE NORTH END OF A CUT BACK CORNER OF THE INTERSECTION OF THE WEST R.O.W. LINE OF SAID KIRBY DRIVE AND THE NORTH R.O.W. LINE OF SAID HWY 6, SAME BEING THE MOST SOUTHEASTERLY CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 64 DEG. 31 MIN. 29 SEC. WEST, ALONG THE SAME SAID CUTBACK LINE OF THE INTERSECTION OF SAID HWY 6 AND SAID KIRBY DRIVE, A DISTANCE OF 28.29 FEET THE **POINT OF BEGINNING** AND CONTAINING 34.28 ACRES OR 1,493,196 SQUARE FEET OF LAND, AS SHOWN ON JOB NO. 59121-BND, PREPARED BY WINDROSE.

_____
LUCAS G. DAVIS
R.P.L.S. NO. 6599
STATE OF TEXAS
FIRM REGISTRATION NO. 10108800

10-31-2023
DATE:

WINDROSE
LAND SURVEYING | PLATTING

DESCRIPTION OF
11.3999 ACRES OR 496,581 SQ. FT.

A TRACT OR PARCEL CONTAINING 11.399 ACRES OR 496.581 SQUARE FEET OF LAND SITUATED IN THE H. T. & B. RR.CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, SAME BEING CALLED "PART TWO OF TRACT FOUR" 11.395 ACRES OF LAND DESCRIBED IN DEED TO TH PROPERTY, INC., RECORDED UNDER BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.) NO. 2022037379, AND BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2002056335, WITH SAID 11.3999 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, WITH ALL BEARINGS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (NAD 83):

COMMENCING, AT BEGINNING AT A CAPPED 5/8 INCH IRON ROD STAMPED "BGE" FOUND MARKING THE SOUTH END OF A CUTBACK CORNER OF THE INTERSECTION OF THE NORTH RIGHT-OF-WAY (R.O.W.) LINE OF STATE HIGHWAY NO. 6 (200' WIDE) AS RECORDED UNDER PLAT NO. 2022037379,(B.C.P.R.) AND THE WEST R.O.W. LINE OF KIRBY DRIVE (120' WIDE) AS RECORDED UNDER PLAT NO. 2022037379, (B.C.P.R.), SAME BEING THE MOST SOUTHERLY SOUTHEAST CORNER OF CALLED 35.905 ACRES OF LAND DESCRIBED IN DEED TO TH PROPERTY, INC. AS RECORDED UNDER MAP OR PLAT NO. 2022037379 AND B.C.C.F. NO. 2002056335,;

THENCE, NORTH 70 DEG. 28 MIN. 31 SEC. WEST, ALONG THE NORTH R.O.W. LINE OF SAID HWY 6 PASSING A FOUND 5/8 INCH IRON ROD FOR A DISTANCE OF 1248.34 FEET MARKING THE SOUTHEAST CORNER OF A 40 FEET R.O.W. (UNIMPROVED) RECORDED UNDER A MAP OR PLAT VOL.2, PG. 81-82, B.C.P.R., AND THE SOUTHWEST CORNER OF SAID 35.905 ACRE TRACT, TO A FOUND 5/8 INCH IRON ROD FOR A TOTAL DISTANCE OF 1291.68 FEET MARKING THE SOUTHWEST CORNER OF SAID 40 FEET R.O.W. AND THE SOUTHEAST CORNER OF SAID 11.395 ACRE TRACT SAME BEING THE **POINT OF BEGINNING** OF THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 70 DEG. 28 MIN. 31 SEC. WEST, CONTIUING ALONG THE NORTH R.O.W. LINE OF SAID HWY 6 AND THE SOUTH LINE OF SAID 11.395 ACRE TRACT, A DISTANCE OF 692.21 FEET TO A FOUND 5/8 INCH IRON ROD MARKING THE SOUTHEAST CORNER OF CALLED LOT 6 AND LOT 7, 8.28689 ACRES OF LAND DESCRIBED IN DEED TO JERRY A. ARGOVITZ, AS RECORDED UNDER MAP OR PLAT VOL. 2, PG. 81, B.C.P.R. AND VOL. 1151, PG. 839 OF B.C.C.F., AND THE SOUTHWEST CORNER OF SAID 11.395 ACRES AND THE HEREIN DESCRIBED TRACT;

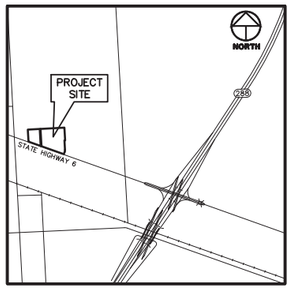
THENCE, NORTH 03 DEG. 21 MIN. 05 SEC. WEST, ALONG THE COMMON LINE OF SAID LOT 6 AND LOT 7 AND SAID 11.395 ACRE TRACT, FOR A DISTANCE OF 644.48 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET FOR THE SOUTHEAST CORNER OF CALLED LOT 5 BEING A PART OF CALLED 201.0164 ACRES OF LAND DESCRIBED IN DEED TO NEW RODEO 288, LTD., AS RECORDED UNDER MAP OR PLAT THEREOF VOL. 2, PG. 81, B.C.P.R. AND B.C.C.F. NO. 2005039031, AND VOL. 1181, PG. 884 OF B.C.C.F., AND THE SOUTHWEST CORNER OF CALLED LOT 13 OR CALLED 10.30 ACRES OF LAND DESCRIBED IN DEED TO J.W. WINZELLER AND LESLIE R. WINZELLER AS RECORDED UNDER MAP OR PLAT THEREOF VOL. 2, PG. 81-82, B.C.P.R. AND B.C.C.F. NO. 200539091 AND SAME BEING THE NORTHWEST CORNER OF SAID 11.395 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 86 DEG. 53 MIN. 57 SEC. EAST, ALONG THE COMMON LINE OF SAID LOT 13 AND 11.395 ACRE TRACT, A DISTANCE OF 639.16 FEET TO A CORNER ON THE WEST R.O.W. LINE OF SAID 40 FEET AND THE SOUTHEAST CORNER OF SAID LOT 13 AND THE NORTHEAST CORNER OF SAID 11.395 ACRE TRACT AND THE HEREIN DESCRIBED TRACT FROM WHICH FOUND 5/8 INCH IRON ROD BEARS SOUTH 16 DEG. 54 MIN. 59 SEC. WEST, FOR A DISTANCE OF .304 FEET;

THENCE, SOUTH 03 DEG. 15 MIN. 50 SEC. EAST, ALONG THE WEST R.O.W. LINE OF SAID 40 FEET AND THE EAST LINE OF SAID 11.395 ACRE TRACT, A DISTANCE OF 910.78 FEET TO THE **POINT OF BEGINNING** AND CONTAINING 11.3999 ACRES OR 496,581 SQUARE FEET OF LAND, AS SHOWN ON JOB NO. 59121-BND, PREPARED BY WINDROSE.

_____
LUCAS G. DAVIS
R.P.L.S. NO. 6599
STATE OF TEXAS
FIRM REGISTRATION NO. 10108800

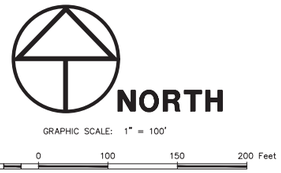
10-31-2023
DATE:



CITY OF MANVEL, BRAZORIA COUNTY, TEXAS

VICINITY MAP

SCALE: 1" = 2000



BENCHMARK — PUBLISHED ELEVATION – 59.14'

PROJECT BENCHMARK IS BRAZORIA COUNTY DRAINAGE DISTRICT NO. 4 BENCHMARK NO. CR58–1, BEING A BRASS DISK STAMPED "CR58–1" FOUND ON A CONCRETE HEADWALL AT THE INTERSECTION OF OUTFALL "A" AND THE NORTH SIDE OF COUNTY ROAD 58, NEAR CR58 WEST DETENTION. ELEVATION – NAVD88, 2001 ADJUSTMENT.

TEMPORARY BENCHMARK "A" — ELEVATION – 54.64'

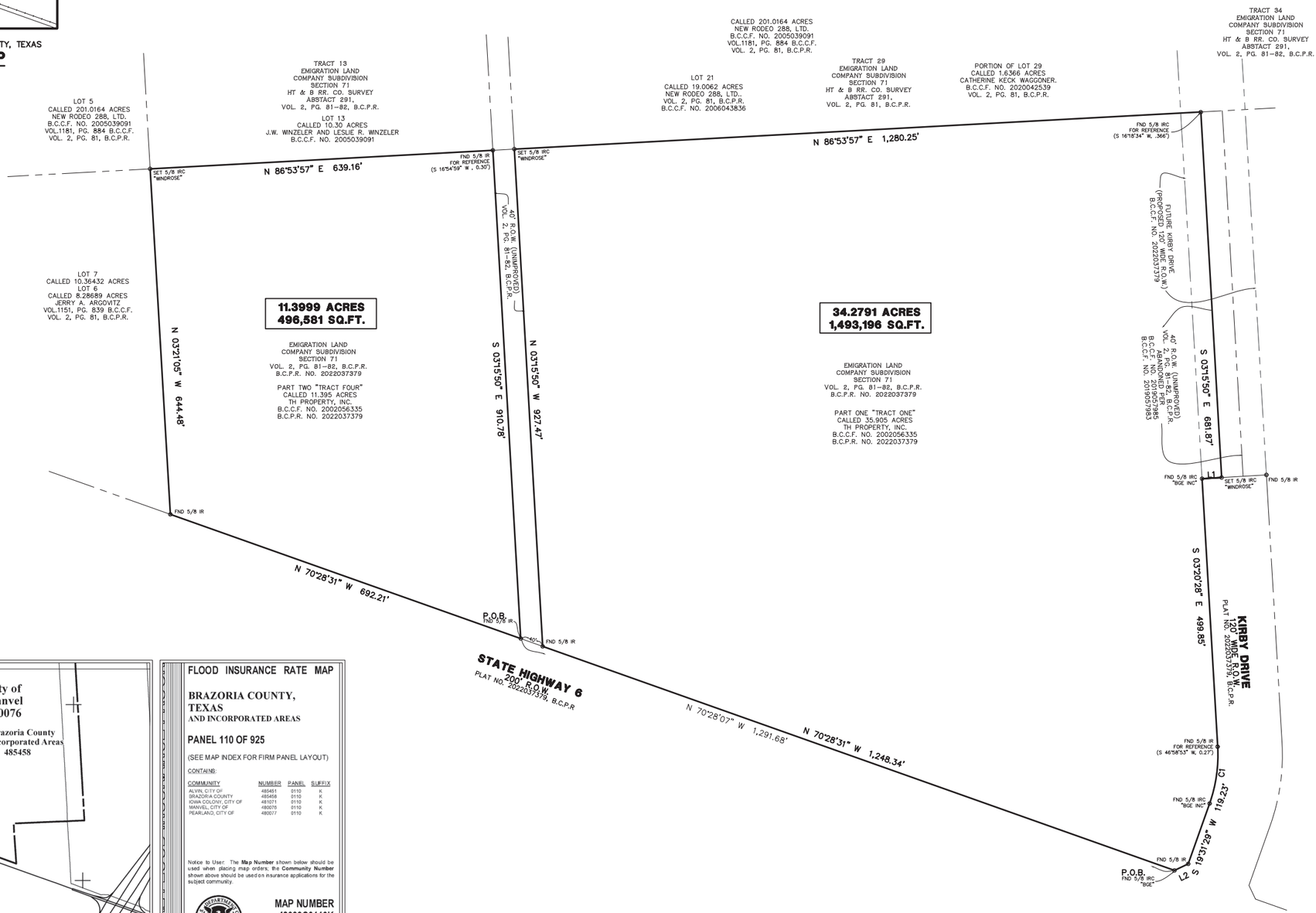
TEMPORARY BENCHMARK "A" IS A BOX CUT ON THE CONCRETE FRAME OF AN ELECTRIC PULL BOX LOCATED ON THE NORTH SIDE OF STATE HIGHWAY 6, APPROXIMATELY 1325 WEST OF ITS INTERSECTION WITH KIRBY DRIVE, AND ABOUT 42 FEET WEST OF THE CENTER OF AN ACCESS DRIVE.

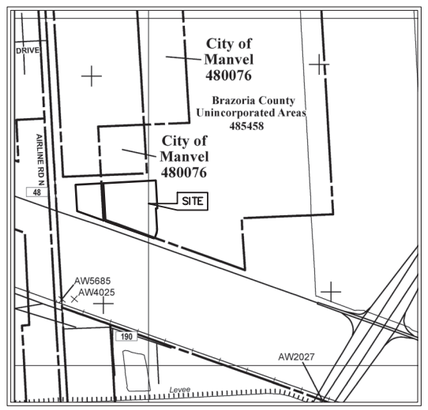
TEMPORARY BENCHMARK "B" — ELEVATION – 56.68'

TEMPORARY BENCHMARK "B" IS A BOX CUT ON A TYPE "C" STORM CURB INLET LOCATED ON THE NORTH SIDE OF STATE HIGHWAY 6, AT ITS INTERSECTION WITH KIRBY DRIVE AND ON THE EAST SIDE OF KIRBY DRIVE, APPROXIMATELY 27 FEET NORTHWEST OF A TRAFFIC SIGNAL POLE.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 86°39'32" W	36.57'
L2	S 64°31'29" W	28.29'

CURVE CHART					
CURVE	RADIUS	DELTA	LENGTH	BEARING	CHORD
C1	270.05'	22°51'57"	107.77'	S 08°05'31" W	107.06'





FLOOD INSURANCE RATE MAP

BRAZORIA COUNTY, TEXAS
AND INCORPORATED AREAS

PANEL 110 OF 925

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALVIN, CITY OF	485451	0110	K
BRAZORIA COUNTY	485458	0110	K
IOWA COLONY, CITY OF	481071	0110	K
MANVEL, CITY OF	480076	0110	K
PEARLAND, CITY OF	480077	0110	K

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48039C0110K

MAP REVISED
DECEMBER 30, 2020

SURVEYOR'S CERTIFICATION

TO: FIDELITY NATIONAL TITLE INSURANCE COMPANY
MEMORIAL ACQUISITIONS, LLC.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6a, 7a, 7b1, 7c, 8, 9, 11b, 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON OCTOBER 20, 2023.

LUCAS G. DAVIS
6599
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS

10/30/2023
DATE

LUCAS G. DAVIS
Registered Professional Land Surveyor
Texas Registration No. 6599

WINDROSE
LAND SURVEYING | PLATTING
5353 W SAM HOUSTON PKWY N, STE 150 | HOUSTON, TX 77041 | 713.458.2281
FIRM REGISTRATION NO. 10108800 | WINDROSESERVICES.COM

ALTA/NSPS LAND TITLE & TOPOGRAPHIC SURVEY
34.2791 ACRES OR 1,493,196 SQ. FT.
11.3999 ACRES OR 496,581 SQ. FT.
SITUATED IN THE
H. T. & B. RR. CO. SURVEY, SECTION 71
ABSTRACT NO. 291
BRAZORIA COUNTY, TEXAS

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FIELDED BY: RP	CHECKED BY: CL	JOB NO. 59121
DRAWN BY: AO	DATE: OCTOBER 2023	SHEET NO. 1 OF 10

WINDROSE
LAND SURVEYING | PLATTING

(PRELIMINARY)

DESCRIPTION OF
1.649 ACRES OR 71,831 SQ. FT.

BEING A TRACT OR PARCEL CONTAINING 1.649 ACRES OR 71,831 SQUARE FEET OF LAND, SITUATED IN THE H.T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, BEING PART OF AND OUT OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION COMPANY SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER VOLUME 2, PAGES 81-82 OF THE BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.), AND BEING ALL OF A CALLED 1.6366 ACRE TRACT OF LAND DESCRIBED IN DEED TO CATHERINE KECK WAGGONER AS RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2020042539, WITH SAID 1.649 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A 5/8 INCH IRON ROD STAMPED "BGE" FOUND IN THE WEST LINE OF RESTRICTED RESERVE "A", BLOCK 1 OF MANVEL TOWN CENTER DETENTION PONDS AND MUD FACILITIES, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER PLAT NO. 2023010263, B.C.P.R., SAME BEING THE MOST NORTHERLY NORTHEAST CORNER OF UNRESTRICTED RESERVE "B", BLOCK 1 OF MANVEL TOWN CENTER SECTION ONE, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER PLAT NO. 2022042761, B.C.P.R., AND SAME BEING THE SOUTHEAST CORNER OF LOT 40 OF SAID EMIGRATION LAND COMPANY SUBDIVISION AND THE SOUTHEAST CORNER OF A CALLED 52.788 ACRE TRACT OF LAND (TRACT 3) DESCRIBED TO KL LB BUY 5 LLC AS RECORDED UNDER B.C.C.F. NO. 2024046753, FROM WHICH A CAPPED 5/8 INCH IRON ROD STAMPED "BGE" FOUND FOR THE SOUTHWEST CORNER OF SAID RESTRICTED RESERVE "A", SAME BEING AN INTERIOR CORNER OF SAID UNRESTRICTED RESERVE "B" BEARS FOR REFERENCE, SOUTH 03 DEG. 20 MIN. 28 SEC. EAST - 64.88 FEET;

THENCE, NORTH 03 DEG. 26 MIN. 07 SEC. WEST, ALONG THE WEST LINE OF SAID RESTRICTED RESERVE "A", SAME BEING THE EAST LINE OF SAID LOT 40, A DISTANCE OF 676.26 FEET TO THE SOUTHEAST CORNER OF LOT 39 OF SAID EMIGRATION LAND COMPANY SUBDIVISION;

THENCE, SOUTH 86 DEG. 53 MIN. 57 SEC. WEST, ALONG THE COMMON LINE OF SAID LOTS 39 AND 40, AND WITH THE COMMON LINE OF LOTS 34 AND 35 OF SAID EMIGRATION LAND COMPANY SUBDIVISION, A DISTANCE OF 1,361.44 FEET TO THE COMMON EAST CORNER OF LOTS 29 AND 30 OF SAID EMIGRATION LAND COMPANY SUBDIVISION, SAME BEING THE SOUTHEAST CORNER OF SAID 1.6366 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT AND THE **POINT OF BEGINNING**;

THENCE, SOUTH 86 DEG. 53 MIN. 57 SEC. WEST, CONTINUING ALONG THE COMMON LINE OF SAID LOTS 29 AND 30 AND WITH THE SOUTH LINE OF SAID 1.6366 ACRE TRACT, A DISTANCE OF 269.03 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET MARKING THE SOUTHWEST CORNER OF SAID 1.6366 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT;

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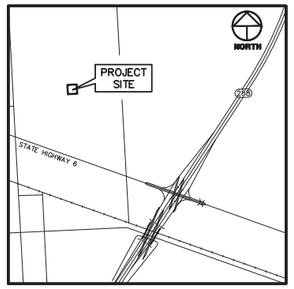
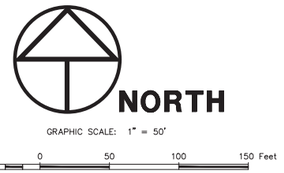


CITY OF MANVEL, BRAZORIA COUNTY, TEXAS

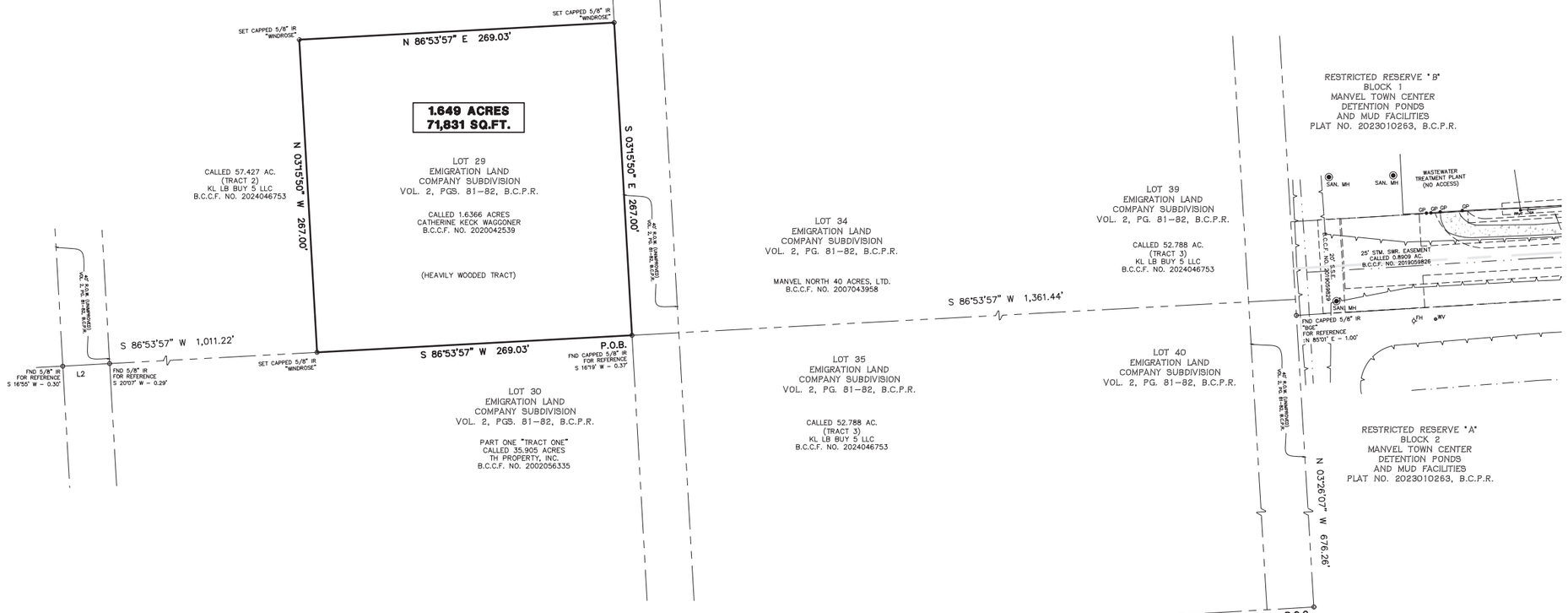
VICINITY MAP

SCALE: 1" = 2000

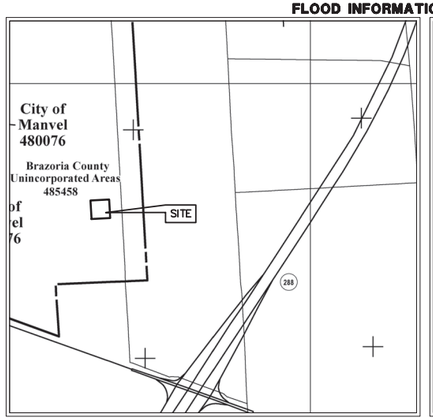


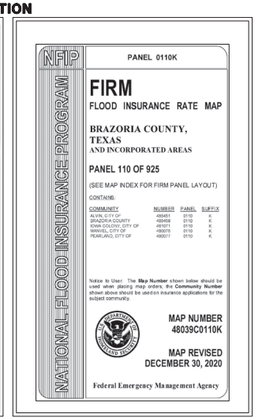
GRAPHIC SCALE: 1" = 50'

50 0 50 100 150 Feet



FLOOD INFORMATION





GENERAL NOTES

1. SURVEYOR DID NOT ABSTRACT SUBJECT PROPERTY. THIS SURVEY WAS PREPARED WITH INFORMATION CONTAINED IN TITLE COMMITMENT GF NO. SN2501255 OF OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY EFFECTIVE DATE OF MAY 30, 2025, ISSUED DATE OF JUNE 5, 2025, AND IS SUBJECT TO THE LIMITATIONS OF THAT COMMITMENT.
2. BEARINGS WERE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (4204). ALL DISTANCES SHOWN HEREON ARE SURFACE DISTANCES AND MAY BE BROUGHT TO GRID BY APPLYING THE FOLLOWING SCALE FACTOR: 0.3999868381.
3. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FLOOD INSURANCE RATE MAP (FIRM) FOR BRAZORIA COUNTY, TEXAS, MAP NO. 48039C0110K REVISED/DATED DECEMBER 20, 20202, THE SUBJECT TRACT APPEARS TO LIE WITHIN UNSHADED ZONE "X". THIS DETERMINATION WAS DONE BY GRAPHIC PLOTTING AND IS APPROXIMATE ONLY, AND HAS NOT BEEN FIELD VERIFIED. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF WINDROSE SURVEYING AND LAND SERVICES.
4. READILY VISIBLE IMPROVEMENTS AND UTILITIES WERE LOCATED WITH THIS SURVEY. NO SUBSURFACE PROBING, EXCAVATION OR EXPLORATION WAS PERFORMED BY WINDROSE SURVEYING AND LAND SERVICES.
5. ENVIRONMENTAL AND DRAINAGE ISSUES ARE BEYOND THE SCOPE OF THIS SURVEY.
6. THE SQUARE FOOTAGE TOTALS SHOWN HEREON ARE BASED ON THE MATHEMATICAL CLOSURE OF THE COURSES AND DISTANCES REFLECTED ON THE SURVEY. IT DOES NOT INCLUDE THE TOLERANCES THAT MAY BE PRESENT DUE TO THE POSITIONAL ACCURACY OF THE BOUNDARY MONUMENTATION.
7. FENCES SHOWN HEREON WITH DIMENSIONAL TIES ARE SHOWN WHERE THEY ARE PHYSICALLY MEASURED. THE FENCE MAY MEANDER BETWEEN MEASURED LOCATIONS.
8. THE WORD "CERTIFY" OR "CERTIFICATE" AS SHOWN AND USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE EXPRESSED OR IMPLIED.

SCHEDULE 'B' NOTES

10h. A PIPELINE EASEMENT GRANTED TO TRUNKLINE GAS COMPANY, BY INSTRUMENT RECORDED IN VOLUME 747, PAGE 283, B.C.D.R., AS AFFECTED BY ASSIGNMENT AND ASSUMPTION FILED OF RECORD UNDER B.C.C.F. NOS. 98 028304 AND 98 028307. (NOT WITHIN SUBJECT TRACT.)

INVESTIGATION INTO OIL, GAS, & MINERAL LEASES OR RIGHTS IS BEYOND THE SCOPE OF THIS SURVEY.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 03°20'28" E	64.88'
L2	S 86°53'57" W	40.00'

DESCRIPTION

BEING A TRACT OR PARCEL CONTAINING 1.649 ACRES OR 71,831 SQUARE FEET OF LAND, SITUATED IN THE H.T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, BEING PART OF AND OUT OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION COMPANY SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER VOLUME 2, PAGES 81–82 OF THE BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.), AND BEING ALL OF A CALLED 1.6366 ACRE TRACT OF LAND DESCRIBED IN DEED TO CATHERINE KECK WAGGONER AS RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2020042539, WITH SAID 1.649 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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SURVEYOR'S CERTIFICATION

TO: BCS ACQUISITIONS, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

I DO HEREBY CERTIFY TO THE ABOVE LISTED THAT THIS SURVEY WAS THIS DAY MADE ON THE GROUND AND WAS PERFORMED UNDER MY SUPERVISION. THAT THIS PLAT CORRECTLY REPRESENTS THE PROPERTY LEGALLY DESCRIBED HEREON, THAT THE FACTS FOUND AT THE TIME OF THIS SURVEY SHOW THE IMPROVEMENTS AND THAT THERE ARE NO VISIBLE ENCROACHMENTS APPARENT ON THE GROUND, EXCEPT AS SHOWN. THIS SURVEY SUBSTANTIALLY CONFORMS TO THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYORS STANDARDS AND SPECIFICATIONS FOR A CATEGORY 1A, CONDITION II SURVEY, TO THE BEST OF MY KNOWLEDGE.

FOR REVIEW ONLY
PRELIMINARY

THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

10–31–2025
DATE

DUSTIN C. KAISER, R.P.L.S.
Registered Professional Land Surveyor
Texas Registration No. 6918

WINDROSE
LAND SURVEYING | PLATTING
5353 W SAM HOUSTON PKWY N, STE 150 | HOUSTON, TX 77041 | 713.458.2281
FIRM REGISTRATION NO. 10108800 | WINDROSESERVICES.COM

REVISIONS

DATE	REASON	BY

LAND TITLE SURVEY OF
1.649 AC. / 71,831 SQ. FT., OUT OF
LOT 29, EMIGRATION LAND COMPANY SUBDIVISION
COMPANY SUBDIVISION, VOL. 2, PGS. 81-82, B.C.P.R.
SITUATED IN THE
H.T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291
BRAZORIA COUNTY, TEXAS

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FIELDED BY: CC	CHECKED BY: DK	JOB NO.	59121–1.6AC
DRAWN BY: CL	DATE: OCTOBER 2025	SHEET NO.	1 OF 1

Appendix 2
Approved Tree List

Plant List for Manvel Crossing

The following is a list of approved trees and shrubs. Alternative plants not specified in this list may be approved by the Director If determined that an alternative is substantially equal to or better than a specified material and the use will not violate any provision of the PUD.

Shade Trees:

Pecan	*Carya Illinoinensis*
Fringe Tree	*Chionanthus virginicus*
Japanese Blueberry	*Elaeocarpus decipiens*
Nellie R. Stevens Holly	*Ilex x attenuata 'Nellie R. Stevens'*
Savannah Holly	*Ilex attenuata 'Savannah'*
Southern Magnolia	*Magnolia grandiflora*
Loblolly Pine	*Pinus taeda*
Texas Pistache	*Pistacia texana*
Sycamore	*Platunus occidentalis'*
Bur Oak	*Quercus macrocarpa*
Chinkapin Oak	*Quercus muehlenbergii*
Monterey Oak	*Quercus polymorpha*
Water Oak	*Quercus nigra*
Live Oak	*Quercus virginiana*
Shumard Oak	*Quercus* shumardii
Bald Cypress	*Taxodium distichum*
Pond Cypress	*Taxodium ascendens*
Cedar Elm	*Ulmus crassifolia*
Bosque or Drake Elm	*Ulmus parvifolia 'Bosque' or 'Drake'*

Small & Ornamental Trees:

Texas Redbud	*Cercs canadensis 'var. texensis'*
European Fan Palm	*Chamaerops humilis*
Desert Willow	*Chilopsis linearis*
Smokebush	*Cotinus obovatus*
Loquat	*Eryobotrya japonica*
Foster Holly	*Ilex x attenuata 'Fosterii'*
Possumhaw Holly	*Ilex decidua*
Yaupon Holly	*Ilex vomitoria*
Columnar Junlper	*Juniporus spp.*
Crape Myrtle	*Lagerstroemia indica 'Basham's Pink', 'Natchez', 'Muskogee'*
Little Gem Magnolia	*Magnolia grandiflora 'Little Gem'*
Tree form (MT) Ligustrum	*Ligustrum japonicum*
Saucer Magnolia	*Magnolia x soulangeana*
Sweetbay Magnolia	*Magnolia virginiana*
Tree Wax Myrtle	*Myrica cerifica*
Mexican Plum	*Prunus mexicana*
Texas Sable Palm	*Sabal texana*
Texas Mountain Laurel	*Sophora secundiflora*
Windmill Palm	*Trachycarpus fortunei*
Chaste Tree	*Vitex agnus-castus*

Shrubs:

Abelia	*Abelia x grandiflora 'Prostrata', 'Sherwoodii', 'Edward Goucher'*
Dwarf Bottlebrush	*Callistemon citrinus 'Austraflora', 'Firebrand', 'Little John', 'Splendens'*
Japanese Cleyera	*Ternstroemia gymnanthera*
Sago Palm	*Cycas revoluta*
Umbrella Plant	*Cyperus alternifolius*
African/Butterfly Iris	*Dietes iridioides, Dietes bicolor*
Elaeagnus Ebbingel	*Elaeagnus macrophylla*
Silverberry	*Elaeagnus fruitlandii*
Pineapple Guava	*Feijoa sellowiana*
Red Yucca	*Hesperaloe parviflora*
Barbados Cherry	*Malpighia glabra*
Fatsia	*Fatsia japonica*
Dwarf Burford Holly	*Ilex cornuta 'Bufordii Nana'*
Chinese Holly	*Ilex cornuta 'Rotunda'*
Dwarf Yaupon	*Ilex vomitoria 'Nana'*
Louisiana Iris	*Iris louisiana*
Dwarf Crape Myrtle	*Lagerstroemia indica 'Nana'*
Ligustrum	*Ligustrum japonicum*
Waxleaf Glossy Privet	*Ligustrum lucidum*
Fringe Flower	*Loropetalum chinense*
Maiden Grass	*Miscanthus sinensis var.*
Dwarf Wax Myrtle	*Myrica pusilla*
Nandina	*Nandina domestica*
Purple Fountain Grass	*Pennisetum setaceum*
Indian Hawthorn	*Raphiolepis indica 'Clara'*
Shrub Rose	*Rosa spp. 'Knockout', 'The Fairy', 'Bonica', 'Carefree Wonder'*
Society Garlic	*Tulbaghia violacea*
Sweet Viburnum	*Viburnum spp.*
Bridal Wreath Spirea	*Spirea prunifolia*
Oleander	*Nerium oleander*
Dwarf Oleander	*Nerium oleander 'Petite Pink', 'Little Red'*
Plumbago	*Plumbago auriculata*
Dwarf Pomegranate	*Punica granatum 'Nana'*
Kumquat	*Fortunella spp.*
Muhly Grass	*Meuhlenbergia lindheimeri*
Dwarf Maiden Grass	*Miscanthus sinensis 'Morning Light'*

Evergreen Trees:

Japanese Blueberry	*Elaeocarpus decipiens*
Nellie R. Stevens Holly	*Ilex x 'Nellie R. Stevens'*
Savannah Holly	*Ilex x attenuata 'Savannah'*
Southern Magnolia	*Magnolia grandiflora*
Loblolly Pine	*Pinus taeda*
Live Oak	*Quercus virginiana*
European Fan Palm	*Chamaerops humilis*
Loquat	*Eriobotrya japonica*
Foster Holly	*Ilex x attenuata 'Fosteri'*
Yaupon Holly	*Ilex vomitória*
Columnar Juniper	*Juniperus spp.*
Little Gem Magnolia	*Magnolia grandiflora ' Little Gem'*
Tree Form Ligustrum	*Ligustrum japonicum*
Sweetbay Magnolia	*Magnolia virginiana*
Tree Wax Myrtle	*Morella cerifera*
Texas Sable Palm	*Sabal mexicana*
Texas Mountain Laurel	*Sophora secundiflora*
Windmill Palm	*Trachycarpus fortunei*

Appendix 3
Ordinance No. XXXX-XX (PUD Ordinance)

Appendix 4
Ordinance No. XXXX-XX
(Annexation Ordinance)

Manvel Crossing Planned Unit Development District

The City of Manvel

Ordinance #XXXXXX

Submitted: November 12, 2025

Prepared for:

BCS Capital Group

5847 San Felipe, Suite 2030

Houston, TX 77057

214.905.1505

EHRA

ENGINEERING THE FUTURE SINCE 1936

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Houston, Texas 77042

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TBPE No. F-726 | TBPLS No. 10092300

TABLE OF CONTENTS

TABLE OF CONTENTS **2**

APPENDICES 5

I. INTRODUCTION **6**

A. Summary 6

B. Purpose of the PUD 6

C. Project Location 6

D. Site History 6

E. Existing Zoning 7

F. Surrounding Land Use 7

G. Existing Site Conditions 7

II. DEVELOPMENT PLAN **8**

A. Purpose & Intent 8

B. Goals & Objectives 8

1. Ensure Quality Development 8

2. A Broader Deeper Tax Base and Employment Opportunities 8

3. Guide and Manage Development Along Highway 6 9

4. Providing a Wider Range of Community Amenities and Commercial Services 9

C. Transportation 9

1. Existing Access 9
2. Future Access 9
3. Site Internal Circulation Plan 10
D. Infrastructure 11
1. Water & Wastewater 11
2. Storm Drainage & Detention System 11
3. Other Utilities 12
III. DEVELOPMENT REGULATIONS 12
A. Purpose & Intent 12
B. General Provisions 12
1. Applicability 12
2. Existing Utilities 13
C. Development Standards 13
1. Permitted Land Use Table 14
2. Automotive Uses 16
3. Restaurant Uses 16
4. Non-Permitted Land Use Table 16
5. Special Events 17
6. Additional Uses 17
7. Site Standards 17
8. Architectural Standards: 18
9. Parking 19

10. Sidewalks 21

11. Landscaping 21

12. Signage 23

13. Lighting 25

14. Design Criteria Manual 26

15. Definitions 26

IV. GENERAL ADMINISTRATION & AMENDMENTS 37

A. Purpose 37

1. Changes to the Zoning Ordinance 37

2. Variances from the Zoning Ordinance 37

3. Variances from the Design Criteria Manual 37

B. Interpretation 38

C. Appeal to the Zoning Board of Adjustments 38

D. Substantial Change 38

E. Fees 38

EXHIBITS

Exhibit 1 Vicinity Map

Exhibit 2 Highway 6 Overlay District

Exhibit 3 Internal Circulation Plan and Proposed Right-of-ways

Exhibit 4 Preliminary Drainage and Detention Plan

Exhibit 5 Approximate Sign Locations

Exhibit 6 Multi-tenant Pylon Sign Elevation

Exhibit 7 Single-tenant Monument Sign Elevation

TABLES

Land Use	26
Shared Parking Schedule	36
Zoning and Subdivision Variances	46
Design Criteria Manual Variances	48

APPENDICES

Site Survey

Approved Tree List

PUD Ordinance

Annexation Ordinance

I. INTRODUCTION

A. Summary

The Planned Unit Development District (PUD) establishes comprehensive guidance and regulations for Manvel Crossing Commercial Development. Manvel Crossing is comprised of approximately 49 acres of privately owned land. The entirety of the property currently lies in the Extraterritorial Jurisdiction (ETJ) of the City of Manvel but is intended to be annexed into the City.

The PUD will offer flexibility to encourage the most appropriate uses and amenities, providing access to more diversified options for citizens and visitors alike. The PUD will achieve this by providing a means by which development may occur in an orderly and responsible manner and establishing guidelines that ensure quality development and specifically address the goals of both the city and the developer.

B. Purpose of the PUD

The City of Manvel is growing at an exponential rate. The Census Bureau predicts that by the end of 2025, there will be double the number of residents documented in the 2020 Census. With such a fast-paced rate of growth, commercial development is pivotal for the development to maintain its independence without needing to travel out of town for goods or services. This PUD will allow the Manvel Crossing site to develop in a way that will achieve this goal.

C. Project Location

The Project is located generally east of Old Airline Road (County Road 48), north and adjacent to State Highway 6, and abutting Kirby Drive to the east. The property is currently wholly located in Brazoria County and will be annexed into the City of Manvel.

D. Site History

Based on a review of historical information, the site consisted of undeveloped and/or agricultural land starting around 1938 through the 1960's. In the 1960's an on-site pipeline easement was established, and throughout this time up to the 1980's, the land appears to have been utilized for rice farming. The site has remained undeveloped to present day.

E. Existing Zoning

The entirety of the site is located in the ETJ of the City of Manvel and therefore has no zoning district classification. Upon annexation and approval of the PUD, the site will be assigned a base zoning designation of Light Commercial with a PUD overlay. ~~will be assigned~~. In addition to the applicable base zoning classification and PUD, the requirements of the Highway 6 Overlay District will apply to approximately 33 acres of the site along Highway 6 frontage at a depth of 700 feet, subject only to those requirements that are not superseded by the PUD. Should the PUD expire, the land will revert back to the Light Commercial zoning district and the Highway 6 Overlay District. ~~In addition to the base zone, the Highway 6 Overlay District will apply to a large portion, approximately 33 acres, of the site.~~

F. Surrounding Land Use

~~The majority of properties surrounding the project are undeveloped, or agricultural in nature. To the east of the site is Manvel Town Center, with a mixture of commercial uses, to the south, State Highway 6 is abutting the property, and generally around the undeveloped areas and across the highway there are several commercial developments. This indicates that the location of the proposed development aligns with the surrounding land uses. There are also multiple single-family projects in development north of the site.~~ The property is situated along State Highway 6, which forms its southern boundary, and is surrounded by a mix of developed properties and agricultural or undeveloped land planned for future single-family communities. To the east is Manvel Town Center, which contains a mix of commercial uses, and to the north several single-family residential communities—including Rodeo Palms, Yanni Palms, Foxtail Palms, and Primrose—are under active development.

G. Existing Site Conditions

There are no major natural features on the site, however, there is a clearing where agricultural activity took place on the western portion of the property. A thirty (30') foot pipeline easement starts at the west property line and turns to the south into Highway 6. There appear to be a small number of manmade drainage canals close to Kirby Drive, but aside from this, the property is generally flat with little topography. A Phase One environmental site assessment was conducted for the entire property, and no significant environmental conditions or endangered species were found.

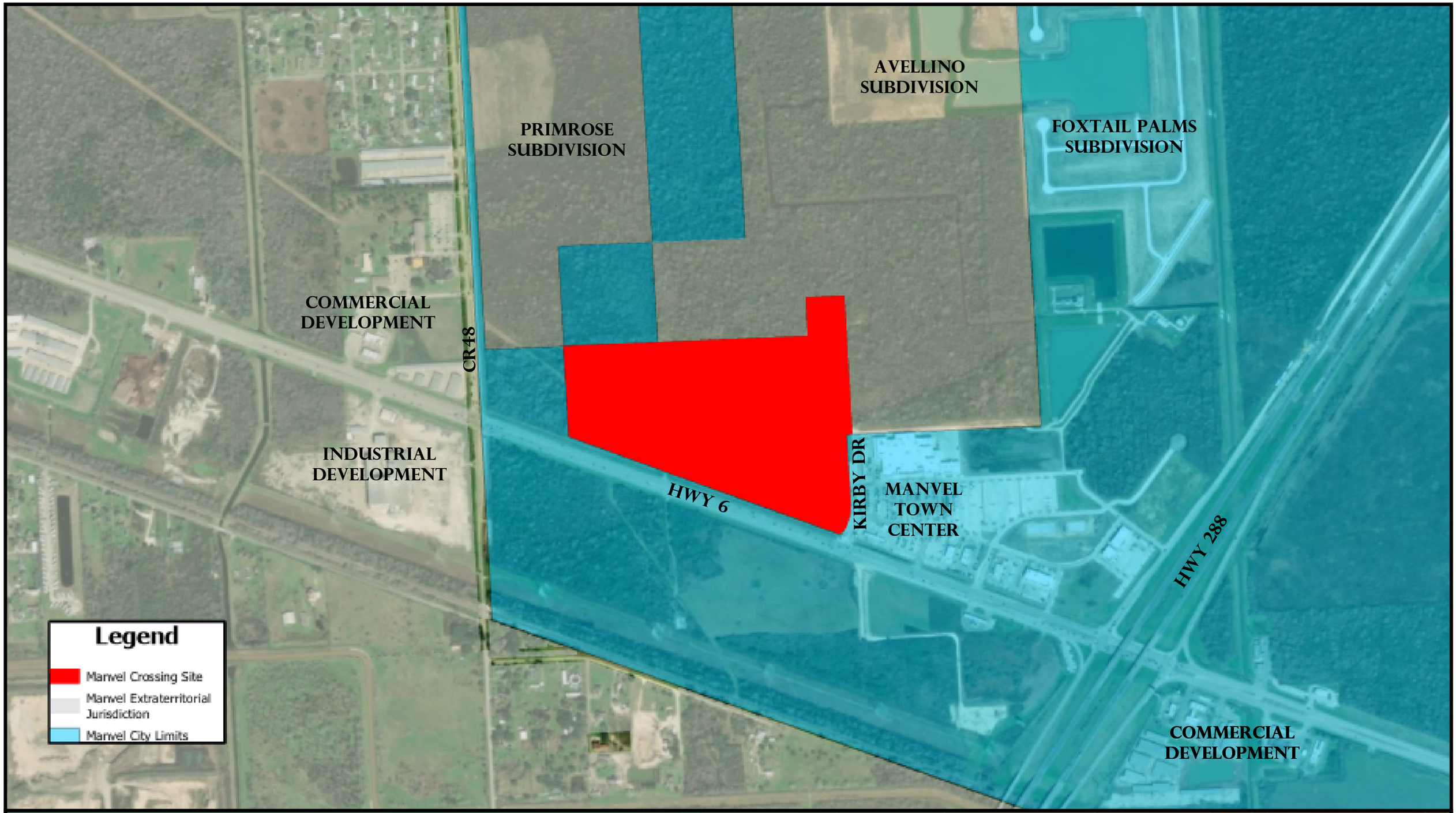

Exhibit 1 - Manvel Crossing Vicinity Map

A ± 49 acre tract located in Brazoria County, Texas.

November, 2025

0 200 300 600

SCALE: 1"=600'

NORTH

EHRA JOB NO.
231-085-00

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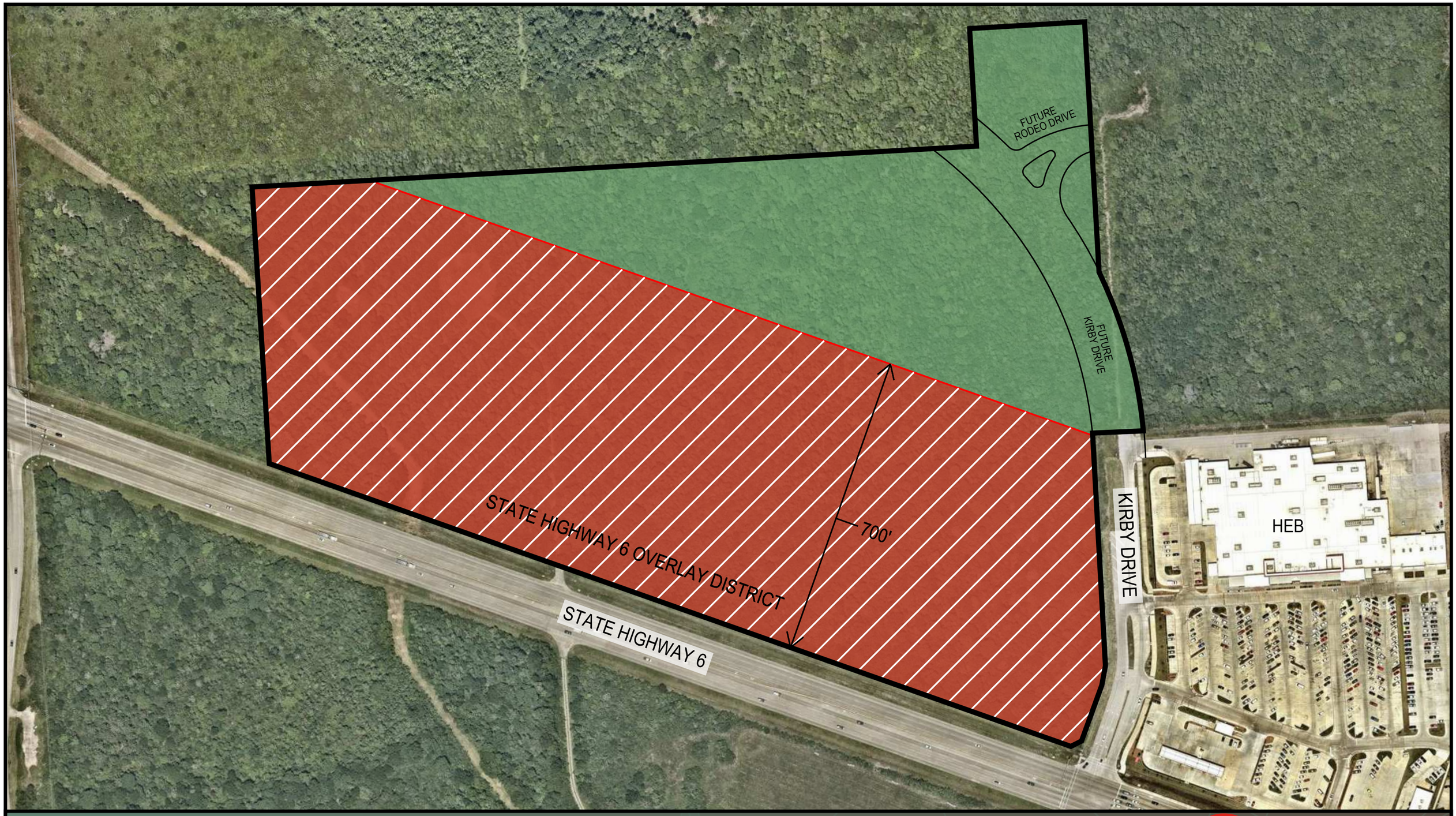

Exhibit 2 - State Highway 6 Overlay District

October 2025

0 50' 100' 200'

SCALE: 1"=200'
TRUE SCALE AT 11" x 17"

NORTH

EHRA JOB NO.
231-085-00

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II. DEVELOPMENT PLAN

A. Purpose & Intent

The purpose of the Development Plan is to clarify planning considerations within the plan area and guide the implementation of the vision for the development in addition to establishing a framework for Manvel Crossing by establishing standards that address the many aspects of a successful commercial development that not only responsibly achieves the vision of Manvel Crossing, but also enhances the City of Manvel and supports its exceedingly fast growth.

This section contains a description of the goals, objectives, and policies of the PUD combined with various plan components intended to guide the design principles of the development.

B. Goals & Objectives

The primary goal of the Manvel Crossing Planned Unit Development District is to create a master planned commercial development that will assist the City in implementing its vision by annexing into the City and increasing the area's tax base which in turn will fund public services and improvements. Additionally, the development will provide more access to goods and resources.

In order to achieve this goal, key objectives have been established to guide development and provide direction for the overall vision of the community. These objectives are consistent with the vision statement contained in the 2045 Strategic Plan adopted by the City and are as follows:

1. Ensure Quality Development

Manvel Crossing will ensure the quality of development through the establishment of design guidelines that regulate architectural standards, robust landscaping, attractive signage, adequate parking, and other common elements of the development.

2. A Broader Deeper Tax Base and Employment Opportunities

The addition of Manvel Crossing to the City of Manvel will not only increase the tax-base, which in turn will provide funding for needed infrastructure improvements, but will also provide employment opportunities for the citizens of Manvel.

3. Guide and Manage Development Along Highway 6

The location of the development is west of Highway 288 which acts as a boundary line for transition into the country feel of the City of Manvel. This location is best suited for commercial development, that is easily accessible by those further into town. Being located at the edge of the city limits and surrounded by other commercial uses, it is an ideal location for commercial development that will support the residential growth happening in the city.

4. Providing a Wider Range of Community Amenities and Commercial Services

This development is designed to bring a broader range of high-quality restaurants and commercial services to Manvel Crossing. ~~With the extensive land use list provided by this PUD, there will be an increase in options for the visitors to the Manvel Crossing development.~~ More shopping means more tax revenue, which can in turn be used to improve local amenities for the citizens to enjoy.

C. Transportation

Manvel Crossing will establish a transportation network consisting of internal circulation and other forms of transportation that will comply with the City's Major Thoroughfare Plan (the Transportation Corridor Plan contained within the adopted Comprehensive Plan) adopted by City Council August 2, 2021, and meet the mobility needs of the community along Highway 6, and to the north and surrounding lands as they develop.

This proposed transportation network is in compliance with the City's Major Thoroughfare Plan as amended on August 2, 2021, and there are no anticipated issues with the ongoing update efforts.

1. Existing Access

Manvel Crossing currently has access directly from Highway 6 and from Kirby Drive to the east. In addition, Old Airline Road (County Road 48) is in close proximity to the site, which gives direct north south access to Pearland. Highway 288 is to the east for direct access to the City of Houston and the Gulf Coast.

2. Future Access

With the construction of the eventual continuation of Kirby Drive to the north, and its planned connection to Rodeo Drive, Manvel Crossing will become an easily accessible shopping area for the surrounding neighborhoods. This planned connectivity will

lessen the congestion from the surrounding area and improve the local street network. There are no anticipated issues with ongoing update efforts.

Rodeo Drive shall be classified as a local street and constructed within a 60-foot right-of-way. This section of Rodeo Drive will be limited to the property within the PUD and will serve as. It will be a tertiary entry point ~~for~~to the Foxtail Palms single-family development. The roadway will consist of a 28-foot-wide pavement section~~, accompanied by~~ with 5-foot sidewalks on both sides to support pedestrian connectivity and accessibility.

Kirby Drive shall be classified as a Parkway and constructed within a 120-foot right-of-way. This section of Kirby Drive, limited to the property within the PUD, will serve as the primary access point to the eastern portion of the site. If ~~It will be one of the main access points to the north portion of the site. Should~~ City Council take action to reduce the required right-of-way width for Kirby Drive through~~via~~ an update to the City's Major Thoroughfare Plan, the reduced width ~~requirement of the Major Thoroughfare Plan~~ shall supersede the requirements of this PUD.

The intersection of Kirby Drive and Rodeo Drive shall be designed and constructed in accordance with the recommendations outlined in the Traffic Impact Analysis (TIA), which has been submitted to and subject to approval by the City of Manvel. Dedication of both sections of road for property within the PUD shall occur ~~will be~~ with the recording of the final plat.

3. Site Internal Circulation Plan

Internal circulation throughout the Manvel Crossing development will consist of an interior east/west oriented road located in a ~~public~~ parallel access easement that will grant access to all the businesses, including the proposed businesses at the rear of the site. There are four (4) possible entrances from Highway 6 per TxDOT spacing requirements, however only three (3) are proposed per the TIA. If a fourth access point from Highway 6 is approved by TxDOT, a fourth access point shall be permitted. Additionally, there are three (3) entrances to a currently proposed from Kirby Drive. Additional access points from Kirby Drive may be permitted if allowed per City ordinance.

The City agrees that the PUD may provide "satisfactory access" to certain parcels that may not have physical frontage on an abutting public road from a twenty-five (25) foot wide cross-access easement(s) which will provide for public access and be noted on a subdivision plat after being filed for record. The subdivision plat will show the recorded cross access easement(s) and/or notate the cross-access easement agreement on the face of the plat. ~~Public access easements (PAE) are not required for~~

~~parcels less than 300 feet from the right-of-way of Highway 6 or Highway 288. Should a PAE be designated, the minimum width will be twenty-five (25) feet. No parking/loading is allowed within PAEs.~~

Additionally, there is an existing forty (40) foot right-of-way dividing the western 1/3 of the site that runs north/south and provides access to the out parcel to the north. This right-of-way will be widened and improved, if required by the City, to meet the ~~requirements~~ standards of the City of Manvel Design Criteria Manual and will ~~also~~ continue to provide access through a portion of the site; however, the right-of-way may be rerouted or abandoned in the future with further action by City Council. Should City Council proceed with this option, this PUD shall not be required to be amended.

D. Infrastructure

1. Water & Wastewater

The water distribution system within the Manvel Crossing development will be designed to meet or exceed applicable requirements. Once annexed into the city limits, the site will be served by city water and wastewater services.

~~Impact fees shall be assessed and collected at the time of the building permit issuance or utility connection approval, whichever occurs first. The assessment and collection of impact fees shall be limited to the building permit or utility connection for which application is being made.~~

2. Storm Drainage & Detention System

The drainage plan and storm sewer system will be designed in accordance with City of Manvel and Brazoria County Drainage District #4 regulations. The storm water runoff within the Manvel Crossing site will be routed to storm sewer lines that will outfall into detention ponds located at the rear of the site. The internal detention ponds will provide storage volume for the increased storm water runoff resulting from development of the property. The storm water from the detention ponds will outfall in a controlled fashion to an offsite wet drainage channel and tie into storm sewers to the east.

The drainage collection systems will be designed to convey the 100-year sheet flow either in the collection system near the outfall point or by sheet flow drainage through the curb and gutter streets with maximum ponding per agency requirements. The

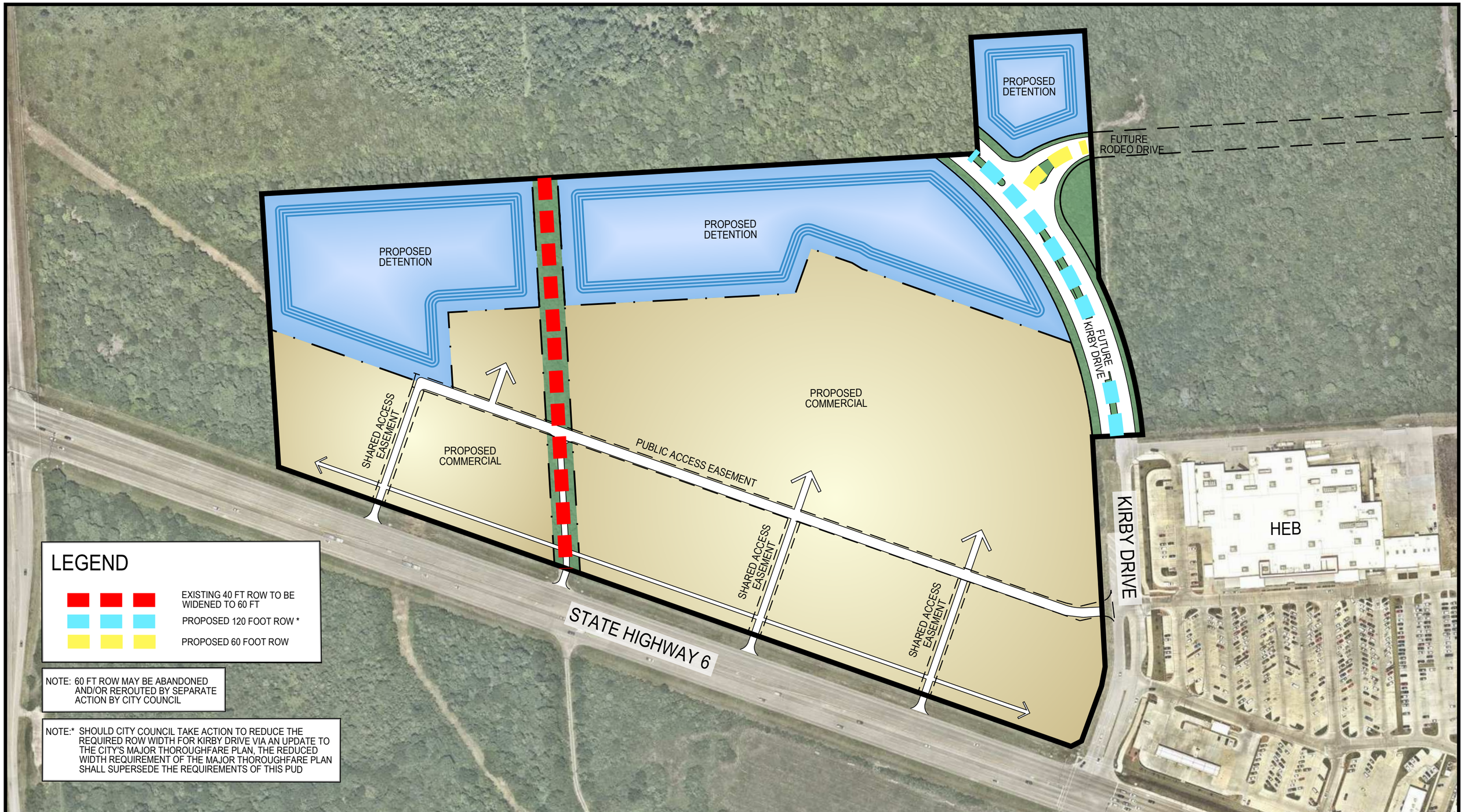

Exhibit 3 - Internal Circulation Plan

October 2025

0 50' 100' 200'

SCALE: 1"=200'

TRUE SCALE AT 11" x 17"

NORTH

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231-085-00

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Exhibit 4 - Preliminary Drainage Plan

October 2025

0 125 250

SCALE: 1"=250

TRUE SCALE AT 11" x 17"

NORTH

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proposed internal detention pond system will be sized to contain the excess run-off resulting from a 24-hour 100-year frequency rainfall event for developed and undeveloped conditions with a minimum freeboard of one (1') foot before out falling into the receiving stream. The storm sewer system will consist of reinforced concrete pipe and box culverts sized per agency requirements. Concrete channelization will be minimized.

Detention facilities intended to serve Manvel Crossing may be ~~temporarily~~ located off-site~~as the site develops~~. Any ~~temporary~~ off-site detention capacity shall be ~~filed~~ recorded~~at~~ with the County and provided to the City of Manvel ~~with~~ so long as the off-site property owner~~'s~~ grants their written acknowledgement and approval.

Should detention footprints be reduced in size or otherwise create additional usable acreage, such acreage may be developed for commercial purposes and shall be incorporated into the overall PUD uses and requirements.

3. Other Utilities

Electricity, natural gas, telecommunications, and cable services will be provided to the Manvel Crossing site through agreements with private or public (CenterPoint Energy Gas and Power) utility companies as development occurs. When determined by the utility provider as physically possible, all new three-phase (primary) overhead power lines will be located at the rear of new developed property.

III. DEVELOPMENT REGULATIONS

A. Purpose & Intent

The purpose of the development regulations is to serve as the primary means of achieving the goals and objectives of the Development Plan.

They are designed to establish clear minimum development standards, promote productive and streamlined processes that facilitate the timely delivery of tax-generating development, and ~~while providing~~ provide a reasonable ~~amount~~ degree of flexibility ~~in order~~ to accommodate future needs.

B. General Provisions

1. Applicability

The regulations contained herein shall apply to all property located within the boundaries of the Manvel Crossing PUD. Appendix 1 contains the legal description of the

property.

All construction and development within the PUD area shall comply with applicable provisions of the City of Manvel codes and ordinances as they exist on the date of adoption of this PUD and the laws of the State of Texas for 3 (three) years from the

acceptance of this PUD, except as modified within this PUD. Applicable International Code Council Codes adopted by the City of Manvel shall apply as amended from time to time.

If specific development standards are not established or if an issue, condition, or situation arises or occurs that is not clearly addressed or understandable in the PUD, then those regulations and standards of the City of Manvel codes and ordinances that are applicable for the most similar issue, condition, or situation shall apply as determined by the City's Zoning Official. Appeal of any determination regarding applicability may be made to the Zoning Board of Adjustments.

This PUD may be amended by the same procedure as it was adopted, by ordinance. Each amendment shall include all sections or portions of the PUD that are affected by the change.

2. Existing Utilities

Existing utilities and all uses allowed by existing easements shall continue to be in all designations within the PUD.

~~**3. Design Guidelines**~~

~~Design guidelines address site and building design within the development. The purpose of these guidelines is to preserve the character of Manvel Crossing by establishing high quality design standards for development. Copies of these guidelines will be provided to City Staff prior to the submittal of the first permit request.~~

C. Development Standards

The development standards outlined herein are intended to guide a high-quality, thoughtfully planned project that delivers meaningful value to the community. These standards set clear expectations, support efficient implementation, and ensure that the project is positioned for long-term success. ~~The following standards are established by this PUD to promote orderly and attractive development in Manvel Crossing. The following tables list permitted uses and non-permitted uses as part of this development.~~

The following tables list permitted uses and non-permitted uses as part of this development. The uses are classified in the North American Industry Classification System (NAICS) format, which is a number code assigned by the NAICS Association to simplify the process of identifying what category a specific land use falls under.

1. Permitted Land Use Table

	NAICS Code	Classification
1	5412	Accounting, tax preparation, bookkeeping and payroll services
2	541611	Administrative Support Services
3	541810	Advertising agency
4	621493	Ambulatory Health Care Services
5	459510	Antique store
6	459920	Art gallery; Studio (art, music or photo)
7	459999	Arts and crafts store
8	811112~~2~~1	Automobile repair and maintenance - *Subject to Section 2
9	441330	Automotive part and accessory retailers - *Subject to Section 2
10	441320	Automotive Tire Dealers - *Subject to Section 2
11	311811	Bakery (Retail)
12	522110	Banks and financial institutions, including drive-through and outdoor ATM
13	812111	Barber or beauty shop
14	459210	Bookstore; Record and tape store
15	444	Building material, garden equipment, and supplies dealers
16	722514	Cafeteria
17	722320	Catering
18	449210	Cellular phone sales and repair store, Computer sales and repair store; Home appliance store
19	624410	Child care facility
20	621111	Clinic
21	458110	Clothing store (no re-used clothing)
22	561440	Collection agency
23	711120	Dance studio
24	492110	Delivery service
25	621210	Dental clinic
26	455110	Department store, Personal or Household Goods Store
27	541340	Drafting service
28	722410	Drinking Places (Alcoholic Beverages), Taverns - *Subject to Section 4
29	456110	Pharmacy, Drug store, with or without liquor or beer and wine sales
30	812320	Dry cleaning storefront, but not dry-cleaning plant
31	611710	Educational Support Services
32	811412	Electronic sales and repair store
33	713940	Fitness and Recreational Sports Centers (including martial arts, dance studios, ballet, etc.)

34	459310	Florist shop
35	445298	Food and Beverage Store
36	722511	Full-service restaurant - *Subject to Section 3
37	449110	Furniture store
38	455219	General Merchandise Retailers
39	459420	Gift shop
40	445110	Grocery store
41	444140	Hardware store
42	444110	Home improvement store
43	423220	House wares and linens store
44	451120	Hobby, Toy, and Game Store
45	531130	Lessor of mini-warehouse and self-storage (climate controlled only)
46	561622	Locksmith
~~46~~	~~561730~~	~~Maintenance facility~~
47	622110	Medical and healthcare services
48	423450	Medical supply store
49	312120	Micro-Brewery, Restaurant with micro-brewery - *Subject to Section 4
50	926130	Minor utilities
51	522310	Mortgage company
52	721110	Motels and hotels
53	512131	Motion picture theaters and dinner theaters
~~54~~	~~336390~~	~~Motor Vehicles and Parts~~
54	459140	Musical instrument store
55	444240	Nursery, Garden center, and farm supply retailers
56	459410	Office supply store
57	621320	Optician or optometrist
58	491110	Postal Service
59	531120	Professional office
60	92	Public facilities
61	922120	Public safety site
62	334220	Radio sales and repair
63	516110	Radio studio (excluding tower)
64	531210	Real Estate
65	722513	Restaurants (limited service and quick service), with or without drive-thru.
66	455211	Retail warehouse clubs and supercenters
67	541990	Scientific and Technical Services
68	448210	Shoe store and repair shop
69	459110	Sporting goods store, Gun Shop
70	315250	Tailor

71	541191	Title Abstract and Settlement Offices
72	459120	Toy store
73	561510	Travel agency
74	541940	Veterinary Services
75	713120	Video arcade

~~2. Restaurants and fast food establishments of the same brand name will not be permitted within Manvel Crossing if the business is proposed within one-mile of the same brand name. Additionally, auto related uses may not be constructed within five-hundred (500) feet of existing matching uses along the north side of Highway 6.~~

2. **Automotive Uses** - Only one (1) nationally or regionally recognized automotive-oriented use shall be permitted for each of the following categories:

   - **811111 Automotive Service/Repair:** Includes, but is not limited to, Take 5, Valvoline, Firestone, Jiffy Lube, or other similar nationally recognized vehicle maintenance or repair concepts.
   - **441330 Automotive Tire Dealer:** Includes, but is not limited to, Discount Tire, Mavis, NTB, or other similar nationally recognized tire retail concepts primarily engaged in the sale of tires and related accessories.
   - **441330 Automotive Parts/Accessories:** Includes, but is not limited to, Advance Auto Parts, AutoZone, O'Reilly Auto Parts, NAPA Auto Parts, or other similar nationally recognized retail concepts primarily engaged in the sale of automotive parts and accessories.

     All approved automotive-related uses shall be restricted to locations within the westernmost 800' of Highway 6 frontage.

3. **Restaurant Uses** – Specific restaurant concepts/franchises shall not locate or operate a site within Manvel Crossing if they own, lease, or control another site within a two-mile radius of the Project.

4. **Permitted Uses Subject to Specific Use Permit** – the uses listed in the Permitted Use table- specifically Drinking Places, Bars, Taverns, Micro-Breweries- are subject to Specific Use Permits to be reviewed and approved by city staff and city council.

~~3.~~5. Non-Permitted Land Use Table

1. 455219 - Auction only	9. Gas Stations with Convenience Stores
2. 493190 - Automobile repair, major, with outside work or storage	10. 522299 - Pawn shop
3. 238990 - Billboards	11. Sexually oriented businesses
4. 811192 – Car Wash	12. 454390 - Swap meet

5. 812220 - Cemeteries	13. 812199 - Tattoo shops
6. 512132 - Drive-in theater	14. 115210-17 - Taxidermist
7. 424910 - Feed store	15. 811121 - Upholstery only
8. 812910 - Kennel (Commercial)	16. 459991 - Vape shop
	17. 336390 – Car Dealerships

~~4.~~6. Special Events

Temporary events shall follow the requirements of Article XII. – Special Events, of the City of Manvel Code of Ordinances.

~~5.~~7. Additional Uses

In the event that a proposed use has not specifically been listed or determined to be similar and compatible to a permitted use in a particular land use category within the PUD, an amendment to the PUD will be necessary to add the unlisted use.

~~6.~~8. Site Standards

Minimum Setbacks:

Along Major Roads:

- Front: 25 feet
- Rear: 15 feet
- Side: 15 feet

Along collector or internal streets/drives:

- Front: 10 feet
- Side: 10 feet
- Rear: 10 feet
- Corner Side: 10 feet

Adjacent to Residential and undeveloped land:

- Side: 10 feet
- Rear: 10 feet

An additional one (1) foot setback per ten (10) feet in height above sixty (60) feet is required from residential zoning districts.

Architectural features may encroach into the setback area a maximum of three (3) feet.

Fences constructed on the site shall comply with Sec. 77-43. - Fences, of the City of Manvel Code of Ordinances.

~~7.~~9. Architectural Standards:

1. Maximum Building Height:

Pad Sites:

- Maximum 35 feet

Commercial Anchor Tenants:

- Maximum 60 feet

Commercial Mixed-use (Office/Medical/Retail):

- Maximum 150 feet

2. Building Materials:

To encourage architectural flexibility and meaningful façade articulation, all commercial buildings shall incorporate a variety of high-quality exterior materials. Buildings must include a minimum of 75% masonry on front and side façades and 50% masonry on rear and service façades, exclusive of windows, doors, and other transparent materials. The following materials shall qualify as masonry for the purposes of this requirement:~~All commercial buildings must be composed of a minimum of 75% on fronts and sides and 50% on rear and service facades masonry, exclusive of windows, doors, or other transparent materials. The following materials shall meet the masonry requirement:~~

- Stone
- Brick
- Concrete
- Hollow clay tile
- Glass block
- True Stucco
- Insulated Concrete Forms

Non-masonry materials may not exceed ~~40%~~ the remainder of the building's elevation.

Additional permitted non-masonry materials (with proof of compliance to ICC and Texas Windstorm standards):

- Cementitious fiber
- EIFS
- Architectural metal panels

Nationally or regionally recognized chains may incorporate company-specific materials—such as metal roofing or siding and wood siding—that would not

ordinarily be permitted under the standard ordinance or PUD, provided such materials are approved by the Zoning Official.~~Nationally or regionally recognized chains may use company specific materials (e.g., metal roofing/siding, wood siding), which are not typically allowed under standard ordinance.~~

Secondary power connections for new development from existing power poles located within the right-of-way of State Highway 6 will be placed underground.

Electrical panel boxes will not be located on a building façade facing State Highway 6 and be located on the rear of the buildings.

3. *Parking Requirement*: Shall comply with the parking standards established in this section.

~~*4. Additional Requirements*: Telecommunication towers may not exceed eighty (80) feet in height and shall be set back from property lines a distance equal to or greater than the height of the tower.~~

~~*5.*~~*4. Open Storage:* Open storage is permitted within the parking lot for temporary seasonal sales or temporary promotional events. Additionally, NAICS code 4441 – Building Material and Supplies Dealers and 455211 – Superstores or Big Box Retailers, located in buildings with 80,000 square feet of gross leasable floor area or more are permitted to use off-street parking spaces ~~provided to comply with~~required by the City of Manvel's parking ~~requirements~~ standards and PUD for permanent, long-term, or seasonal storage of inventory, equipment, vehicles, or other business-related property, provided that required parking is preserved and the use does not result in cross-parking impacts or deficiencies. Such storage shall not ~~to~~ exceed twelve percent (12%) of all parking spaces provided for that building. No permits are required for temporary storage.

~~8.~~10. Parking

Parking within the Manvel Crossing site shall be provided according to Sec. 77-45. of The City of Manvel Zoning Ordinance, with the addition of a reduction in the required number of parking spaces from 5.0 spaces to 4.0 spaces per 1,000 square feet of gross leasable floor area for NAICS code 4441 – Building Material and Supplies Dealers, ~~any building with 80,000 square feet or more~~, plus an additional 2.0 parking spaces for each 1,000 square feet of the floor area designated as an outdoor garden center.

The City's ~~Designated Official~~PD&Z shall determine the minimum number of parking spaces required for any use not specified. Appeals to the ~~Official's~~ interpretation may be made to the Zoning Board of Adjustments within thirty (30) days of the date of the determination.

~~50% of the parking spaces provided for the Manvel Crossing development will be required to be ten (10) feet in width by twenty (20) feet in depth, while the remainder shall be nine (9) feet in width by nineteen (19) feet in depth. ADA (American Disabilities Act) required spaces shall meet Texas Accessibility Standards.~~

Shared parking should be encouraged where appropriate. Adjustment of the minimum number of parking spaces required to serve a combination of occupancies shall be determined according to the following formula:

1. Determine the parking requirement for each occupancy as though it were a separate use;
2. Multiply each amount by the corresponding percentage for each applicable time period shown in the following schedule:

	Weekdays			Weekends		
	8am-5pm	6pm-12am	12am-6am	8am-5pm	6pm-12am	12am-6am
Commercial	90%	80%	5%	100%	70%	5%
Food & Beverage	70%	100%	10%	70%	100%	20%
Entertainment	40%	80%	10%	80%	100%	10%
Industrial & Manufacturing	100%	20%	5%	5%	5%	5%
Institutional	100%	20%	5%	10%	10%	5%
Convention	100%	100%	5%	100%	100%	5%
Performing Arts	40%	80%	10%	80%	100%	10%
Religious	10%	5%	5%	100%	50%	5%
Lodging	70%	100%	100%	70%	100%	100%
Residential	60%	100%	100%	80%	100%	100%

(Table from SmartCode V10.0, created by Center for Applied Transect Studies)

3. Calculate the column total for each time period;

4. The column with the highest value shall be the parking requirement.

The intent of shared parking is to allow uses that are more intense at certain times of the day to utilize an adjacent use's available parking at a time in the day that their need for parking is less intense. The result is a reduction in the need to park farther away when unexpected situations arise, in turn reducing potential for pedestrian harm.

~~9.~~11. Sidewalks

Sidewalks shall be installed per Sec. 62-113. – Sidewalks, of the City of Manvel Code of Ordinances. Any internal sidewalks must meet American Disability Act (ADA) and Texas Accessibility Standards (TAS). Sidewalks must be a minimum of 5 feet wide and 4.5 inches thick with steel reinforcement, unless otherwise required in the City's approved Master Thoroughfare Plan.

~~10.~~12. Landscaping

1. Landscaping for the Manvel Crossing development will adhere to Sec. 77-44. - Tree preservation, landscaping, fencing and screening of the City of Manvel Code of Ordinances.

2. Minimum 10% of site (excluding building footprint) must be landscaped. Minimum 5% of the site must be distributed as street, building, and parking lot landscaping. Specific

tree and shrub spacing and screening requirements apply.

3. Manvel Crossing shall design, construct, and install a detention and drainage system that incorporates landscaping, pedestrian trails, and other complementary amenities where feasible. These enhancements shall be integrated into the detention areas to improve connectivity, promote aesthetic quality, and create a welcoming and enjoyable environment for the community. The berms and areas with aesthetic improvements in these areas shall count toward the 10% landscaping requirement.

~~2. Landscaping for the Manvel Crossing development will adhere to Sec. 77-44. - Tree preservation, landscaping, fencing and screening of the City of Manvel Code of Ordinances. All pervious area shall be counted toward the total landscape area, including the maintenance berm of detention ponds, if maintenance berms incorporate landscaping and pedestrian trails where feasible to enhance connectivity and visual appeal. Landscaping within these areas shall be consistent with the overall development standards and contribute to the cohesive character of the site.~~

~~3.~~4. Landscaping and/or decorative fence shall screen outside storage areas, loading docks, garbage collection bins and delivery entrances from adjacent property and public street right of way.

~~4.~~5. A ten (10) foot wide landscaping buffer will be provided between commercial and residential zoning districts.

~~5.~~6. Street Trees

i. A minimum of one (1) street tree is required for every thirty (30) feet of street frontage.

ii. No street tree shall be less than two and a half (2.5) inch caliper

~~6.~~7. Parking lot landscaping

i. In addition to the Street Trees noted above, a tree of minimum one and a half (1.5) inch caliper shall be provided within or adjacent to the parking area at tree islands that:

a. Are at least nine feet (9') wide (back of curb to back of curb).

b. Each have a square footage of minimum 180.

c. Are located so that no parking space is further away than one hundred feet (100') from a tree island.

ii. Shrub planting shall be placed along the perimeter of a parking lot in order to screen the parking lot. The shrubs shall be maintained at a maximum height of 36 inches.

iii. At entrance and exits, shrubs shall be no higher than twelve (12) inches in height.

~~7.~~8. Trees Along Highway 6

i. Trees along Highway 6 will be staggered, with small and ornamental trees closest to Highway 6, and shade trees set back per distances listed below for a more natural look, as well as a precaution from unnecessary trimming near the power line.

a. Small and Ornamental Trees: May be planted up to 10 feet from any power lines and may constitute up to 60% of the site's landscaping.

1) Of small or ornamental trees, crape myrtles may constitute up to 30% of the trees planted.

b. Shade trees: May be planted up to 20 feet from the powerline.

1) Evergreen trees shall constitute a minimum of 40% of trees planted.

See "Appendix 3" below for a list of approved trees.

~~11.~~13. Signage

All signage must be composed of materials and colors compatible with the associated use and the overall development. LED signage is permitted throughout the development so long as they do not flash or pulse, move at a fast pace, or use blue and red lights that mimic emergency vehicles. All signage will comply with the City of Manvel Lighting Standards. See "Exhibit 6~~4~~" for an example of multi-tenant signage (subject to change). The following regulations shall apply:

a. General Signage Requirements
   i. All signage shall be located a minimum of ten (10) feet from the property line.
   ii. All signage must be perpendicular to the right of way.
   iii. Directional/informational signs within the Manvel Town Center project indicating the location of a business, street or facility within the project are permitted up to one (1) sign, four (4) feet in height and six (6) square feet in area per side.
   iv. Temporary Signage: Temporary signage shall be subject to the regulations listed in Section 53-10 of the City of Manvel Code of Ordinance in effect January 16,

2024 as amended.

v. Prohibited Signage: Unless specifically permitted in the above regulations, all signage listed in 53-11 of the City of Manvel Code of Ordinances in effect January 16, 2024, is prohibited.

b. *Multi-Tenant Monument/Pylon Signs* - A multi-tenant sign is defined as a freestanding sign with signage panels for multiple tenants within a single development.

i. Multi-tenant signs may be constructed up to ~~fifty~~ forty (~~5~~40) feet ~~when located on Highway 6, and up to forty (40) feet elsewhere,~~ with a maximum width of twenty-five (25) feet.

ii. The bottom of such multi-tenant pylon sign message area shall not be less than ten feet (10') feet above the surrounding finished grade level.

iii. Each multi-tenant monument tenant sign may not exceed five (5) feet in height or fifty (50) square feet in area.

iv. In some instances, a multi-tenant sign may be considered off-premises if included within the Manvel Crossing development.

v. Two (2) total multi-tenant pylon signs are permitted along Highway 6 and one (1) along Kirby Drive.

c. *Single-Tenant Monument* – A single-tenant sign is defined as a freestanding sign advertising a single use.

i. Single-tenant signs may be constructed up to twelve feet (12') in height and sixty (60) square feet in area.

ii. One single tenant monument sign is permitted for each platted of otherwise designated tract or parcel. If a parcel has frontage on two public roadways/highways, thoroughfares, one monument sign is permitted on each street frontage.

d. ~~d.~~ *Wall Mounted Signage* – A Wall sign is defined as a sign anchored to a wall elevation of a business.

i. Buildings thirty (30') feet or less in height.

- Wall signs are limited to 15% of the elevation they are placed on not to exceed 200 square feet. All parts of the elevation are used in this calculation.
- Maximum Letter Height – thirty-six (36") inches for one line of text, eighteen (18") inches for two lines of text.
- Maximum Overall Height – thirty-six (36") inches for one line of text, forty-two (42") inches for two lines of text.
- The signage face shall not exceed 80% of storefront width.

ii. Buildings over thirty (30') feet in height.

- Wall signs are limited to 25% of the elevation they are place on not to exceed 400 square feet. All parts of the elevation are used in this calculation.
- For every additional six (6') feet in height over thirty (30') feet, an additional twelve (12") inches of letter height is permitted, up to a maximum overall height of seventy-two (72") inches.
- The signage face shall not exceed 80% of the storefront width.

~~i. Businesses located farther than five-hundred (500) feet from the right-of-way of Highway 6 are permitted a front facing façade wall sign not to exceed 25% of the façade's area~~

~~ii.~~iii. No wall sign can extend above the parapet.

~~iii.~~iv. For individual uses greater than 80,000 square feet in gross floor area, up to one hundred twenty inches (120") of letter height is permitted.

~~iv.~~v. For buildings over ~~one~~ 120,000 square feet of gross floor area ~~Wall mounted signage lettering may not exceed~~ , up to one-hundred thirty inches (130") in overall height is permitted.

~~v.~~vi. Wall mounted logos, symbols, and related branding shall not exceed one-hundred ninety-eight inches (198") in height.

~~12.~~14. Lighting

LED signage is recommended within the development for all business types and must comply with the Outdoor Lighting Standards and Regulations listed within the City of Manvel Ordinance No. 2024-O-36, as amended from time to time.

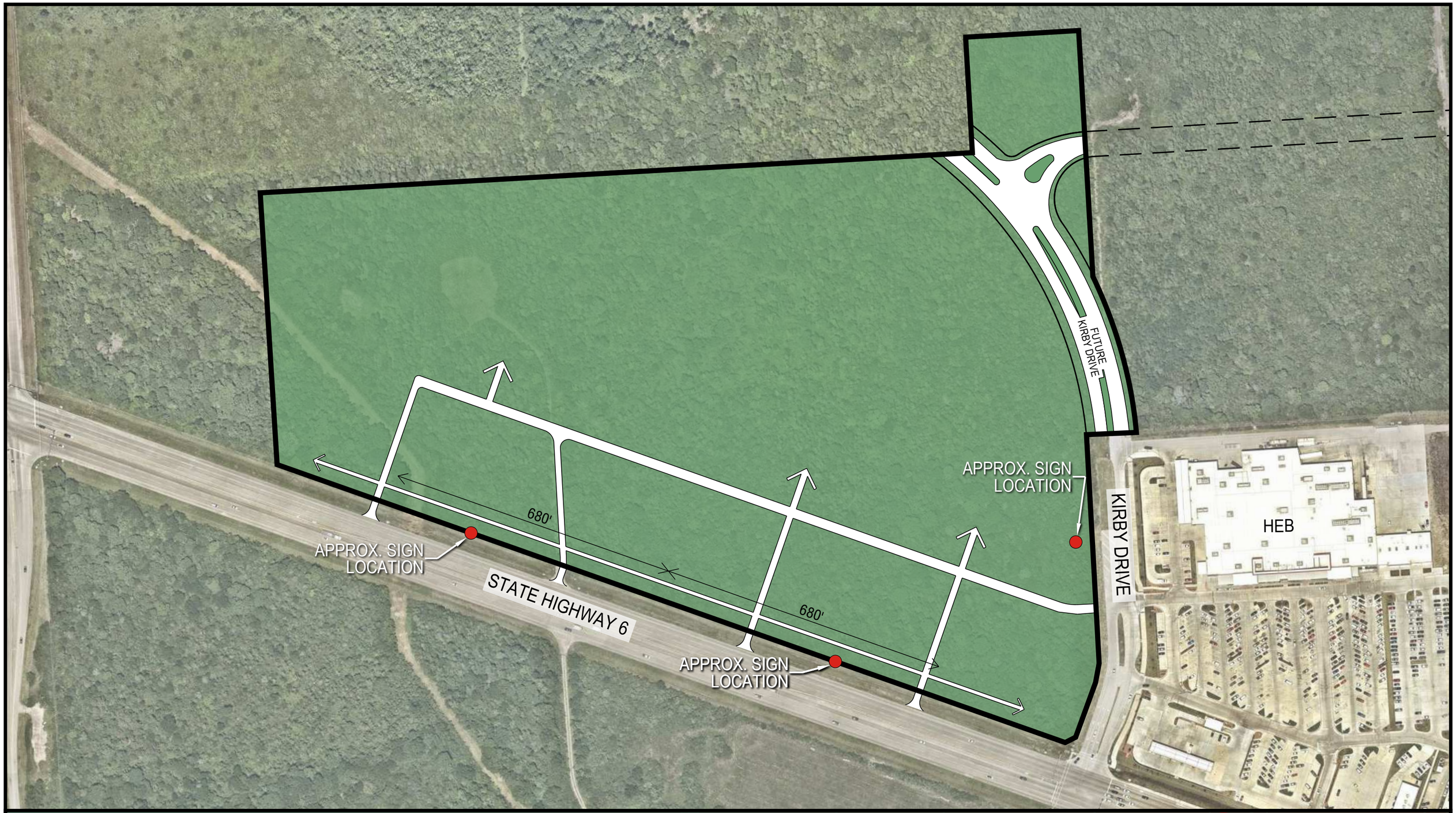

Exhibit 5 - Approximate Sign Locations

October 2025

0 50' 100' 200'

SCALE: 1"=200'

TRUE SCALE AT 11" x 17"

NORTH

EHRA JOB NO.
231-085-00

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

EHRA
ENGINEERING THE FUTURE
SINCE 1936

10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRA.TEAM
TBPE NO. F-726
TBPLS NO. 10092300

P:\231-085-00\LandPlan\BCS PUD\Exhibits\CAD\2nd Iterations\Exhibit 5- Approximate Sign Locations.dwg Nov 10, 2025-2:23pm Edited by: bmex

This sign elevation is conceptual in nature and subject to change.

Exhibit 6 - Multi-tenant Pylon Sign Elevation

October, 2025

EHRA JOB NO. 231-085-00

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

EHRA
ENGINEERING THE FUTURE SINCE 1936
10011 MEADOWGLEN LANE
HOUSTON, TEXAS 77042
713.784.4500
WWW.EHRA.TEAM
TBPE NO. F-726
TBPLS NO. 10092300

Single-tenant Monument Sign - Elevation

This sign elevation is conceptual in nature and subject to change.

Exhibit 7 - Manvel Crossing Single-tenant Monument Sign

October 2025

NORTH

EHRA JOB NO.
231-085-00

No warranty or representation of intended use, design or proposed improvements are made herein. All Plans for land or facilities are subject to change without notice.

EHRA
ENGINEERING THE FUTURE SINCE 1936

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TBPLS NO. 10092300

~~13.~~15. Design Criteria Manual

The Project shall abide by the version of the City of Manvel Design Criteria Manual dated May 6, 2024 for a period of three (3) years, at which time it will abide by the most recently amended iteration.

~~14.~~16. Definitions

Abstract or title company – an establishment that examines historical records to create a summary of a piece of real estate, showing ownership, liens, mortgages, or other encumbrances, and often will issue title insurance to protect against ownership disputes.

Accounting, tax preparation, bookkeeping and payroll services – a business that functions to perform financial analysis and strategic advising, performs tax preparation for individuals or businesses, and may handle employee compensation for payroll related responsibilities.

Administrative support services – an establishment that handles day-to-day operations for other businesses or entities, including but not limited to office operations, information management, internal and external communication, scheduling, documenting, and other forms of support.

Advertising agency – a business that prepares strategies and products meant to seek the attraction, or to direct the attention, of the public to any goods, services, merchandise, purpose or cause.

~~*Alley* – a private right-of-way that provides vehicular access to buildings or properties that front on an adjacent street.~~

Ambulatory Health Care Services – medical services performed on an outpatient basis, without admission to a hospital or other facility.

Antique store – a retail business that buys and sells old items, sch as furniture, art, and collectible, which are considered valuable due to their age, historical significance or rarity.

Architectural feature – an ornamentation or decorative feature attached to or protruding from the exterior wall of a building. Architectural features may include, but are not limited to windows (e.g. bay windows), chimneys, columns, awnings, marquees, façade or facia.

Art gallery – a room or building used for the display or sale of works of art.

Arts and crafts store – a retail store selling a wide variety of supplies, materials, and tools for artistic creativity.

Auction - a public or private sale where goods or property are sold to the highest bidder.

Automobile parts and accessory retailers - This industry comprises establishments primarily engaged in retailing new, used, and/or rebuilt automotive parts and accessories, with or without repairing automobiles; and/or establishments primarily engaged in retailing and installing automotive accessories. ~~A business that diagnoses and fixes mechanical or electrical issues in vehicles, and stores and repairs vehicles on the site, outside of a vehicle bay.~~

Automotive repair and maintenance - a facility used for the repair or replacement of engines, transmissions, differentials, drivetrains, or any parts thereof, in addition to the replacement of parts, service, and incidental repairs to private passenger vehicles. A private passenger vehicle is defined as automobiles, motorcycles, station wagons, vans, SUVs, or pickup trucks reserved for personal use.

~~*Automotive part sales* – a retail store that involves the sale of components, accessories, and related equipment for vehicles.~~

Bakery (retail) – an establishment that produces and sells baked goods to the public in a storefront setting.

Banking or financial institution – a chartered financial institution that engages in deposit banking and closely related functions such as making loans, investments and other fiduciary activities. Drive-up windows and drive-thru automated teller machines (ATM) are permitted as an accessory use.

Barber or beauty shop – a business that offers hairdressing, cosmetology, and personal grooming services.

Billboards – large outdoor advertising structures typically found along highways or in high-traffic areas.

~~*Block length* – the distance measured along a street between two intersecting streets.~~

Bookstore - means a retail establishment that engages in the sale, rental, or other charge-for-use of books, magazines, newspapers, greeting cards, postcards, videotapes, computer software, or any other printed or electronically conveyed information or media, excluding any "adult bookstore," "adult theater," "theater," or "studio theater."

Building – a structure used for or supporting any use or occupancy that requires a building permit.

Building material, garden equipment, and supplies dealers - retail establishments that sell building materials (like lumber, paint, hardware) and lawn and garden products (such as plants, tools, and outdoor power equipment) to consumers and contractors.

Cafeteria - a restaurant or dining room located in part of a business in which customers serve themselves or are served from a counter and pay before eating.

Candy store – a specialized retail business that provides sweet treats as their primary inventory.

~~*Car wash* – a facility used for the cleaning of motor vehicles, such as passenger cars, trucks, and motorcycles. A heavy vehicle wash is not included in this definition. Only one (1) nationally or regionally recognized brand permitted at this location by this PUD.~~

Catering – a business that provides food and beverage for an event at a location other than a traditional restaurant, handling everything from menu planning to food preparation, set-up, serving, and cleanup.

Cellular phone sales and repair store - a business that provides small-scale electronic repair services for items of the general public, including, but not limited to cellphone repair and other related minor repairs.

Childcare facility – a commercial or non-profit facility that provides shelter, care, activity, and supervision of children for periods of less than 24 hours a day and is licensed by the state.

Clinic - a building, other than a hospital as herein defined, used by one (1) or more licensed physicians for the purpose of receiving and treating patients.

Clothing store (no re-used clothing) - a small retail establishment that sells fashionable clothing or accessories.

Collection Agency – an business that attempt to collect past-due or unpaid debts on behalf of a creditor or lender, or purchases the debt itself to collect.

Collector street – a public street designated as a "minor corridor" on the City's Major Thoroughfare Plan.

Computer sales and repair store - a business that sells and provides computer electronic

repair services for items of the general public.

Council – Shall mean the City Council of the City of Manvel.

~~*Cul-de-sac* - any street with only one (1) outlet that terminates in a vehicular turnaround.~~

Dance studio - a facility in which students are instructed and educated on the particulars of a physical art form. This does not include adult uses such as adult cabaret.

Delivery service – a commercial service that transports goods, parcels, or prepared food from a point of origin to a customer-specified destination.

Dental Clinic – a healthcare facility where dental services are provided.

Department store – a retail establishment that conducts business under a single owner's name wherein a variety of unrelated merchandise and services are housed and are exhibited and sold directly to the customer for whom the goods and services are furnished.

~~*Designated Official* – the individual authorized by the City of Manvel to provide direction and oversight and personally perform duties related to a comprehensive program to protect the health and safety of citizens and the quality of life by ensuring that planning activities meet appropriate codes, standards, and city ordinances.~~

Drafting service – a business that provides technical drawings and plans used in architecture, engineering, or manufacturing.

Drinking places (alcoholic beverages) - establishments primarily serving alcoholic drinks, such as bars, pubs, and lounges.

Drug store, with or without liquor or beer and wine sales – an establishment that sells prescription medications, health products, and may also offer alcoholic beverages depending on licensing.

Dry-cleaning storefront, but not dry-cleaning plant - A retail location where customers drop off and pick up garments for cleaning; the actual cleaning is done off-site.

Educational support services - non-instructional services that assist educational institutions, such as curriculum development, testing, or tutoring.

Electronic sales and repair store - sells and repairs electronics including but not limited to, appliances, air-conditioners, refrigerators, dishwashers, and clothing washers and driers.

~~*Entry features* – Primary points of vehicular entry into the property that are enhanced with landscaping, water features, architectural treatments, and lighting.~~

Fitness and recreational sports center - facilities offering exercise equipment, fitness classes, and wellness programs.

Florist shop – a business that sells flowers, floral arrangements, and related decorative items

Food and beverage store – a store that sells perishable goods for human consumption, and includes grocery stores, convenience stores, and specialty food retailers.

Frontage – Frontage shall mean that portion of any lot or tract that abuts a street or approved common area. A lot or tract abutting more than one (1) street shall have frontage on only one (1) street which shall be deemed to be the side having the shortest dimension unless otherwise indicated on the subdivision plat.

Full-service restaurants - a restaurant where meals are primarily prepared individually for the customer and are served to customers at their table by wait staff. A restaurant which is a fast-food restaurant, or which has drive-thru facilities is not considered a full-service restaurant.

Furniture store – a store that sells household or office furniture such as sofas, tables, and beds.

~~*General development plan* – A plan that illustrates the portion of Manvel Crossing located within the City, which identifies the major thoroughfares and collector streets that are proposed in the property and any recorded easements over 20 feet in width that affect the property and proposed land use.~~

General merchandise retailers - stores offering a wide variety of goods, such as department stores or big-box retailers.

Gift shop – a store that sells novelty items, souvenirs, and small gifts.

Grocery store – A retail establishment primarily selling prepackaged and perishable food as well as other convenience and household goods. The sale of alcohol is permitted as an accessory use.

~~*Gross acreage* – Gross acreage shall mean the total area of land inclusive of all encumbrances, including, but not limited to rights-of-way, drainage ways, pipeline and utility easements, detention facilities, parks and open space areas.~~

Gross floor area - Gross floor area (GFA) shall be defined as the sum in square feet of all floors of the building measured from the exterior face of the exterior walls. The gross floor area shall include all enclosed habitable space, including elevators, hallways, and stairwells on stories containing habitable space.

Gun shop – a store that sells firearms, ammunition, and related accessories.

Hardware store – a store that sells tools, building materials, and home repair supplies.

Home appliance store – a store that sells large and small appliances like refrigerators, washers, and microwaves.

Home improvement store – a store that offers products for remodeling, construction, and DIY projects.

House wares and linens store – a store that sells kitchenware, bedding, towels, and other household items.

Institutional use – A use designated for public facilities including, but not limited to major and minor utilities, public safety sites, libraries, schools (both public and private) and other civic uses.

~~*Knuckle* – The projection toward the outside corner of a bend in the right-of-way of that allows for adequate turning movements for emergency and other vehicles.~~

Landscaping – Planting and related improvements for the purpose of beautifying and enhancing a portion of land and for the control of erosion and the reduction of glare, dust and noise. Rocks and/or gravel, by itself shall not constitute landscaping.

~~*Lessor of mini-warehouse and self-storage* - a business that rents out small storage units or spaces for personal or commercial use.~~

Locksmith - services related to locks, keys, and security systems, including installation and emergency access.

Lodging facilities – A building in which lodging is offered for compensation for a period of less than seven (7) days. This use includes hotels, motels, inns, and bed and breakfast residences, but does not include group homes and boarding houses.

Lot – An undivided tract of land having frontage on a public or private street which is designated as a separate and distinct tract and identified by numerical identification on a duly and properly recorded subdivision plat.

Maintenance facility – A facility intended to store equipment related to the maintenance, upkeep, or repair of the parks, open space, and detention/drainage areas inside the Project.

~~*Major thoroughfare* - A public street designated as a "major corridor" on the City's Major Thoroughfare Plan.~~

~~*Major utility* – Uses or structures providing utility services that have a potential major impact by virtue of appearance, noise, size, traffic generation, or other operational characteristics, which include, but are not limited to, transmission substations, wastewater treatment facilities, water reservoirs and pump stations, and power plants. This use does not include private individual water supplies or septic tanks. *See Minor Utilities.*~~

Medical and health care services - a healthcare facility offering inpatient services such as diagnosis, treatment, and preventive care. Examples of such a use are multi-specialty medical group practices providing outpatient care, offices of physicians, and general medical and surgical hospitals.

Medical supply store – a store that sells medical equipment and supplies like wheelchairs, bandages, and diagnostic tools.

Micro-brewery, with or without food service - a small-scale brewery producing limited quantities of beer, often with an on-site tasting room or restaurant, that has the necessary permits per the Texas Alcoholic Beverage Code.

Minor utility – Small scale facilities that are necessary to support development and that involve only minor structures. Minor utilities include, but are not limited to facilities such as power lines, water and sewer lines, storm drainage facilities, transformers, hydrants, switching boxes, wastewater lift stations, and similar structures.

Commercial Mixed-use – A tract of land, building, or structure developed for two or more different uses such as, but not limited to, office, retail, public, or entertainment. The mix of uses may occur either on the same tract of land, but compartmentalized into separate buildings, or located within the same building (e.g. retail on the first floor and office on the floors above the retail).

Mortgage Company – a business that provides loans for purchasing real estate and may offer refinancing or financial consulting services.

Motels and Hotels - lodging establishments offering overnight accommodations, with varying levels of amenities and services.

Motion picture theater companies and dinner theaters (with or without food service or alcoholic beverage sales) - a venue for screening films to the public, which may include

concessions or full dining options.

~~*Motor vehicles and parts* – A business involved in the sale, repair, or distribution of cars, trucks, motorcycles, and related parts or accessories.~~

Musical instrument store- a store that sells instruments, sheet music, and accessories; may also offer rentals or repairs.

Nursery, garden center, and farm supply retailers – a business that primarily sell plants, such as trees, shrubs, and flowers, as well as garden and farm supplies like seeds, fertilizers, tools, and animal feed.

Office supply and machinery store and repairs – a store that sells office equipment and supplies and may provide repair services for items like printers or copiers.

Optician or optometrist – Provides vision care services including eye exams, prescriptions, and eyewear fittings.

~~*Overall project* - The approximately 49 acres of land that constitutes the entire Manvel Crossing project.~~

Parkway – A right-of-way with a total width of 120 feet, designed for higher traffic transportation.

Personal and household goods store - services that sell, fix, or maintain items like appliances, furniture, electronics, or clothing.

Personal services – a business that includes but is not limited to salons, spas, dry cleaners, and other businesses that cater to individual needs and grooming.

Pharmacy – an establishment that dispenses prescription medications and offers health-related products and advice.

Postal Service – an establishment that offers mail and package delivery, shipping, and related services, either publicly or privately operated.

~~*Private* – Elements of the development that are not intended for public use and are operated and maintained by a private entity.~~

~~*Private street* - A street that is privately owned and maintained. Private streets may be gated.~~

Private utilities – Utilities other than water and wastewater. Other utilities may be public and/or private in nature and may include, but are not limited to electrical power, gas,

telephone, wireless communication, internet, and cable television.

Professional office- A room or group of rooms used for conducting the affairs of a business, medical, professional or service industry.

Project – The approximately 4~~6~~9 acres of land which is the subject of this PUD, the legal description of which is contained in the appendix of this document.

Public facilities – Any non-commercial land use (whether publicly or privately owned) which is to be used and/or allocated for the general good of the public. These uses include, but are not limited to governmental offices, libraries, parks, and major and minor utilities.

Public safety site – a location dedicated to emergency services such as police stations, fire departments, or emergency response centers

Public utilities – Any utilities that are provided by the city, county or municipal utility district which may include, but are not limited to water and wastewater.

Radio sales and repair - businesses that sell and/or repair radio equipment and related electronics.

Radio Studio (excluding tower) - a facility for producing and broadcasting radio programs, not including transmission towers.

Real estate - services related to buying, selling, leasing, or managing property.

Record and tape store – a store that sells music in physical formats such as vinyl records, cassette tapes, and CDs.

Recreational facilities – Any structure or building intended for active recreational use. Recreational uses shall include, but are not limited to clubhouses, tennis courts, basketball courts, sports fields, pools, playground equipment, bleachers, etc.

Restaurant - limited service (LSR) and quick service - a dining establishment emphasizing speed and convenience, where customers typically order and pay before eating and often help themselves to drinks, cutlery, and table maintenance. Quick Service Restaurant (QSR) is a specific type of LSR, a subset that is synonymous with "fast food," prioritizing very fast, efficient service, often with a consistent, streamlined menu and limited table service or a drive-thru window.

Restaurant with micro-brewery - a restaurant where meals are primarily prepared individually for the customer and are served to customers at their table by wait staff,

where malt liquors or beer are produced on-site, as permitted by the Texas Alcoholic Beverage Code.

Retail – Retail sales of any article, substance, or commodity within a building or structure.

Retail warehouse clubs and supercenters – a business that sells goods directly to consumers (retail) or in bulk to other businesses (wholesale).

Scientific and technical services - professional services involving research, engineering, consulting, or specialized technical expertise.

School (public or private) – An institution for the teaching of children or adults including primary and secondary schools, colleges, professional schools, art schools, trade schools, and similar facilities.

~~*Self-service car wash* – a facility where customers wash their own vehicles using provided equipment.~~

Sexually oriented Businesses - Establishments that provide adult entertainment or sell adult products, such as strip clubs, adult bookstores, or adult video stores.

Shade Tree - A shade tree is a tree planted or valued primarily for the shade it provides, rather than for fruit, beauty, or other purposes.

Shared parking – the use of the same off-street parking stall or stalls to satisfy the off-street parking requirements for two or more individual land uses without significant conflict or encroachment.

Shoe store and repair shop – a store that sells footwear and provides shoe repair services.

Small or ornamental tree - a tree that is grown for its aesthetic appeal, such as attractive flowers, fall foliage, or unique bark, rather than for practical purposes like fruit or wood

Sporting goods store – a store that sells equipment, apparel, and accessories for sports and outdoor activities.

Studio (art, music or photo) - a space used for creating or teaching visual arts, music, or photography.

Subdivision – the division of a lot, tract, or parcel of land into two or more lots, plats, sites or other divisions of land for the purpose of industrial, office, and business development or other uses.

Tailor – an establishment that alters, repairs, or customizes clothing to fit individual clients.

Tattoo shop – a business where licensed artists perform body modification, including but not limited to applying permanent body art using ink and needles, and piercings.

Tavern – an establishment that primarily serving alcoholic beverages, often with food and entertainment.

Taxidermist - A professional who prepares, stuffs, and mounts the skins of animals for display.

~~*Telecommunication tower* – A structure on which there are electronic facilities for receiving or transmitting communication signals.~~

Toy store – a store that sells toys, games, and educational items for children.

Travel agency – a business that offers travel planning, booking, and tourism-related services.

Upholstery shop - a business that repairs or replaces fabric, padding, and springs on furniture or vehicle interiors.

Veterinary services - medical care and treatment for animals, including surgeries and vaccinations.

Video arcade – a venue offering coin-operated or digital games for public entertainment, including pinball machines, racing simulators, shooting games, and other interactive amusements. These establishments are designed for recreational play and social engagement, often catering to families and youth. Gambling activities, including games of chance with monetary payouts or betting mechanisms, are strictly prohibited in video arcades to maintain compliance with state law.

Warehouse and storage – ancillary to primary use - facilities for storing goods, either for distribution, safekeeping, or inventory management, located on the same site as a compatible use.

~~*Wastewater treatment facilities* – Any facility used for the treatment of wastewater for sewer systems and for the reduction and handling of solids and gasses removed from such wastes.~~

~~*Water plant facilities* – Any facility used for the collection, treatment, testing, storage, pumping, or distribution of water for a public water system.~~

Zoning and Subdivision Deviations

Ordinance reference	Requirement	Proposed	Difference	Justification
Sec. 77-31. – Light-commercial (LC) district (c)	*Setbacks.* (1) Minimum front yard setback is 25 feet. (2) Minimum rear yard setback is ten feet. (3) Minimum side yard and corner side yard is five feet.	*Minimum Setbacks:* *Along Major Roads:* Front: 25 feet, Rear: 15 feet, Side: 15 feet *Along collector or internal streets:* Front: 10 feet, Side: 10 feet, Rear: 10 feet, Corner Side: 10 feet *Adjacent to Residential and Undeveloped Land:* Side: 10 feet, Rear: 10 feet Landscape buffer of 10 feet required between commercial and residential zoning districts. Architectural features may encroach into the setback area a maximum of three (3) feet.	15-foot reduction for front setbacks along collector or internal streets 5-foot reduction for side setbacks along collector or internal streets 10-foot reduction for rear setbacks adjacent to commercial 5-foot reduction for side setbacks adjacent to commercial	With the intended design of the site and pad placements, the setbacks will be reduced for adequate use of the property, as it is a larger site not fronting on Highway 6 directly.
Sec. 77-31. – Light-commercial (LC) district (d)	*Maximum building height*. The maximum height of any building in the light commercial district may not exceed 60 feet measured from the finished grade to the highest point of the roof, not including ancillary structures such as chimneys.	*Commercial Mixed use/Office/Medical:* Maximum 150 feet Additional setback of 1 foot per 10 feet in height exceeding 60 feet in height.	90-foot increase in height specifically for Mixed use/Office/Medical	This type of use will likely incorporate several stories.
Sec. 62-108. – Lots (a) (8)	*Any subdivision of land shall provide each lot with access to a public street as specified in the design criteria manual. The public street shall have a minimum width of 60 feet, or the proposed plat must dedicate the necessary additional rights-of-way to provide a minimum width of 30 feet from the centerline of the existing or original right-of-way.*	*Parcels without public road frontage may use **recorded cross-access easements** to meet access requirements*	Cross-access easements for access to properties	This is a typical course of action for sites with multiple tenants along major highways
Sec. 77-36. State Highway 6 overlay (SH-6) district. (c)	*Exterior building materials.* *(1) All building façades must be constructed of a minimum of 90 percent masonry materials on all non-transparent portions of all exterior walls. The percentage of masonry materials is calculated on a per façade basis. Permitted masonry materials include:* *a. Stone;* *b. Brick;* *c. Concrete;* *d. Hollow clay tile;* *e. Decorative concrete block or tile;* *f. Glass block;* *g. True stucco.* *The use of any material that is not specified on the above permitted masonry materials list is prohibited.* *(2) Up to the remaining ten percent of all exterior walls on non-transparent portions of the building may be constructed of materials not listed in the permitted masonry materials list but under no*	All commercial buildings must be composed of a **minimum of 75% on fronts and sides and 50% on rears and service facades** masonry, exclusive of windows, doors, or other transparent materials. The following materials shall meet the masonry requirement: • Stone • Brick • Concrete • Hollow clay tile • Glass block • True Stucco • Insulated Concrete Forms Non-masonry materials **may not exceed the remainder** of the building's elevation. **Additional permitted non-masonry materials** (with proof of compliance to ICC and Texas Windstorm standards): • Cementitious fiber • EIFS • Architectural metal panels **Nationally or regionally recognized chains** may use **company-specific materials** (e.g., metal roofing/siding, wood siding), which are **not typically allowed** under standard ordinance.	Insulated concrete forms added as approved, the addition of non-masonry materials approved for the remainder nof the elevations utilizing cementious fiber, EIFS, or architectural metal panels, nationally or regionally recognized chains may use company specific materials	This will allow the developer more freedom to build with more contrast in materials for different locations within the site

	circumstances will the following prohibited materials be allowed: *a. Sheet metal material; coated, galvanized, or uncoated with a metal thickness less than one-quarter inch;* *b. Smooth concrete masonry units (CMU) or block, painted or un-painted;* *c. Exterior insulation finish systems (EIFS);* *d. Plywood or oriented strand board (OSB).* *(3) No more than 75 percent of any façade may consist of glass.*			
Sec. 77-45. – Parking. (a)	Use not listed in table	Reduce the required number of parking spaces from 5.0 spaces to 4.0 spaces per 1,000 square feet of gross leasable floor area for any building with 80,000 square feet or more, plus an additional 2.0 parking spaces for each 1,000 square feet of the floor area designated as an outdoor garden center	Reduced parking for store area with the addition of 2 spaces per 1,000 square feet for outdoor shopping	Reduced parking will lower the impervious coverage, and remove unneeded spaces for some uses
Sec. 77-45. – Parking. (c) & (d)	*(c) Shared Parking.* *(1) Shared parking is encouraged and intended to make use of parking areas that are not used during certain parts of the day. Shared parking is permitted only with a written agreement between the subject landowners. Such agreement shall be maintained in the office of the city secretary.* *(2) Property on which shared parking is proposed shall be no further than 300 feet from the boundary of the principal property, as measured along public rights-of-way, such as streets or sidewalks.* *(3) No more than 75 percent of the total amount of parking spaces required for the principal use shall be shared parking spaces.* *(4) Required handicapped parking spaces shall not be used in the calculation for shared parking spaces.* *(d) Parking space dimensions.* *(1) The minimum size of a car parking space shall be ten feet wide and 20 feet long for residential or commercial land uses.* *(2) The minimum size of a handicapped parking space shall be as required by the Americans with Disabilities Act.* *(3) Compact car parking spaces shall not be credited to the overall parking calculation requirement.*	Shared parking allowed and shall satisfy the minimum parking ratio requirements.	Allowed Shared parking to satisfy all required parking when necessary.	Changes will allow for a reduction of unused parking
Sec. 77-52. – Open storage and display of items	Open storage of items not for sale and for sale is permitted when incidental to principal land use on the same property.	Open storage is permitted within the parking lot for temporary seasonal sales or temporary promotional events. No permits are required for temporary storage. Buildings with 80,000 square feet of gross leasable floor area or more are permitted to use off-street parking spaces provided to comply with the City of Manvel's parking requirements for permanent, long-term or seasonal storage of inventory, equipment, vehicles, or other business-related property, not to exceed twelve percent (12%) of all parking spaces provided for that building.	Temporary outdoor sales can occur in the parking areas, and buildings of 80,000 square feet of GLA are permitted to use off-street parking for storage of various business related equipment, not exceeding 12% of the parking	This allows flexibility to the businesses to utilize a small portion of their parking lot for business purposes

Sec. 77-44. - Tree preservation, landscaping, fencing and screening. (c) (1) & (2)	Landscaping is required for street frontage as well as for parking lots at a rate of one street tree per 30 feet of frontage, and one parking lot tree per 10 parking spaces.	Minimum **10% of site** (excluding building footprint) must be landscaped. Specific tree and shrub spacing and screening requirements apply. All pervious area shall be counted toward the total landscape area, including the maintenance berm of detention ponds, if the maintenance berms incorporate landscaping and pedestrian trails where feasible, to enhance connectivity and visual appeal. Landscaping within these areas shall be consistent with the overall development standards and contribute to the cohesive character of the site. Street Trees ii. One street tree is required for every thirty (30) feet of street frontage. iii. No street tree shall be less than two and a half (2.5) inch caliper No more than 30% of street trees may be crape myrtle along Highway 6. A minimum percentage of evergreens is required. Staggering of trees along the highway is required adjacent to powerlines. Examples of tree types are given.	The addition of a minimum of 10% landscaping, maintenance berms and detention ponds can count towards pervious area. Landscaping will be included with maintenance berms where feasible, but half of the required landscaping must be evenly distributed across the parking areas, pad sites, and street frontages. Maximum of 45 feet spacing for single trees. A limit on the number of crape myrtles allowed to be planted. A minimum percentage of evergreens planted.	More diversity in tree types will enhance the streetscape, and the addition of landscaping around detention ponds will accomplish a similar outcome
Sec. 53-16. – Shopping center and integrated business developments (2)	*Sign district B.* a. Each shopping center or integrated business development is permitted one single or double-faced monument sign not exceeding 100 square feet in area plus an additional ten square feet for each business establishment located in such shopping center or integrated business development, or 150 square feet, whichever is less, and not exceeding 15 feet in height above the surrounding finished grade level. Additionally, each monument sign shall not exceed 22 feet in width. b. The location of a monument sign is subject to the approval of the sign administrator to ensure that such location does not create hazards to traffic or pedestrians; provided, however, all monument signs shall be located outside of the sight distance triangle corresponding to the nearest street intersection. c. An additional monument sign may be permitted for each shopping center or integrated business development that is on the corner of an intersection of two public streets. One sign shall face each adjacent street. Such additional sign shall not exceed 15 feet in height above the surrounding finished grade level. The total sign area of both signs combined shall not exceed 250 square feet.	*Multi-Tenant Monument/Pylon Signs* - A multi-tenant sign is defined as a freestanding sign with signage panels for multiple tenants within a single development. Multi-tenant signs may be constructed up to fifty (40) feet when located on Highway 6. The bottom of such sign message area shall not be less than ten feet (10') feet above the surrounding finished grade level. Each tenant sign may not exceed five (5) feet in height or fifty (5) square feet in area. In some instances, a multi-tenant sign may be considered off-premises if included within the Manvel Crossing development. Two multi-tenant signs along Highway 6 and one along Kirby Dr allowed.	Increased height and area for multi-tenant monument signs, and to provide rear property tenants visibility from Highway 6. Number of signs: 2 on Highway 6, 1 on Kirby Dr	These deviations are requested to provide more flexibility in placement and design of the multi-tenant signs.
Sec. 53-10. – Allowed Signs (b)(8)	*(8) Wall signs. Each business establishment is allowed wall signage not exceeding the total square feet of the facade to which it is affixed:* *a. Fifteen percent of the business frontage or a maximum 200 square feet for the side with the principal entrance;* *b. Ten percent of the business frontage or a maximum 150 square feet for the side(s) fronting*	*Wall Mounted Signage* – A Wall sign is defined as a sign anchored to a wall elevation of a business. Wall signs are limited to 25% of the elevation they are placed on. All parts of the elevation are used in this calculation. No wall sign can extend above the parapet. For individual uses greater than 8,000 square feet in gross floor	An increase in the allowable size of wall signs.	This request is similar to that of the neighboring development, and varying business sizes and locations may require larger signs for street visibility.

	on a public street; *c. Ten percent of the business frontage or a maximum 150 square feet for all other sides;* *d. Ten percent per side for canopies related to a business;* *e. A maximum of 32 square feet for freestanding menu boards in addition to wall signs; or* *f. Wall signage may not project above the lower edge of the roof line or parapet of a building.*	area, up to one hundred twenty inches (120”) of letter height is permitted. For buildings over one 120,000 square feet of gross floor area Wall mounted signage lettering may not exceed one-hundred thirty inches (130") in overall height. Wall mounted logos, symbols, and related branding shall not exceed one-hundred ninety-eight inches (198”) in height.		

IV. GENERAL ADMINISTRATION & AMENDMENTS

A. Purpose

This section establishes guidelines regarding the administration and future amendments to the PUD.

1. Changes to the Zoning Ordinance

The Development Regulations section of the PUD addresses only those areas that differ from the City of Manvel Zoning Ordinance. In the event that an issue, condition, or situation arises that is not specifically addressed in the PUD, the City of Manvel Zoning Ordinance in place at the time of the adoption of this document shall be used by the City's Zoning Official as the basis to resolve the issue.

2. Variances from the Zoning Ordinance

The criteria established in this PUD require variances from the City of Manvel Subdivision Ordinance as amended on May 6, 2023. These variances are necessary to achieve the community vision established in the City's Comprehensive Plan. The table below describes the requested variances and their corresponding section of the subdivision ordinance. These variances shall apply to all property within the PUD. Should any additional variances be sought in the future, this document will be amended with City Council approval.

3. Variances from the Design Criteria Manual

The criteria established in this PUD require variances from the City of Manvel Design Manual as adopted on May 6, 2024. These variances are necessary to achieve the community vision established in the City's Comprehensive Plan. Table 8 describes the requested variances and their corresponding section of the design manual. These variances shall apply to all property within the PUD.

B. Interpretation

The City's ~~Designated~~ Zoning Official shall be responsible for interpreting the provisions of the PUD. Appeals to the ~~Designated~~ Zoning Official's interpretation may be made to the Zoning Board of Adjustments within thirty (30) days of the date of the interpretation. Appeals shall be heard by the Zoning Board of Adjustments a maximum of sixty (60) days after receipt by City staff.

C. Appeal to the Zoning Board of Adjustments

Decisions by the Zoning Official or PD&Z regarding administrative changes shall be subject to appeal by the Zoning Board of Adjustments. The following categories shall be considered administrative changes, but are not limited to:

- The addition of new information to the PUD, including maps or text that does not change or affect any of the regulations or guidelines contained therein.
- Changes to the development infrastructure phasing and alignment, such as roads, drainage, water and sewer systems, excluding water and sewer plant locations.
- The determination that a use may be allowed which is not specifically listed as a permitted use, but may be determined to be analogous and/or accessory to a permitted use as determined by the City's ~~Designated Official~~PD&Z.

D. Substantial Change

The PUD may be substantially amended by the procedure outlined in the City of Manvel Zoning Ordinance, Section 7 of the City of Manvel Zoning Ordinance.

E. Fees

All fees associated with the entitlement process shall be assessed as indicated by the City's adopted fee schedule that is in place at the time of Council approval, as amended from time to time. All fees shall be fair and reasonable.

Appendix 1
Metes & Bounds Description and Boundary Map

WINDROSE
LAND SURVEYING | PLATTING

DESCRIPTION OF
34.28 ACRES OR 1,493,196 SQ. FT.

A TRACT OR PARCEL CONTAINING 34.28 ACRES OR 1,493,196 SQUARE FEET OF LAND SITUATED IN THE H. T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, SAME BEING CALLED "PART ONE, TRACT ONE" OR 35.905 ACRES OF LAND DESCRIBED IN DEED TO TH PROPERTY, INC., RECORDED UNDER BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.) NO. 2022037379, AND BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2002056335, WITH SAID 34.28 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, WITH ALL BEARINGS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (NAD 83):

BEGINNING, AT BEGINNING AT A CAPPED 5/8 INCH IRON ROD STAMPED "BGE" FOUND MARKING THE SOUTH END OF A CUTBACK CORNER OF THE INTERSECTION OF THE NORTH RIGHT-OF-WAY (R.O.W.) LINE OF SAID STATE HIGHWAY NO. 6 (200' WIDE) AS RECORDED UNDER MAP OR PLAT NO. 2022037379, B.C.P.R. AND THE WEST R.O.W. LINE OF KIRBY DRIVE (120' WIDE) AS RECORDED UNDER MAP OR PLAT NO. 2022037379, B.C.P.R., SAME BEING THE MOST SOUTHERLY SOUTHEAST CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 70 DEG. 28 MIN. 31 SEC. WEST, ALONG THE SOUTH LINE OF SAID 35.905 ACRES AND NORTH LINE OF SAID HWY NO. 6, A DISTANCE OF 1,248.34 FEET TO A 5/8 INCH IRON ROD FOUND ON THE SOUTHEAST CORNER OF A 40 FEET R.O.W. (UNIMPROVED), AS RECORDED UNDER MAP OR PLAT VOL. 2, PG. 81-82, B.P.C.R., AND THE SOUTHWEST CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 03 DEG. 15 MIN. 50 SEC. WEST, ALONG THE EAST LINE OF SAID 40 FEET R.O.W. AND WEST LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 927.47 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET ON THE EAST LINE OF SAID 40 FEET R.O.W. AND THE SOUTHWEST CORNER OF CALLED LOT 21 BEING A PART OF CALLED 201.0164 ACRE TRACT OF LAND DESCRIBED IN DEED TO NEW RODEO 288, LTD., AS RECORED UNDER MAP OR PLAT VOL. 2, PG. 81. B.C.P.R. AND BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2006043836., AND THE NORTHWEST CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 86 DEG. 53 MIN. 57 SEC. EAST, ALONG THE SOUTH LINE OF SAID 201.0164 ACRE TRACT AND NORTH LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 1,280.25 FEET TO A CORNER FOR THE SOUTHEAST CORNER OF CALLED LOT 29, BEING A PROTION OF SAID 201.0164 ACRE TRACT OF LAND AND ON THE WEST LINE OF CALLED 40 FEET R.O.W., AS RECORDED UNDER MAP OR PLAT VOL. 2, PG. 81-82 B.C.P.R. AND B.C.C.F. NO. 2019057985, AND B.C.C.F. NO. 2019057983, AND SAME BEING THE NORTHEAST CORNER OF SAID 35.905 ACRE AND OF THE HERIEN DESCRIBED TRACT FROM A 5/8 INCH IRON ROD BEARS SOUTH 16 DEG. 18 MIN. 34 SEC. WEST FOR A DISTANCE OF 0.366 FEET;

THENCE, SOUTH 03 DEG. 15 MIN. 50 SEC. EAST, ALONG THE WEST LINE OF SAID 40 FEET R.O.W. AND EAST LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 681.87 FEET TO CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET ON THE WEST LINE OF SAID 40 FEET R.O.W., AND MARKING THE MOST NORTHEASTERLEY CORNER OF SAID KIRBY DRIVE AND THE MOST EASTERLY CORNER OF SAID 35.905 ACER TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 86 DEG. 39 MIN. 32 SEC. WEST, ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, A DISTANCE OF 36.57 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "BGE INC." FOR THE NORTHWEST CORNER OF SAID KIRBY DRIVE AND THE EAST CORNER OF SAID 35.905 ACRE TRACT, AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 03 DEG. 20 MIN. 28 SEC. EAST, ALONG THE WEST R.O.W. LINE OF SAID KIRBY DRIVE AND THE EAST LINE OF SAID 35.905 ACRE TRACT, A DISTANCE OF 499.85 FEET, TO A POINT STARTING A NONTANGENT CURVE TO THE RIGHT FROM WHICH A FOUND 5/8 INCH IRON ROD BEARS SOUTH 46 DEG. 58 MIN. 53 SEC. WEST FOR A DISTANCE OF 0.267 FEET;

THENCE, CONTIUNING ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, WITH A CURVE TO THE RIGHT, HAVING A RADIUS OF 270.05 FEET, A CENTRAL ANGLE OF 22 DEG. 51 MIN. 57 SEC., AN ARC LENGTH OF 107.77 FEET, AND A CHORD BEARING AND DISTANCE OF SOUTH 08 DEG. 05 MIN. 31 SEC. WEST, - 107.06 FEET TO A FOUND 5/8 INCH IRON ROD ON THE SAME SAID COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 19 DEG. 31 MIN. 29 SEC. WEST, CONTINUING ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, A DISTANCE OF 119.23 FEET TO A 5/8 INCH IRON ROD FOUND MARKING THE NORTH END OF A CUT BACK CORNER OF THE INTERSECTION OF THE WEST R.O.W. LINE OF SAID KIRBY DRIVE AND THE NORTH R.O.W. LINE OF SAID HWY 6, SAME BEING THE MOST SOUTHEASTERLY CORNER OF SAID 35.905 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, SOUTH 64 DEG. 31 MIN. 29 SEC. WEST, ALONG THE SAME SAID CUTBACK LINE OF THE INTERSECTION OF SAID HWY 6 AND SAID KIRBY DRIVE, A DISTANCE OF 28.29 FEET THE **POINT OF BEGINNING** AND CONTAINING 34.28 ACRES OR 1,493,196 SQUARE FEET OF LAND, AS SHOWN ON JOB NO. 59121-BND, PREPARED BY WINDROSE.

_____
LUCAS G. DAVIS
R.P.L.S. NO. 6599
STATE OF TEXAS
FIRM REGISTRATION NO. 10108800

10-31-2023
DATE:

WINDROSE
LAND SURVEYING | PLATTING

DESCRIPTION OF
11.3999 ACRES OR 496,581 SQ. FT.

A TRACT OR PARCEL CONTAINING 11.399 ACRES OR 496.581 SQUARE FEET OF LAND SITUATED IN THE H. T. & B. RR.CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, SAME BEING CALLED "PART TWO OF TRACT FOUR" 11.395 ACRES OF LAND DESCRIBED IN DEED TO TH PROPERTY, INC., RECORDED UNDER BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.) NO. 2022037379, AND BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2002056335, WITH SAID 11.3999 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS, WITH ALL BEARINGS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (NAD 83):

COMMENCING, AT BEGINNING AT A CAPPED 5/8 INCH IRON ROD STAMPED "BGE" FOUND MARKING THE SOUTH END OF A CUTBACK CORNER OF THE INTERSECTION OF THE NORTH RIGHT-OF-WAY (R.O.W.) LINE OF STATE HIGHWAY NO. 6 (200' WIDE) AS RECORDED UNDER PLAT NO. 2022037379,(B.C.P.R.) AND THE WEST R.O.W. LINE OF KIRBY DRIVE (120' WIDE) AS RECORDED UNDER PLAT NO. 2022037379, (B.C.P.R.), SAME BEING THE MOST SOUTHERLY SOUTHEAST CORNER OF CALLED 35.905 ACRES OF LAND DESCRIBED IN DEED TO TH PROPERTY, INC. AS RECORDED UNDER MAP OR PLAT NO. 2022037379 AND B.C.C.F. NO. 2002056335,;

THENCE, NORTH 70 DEG. 28 MIN. 31 SEC. WEST, ALONG THE NORTH R.O.W. LINE OF SAID HWY 6 PASSING A FOUND 5/8 INCH IRON ROD FOR A DISTANCE OF 1248.34 FEET MARKING THE SOUTHEAST CORNER OF A 40 FEET R.O.W. (UNIMPROVED) RECORDED UNDER A MAP OR PLAT VOL.2, PG. 81-82, B.C.P.R., AND THE SOUTHWEST CORNER OF SAID 35.905 ACRE TRACT, TO A FOUND 5/8 INCH IRON ROD FOR A TOTAL DISTANCE OF 1291.68 FEET MARKING THE SOUTHWEST CORNER OF SAID 40 FEET R.O.W. AND THE SOUTHEAST CORNER OF SAID 11.395 ACRE TRACT SAME BEING THE **POINT OF BEGINNING** OF THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 70 DEG. 28 MIN. 31 SEC. WEST, CONTIUING ALONG THE NORTH R.O.W. LINE OF SAID HWY 6 AND THE SOUTH LINE OF SAID 11.395 ACRE TRACT, A DISTANCE OF 692.21 FEET TO A FOUND 5/8 INCH IRON ROD MARKING THE SOUTHEAST CORNER OF CALLED LOT 6 AND LOT 7, 8.28689 ACRES OF LAND DESCRIBED IN DEED TO JERRY A. ARGOVITZ, AS RECORDED UNDER MAP OR PLAT VOL. 2, PG. 81, B.C.P.R. AND VOL. 1151, PG. 839 OF B.C.C.F., AND THE SOUTHWEST CORNER OF SAID 11.395 ACRES AND THE HEREIN DESCRIBED TRACT;

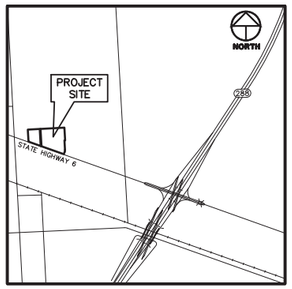
THENCE, NORTH 03 DEG. 21 MIN. 05 SEC. WEST, ALONG THE COMMON LINE OF SAID LOT 6 AND LOT 7 AND SAID 11.395 ACRE TRACT, FOR A DISTANCE OF 644.48 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET FOR THE SOUTHEAST CORNER OF CALLED LOT 5 BEING A PART OF CALLED 201.0164 ACRES OF LAND DESCRIBED IN DEED TO NEW RODEO 288, LTD., AS RECORDED UNDER MAP OR PLAT THEREOF VOL. 2, PG. 81, B.C.P.R. AND B.C.C.F. NO. 2005039031, AND VOL. 1181, PG. 884 OF B.C.C.F., AND THE SOUTHWEST CORNER OF CALLED LOT 13 OR CALLED 10.30 ACRES OF LAND DESCRIBED IN DEED TO J.W. WINZELLER AND LESLIE R. WINZELLER AS RECORDED UNDER MAP OR PLAT THEREOF VOL. 2, PG. 81-82, B.C.P.R. AND B.C.C.F. NO. 200539091 AND SAME BEING THE NORTHWEST CORNER OF SAID 11.395 ACRE TRACT AND THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 86 DEG. 53 MIN. 57 SEC. EAST, ALONG THE COMMON LINE OF SAID LOT 13 AND 11.395 ACRE TRACT, A DISTANCE OF 639.16 FEET TO A CORNER ON THE WEST R.O.W. LINE OF SAID 40 FEET AND THE SOUTHEAST CORNER OF SAID LOT 13 AND THE NORTHEAST CORNER OF SAID 11.395 ACRE TRACT AND THE HEREIN DESCRIBED TRACT FROM WHICH FOUND 5/8 INCH IRON ROD BEARS SOUTH 16 DEG. 54 MIN. 59 SEC. WEST, FOR A DISTANCE OF .304 FEET;

THENCE, SOUTH 03 DEG. 15 MIN. 50 SEC. EAST, ALONG THE WEST R.O.W. LINE OF SAID 40 FEET AND THE EAST LINE OF SAID 11.395 ACRE TRACT, A DISTANCE OF 910.78 FEET TO THE **POINT OF BEGINNING** AND CONTAINING 11.3999 ACRES OR 496,581 SQUARE FEET OF LAND, AS SHOWN ON JOB NO. 59121-BND, PREPARED BY WINDROSE.

_____
LUCAS G. DAVIS
R.P.L.S. NO. 6599
STATE OF TEXAS
FIRM REGISTRATION NO. 10108800

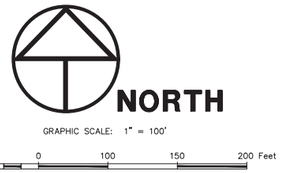
10-31-2023
DATE:



CITY OF MANVEL, BRAZORIA COUNTY, TEXAS

VICINITY MAP

SCALE: 1" = 2000



BENCHMARK — PUBLISHED ELEVATION – 59.14'

PROJECT BENCHMARK IS BRAZORIA COUNTY DRAINAGE DISTRICT NO. 4 BENCHMARK NO. CR58–1, BEING A BRASS DISK STAMPED "CR58–1" FOUND ON A CONCRETE HEADWALL AT THE INTERSECTION OF OUTFALL "A" AND THE NORTH SIDE OF COUNTY ROAD 58, NEAR CR58 WEST DETENTION. ELEVATION – NAVD88, 2001 ADJUSTMENT.

TEMPORARY BENCHMARK "A" — ELEVATION – 54.64'

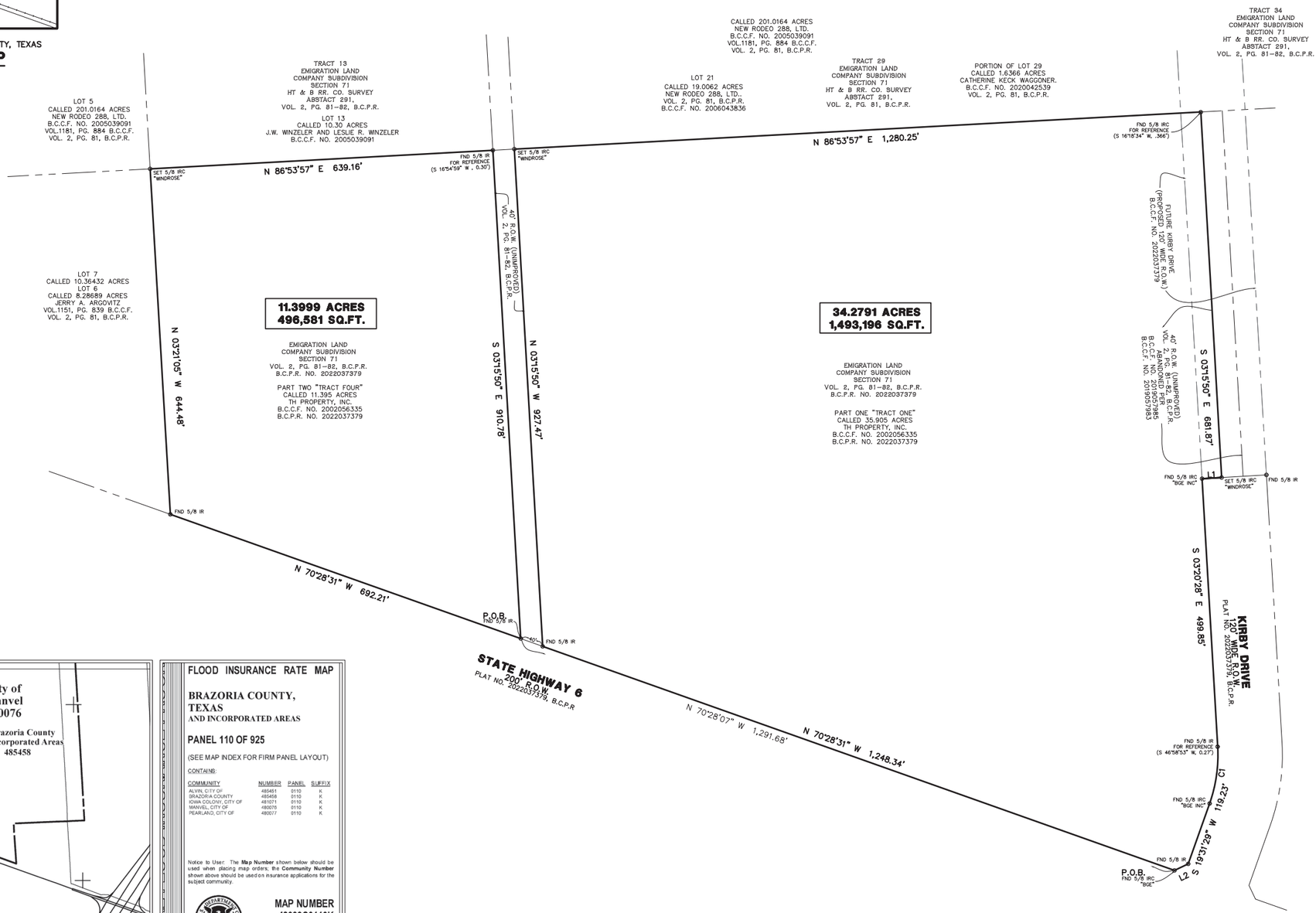
TEMPORARY BENCHMARK "A" IS A BOX CUT ON THE CONCRETE FRAME OF AN ELECTRIC PULL BOX LOCATED ON THE NORTH SIDE OF STATE HIGHWAY 6, APPROXIMATELY 1325 WEST OF ITS INTERSECTION WITH KIRBY DRIVE, AND ABOUT 42 FEET WEST OF THE CENTER OF AN ACCESS DRIVE.

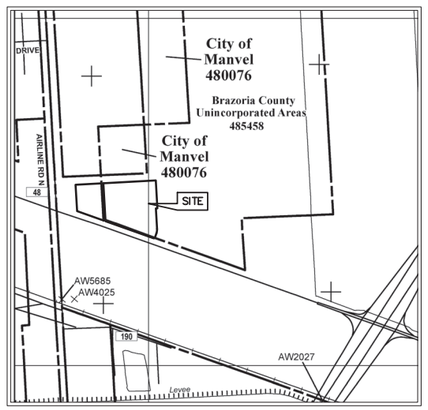
TEMPORARY BENCHMARK "B" — ELEVATION – 56.68'

TEMPORARY BENCHMARK "B" IS A BOX CUT ON A TYPE "C" STORM CURB INLET LOCATED ON THE NORTH SIDE OF STATE HIGHWAY 6, AT ITS INTERSECTION WITH KIRBY DRIVE AND ON THE EAST SIDE OF KIRBY DRIVE, APPROXIMATELY 27 FEET NORTHWEST OF A TRAFFIC SIGNAL POLE.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 86°39'32" W	36.57'
L2	S 64°31'29" W	28.29'

CURVE CHART					
CURVE	RADIUS	DELTA	LENGTH	BEARING	CHORD
C1	270.05'	22°51'57"	107.77'	S 08°05'31" W	107.06'





FLOOD INSURANCE RATE MAP

BRAZORIA COUNTY, TEXAS
AND INCORPORATED AREAS

PANEL 110 OF 925

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALVIN, CITY OF	485451	0110	K
BRAZORIA COUNTY	485458	0110	K
IOWA COLONY, CITY OF	481071	0110	K
MANVEL, CITY OF	480076	0110	K
PEARLAND, CITY OF	480077	0110	K

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
48039C0110K

MAP REVISED
DECEMBER 30, 2020

SURVEYOR'S CERTIFICATION

TO: FIDELITY NATIONAL TITLE INSURANCE COMPANY
MEMORIAL ACQUISITIONS, LLC.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 6a, 7a, 7b1, 7c, 8, 9, 11b, 13, 14, 16, 17, 18, AND 19 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON OCTOBER 20, 2023.

LUCAS G. DAVIS
6599
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS

10/30/2023
DATE

LUCAS G. DAVIS
Registered Professional Land Surveyor
Texas Registration No. 6599

WINDROSE
LAND SURVEYING | PLATTING
5353 W SAM HOUSTON PKWY N, STE 150 | HOUSTON, TX 77041 | 713.458.2281
FIRM REGISTRATION NO. 10108800 | WINDROSESERVICES.COM

ALTA/NSPS LAND TITLE & TOPOGRAPHIC SURVEY
34.2791 ACRES OR 1,493,196 SQ. FT.
11.3999 ACRES OR 496,581 SQ. FT.
SITUATED IN THE
H. T. & B. RR. CO. SURVEY, SECTION 71
ABSTRACT NO. 291
BRAZORIA COUNTY, TEXAS

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FIELDED BY: RP	CHECKED BY: CL	JOB NO. 59121
DRAWN BY: AO	DATE: OCTOBER 2023	SHEET NO. 1 OF 10

WINDROSE
LAND SURVEYING | PLATTING

(PRELIMINARY)

DESCRIPTION OF
1.649 ACRES OR 71,831 SQ. FT.

BEING A TRACT OR PARCEL CONTAINING 1.649 ACRES OR 71,831 SQUARE FEET OF LAND, SITUATED IN THE H.T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, BEING PART OF AND OUT OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION COMPANY SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER VOLUME 2, PAGES 81-82 OF THE BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.), AND BEING ALL OF A CALLED 1.6366 ACRE TRACT OF LAND DESCRIBED IN DEED TO CATHERINE KECK WAGGONER AS RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2020042539, WITH SAID 1.649 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT A 5/8 INCH IRON ROD STAMPED "BGE" FOUND IN THE WEST LINE OF RESTRICTED RESERVE "A", BLOCK 1 OF MANVEL TOWN CENTER DETENTION PONDS AND MUD FACILITIES, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER PLAT NO. 2023010263, B.C.P.R., SAME BEING THE MOST NORTHERLY NORTHEAST CORNER OF UNRESTRICTED RESERVE "B", BLOCK 1 OF MANVEL TOWN CENTER SECTION ONE, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER PLAT NO. 2022042761, B.C.P.R., AND SAME BEING THE SOUTHEAST CORNER OF LOT 40 OF SAID EMIGRATION LAND COMPANY SUBDIVISION AND THE SOUTHEAST CORNER OF A CALLED 52.788 ACRE TRACT OF LAND (TRACT 3) DESCRIBED TO KL LB BUY 5 LLC AS RECORDED UNDER B.C.C.F. NO. 2024046753, FROM WHICH A CAPPED 5/8 INCH IRON ROD STAMPED "BGE" FOUND FOR THE SOUTHWEST CORNER OF SAID RESTRICTED RESERVE "A", SAME BEING AN INTERIOR CORNER OF SAID UNRESTRICTED RESERVE "B" BEARS FOR REFERENCE, SOUTH 03 DEG. 20 MIN. 28 SEC. EAST - 64.88 FEET;

THENCE, NORTH 03 DEG. 26 MIN. 07 SEC. WEST, ALONG THE WEST LINE OF SAID RESTRICTED RESERVE "A", SAME BEING THE EAST LINE OF SAID LOT 40, A DISTANCE OF 676.26 FEET TO THE SOUTHEAST CORNER OF LOT 39 OF SAID EMIGRATION LAND COMPANY SUBDIVISION;

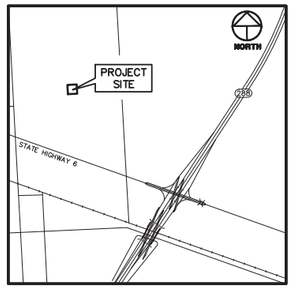
THENCE, SOUTH 86 DEG. 53 MIN. 57 SEC. WEST, ALONG THE COMMON LINE OF SAID LOTS 39 AND 40, AND WITH THE COMMON LINE OF LOTS 34 AND 35 OF SAID EMIGRATION LAND COMPANY SUBDIVISION, A DISTANCE OF 1,361.44 FEET TO THE COMMON EAST CORNER OF LOTS 29 AND 30 OF SAID EMIGRATION LAND COMPANY SUBDIVISION, SAME BEING THE SOUTHEAST CORNER OF SAID 1.6366 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT AND THE **POINT OF BEGINNING**;

THENCE, SOUTH 86 DEG. 53 MIN. 57 SEC. WEST, CONTINUING ALONG THE COMMON LINE OF SAID LOTS 29 AND 30 AND WITH THE SOUTH LINE OF SAID 1.6366 ACRE TRACT, A DISTANCE OF 269.03 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET MARKING THE SOUTHWEST CORNER OF SAID 1.6366 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 03 DEG. 15 MIN. 50 SEC. WEST, OVER AND ACROSS SAID LOT 29 AND WITH THE WEST LINE OF SAID 1.6366 ACRE TRACT, A DISTANCE OF 267.00 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET FOR THE NORTHWEST CORNER OF SAID 1.6366 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT;

THENCE, NORTH 86 DEG. 53 MIN. 57 SEC. EAST, CONTINUING OVER AND ACROSS SAID LOT 39 AND WITH THE NORTH LINE OF SAID 1.6366 ACRE TRACT, A DISTANCE OF 269.03 FEET TO A CAPPED 5/8 INCH IRON ROD STAMPED "WINDROSE" SET ON THE WEST LINE OF A CALLED 40' WIDE R.O.W. (UNIMPROVED) AS RECORDED UNDER VOLUME 2, PAGES. 81-82, B.C.P.R., SAME BEING THE NORTHEAST CORNER OF SAID 1.6366 ACRE TRACT AND OF THE HEREIN DESCRIBED TRACT;

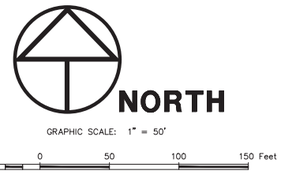
THENCE, SOUTH 03 DEG. 15 MIN. 50 SEC. EAST, WITH THE COMMON LINE OF SAID 40' R.O.W. AND SAID 1.6366 ACRE TRACT, A DISTANCE OF 267.00 FEET TO THE **POINT OF BEGINNING**, AND CONTAINING 1.649 ACRES OR 71,831 SQUARE FEET OF LAND, MORE OR LESS, AS SHOWN ON JOB NO. 59121-1.6AC, PREPARED BY WINDROSE, WITH ALL BEARINGS BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (4204).



CITY OF MANVEL, BRAZORIA COUNTY, TEXAS

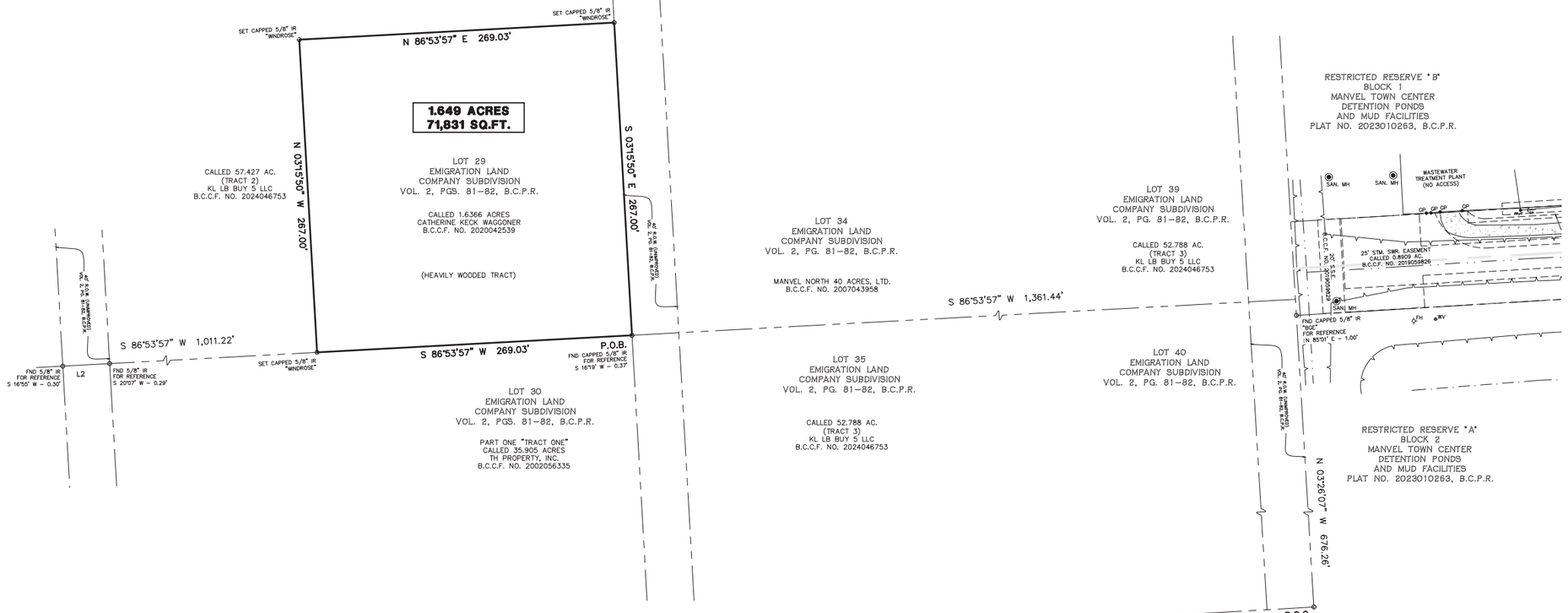
VICINITY MAP

SCALE: 1" = 2000

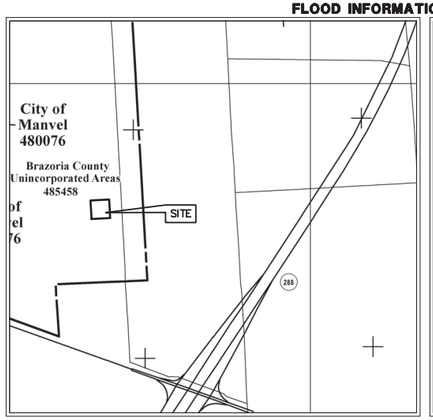


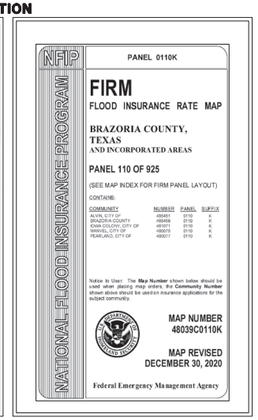
GRAPHIC SCALE: 1" = 50'

50 0 50 100 150 Feet



FLOOD INFORMATION





GENERAL NOTES

1. SURVEYOR DID NOT ABSTRACT SUBJECT PROPERTY. THIS SURVEY WAS PREPARED WITH INFORMATION CONTAINED IN TITLE COMMITMENT GF NO. SN2501255 OF OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY EFFECTIVE DATE OF MAY 30, 2025, ISSUED DATE OF JUNE 5, 2025, AND IS SUBJECT TO THE LIMITATIONS OF THAT COMMITMENT.
2. BEARINGS WERE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, SOUTH CENTRAL ZONE (4204). ALL DISTANCES SHOWN HEREON ARE SURFACE DISTANCES AND MAY BE BROUGHT TO GRID BY APPLYING THE FOLLOWING SCALE FACTOR: 0.3999868381.
3. ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), FLOOD INSURANCE RATE MAP (FIRM) FOR BRAZORIA COUNTY, TEXAS, MAP NO. 48039C0110K REVISED/DATED DECEMBER 20, 20202, THE SUBJECT TRACT APPEARS TO LIE WITHIN UNSHADED ZONE "X". THIS DETERMINATION WAS DONE BY GRAPHIC PLOTTING AND IS APPROXIMATE ONLY, AND HAS NOT BEEN FIELD VERIFIED. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF WINDROSE SURVEYING AND LAND SERVICES.
4. READILY VISIBLE IMPROVEMENTS AND UTILITIES WERE LOCATED WITH THIS SURVEY. NO SUBSURFACE PROBING, EXCAVATION OR EXPLORATION WAS PERFORMED BY WINDROSE SURVEYING AND LAND SERVICES.
5. ENVIRONMENTAL AND DRAINAGE ISSUES ARE BEYOND THE SCOPE OF THIS SURVEY.
6. THE SQUARE FOOTAGE TOTALS SHOWN HEREON ARE BASED ON THE MATHEMATICAL CLOSURE OF THE COURSES AND DISTANCES REFLECTED ON THE SURVEY. IT DOES NOT INCLUDE THE TOLERANCES THAT MAY BE PRESENT DUE TO THE POSITIONAL ACCURACY OF THE BOUNDARY MONUMENTATION.
7. FENCES SHOWN HEREON WITH DIMENSIONAL TIES ARE SHOWN WHERE THEY ARE PHYSICALLY MEASURED. THE FENCE MAY MEANDER BETWEEN MEASURED LOCATIONS.
8. THE WORD "CERTIFY" OR "CERTIFICATE" AS SHOWN AND USED HEREON MEANS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANTY OR GUARANTEE EXPRESSED OR IMPLIED.

SCHEDULE 'B' NOTES

10h. A PIPELINE EASEMENT GRANTED TO TRUNKLINE GAS COMPANY, BY INSTRUMENT RECORDED IN VOLUME 747, PAGE 283, B.C.D.R., AS AFFECTED BY ASSIGNMENT AND ASSUMPTION FILED OF RECORD UNDER B.C.C.F. NOS. 98 028304 AND 98 028307. (NOT WITHIN SUBJECT TRACT.)

INVESTIGATION INTO OIL, GAS, & MINERAL LEASES OR RIGHTS IS BEYOND THE SCOPE OF THIS SURVEY.

LINE TABLE		
LINE	BEARING	DISTANCE
L1	S 03°20'28" E	64.88'
L2	S 86°53'57" W	40.00'

DESCRIPTION

BEING A TRACT OR PARCEL CONTAINING 1.649 ACRES OR 71,831 SQUARE FEET OF LAND, SITUATED IN THE H.T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, BEING PART OF AND OUT OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION COMPANY SUBDIVISION, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED UNDER VOLUME 2, PAGES 81–82 OF THE BRAZORIA COUNTY PLAT RECORDS (B.C.P.R.), AND BEING ALL OF A CALLED 1.6366 ACRE TRACT OF LAND DESCRIBED IN DEED TO CATHERINE KECK WAGGONER AS RECORDED UNDER BRAZORIA COUNTY CLERK'S FILE (B.C.C.F.) NO. 2020042539, WITH SAID 1.649 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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SURVEYOR'S CERTIFICATION

TO: BCS ACQUISITIONS, LLC
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

I DO HEREBY CERTIFY TO THE ABOVE LISTED THAT THIS SURVEY WAS THIS DAY MADE ON THE GROUND AND WAS PERFORMED UNDER MY SUPERVISION. THAT THIS PLAT CORRECTLY REPRESENTS THE PROPERTY LEGALLY DESCRIBED HEREON, THAT THE FACTS FOUND AT THE TIME OF THIS SURVEY SHOW THE IMPROVEMENTS AND THAT THERE ARE NO VISIBLE ENCROACHMENTS APPARENT ON THE GROUND, EXCEPT AS SHOWN. THIS SURVEY SUBSTANTIALLY CONFORMS TO THE CURRENT TEXAS SOCIETY OF PROFESSIONAL SURVEYORS STANDARDS AND SPECIFICATIONS FOR A CATEGORY 1A, CONDITION II SURVEY, TO THE BEST OF MY KNOWLEDGE.

FOR REVIEW ONLY
PRELIMINARY

THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE AND SHALL NOT BE USED OR VIEWED OR RELIED UPON AS A FINAL SURVEY DOCUMENT

10–31–2025
DATE

DUSTIN C. KAISER, R.P.L.S.
Registered Professional Land Surveyor
Texas Registration No. 6918

WINDROSE
LAND SURVEYING | PLATTING
5353 W SAM HOUSTON PKWY N, STE 150 | HOUSTON, TX 77041 | 713.458.2281
FIRM REGISTRATION NO. 10108800 | WINDROSESERVICES.COM

REVISIONS

DATE	REASON	BY

LAND TITLE SURVEY OF
1.649 AC. / 71,831 SQ. FT., OUT OF
LOT 29, EMIGRATION LAND COMPANY SUBDIVISION
COMPANY SUBDIVISION, VOL. 2, PGS. 81-82, B.C.P.R.
SITUATED IN THE
H.T. & B. RR. CO. SURVEY, SECTION 71, ABSTRACT NO. 291
BRAZORIA COUNTY, TEXAS

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FIELDED BY: CC	CHECKED BY: DK	JOB NO.	59121–1.6AC
DRAWN BY: CL	DATE: OCTOBER 2025	SHEET NO.	1 OF 1

Appendix 2
Approved Tree List

Plant List for Manvel Crossing

The following is a list of approved trees and shrubs. Alternative plants not specified in this list may be approved by the Director If determined that an alternative is substantially equal to or better than a specified material and the use will not violate any provision of the PUD.

Shade Trees:

Pecan	*Carya Illinoinensis*
Fringe Tree	*Chionanthus virginicus*
Japanese Blueberry	*Elaeocarpus decipiens*
Nellie R. Stevens Holly	*Ilex x attenuata 'Nellie R. Stevens'*
Savannah Holly	*Ilex attenuata 'Savannah'*
Southern Magnolia	*Magnolia grandiflora*
Loblolly Pine	*Pinus taeda*
Texas Pistache	*Pistacia texana*
Sycamore	*Platunus occidentalis'*
Bur Oak	*Quercus macrocarpa*
Chinkapin Oak	*Quercus muehlenbergii*
Monterey Oak	*Quercus polymorpha*
Water Oak	*Quercus nigra*
Live Oak	*Quercus virginiana*
Shumard Oak	*Quercus* shumardii
Bald Cypress	*Taxodium distichum*
Pond Cypress	*Taxodium ascendens*
Cedar Elm	*Ulmus crassifolia*
Bosque or Drake Elm	*Ulmus parvifolia 'Bosque' or 'Drake'*

Small & Ornamental Trees:

Texas Redbud	*Cercs canadensis 'var. texensis'*
European Fan Palm	*Chamaerops humilis*
Desert Willow	*Chilopsis linearis*
Smokebush	*Cotinus obovatus*
Loquat	*Eryobotrya japonica*
Foster Holly	*Ilex x attenuata 'Fosterii'*
Possumhaw Holly	*Ilex decidua*
Yaupon Holly	*Ilex vomitoria*
Columnar Junlper	*Juniporus spp.*
Crape Myrtle	*Lagerstroemia indica 'Basham's Pink', 'Natchez', 'Muskogee'*
Little Gem Magnolia	*Magnolia grandiflora 'Little Gem'*
Tree form (MT) Ligustrum	*Ligustrum japonicum*
Saucer Magnolia	*Magnolia x soulangeana*
Sweetbay Magnolia	*Magnolia virginiana*
Tree Wax Myrtle	*Myrica cerifica*
Mexican Plum	*Prunus mexicana*
Texas Sable Palm	*Sabal texana*
Texas Mountain Laurel	*Sophora secundiflora*
Windmill Palm	*Trachycarpus fortunei*
Chaste Tree	*Vitex agnus-castus*

Shrubs:

Abelia	*Abelia x grandiflora 'Prostrata', 'Sherwoodii', 'Edward Goucher'*
Dwarf Bottlebrush	*Callistemon citrinus 'Austraflora', 'Firebrand', 'Little John', 'Splendens'*
Japanese Cleyera	*Ternstroemia gymnanthera*
Sago Palm	*Cycas revoluta*
Umbrella Plant	*Cyperus alternifolius*
African/Butterfly Iris	*Dietes iridioides, Dietes bicolor*
Elaeagnus Ebbingel	*Elaeagnus macrophylla*
Silverberry	*Elaeagnus fruitlandii*
Pineapple Guava	*Feijoa sellowiana*
Red Yucca	*Hesperaloe parviflora*
Barbados Cherry	*Malpighia glabra*
Fatsia	*Fatsia japonica*
Dwarf Burford Holly	*Ilex cornuta 'Bufordii Nana'*
Chinese Holly	*Ilex cornuta 'Rotunda'*
Dwarf Yaupon	*Ilex vomitoria 'Nana'*
Louisiana Iris	*Iris louisiana*
Dwarf Crape Myrtle	*Lagerstroemia indica 'Nana'*
Ligustrum	*Ligustrum japonicum*
Waxleaf Glossy Privet	*Ligustrum lucidum*
Fringe Flower	*Loropetalum chinense*
Maiden Grass	*Miscanthus sinensis var.*
Dwarf Wax Myrtle	*Myrica pusilla*
Nandina	*Nandina domestica*
Purple Fountain Grass	*Pennisetum setaceum*
Indian Hawthorn	*Raphiolepis indica 'Clara'*
Shrub Rose	*Rosa spp. 'Knockout', 'The Fairy', 'Bonica', 'Carefree Wonder'*
Society Garlic	*Tulbaghia violacea*
Sweet Viburnum	*Viburnum spp.*
Bridal Wreath Spirea	*Spirea prunifolia*
Oleander	*Nerium oleander*
Dwarf Oleander	*Nerium oleander 'Petite Pink', 'Little Red'*
Plumbago	*Plumbago auriculata*
Dwarf Pomegranate	*Punica granatum 'Nana'*
Kumquat	*Fortunella spp.*
Muhly Grass	*Meuhlenbergia lindheimeri*
Dwarf Maiden Grass	*Miscanthus sinensis 'Morning Light'*

Evergreen Trees:

Japanese Blueberry	*Elaeocarpus decipiens*
Nellie R. Stevens Holly	*Ilex x 'Nellie R. Stevens'*
Savannah Holly	*Ilex x attenuata 'Savannah'*
Southern Magnolia	*Magnolia grandiflora*
Loblolly Pine	*Pinus taeda*
Live Oak	*Quercus virginiana*
European Fan Palm	*Chamaerops humilis*
Loquat	*Eriobotrya japonica*
Foster Holly	*Ilex x attenuata 'Fosteri'*
Yaupon Holly	*Ilex vomitória*
Columnar Juniper	*Juniperus spp.*
Little Gem Magnolia	*Magnolia grandiflora ' Little Gem'*
Tree Form Ligustrum	*Ligustrum japonicum*
Sweetbay Magnolia	*Magnolia virginiana*
Tree Wax Myrtle	*Morella cerifera*
Texas Sable Palm	*Sabal mexicana*
Texas Mountain Laurel	*Sophora secundiflora*
Windmill Palm	*Trachycarpus fortunei*

Appendix 3
Ordinance No. XXXX-XX (PUD Ordinance)

Appendix 4
Ordinance No. XXXX-XX
(Annexation Ordinance)

Section 5.0 Application Materials

This section includes:

1) Application Materials Checklist
2) Submission Fees
3) Application
4) Application Flowchart

Application Materials Checklist

To apply for a Planned Unit Development (PUD), eight (8) complete sets of the following materials and the required PUD plan exhibits to the City of Manvel (Please check all items submitted):

- ☐ Completed PUD application form
- ☐ Application fee
- ☐ Original letter of consent signed by all owners (if applicable)
- ☐ 24" x 36" prints of the PUD plan exhibits (Refer to Minimum Exhibit Requirements)
- ☐ Title Report, Letter, or Attorney Statement
- ☐ Copy of the confirmation of review from Alvin Independent School District
- ☐ Certificates of water and sewer availability
- ☐ Traffic study or letter from City Traffic Engineer stating no such study is required
- ☐ Letter detailing the development, anticipated build-out (number of units for residential, gross floor area for office and commercial) the amount of land to be developed, preserved or dedicated, and how public and/or private services will be provided
- ☐ Flood Impact Analysis if any portion of the PUD is located within the 100-year floodplain of floodway
- ☐ Original stamped, PUD plan mark-up from pre-application meeting (if any)
- ☐ Letter stating that all comments made by DRC at the pre-application meeting have been addressed
- ☐ List of requested deviations, if any from the established PUD guidelines with a statement of justification.

Certification

The undersigned hereby certifies that the enclosed Planned Unit Development Application and materials meets all of the City of Manvel requirements contained in Section 77-29 of the Zoning Ordinance and the PUD Manual.

_____ _____

NAME DATE

_____

TITLE

Submission Fees

A onetime fee of $2,500.00 will be paid for by the applicant for each pre-application meeting with the DRC prior to the formal submittal of a PUD application.

All fees related to the review and processing of PUD applications must be received by the City prior to the initiation of the PUD review process. No pre-application meetings and/or formal application submittals will be processed until all required fees have been paid. ALL FEES MUST BE PAID IN FULL before the PUD application can be placed on the Planning, Development and Zoning Commission agenda or the City Council agenda for action.

PUD fees are as follows:

1. Review Fees: All PUD applications must be accompanied with a Review Fee based on the size of the PUD.
   A. Small PUD:
      1. Four Thousand Dollars ($4,000)
   B. Medium PUD (Master Plan only, all future phases must be submitted for site plan review and pay appropriate fees as shown below)
      1. Four Thousand Dollars ($4,000), and
         a. Per Acre Fee of Forty Dollars ($40) per acre or any part thereof
   C. Large PUD (Master Plan only, all future phases must be submitted for site plan review and pay appropriate fees as shown below)
      1. Master plan less than one thousand (1,000) acres
         a. Ten Thousand Dollars ($10,000), and
         b. Per Acre Fee of Thirty Dollars ($30) per acre or any part thereof, or
      2. Master plan greater than one thousand (1,000) acres
         a. Twenty Thousand Dollars ($20,000), and
         b. Per Acre Fee of Twenty Dollars ($20) per acre or any part thereof in excess of 1,000 acres
   D. Site plan review fees (does not apply to Small PUDs)
      1. Three Thousand Dollars ($3,000)
         a. 10 - 40 acres will have a per acre fee of Forty Dollars ($40),
         b. 41 - 160 acres will have a per acre fee of Twenty-five Dollars ($25), and;
         c. Per acre fee Tewenty Dollars ($20) per acre of any part thereof in excess of 160 acres.

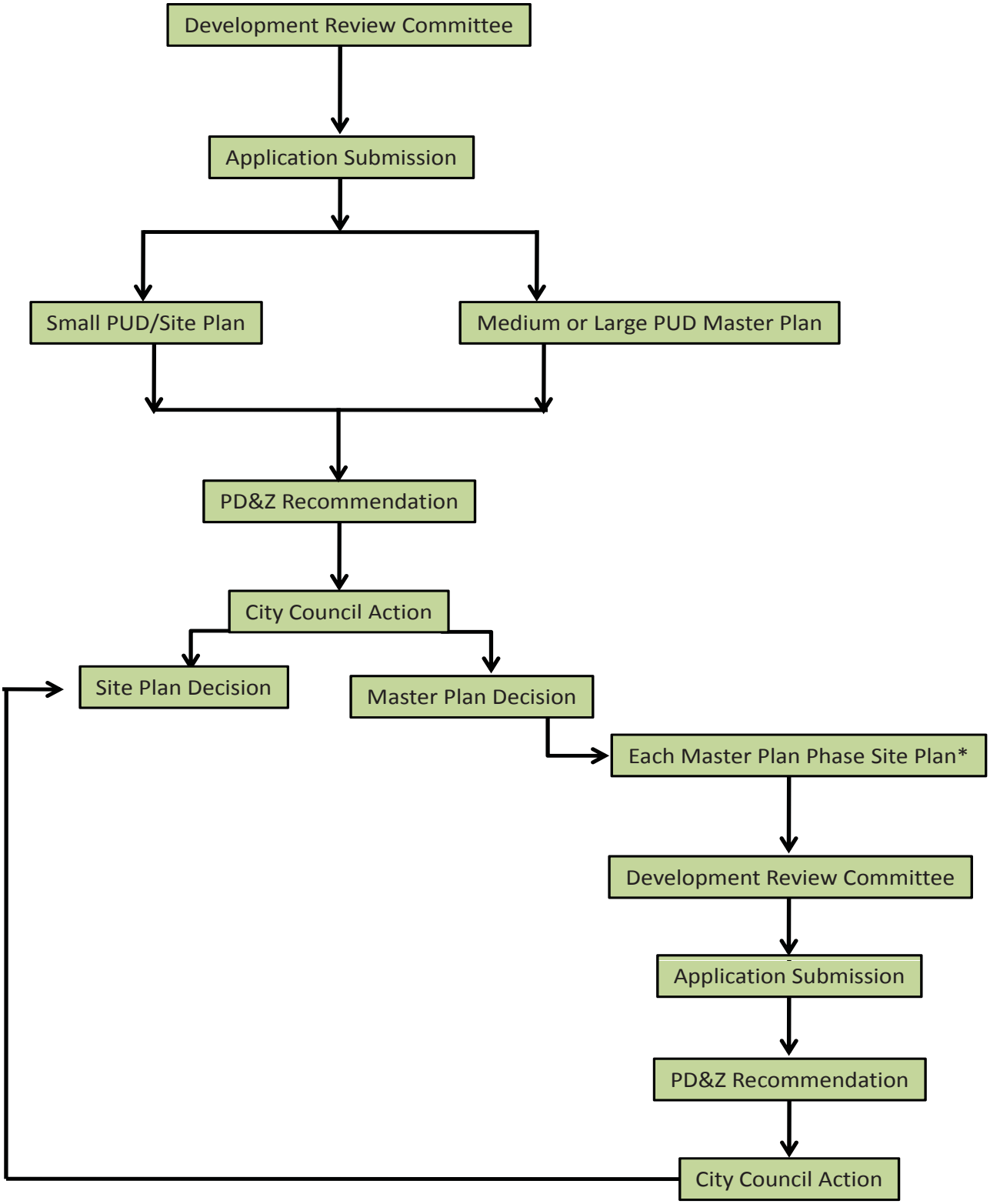
Public Notice Fee: A One Hundred and Fifty Dollar ($150) fee will be charged to the applicant for any review process that requires a public notification.

Additional Services Fee: In addition to the Review Fee, and the Public Notice Fee, an Additional Service Fee, based on the actual hourly cost to the City for staff or outside consultant will be charged to the applicant for the following:

a. Any pre-submission meetings requested by the applicant

b. Any additional review of PUD application submissions, other than the review covered in the Review Fee, requested by the applicant

Figure 6 - Application Process



* Each subsequent development phase must follow the process detailed below.

Staff Use Only:
Date Received: _____
Received by: _____
Date Complete: _____
Completeness Review by:
_____

Planned Unit Development (PUD) Application

Incomplete Applications will not be accepted. Please review application submittal requirements contained in the City of Manvel PUD Manual.

(Please Type or Print Clearly with Dark Ink)

☒ Master Plan PUD ☐ Small PUD ☐ Site Plan Only

General Information

PUD Name: Manvel Crossing

Number of Units Proposed: - Current Zoning Designation: N/A - Currently ETJ

Zoning District under Which PUD Will Be Designed: Planned Unit Development (PUD) once annexed

Address/Location: Northwest corner of Highway 6 and Kirby Dr.

Brazoria County Parcel Number (s): 167695 & 167690 Acres: ~49.525

Legal Description: A0291 HT&BRR TRACT 14-15-22-23-30-31 ACRES 48.1617 & A0291 HT&BRR TRACT 29 ACRES 1.6366

Applicant Information

Name: EHRA Engineering Daytime Phone: (346)-326-9557

Mailing Address: 10011 Meadowglen Ln

City/State/Zip: Houston, TX 77042

Contact Person: Ian Knox

Email Address: _____

Property Owner Information (If different from applicant; attach additional signature page or appropriate letter of consent/agreement if more than one property owner)

Name: Ryan Sweeney, BCS Capital Group Daytime Phone: (281)-216-5717

Mailing Address: 1940 Fountain View Dr, #220

City/State/Zip: Houston, TX 77057

Email Address: _____

CITY OF MANVEL PLANNED UNIT DEVELOPMENT APPLICATION, PAGE 2

(Attach additional sheets if necessary to fully answer the following.)

1. Contiguous Land Ownership- Please specify if the owner(s) own any property that is directly adjacent to the proposed PUD and describe any future projects in adjacent property: The owner does not own any property that is directly adjacent to the proposed PUD.

2. Concept Statement- Brief description of the project including proposed the use or uses: Manvel Crossing is a ~49 acre retail shopping and commercial services development.

The proposed activities and uses shall be shown on an attached PUD plan based on the exhibit requirements for master plan and site plan review. Please refer to the City of Manvel PUD Manual for the master plan and site plan requirements.

3. Statement of Justification- Brief description outlining how the proposed PUD is consistent with the purpose of the Zoning Ordinance and all departures from the provisions of the underlying zoning district that are necessary to provide superior site development: A currently undeveloped piece of land that is lying outside the City limits, this site will be developed to standards similar to the surrounding developments, with architectural design regulations, a comprehensive use table, landscaping, and shopping/dining amenities.

4. Statement of Compliance with the Comprehensive Plan- Description of how the PUD meets or exceeds the City vision as described in the Comprehensive Plan: With the site currently sitting in the ETJ of the City of Manvel, this site is planned to be annexed into the City Limits as part of the overall PUD process. Once annexed into the City, Manvel Crossing will provide amenities and a higher tax base for the community.

5. Statement of Compatibility- Describe how the proposed project is compatible with the surrounding uses and will not have significant adverse impacts on the properties: The majority of properties surrounding the project are undeveloped, or agricultural in nature. To the east of the site is the Manvel Town Center development, to the south, State Highway 6 is abutting the property, and generally around the undeveloped areas and across the highway there are several commercial developments. This indicates that the location of the proposed development aligns with the surrounding land uses.

10/06/2025
Date

Ian Knox
Digitally signed by Ian Knox
Date: 2025.10.06 14:39:59 -05'00'
Applicant's Signature

Date

Owner's Signature (If different from Applicant)

The above signed property owners, certify that the above information is true and correct to the best of our knowledge and state that we are the legal owners of the property included in this application and/or designate the applicant to act as our agent with respect to this application. If there are more than one property owner(s), attach additional signature sheets or letter of consent to application.

RAVEN ***Environmental Services, Inc.***

CONSULTING AND MANAGEMENT

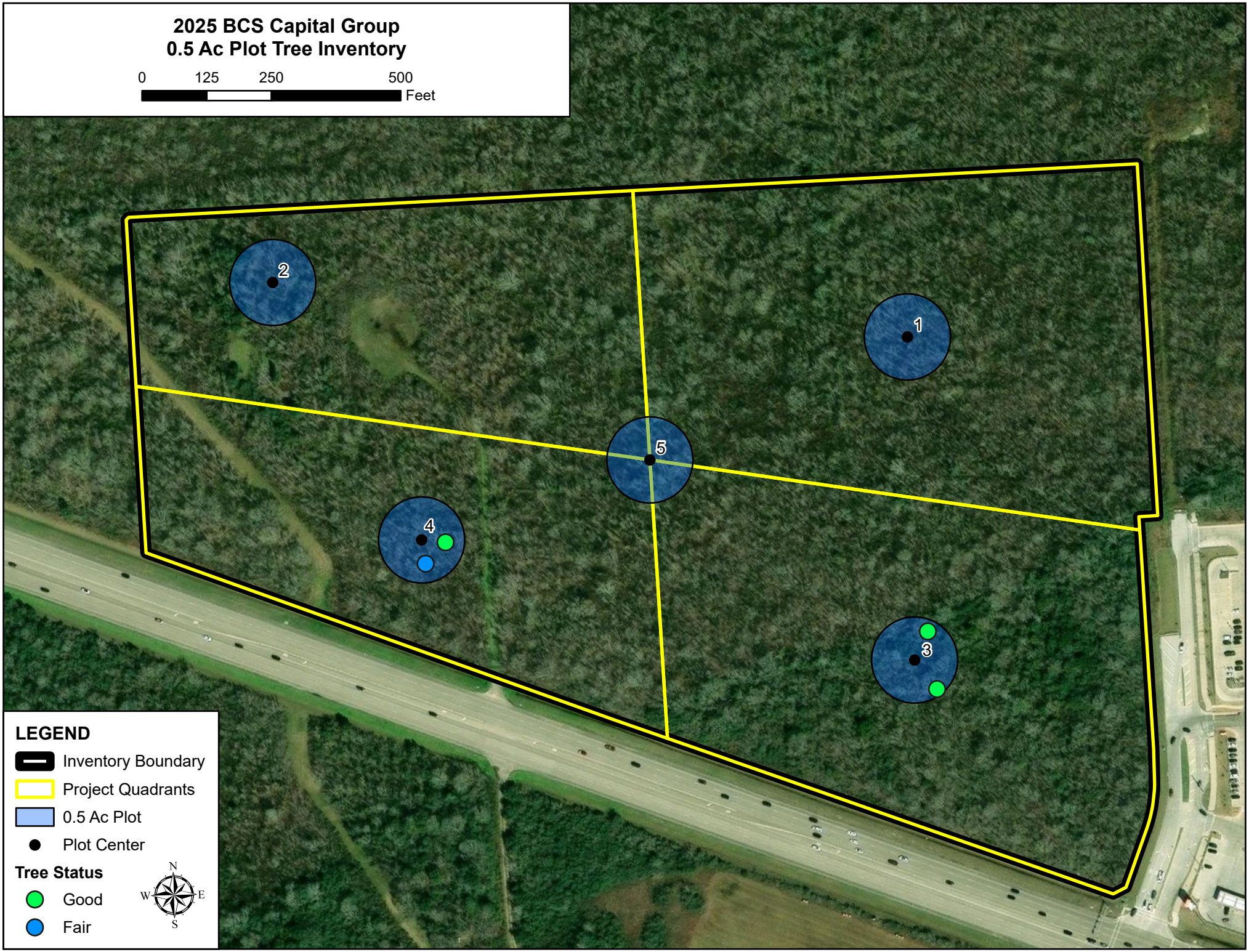
½ Acre Sample Plot Tree Inventory

On September 29th, 2025, five ½ acre plots were inventoried on the property located near highway 6 and County Road 48, Manvel, TX (attached map). The two western plot locations were adjusted due to clearings falling within plot boundaries. Vegetation composition for all plots consisted of non-protected trees ranging from 3-15 inches in DBH with blackberry/yaupon holly dominating the understory. Chinese Tallow was the prevalent tree species followed by American Elm and Hackberry. No protected trees fell within plots 1,2 and 5. Vegetation composition for plot 4 was the same as the previous plots but an American Elm with a DBH of 20 inches fell within plot boundaries. Additionally, a multi-stem American Elm was inventoried with the 3 stems measuring 8, 10 and 16 inches. Information on how to record multi-stem DBH was not found after looking through section 77-44. However, if the square root of the sum of the squares methodology was used then the multi-stem tree would equal 20 inches DBH ($\sqrt{8^2+10^2+16^2}$). Vegetation Composition for plot 3 consisted of Chinese Tallow, American Elm, Hackberry and Eastern Red-Cedar. Chinese tallow was the dominate tree species. Plot 3 had 2 protected trees, an American Elm measuring 21 inches and another American Elm measuring 24 inches.

Protected Tree Inventory			
Plot #	**Species**	**DBH**	**Health**
4	American Elm	20	Good
3	American Elm	21	Good
3	American Elm	24	Good

If you have any questions or concerns, please contact me.

Thank you,
Trey Marrero
Wildlife Biologist/ISA Certified Arborist TX-5004A
tmarrero@ravenenvironmental.com


2025 BCS Capital Group
0.5 Ac Plot Tree Inventory
0
125
250
500
Feet
2
1
5
4
3
LEGEND
Inventory Boundary
Project Quadrants
0.5 Ac Plot
Plot Center
Tree Status
Good
Fair
N
W
E
S

Tree Inventory and Preservation Summary

A certified arborist with Raven Environmental Services conducted five ½-acre sample plots (2.5 acres total) across the 47-acre tract on September 29, 2025. The sampled areas were overwhelmingly dominated by **Chinese Tallow** and other non-protected species in the 3"–15" DBH range, with **yaupon** and **blackberry** comprising the understory. Only **three protected-caliber American Elm** trees in good condition (20", 21", and 24" DBH) were identified, and all occurred within the same general portion of the site; multiple other plots contained **zero** protected trees. Using standard acreage extrapolation, the upper-bound estimate would be roughly **50 protected-class trees** across all 47 acres. However, because protected trees did not appear in the plots representative of the rear/interior portions of the property—which consist almost entirely of invasive tallow scrub—the actual number of protected-quality trees across the site is expected to be **meaningfully lower than that upper-bound estimate**.

The **Planned Unit Development's tree-installation guidelines** require a **larger quantity of desirable native and protected species** to be planted throughout the project, resulting in a higher-quality and more sustainable canopy post-development.

Accordingly, we respectfully request that this PUD incorporate approval pursuant to Section 77-44(b)(7)(d) of the Zoning Ordinance, which allows the City to accept a partial tree survey in lieu of a full survey when protected trees are confined to a limited portion of the site. Given that all identified protected trees are concentrated within the front portion of the property and the remainder is dominated by non-protected invasive vegetation, this finding directly satisfies the intent and criteria of that provision.

Traffic Impact Analysis

Manvel Commercial Development

SH 6 at Kirby Drive

Manvel, Texas 77578

-prepared by-

QUALLS DESIGN

TBPE Firm: F-23500

Dustin W. Qualls, PE, PTOE

October 9, 2025

10207 Birchline Dr
Spring, TX 77379
(713) 398-7461
dustin@quallsdesign.com
http://QuallsDesign.com

Executive Summary

The *Manvel Commercial* development is proposed to be located on the north side of SH 6, just west of Kirby Drive, in Manvel, Texas. The proposed site location is shown outlined in red in **Figure 1** below.

Figure 1: Manvel Commercial Proposed Development Location

The Manvel Commercial development proposes to construct various retail land uses within the tract including:

- 28,630 total square footage of retail (shopping center)
- 11,567 total square footage of fast-food or fast-casual restaurants
- 5,312 total square footage of convenience store with 12 gasoline fueling stations
- 106,631 square feet of a home improvement superstore
- 49,500 square feet of a medical clinic
- 4,260 square feet of a car wash
- 2,549 square feet of an oil change service center
- 7,020 square feet of an auto parts store

Full buildout of the development is modeled as a single phase of construction with ultimate buildout by the end of 2028. A growth rate of 5% compounded annually for three years is utilized to develop the no-build baseline conditions prior to full buildout. The existing site is

mostly undeveloped, with an HEB shopping center located adjacent to the site on the east side of Kirby Drive.

The proposed development will provide six points of access:

- **Driveway 1 at SH 6** – this driveway is proposed to provide right-in/right-out access to SH 6 at the west side of the development. The driveway will function as a T-intersection.
- **Driveway 2 at SH 6** – this driveway is proposed to provide full-access to SH 6 from the center of the development. The driveway is proposed to align with an existing median opening on SH 6 that has left-turn lanes already servicing the median opening.
- **Driveway 3 at SH 6** – this driveway is proposed to provide right-in/right-out access to SH 6 at the east side of the development. The driveway will function as a T-intersection.
- **Driveway 4 at Kirby Drive** – this driveway will provide full access to Kirby Drive from the southeast portion of the development and align with an existing HEB driveway on the east side of Kirby Drive.
- **Driveway 5 at Kirby Drive** - this driveway will provide full access to Kirby Drive from the northeast portion of the development.
- **Driveway 6 at Kirby Drive** - this driveway will provide full access to Kirby Drive from the northern portion of the development.

The purpose of this Traffic Impact Analysis is to analyze the impacts of the Manvel Commercial development on adjacent critical roadways and recommend mitigation as necessary.

Data Collection

Weekday AM and PM peak hour turning movement counts (TMCs) were collected on Wednesday, September 24th, by Qualls Design. The raw traffic counts can be found in **Appendix A**. Traffic control and existing traffic circulation patterns were observed in the field and documented as a part of this study. From the TMC data collected, the weekday AM peak hour for the overall study area was determined to be 7:00 AM to 8:00 AM, and the weekday PM peak hour was similarly calculated to be 5:00 PM to 6:00 PM.

Traffic Impact Analysis Assumptions

Assumptions utilized in the study are listed below, along with justification for their use:

- Growth Rate: A 5% growth rate compounded annually is used in this study; this growth rate is consistent in context with the surrounding developments, site location, and relatively low growth in and around the study area.
- Internal Capture: No internal capture traffic volumes are assumed for this study to model worst-case conditions.
- Passerby Trips: Passerby traffic volumes are included according to the Institute of Transportation Engineers (ITE) *Trip Generation* passerby methodology.
- Trip Distribution: Percentages for global trip distribution were assumed based on proposed origins and destinations of the development. Globally, the trip distribution percentages assumed are as follows:
    - 50% to/from the east of the development via SH 6
    - 35% to/from the west of the development via SH 6
    - 10% to/from the northwest of the development via County Road 48
    - 5% to/from the southwest of the development via County Road 48

Site Plan

The proposed site plan is shown on the next page in **Figure 2** with plan north being at the left of the image.

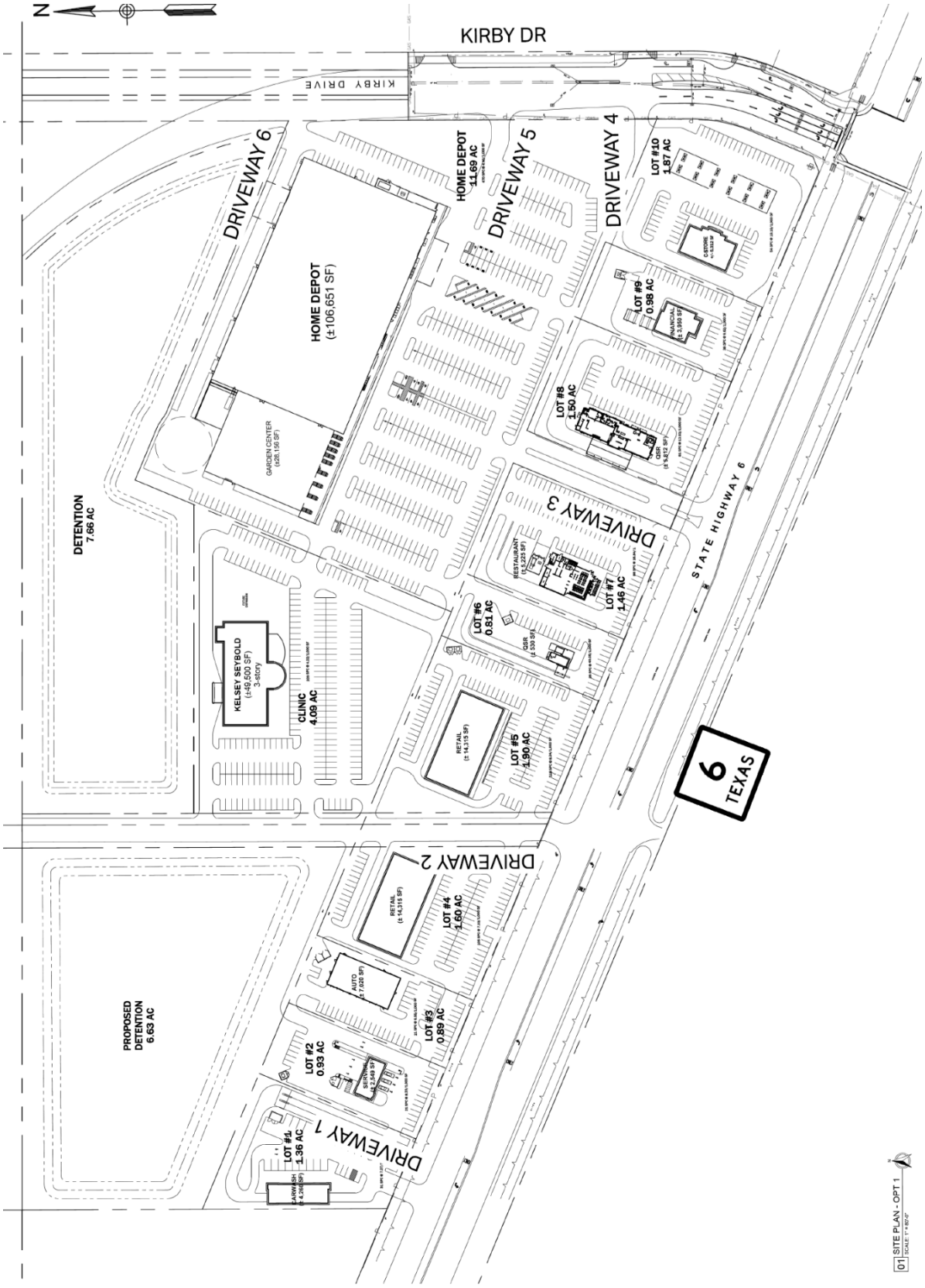


Figure 2: Manvel Commercial Proposed Site Plan

Mitigation and Recommendations

Based on the capacity analyses performed for the proposed Manvel Commercial development, the following findings and findings are made:

- Construct a westbound right-turn deceleration lane at the proposed intersection of SH 6 at Driveway 3. A minimum taper length of 100 feet with a minimum storage length of 200 feet will suffice for the right-turn lane based on the buildout queue length analysis.
- Construct an extension of Kirby Drive north from the current terminus at the HEB property line to the proposed property line of the Manvel Commercial tract.
- Construct northbound left-turn lanes for Driveway 5 and Driveway 6 at the intersections with Kirby Drive.
- No additional mitigation measures are recommended for the critical intersections of the study area.

Table of Contents

Executive Summary 1
Data Collection 2
Traffic Impact Analysis Assumptions 3
Site Plan 3
Mitigation and Recommendations 5
Introduction 7
Existing Conditions 8
Study Roadways 8
Data Collection 8
Existing Peak Hour Turning Movement Counts (2025) 8
No-Build Conditions 11
Future Roadway Improvements 11
No-Build Traffic Volume Methodology 11
Growth Rate 11
No-Build Peak Hour Turning Movement Counts (2028) 11
Proposed Development 13
Site Plan 13
Critical Study Intersections 15
Trip Generation 15
Trip Distribution 17
Traffic Model 17
Peak Hour Generated Trips 17
Proposed Intersection Lanes Assignments and Traffic Control 20
Buildout Turning Movement Counts 21
Highway Capacity Manual Level-of-Service 23
Mitigation Analysis 25
Summary of Findings and Recommendations 25

List of Tables

Table 1: ITE Trip Generation Manvel Commercial 16
Table 2: AM Peak Hour Capacity Analyses 23
Table 3: PM Peak Hour Capacity Analyses 24

List of Figures

Figure 1: Manvel Commercial Proposed Development Location 1
Figure 2: Manvel Commercial Proposed Site Plan 4
Figure 3: Existing AM Peak Hour TMCs (2025) 9
Figure 4: Existing PM Peak Hour TMCs (2025) 10
Figure 5: No-Build AM Peak Hour TMCs (2028) 12
Figure 6: No-Build PM Peak Hour TMCs (2028) 13
Figure 7: Manvel Commercial Proposed Site Plan 14
Figure 8: AM Peak Hour Generated Trips by Intersection 18
Figure 9: PM Peak Hour Generated Trips by Intersection 19
Figure 10: Lane Assignments and Traffic Control 20
Figure 11: Buildout AM Peak Hour TMCs (2028) 21
Figure 12: Buildout PM Peak Hour TMCs (2028) 22

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Full buildout of the development is modeled as a single phase of construction with ultimate buildout by the end of 2028. A growth rate of 5% compounded annually for three years is utilized to develop the no-build baseline conditions prior to full buildout. The existing site is mostly undeveloped, with an HEB shopping center located adjacent to the site on the east side of Kirby Drive.

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- **Driveway 6 at Kirby Drive** - this driveway will provide full access to Kirby Drive from the northern portion of the development.

Existing Conditions

Study Roadways

Existing land use in the vicinity of the proposed Manvel Commercial development is primarily low-density residential, with commercial development located along SH 6. The critical roadways that will be impacted by the proposed development include:

SH 6:

- Typical 6-lane, undivided major thoroughfare with raised ribbon medians providing median openings and left-turn lanes at specific locations
- Drainage provided by open ditches on both sides of the roadway
- Posted speed limit: 60 MPH
- Sidewalks are not present on either side of the roadway

Kirby Drive:

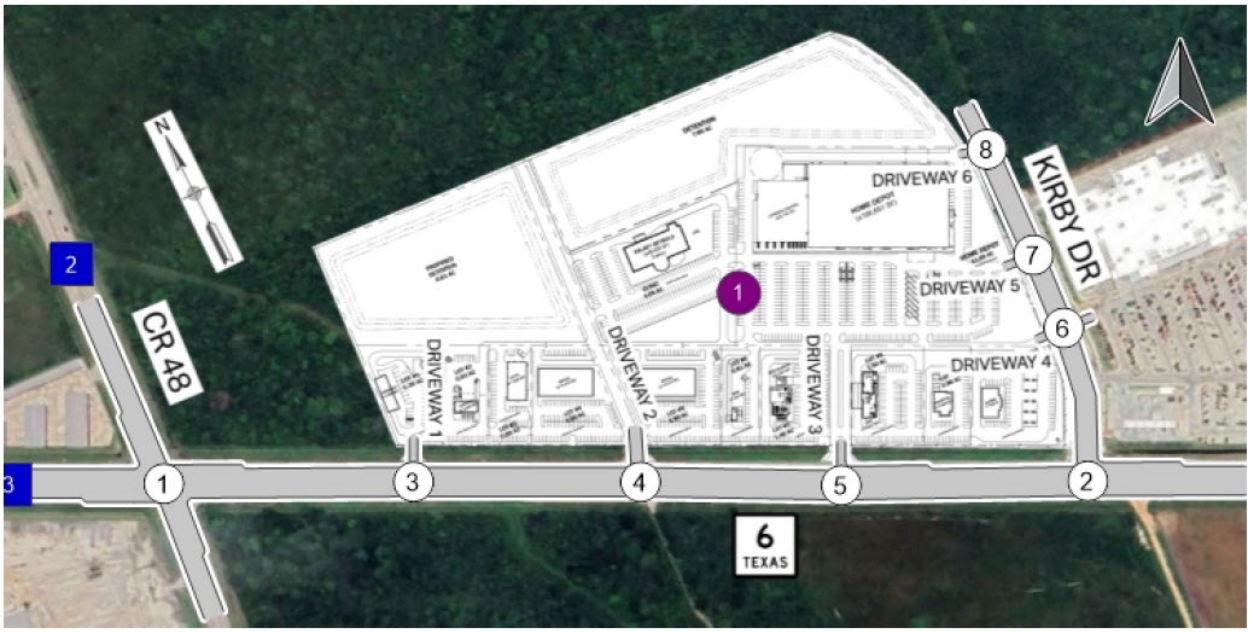
- Typical 2-lane, undivided collector roadway
- Drainage provided by open drainage ditches on both sides of the roadway
- Posted speed limit: 40 MPH
- A sidewalk is present along the east side of Kirby Drive
- Kirby Drive terminates as a dead-end north of the proposed site driveways; this project will construct an extension of Kirby Drive north to the property line

Data Collection

Weekday AM and PM peak hour turning movement counts (TMCs) were collected on Wednesday, September 24th, by Qualls Design. The raw traffic counts can be found in **Appendix A**. Traffic control and existing traffic circulation patterns were observed in the field and documented as a part of this study. From the TMC data collected, the weekday AM peak hour for the overall study area was determined to be 7:00 AM to 8:00 AM, and the weekday PM peak hour was similarly calculated to be 5:00 PM to 6:00 PM.

Existing Peak Hour Turning Movement Counts (2025)

The summarized peak hour TMCs by critical intersection can be seen in **Figure 3** for the weekday AM peak hour (7:00 AM to 8:00 AM) and **Figure 4** for the weekday PM peak hour (5:00 PM to 6:00 PM) respectively.



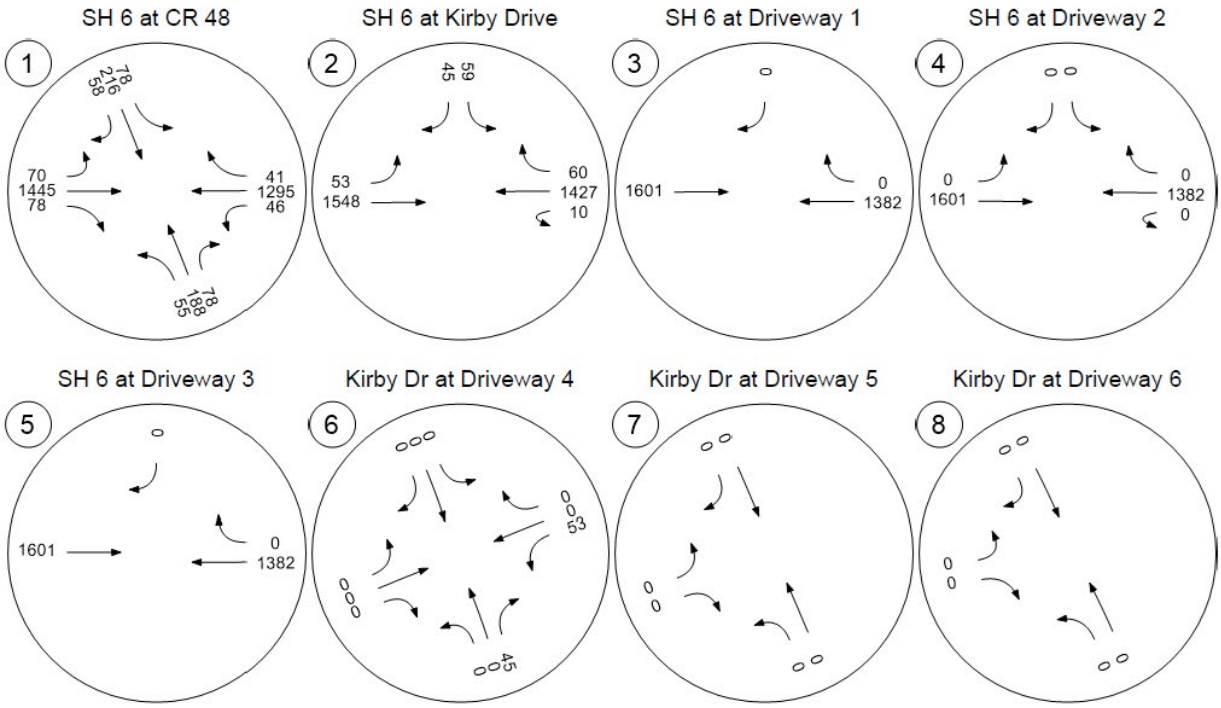
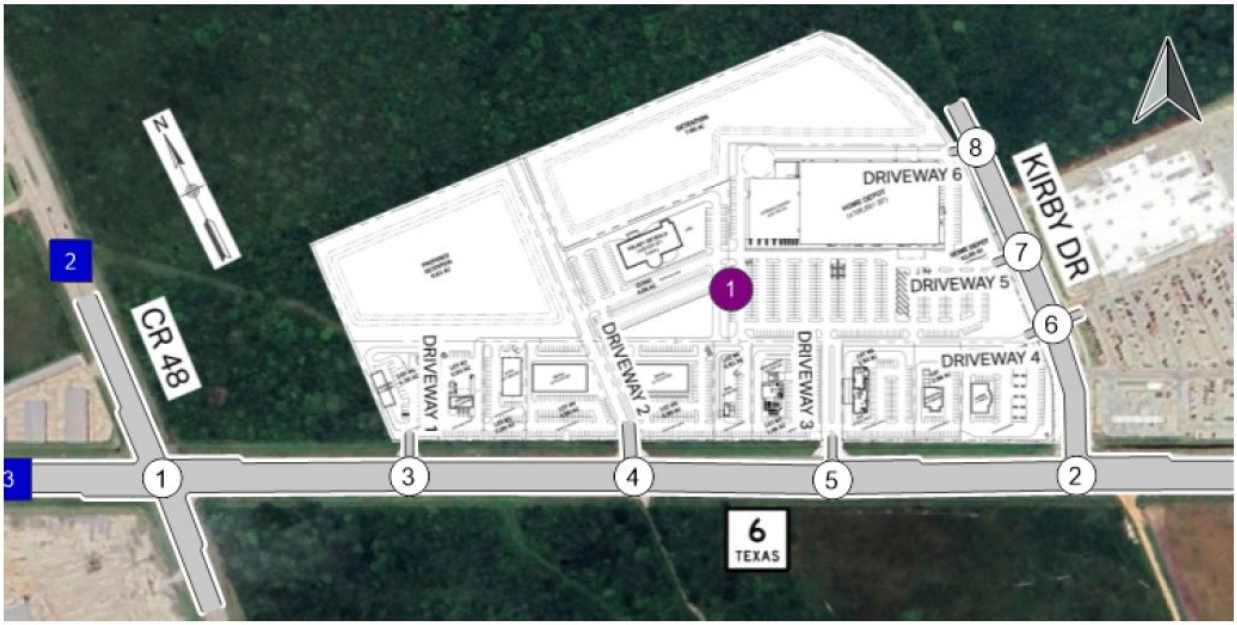


Figure 3: Existing AM Peak Hour TMCs (2025)



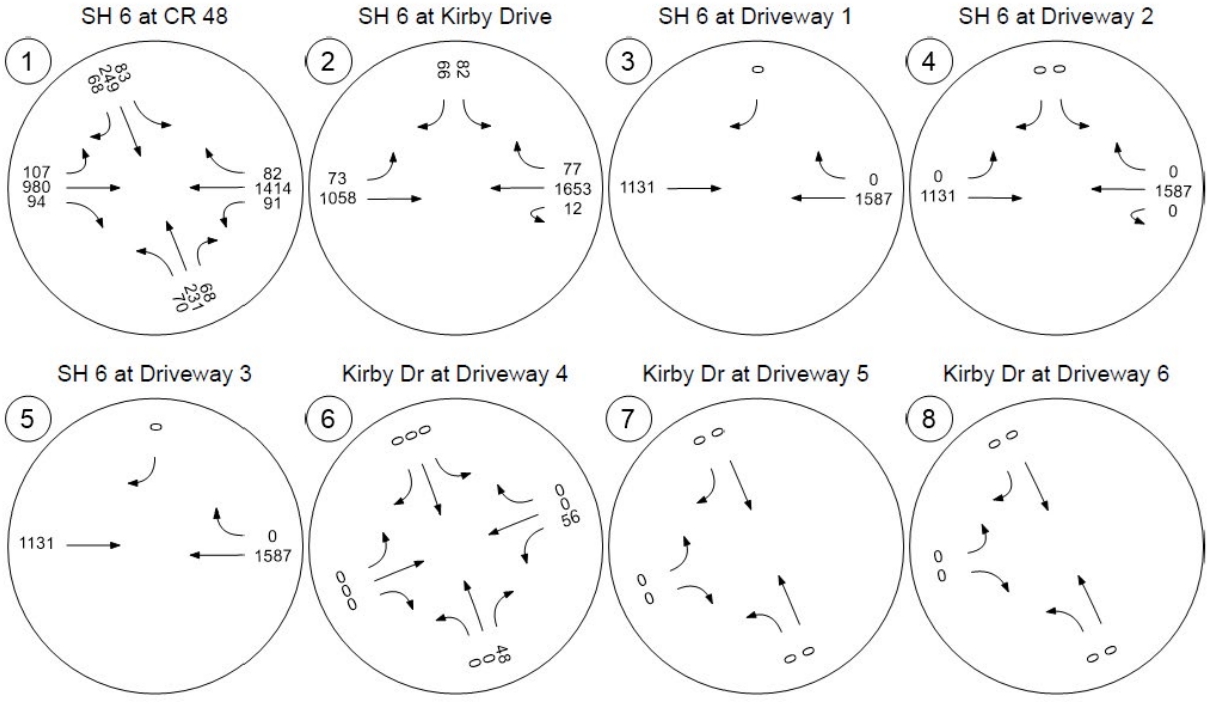


Figure 4: Existing PM Peak Hour TMCs (2025)

No-Build Conditions

Future Roadway Improvements

Existing land use in the vicinity of the proposed Manvel Commercial development is primarily low-density residential with commercial developments fronting along SH 6. For the purposes of this study, no future roadway improvements are included in the background conditions of the traffic modeling analysis.

No-Build Traffic Volume Methodology

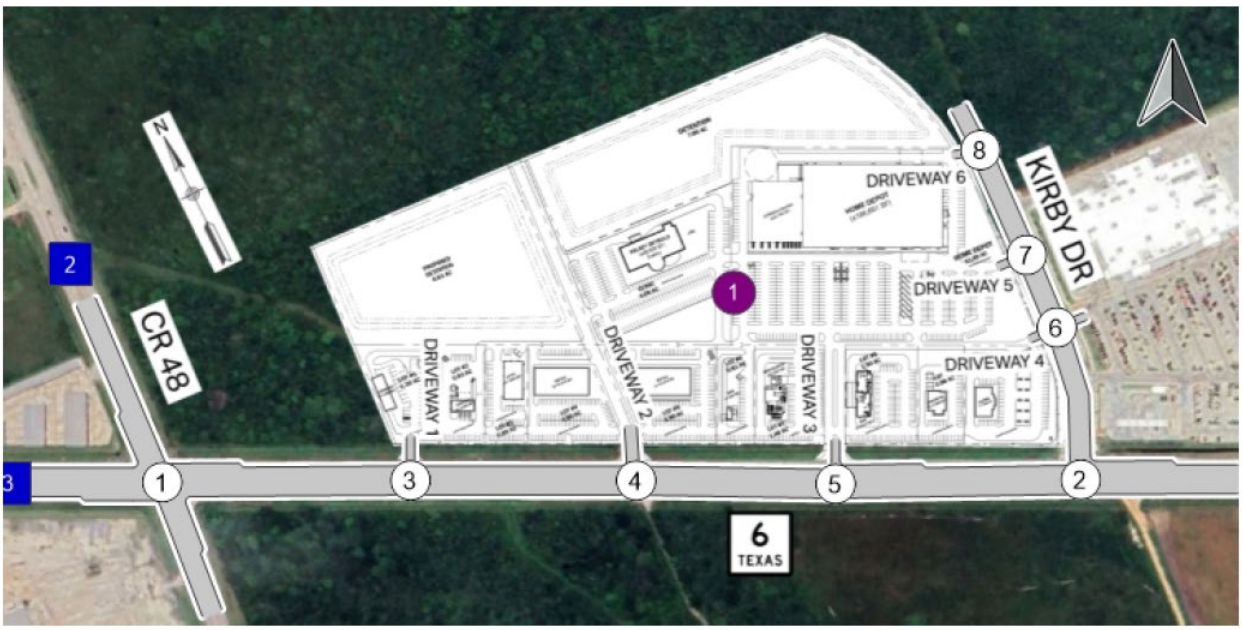
The methodology to calculate the no-build traffic volumes involves collecting existing traffic volumes, combining them with known future background volume generation from adjacent developments, and then growing the traffic volumes up to the design year of the development. The no-build projected traffic volumes will include existing traffic volumes grown for three years up to the buildout horizon timeframe of 2028.

Growth Rate

A 5% growth rate compounded annually is used in this study; this growth rate is consistent in context with the surrounding developments, site location, and potential growth of the SH 6 corridor near the study area.

No-Build Peak Hour Turning Movement Counts (2028)

The summarized no-build peak hour TMCs by intersection can be seen in **Figure 5** for the weekday AM peak hour (7:00 AM to 8:00 AM) and **Figure 6** for the weekday PM peak hour (5:00 PM to 6:00 PM) respectively.



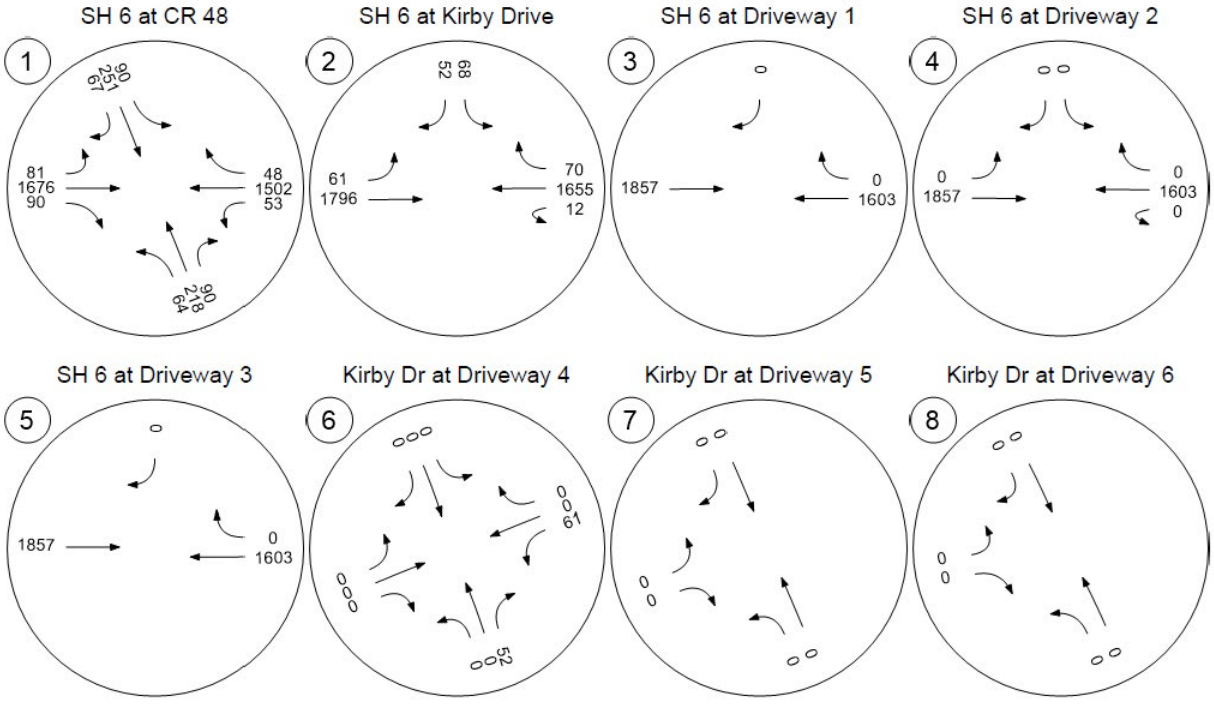
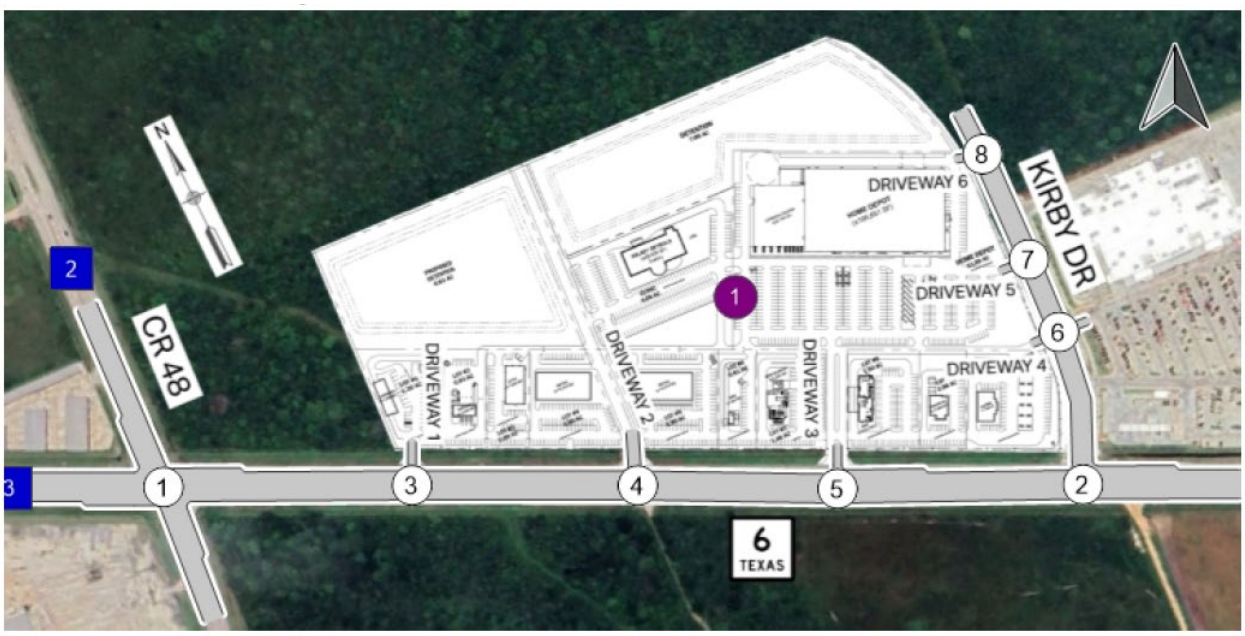


Figure 5: No-Build AM Peak Hour TMCs (2028)



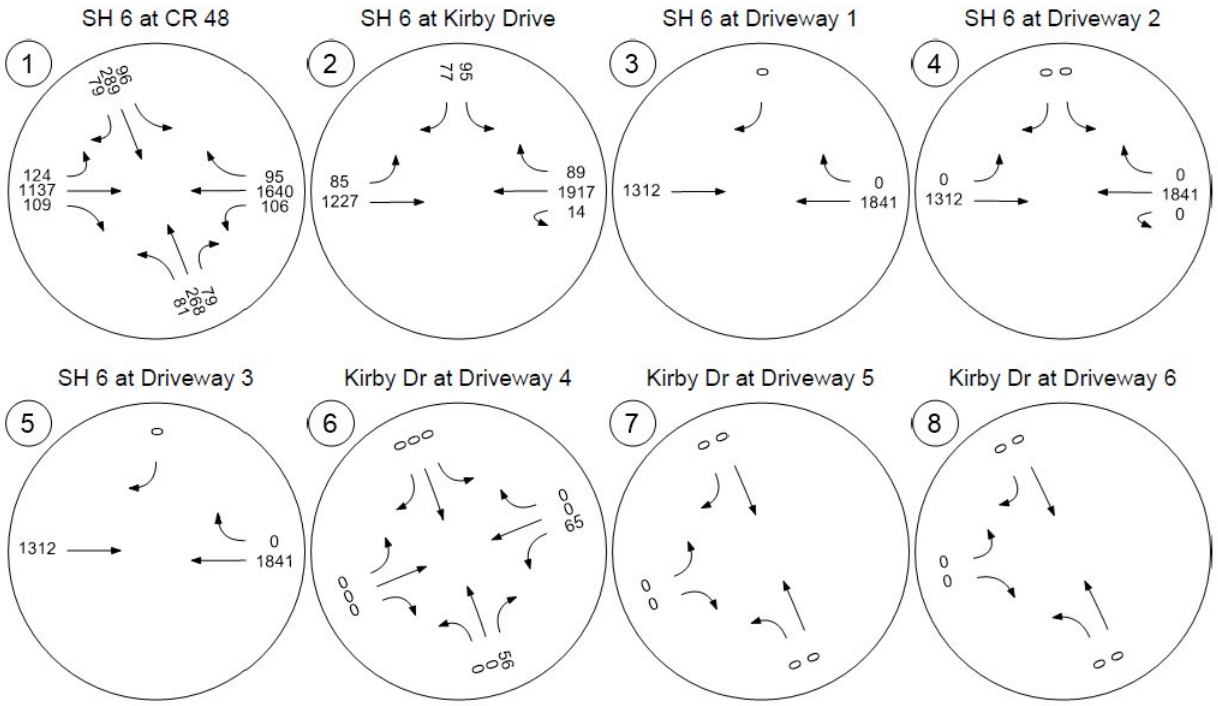


Figure 6: No-Build PM Peak Hour TMCs (2028)

Proposed Development

Site Plan

An enlarged Manvel Commercial site plan is shown in **Figure 7**, with plan north being at the left of the image.

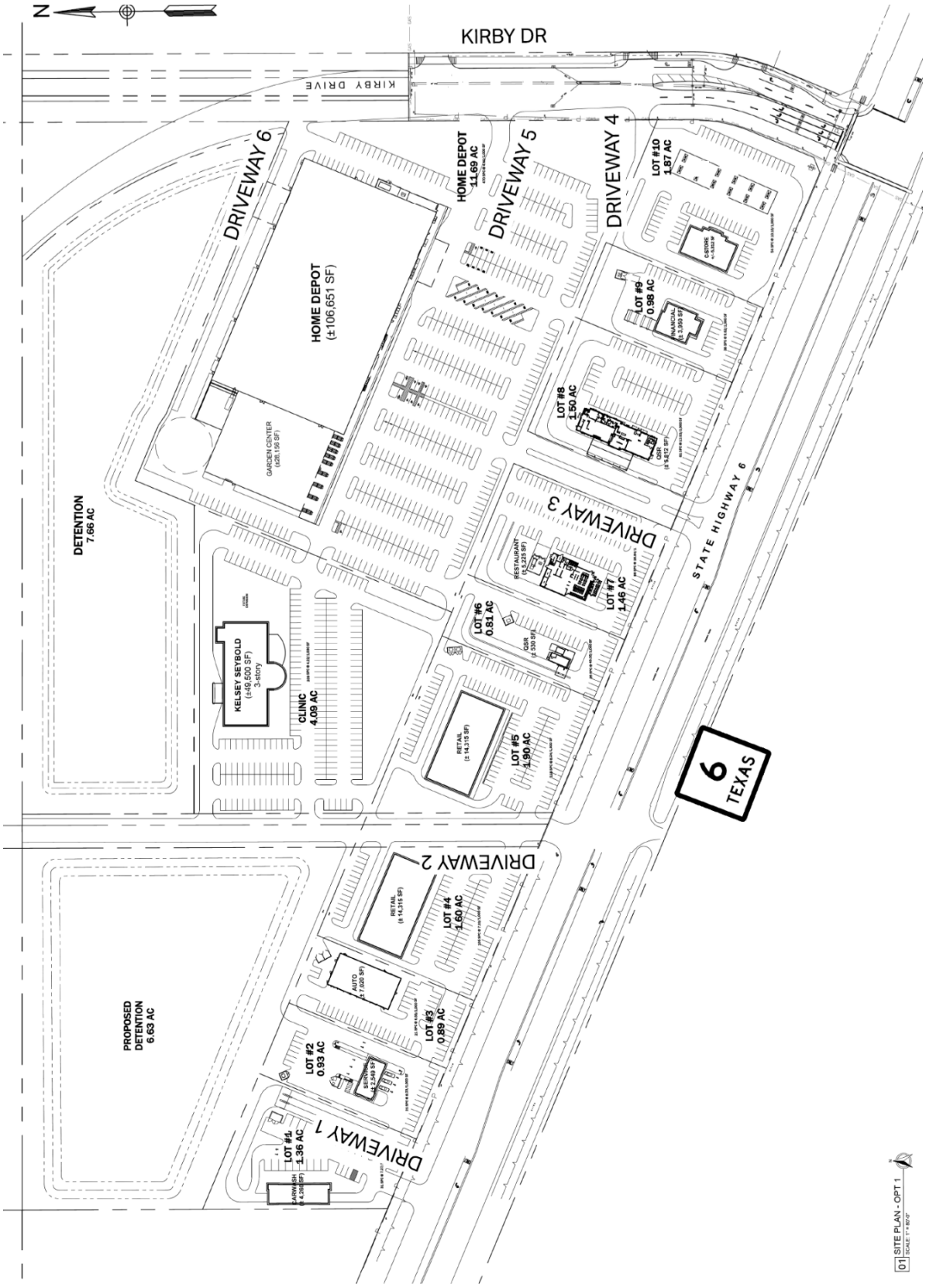


Figure 7: Manvel Commercial Proposed Site Plan

Critical Study Intersections

Critical existing study intersections included in the capacity analyses section of the study to follow include:

SH 6 at Kirby Drive

- This existing intersection is located adjacent to the development and is controlled by a traffic signal.
- The eastbound approach of SH 6 provides one left-turn lane and three through lanes. The westbound approach of SH 6 provides one U-turn lane, three through lanes, and one right-turn lane. The southbound approach of Kirby Drive provides two left-turn lanes and one right-turn lane.

SH 6 at County Road 48

- This existing intersection is located west of the development and is controlled by a traffic signal.
- The eastbound and westbound approaches of SH 6 provide one left-turn lane, three through lanes, and one right-turn lane. The northbound and southbound approaches of County Road 48 provide one left-turn lane, one shared left-turn/through lane, one through lane and one right-turn lane.

SH 6 at Proposed Driveways

- Driveway 1 and Driveway 3 will provide one lane for ingress and one lane for egress. Driveway 2 will provide one lane of ingress and two lanes of egress.

Kirby Drive at Proposed Driveways

- Driveway 4, Driveway 5, and Driveway 6 will provide one lane for ingress and one lane for egress.

Trip Generation

The *Institute of Transportation Engineers (ITE) Trip Generation, Latest Edition*, was utilized to best approximate the generated trips for Manvel Commercial development. **Table 1** displays the ITE trip generation for the proposed development as shown in **Figure 7**. The ITE trip generation worksheets can be found in **Appendix B**.

ITE Land Use Category	Size	Daily Weekday Trips			Weekday AM Peak Trips			Weekday PM Peak Trips		
		Total Trips	Trips Entering	Trips Exiting	Total Trips	Trips Entering	Trips Exiting	Total Trips	Trips Entering	Trips Exiting
Strip Retail Plaza (Code: 822)	28,630 SF	1,557	779	778	67	40	27	188	94	94
Fast-Food w/ Drive-Thru (Code: 934)	11,567 SF	5,423	2,711	2,712	517	264	253	383	199	184
Home Improvement (Code: 862)	106,651 SF	3,277	1,638	1,639	161	92	69	244	120	124
Convenience Store w/ Gas (Code: 945)	12 Fuel Stations	3,086	1,543	1,543	324	162	162	273	137	136
Drive-In Bank (C0de: 912)	3,950 SF	391	196	195	39	23	15	82	41	41
Automated Car Wash (Code: 948)	4,260 SF	122	62	60	-	-	-	61	31	30
Medical Clinic (Code: 630)	49,500 SF	1,861	931	930	136	110	26	183	55	128
Quick Lubrication (Code: 941)	2,549 SF	174	87	87	15	11	4	22	9	13
Automobile Parts (Code: 843)	7,020 SF	382	191	191	18	10	8	34	16	18
Passerby Trips (Code 822, 40% in PM):		-	-	-	-	-	-	76	38	38
Passerby Trips (Code 934, 50% AM, 55% PM):		-	-	-	259	132	127	210	109	101
Passerby Trips (Code 945, 76% AM, 75% PM):		-	-	-	246	123	123	204	102	102
Total Passerby Trips:		**-**	**-**	**-**	**505**	**255**	**250**	**490**	**249**	**241**
Total Generated Trips:					**772**	**457**	**314**	**980**	**453**	**527**

Table 1: ITE Trip Generation Manvel Commercial

Trip Distribution

Percentages for global trip distribution were assumed based on proposed origins and destinations of the development. Globally, the trip distribution percentages assumed are as follows:

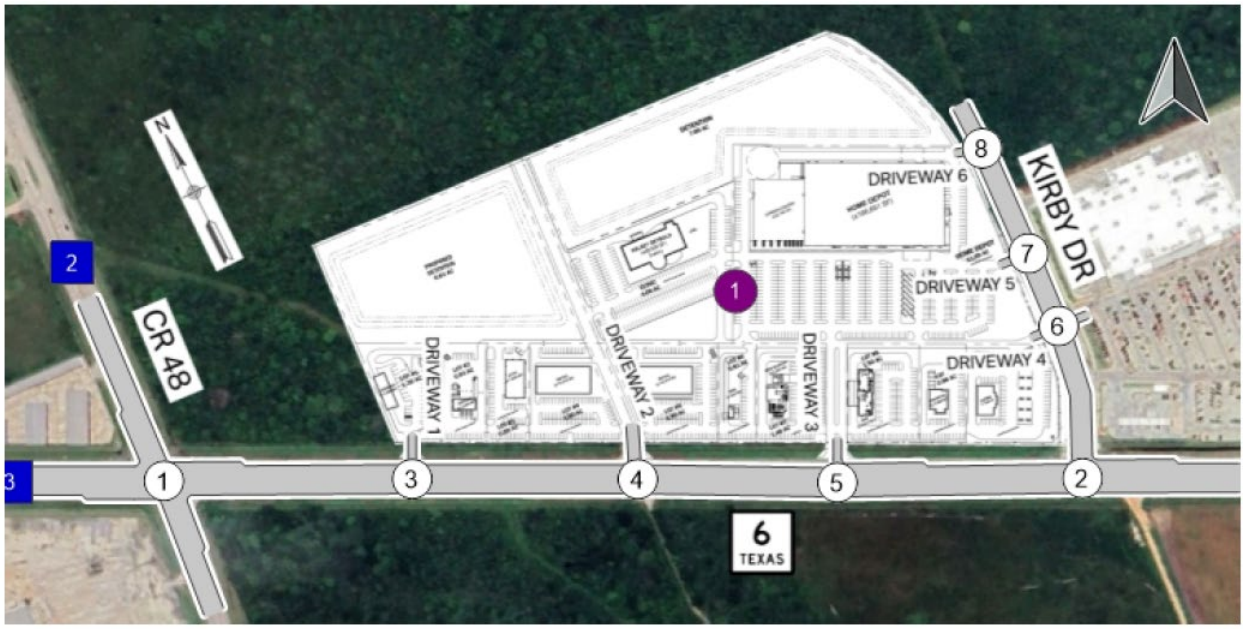
- 50% to/from the east of the development via SH 6
- 35% to/from the west of the development via SH 6
- 10% to/from the northwest of the development via County Road 48
- 5% to/from the southwest of the development via County Road 48

Traffic Model

VISTRO software was utilized to develop a traffic model of the study area. The network was designed with Manvel Commercial development as a "zone" that generates new trips and adds to the existing roadway network. The zone was then routed to the directional "gates" according to a gravity model and ease-of-access methodology. The *Highway Capacity Manual (HCM)* capacity analyses methodology is embedded within *VISTRO* and is utilized in this study for determinations of Levels-of-Service (LOS).

Peak Hour Generated Trips

The following **Figure 8 and Figure 9** graphically displays the trips generated at each critical intersection during the AM peak hour (7:00 AM to 8:00 AM) and during the PM peak hour (5:00 PM to 6:00 PM) respectively.



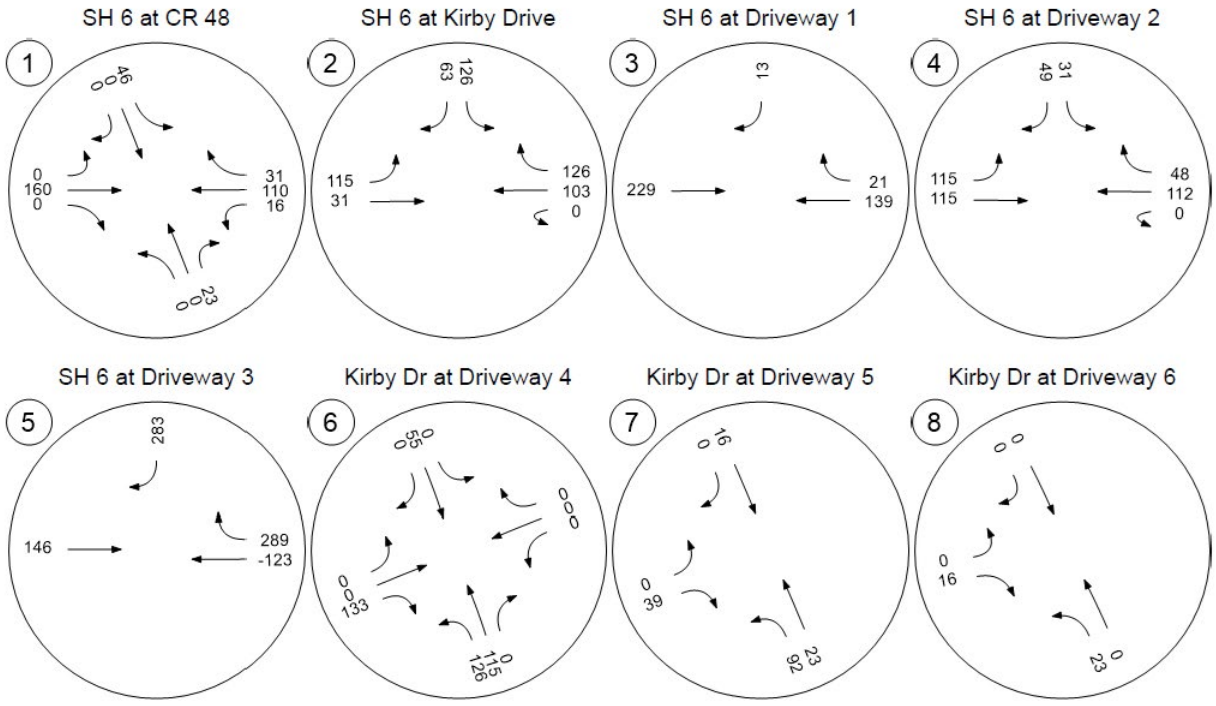
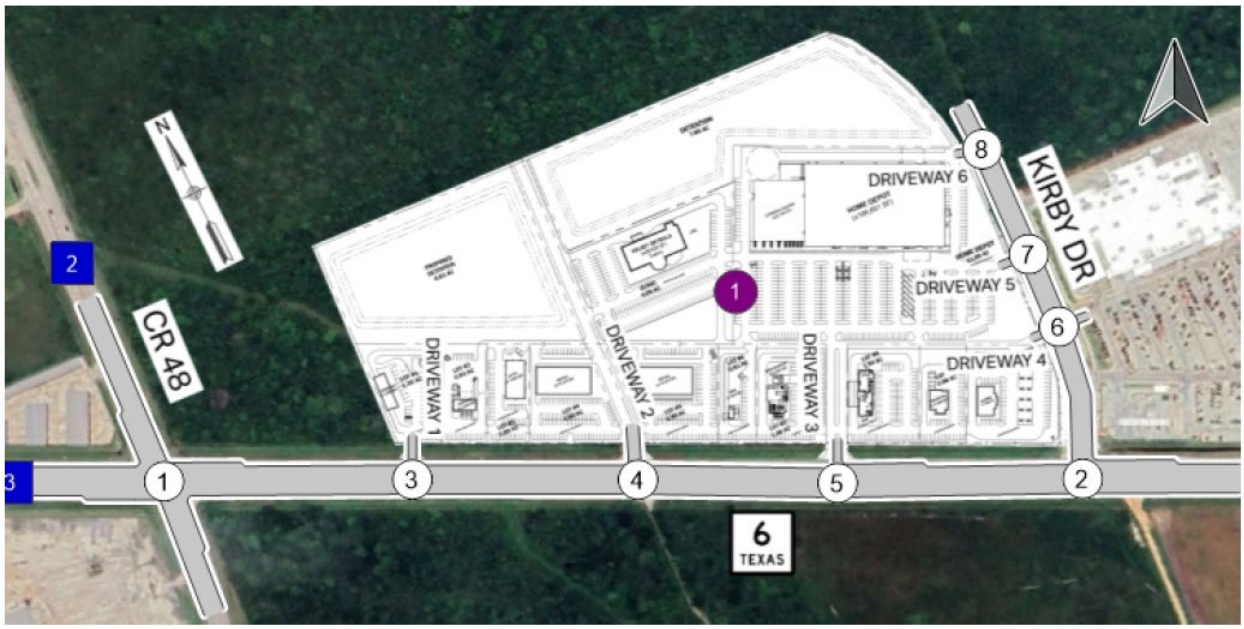


Figure 8: AM Peak Hour Generated Trips by Intersection



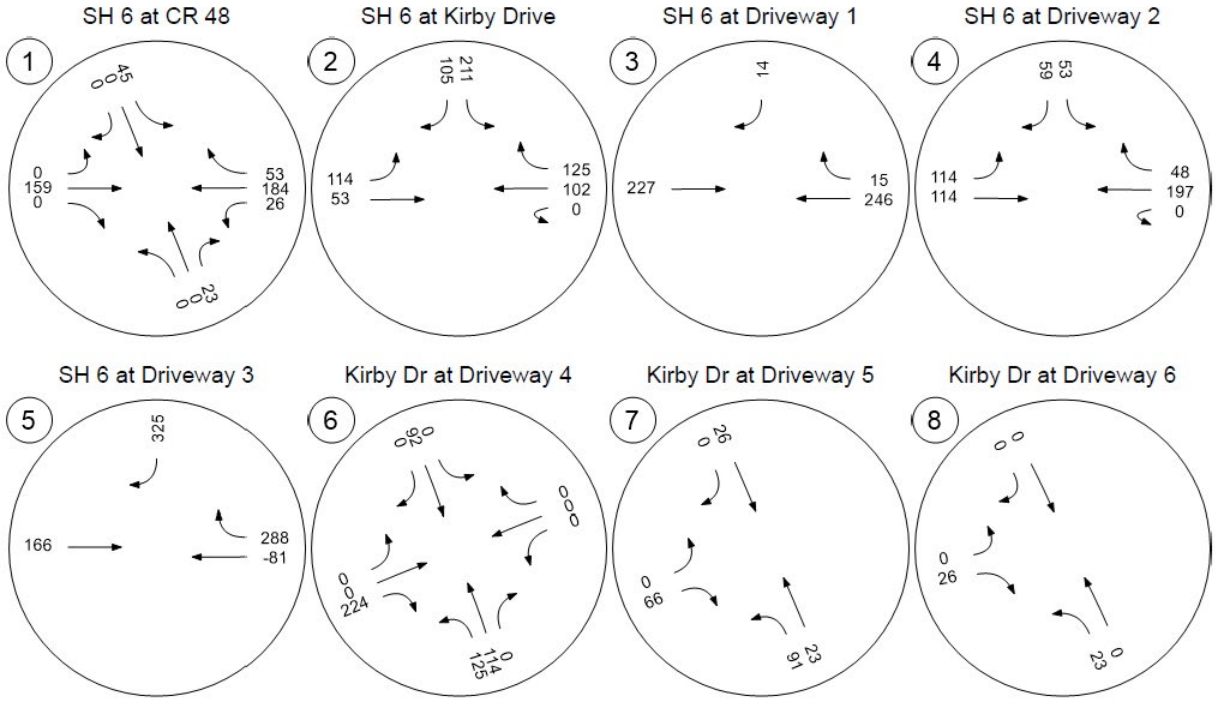


Figure 9: PM Peak Hour Generated Trips by Intersection

Proposed Intersection Lanes Assignments and Traffic Control

The following **Figure 10** graphically displays lane assignments and traffic control for the critical study intersections. Existing lane assignments are shown for intersections that currently exist, and proposed lane assignments are shown according to the proposed site plan and results of the forthcoming HCM capacity analyses.

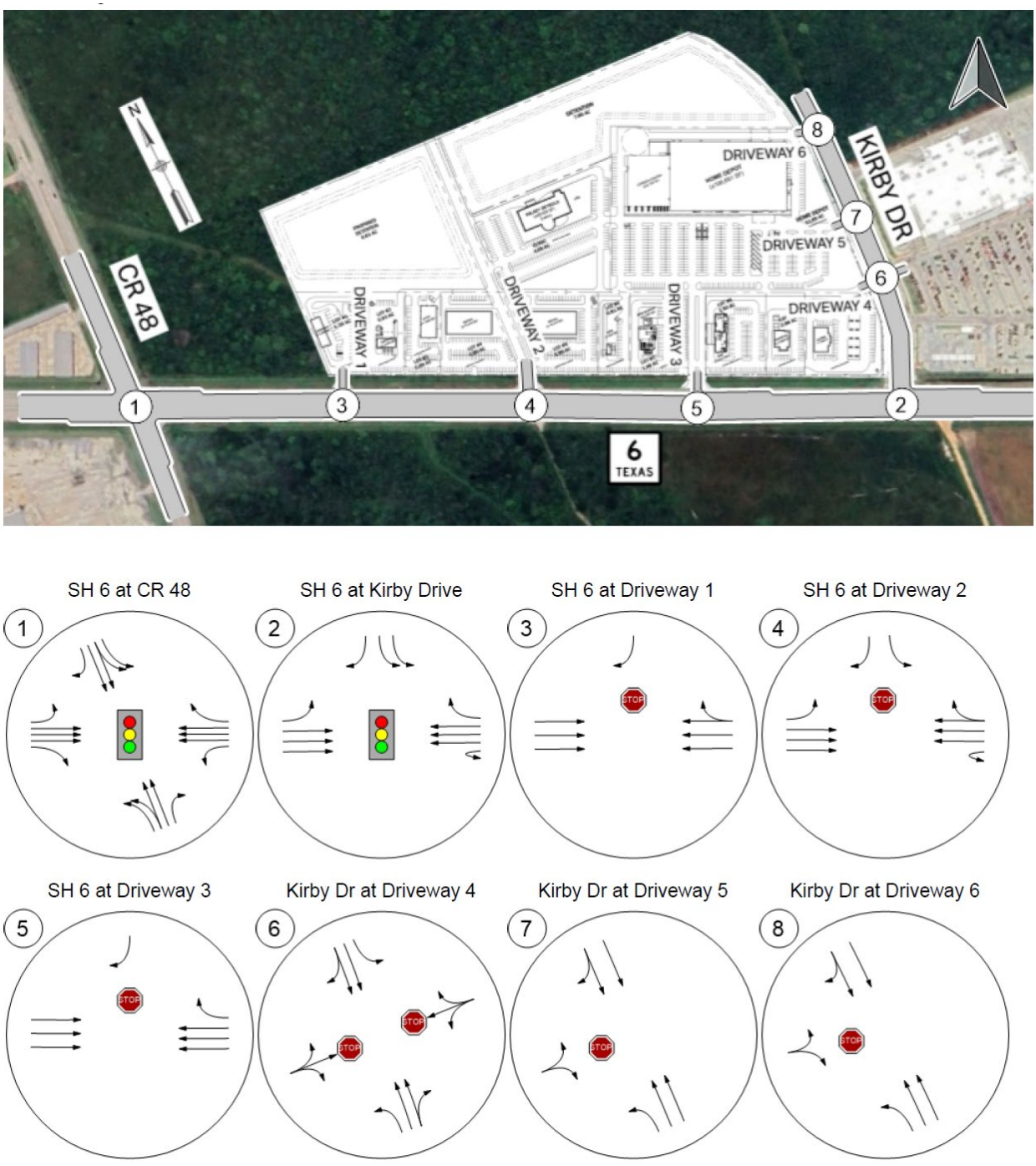
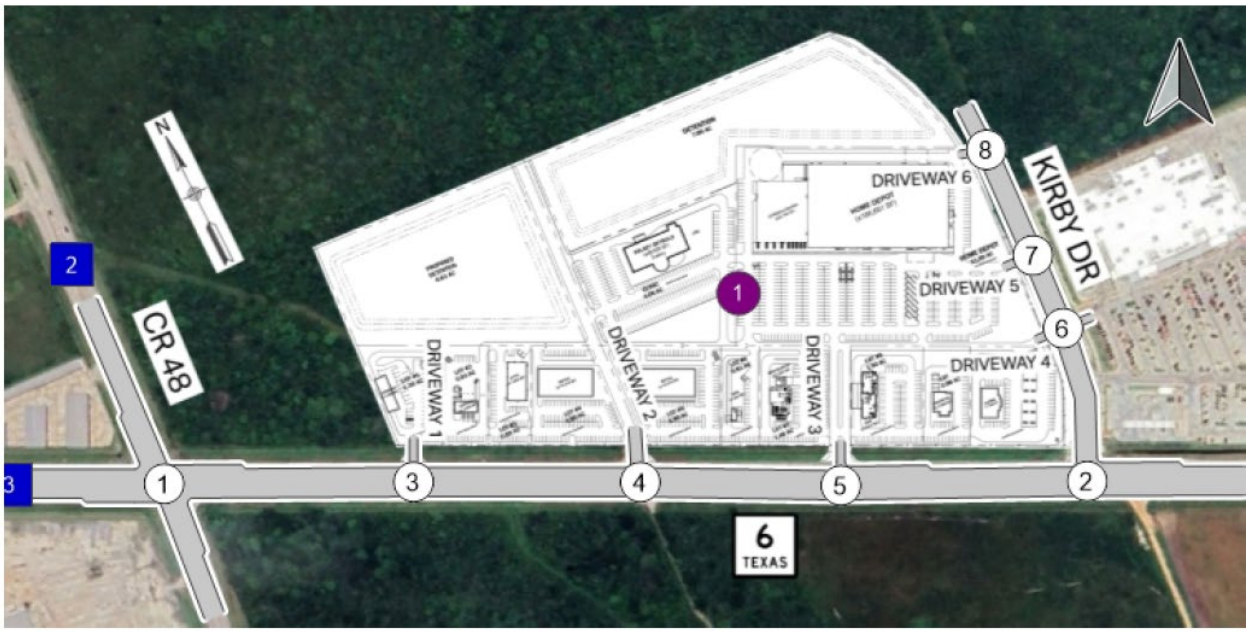


Figure 10: Lane Assignments and Traffic Control

Buildout Turning Movement Counts

Trips generated by Manvel Commercial development were distributed according to the trip distribution percentages listed earlier in the study and then combined with the baseline (no-build) traffic volumes. The buildout TMCs are summarized by AM Peak hour in **Figure 11** and PM peak hour in **Figure 12**.



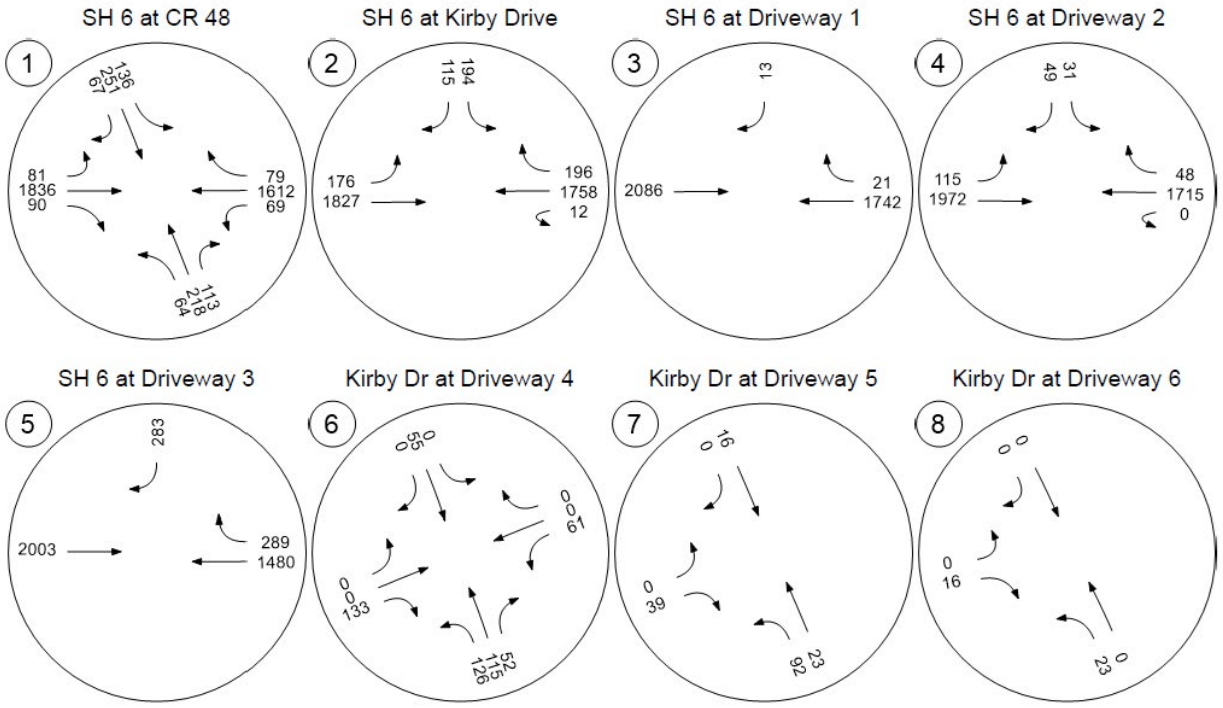
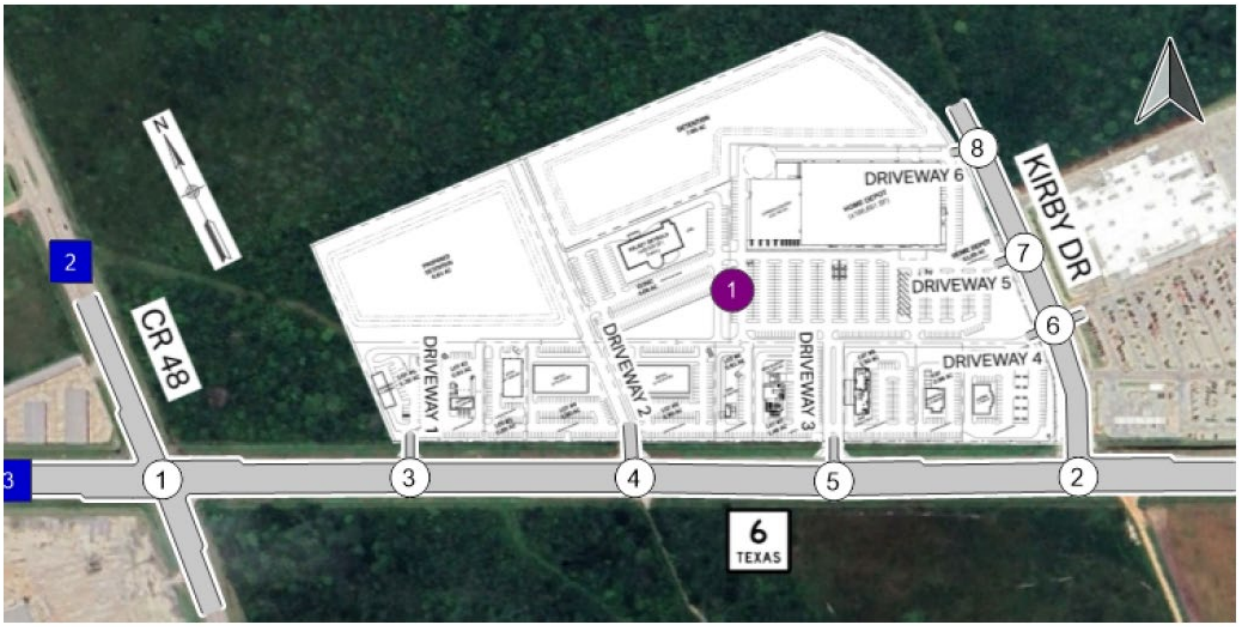


Figure 11: Buildout AM Peak Hour TMCs (2028)



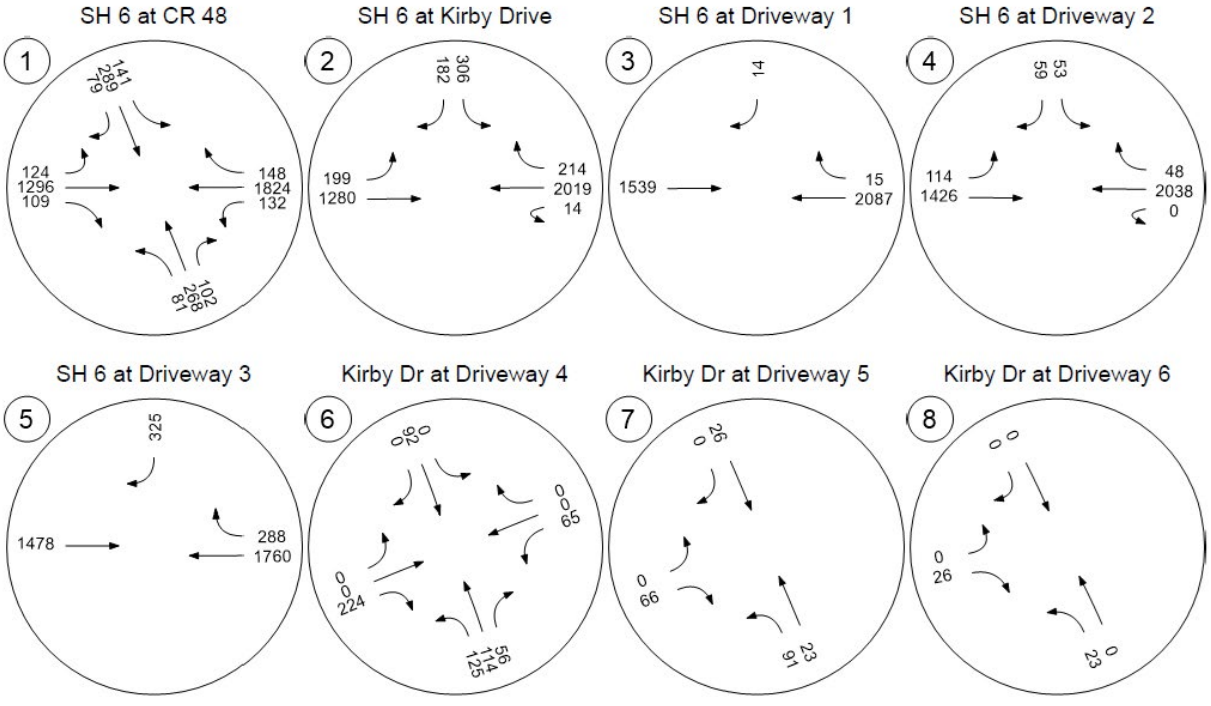


Figure 12: Buildout PM Peak Hour TMCs (2028)

Highway Capacity Manual Level-of-Service

Capacity analyses were conducted for existing (2025), no-build (2028) and buildout (2028) traffic conditions. The level-of-service indicates the average seconds of delay experienced by a motorist at a signalized intersection, or at the stop-controlled approaches of an unsignalized intersection. As a frame of reference, intersection levels-of- service range from A to F, with LOS A representing free flow conditions and LOS F representing congested conditions. In general, a signalized intersection or stop controlled approach at an unsignalized intersection operating at LOS D or better in an urban area is characterized by acceptable delays. Results of the capacity analyses are provided in **Appendices C and D** and **Tables 2 and 3** for the AM and PM peak hours, respectively.

INTERSECTION	APPROACH	AM Peak Hour					
		2025 Existing		2028 No-Build		2028 Build	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SIGNALIZED INTERSECTIONS							
SH 6 at CR 48	NB	37.4	D	40.1	D	45.3	D
	SB	37.6	D	40.3	D	45.3	D
	EB	37.4	D	58.5	E	85.4	F
	WB	33.4	D	36.6	D	37.2	D
	Intersection	**35.9**	**D**	**46.8**	**D**	**54.7**	**D**
SH 6 at Kirby Drive	NB	-	-	-	-	-	-
	SB	23.8	C	24.3	C	30.0	C
	EB	5.2	A	5.8	A	8.5	A
	WB	6.7	A	7.7	A	10.9	B
	Intersection	**6.5**	**A**	**7.3**	**A**	**11.2**	**B**
UNSIGNALIZED INTERSECTIONS							
SH 6 at Driveway 1	SB	-	-	-	-	20.3	C
SH 6 at Driveway 2	SB	-	-	-	-	91.8	F
SH 6 at Driveway 3	SB	-	-	-	-	70.1	F
Kirby Drive at Driveway 4	EB	-	-	-	-	9.0	A
Kirby Drive at Driveway 5	EB	-	-	-	-	8.5	A
Kirby Drive at Driveway 6	EB	-	-	-	-	8.4	A

Table 2: AM Peak Hour Capacity Analyses

INTERSECTION	APPROACH	PM Peak Hour					
		2025 Existing		2028 No-Build		2028 Build	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SIGNALIZED INTERSECTIONS							
SH 6 at CR 48	NB	40.2	D	43.8	D	45.2	D
	SB	40.6	D	44.3	D	46.3	D
	EB	32.8	C	33.5	C	35.7	C
	WB	40.7	D	69.3	E	104.1	F
	Intersection	**38.0**	**D**	**51.8**	**D**	**54.3**	**D**
SH 6 at Kirby Drive	NB	-	-	-	-	-	-
	SB	25.2	C	33.8	C	42.3	D
	EB	5.3	A	5.8	A	12.5	B
	WB	8.2	A	8.6	A	16.0	B
	Intersection	**7.9**	**A**	**8.8**	**A**	**17.8**	**B**
UNSIGNALIZED INTERSECTIONS							
SH 6 at Driveway 1	SB	-	-	-	-	25.1	D
SH 6 at Driveway 2	SB	-	-	-	-	>100	F
SH 6 at Driveway 3	SB	-	-	-	-	37.1	E
Kirby Drive at Driveway 4	EB	-	-	-	-	9.6	A
Kirby Drive at Driveway 5	EB	-	-	-	-	8.6	A
Kirby Drive at Driveway 6	EB	-	-	-	-	8.4	A

Table 3: PM Peak Hour Capacity Analyses

From the results of the capacity analyses, all approaches and critical existing intersections are expected to operate at acceptable levels-of-service (LOS) in both the no-build analysis and buildout analysis. The delay and LOS for the southbound approaches of Driveway 2 and Driveway 3 at SH 6 are to be expected due to the limitations of the traffic model for accurately modeling the two-stage gap acceptance that would be present for the southbound approaches. The LOS and delays for these southbound approaches are expected to operate better in the field than what the results of the capacity analyses are indicating.

Mitigation Analysis

A right-turn deceleration lane analysis was conducted for the westbound right-turn movements on SH 6 at Driveway 3. From the 2028 Buildout traffic volumes shown in **Figure 11** and **Figure 12**, the following westbound right-turn volumes are projected at the intersection:

- 2028 Buildout AM Peak Hour: 289 westbound right-turns
- 2028 Buildout PM Peak Hour: 288 westbound right-turns

Due to the projected number of peak hour right-turns being over 50 in number in both the 2028 Buildout AM and PM peak hours, a westbound right-turn deceleration lane is recommended on SH 6 at Driveway 3.

Summary of Findings and Recommendations

Based on the capacity analyses performed for the proposed Manvel Commercial development, the following findings and findings are made:

- Construct a westbound right-turn deceleration lane at the proposed intersection of SH 6 at Driveway 3. A minimum taper length of 100 feet with a minimum storage length of 200 feet will suffice for the right-turn lane based on the buildout queue length analysis.
- Construct an extension of Kirby Drive north from the current terminus at the HEB property line to the proposed property line of the Manvel Commercial tract.
- Construct northbound left-turn lanes for Driveway 5 and Driveway 6 at the intersections with Kirby Drive.
- No additional mitigation measures are recommended for the critical intersections of the study area.

Appendices

Appendix A – Traffic Counts

Summary of Turning Movement Counts - from Traffic Count on iOS

SH 6 at County Road 48

Observer Dustin Qualls

Weather Clear

Date: Wed, Sep 24th, 2025

	County Road 48				**County Road 48**				**SH 6**				**SH 6**			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn
7:00 AM	12	44	18	-	17	49	13	-	17	346	19	-	11	312	9	-
7:15 AM	13	46	18	-	17	55	13	-	17	355	21	-	12	322	9	-
7:30 AM	15	47	21	-	21	54	14	-	18	366	21	-	9	330	11	-
7:45 AM	15	51	21	-	23	58	18	-	18	378	17	-	14	331	12	-
Total:	***55***	***188***	***78***	***0***	***78***	***216***	***58***	***0***	***70***	***1445***	***78***	***0***	***46***	***1295***	***41***	***0***
8:00 AM	8	43	19	-	14	51	12	-	15	352	14	-	13	311	8	-
8:15 AM	8	41	18	-	14	40	12	-	15	342	14	-	13	299	8	-
8:30 AM	9	39	18	-	13	45	9	-	14	312	15	-	9	297	6	-
8:45 AM	11	39	14	-	11	41	11	-	16	322	16	-	9	291	6	-
Total:	***36***	***162***	***69***	***0***	***52***	***177***	***44***	***0***	***60***	***1328***	***59***	***0***	***44***	***1198***	***28***	***0***
PHF:	*0.92*	*0.92*	*0.93*		*0.85*	*0.93*	*0.81*		*0.97*	*0.96*	*0.93*		*0.82*	*0.98*	*0.85*	
4:00 PM	13	44	13	-	14	46	10	-	19	220	14	-	14	266	11	-
4:15 PM	13	45	9	-	13	46	10	-	21	204	14	-	14	267	12	-
4:30 PM	15	48	5	-	15	48	14	-	22	209	18	-	15	275	15	-
4:45 PM	15	49	11	-	17	55	13	-	24	221	19	-	19	281	15	-
Total:	***56***	***186***	***38***	***0***	***59***	***195***	***47***	***0***	***86***	***854***	***65***	***0***	***62***	***1089***	***53***	***0***
5:00 PM	15	55	14	-	21	56	15	-	25	222	21	-	21	334	18	-
5:15 PM	16	57	14	-	17	59	14	-	26	245	22	-	22	355	18	-
5:30 PM	18	58	17	-	22	66	18	-	28	255	25	-	24	356	22	-
5:45 PM	21	61	23	-	23	68	21	-	28	258	26	-	24	369	24	-
Total:	***70***	***231***	***68***	***0***	***83***	***249***	***68***	***0***	***107***	***980***	***94***	***0***	***91***	***1414***	***82***	***0***
PHF:	*0.83*	*0.95*	*0.74*		*0.90*	*0.92*	*0.81*		*0.96*	*0.95*	*0.90*		*0.95*	*0.96*	*0.85*	

Summary of Turning Movement Counts - from Traffic Count on iOS

SH 6 at Kirby Drive

Observer Dustin Qualls

Weather Clear

Date: Wed, Sep 24th, 2025

					Kirby Drive				**SH 6**				**SH 6**			
	Northbound				Southbound				Eastbound				Westbound			
Start Time	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn
7:00 AM	-	-	-	-	14	-	11	-	14	367	-	-	-	343	13	-
7:15 AM	-	-	-	-	14	-	12	-	14	376	-	-	-	355	14	-
7:30 AM	-	-	-	-	15	-	9	-	16	392	-	-	-	359	15	-
7:45 AM	-	-	-	-	16	-	13	-	9	413	-	-	-	370	18	-
Total:	***0***	***0***	***0***	***0***	***59***	***0***	***45***	***0***	***53***	***1548***	***0***	***0***	***0***	***1427***	***60***	***0***
8:00 AM	-	-	-	-	15	-	9	-	8	377	-	-	-	341	11	-
8:15 AM	-	-	-	-	15	-	9	-	11	363	-	-	-	329	12	-
8:30 AM	-	-	-	-	14	-	11	-	12	331	-	-	-	323	9	-
8:45 AM	-	-	-	-	11	-	10	-	9	338	-	-	-	316	9	-
Total:	***0***	***0***	***0***	***0***	***55***	***0***	***39***	***0***	***40***	***1409***	***0***	***0***	***0***	***1309***	***41***	***0***
PHF:					*0.92*		*0.87*		*0.83*	*0.94*				*0.96*	*0.83*	
4:00 PM	-	-	-	-	9	-	10	-	14	233	-	-	-	301	13	-
4:15 PM	-	-	-	-	13	-	14	-	13	213	-	-	-	307	13	-
4:30 PM	-	-	-	-	14	-	14	-	9	220	-	-	-	319	14	-
4:45 PM	-	-	-	-	15	-	15	-	16	233	-	-	-	330	15	-
Total:	***0***	***0***	***0***	***0***	***51***	***0***	***53***	***0***	***52***	***899***	***0***	***0***	***0***	***1257***	***55***	***0***
5:00 PM	-	-	-	-	16	-	14	-	16	241	-	-	-	387	18	-
5:15 PM	-	-	-	-	22	-	15	-	17	259	-	-	-	410	18	-
5:30 PM	-	-	-	-	23	-	16	-	18	276	-	-	-	418	21	-
5:45 PM	-	-	-	-	21	-	21	-	22	282	-	-	-	438	20	-
Total:	***0***	***0***	***0***	***0***	***82***	***0***	***66***	***0***	***73***	***1058***	***0***	***0***	***0***	***1653***	***77***	***0***
PHF:					*0.89*		*0.79*		*0.83*	*0.94*				*0.94*	*0.92*	

Appendix B – ITE Trip Generation Worksheets

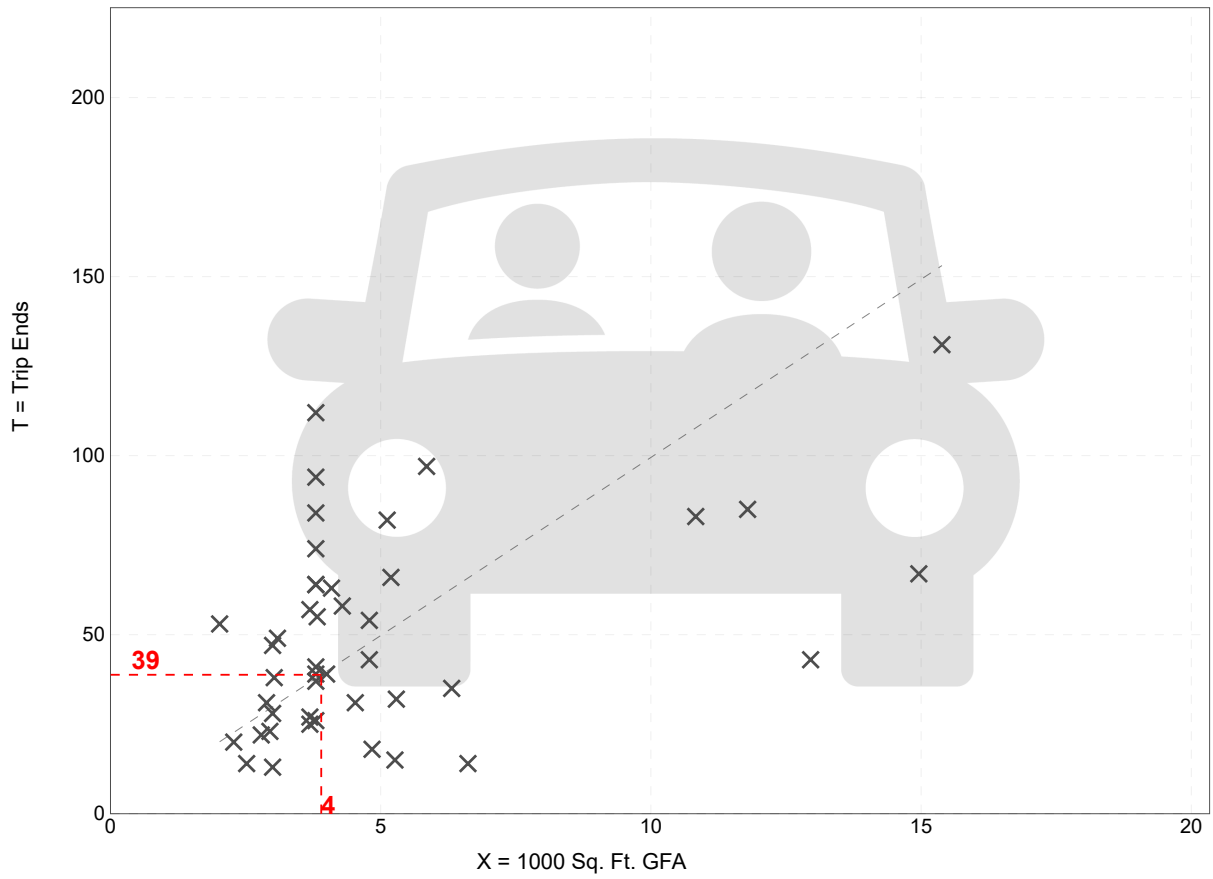
Drive-in Bank
(912)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 44
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.95	2.12 - 29.47	6.00

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

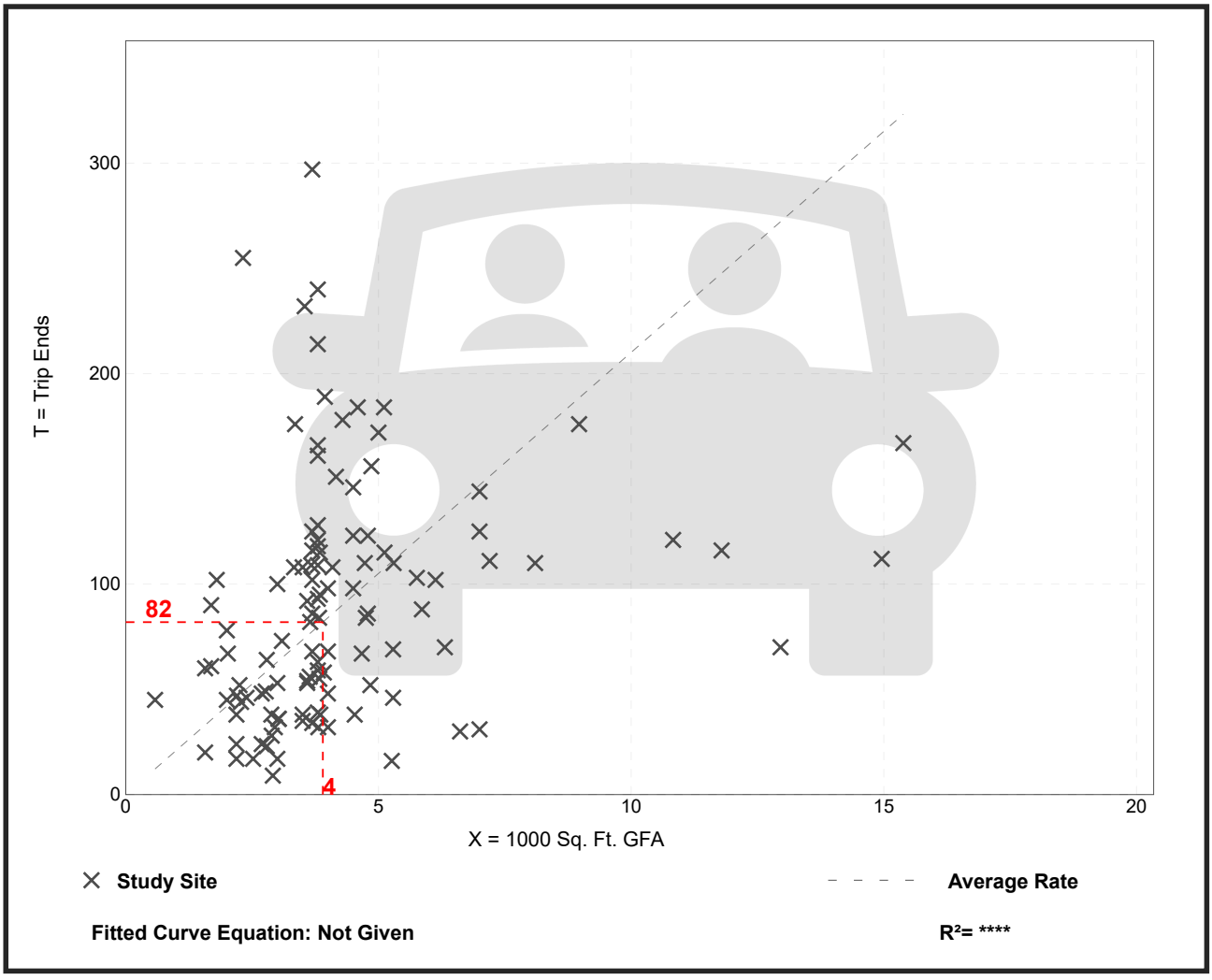
Drive-in Bank
(912)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 114
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
21.01	3.04 - 109.91	15.13

Data Plot and Equation



Automated Car Wash
(948)

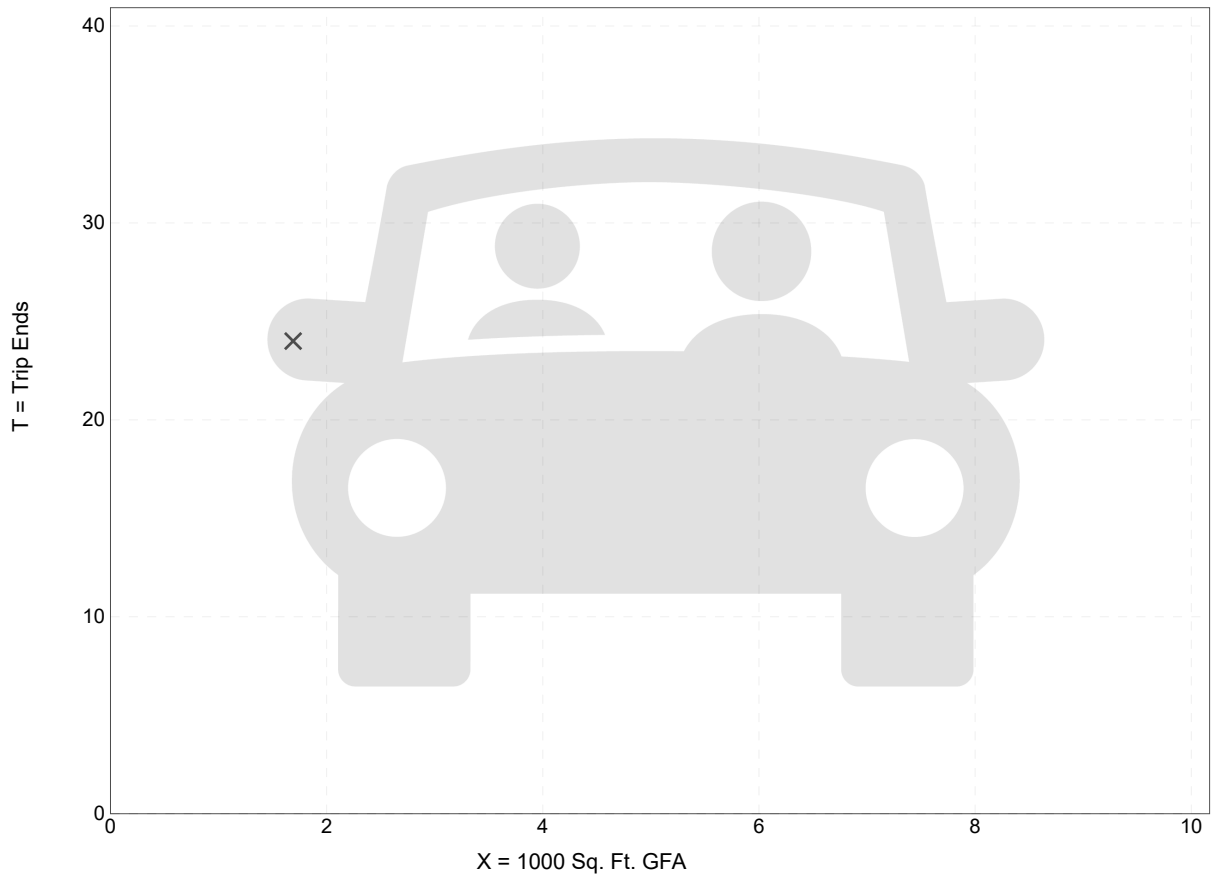
Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	1
Avg. 1000 Sq. Ft. GFA:	2
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
14.20	14.20 - 14.20	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

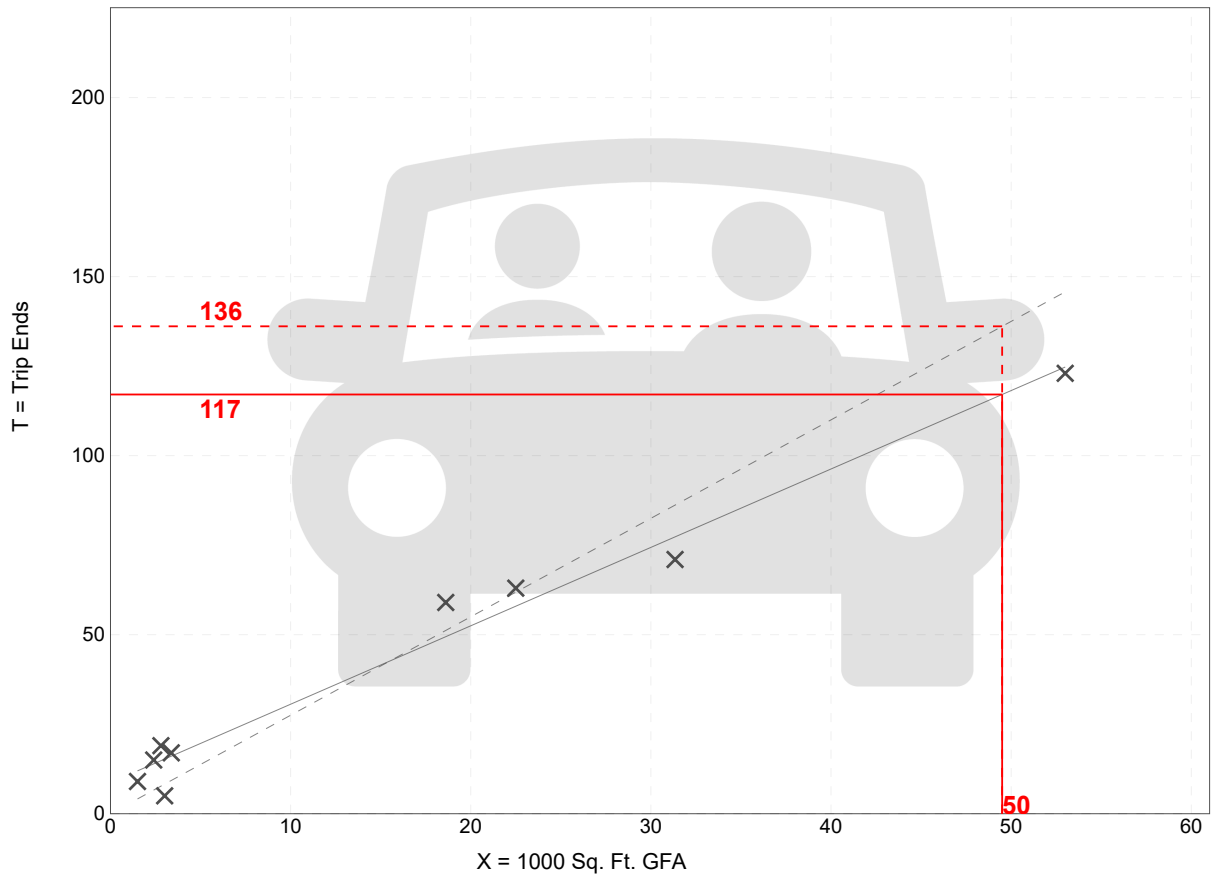
Clinic
(630)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 9
Avg. 1000 Sq. Ft. GFA: 15
Directional Distribution: 81% entering, 19% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.75	1.66 - 6.79	1.04

Data Plot and Equation



Fitted Curve Equation: T = 2.19(X) + 8.68

R^2= 0.98

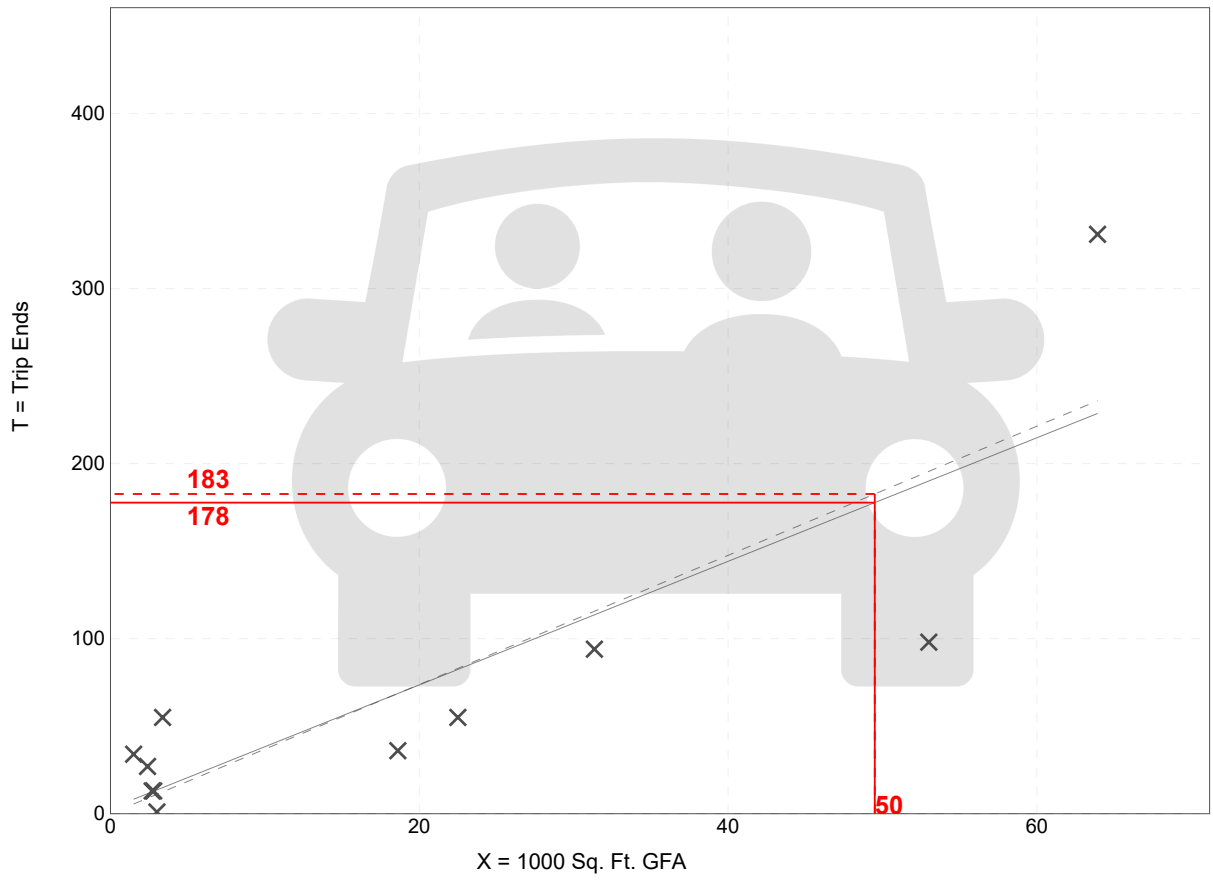
Clinic
(630)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	11
Avg. 1000 Sq. Ft. GFA:	19
Directional Distribution:	30% entering, 70% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.69	0.33 - 22.67	3.00

Data Plot and Equation



Fitted Curve Equation: T = 3.53(X) + 2.98

R^2= 0.72

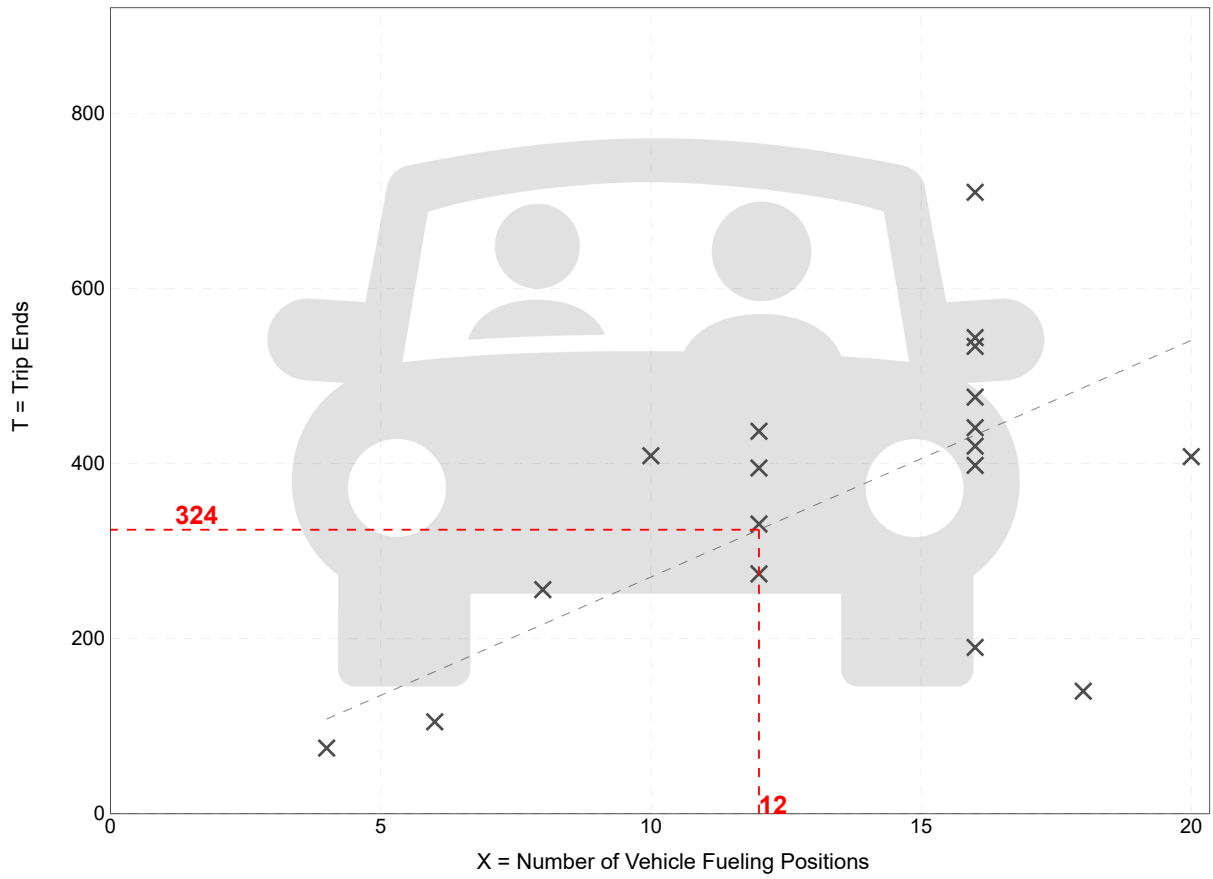
Convenience Store/Gas Station - GFA (4-5.5k)
(945)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 7 and 9 a.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	18
Avg. Num. of Vehicle Fueling Positions:	13
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
27.04	7.78 - 44.38	9.88

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

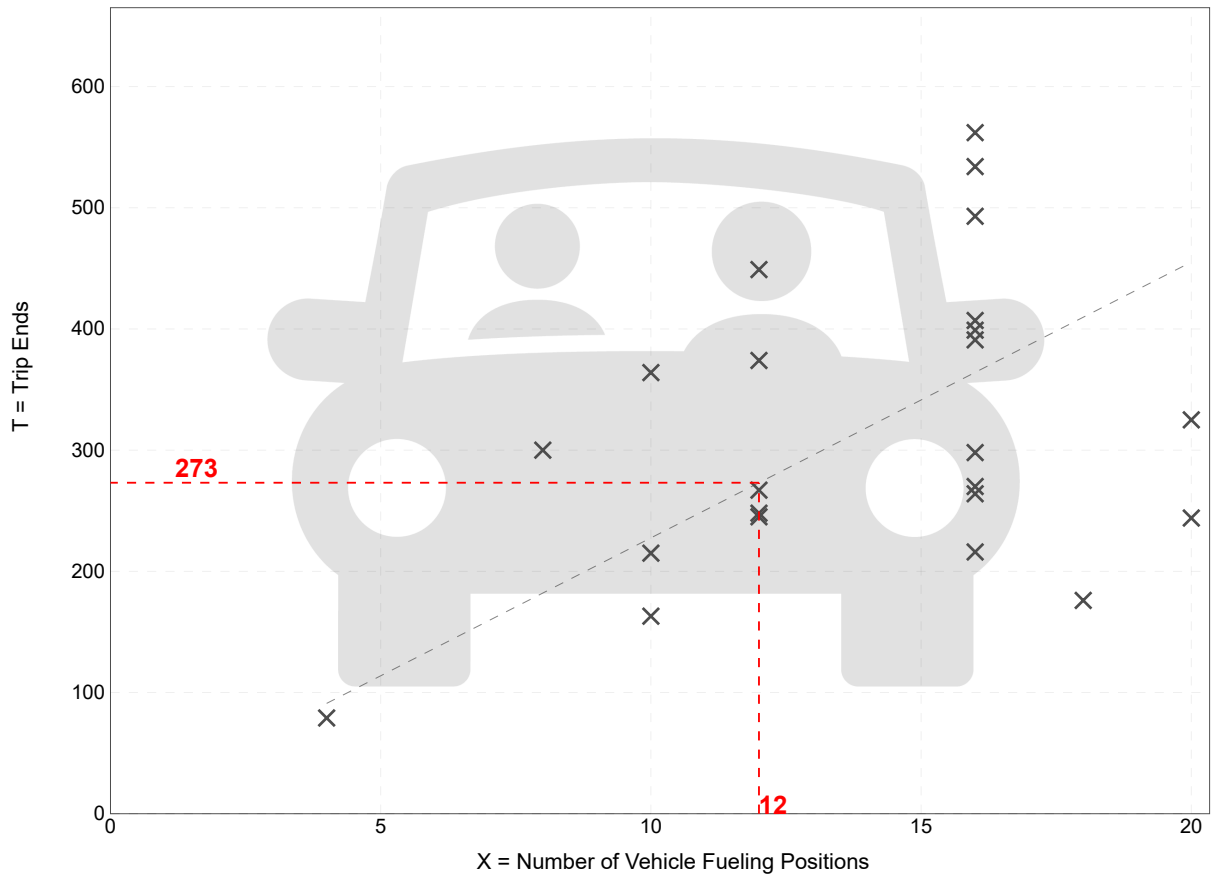
Convenience Store/Gas Station - GFA (4-5.5k)
(945)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 4 and 6 p.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	23
Avg. Num. of Vehicle Fueling Positions:	14
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
22.76	9.78 - 37.50	8.49

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

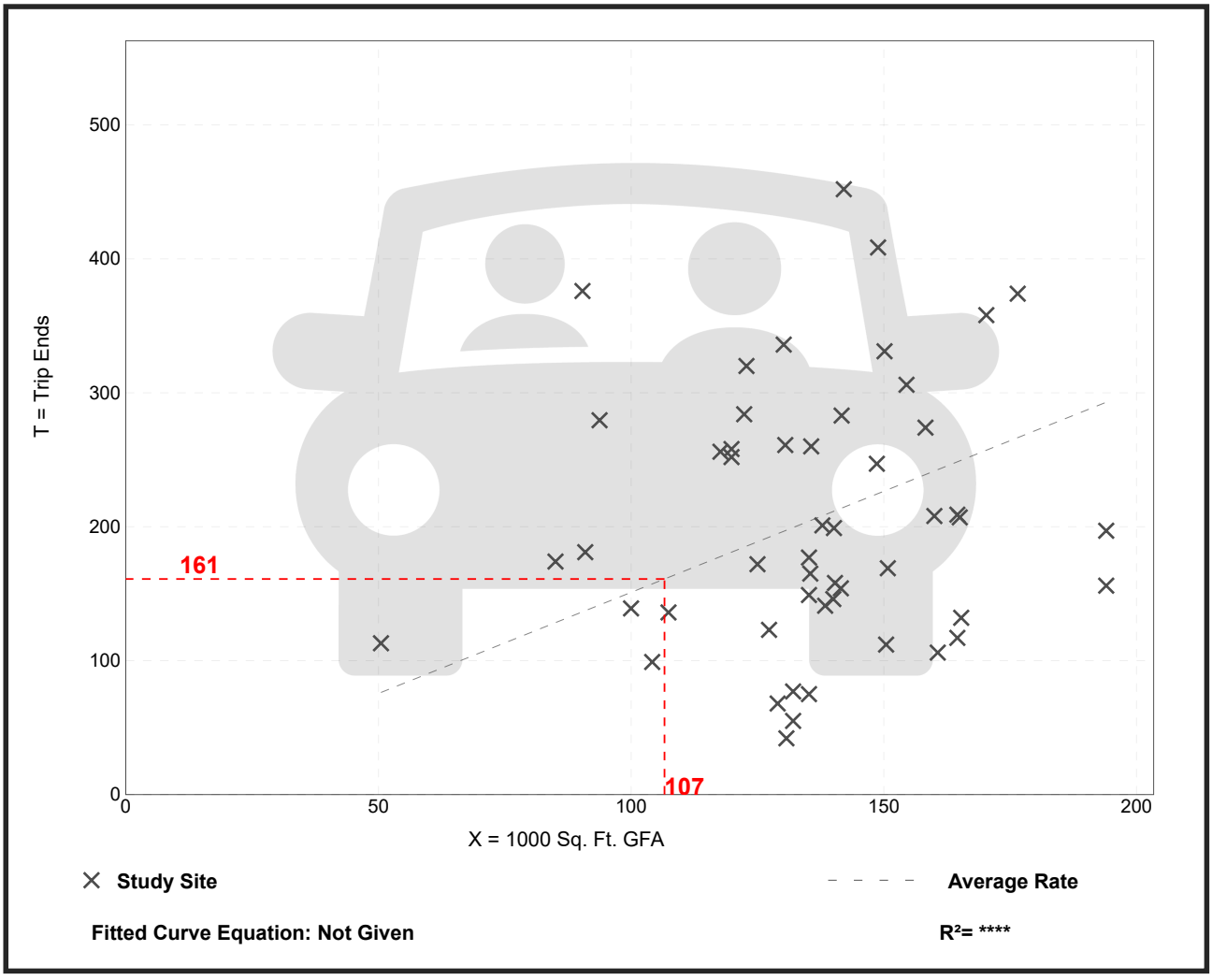
Home Improvement Superstore
(862)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. 1000 Sq. Ft. GFA:	136
Directional Distribution:	57% entering, 43% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.51	0.32 - 4.16	0.76

Data Plot and Equation



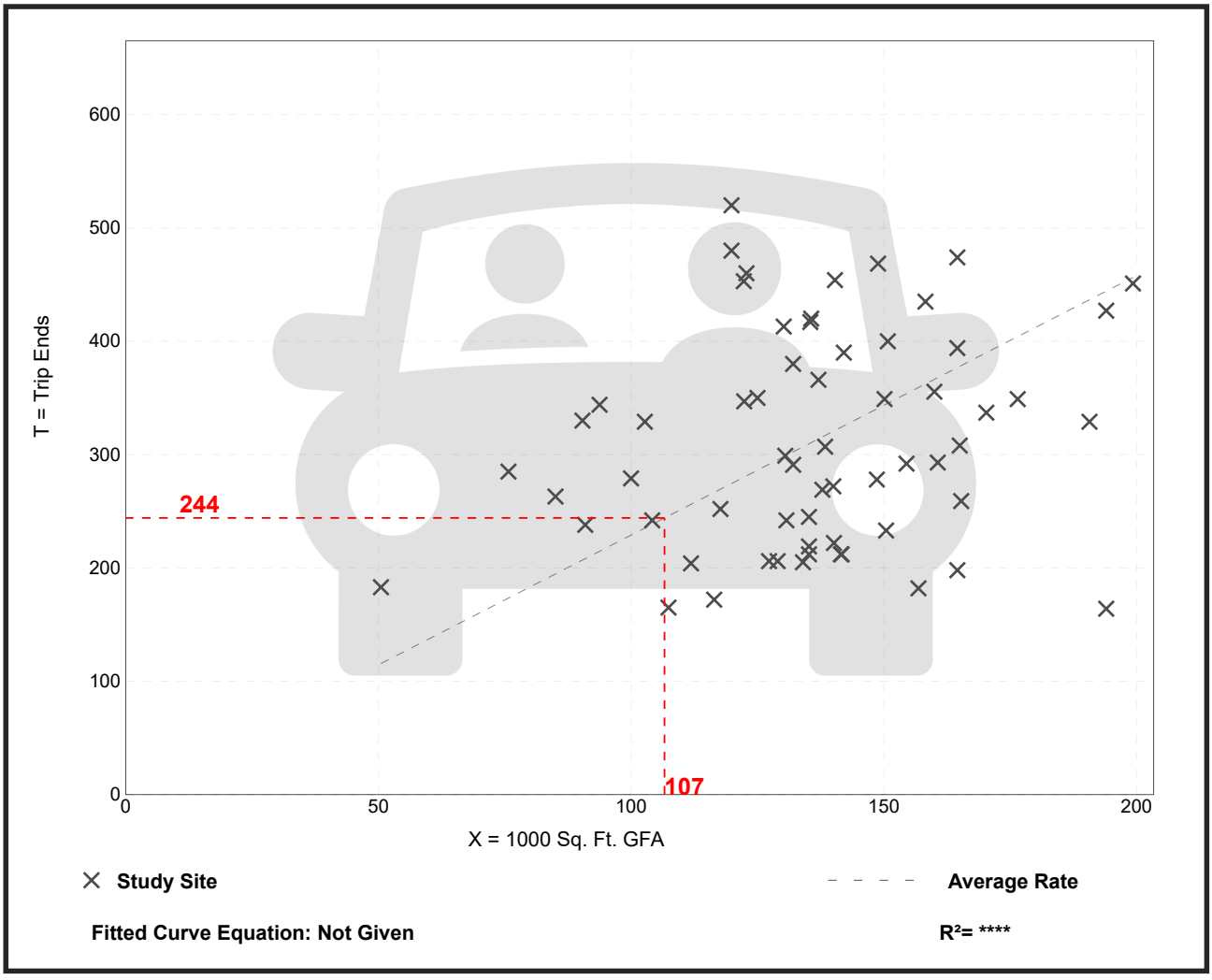
Home Improvement Superstore
(862)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 62
Avg. 1000 Sq. Ft. GFA: 136
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.29	0.85 - 4.34	0.77

Data Plot and Equation



Quick Lubrication Vehicle Shop
(941)

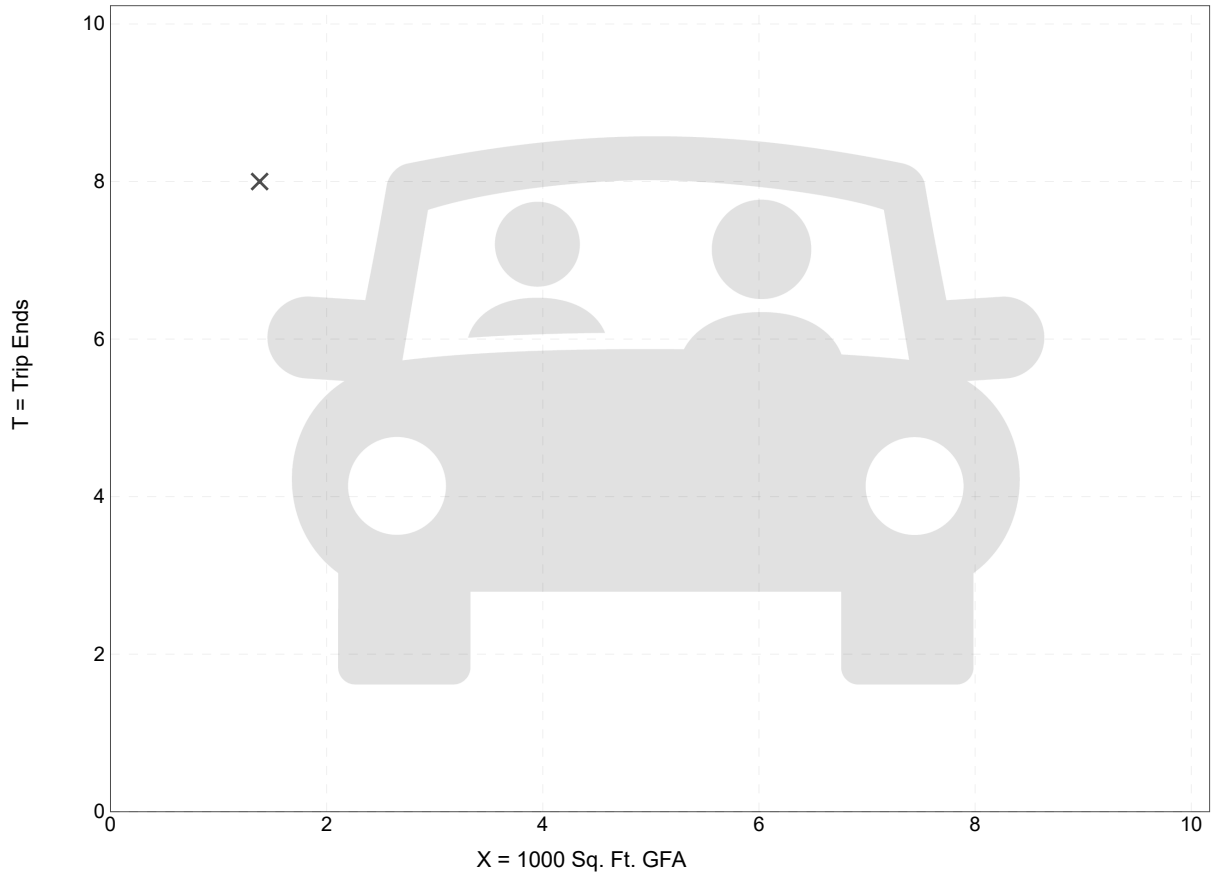
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 75% entering, 25% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
5.80	5.80 - 5.80	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

Quick Lubrication Vehicle Shop
(941)

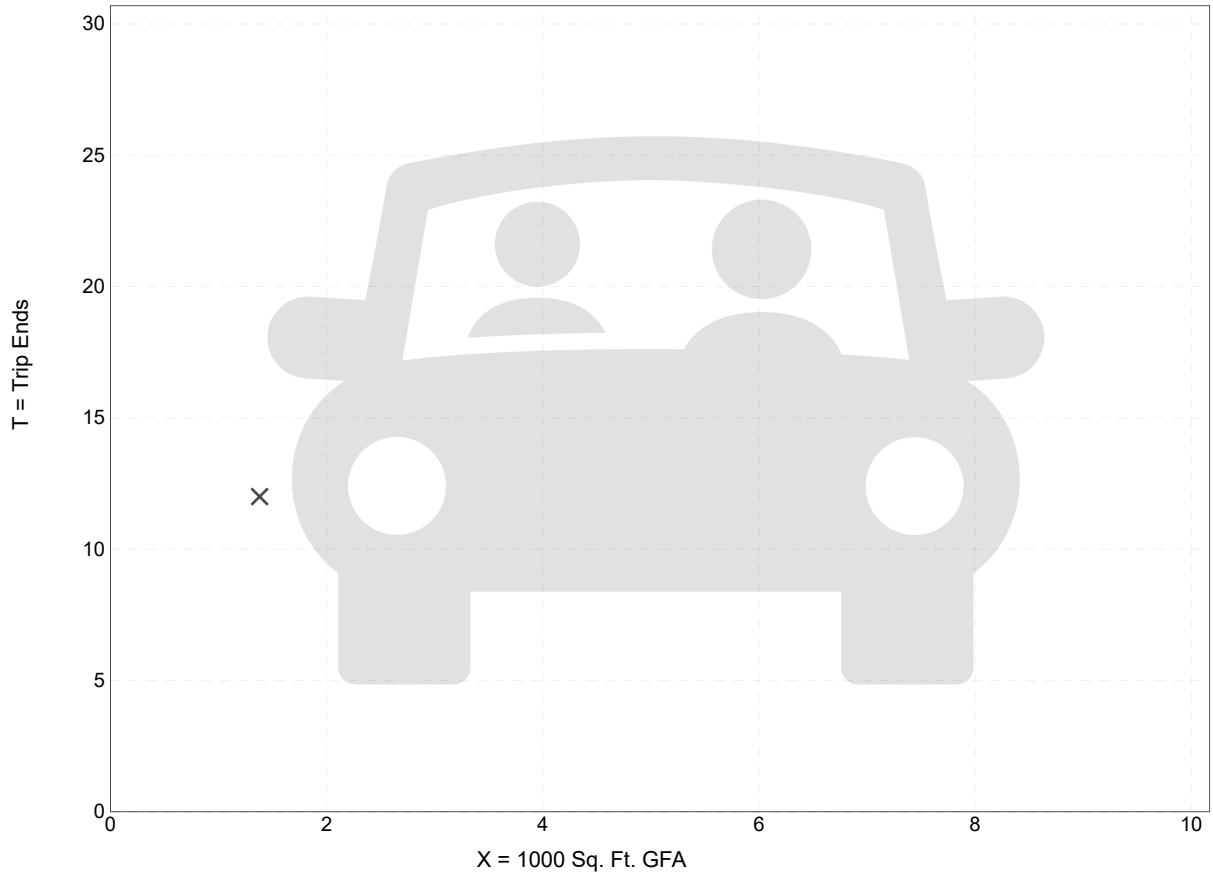
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 42% entering, 58% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.70	8.70 - 8.70	*

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Not Given

R^2= **

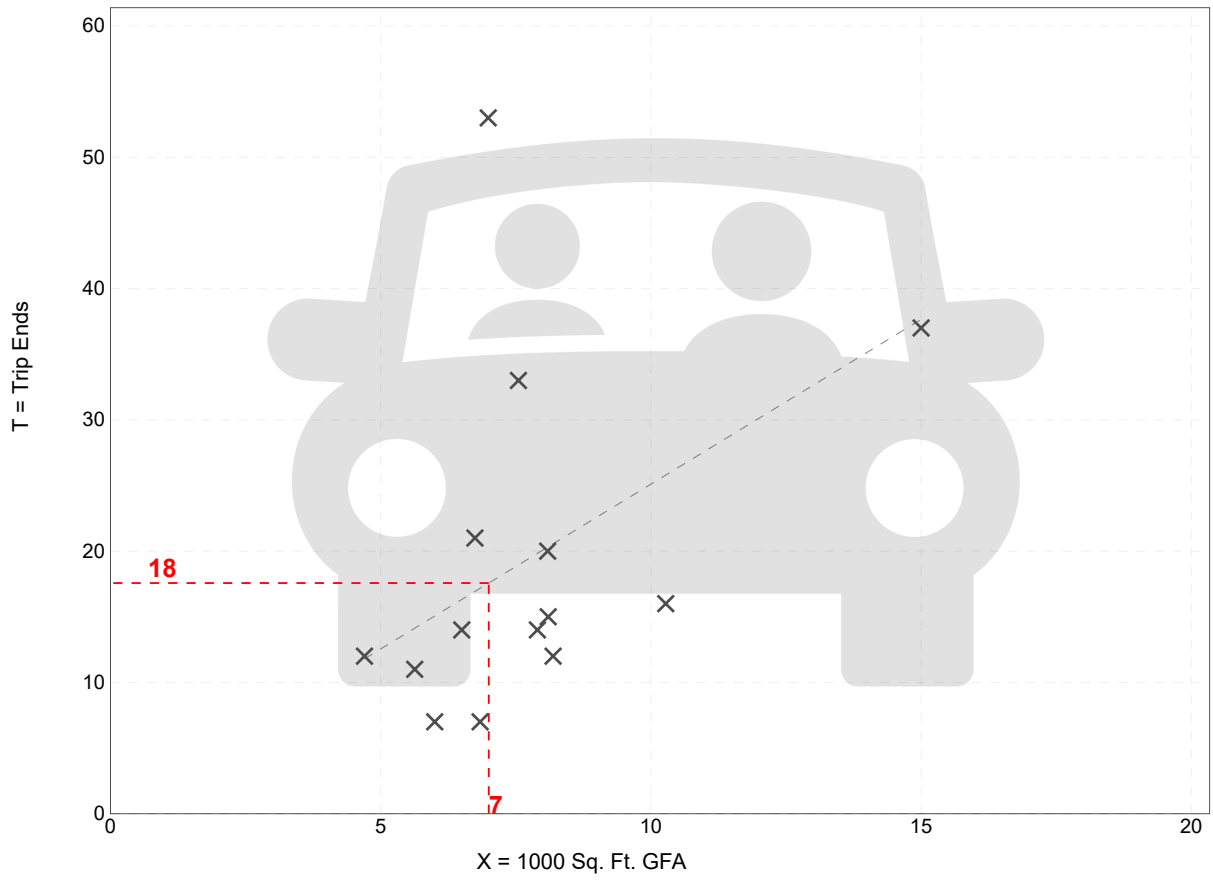
Automobile Parts Sales
(843)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 14
Avg. 1000 Sq. Ft. GFA: 8
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.51	1.02 - 7.58	1.62

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

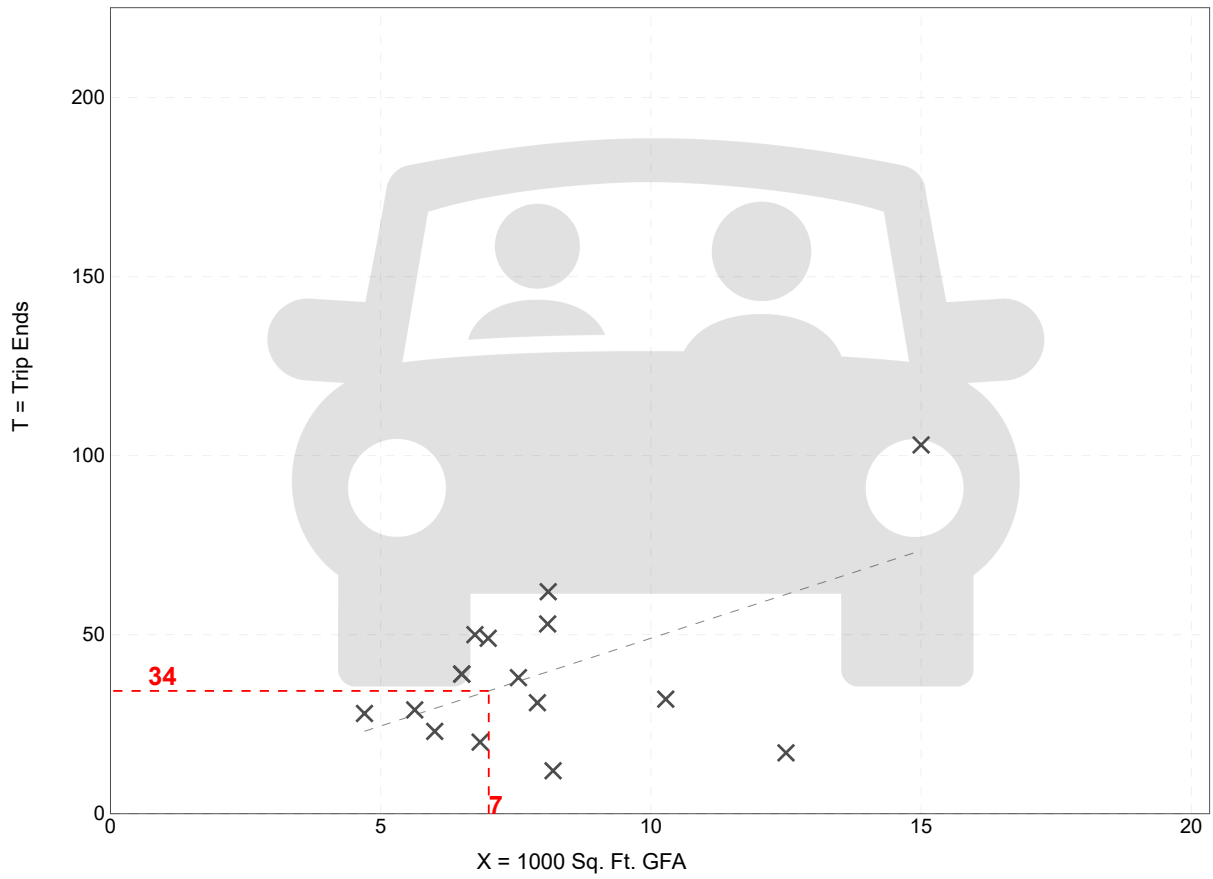
Automobile Parts Sales
(843)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 16
Avg. 1000 Sq. Ft. GFA: 8
Directional Distribution: 48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.90	1.36 - 7.65	2.17

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ****

Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

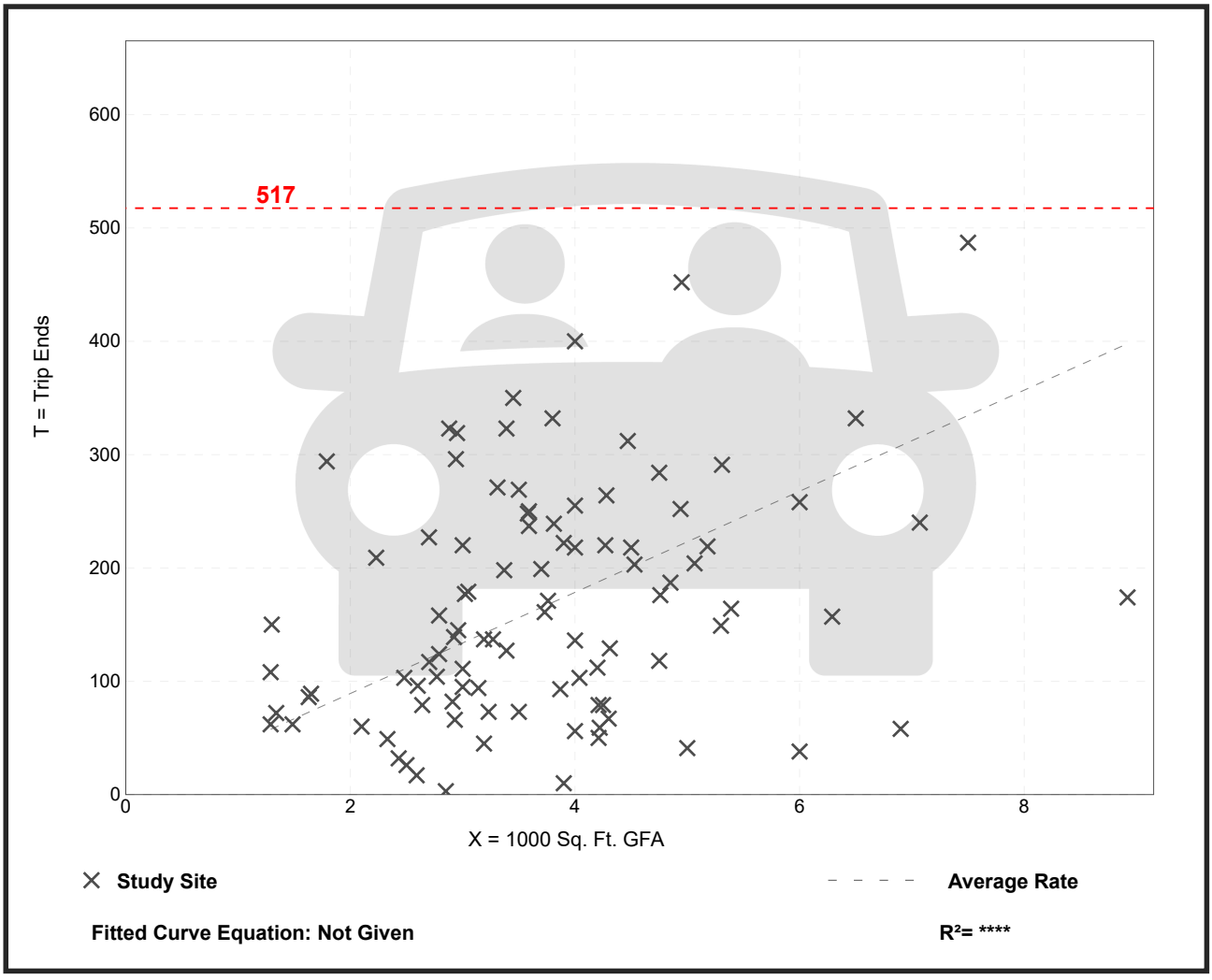
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	96
Avg. 1000 Sq. Ft. GFA:	4
Directional Distribution:	51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



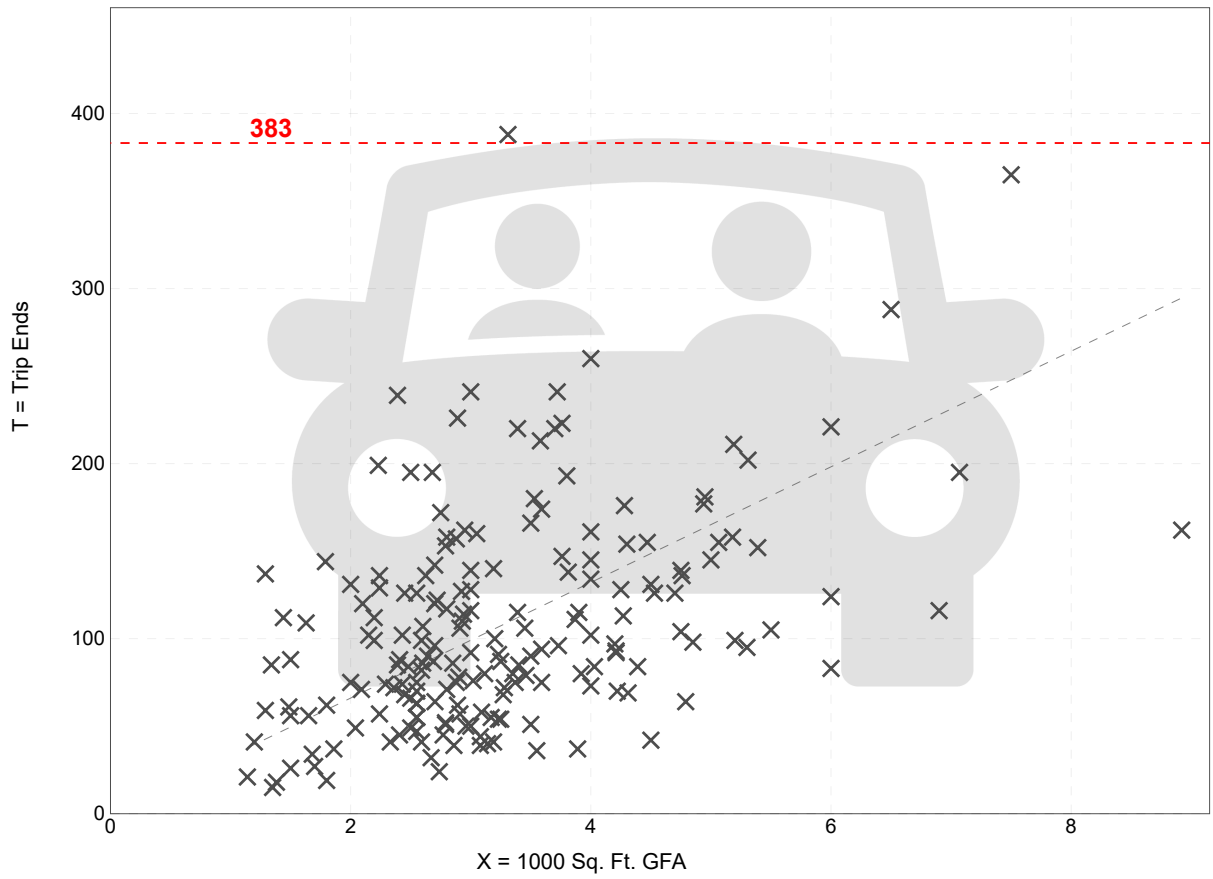
Fast-Food Restaurant with Drive-Through Window
(934)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 190
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

Strip Retail Plaza (<40k)
(822)

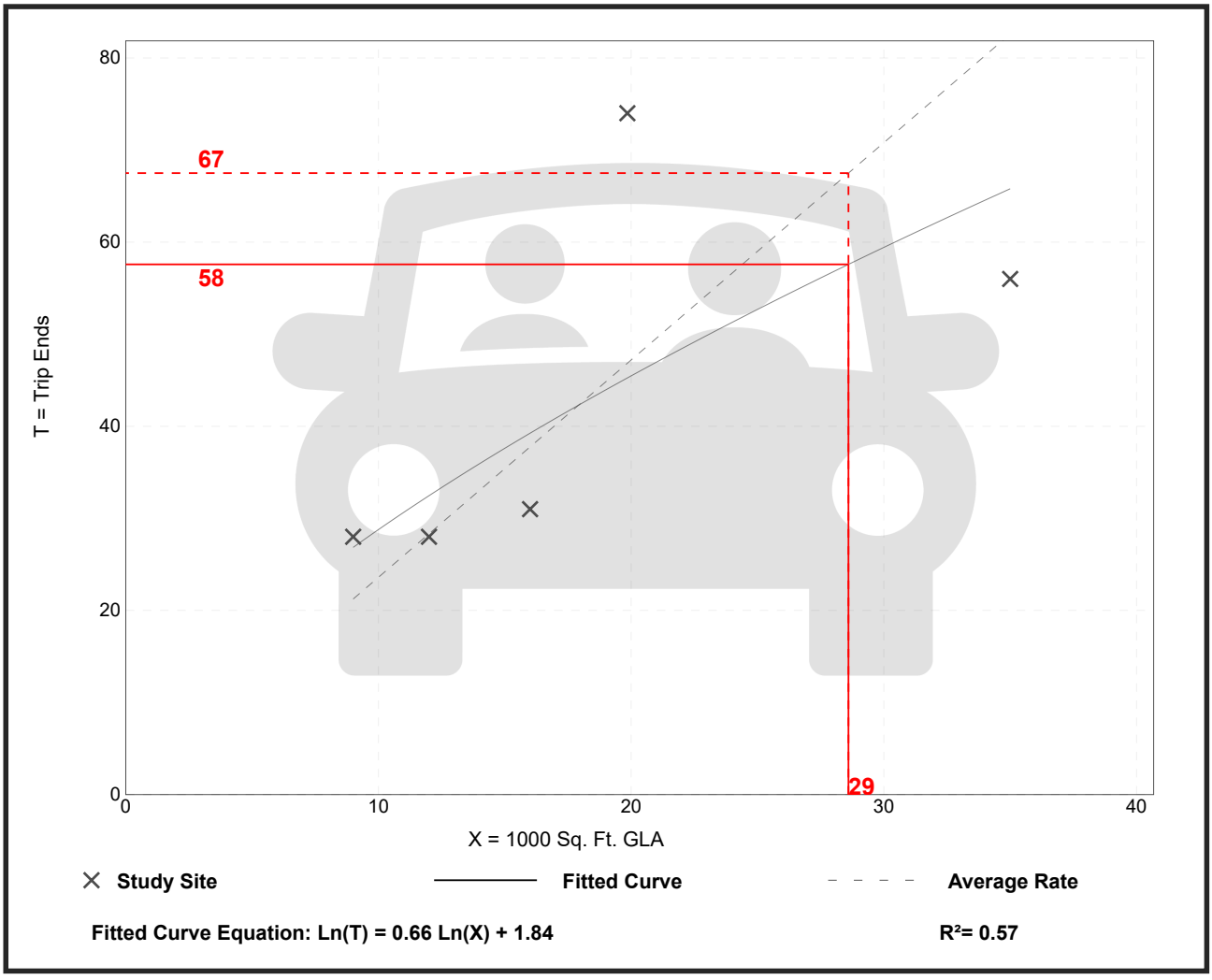
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation

Caution – Small Sample Size



Fitted Curve Equation: Ln(T) = 0.66 Ln(X) + 1.84

R^2= 0.57

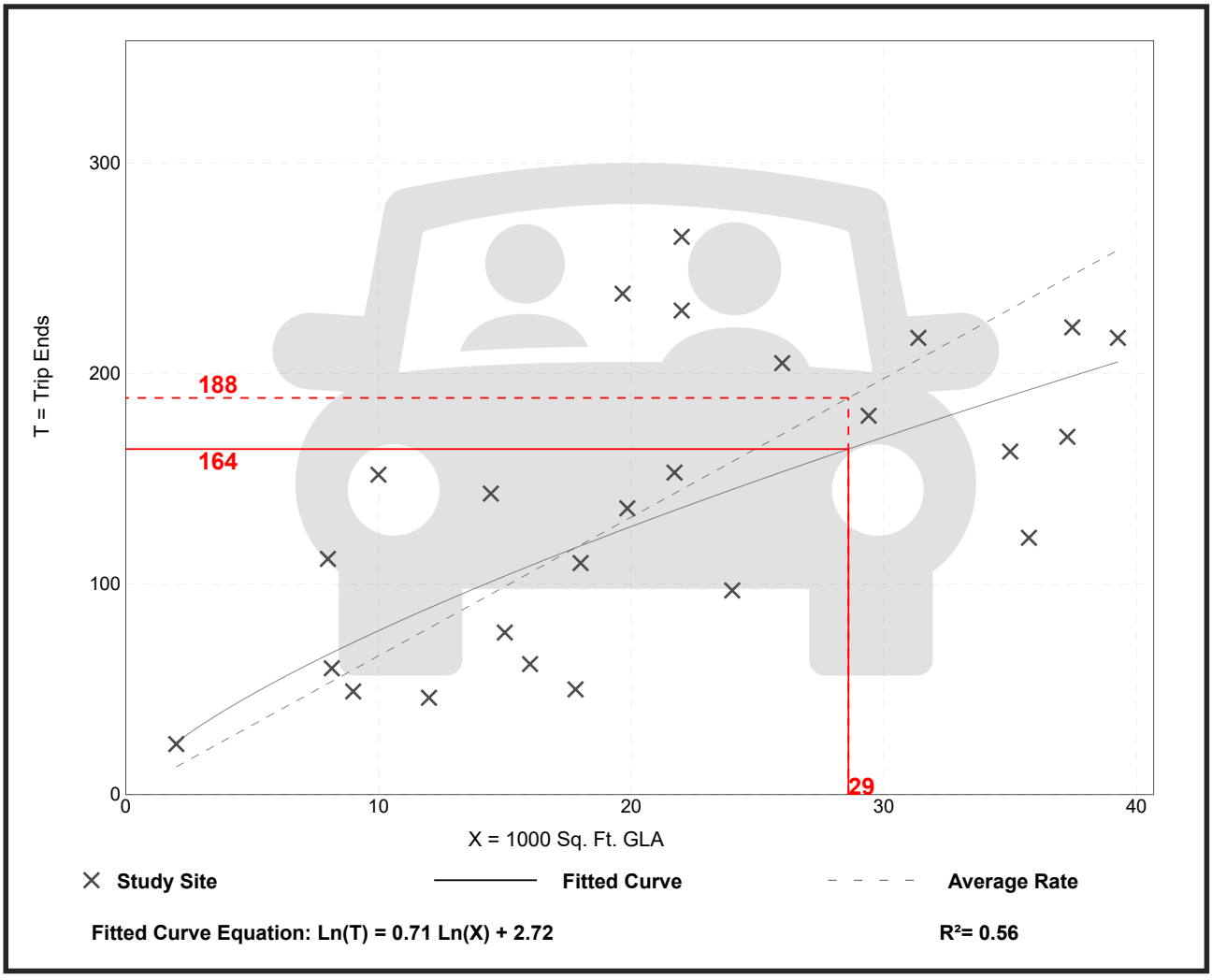
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 25
Avg. 1000 Sq. Ft. GLA: 21
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.71 Ln(X) + 2.72

R^2= 0.56

Appendix C – AM Peak Hour Capacity Analyses

Intersection Level Of Service Report
Intersection 1: SH 6 at CR 48

Control Type:	Signalized	Delay (sec / veh):	35.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.501

Intersection Setup

Name	CR 48			CR 48			SH 6			SH 6		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			60.00			60.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	CR 48			CR 48			SH 6			SH 6		
Base Volume Input [veh/h]	55	188	78	78	216	58	70	1445	78	46	1295	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	188	78	78	216	58	70	1445	78	46	1295	41
Peak Hour Factor	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.9600	0.9600	0.9600	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	51	21	21	58	16	18	376	20	12	330	10
Total Analysis Volume [veh/h]	60	204	85	84	232	62	73	1505	81	47	1321	42
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	40	0	0	40	0	10	30	0	10	30	0
Maximum Green [s]	0	60	0	0	60	0	30	60	0	30	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
l1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
l2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		Yes			Yes		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	R	L	C	R
C, Cycle Length [s]	161	161	161	161	161	161	161	161	161	161	161	161	161	161
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	40	40	10	56	56	9	55	55
g / C, Green / Cycle	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.06	0.35	0.35	0.05	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.04	0.07	0.06	0.06	0.05	0.07	0.07	0.04	0.05	0.33	0.06	0.03	0.29	0.03
s, saturation flow rate [veh/h]	1603	1683	1532	1431	1603	1683	1532	1431	1603	4584	1431	1603	4584	1431
c, Capacity [veh/h]	399	419	381	356	399	419	381	356	96	1594	497	88	1571	490
d1, Uniform Delay [s]	36.45	37.48	37.12	37.17	36.93	37.70	37.51	36.64	71.23	32.36	22.94	71.09	30.89	23.14
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	0.35	0.31	0.34	0.26	0.40	0.39	0.23	11.42	3.60	0.15	4.93	1.29	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.27	0.23	0.24	0.21	0.30	0.28	0.17	0.76	0.94	0.16	0.53	0.84	0.09
d, Delay for Lane Group [s/veh]	36.62	37.83	37.43	37.51	37.19	38.09	37.91	36.87	82.65	35.96	23.09	76.02	32.17	23.21
Lane Group LOS	D	D	D	D	D	D	D	D	F	D	C	E	C	C
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.46	2.88	2.20	2.11	2.07	3.16	2.67	1.52	3.06	13.49	1.37	1.88	10.43	0.71
50th-Percentile Queue Length [ft/ln]	36.53	71.98	55.10	52.84	51.81	78.94	66.67	38.00	76.54	337.30	34.24	47.12	260.67	17.80
95th-Percentile Queue Length [veh/ln]	2.63	5.18	3.97	3.80	3.73	5.68	4.80	2.74	5.51	19.52	2.47	3.39	15.72	1.28
95th-Percentile Queue Length [ft/ln]	65.75	129.5	99.18	95.11	93.25	142.0	120.0	68.40	137.77	487.90	61.63	84.82	393.06	32.05

Movement, Approach, & Intersection Results

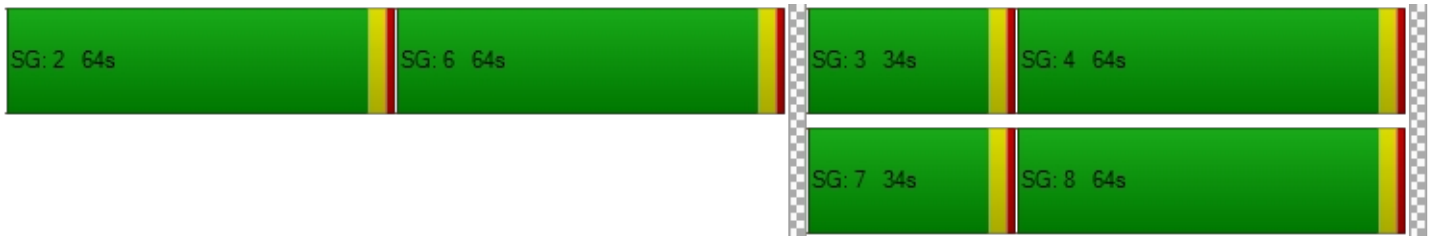
d_M, Delay for Movement [s/veh]	36.62	37.65	37.51	37.19	38.01	36.87	82.65	35.96	23.09	76.02	32.17	23.21
Movement LOS	D	D	D	D	D	D	F	D	C	E	C	C
d_A, Approach Delay [s/veh]	37.44			37.64			37.38			33.37		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	35.92											
Intersection LOS	D											
Intersection V/C	0.501											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	747	747	747	747
d_b, Bicycle Delay [s]	31.55	31.55	31.55	31.55
l_b,int, Bicycle LOS Score for Intersection	1.848	1.871	2.472	2.335
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SH 6 at Kirby Drive

Control Type:	Signalized	Delay (sec / veh):	6.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.376

Intersection Setup

Name	Kirby Drive		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	600.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		No		

Volumes

Name	Kirby Drive		SH 6		SH 6		
Base Volume Input [veh/h]	59	45	53	1548	10	1427	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	59	45	53	1548	10	1427	60
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	11	13	387	3	357	15
Total Analysis Volume [veh/h]	59	45	53	1548	10	1427	60
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0		
v_di, Inbound Pedestrian Volume crossing m	0		0		0		
v_co, Outbound Pedestrian Volume crossing	0		0		0		
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0		
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		
Bicycle Volume [bicycles/h]	0		0		0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	7	0	5	2	1	6	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	0	10	30	10	30	0
Maximum Green [s]	40	0	30	60	30	60	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	5	0
Pedestrian Clearance [s]	24	0	0	10	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	L	C	R
C, Cycle Length [s]	51	51	51	51	51	51	51
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	4	5	34	1	30	30
g / C, Green / Cycle	0.08	0.08	0.11	0.66	0.03	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.02	0.03	0.03	0.34	0.01	0.31	0.04
s, saturation flow rate [veh/h]	3113	1431	1603	4584	1603	4584	1431
c, Capacity [veh/h]	241	111	171	3035	45	2674	834
d1, Uniform Delay [s]	22.38	22.67	21.30	4.45	24.54	6.51	4.68
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	2.37	1.02	0.13	2.48	0.17	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.41	0.31	0.51	0.22	0.53	0.07
d, Delay for Lane Group [s/veh]	22.90	25.04	22.32	4.59	27.01	6.67	4.71
Lane Group LOS	C	C	C	A	C	A	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.31	0.53	0.52	0.48	0.13	1.20	0.11
50th-Percentile Queue Length [ft/ln]	7.84	13.26	12.89	11.93	3.20	30.07	2.84
95th-Percentile Queue Length [veh/ln]	0.56	0.95	0.93	0.86	0.23	2.17	0.20
95th-Percentile Queue Length [ft/ln]	14.11	23.87	23.21	21.47	5.75	54.13	5.12

Movement, Approach, & Intersection Results

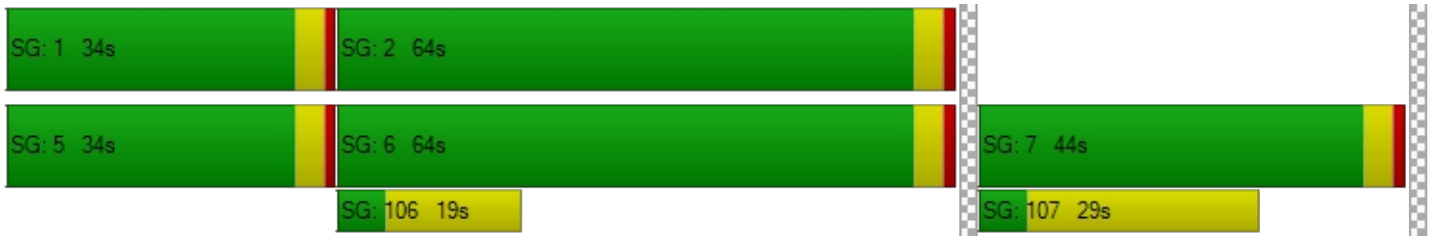
d_M, Delay for Movement [s/veh]	22.90	25.04	22.32	4.59	27.01	6.67	4.71
Movement LOS	C	C	C	A	C	A	A
d_A, Approach Delay [s/veh]	23.83		5.17		6.73		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	6.51						
Intersection LOS	A						
Intersection V/C	0.376						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	17.49	17.49	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.328	3.422	0.000
Crosswalk LOS	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1556	2334	2334
d_b, Bicycle Delay [s]	1.26	0.72	0.72
l_b,int, Bicycle LOS Score for Intersection	1.560	2.440	2.383
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SH 6 at Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Driveway 1		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 1		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1601	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1601	1382	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	400	346	0
Total Analysis Volume [veh/h]	0	0	0	1601	1382	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	15.85	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.85		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: SH 6 at Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Driveway 2		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	415.00	100.00	350.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Crosswalk	No		No		No		

Volumes

Name	Driveway 2		SH 6		SH 6		
Base Volume Input [veh/h]	0	0	0	1601	0	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1601	0	1382	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	400	0	346	0
Total Analysis Volume [veh/h]	0	0	0	1601	0	1382	0
Pedestrian Volume [ped/h]	0		0		0		

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	34.35	15.85	19.13	0.00	15.17	0.00	0.00
Movement LOS	D	C	C	A	C	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	25.10		0.00		0.00		
Approach LOS	D		A		A		
d_I, Intersection Delay [s/veh]	0.00						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 5: SH 6 at Driveway 3

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Driveway 3		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 3		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1601	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1601	1382	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	400	346	0
Total Analysis Volume [veh/h]	0	0	0	1601	1382	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	15.85	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.85		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Kirby Dr at Driveway 4

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.054

Intersection Setup

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Base Volume Input [veh/h]	0	0	45	0	0	0	0	0	0	53	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	45	0	0	0	0	0	0	53	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	11	0	0	0	0	0	0	13	0	0
Total Analysis Volume [veh/h]	0	0	45	0	0	0	0	0	0	53	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	7.31	0.00	0.00	8.52	9.25	8.32	8.86	9.34	8.64
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.17	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.25	4.25	4.25
d_A, Approach Delay [s/veh]	0.00			2.44			8.70			8.86		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.79											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 7: Kirby Dr at Driveway 5

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Drive		Driveway 5	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Drive		Driveway 5	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report
Intersection 8: Kirby Dr at Driveway 6

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Dr		Driveway 6	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Dr		Driveway 6	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

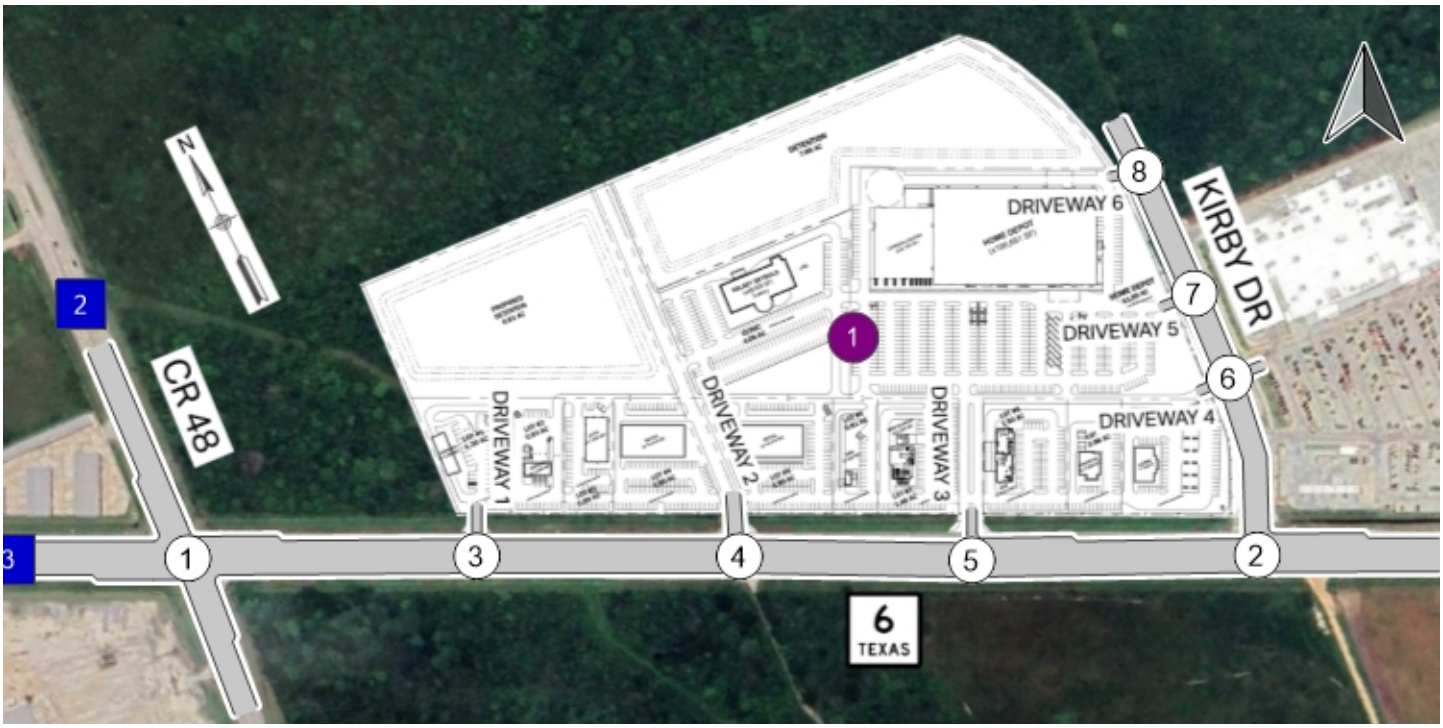
Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

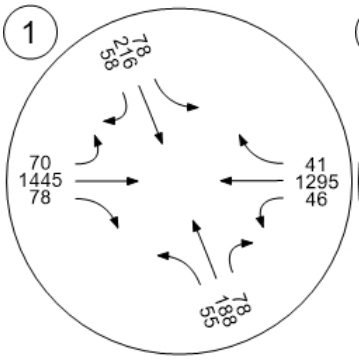
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

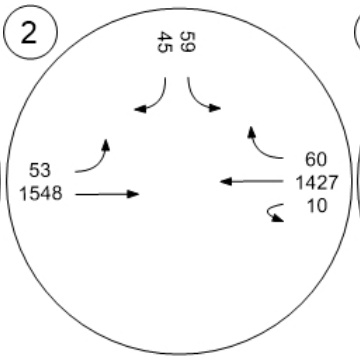
Traffic Volume - Base Volume



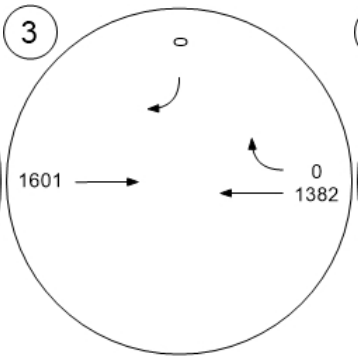
SH 6 at CR 48



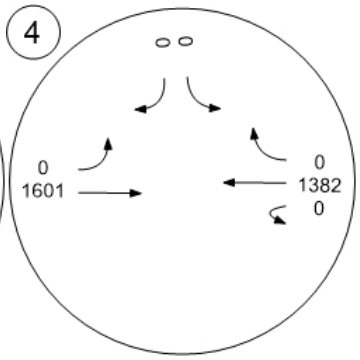
SH 6 at Kirby Drive



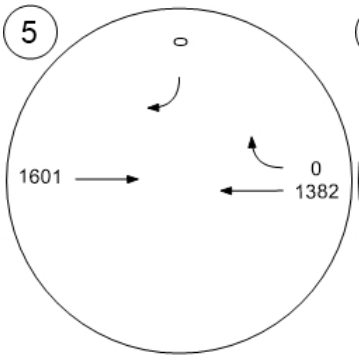
SH 6 at Driveway 1



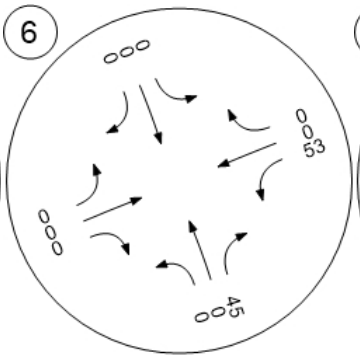
SH 6 at Driveway 2



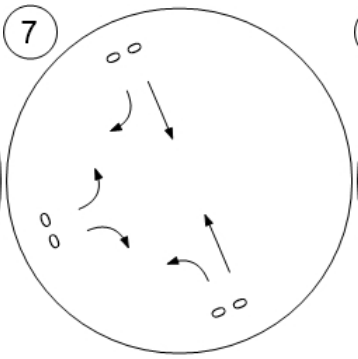
SH 6 at Driveway 3



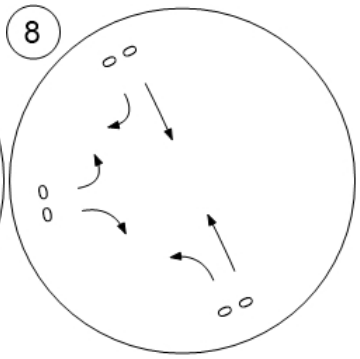
Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



Kirby Dr at Driveway 6



Intersection Level Of Service Report
Intersection 1: SH 6 at CR 48

Control Type:	Signalized	Delay (sec / veh):	46.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.581

Intersection Setup

Name	CR 48			CR 48			SH 6			SH 6		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			60.00			60.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	CR 48			CR 48			SH 6			SH 6		
Base Volume Input [veh/h]	55	188	78	78	216	58	70	1445	78	46	1295	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	218	90	90	251	67	81	1676	90	53	1502	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.9600	0.9600	0.9600	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	59	24	24	67	18	21	436	23	14	383	12
Total Analysis Volume [veh/h]	70	237	98	97	270	72	84	1746	94	54	1533	49
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	40	0	0	40	0	10	30	0	10	30	0
Maximum Green [s]	0	60	0	0	60	0	30	60	0	30	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		Yes			Yes		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	R	L	C	R
C, Cycle Length [s]	165	165	165	165	165	165	165	165	165	165	165	165	165	165
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	40	40	10	60	60	9	59	59
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.36	0.36	0.06	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.07	0.07	0.06	0.09	0.08	0.05	0.05	0.38	0.07	0.03	0.33	0.03
s, saturation flow rate [veh/h]	1603	1683	1532	1431	1603	1683	1532	1431	1603	4584	1431	1603	4584	1431
c, Capacity [veh/h]	388	408	371	346	388	408	371	346	102	1664	519	90	1629	508
d1, Uniform Delay [s]	38.79	40.09	39.64	39.68	39.38	40.39	40.15	39.02	73.06	32.69	21.77	73.25	32.14	22.25
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	0.46	0.41	0.44	0.33	0.53	0.52	0.29	14.95	26.33	0.17	6.32	3.38	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.33	0.28	0.28	0.25	0.36	0.33	0.21	0.82	1.05	0.18	0.60	0.94	0.10
d, Delay for Lane Group [s/veh]	39.01	40.56	40.05	40.12	39.72	40.93	40.67	39.31	88.01	59.02	21.94	79.57	35.52	22.33
Lane Group LOS	D	D	D	D	D	D	D	D	F	F	C	E	D	C
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.81	3.55	2.73	2.59	2.54	3.92	3.30	1.87	3.70	19.57	1.54	2.25	13.93	0.81
50th-Percentile Queue Length [ft/ln]	45.15	88.87	68.18	64.73	63.50	98.01	82.55	46.78	92.43	489.32	38.56	56.36	348.30	20.35
95th-Percentile Queue Length [veh/ln]	3.25	6.40	4.91	4.66	4.57	7.06	5.94	3.37	6.66	27.72	2.78	4.06	20.05	1.47
95th-Percentile Queue Length [ft/ln]	81.26	159.9	122.7	116.5	114.2	176.4	148.6	84.21	166.38	692.88	69.41	101.46	501.34	36.63

Movement, Approach, & Intersection Results

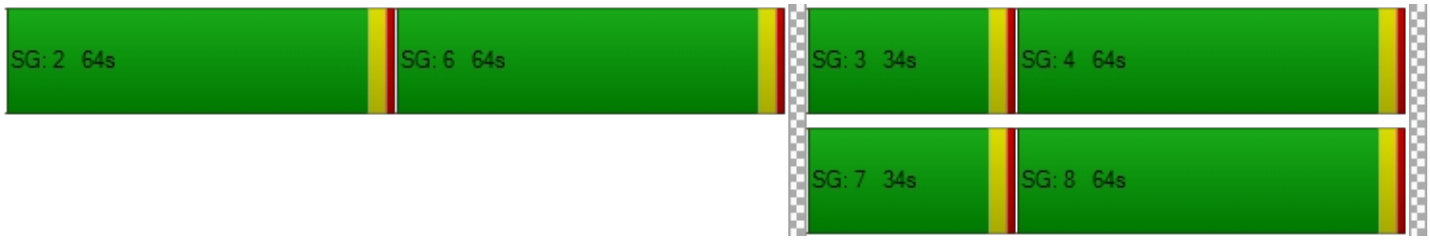
d_M, Delay for Movement [s/veh]	39.01	40.33	40.12	39.72	40.81	39.31	88.01	59.02	21.94	79.57	35.52	22.33
Movement LOS	D	D	D	D	D	D	F	F	C	E	D	C
d_A, Approach Delay [s/veh]	40.05			40.32			58.47			36.58		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	46.84											
Intersection LOS	D											
Intersection V/C	0.581											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	726	726	726	726
d_b, Bicycle Delay [s]	33.55	33.55	33.55	33.55
l_b,int, Bicycle LOS Score for Intersection	1.894	1.922	2.618	2.459
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SH 6 at Kirby Drive

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.436

Intersection Setup

Name	Kirby Drive		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	600.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		No		

Volumes

Name	Kirby Drive		SH 6		SH 6		
Base Volume Input [veh/h]	59	45	53	1548	10	1427	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	68	52	61	1796	12	1655	70
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	13	15	449	3	414	18
Total Analysis Volume [veh/h]	68	52	61	1796	12	1655	70
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0		
v_di, Inbound Pedestrian Volume crossing m	0		0		0		
v_co, Outbound Pedestrian Volume crossing	0		0		0		
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0		
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		
Bicycle Volume [bicycles/h]	0		0		0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	7	0	5	2	1	6	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	0	10	30	10	30	0
Maximum Green [s]	40	0	30	60	30	60	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	5	0
Pedestrian Clearance [s]	24	0	0	10	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	L	C	R
C, Cycle Length [s]	52	52	52	52	52	52	52
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	4	6	34	2	30	30
g / C, Green / Cycle	0.08	0.08	0.11	0.66	0.03	0.58	0.58
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.04	0.39	0.01	0.36	0.05
s, saturation flow rate [veh/h]	3113	1431	1603	4584	1603	4584	1431
c, Capacity [veh/h]	250	115	184	3018	51	2638	823
d1, Uniform Delay [s]	22.63	22.97	21.31	5.02	24.71	7.38	4.96
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.58	2.76	1.04	0.19	2.29	0.25	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.45	0.33	0.60	0.23	0.63	0.09
d, Delay for Lane Group [s/veh]	23.21	25.73	22.36	5.21	27.00	7.63	5.01
Lane Group LOS	C	C	C	A	C	A	A
Critical Lane Group	No	Yes	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.37	0.63	0.60	0.74	0.15	1.70	0.15
50th-Percentile Queue Length [ft/ln]	9.19	15.69	14.95	18.49	3.78	42.41	3.74
95th-Percentile Queue Length [veh/ln]	0.66	1.13	1.08	1.33	0.27	3.05	0.27
95th-Percentile Queue Length [ft/ln]	16.55	28.25	26.92	33.28	6.80	76.34	6.73

Movement, Approach, & Intersection Results

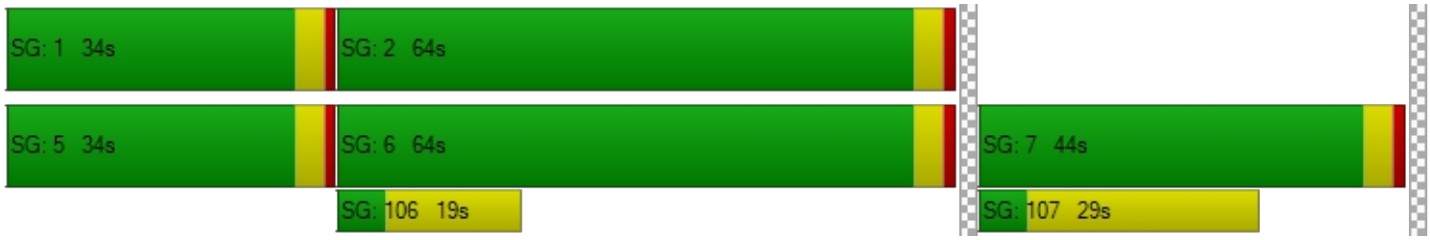
d_M, Delay for Movement [s/veh]	23.21	25.73	22.36	5.21	27.00	7.63	5.01
Movement LOS	C	C	C	A	C	A	A
d_A, Approach Delay [s/veh]	24.30		5.78		7.66		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	7.26						
Intersection LOS	A						
Intersection V/C	0.436						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	17.87	17.87	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.338	3.560	0.000
Crosswalk LOS	B	D	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1533	2300	2300
d_b, Bicycle Delay [s]	1.42	0.59	0.59
l_b,int, Bicycle LOS Score for Intersection	1.560	2.581	2.515
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SH 6 at Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Driveway 1		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 1		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1601	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1857	1603	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	464	401	0
Total Analysis Volume [veh/h]	0	0	0	1857	1603	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	17.82	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.82		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: SH 6 at Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Driveway 2		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	415.00	100.00	350.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Crosswalk	No		No		No		

Volumes

Name	Driveway 2		SH 6		SH 6		
Base Volume Input [veh/h]	0	0	0	1601	0	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1857	0	1603	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	464	0	401	0
Total Analysis Volume [veh/h]	0	0	0	1857	0	1603	0
Pedestrian Volume [ped/h]	0		0		0		

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	45.50	17.82	23.18	0.00	17.94	0.00	0.00
Movement LOS	E	C	C	A	C	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	31.66		0.00		0.00		
Approach LOS	D		A		A		
d_I, Intersection Delay [s/veh]	0.00						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 5: SH 6 at Driveway 3

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	Driveway 3		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 3		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1601	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1857	1603	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	464	401	0
Total Analysis Volume [veh/h]	0	0	0	1857	1603	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	17.82	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.82		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Kirby Dr at Driveway 4

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Base Volume Input [veh/h]	0	0	45	0	0	0	0	0	0	53	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	52	0	0	0	0	0	0	61	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	13	0	0	0	0	0	0	15	0	0
Total Analysis Volume [veh/h]	0	0	52	0	0	0	0	0	0	61	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	7.32	0.00	0.00	8.52	9.29	8.32	8.91	9.40	8.69
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.20	0.20
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.96	4.96	4.96
d_A, Approach Delay [s/veh]	0.00			2.44			8.71			8.91		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.81											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 7: Kirby Dr at Driveway 5

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Drive		Driveway 5	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Drive		Driveway 5	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report
Intersection 8: Kirby Dr at Driveway 6

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Dr		Driveway 6	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Dr		Driveway 6	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

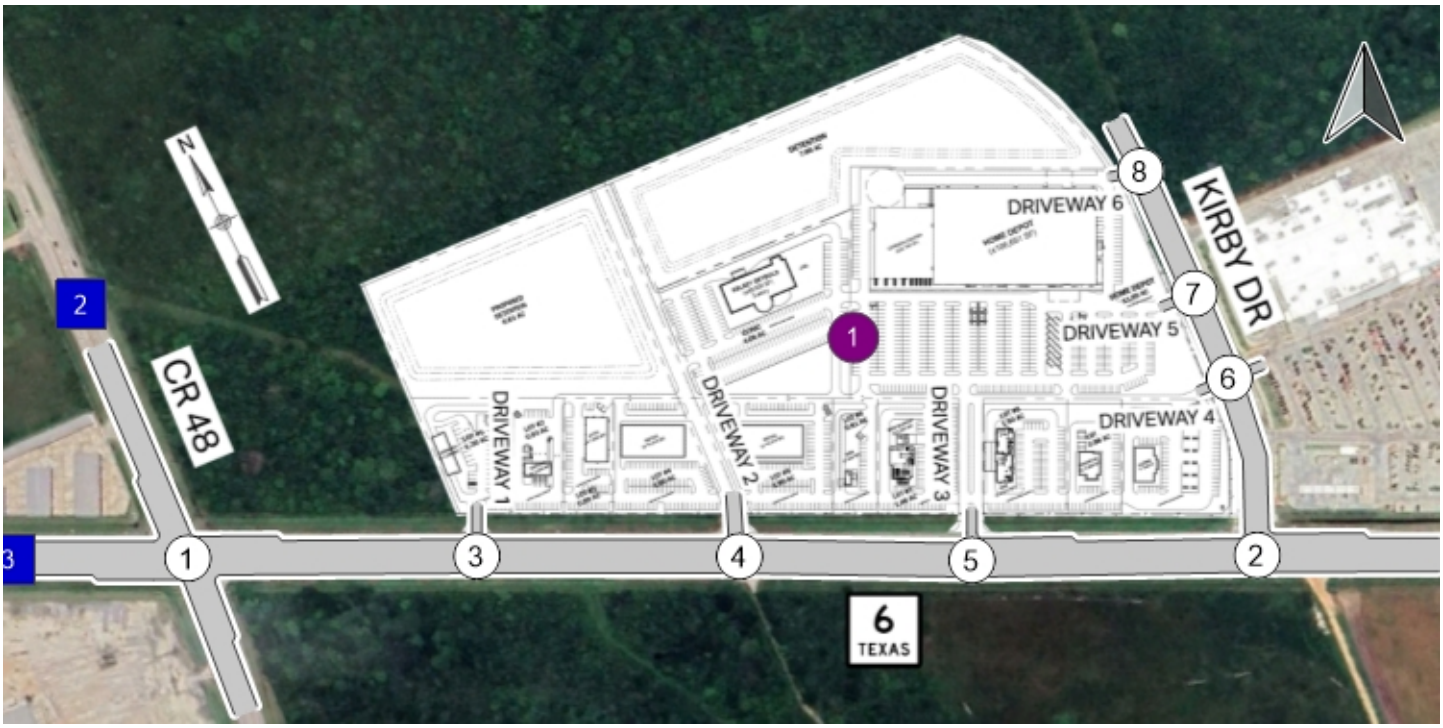
Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

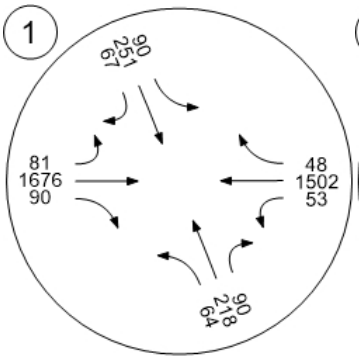
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

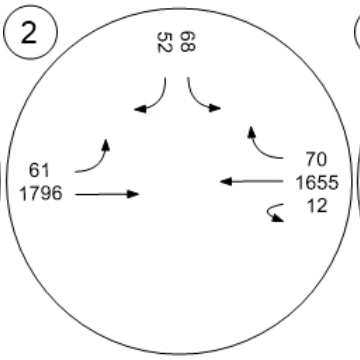
Traffic Volume - Future Background Volume



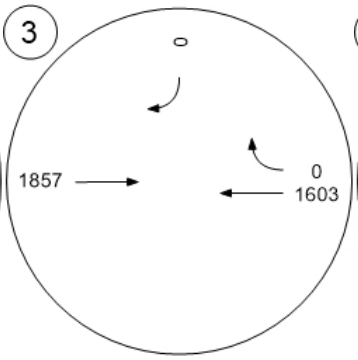
SH 6 at CR 48



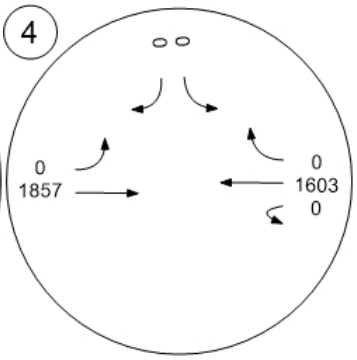
SH 6 at Kirby Drive



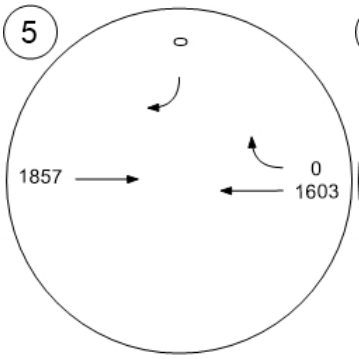
SH 6 at Driveway 1



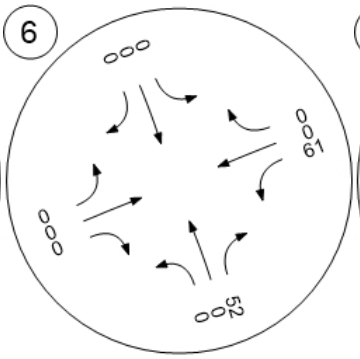
SH 6 at Driveway 2



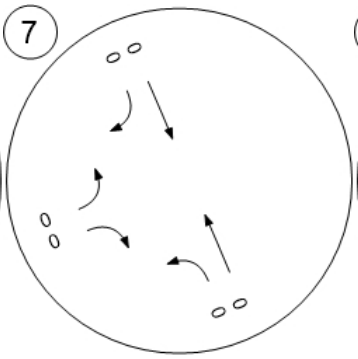
SH 6 at Driveway 3



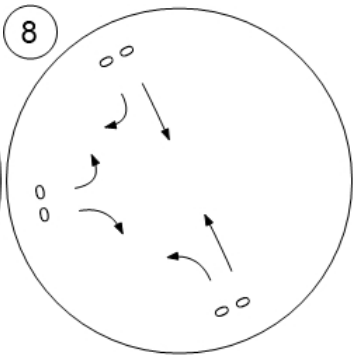
Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



Kirby Dr at Driveway 6



Intersection Level Of Service Report
Intersection 1: SH 6 at CR 48

Control Type:	Signalized	Delay (sec / veh):	54.7
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.639

Intersection Setup

Name	CR 48			CR 48			SH 6			SH 6		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			60.00			60.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	CR 48			CR 48			SH 6			SH 6		
Base Volume Input [veh/h]	55	188	78	78	216	58	70	1445	78	46	1295	41
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	23	46	0	0	0	160	0	16	110	31
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	64	218	113	136	251	67	81	1836	90	69	1612	79
Peak Hour Factor	0.9200	0.9200	0.9200	0.9300	0.9300	0.9300	0.9600	0.9600	0.9600	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	59	31	37	67	18	21	478	23	18	411	20
Total Analysis Volume [veh/h]	70	237	123	146	270	72	84	1913	94	70	1645	81
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	40	0	0	40	0	10	30	0	10	30	0
Maximum Green [s]	0	60	0	0	60	0	30	60	0	30	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		Yes			Yes		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	R	L	C	R
C, Cycle Length [s]	167	167	167	167	167	167	167	167	167	167	167	167	167	167
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	40	40	10	61	61	10	60	60
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.37	0.37	0.06	0.36	0.36
(v / s)_i Volume / Saturation Flow Rate	0.04	0.08	0.07	0.09	0.08	0.08	0.09	0.05	0.05	0.42	0.07	0.04	0.36	0.06
s, saturation flow rate [veh/h]	1603	1683	1532	1431	1603	1677	1532	1431	1603	4584	1431	1603	4584	1431
c, Capacity [veh/h]	385	405	368	344	385	403	368	344	101	1673	522	93	1650	515
d1, Uniform Delay [s]	33.94	34.99	34.62	35.20	35.15	35.12	35.39	34.13	71.92	22.51	14.75	72.48	23.26	15.36
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	0.47	0.41	0.63	0.55	0.51	0.65	0.30	15.44	66.27	0.16	11.39	9.62	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.33	0.28	0.36	0.35	0.35	0.38	0.21	0.83	1.14	0.18	0.75	1.00	0.16
d, Delay for Lane Group [s/veh]	34.17	35.46	35.04	35.83	35.70	35.64	36.04	34.43	87.36	88.78	14.91	83.87	32.88	15.50
Lane Group LOS	C	D	D	D	D	D	D	C	F	F	B	F	C	B
Critical Lane Group	No	No	No	Yes	No	No	Yes	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.58	3.10	2.38	2.88	3.16	3.27	3.30	1.64	3.66	18.48	1.06	2.99	10.09	0.94
50th-Percentile Queue Length [ft/ln]	39.54	77.52	59.61	72.03	79.02	81.63	82.56	40.96	91.41	461.89	26.38	74.74	252.17	23.51
95th-Percentile Queue Length [veh/ln]	2.85	5.58	4.29	5.19	5.69	5.88	5.94	2.95	6.58	27.76	1.90	5.38	15.30	1.69
95th-Percentile Queue Length [ft/ln]	71.17	139.5	107.2	129.6	142.2	146.9	148.6	73.72	164.54	693.88	47.48	134.54	382.39	42.31

Movement, Approach, & Intersection Results

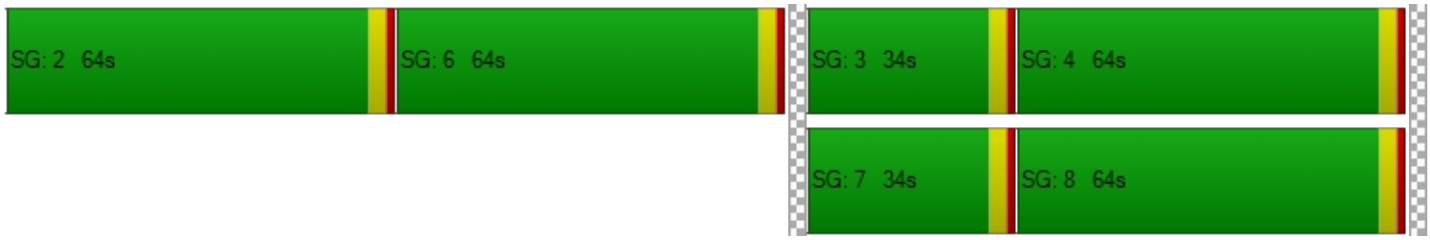
d_M, Delay for Movement [s/veh]	34.17	35.28	35.83	35.70	35.85	34.43	87.36	88.78	14.91	83.87	32.88	15.50
Movement LOS	C	D	D	D	D	C	F	F	B	F	C	B
d_A, Approach Delay [s/veh]	35.25			35.59			85.40			34.08		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	54.67											
Intersection LOS	D											
Intersection V/C	0.639											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	720	720	720	720
d_b, Bicycle Delay [s]	34.09	34.09	34.09	34.09
l_b,int, Bicycle LOS Score for Intersection	1.914	1.962	2.710	2.547
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 2: SH 6 at Kirby Drive

Control Type:	Signalized	Delay (sec / veh):	11.2
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.574

Intersection Setup

Name	Kirby Drive		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	600.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		No		

Volumes

Name	Kirby Drive		SH 6		SH 6		
Base Volume Input [veh/h]	59	45	53	1548	10	1427	60
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	126	63	115	31	0	103	126
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	194	115	176	1827	12	1758	196
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	29	44	457	3	440	49
Total Analysis Volume [veh/h]	194	115	176	1827	12	1758	196
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0		
v_di, Inbound Pedestrian Volume crossing m	0		0		0		
v_co, Outbound Pedestrian Volume crossing	0		0		0		
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0		
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		
Bicycle Volume [bicycles/h]	0		0		0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	7	0	5	2	1	6	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	0	10	30	10	30	0
Maximum Green [s]	40	0	30	60	30	60	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	5	0
Pedestrian Clearance [s]	24	0	0	10	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	L	C	R
C, Cycle Length [s]	66	66	66	66	66	66	66
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	8	10	44	2	37	37
g / C, Green / Cycle	0.12	0.12	0.15	0.67	0.03	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.06	0.08	0.11	0.40	0.01	0.38	0.14
s, saturation flow rate [veh/h]	3113	1431	1603	4584	1603	4584	1431
c, Capacity [veh/h]	374	172	232	3067	49	2541	793
d1, Uniform Delay [s]	27.44	27.98	27.30	6.06	31.49	10.71	7.65
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	4.43	4.99	0.19	2.61	0.34	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.67	0.76	0.60	0.25	0.69	0.25
d, Delay for Lane Group [s/veh]	28.55	32.41	32.29	6.24	34.10	11.05	7.81
Lane Group LOS	C	C	C	A	C	B	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.39	1.82	2.60	1.93	0.20	3.85	0.94
50th-Percentile Queue Length [ft/ln]	34.76	45.56	64.93	48.19	5.00	96.33	23.42
95th-Percentile Queue Length [veh/ln]	2.50	3.28	4.67	3.47	0.36	6.94	1.69
95th-Percentile Queue Length [ft/ln]	62.56	82.01	116.87	86.73	8.99	173.40	42.16

Movement, Approach, & Intersection Results

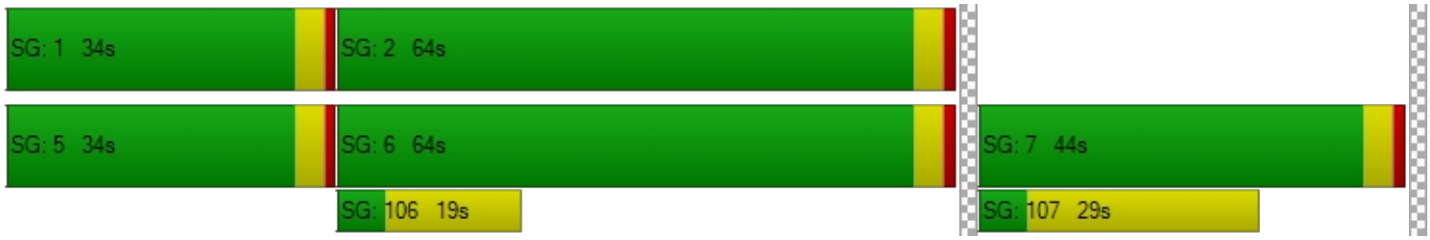
d_M, Delay for Movement [s/veh]	28.55	32.41	32.29	6.24	34.10	11.05	7.81
Movement LOS	C	C	C	A	C	B	A
d_A, Approach Delay [s/veh]	29.99		8.53		10.87		
Approach LOS	C		A		B		
d_I, Intersection Delay [s/veh]	11.16						
Intersection LOS	B						
Intersection V/C	0.574						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	24.78	24.78	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.463	3.660	0.000
Crosswalk LOS	B	D	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1206	1809	1809
d_b, Bicycle Delay [s]	5.23	0.30	0.30
l_b,int, Bicycle LOS Score for Intersection	1.560	2.661	2.641
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SH 6 at Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	20.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

Intersection Setup

Name	Driveway 1		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 1		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1601	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	0	229	149	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	5	0	0	-10	10
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	13	0	2086	1742	21
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	0	522	436	5
Total Analysis Volume [veh/h]	0	13	0	2086	1742	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	20.27	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.16	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	4.11	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.27		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: SH 6 at Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	200.5
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.717

Intersection Setup

Name	Driveway 2		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	415.00	100.00	350.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Crosswalk	No		No		No		

Volumes

Name	Driveway 2		SH 6		SH 6		
Base Volume Input [veh/h]	0	0	0	1601	0	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	31	24	115	115	0	137	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	25	0	0	0	-25	25
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	49	115	1972	0	1715	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	12	29	493	0	429	12
Total Analysis Volume [veh/h]	31	49	115	1972	0	1715	48
Pedestrian Volume [ped/h]	0		0		0		

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.72	0.20	0.70	0.02	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	200.46	23.00	66.08	0.00	19.42	0.00	0.00
Movement LOS	F	C	F	A	C	A	A
95th-Percentile Queue Length [veh/ln]	2.73	0.72	4.16	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	68.24	17.89	103.94	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	91.76		3.64		0.00		
Approach LOS	F		A		A		
d_I, Intersection Delay [s/veh]	3.80						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 5: SH 6 at Driveway 3

Control Type:	Two-way stop	Delay (sec / veh):	70.1
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.918

Intersection Setup

Name	Driveway 3		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 3		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1601	1382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	63	0	146	97	69
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	220	0	0	-220	220
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	283	0	2003	1480	289
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	71	0	501	370	72
Total Analysis Volume [veh/h]	0	283	0	2003	1480	289
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.92	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	70.11	0.00	0.00	0.00	0.00
Movement LOS		F		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	8.84	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	221.09	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	70.11		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	4.89					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Kirby Dr at Driveway 4

Control Type:	Two-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.147

Intersection Setup

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Base Volume Input [veh/h]	0	0	45	0	0	0	0	0	0	53	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	126	115	0	0	55	0	0	0	133	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	126	115	52	0	55	0	0	0	133	61	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	29	13	0	14	0	0	0	33	15	0	0
Total Analysis Volume [veh/h]	126	115	52	0	55	0	0	0	133	61	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.15	0.00	0.00
d_M, Delay for Movement [s/veh]	7.53	0.00	0.00	7.56	0.00	0.00	12.42	13.54	8.96	15.18	14.26	10.25
Movement LOS	A	A	A	A	A	A	B	B	A	C	B	B
95th-Percentile Queue Length [veh/ln]	0.27	0.00	0.00	0.00	0.00	0.00	0.44	0.44	0.44	0.51	0.51	0.51
95th-Percentile Queue Length [ft/ln]	6.63	0.00	0.00	0.00	0.00	0.00	10.94	10.94	10.94	12.80	12.80	12.80
d_A, Approach Delay [s/veh]	3.24			0.00			8.96			15.18		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	5.66											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 7: Kirby Dr at Driveway 5

Control Type:	Two-way stop	Delay (sec / veh):	8.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.036

Intersection Setup

Name	Kirby Drive		Kirby Drive		Driveway 5	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Drive		Driveway 5	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	92	23	16	0	0	39
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	23	16	0	0	39
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	6	4	0	0	10
Total Analysis Volume [veh/h]	92	23	16	0	0	39
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.04
d_M, Delay for Movement [s/veh]	7.39	0.00	0.00	0.00	10.17	8.49
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.18	0.00	0.00	0.00	0.11	0.11
95th-Percentile Queue Length [ft/ln]	4.57	0.00	0.00	0.00	2.83	2.83
d_A, Approach Delay [s/veh]	5.91		0.00		8.49	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.94					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 8: Kirby Dr at Driveway 6

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name	Kirby Drive		Kirby Dr		Driveway 6	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Dr		Driveway 6	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	0	0	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	0	0	0	0	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	0	0	0	4
Total Analysis Volume [veh/h]	23	0	0	0	0	16
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	7.25	0.00	0.00	0.00	8.86	8.37
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.00	0.04	0.04
95th-Percentile Queue Length [ft/ln]	1.08	0.00	0.00	0.00	1.12	1.12
d_A, Approach Delay [s/veh]	7.25		0.00		8.37	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.71					
Intersection LOS	A					

Buildout Conditions (2028)

Vistro File: C:\...\vistro-manvel commercial.vistro
Report File: C:\...\vistro-03-am-buildout.pdf

Scenario 1 AM Peak Hour
10/9/2025

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Manvel Commercial				1.000	0.000	50.00	50.00	457	314	771	100.00
					Added Trips Total			**457**	**314**	**771**	**100.00**

Buildout Conditions (2028)

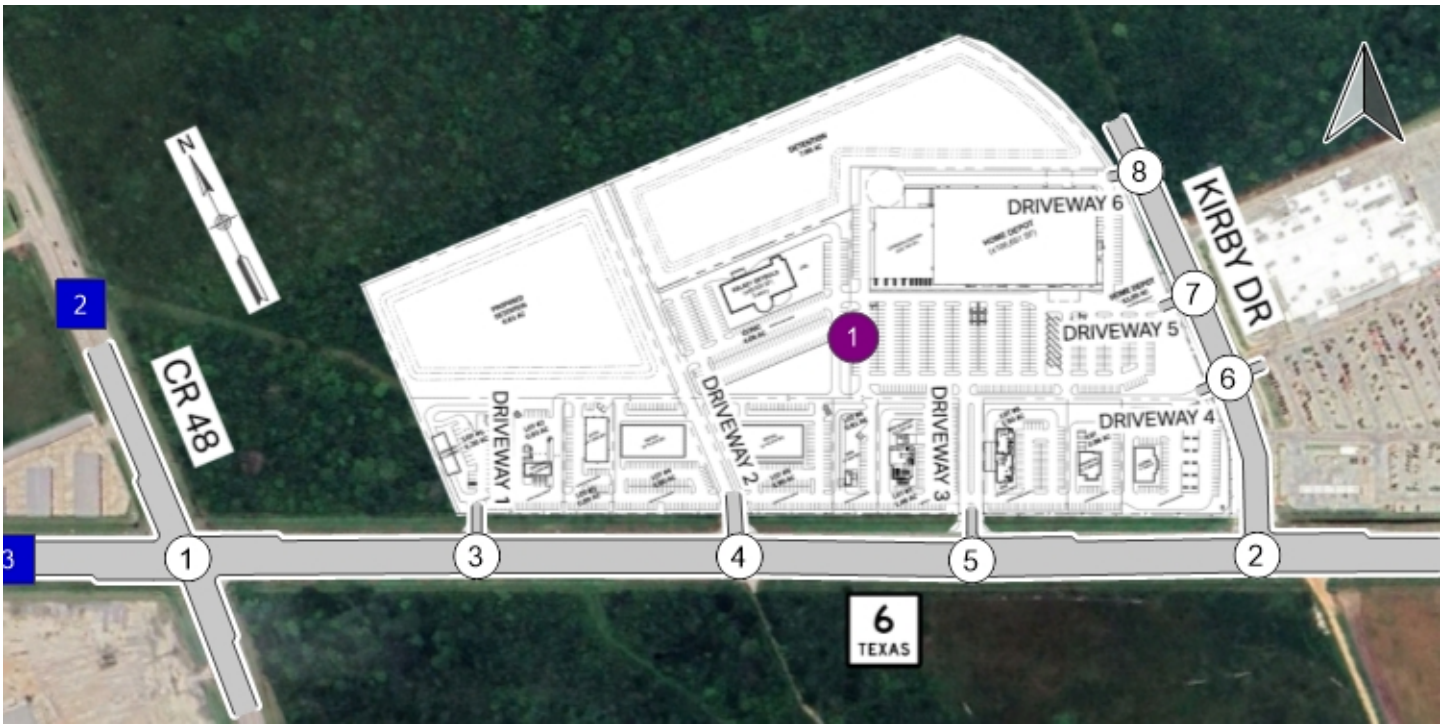
Vistro File: C:\...\vistro-manvel commercial.vistro
Report File: C:\...\vistro-03-am-buildout.pdf

Scenario 1 AM Peak Hour
10/9/2025

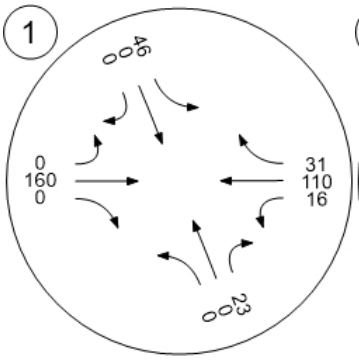
Trip Distribution summary

Zone / Gate	Zone 1: Manvel Commercial			
	To Manvel Commercial:		From Manvel Commercial:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	46	10.00	31
3: Gate	35.00	160	35.00	110
4: Gate	5.00	23	5.00	16
5: Gate	50.00	229	50.00	157
Total	**100.00**	**458**	**100.00**	**314**

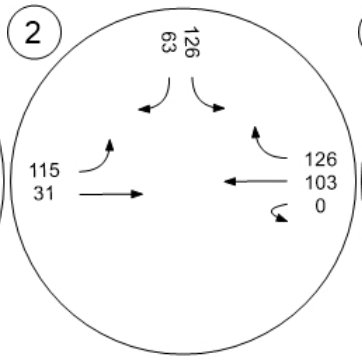
Traffic Volume - Net New Site Trips



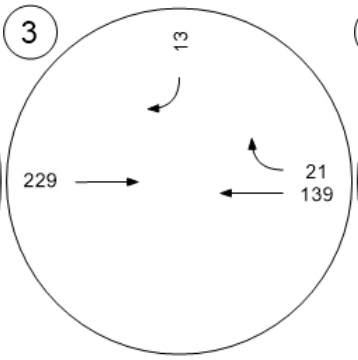
SH 6 at CR 48



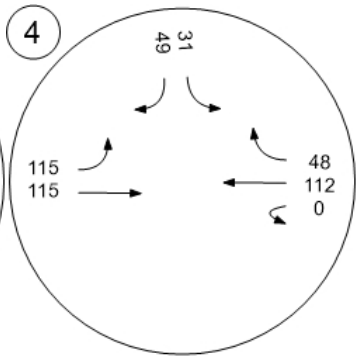
SH 6 at Kirby Drive



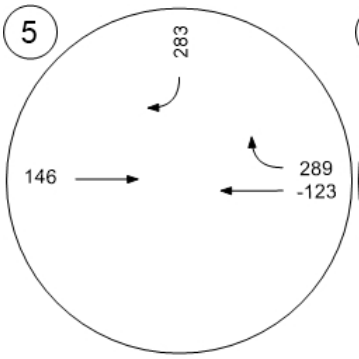
SH 6 at Driveway 1



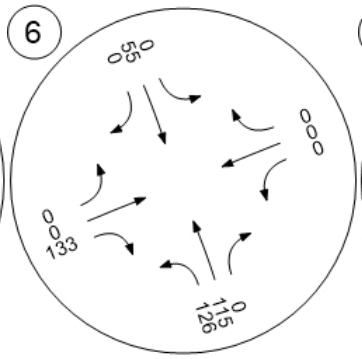
SH 6 at Driveway 2



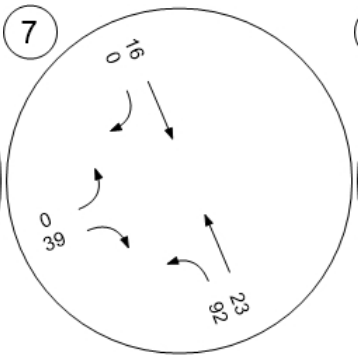
SH 6 at Driveway 3



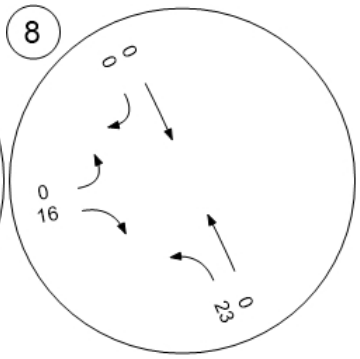
Kirby Dr at Driveway 4



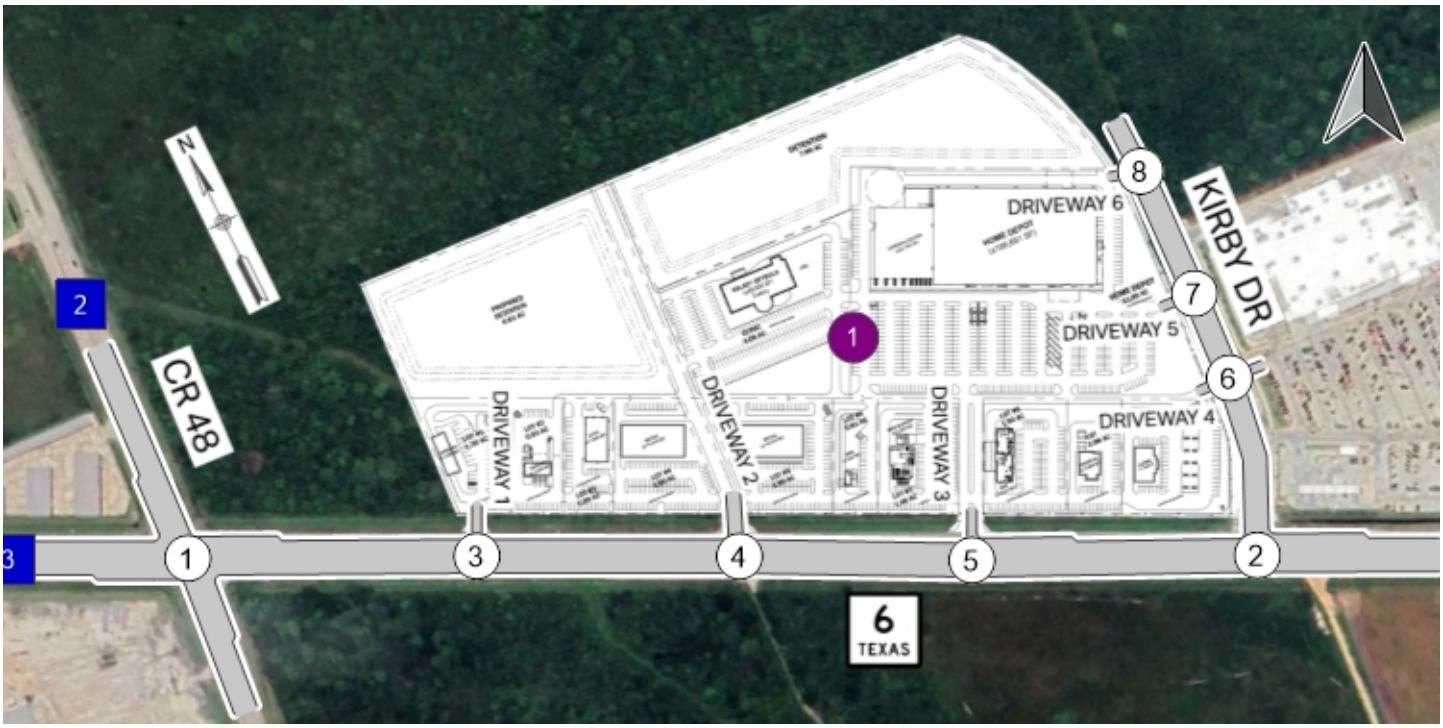
Kirby Dr at Driveway 5



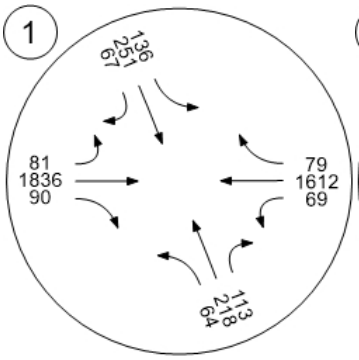
Kirby Dr at Driveway 6



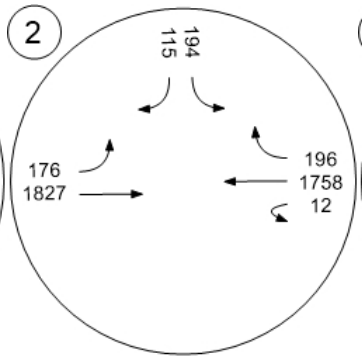
Traffic Volume - Future Total Volume



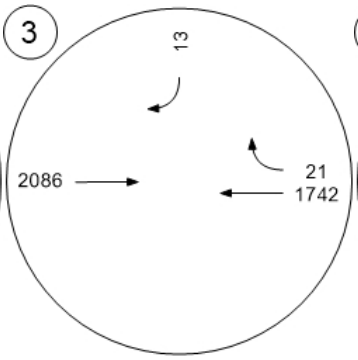
SH 6 at CR 48



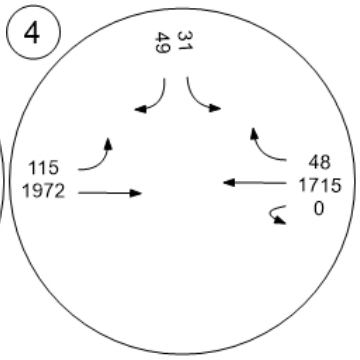
SH 6 at Kirby Drive



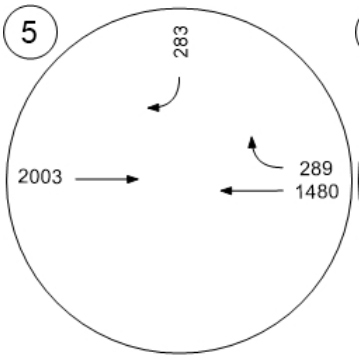
SH 6 at Driveway 1



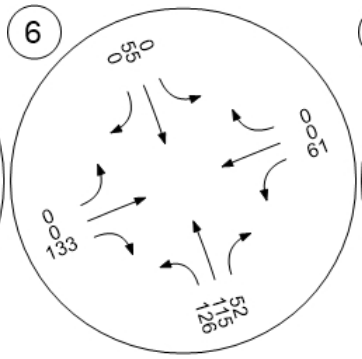
SH 6 at Driveway 2



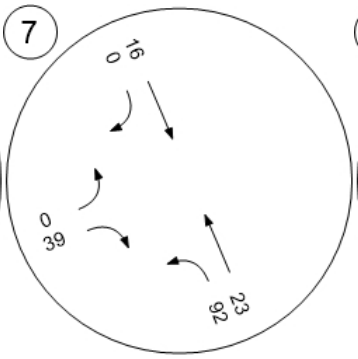
SH 6 at Driveway 3



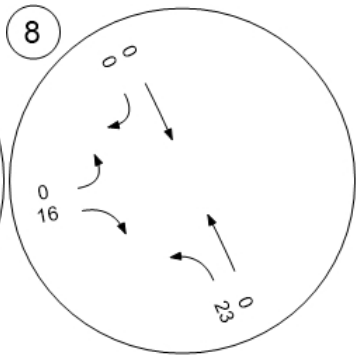
Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



Kirby Dr at Driveway 6



Appendix D – PM Peak Hour Capacity Analyses

Intersection Level Of Service Report
Intersection 1: SH 6 at CR 48

Control Type:	Signalized	Delay (sec / veh):	38.0
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.561

Intersection Setup

Name	CR 48			CR 48			SH 6			SH 6		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			60.00			60.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	CR 48			CR 48			SH 6			SH 6		
Base Volume Input [veh/h]	70	231	68	83	249	68	107	980	94	91	1414	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	231	68	83	249	68	107	980	94	91	1414	82
Peak Hour Factor	0.9500	0.9500	0.9500	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	61	18	23	68	18	28	258	25	24	368	21
Total Analysis Volume [veh/h]	74	243	72	90	271	74	113	1032	99	95	1473	85
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	40	0	0	40	0	10	30	0	10	30	0
Maximum Green [s]	0	60	0	0	60	0	30	60	0	30	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		Yes			Yes		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	R	L	C	R
C, Cycle Length [s]	166	166	166	166	166	166	166	166	166	166	166	166	166	166
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	40	40	14	58	58	12	56	56
g / C, Green / Cycle	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.08	0.35	0.35	0.07	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.05	0.08	0.07	0.05	0.06	0.09	0.08	0.05	0.07	0.23	0.07	0.06	0.32	0.06
s, saturation flow rate [veh/h]	1603	1683	1532	1431	1603	1683	1532	1431	1603	4584	1431	1603	4584	1431
c, Capacity [veh/h]	387	406	369	345	387	406	369	345	131	1608	502	113	1555	485
d1, Uniform Delay [s]	39.13	40.42	39.99	39.28	39.48	40.73	40.36	39.32	70.69	27.54	23.50	72.31	34.68	24.87
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.24	0.48	0.43	0.30	0.30	0.56	0.52	0.31	14.69	0.43	0.19	15.07	3.87	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.19	0.34	0.29	0.21	0.23	0.37	0.33	0.21	0.86	0.64	0.20	0.84	0.95	0.18
d, Delay for Lane Group [s/veh]	39.37	40.90	40.41	39.57	39.79	41.29	40.88	39.63	85.38	27.97	23.69	87.38	38.55	25.04
Lane Group LOS	D	D	D	D	D	D	D	D	F	C	C	F	D	C
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.92	3.65	2.84	1.88	2.36	4.03	3.26	1.94	4.87	6.71	1.73	4.16	14.25	1.55
50th-Percentile Queue Length [ft/ln]	48.11	91.31	70.94	47.06	59.03	100.8	81.58	48.43	121.66	167.65	43.20	103.99	356.18	38.69
95th-Percentile Queue Length [veh/ln]	3.46	6.57	5.11	3.39	4.25	7.26	5.87	3.49	8.48	10.95	3.11	7.49	20.44	2.79
95th-Percentile Queue Length [ft/ln]	86.60	164.3	127.6	84.70	106.2	181.4	146.8	87.17	212.11	273.83	77.76	187.19	510.93	69.65

Movement, Approach, & Intersection Results

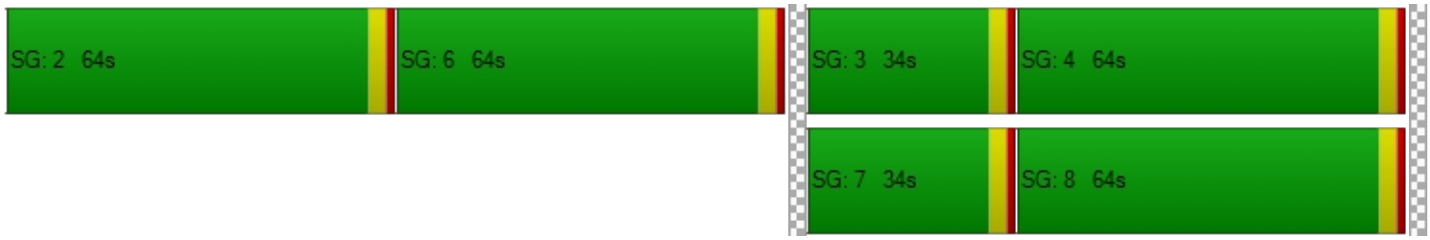
d_M, Delay for Movement [s/veh]	39.37	40.69	39.57	39.79	41.11	39.63	85.38	27.97	23.69	87.38	38.55	25.04
Movement LOS	D	D	D	D	D	D	F	C	C	F	D	C
d_A, Approach Delay [s/veh]	40.23			40.58			32.84			40.66		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	37.99											
Intersection LOS	D											
Intersection V/C	0.561											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	724	724	724	724
d_b, Bicycle Delay [s]	33.76	33.76	33.76	33.76
l_b,int, Bicycle LOS Score for Intersection	1.881	1.918	2.244	2.469
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	



Intersection Level Of Service Report
Intersection 2: SH 6 at Kirby Drive

Control Type:	Signalized	Delay (sec / veh):	7.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.452

Intersection Setup

Name	Kirby Drive		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	600.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		No		

Volumes

Name	Kirby Drive		SH 6		SH 6		
Base Volume Input [veh/h]	82	66	73	1058	12	1653	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	66	73	1058	12	1653	77
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	17	18	265	3	413	19
Total Analysis Volume [veh/h]	82	66	73	1058	12	1653	77
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0		
v_di, Inbound Pedestrian Volume crossing m	0		0		0		
v_co, Outbound Pedestrian Volume crossing	0		0		0		
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0		
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		
Bicycle Volume [bicycles/h]	0		0		0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	7	0	5	2	1	6	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	0	10	30	10	30	0
Maximum Green [s]	40	0	30	60	30	60	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	5	0
Pedestrian Clearance [s]	24	0	0	10	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	L	C	R
C, Cycle Length [s]	53	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	4	4	7	35	2	30	30
g / C, Green / Cycle	0.08	0.08	0.13	0.66	0.03	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.05	0.23	0.01	0.36	0.05
s, saturation flow rate [veh/h]	3113	1431	1603	4584	1603	4584	1431
c, Capacity [veh/h]	262	121	201	3021	50	2589	808
d1, Uniform Delay [s]	22.93	23.40	21.33	4.03	25.17	7.89	5.33
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.67	3.82	1.10	0.07	2.40	0.26	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.55	0.36	0.35	0.24	0.64	0.10
d, Delay for Lane Group [s/veh]	23.60	27.23	22.42	4.10	27.57	8.15	5.38
Lane Group LOS	C	C	C	A	C	A	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.45	0.83	0.72	0.38	0.16	1.93	0.19
50th-Percentile Queue Length [ft/ln]	11.33	20.82	18.10	9.46	3.88	48.34	4.70
95th-Percentile Queue Length [veh/ln]	0.82	1.50	1.30	0.68	0.28	3.48	0.34
95th-Percentile Queue Length [ft/ln]	20.40	37.48	32.59	17.02	6.98	87.02	8.46

Movement, Approach, & Intersection Results

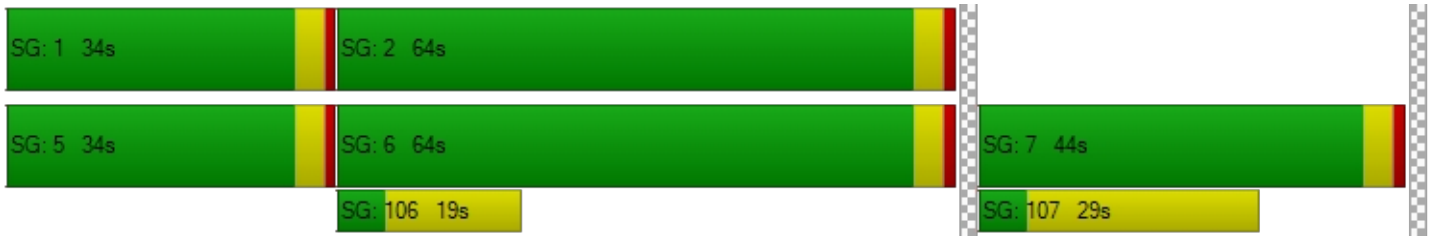
d_M, Delay for Movement [s/veh]	23.60	27.23	22.42	4.10	27.57	8.15	5.38
Movement LOS	C	C	C	A	C	A	A
d_A, Approach Delay [s/veh]	25.22		5.28		8.16		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	7.92						
Intersection LOS	A						
Intersection V/C	0.452						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	18.34	18.34	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.351	3.362	0.000
Crosswalk LOS	B	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1505	2258	2258
d_b, Bicycle Delay [s]	1.63	0.44	0.44
l_b,int, Bicycle LOS Score for Intersection	1.560	2.182	2.518
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SH 6 at Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Driveway 1		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 1		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1131	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1131	1587	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	283	397	0
Total Analysis Volume [veh/h]	0	0	0	1131	1587	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	17.66	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.66		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: SH 6 at Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Driveway 2		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	415.00	100.00	350.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Crosswalk	No		No		No		

Volumes

Name	Driveway 2		SH 6		SH 6		
Base Volume Input [veh/h]	0	0	0	1131	0	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1131	0	1587	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	283	0	397	0
Total Analysis Volume [veh/h]	0	0	0	1131	0	1587	0
Pedestrian Volume [ped/h]	0		0		0		

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	42.97	17.66	22.85	0.00	11.56	0.00	0.00
Movement LOS	E	C	C	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	30.32		0.00		0.00		
Approach LOS	D		A		A		
d_I, Intersection Delay [s/veh]	0.00						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 5: SH 6 at Driveway 3

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Driveway 3		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 3		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1131	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1131	1587	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	283	397	0
Total Analysis Volume [veh/h]	0	0	0	1131	1587	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	17.66	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.66		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Kirby Dr at Driveway 4

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Base Volume Input [veh/h]	0	0	48	0	0	0	0	0	0	56	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	48	0	0	0	0	0	0	56	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	12	0	0	0	0	0	0	14	0	0
Total Analysis Volume [veh/h]	0	0	48	0	0	0	0	0	0	56	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	7.31	0.00	0.00	8.52	9.27	8.32	8.88	9.36	8.66
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.18	0.18
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.52	4.52	4.52
d_A, Approach Delay [s/veh]	0.00			2.44			8.70			8.88		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.78											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 7: Kirby Dr at Driveway 5

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Drive		Driveway 5	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Drive		Driveway 5	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report
Intersection 8: Kirby Dr at Driveway 6

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Dr		Driveway 6	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Dr		Driveway 6	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

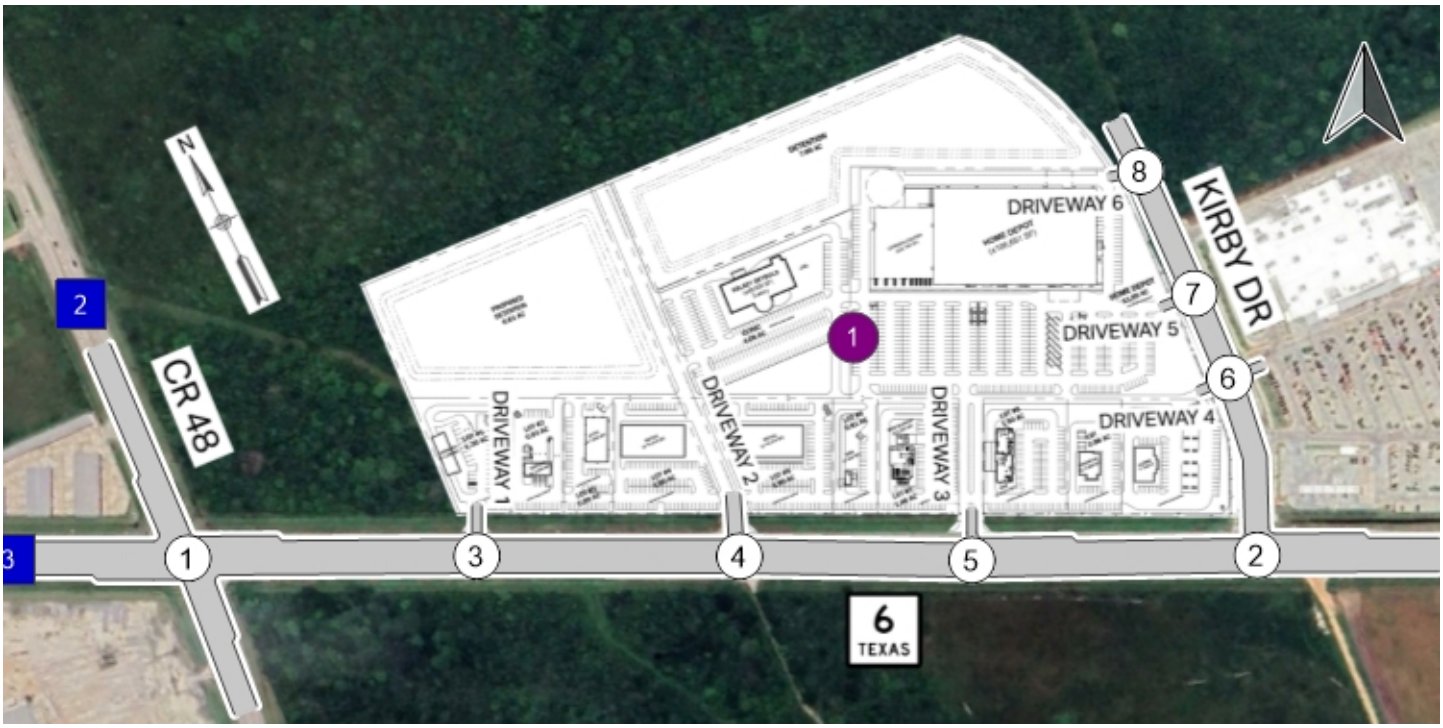
Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

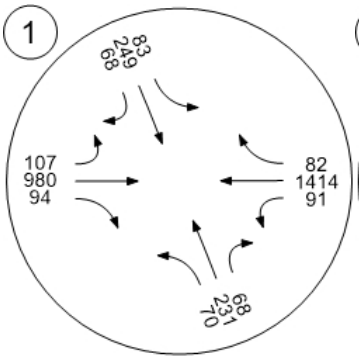
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

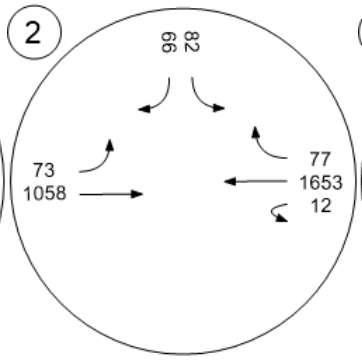
Traffic Volume - Base Volume



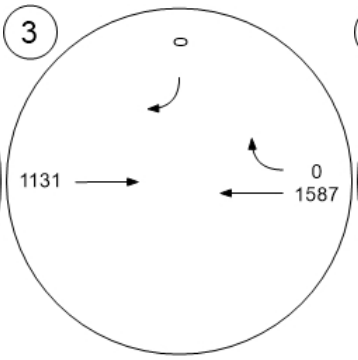
SH 6 at CR 48



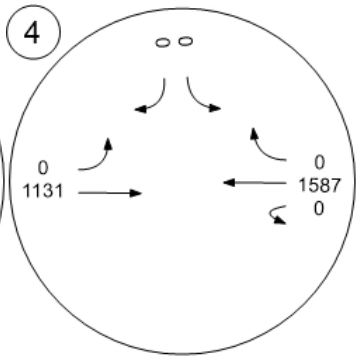
SH 6 at Kirby Drive



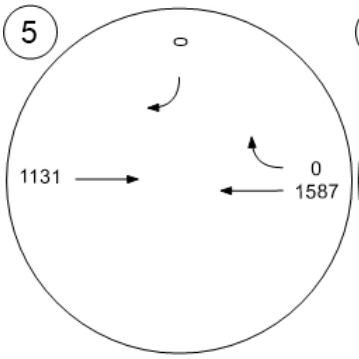
SH 6 at Driveway 1



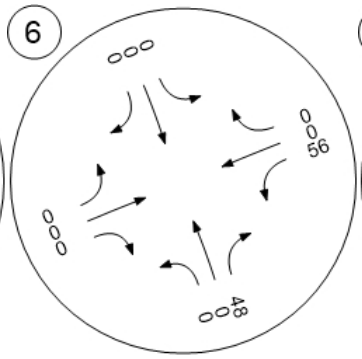
SH 6 at Driveway 2



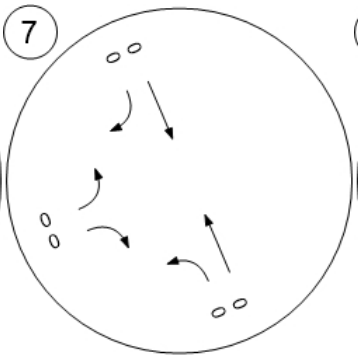
SH 6 at Driveway 3



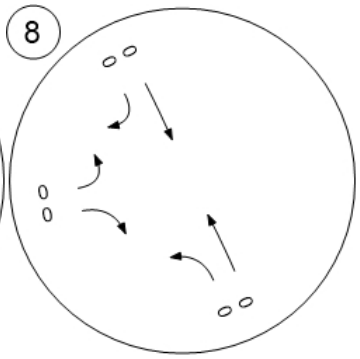
Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



Kirby Dr at Driveway 6



Intersection Level Of Service Report
Intersection 1: SH 6 at CR 48

Control Type:	Signalized	Delay (sec / veh):	51.8
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name	CR 48			CR 48			SH 6			SH 6		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			60.00			60.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	CR 48			CR 48			SH 6			SH 6		
Base Volume Input [veh/h]	70	231	68	83	249	68	107	980	94	91	1414	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	268	79	96	289	79	124	1137	109	106	1640	95
Peak Hour Factor	0.9500	0.9500	0.9500	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	71	21	26	79	21	33	299	29	28	427	25
Total Analysis Volume [veh/h]	85	282	83	104	314	86	131	1197	115	110	1708	99
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	40	0	0	40	0	10	30	0	10	30	0
Maximum Green [s]	0	60	0	0	60	0	30	60	0	30	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		Yes			Yes		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	R	L	C	R
C, Cycle Length [s]	172	172	172	172	172	172	172	172	172	172	172	172	172	172
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	40	40	16	62	62	14	60	60
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.09	0.36	0.36	0.08	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.06	0.06	0.10	0.09	0.06	0.08	0.26	0.08	0.07	0.37	0.07
s, saturation flow rate [veh/h]	1603	1683	1532	1431	1603	1683	1532	1431	1603	4584	1431	1603	4584	1431
c, Capacity [veh/h]	373	392	356	333	373	392	356	333	149	1658	517	128	1597	498
d1, Uniform Delay [s]	42.32	44.04	43.45	42.51	42.79	44.44	43.95	42.60	71.76	28.12	23.10	73.66	36.10	24.71
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.67	0.58	0.39	0.40	0.78	0.71	0.41	14.65	0.61	0.21	14.83	34.58	0.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.67
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.40	0.35	0.25	0.28	0.44	0.40	0.26	0.88	0.72	0.22	0.86	1.07	0.20
d, Delay for Lane Group [s/veh]	42.62	44.71	44.03	42.90	43.19	45.22	44.66	43.00	86.41	28.73	23.32	88.49	70.68	24.90
Lane Group LOS	D	D	D	D	D	D	D	D	F	C	C	F	F	C
Critical Lane Group	No	Yes	No	No	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.38	4.59	3.55	2.33	2.94	5.06	4.09	2.42	5.77	8.49	2.01	4.93	21.54	1.82
50th-Percentile Queue Length [ft/ln]	59.41	114.8	88.79	58.37	73.47	126.5	102.3	60.60	144.36	212.25	50.18	123.29	538.55	45.45
95th-Percentile Queue Length [veh/ln]	4.28	8.11	6.39	4.20	5.29	8.75	7.37	4.36	9.72	13.27	3.61	8.57	30.48	3.27
95th-Percentile Queue Length [ft/ln]	106.9	202.6	159.8	105.0	132.2	218.7	184.1	109.0	242.88	331.71	90.32	214.34	762.12	81.80

Movement, Approach, & Intersection Results

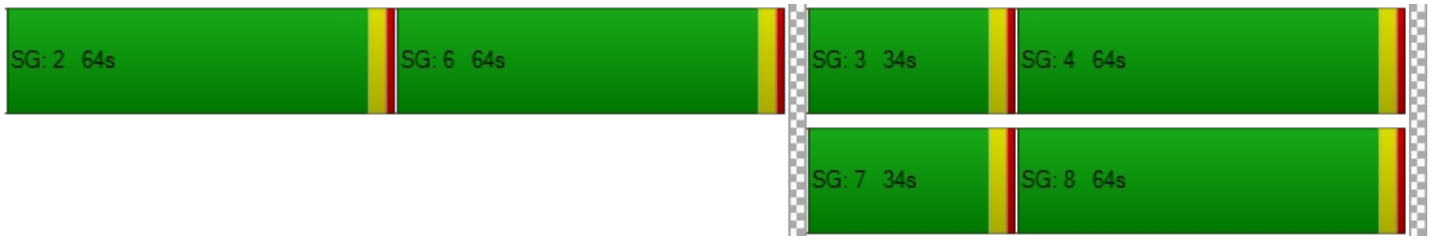
d_M, Delay for Movement [s/veh]	42.62	44.41	42.90	43.19	44.97	43.00	86.41	28.73	23.32	88.49	70.68	24.90
Movement LOS	D	D	D	D	D	D	F	C	C	F	F	C
d_A, Approach Delay [s/veh]	43.79			44.27			33.54			69.34		
Approach LOS	D			D			C			E		
d_I, Intersection Delay [s/veh]	51.77											
Intersection LOS	D											
Intersection V/C	0.651											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	697	697	697	697
d_b, Bicycle Delay [s]	36.50	36.50	36.50	36.50
l_b,int, Bicycle LOS Score for Intersection	1.931	1.975	2.353	2.614
Bicycle LOS	A	A	B	B

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SH 6 at Kirby Drive

Control Type:	Signalized	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

Intersection Setup

Name	Kirby Drive		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	600.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		No		

Volumes

Name	Kirby Drive		SH 6		SH 6		
Base Volume Input [veh/h]	82	66	73	1058	12	1653	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	77	85	1227	14	1917	89
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	19	21	307	4	479	22
Total Analysis Volume [veh/h]	95	77	85	1227	14	1917	89
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0		
v_di, Inbound Pedestrian Volume crossing m	0		0		0		
v_co, Outbound Pedestrian Volume crossing	0		0		0		
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0		
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		
Bicycle Volume [bicycles/h]	0		0		0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	7	0	5	2	1	6	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	0	10	30	10	30	0
Maximum Green [s]	40	0	30	60	30	60	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	5	0
Pedestrian Clearance [s]	24	0	0	10	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	L	C	R
C, Cycle Length [s]	71	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	6	8	50	2	44	44
g / C, Green / Cycle	0.08	0.08	0.12	0.71	0.03	0.63	0.63
(v / s)_i Volume / Saturation Flow Rate	0.03	0.05	0.05	0.27	0.01	0.42	0.06
s, saturation flow rate [veh/h]	3113	1431	1603	4584	1603	4584	1431
c, Capacity [veh/h]	263	121	185	3261	55	2890	902
d1, Uniform Delay [s]	30.56	31.31	29.21	4.02	33.24	8.30	5.15
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	5.47	1.78	0.07	2.38	0.26	0.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.64	0.46	0.38	0.25	0.66	0.10
d, Delay for Lane Group [s/veh]	31.40	36.79	30.99	4.09	35.62	8.56	5.20
Lane Group LOS	C	D	C	A	D	A	A
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.75	1.37	1.27	0.81	0.24	3.36	0.30
50th-Percentile Queue Length [ft/ln]	18.66	34.32	31.66	20.20	6.10	84.02	7.40
95th-Percentile Queue Length [veh/ln]	1.34	2.47	2.28	1.45	0.44	6.05	0.53
95th-Percentile Queue Length [ft/ln]	33.59	61.78	57.00	36.36	10.97	151.24	13.33

Movement, Approach, & Intersection Results

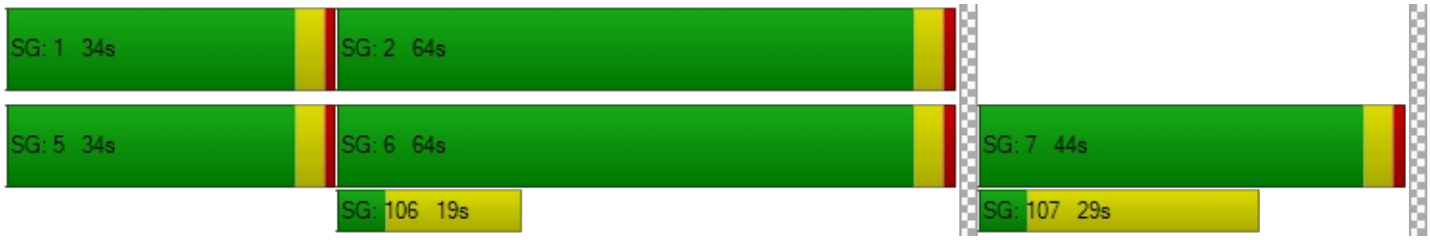
d_M, Delay for Movement [s/veh]	31.40	36.79	30.99	4.09	35.62	8.56	5.20
Movement LOS	C	D	C	A	D	A	A
d_A, Approach Delay [s/veh]	33.81		5.84		8.60		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	8.80						
Intersection LOS	A						
Intersection V/C	0.525						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	26.86	26.86	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.379	3.504	0.000
Crosswalk LOS	B	D	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1134	1700	1700
d_b, Bicycle Delay [s]	6.62	0.79	0.79
l_b,int, Bicycle LOS Score for Intersection	1.560	2.281	2.671
Bicycle LOS	A	B	B

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SH 6 at Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Driveway 1		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 1		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1131	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1312	1841	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	328	460	0
Total Analysis Volume [veh/h]	0	0	0	1312	1841	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	20.37	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.37		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: SH 6 at Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Driveway 2		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	415.00	100.00	350.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Crosswalk	No		No		No		

Volumes

Name	Driveway 2		SH 6		SH 6		
Base Volume Input [veh/h]	0	0	0	1131	0	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1312	0	1841	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	328	0	460	0
Total Analysis Volume [veh/h]	0	0	0	1312	0	1841	0
Pedestrian Volume [ped/h]	0		0		0		

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	60.12	20.37	28.92	0.00	12.76	0.00	0.00
Movement LOS	F	C	D	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	40.24		0.00		0.00		
Approach LOS	E		A		A		
d_I, Intersection Delay [s/veh]	0.00						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 5: SH 6 at Driveway 3

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.018

Intersection Setup

Name	Driveway 3		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 3		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1131	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	1312	1841	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	328	460	0
Total Analysis Volume [veh/h]	0	0	0	1312	1841	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	20.37	0.00	0.00	0.00	0.00
Movement LOS		C		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.37		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Kirby Dr at Driveway 4

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.066

Intersection Setup

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Base Volume Input [veh/h]	0	0	48	0	0	0	0	0	0	56	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	56	0	0	0	0	0	0	65	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	14	0	0	0	0	0	0	16	0	0
Total Analysis Volume [veh/h]	0	0	56	0	0	0	0	0	0	65	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	7.33	0.00	0.00	8.52	9.31	8.32	8.94	9.43	8.72
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.21	0.21
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.33	5.33	5.33
d_A, Approach Delay [s/veh]	0.00			2.44			8.72			8.94		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	4.80											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 7: Kirby Dr at Driveway 5

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Drive		Driveway 5	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Drive		Driveway 5	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

Intersection Level Of Service Report
Intersection 8: Kirby Dr at Driveway 6

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Kirby Drive		Kirby Dr		Driveway 6	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Dr		Driveway 6	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0
Total Analysis Volume [veh/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

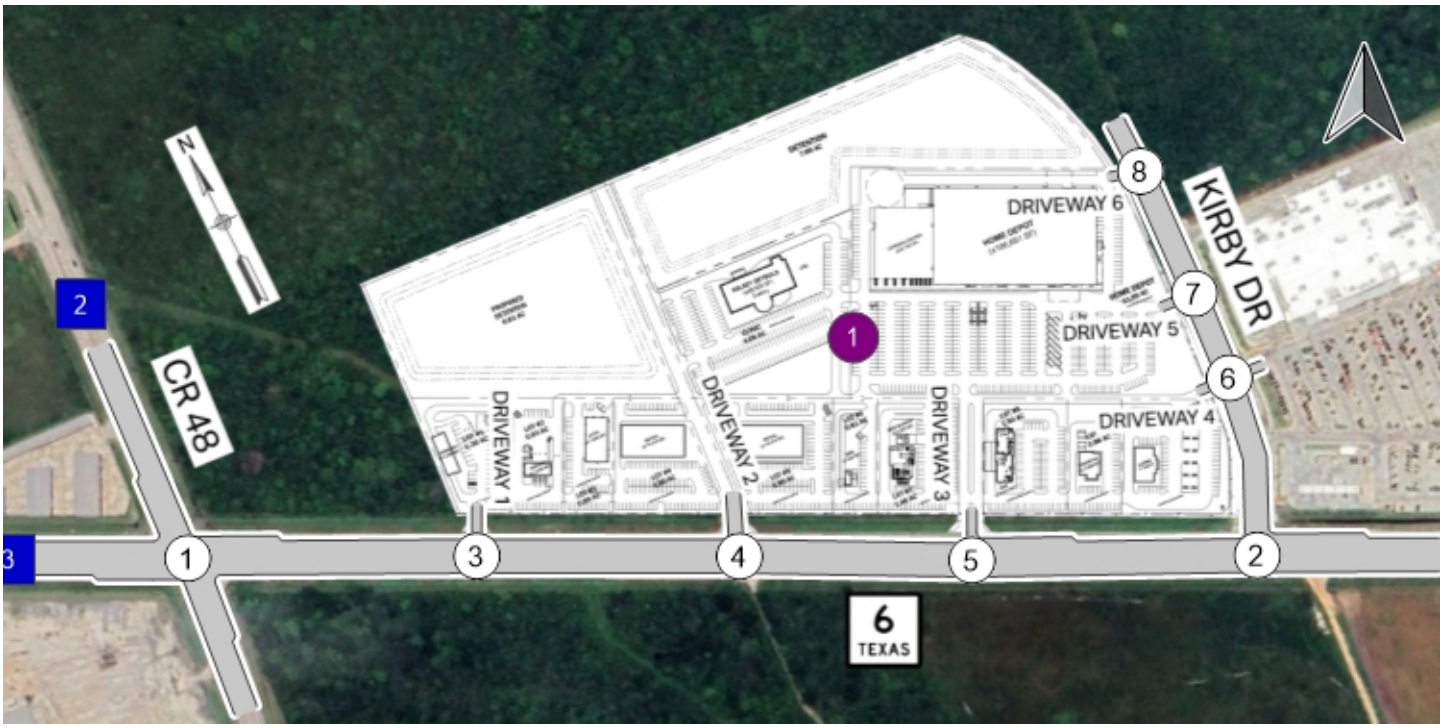
Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

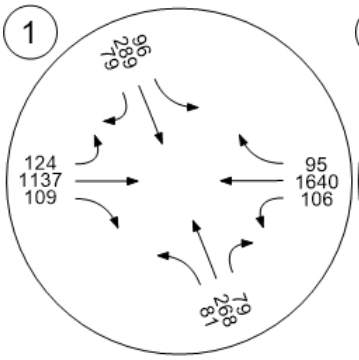
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	7.22	0.00	0.00	0.00	8.52	8.32
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	3.61		0.00		8.42	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.01					
Intersection LOS						

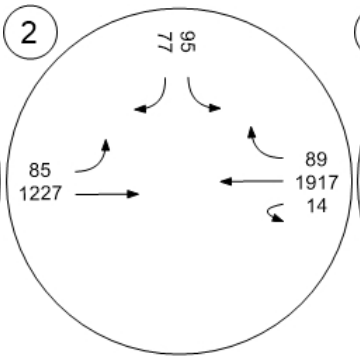
Traffic Volume - Future Background Volume



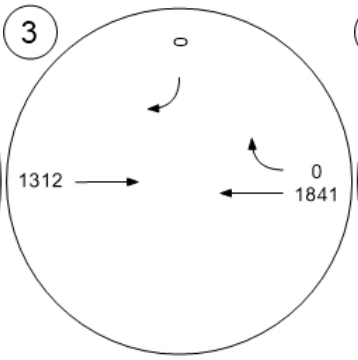
SH 6 at CR 48



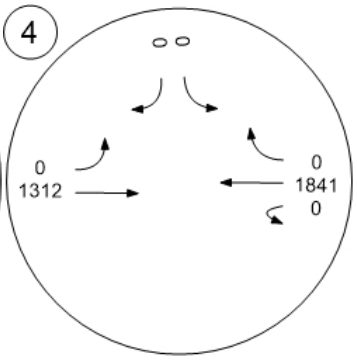
SH 6 at Kirby Drive



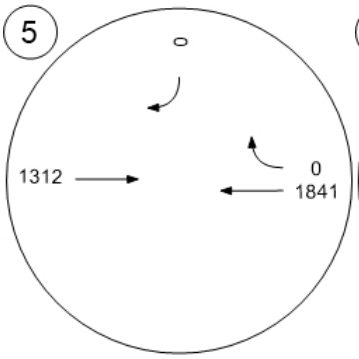
SH 6 at Driveway 1



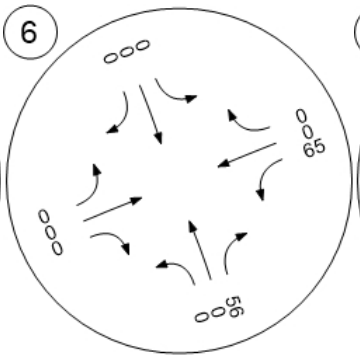
SH 6 at Driveway 2



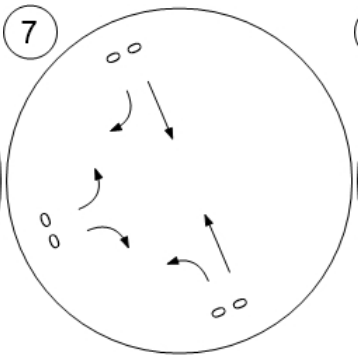
SH 6 at Driveway 3



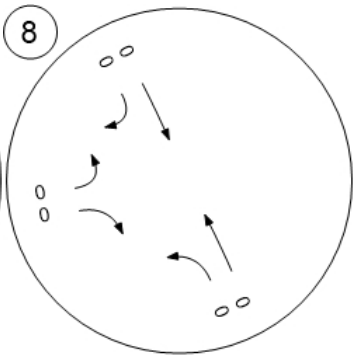
Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



Kirby Dr at Driveway 6



Intersection Level Of Service Report
Intersection 1: SH 6 at CR 48

Control Type:	Signalized	Delay (sec / veh):	54.3
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

Intersection Setup

Name	CR 48			CR 48			SH 6			SH 6		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	1	0	1	1	0	1	1	0	1
Entry Pocket Length [ft]	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00	150.00	100.00	150.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	45.00			45.00			60.00			60.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	CR 48			CR 48			SH 6			SH 6		
Base Volume Input [veh/h]	70	231	68	83	249	68	107	980	94	91	1414	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	23	45	0	0	0	159	0	26	184	53
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	268	102	141	289	79	124	1296	109	132	1824	148
Peak Hour Factor	0.9500	0.9500	0.9500	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	71	27	38	79	21	33	341	29	34	475	39
Total Analysis Volume [veh/h]	85	282	107	153	314	86	131	1364	115	138	1900	154
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Split	Split	Split	Split	Split	Split	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	6	0	0	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	40	0	0	40	0	10	30	0	10	30	0
Maximum Green [s]	0	60	0	0	60	0	30	60	0	30	60	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		Yes			Yes		No	Yes		No	Yes	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	R	L	C	C	R	L	C	R	L	C	R
C, Cycle Length [s]	172	172	172	172	172	172	172	172	172	172	172	172	172	172
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	40	40	40	40	16	59	59	17	60	60
g / C, Green / Cycle	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.09	0.34	0.34	0.10	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.05	0.09	0.08	0.07	0.09	0.09	0.10	0.06	0.08	0.30	0.08	0.09	0.41	0.11
s, saturation flow rate [veh/h]	1603	1683	1532	1431	1603	1682	1532	1431	1603	4584	1431	1603	4584	1431
c, Capacity [veh/h]	373	392	357	333	373	392	357	333	149	1578	492	156	1598	499
d1, Uniform Delay [s]	36.74	38.13	37.66	37.45	38.15	38.12	38.47	36.97	69.17	23.71	18.38	68.42	26.06	18.06
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.67	0.58	0.55	0.71	0.67	0.86	0.41	15.05	1.53	0.24	15.04	86.49	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.23	0.40	0.35	0.32	0.41	0.40	0.44	0.26	0.88	0.86	0.23	0.89	1.19	0.31
d, Delay for Lane Group [s/veh]	37.05	38.80	38.24	38.00	38.86	38.79	39.34	37.37	84.22	25.24	18.62	83.46	112.56	18.41
Lane Group LOS	D	D	D	D	D	D	D	D	F	C	B	F	F	B
Critical Lane Group	No	Yes	No	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.07	3.98	3.08	2.65	3.81	3.96	4.00	2.11	5.59	7.36	1.57	5.84	23.26	2.07
50th-Percentile Queue Length [ft/ln]	51.66	99.38	77.04	66.33	95.35	99.04	100.0	52.67	139.68	184.09	39.20	146.04	581.46	51.74
95th-Percentile Queue Length [veh/ln]	3.72	7.16	5.55	4.78	6.87	7.13	7.20	3.79	9.46	11.81	2.82	9.81	34.66	3.73
95th-Percentile Queue Length [ft/ln]	92.99	178.8	138.6	119.3	171.6	178.2	180.1	94.80	236.59	295.34	70.57	245.14	866.50	93.13

Movement, Approach, & Intersection Results

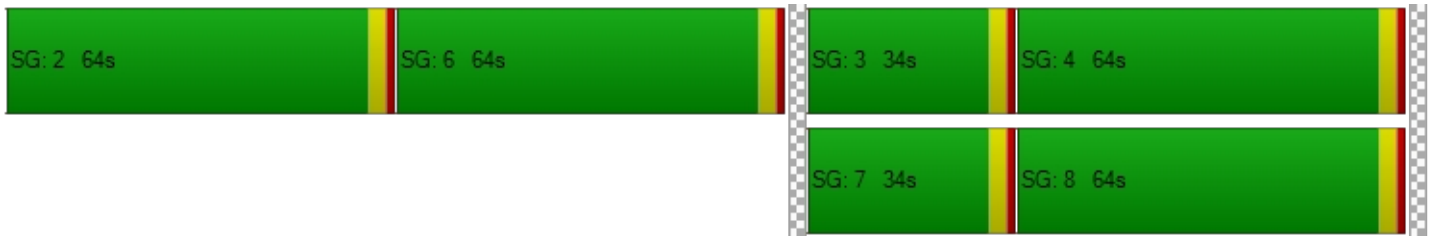
d_M, Delay for Movement [s/veh]	37.05	38.55	38.00	38.86	39.06	37.37	84.22	25.24	18.62	83.46	112.56	18.41
Movement LOS	D	D	D	D	D	D	F	C	B	F	F	B
d_A, Approach Delay [s/veh]	38.16			38.75			29.57			104.11		
Approach LOS	D			D			C			F		
d_I, Intersection Delay [s/veh]	54.30											
Intersection LOS	D											
Intersection V/C	0.693											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	698	698	698	698
d_b, Bicycle Delay [s]	36.47	36.47	36.47	36.47
l_b,int, Bicycle LOS Score for Intersection	1.951	2.016	2.445	2.765
Bicycle LOS	A	B	B	C

Sequence

Ring 1	2	6	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: SH 6 at Kirby Drive

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.692

Intersection Setup

Name	Kirby Drive		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	1	0	1
Entry Pocket Length [ft]	100.00	100.00	600.00	100.00	225.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Curb Present	No		No		No		
Crosswalk	Yes		Yes		No		

Volumes

Name	Kirby Drive		SH 6		SH 6		
Base Volume Input [veh/h]	82	66	73	1058	12	1653	77
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00						
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	211	105	114	53	0	102	125
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	306	182	199	1280	14	2019	214
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	46	50	320	4	505	54
Total Analysis Volume [veh/h]	306	182	199	1280	14	2019	214
Presence of On-Street Parking	No	No	No	No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0		
v_di, Inbound Pedestrian Volume crossing m	0		0		0		
v_co, Outbound Pedestrian Volume crossing	0		0		0		
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0		
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		
Bicycle Volume [bicycles/h]	0		0		0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Protected	Permissive	Permissive
Signal Group	7	0	5	2	1	6	0
Auxiliary Signal Groups							
Lead / Lag	Lead	-	Lead	-	Lead	-	-
Minimum Green [s]	5	0	10	30	10	30	0
Maximum Green [s]	40	0	30	60	30	60	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	0	5	0
Pedestrian Clearance [s]	24	0	0	10	0	14	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No		No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	Yes	No	Yes	
Maximum Recall	No		No	No	No	No	
Pedestrian Recall	No		No	No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	L	C	R
C, Cycle Length [s]	98	98	98	98	98	98	98
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	15	14	67	3	56	56
g / C, Green / Cycle	0.16	0.16	0.15	0.69	0.03	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.10	0.13	0.12	0.28	0.01	0.44	0.15
s, saturation flow rate [veh/h]	3113	1431	1603	4584	1603	4584	1431
c, Capacity [veh/h]	492	226	233	3149	52	2632	821
d1, Uniform Delay [s]	38.50	39.78	40.82	6.66	46.21	15.88	10.45
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.30	6.64	8.58	0.08	2.68	0.48	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.81	0.85	0.41	0.27	0.77	0.26
d, Delay for Lane Group [s/veh]	39.80	46.42	49.39	6.75	48.90	16.36	10.61
Lane Group LOS	D	D	D	A	D	B	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.40	4.49	4.86	2.54	0.35	8.91	1.88
50th-Percentile Queue Length [ft/ln]	85.09	112.27	121.61	63.53	8.75	222.79	46.95
95th-Percentile Queue Length [veh/ln]	6.13	7.97	8.48	4.57	0.63	13.81	3.38
95th-Percentile Queue Length [ft/ln]	153.17	199.15	212.04	114.35	15.75	345.18	84.51

Movement, Approach, & Intersection Results

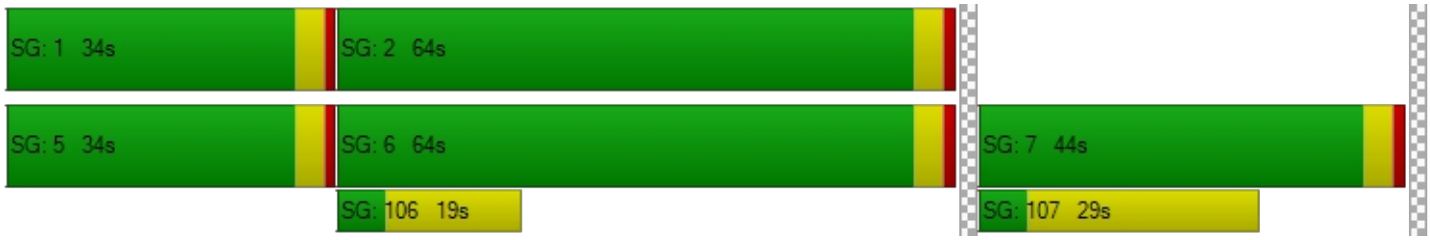
d_M, Delay for Movement [s/veh]	39.80	46.42	49.39	6.75	48.90	16.36	10.61
Movement LOS	D	D	D	A	D	B	B
d_A, Approach Delay [s/veh]	42.27		12.48		16.02		
Approach LOS	D		B		B		
d_I, Intersection Delay [s/veh]	17.82						
Intersection LOS	B						
Intersection V/C	0.692						

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	40.30	40.30	0.00
l_p,int, Pedestrian LOS Score for Intersectio	2.540	3.625	0.000
Crosswalk LOS	B	D	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	818	1227	1227
d_b, Bicycle Delay [s]	17.07	7.30	7.30
l_b,int, Bicycle LOS Score for Intersection	1.560	2.373	2.795
Bicycle LOS	A	B	C

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: SH 6 at Driveway 1

Control Type:	Two-way stop	Delay (sec / veh):	25.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.073

Intersection Setup

Name	Driveway 1		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 1		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1131	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	13	0	227	250	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	1	0	0	-4	4
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	0	1539	2087	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	385	522	4
Total Analysis Volume [veh/h]	0	14	0	1539	2087	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.00	0.02	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	25.24	0.00	0.00	0.00	0.00
Movement LOS		D		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.23	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	5.84	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	25.24		0.00		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 4: SH 6 at Driveway 2

Control Type:	Two-way stop	Delay (sec / veh):	10,000.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name	Driveway 2		SH 6		SH 6		
Approach	Southbound		Eastbound		Westbound		
Lane Configuration							
Turning Movement	Left	Right	Left	Thru	U-turn	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	415.00	100.00	350.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00		
Grade [%]	0.00		0.00		0.00		
Crosswalk	No		No		No		

Volumes

Name	Driveway 2		SH 6		SH 6		
Base Volume Input [veh/h]	0	0	0	1131	0	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	53	39	114	114	0	222	23
Diverted Trips [veh/h]	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	20	0	0	0	-25	25
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	53	59	114	1426	0	2038	48
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	15	29	357	0	510	12
Total Analysis Volume [veh/h]	53	59	114	1426	0	2038	48
Pedestrian Volume [ped/h]	0		0		0		

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	Yes		
Number of Storage Spaces in Median	1	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.30	1.01	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	10000.00	31.44	158.93	0.00	13.63	0.00	0.00
Movement LOS	F	D	F	A	B	A	A
95th-Percentile Queue Length [veh/ln]	8.87	1.22	6.60	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	221.66	30.53	164.94	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	4748.70		11.77		0.00		
Approach LOS	F		B		A		
d_I, Intersection Delay [s/veh]	147.13						
Intersection LOS	F						

Intersection Level Of Service Report
Intersection 5: SH 6 at Driveway 3

Control Type:	Two-way stop	Delay (sec / veh):	202.5
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.304

Intersection Setup

Name	Driveway 3		SH 6		SH 6	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	225.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		60.00		60.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Driveway 3		SH 6		SH 6	
Base Volume Input [veh/h]	0	0	0	1131	1587	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	105	0	166	139	68
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	220	0	0	-220	220
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	325	0	1478	1760	288
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	81	0	370	440	72
Total Analysis Volume [veh/h]	0	325	0	1478	1760	288
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop		Free		Free	
Flared Lane						
Storage Area [veh]	0		0		0	
Two-Stage Gap Acceptance	No					
Number of Storage Spaces in Median	0		0		0	

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	1.30	0.00	0.01	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	202.53	0.00	0.00	0.00	0.00
Movement LOS		F		A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	16.75	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	418.69	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	202.53		0.00		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	17.09					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: Kirby Dr at Driveway 4

Control Type:	Two-way stop	Delay (sec / veh):	17.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.181

Intersection Setup

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			40.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Kirby Drive			Kirby Drive			Driveway 4			HEB Driveway		
Base Volume Input [veh/h]	0	0	48	0	0	0	0	0	0	56	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	125	114	0	0	92	0	0	0	224	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	125	114	56	0	92	0	0	0	224	65	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	29	14	0	23	0	0	0	56	16	0	0
Total Analysis Volume [veh/h]	125	114	56	0	92	0	0	0	224	65	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.18	0.00	0.00
d_M, Delay for Movement [s/veh]	7.62	0.00	0.00	7.56	0.00	0.00	13.34	14.47	9.56	17.24	15.37	10.97
Movement LOS	A	A	A	A	A	A	B	B	A	C	C	B
95th-Percentile Queue Length [veh/ln]	0.27	0.00	0.00	0.00	0.00	0.00	0.84	0.84	0.84	0.65	0.65	0.65
95th-Percentile Queue Length [ft/ln]	6.80	0.00	0.00	0.00	0.00	0.00	21.10	21.10	21.10	16.31	16.31	16.31
d_A, Approach Delay [s/veh]	3.23			0.00			9.56			17.24		
Approach LOS	A			A			A			C		
d_I, Intersection Delay [s/veh]	6.23											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 7: Kirby Dr at Driveway 5

Control Type:	Two-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	Kirby Drive		Kirby Drive		Driveway 5	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Drive		Driveway 5	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	91	23	26	0	0	66
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	91	23	26	0	0	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	6	7	0	0	17
Total Analysis Volume [veh/h]	91	23	26	0	0	66
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.00	0.00	0.00	0.06
d_M, Delay for Movement [s/veh]	7.41	0.00	0.00	0.00	10.32	8.61
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.18	0.00	0.00	0.00	0.20	0.20
95th-Percentile Queue Length [ft/ln]	4.56	0.00	0.00	0.00	4.95	4.95
d_A, Approach Delay [s/veh]	5.91		0.00		8.61	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.03					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 8: Kirby Dr at Driveway 6

Control Type:	Two-way stop	Delay (sec / veh):	8.4
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.024

Intersection Setup

Name	Kirby Drive		Kirby Dr		Driveway 6	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		40.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Kirby Drive		Kirby Dr		Driveway 6	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.1600	1.1600	1.1600	1.1600	1.1600	1.1600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	0	0	0	26
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	0	0	0	0	26
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	0	0	0	7
Total Analysis Volume [veh/h]	23	0	0	0	0	26
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	7.25	0.00	0.00	0.00	8.89	8.40
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.04	0.00	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	1.08	0.00	0.00	0.00	1.84	1.84
d_A, Approach Delay [s/veh]	7.25		0.00		8.40	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.86					
Intersection LOS	A					

Buildout Conditions (2028)

Vistro File: C:\...\vistro-manvel commercial.vistro
Report File: C:\...\vistro-06-pm-buildout.pdf

Scenario 2 PM Peak Hour
10/9/2025

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Manvel Commercial				1.000	0.000	50.00	50.00	453	527	980	100.00
					Added Trips Total			**453**	**527**	**980**	**100.00**

Buildout Conditions (2028)

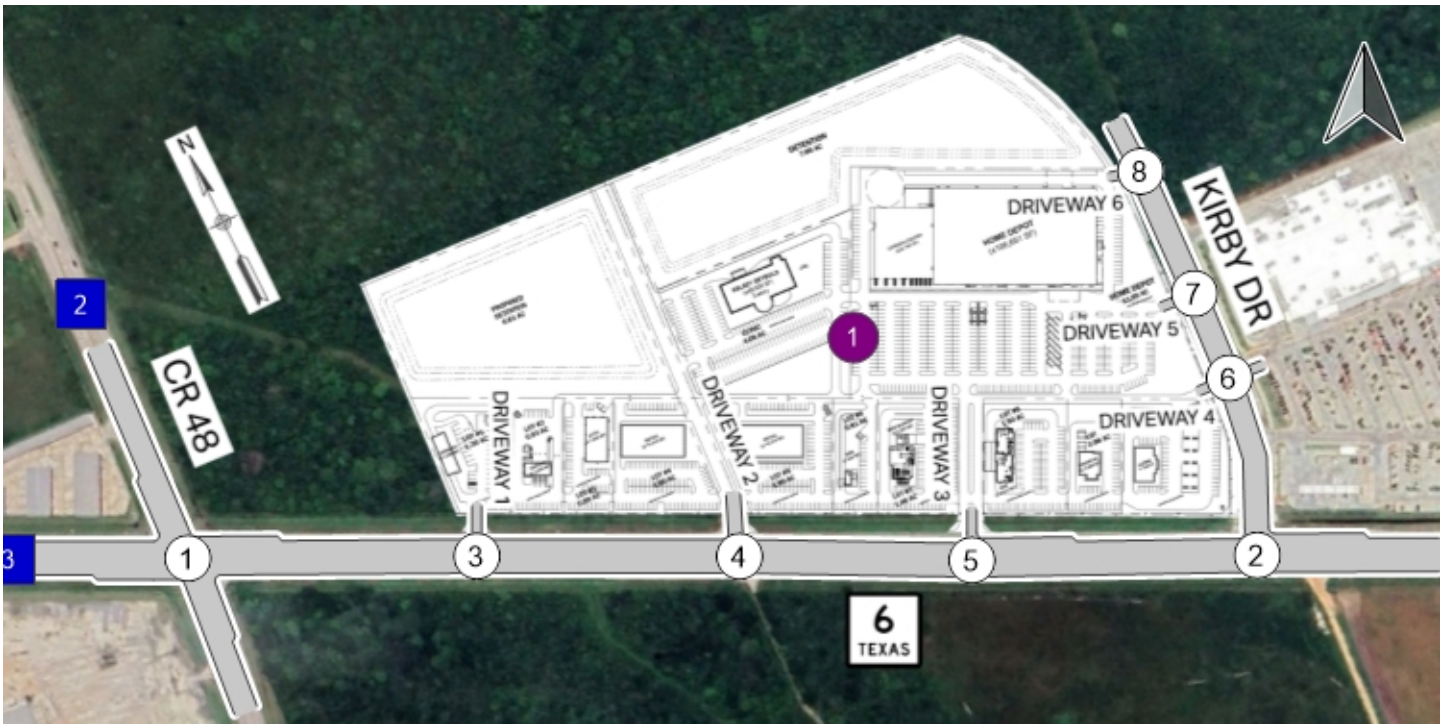
Vistro File: C:\...\vistro-manvel commercial.vistro
Report File: C:\...\vistro-06-pm-buildout.pdf

Scenario 2 PM Peak Hour
10/9/2025

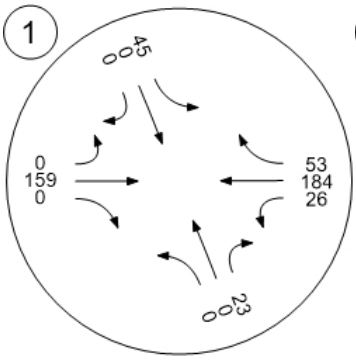
Trip Distribution summary

Zone / Gate	Zone 1: Manvel Commercial			
	To Manvel Commercial:		From Manvel Commercial:	
	Share %	Trips	Share %	Trips
2: Gate	10.00	45	10.00	53
3: Gate	35.00	159	35.00	184
4: Gate	5.00	23	5.00	26
5: Gate	50.00	227	50.00	264
Total	**100.00**	**454**	**100.00**	**527**

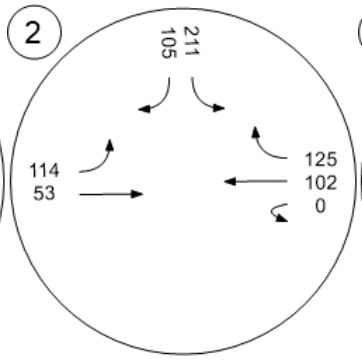
Traffic Volume - Net New Site Trips



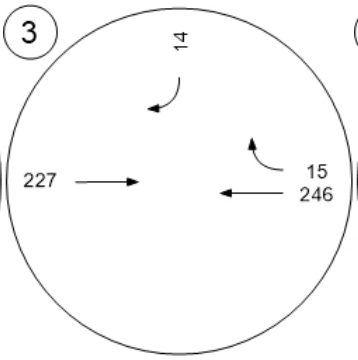
SH 6 at CR 48



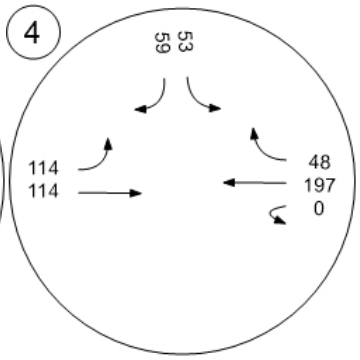
SH 6 at Kirby Drive



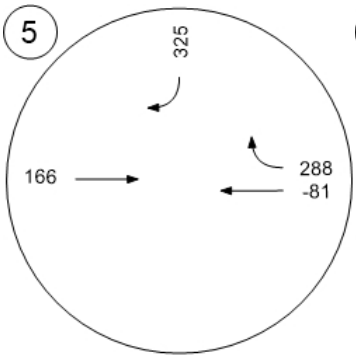
SH 6 at Driveway 1



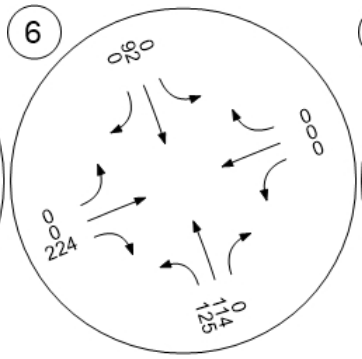
SH 6 at Driveway 2



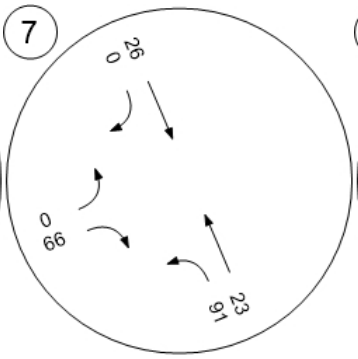
SH 6 at Driveway 3



Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



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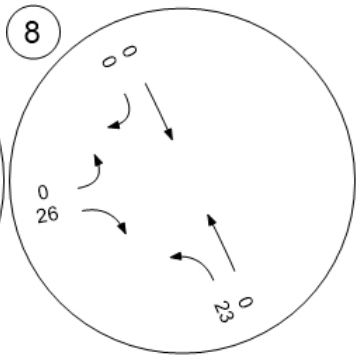
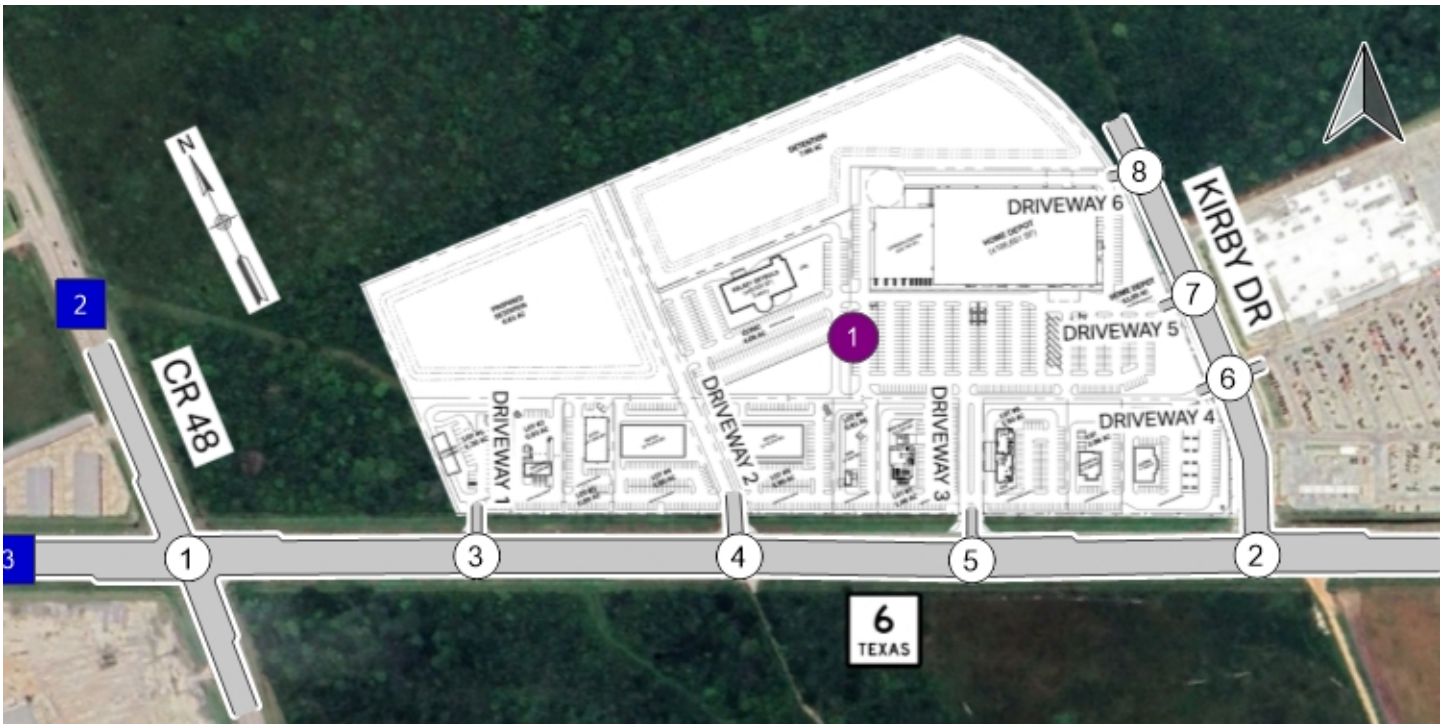
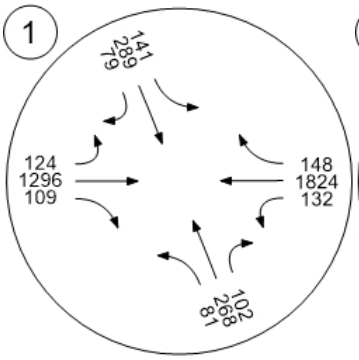


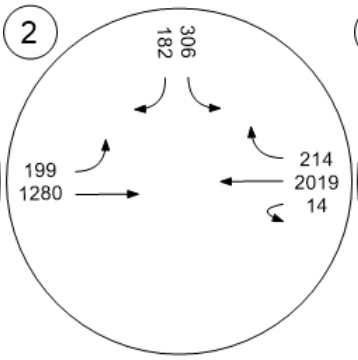
Traffic Volume - Future Total Volume



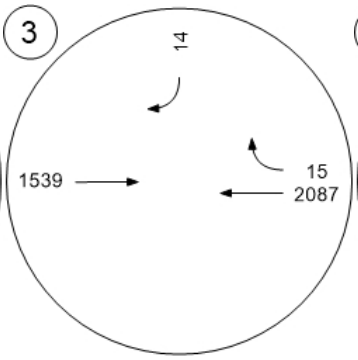
SH 6 at CR 48



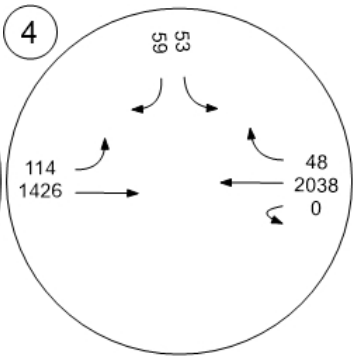
SH 6 at Kirby Drive



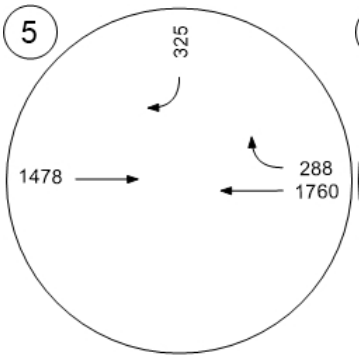
SH 6 at Driveway 1



SH 6 at Driveway 2



SH 6 at Driveway 3



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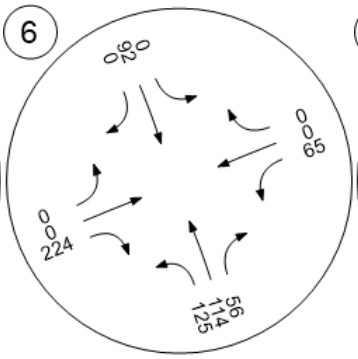

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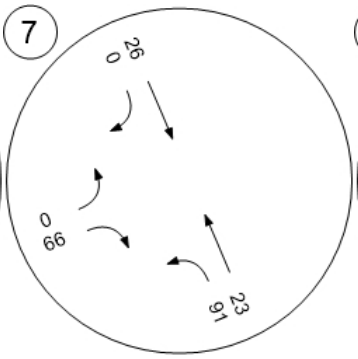
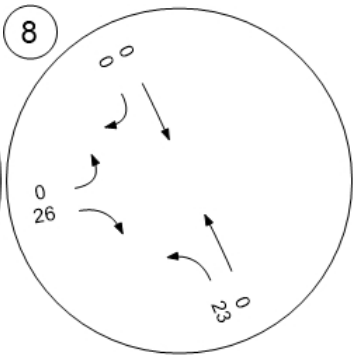


Kirby Dr at Driveway 6



HOUSTON PUBLIC WORKS

IMPACT FEE SERVICE UNIT EQUIVALENT TABLE

How to calculate:

Multiply Service Units Equivalent (SUE) by Sq ft, Occ, number of bowls etc...(SUE column x Per column) to obtain the "approximate". total number of service units.

Recommended SUs are based on 1.0 SU = 250 gpd.

*Please keep in mind that some proposed developments may require multiple SUEs

Line No.	Type of Development	Service Unit Equivalent	Per
1.	Bakery	0.0019	Square Foot
2.	Banquet Hall (No Cooking, Warming Kitchen Only)	0.0200	Occupant
3.	Barber Shop	0.6048	Bowl
4.	Beauty Shop or Beauty Salon	0.6048	Bowl
5.	Bowling Alley (Dining Additional Charge)	0.8000	Lane
6.	Car Repair (Office Additional Charge)	0.00020	Square Foot
7.	Carwash, Tunnel, Self-Service	8.00	Carwash
8.	Carwash, Tunnel, With Attendant	39.60	Carwash
9.	Carwash, Wand Type, Self-Serve	1.54	Carwash Bay
10.	Church or Fellowship Hall	0.0037	Occupant
11.	Club, Tavern, or Lounge	0.0399	Occupant
12.	Concert Hall	0.0399	Occupant
13.	Country Club	0.4032	Member
		0.1008	Guest
14.	Dance School or Dance Studio	0.0399	Occupant
15.	Day Care Center	0.0399	Occupant
16.	Dormitory (Dining Additional Charge)	0.3604	Bed
17.	Fire Station (Dining Additional Charge)	0.3604	Capita
18.	Fitness Center/Club – Freestanding	0.0015	Square Foot
19.	Fitness Club – Within Shopping Center	0.0399	Occupant
20.	Funeral Home (Services Per Week)	0.39	Service
21.	Gas Station with Carwash	11.78	Station
22.	Gas Station Without Carwash	2.21	Station
23.	Grocery Store, 5,000-28,999 Sq. Ft	0.00033	Square Foot
24.	Grocery Store, 29,000 + Sq. Ft	0.0009	Square Foot
25.	Homeless Shelter (No Cooking or Dining)	0.1323	Bed
26.	Hospital (Dining Additional Charge))	0.8001	Bed
27.	Hotel or Motel, With or W/O Kitchenettes	0.7554	Room
28.	Manufacturing	0.00020	Square Foot
29.	Mobile Home Park	1.00	Space
30.	Movie Theater	0.0200	Seat
31.	Nail Salon (Manicure or Pedicure)	0.0004	Square Foot
		0.3024	Bowl
32.	Nursing Home (Salon & Dining Additional Charge)	0.3604	Bed
33.	Office (Includes Studio, Therapy & Massage)	0.000237	Square Foot
34.	Park	0.0200	Occupant
35.	Post Office, Excluding Dock	0.000320	Square Foot
36.	Prison	0.3654	Capita
37.	Racquetball Court	0.6426	Court
38.	Recreational Vehicle Park	0.3000	Vehicle
39.	Residence, Apartment with Washer / Dryer	0.4762	Unit

Line No.	Type of Development	Service Unit Equivalent	Per
40.	Residence. Apartment Without Washer / Dryer	0.4046	Unit
41.	Residence, Condominium	0.4762	Unit
42.	Residence, Single Family or Townhouse, Up To 3000 Sq. Ft (Additional Charge Of 0.0002 SU Per Sq. Ft Over 3000 Sq. Ft)	1.000	Unit
43.	Restaurant, Fast Food	0.0021	Square Foot
44.	Restaurant, Full Service / Dining / Bar Area	0.0033	Square Foot
45.	Retail	0.000281	Square Foot
46.	School (College, High, Middle, Elementary)	0.0198	Seat
47.	Skating Rink	0.0200	Capita
48.	Stadium	0.0126	Seat
49.	Swimming Pool	0.0200	Swimmer
50.	Toilet (Park Amenity)	0.1640	Toilet
51.	Transportation Terminal (Dining Additional Charge)	0.0200	Passenger
52.	Warehouse	0.000121	Square Foot
53.	Washeteria	0.5639	Machine
54.	Water Dispensing Unit – Freestanding	4.5630	Unit

ORDINANCE NO. 2025-O-33

AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING ORDINANCE OF THE CITY, BY ESTABLISHING THE ZONING CLASSIFICATION OF LAND ANNEXED INTO THE CITY BY ORDINANCE NO. 2025-O-34, SAID ANNEXED AREA OF ORDINANCE NO. 2025-O-34 DESCRIBED AS APPROXIMATELY 47.3156 ACRES OF LAND, ANNEXED INTO CITY OF MANVEL'S CITY LIMITS AND SUBSEQUENT DEVELOPMENT AS A RETAIL CENTER, GENERALLY LOCATED AT THE NORTHWEST CORNER OF STATE HIGHWAY (SH) 6 AND KIRBY DRIVE INTERSECTION; SAID TERRITORY CONTAINING A 34.2791 ACRE TRACT AND A 11.3999 ACRE TRACT SEPARATED BY A 40-FOOT-WIDE (0.844 ACRE) UNIMPROVED RIGHT-OF-WAY, SITUATED IN H.T. & B. RAILROAD COMPANY SURVEY, SECTION 71, ABSTRACT NO. 291, BRAZORIA COUNTY, TEXAS, AND A 1.6366 ACRE TRACT BEING A PORTION OF LOT 29 OF EMIGRATION LAND COMPANY SUBDIVISION OF IOWA COLONY H.T. & B. RAILROAD COMPANY SURVEY NO. 71 (ALSO REFERRED TO AS THE IMMIGRATION LAND COMPANY SUBDIVISION OF SECTION 71 , H.T. & B.R.R.COMPANY SURVEY) ABSTRACT 291, BRAZORIA COUNTY, TEXAS), SAID TERRITORY BEING MORE SPECIFICALLY DESCRIBED IN EXHIBIT "A" ATTACHED HERETO; ESTABLISHING THE INITIAL ZONING DISTRICT AS PLANNED UNIT DEVELOPMENT (PUD) ZONING DISTRICT IN ACCORDANCE WITH SECTION 77-79.(A) OF CITY OF MANVEL'S ZONING ORDINANCE; ADOPTING A PUD DOCUMENT PROVIDING FOR ZONING AND DEVELOPMENT RELATED PROVISIONS AND REQUIREMENTS; PROVIDING FOR THE AMENDMENT OF THE CITY'S OFFICIAL ZONING MAP; PROVIDING FOR SEVERABILITY; AND PROVIDING A PENALTY IN AN AMOUNT NOT TO EXCEED $2,000 FOR EACH DAY OF VIOLATION OF ANY PROVISION HEREOF.

* * * * *

WHEREAS, on _____, 2025, the city council adopted Ordinance No. 2025-O-34 annexing into the city land described as being approximately 47.3156 acres of land, located at the Northwest Corner of SH6 intersection, said land containing a 34.2791 acre tract and a 11.3999 acre tract separated by a 40-foot wide (0.844 acre) unimproved right-of-way, situated in H.T. & B. Railroad Company Survey, Section 71, Abstract No. 291, Brazoria County, Texas, and a 1.63 acre tract being a portion of Lot 29 of Emigration Land Company Subdivision of Iowa Colony H.T. & B.

Railroad Company Survey No. 71 (also referred to as the Immigration Land Company Subdivision of Section 71, H.T. & B.R.R. Company Survey) Abstract 291, Brazoria County, Texas, described herein and more particularly described and shown in Exhibit "A," attached hereto and made a part hereof; and

WHEREAS, section 77-79 of the City Code, also known as the zoning ordinance, requires the city council to take appropriate measures to establish a zoning district for land that is annexed into the City of Manvel; and

WHEREAS, the City of Manvel seeks to establish the zoning district of said annexed land as Planned Unit Development (PUD), and adopt a PUD Document providing for zoning and development related provisions and requirements; and

WHEREAS, the Planning, Development, and Zoning Commission and the City Council have conducted, in the time and manner required by law and the Zoning Ordinance of the City, the notices and public hearings on such request, as required by law; and

WHEREAS, the Planning, Development, and Zoning Commission has recommended approval of PUD zoning district named herein and amendment of the city's official zoning map; now, therefore,

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS:

Section 1. The facts and matters set forth in the preamble of this Ordinance are hereby found to be true and correct.

Section 2. The zoning classification of the land annexed by Ordinance No. 2025-O-34 is hereby established as Planned Unit Development (PUD) District, for uses as permitted within such zone classifications, subject to the regulations, restrictions, and conditions hereinafter set forth. Said area of Ordinance No. 2025-O-34 is described as being approximately

47.3156 acres of land, located at the Northwest Corner of SH6 intersection, said land containing a 34.2791 acre tract and a 11.3999 acre tract separated by a 40-foot wide (0.844 acre) unimproved right-of-way, situated in H.T. & B. Railroad Company Survey, Section 71, Abstract No. 291, Brazoria County, Texas, and a 1.63 acre tract being a portion of Lot 29 of Emigration Land Company Subdivision of Iowa Colony H.T. & B. Railroad Company Survey No. 71 (also referred to as the Immigration Land Company Subdivision of Section 71, H.T. & B.R.R. Company Survey) Abstract 291, Brazoria County, Texas, described herein and more particularly described/shown in Exhibit "A," attached hereto and made a part hereof.

Section 3. The official Zoning District Map of the City of Manvel shall be revised and amended to show the designation of territory, as described and as provided in Section 2 above, with the appropriate reference thereon to the number and effective date of this Ordinance and a brief description of the nature of the change.

Section 4. Development of the land annexed by Ordinance No. 2025-O-34 shall strictly comply with the Manvel Crossing PUD Document, attached hereto as Exhibit "B" and made a part of hereof for all purposes.

Section 5. The City Council hereby finds and determines that said rezoning comports to the City's comprehensive land use plan, and to the extent of any conflict, amends said comprehensive land use plan. This Ordinance shall in no manner amend, change, supplement, or revise any provision of any ordinance of the City of Manvel, save and except the change in zoning classifications of said territory as described above.

Section 6. In the event any section, paragraph, subdivision, clause, phrase, provision, sentence, or part of this Ordinance or the application of the same to any person or circumstance shall for any reason be adjudged invalid or held unconstitutional by a court of competent

jurisdiction, it shall not affect, impair, or invalidate this Ordinance as a whole or any part or provision hereof other any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Manvel, Texas, declares that it would have passed each and every part of the same notwithstanding the omission of any and every part of the same notwithstanding the omission of any such part thus declared to be invalid or unconstitutional, or whether there be one or more parts.

Section 7. Any person who shall intentionally, knowingly, recklessly or with criminal negligence violate any provision of this Ordinance shall be deemed guilty of a misdemeanor and upon conviction, shall be fined in an amount not to exceed $2,000.00. Each day of violation shall constitute a separate offense.

PASSED, AND APPROVED on this _____ day of _____, 2025.

PASSED, APPROVED, AND ADOPTED on this _____ day of _____, 2025.

_____
Dan Davis, Mayor

ATTEST:

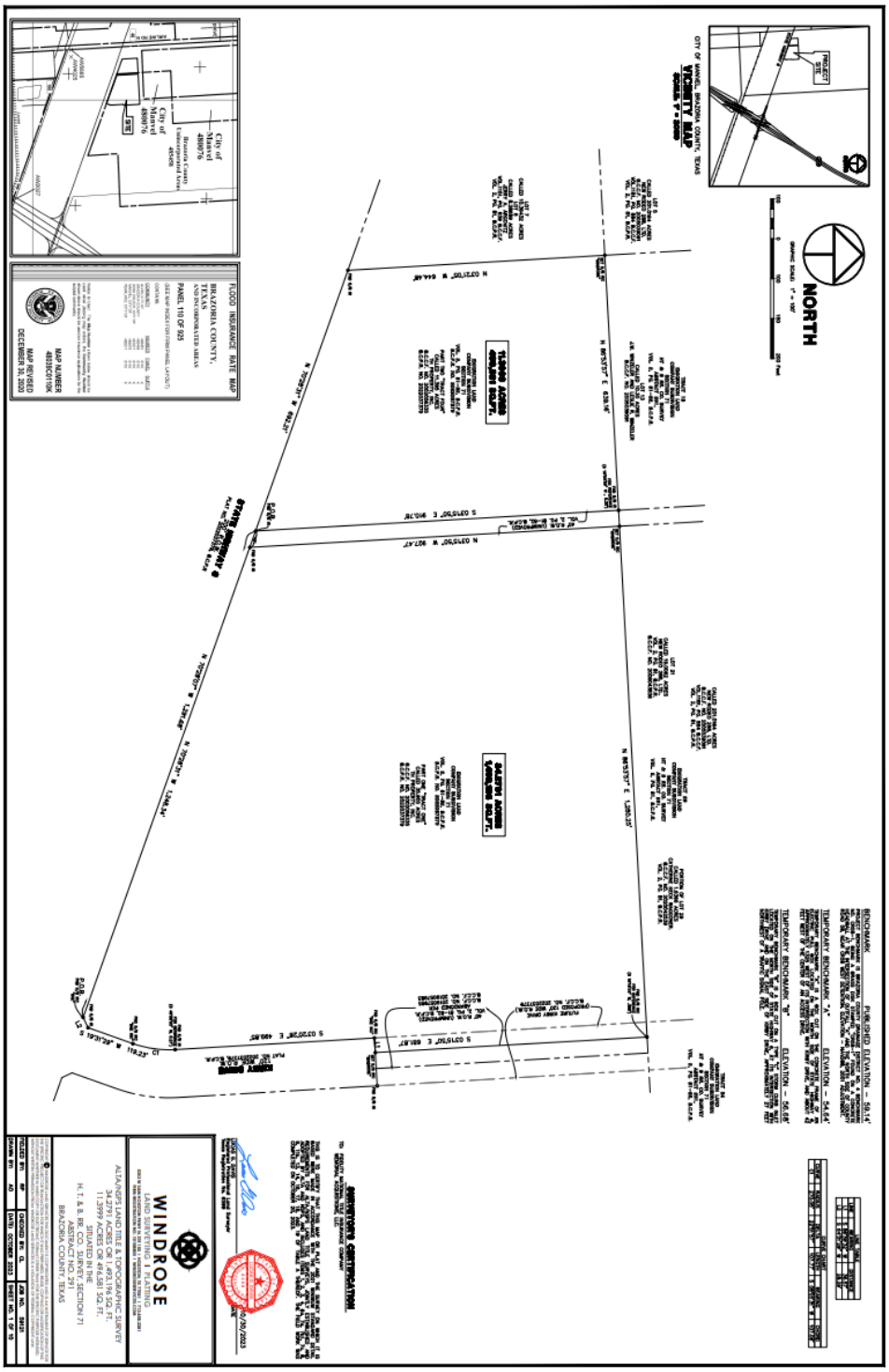
_____
Tammy Bell, City Secretary

APPROVED AS TO FORM:

_____
Robert Gervais, City Attorney

EXHIBIT A (Property Description)

A 34.2791 acre tract and a 11.3999 acre tract separated by a 40-foot wide (0.844 acre) unimproved right-of-way, situated in H.T. & B. Railroad Company Survey, Section 71, Abstract No. 291, Brazoria County, Texas, and a 1.63 acre tract being a portion of Lot 29 of Emigration Land Company Subdivision of Iowa Colony H.T. & B. Railroad Company Survey No. 71 (also referred to as the Immigration Land Company Subdivision of Section 71, H.T. & B.R.R. Company Survey) Abstract 291, Brazoria County, Texas.



1.63 acre tract being a portion of Lot 29 of Emigration Land Company Subdivision of Iowa Colony H.T. & B. Railroad Company Survey No. 71 (also referred to as the Immigration Land Company Subdivision of Section 71, H.T. & B.R.R. Company Survey) Abstract 291, Brazoria
County, Texas

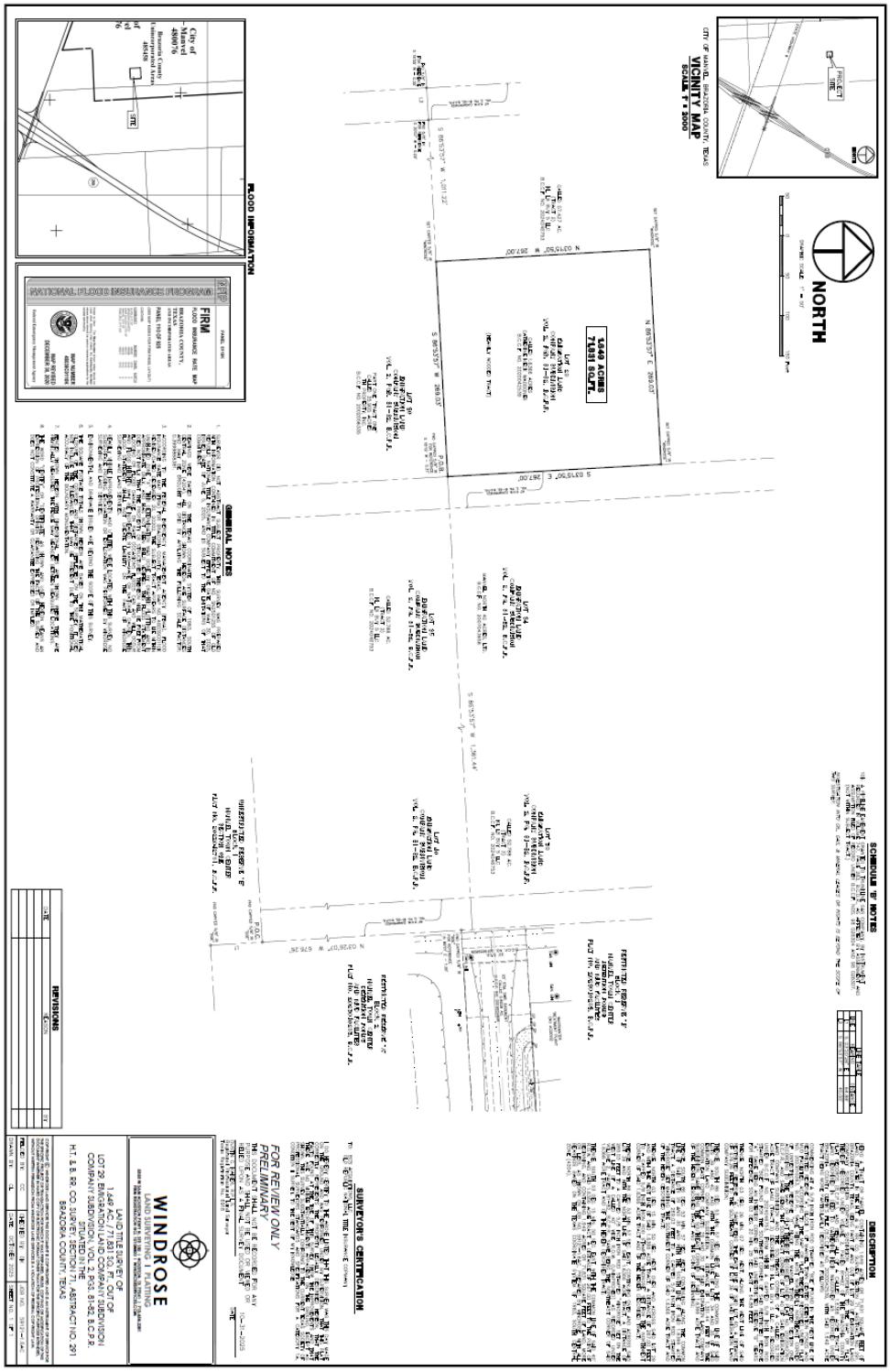


EXHIBIT B

MANVEL CROSSING

PUD DOCUMENT

ORDINANCE NO. 2025-O-36

AN ORDINANCE REGARDING THE CITY OF MANVEL'S TEXAS MUNICIPAL RETIREMENT SYSTEM BENEFITS AUTHORIZING: (1) ANNUALLY ACCRUING UPDATED SERVICE CREDITS AND TRANSFER UPDATED SERVICE CREDITS; (2) ANNUALLY ACCRUING ANNUITY INCREASES, ALSO REFERRED TO AS COST OF LIVING ADJUSTMENTS (COLAS) FOR RETIREES AND THEIR BENEFICIARIES; AND (3) REMOVAL OF THE STATUTORY MAXIMUM CONTRIBUTION LIMIT.

WHEREAS, the City of Manvel, Texas (the "City"), elected to participate in the Texas Municipal Retirement System (the "System" or "TMRS") pursuant to Subtitle G of Title 8, Texas Government Code, as amended (which subtitle is referred to as the "TMRS Act"); and

WHEREAS, each person who is or becomes an employee of the City on or after the effective date of the City's participation in the System in a position that normally requires services of 1,000 hours or more per year ("Employee") shall be a member of the System ("Member") as a condition of their employment; and

WHEREAS, the City Council finds that it is in the public interest to: (1) in accordance with TMRS Act §853.404 and §854.203(h), authorize annually accruing Updated Service Credits and provide transfer Updated Service Credits, (2) in accordance with TMRS Act §854.203 and §853.404, authorize annually accruing annuity increases, also referred to as cost of living adjustments ("COLAs") for retirees and their beneficiaries, and (3) authorize actuarially determined city contribution rate payments and remove the statutory maximum contribution rate ("StatMax") limit; now:

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANVEL, TEXAS:

Section 1. Authorization of Annually Accruing Updated Service Credits and Transfer Updated Service Credits.

(a) As authorized by TMRS Act §854.203(h) and §853.404, and on the terms and conditions set out in TMRS Act §§853.401 through 853.404, the City authorizes each Member who on the first day of

January of the calendar year immediately preceding the January 1 on which the Updated Service Credits will take effect (i) has current service credit or prior service credit in the System by reason of service to the City, (ii) has at least 36 months of credited service with the System, and (iii) is a TMRS-contributing Employee of the City, to receive "Updated Service Credit," as that term is defined and calculated in accordance with TMRS Act §853.402.

(b) The City authorizes and provides that each Employee of the City who (i) is eligible for Updated Service Credits under Subsection (a) above, and (ii) who has unforfeited prior service credit and/or current service credit with another System-participating municipality or municipalities by reason of previous employment, shall be credited with Updated Service Credits pursuant to, calculated in accordance with, and subject to adjustment as set forth in TMRS Act §853.601 (also known as "Transfer USC"), both as to the initial grant and all future grants under this Ordinance.

(c) The Updated Service Credit authorized and provided under this Ordinance shall be 100% of the "base Updated Service Credit" of the TMRS Member calculated as provided in TMRS Act §853.402.

(d) Each Updated Service Credit authorized and provided by this Ordinance shall replace any Updated Service Credit, prior service credit, special prior service credit, or antecedent service credit previously authorized for part of the same service.

(e) The initial Updated Service Credit authorized by this Section shall be effective on January 1 immediately following the year in which this Ordinance is approved, subject to receipt by the System prior to such January 1 and approval by the Board of Trustees ("Board") of the System. Pursuant to TMRS Act §853.404, the authorization and grant of Updated Service Credits in this Section shall be effective on January 1 of each subsequent year, using the same percentage of the "base Updated Service Credit" stated in Subsection (c) in computing Updated Service Credits for each future year, provided that, as to such subsequent year, the actuary for the System has made the determination set forth in TMRS Act §853.404(d), until this Ordinance ceases to be in effect as provided in TMRS Act

§853.404(e).

Section 2. Authorization of Annual Increases in Retirement Annuities, or COLAs.

(a) On the terms and conditions set out in TMRS Act §854.203 and §853.404, the City authorizes and provides for payment of the increases described by this Section to the annuities paid to retired City Employees and beneficiaries of deceased City retirees (such increases also called COLAs). An annuity increased under this Section replaces any annuity or increased annuity previously granted to the same person.

(b) The amount of the annuity increase under this Section is computed as the sum of the prior service and current service annuities on the effective date of retirement of the person on whose service the annuities are based, multiplied by 70% of the percentage change in Consumer Price Index for All Urban Consumers, from December of the year immediately preceding the effective date of the person's retirement to the December that is 13 months before the effective date of the increase under this Section.

(c) An increase in an annuity that was reduced because of an option selection is reducible in the same proportion and in the same manner that the original annuity was reduced.

(d) If a computation under this Section does not result in an increase in the amount of an annuity, the amount of the annuity will not be changed under this Section.

(e) The amount by which an increase under this Section exceeds all previously granted increases to an annuitant is an obligation of the City and of its account in the benefit accumulation fund of the System (the "City's BAF").

(f) The initial increase in annuities authorized by this Section shall be effective on January 1 immediately following the year in which this Ordinance is approved, subject to receipt by the System prior to such January 1 and approval by the System's Board. Pursuant to TMRS Act §853.404, an increase in retirement annuities shall be made on January 1 of each subsequent year, provided that, as to such subsequent year, the actuary for the System has made the determination set forth in TMRS Act

§853.404(d), until this Ordinance ceases to be in effect as provided in TMRS Act §853.404(e).

Section 3. Removal of Maximum Contribution Rate Limit.

(a) Pursuant to TMRS Act §855.407, the City elects to make normal service and prior service contributions to the City's BAF at the combined rate of the total compensation paid to its Employees who are System Members as the System's actuary annually determines is necessary to fund all obligations chargeable to the City's BAF, within the amortization period determined as applicable to the City under the TMRS Act and regardless of other TMRS Act provisions limiting the combined rate of City contributions.

(b) The removal of the maximum contribution rate limit under this Section shall be effective on the first day of the month of January, 2026.

PASSED AND APPROVED on first reading this _____ day of _____, 2025.

PASSED, APPROVED, AND ADOPTED on second and final reading this _____ day of _____, 2025.

_____
Dan Davis, Mayor

ATTEST:

_____
Tammy Bell, City Secretary

APPROVED AS TO FORM:

_____
Robert Gervais, City Attorney

City of Manvel Artificial Intelligence (AI) Governance and Ethics Policy

Purpose

The purpose of this policy is to ensure the responsible, transparent, and ethical use of Artificial Intelligence (AI) by the City of Manvel. As AI becomes increasingly integrated into municipal operations—from public safety and infrastructure management to customer service and administrative efficiency—the City is committed to using these tools in ways that enhance service delivery, uphold public trust, and reflect our community's values.

Guiding Principles

Transparency

- • The City will clearly communicate when and how AI systems are used in municipal operations.
- • Residents have the right to understand how automated tools affect decisions or services that impact them.

Accountability

- • AI systems shall not replace human judgment in areas that materially affect residents' rights, benefits, or obligations.
- • Final responsibility for decisions supported by AI rests with City staff or officials, not the technology itself.

Equity and Fairness

- • The City will actively monitor AI systems to prevent and mitigate bias or discriminatory outcomes.
- • Procurement or use of AI tools must include an evaluation of the system's training data, potential biases, and impact on underrepresented or vulnerable groups.

Privacy and Data Protection

- • All AI systems must comply with applicable state and federal privacy laws, as well as local policies on data retention and protection.
- • The City will minimize the collection, use, and storage of personal data to only what is necessary for operational purposes.

Security and Reliability

- • AI tools used by the City must meet appropriate cybersecurity standards and be regularly reviewed for vulnerabilities or unintended outcomes.
- • Systems should include mechanisms for human review, override, and correction.

Public Benefit

- • AI shall be deployed only when it demonstrably improves city services, efficiency, or safety for the residents of Manvel.

- • The City will prioritize AI applications that strengthen community engagement, transparency, and sustainability.

Ethical Leadership

- • City leaders will foster a culture of responsible innovation, ensuring that the use of AI aligns with Manvel's core values of integrity, service, and accountability to the public.

Operational Governance

AI Oversight Committee

- • The City Manager shall establish an internal AI Oversight Committee composed of representatives from departments utilizing AI, along with the City Attorney and IT Director.
- • The committee will review and approve all proposed AI implementations and issue annual reports on AI use across departments.

Approval and Procurement

- • Before acquisition or deployment, all AI tools must undergo a Risk and Impact Assessment evaluating:
- • - Data sources and ownership
- • - Privacy and security implications
- • - Potential bias or discrimination risks
- • - Operational effectiveness and public impact

Training and Literacy

- • City staff who use AI tools will receive training on responsible use, data ethics, and privacy compliance.
- • The City will encourage ongoing learning and professional development on emerging technologies.

Public Engagement and Transparency

- • The City will maintain a public-facing inventory of AI systems in use, describing their function, department owner, and point of contact.
- • Significant AI projects will include opportunities for public feedback during planning and implementation.

Monitoring and Evaluation

- • Departments using AI systems must conduct periodic reviews to assess accuracy, fairness, and continued relevance.
- • Any issues discovered must be reported to the AI Oversight Committee with a corrective action plan.

Prohibited Uses

- • The City will not use AI for mass surveillance, predictive policing, or profiling of individuals without due legal authority and explicit Council approval.

- • The City will not use AI to make determinations on eligibility, benefits, or enforcement actions without human oversight.

Implementation Timeline

- • Phase 1 (0–3 months): Establish AI Oversight Committee and begin AI inventory.
- • Phase 2 (3–6 months): Develop training modules and risk assessment framework.
- • Phase 3 (6–12 months): Public transparency portal launch and first annual review.

Conclusion

The City of Manvel is committed to embracing innovation while protecting the public trust. Through responsible governance, transparency, and ethical oversight, Manvel aims to harness the benefits of AI in a way that serves every resident fairly, securely, and effectively.