October 27, 2025 PLANNING DEVELOPMENT AND ZONING MEETING

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

NOTICE OF A MEETING
MANVEL PLANNING DEVELOPMENT AND ZONING COMMISSION
October 27, 2025

NOTICE IS HEREBY GIVEN
6:00 P.M.

Pursuant to Chapter 551, Title 5 of the Texas Government Code, the Texas Open Meetings Act, notice is hereby given that the Planning Development and Zoning Commission 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 PD&Z Commission 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. They may discuss the items on this agenda in any order.

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

CITY OF MANVEL MISSION STATEMENT

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

Regular Session

Call to Order

Position #1 Ryan Miller, Chair 03/2027
Position #2 Kyle Marasckin, Vice-Chair 03/2027
Position #3 Mary Ann Atkinson 03/2027
Position #4 Kenneth Haynes 03/2027
Position #5 Christy Kennard 03/2026
Position #6 Delores Martin 03/2026
Position #7 William Richardson 03/2026

Pledge

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

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.

Staff Presentation on Public Hearing Item(s)

Public Hearing

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.

Consent PDZ

All Consent Agenda items listed are considered to be routine by the Planning Development and Zoning Commission and will be approved by one motion. There will be no separate discussion of these items unless a Planning Development and Zoning Member so requests, in which event the item will be removed from the Consent Agenda and considered in sequence on the Agenda.

A. Approve the meeting minutes to date.

Regular Agenda

A. Consideration and possible action to approve and forward with recommendation to City Council, a request for a 1-year extension for a specific use permit issued under Ordinance 2024-O-41 (Adopted November 4, 2024);
AN ORDINANCE OF THE CITY OF MANVEL, TEXAS AMENDING THE ZONING ORDINANCE OF THE CITY, BY CHANGING THE ZONING CLASSIFICATION OF A CERTAIN TRACT OF LAND CONSTITUTING APPROXIMATELY TWO AND A HALF (2.5) ACRES LOCATED AT 4910 CROIX ROAD, AN ORDINANCE OF THE CITY OF MANVEL, TEXAS AMENDING THE ZONING ORDINANCE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION OF AN APPROXIMATE 6.910 ACRES BOUNDED BY OLD MASSEY RANCH ROAD (NORTH), THE BRISCOE CANAL (EAST), AND RESIDENTIALLY DEVELOPED PROPERTIES (SOUTH AND EAST), FROM HUD-CODE MANUFACTURED HOME DISTRICT (HCMH) TO HUD-CODE MANUFACTURED HOME DISTRICT WITH SPECIFIC USE PERMIT (HCMH-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 813110 "RELIGIOUS ORGANIZATIONS"; 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.

B. Consideration and possible action to forward a recommendation of approval to City Council; A SUBDIVISION VARIANCE REQUEST SEEKING TO VARY THE REQUIREMENTS OF CHAPTER 62, SECTION 111 - ADDITIONAL STREET REQUIREMENTS, AND SECTION 62-113 – SIDEWALKS, AND TO ALLOW ESCROWING OF FUNDS FOR PERIMETER ROAD AND SIDEWALK CONSTRUCTION FOR A PROPOSED MEDICAL FACILITY DEVELOPMENT ON AN APPROXIMATE 1.5491-ACRE TRACT OF LAND (PID: 167427), LOCATED ALONG SOUTH SIDE OF STATE HIGHWAY 6, EAST OF 17518 MORRIS AVENUE (STATE HIGHWAY 6), MANVEL, TEXAS.

C. Consideration and possible action to forward a final report recommending approval to City Council;
REGARDING A PROPOSED ORDINANCE (2025-O-33) 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).

D. Development Services Staff Update.

Adjourn

CERTIFICATION

I, Tammy Bell, City Secretary for the City of Manvel, do hereby certify that the foregoing Agenda of the Planning Development and Zoning Commission 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 10/21/2025 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

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

MANVEL PLANNING DEVELOPMENT AND ZONING COMMISSION
NOTICE IS HEREBY GIVEN
6:00 P.M.

MINUTES 10/14/2025

Regular Session

Call to Order

PDZ Member Ryan Miller called the meeting of the PDZ to order at 6:00 p.m.
Those in attendance were:

Present:	Ryan Miller
	Kyle Marasckin
	Kenneth Haynes
	Christy Kennard
	Delores Martin
Absent:	William Richardson
	MaryAnn Atkinson
Also Present:	Jose Abraham, Director of Development Services
	Tammy Bell, City Secretary
	Elaheh Roohbakhsh, Senior Planner
	Matt De La Rosa, Assistant City Engineer

Pledge

Public Comments: "Comment Card" Required

Staff Presentation on Public Hearing Item(s)

Elaheh Roohbakhsh, Senior Planner, provided the presentation.

Public Hearing

TO HEAR INPUT FROM THE PUBLIC REGARDING AN ORDINANCE OF THE CITY OF MANVEL, TEXAS, AMENDING THE ZONING CLASSIFICATION OF AN APPROXIMATE 0.5651-ACRE TRACT CURRENTLY, DEVELOPED AS A RETAIL CENTER WITH ASSOCIATED PARKING, LOCATED AT 20226 MORRIS AVENUE/HIGHWAY 6 (PID: 227994) FROM LIGHT COMMERCIAL DISTRICT / STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/ STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT (LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621310 “OFFICES OF CHIROPRACTORS” WITHIN THE LEASE SPACE “SUITE C;” 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.

Ryan Miller opened the Public Hearing at 6:04 p.m.
1st call for comments - None / 2nd call for comments - None / 3rd call for comments - None
Ryan Miller closed the Public Hearing at 6:05 p.m.

Consent PDZ

A. Approve the meeting minutes to date.

B. Approve Meridiana Section 16 Preliminary Plat;
BEING ASUBDIVISION OF 15.12 ACRES, OUT OF THE H.T.& B.R.R. CO. SURVEY, SECTION 62, A-484, BEING PORTIONS OF LOTS 134 AND 135 OF THE DR. A.A. LUTHER LANDS IN THE TOWN OF MANVEL VOLUME, 1 PAGE 71-72 OF THE BRAZORIA COUNTY PLAT RECORDS, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

C. Approve Final Plat for Meridiana Greenbelt Park;
BEING A SUBDIVISION OF 3.883 ACRES OUT OF THE OLIVER HALL SURVEY, ABSTRACT 203; CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

PDZ Member Kyle Marasckin made the motion to approve the Consent Agenda. PDZ Member Christy Kennard seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

Regular Agenda

A. Consideration and possible action to approve Meridiana Cadence Drive Phase 1 Preliminary Plat;
BEING A SUBDIVISION OF 1.29 ACRES, OUT OF THE OLIVER HALL SURVEY, A-203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

B. Consideration and possible action to approve Meridiana Detention Reserve E-2 Preliminary Plat;
BEING A SUBDIVISION OF 7.55 ACRES, OUT OF THE OLIVER HALL SURVEY, A-203, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.
Regular Agenda Items A and B were combined.

Staff recommends approval with the following conditions:
A
1. Please ensure the drainage areas shown on the table and on the plan view of the drainage exhibit match (Section 62-38 (a)(12)).
2. Please verify that the detention ledger is the most up to date. Some values show to be different than those on the As-Builts for D-2 (Section 62-38 (a)(12)).
B
1. Please ensure the drainage areas shown on the table and on the plan view of the drainage exhibit match (Section 62-38 (a)(12)).
2. Please verify that the detention ledger is the most up to date. Some values show to be different than those on the As-Builts for D-2 (Section 62-38 (a)(12)).

PDZ Member Christy Kennard made the motion to approve Regular Agenda Items A and B with Conditions. PDZ Member Delores Martin seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

C. Consideration and possible action to approve Valencia Charlotte Street Phase 2 Street Dedication Preliminary Plat;
BEING A SUBDIVISION OF 1.58 ACRES OF LAND LOCATED IN THE H.T. & B.R.R. COMPANY SURVEY, SECTION 64, ABSTRACT 483, BRAZORIA COUNTY, TEXAS, BEING A PART OF OUTLOT 181 IN THE DR. A.A. LUTHER SUBDIVISION OF THE TOWN OF MANVEL AND SURROUNDING ACREAGE PROPERTY, A SUBDIVISION RECORDED IN VOLUME 1, PAGES 71 & 72 AND VOLUME 3, PAGES 139 & 140, IN BRAZORIA COUNTY PUBLIC RECORDS (B.C.P.R.).

Elaheh Roohbakhsh, Senior Planner, provided the presentation.
City staff recommends approval of the - Valencia Charlotte St Ph 2 - Preliminary Plat with the following conditions:
1. Please show the existing pavement, sewers, water mains, culverts, or other underground structures adjacent to and within 200 feet of the tract, with pipe sizes, grades, and locations indicated (Section 62-38 (a) (7)).
2. Provide proof of notification to MUD 61 (Section 62-38 (a) (14)).
Note:
• Abandonment of the remainder 20’ ROW along the western boundary must be complete prior to approval of the final plat (Section 62-38 (a) (6)).
• TIA needs to be approved prior to final plat submittal (Section 62-38 (a) (13)).

PDZ Member Delores Martin made the motion to approve with conditions and notes. PDZ Member Kyle Marasckin seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

D. Consideration and possible action to approve Valencia Lake J Preliminary Plat;
BEING A SUBDIVISION OF 6.5 ACRES OF LAND LOCATED IN THE H.T. & B.R.R. COMPANY SURVEY, SECTION 64, ABSTRACT 483, BRAZORIA COUNTY, TEXAS, BEING A PART OF OUTLOT 181 IN THE DR. A.A. LUTHER SUBDIVISION OF MANVEL AND SURROUNDING ACREAGE PROPERTY, A SUBDIVISION RECORDED IN VOLUME 1, PAGES 71 & 72 AND VOLUME 3, PAGES 139 & 140, IN BRAZORIA COUNTY PUBLIC RECORDS (B.C.P.R.).

E. Consideration and possible action to approve Valencia Section 17 Preliminary Plat;
BEING A SUBDIVISION OF 11.777 ACRES OF LAND LOCATED IN THE H.T. & B.R.R. COMPANY SURVEY, SECTION 64, ABSTRACT 483, BRAZORIA COUNTY, TEXAS, BEING A PART OF OUTLOT 181 IN THE DR. A.A. LUTHER SUBDIVISION OF THE TOWN OF MANVEL AND SURROUNDING ACREAGE PROPERTY, A SUBDIVISION RECORDED IN VOLUME 1, PAGES 71 & 72 AND VOLUME 3, PAGES 139 & 140, IN BRAZORIA COUNTY PUBLIC RECORDS (B.C.P.R.).

Regular Agenda Items D and E were combined.

The City staff recommends approval of the Valencia Lake J - Preliminary Plat with the following conditions:
1. Please show the existing pavement, sewers, water mains, culverts, or other underground structures adjacent to and within 200 feet of the tract, with pipe sizes, grades, and locations indicated (Section 62-38 (a) (7)).
2. Please verify the maintenance responsibility of Reserve A (Section 62-38 (a) (8)).
3. Provide proof of notification to MUD 61 (Section 62-38 (a) (14)).
Note:
• Abandonment of the remainder 20’ ROW along the western and northern boundary must be complete prior to approval of the final plat (Section 62-38 (a) (6)).
• TIA needs to be approved prior to final plat submittal (Section 62-38 (a) (13)).

The City staff recommends approval of the Valencia Section 17 - Preliminary Plat with the following conditions:
1. Please show the existing pavement, sewers, water mains, culverts, or other underground structures adjacent to and within 200 feet of the tract, with pipe sizes, grades, and locations indicated (Section 62-38 (a) (7)).
2. Please add Drainage to Reserve B and Utilities to Reserve D in the Type Column of the Reserve Table. (Sec 62-38 (a)(8)).
3. Please show the utility easements on the plat and ensure the transitions are clear (Water to Sewer, etc.) (Section 62-38 (a) (9)).
4. Please verify accuracy of the MUD Boundary Lines on the Plat (Sec 62-38 (a)(11)).
5. Provide proof of notification to MUD 61 indicating that their required easements are correctly shown on the plat and verifying availability of utility service (Section 62-38 (a) (14)). Note:
• Abandonment of the remainder 20’ ROW along the western and northern boundary must be complete prior to approval of the final plat (Section 62-38 (a) (6)).
• TIA needs to be approved prior to final plat submittal (Section 62-38 (a) (13)).

PDZ Member Delores Martin made the motion to approve Regular Agenda Items D and E with conditions and notes. PDZ Member Kenneth Haynes seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

F. Consideration and possible action to approve Hampton Business Park Preliminary Plat;
BEING A SUBDIVISION OF 13.82 ACRES / 602,164 SQ. FT. SITUATED IN THE H.T. & B.R.R. CO. SURVEY, ABSTRACT NO. 298, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

City staff recommends approval of the Hampton Business Park Preliminary Plat with following conditions:
1. Please show existing pavement, sewers, water mains, culverts, or other underground structures adjacent to and within 200 feet of the tract, with pipe sizes, grades, and locations indicated (Section 62-38 (a) (7)).
2. Please clearly show the MUD Boundaries on the Plat. Please use a different line type if needed for clarity (Section 62-38 (a)(11)).
3. Provide a tree survey to show protected trees within the plat boundary. If there are no protected trees, please provide supporting documentation, such as photographs, report, or a tree survey and include a note on the plat stating that there are no protected trees requiring preservation as defined by Section 77-44 of the zoning ordinance within the proposed plat boundary. (Section 77-44 - Tree Preservation, Landscaping, and Screening)
Note:
• DCM modification request needs to be approved prior to final plat submittal (DCM Section 7).
• Please provide the CAD file for this plat.
• Please note that Preliminary plats will not be signed by the PD&Z Commission.

PDZ Member Delores Martin made the motion to approve with conditions and notes. PDZ Member Christy Kennard seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

G. Consideration and possible action to approve Akery Lake Minor Plat;
BEING A SUBDIVISION OF 116.899 ACRES, LOCATED IN THE M.V. O'DONNELL SURVEY, ABSTRACT NO. 479 AND THE H.T. & B.R.R. CO. SURVEY, ABSTRACT NO. 484, CITY OF MANVEL, BRAZORIA COUNTY, TEXAS.

Jose Abraham presented.
The City staff recommends approval of the Akery Lake Minor Plat with the following conditions:
1. Please add a North Arrow to the Vicinity Map (Section 62-41 (b) (2)).
2. Provide signature of the Registered Professional Land Surveyor on the face of the plat (Mylar and electronic copies) (Section 62-41 (b) (4)).
3. Please provide the full date on the Plat (Section 62-41 (b) (9)).
4. Please show the centerlines of Masters and Jordan Rd and their distance to the property line and shade in the dedicated ROW along Masters and Jordan for clarity (Section 62-41 (b) (10)).
5. Please either show the drainage easement mentioned in the CPL on the plat or remove it from the CPL if it is not applicable (Section 62-41 (b) (13)).
6. Please address the following items:
• Provide a reserve table which outlines the party responsible for maintenance of the reserve;
• Include a note referencing the abandonment information for 40’ Road to be abandoned;
• Provide a Letter of No Objection (LONO) from GCWA;
• For the benchmark note, include the full location description and verify the elevation. The data sheet also indicates it is without sleeve—please confirm;
• Provide a CAD file;
• Show the floodplain limits on the Plat;
• Revise the flood statement note and note 11 for accuracy. The property is in the AO (3) Zone and is part of Map 48039C0130K. It is also in the incorporated areas (480076)

(Section 62-41 (b) (18)).
7. Please provide the requested LONOs from the Utility Companies once received (Section 62-41 (b) (20)).
8. Please add a notation that the development regulations and City permits are required on all property (Section 62-41 (b) (29)).

PDZ Member Delores Martin made the motion to approve with conditions. PDZ Member Christy Kennard seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

H. Consideration and possible action to approve The Church on MastersRoad Replat;
BEING A SUBDIVISION OF 12.921 ACRES, BEING A REPLAT OF LOT 1, BLOCK 1 OF THE CHURCH ON MASTERSROAD RECORDED IN C.F. NO. 2018031038 OF THE BRAZORIA COUNTY PLAT RECORDS.

City staff recommends approval of The Church on Masters Road - Replat with the following conditions:
1. Provide all signatures on the face of the plat (Mylar and electronic copies) (Section 62-41 (b) (4) & (b) (6)).
2. Revise note 1 to reference accurate date based on the provided City Planning Letter (CPL) (Section 62-41 (b)(5) & (b)(21)).
3. Please add a note stating that bearings and distances to the nearest established street lines or official monuments shall be accurately described on the plat using Lambert Grid Bearings (Section 62-41 (b) (12)).
4. Please address the following items:
• Review and revise to show all easements indicated on the City Planning Letter (CPL). If the referenced easements are not part of the subdivision, revise the CPL accordingly;
• Please verify the boundaries and locations of the 15-foot and 40-foot drainage easements (DEs), as they differ from those shown on the recorded plats;
(Section 62-41 (b) (13)).
5. Provide boundary closure calculations, the minimum of which shall be 1:15,000 (Section 62-41 (b) (14)).
6. Please add a waiver claim for damage occasioned by the establishment of grades or alterations of the surface of any portion of the streets (Section 62-41 (b) (16)).
7. Please show the floodplain limits on the plat, add a note about the project benchmark used, and Provide a CAD file (Section 62-41 (b) (18)).
8. Revise the City Manager signature block to state "This is to certify that the Planning, Development, and Zoning Commission of the City of Manvel, Texas, has approved this plat of _____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 ___, 20__" Planning, Development, and Zoning Commission (Section 62-41 (b) (19)).
9. Please submit proof of submittal to the drainage district or confirmation from the district that a review is not required (Section 62-41 (b) (19)).
10. Please provide letter of no objection from all applicable utility companies (Section 62-41 (b) (20)).

PDZ Member Christy Kennard made the motion to approve with conditions. PDZ Member Delores Martin seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

I. Consideration and possible action to forward a final report recommending approval to City Council;
AMENDING THE ZONING CLASSIFICATION OF AN APPROXIMATE 0.5651-ACRE TRACT CURRENTLY, DEVELOPED AS A RETAIL CENTER WITH ASSOCIATED PARKING, LOCATED AT 20226 MORRIS AVENUE/HIGHWAY 6 (PID: 227994) FROM LIGHT COMMERCIAL DISTRICT / STATE HIGHWAY 6 OVERLAY DISTRICT (LC/SH6) TO LIGHT COMMERCIAL DISTRICT/ STATE HIGHWAY 6 OVERLAY DISTRICT WITH SPECIFIC USE PERMIT (LC/SH6-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 621310 "OFFICES OF CHIROPRACTORS" WITHIN THE LEASE SPACE "SUITE C". (PROPOSED ORDINANCE NO. 2025-0-30)

City staff recommends approval of this SUP request for the subject site to allow NAICS use 621310 "Offices of Chiropractors "with the following conditions:

1. The land use allowance of this Specific Use Permit is limited to 20226 Highway 6 / Morris Avenue, Suite C, with floor area not to exceed 1,000 square feet;
2. Unless otherwise required by state law or regulation, the facility is only permitted to operate during the hours of 7:00 a.m. to 10:00 p.m. each day;
3. All waiting and/or lobby areas shall maintain an unobstructed view from the outside; and
4. All doors shall remain unlocked and accessible during normal business hours.

PDZ Member Delores Martin made the motion to approve with conditions. PDZ Member Kenneth Haynes seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No:	None
Absent:	William Richardson, MaryAnn Atkinson
Abstained:	None

J. Consideration and possible action to direct staff to provide Applicants written statements of the conditions for any conditional approvals, and the reasons for disapproval of any plans or plats that were not approved, per Texas Local Government Code §212.0091.

PDZ Member Ryan Miller made the motion to approve. PDZ Member Delores Martin seconded the motion.

The motion carried with a vote: 5/0

Yes:	Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin

No: None
Absent: William Richardson, MaryAnn Atkinson
Abstained: None

K. Staff Update on National Community Planning Month.

Jose Abraham provided the update.

Adjourn

PDZ Member Ryan Miller made the motion to adjourn the meeting at 6:24 p.m. PDZ Member Christy Kennard seconded the motion.

The motion carried with a vote: 5/0

Yes: Ryan Miller, Kyle Marasckin, Kenneth Haynes, Christy Kennard, Delores Martin
No: None
Absent: William Richardson, MaryAnn Atkinson
Abstained: None

CERTIFICATION

TAMMY BELL, CITY SECRETARY
CITY OF MANVEL, TEXAS

MANVEL
PD&Z COMMISSION
DATA SHEET

MEETING DATE: October 27, 2025

TOPIC: Consideration and possible action to approve and forward with recommendation to City Council, a request for a 1-year extension for a specific use permit issued under Ordinance No. 2024-O-41 (adopted November 4, 2024).

BACKGROUND:
The subject site, consisting of approximately 6.910 acres of land (Property ID #171785), is located along the southern side of Old Massey Ranch Road, abutting the Briscoe Canal to the east.

In 2020, the site was rezoned to HUD-Code Manufactured Home District with a Specific Use Permit (HCMH-SUP) allowing NAICS use 813110 – "Religious Organizations" (Ordinance No. 2020-O-28). Per Section 77-50(h) of the City's Zoning Ordinance, a Specific Use Permit expires one year after its date of issuance if construction or use authorized there under is not substantially under way prior to the expiration of said one-year period. The property owner experienced financial difficulties at that time, which led to the abandonment of the development process and the expiration of the SUP and associated variance due to inactivity or lack of substantial progress within the required one-year period.

In October 2024, the applicant indicated that the owner was in a better financial position and wished to restart the project. The applicant requested a new SUP allowing the same NAICS use, 813110 – "Religious Organizations." The City Council approved this SUP on November 4, 2024, under Ordinance No. 2024-O-41, with five conditions.

The property owner has not yet begun construction or established the authorized use on the property and has therefore requested a one-year extension to Ordinance No. 2024-O-41.

STAFF RECOMMENDATION: City staff recommends approval of a one-year extension of Ordinance No. 2024-O-41.

ATTACHMENTS: Ordinance No. 2024-O-41 and Extension Request Letter

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** __NA___ **CITY MANAGER APPROVAL** ___YES___

From:	Bob Stewart
To:	City of Manvel Permits
Cc:	Elaheh Roohbakhsh
Subject:	SCS Project 233 - International Victory Christian Church - 5730 Old Massey Ranch Rd. - Manvel, Tx 77588 - FORMAL REQUEST FOR SUP EXTENSION
Date:	Thursday, October 2, 2025 11:11:50 PM
Attachments:	2024-O-41 HCHM-SUP 6.910 Acres International Victory Christian Church.pdf

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Good morning,

Please find attached the Ordinance 2024-O-41 that provided for a Specific Use Permit for the development of the International Victory Christian Church to be located at 0 CR 100, address being 5730 Old Massey Ranch Road. Our Civil sitework plans and Minor plat are currently in review with the Brazoria County Drainage District No. 4, awaiting engineering approval and board action.

Once approved, the complete sitework and building plan package, along with the minor plat, will be submitted to the City of Manvel for review, approvals, and permitting.

Contractors are currently reviewing the project plans, and one should be selected within the next 30 days.

At this time, we are respectfully requesting that the City of Manvel grants us an extension on the expiration date of the ordinance, as provided for in Section 5.

Please let me know if you have any questions or comments.

Thank you,

Bob N. Stewart, Principal

STEWART CONSULTING SERVICES(SCS)

Civil Engineers|Planners|Construction Mgmt.

TBPE Firm F-17175

Humble, TX 77396

713.446.8537 (Direct)

281.858.2335 (Fax)

www.stewartconsultingservices.com

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From: Bob Stewart
Sent: Thursday, August 14, 2025 11:53 AM
To: permits@cityofmanvel.com
Cc: Sandy Parra <s.parra@stewartconsultingservices.com>
Subject: SCS Project 233 - International Victory Christian Church - 5730 Old Massey Ranch Rd. - Manvel, Tx 77588 - COMMERCIAL PERMIT APPLICATION

Good morning,

Please find attached the Commercial Permit Application and survey for the International Victory Christian Church Development.
Let us know if additional information is needed, or when we are to upload and deliver the hardcopy plan sets for review.

Thank you,

Bob N. Stewart, Principal
STEWART CONSULTING SERVICES(SCS)
Civil Engineers|Planners|Construction Mgmt.
TBPE Firm F-17175
Humble, TX 77396
713.446.8537 (Direct)
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ORDINANCE NO. 2024-O-41

AN ORDINANCE OF THE CITY OF MANVEL, TEXAS AMENDING THE ZONING ORDINANCE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION OF AN APPROXIMATE 6.910 ACRES BOUNDED BY OLD MASSEY RANCH ROAD (NORTH), THE BRISCOE CANAL (EAST), AND RESIDENTIALLY DEVELOPED PROPERTIES (SOUTH AND EAST), FROM HUD-CODE MANUFACTURED HOME DISTRICT (HCMH) TO HUD-CODE MANUFACTURED HOME DISTRICT WITH SPECIFIC USE PERMIT (HCMH-SUP); PROVIDING FOR THE GRANTING OF A SPECIFIC USE PERMIT WITH CONDITIONS TO AUTHORIZE THE USE OF PROPERTY FOR NAICS USE 813110 "RELIGIOUS ORGANIZATIONS"; 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, International Victory Christian Church (the "Owner"), represented by Pasto Michael Liga, is the owner of a certain 6.910-acre tract of land bounded by Old Massey Ranch Road (north), the Briscoe Canal (east) and residentially developed properties (south and west), Manvel, Texas, such tract situated in the A. C.H. & B. Railroad Company Survey, A-402, Brazoria County, Texas, being the residue of tract which was called 9.523 acres conveyed to International Victory Christian Church, by an instrument of record in Clerks File #2015007219, Brazoria County Official Public Record, (BCOPR), a map and description of which is attached hereto as Exhibit "A"; and

WHEREAS, in 2020, the owner, represented by Bob Stewart, filed an application to change the zoning classification of the 6.910-acre tract to HUD-Code Manufactured Home District, with a Specific Use Permit (HCMH-SUP) allowing use of the Property for NAICS Use 813110 "Religious Organizations"; and

WHEREAS, the SUP granted in 2020 allowing use of the Property for NAICS Use 813110 "Religious Organizations" expired after one year due to inactivity and failure to establish the allowed use; and

WHEREAS, the 6.910-acre tract is currently zoned HUD-Code Manufactured Home District (HCMH) District; and

WHEREAS, the owner, represented by Bob Stewart has filed an application to change the zoning classification of the 6.910-acre tract to HUD-Code Manufactured Home District with Specific Use Permit (HCMH-SUP) allowing the existing use of the property for NAICS use 813110 – "Religious Organizations"; 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, a public hearing on such request; and

WHEREAS, the Planning, Development, and Zoning Commission has recommended in its report the approval of such request, and the City Council deems it appropriate to approve said amendment to the zoning and specific use permit; 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 a certain 6.910-acre tract of land bounded by Old Massey Ranch Road (north), the Briscoe Canal (east) and residentially developed properties (south and west), Manvel, Texas, such tract situated in the A. C.H.

& B. Railroad Company Survey, A-402, Brazoria County, Texas, being the residue of tract which was called 9.523 acres conveyed to International Victory Christian Church, by an instrument of record in Clerks File #2015007219, Brazoria County Official Public Record, (BCOPR), as more particularly described in Exhibit "A" attached hereto, shall be changed from HUD-Code Manufactured Home District (HCMH) to HUD-Code Manufactured Home District with Specific Use Permit (HCMH-SUP), for uses as permitted within such zone classification, subject to the regulations, regulations, and conditions hereinafter set forth:

1. Religious Organizations - (NAICS 813118)

Section 3. The request meets the criteria set forth in Section 77-50 of the City of Manvel Zoning Ordinance for a Specific Use Permit. The City of Manvel Zoning Ordinance is hereby further amended by granting a Specific Use Permit authorizing use of the Property for the additional NAICS use listed in Section 2, above.

Section 4. The City Council hereby finds it appropriate to impose the conditions to the granting of the Specific Use Permit as shown in Exhibit "B", attached hereto and incorporated herein as if set out in full. Use and development of the Property shall comply with the conditions and with the site plan as shown in Exhibit "C", attached hereto. The uses and site may not be changed or expanded except by amendment of this Specific Use Permit.

Section 5. The Specific Use Permit issued under this ordinance, or a specific use listed herein, shall expire one year after its date of issuance if construction or if the listed use authorized hereunder is not substantially under way or in use prior to the

expiration of said one year period. If, prior to the expiration of such one-year period, the owner of the property to which the Specific Use Permit applies in writing, for an extension, the City Council may, after recommendation from the Planning, Development, and Zoning Commission, grant such extension for one additional year.

Section 6. The Zoning District Map of the City of Manvel shall be revised and amended to show the designation of said tract, 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 7. The City Council hereby finds and determines that said rezoning comports to the City's 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 classification of said tract(s) as described above.

Section 8. 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 9. 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.

Section 10. Revocation. This Specific Use Permit may be revoked or modified by the City Council, in whole or in part, after notice and hearing, for either of the following reasons:

(1) The Specific Use Permit was obtained or extended by misrepresentation, fraud or deception: or

(2) That one of more of the conditions imposed by the permit has not been met or has been violated.

PASSED AND APPROVED on first reading this 21 day of October, 2024.

PASSED, APPROVED, AND ADOPTED on second and final reading this 4 day of Nov, 2024.

Dan Davis, Mayor

ATTEST:

Tammy Bell, City Secretary

APPROVED AS TO FORM:

Robert Gervais, City Attorney

Exhibit A

Being a certain 6.910-acre tract of land bounded by Old Massey Ranch Road (north), the Briscoe Canal (east), and residentially developed properties (south and west), Manvel, Texas, such tract situated in the A. C.H. & B. Railroad Company Survey, A-402, Brazo ria County, Texas, being the residue of tract which was called 9.523 acres conveyed to International Victory Christian Church, by an instrument of record in Clerks File #2015007219, Brazoria County Official Public Record, (BCOPR).

METES AND BOUNDS DESCRIPTION
6.910 ACRE

All that certain tract or parcel containing 6.910 acre of land in the **A. C. H. & B. Railroad Company Survey, A-402, Brazoria County, Texas**, being the residue of tract which was called 9.523 acres conveyed to International Victory Christian Church, by an instrument of record in Clerks File #2015007219, Brazoria County Official Public Record, (BCOPR), said 6.910 acre being more particularly described as follows, (Bearing Basis: State Plane Coordinates, Texas South Central 4204, NAD83, GRID)

BEGINNING at a 3/8" iron rod (1184) for northeast corner, being the northeast corner of said Residue Tract, lying in the west line of a tract which was called 128.86 acres conveyed to Marguerite Massey Smith Charitable Remainder Trust, by an instrument of record in Clerks File #2017051881, BCOPR and lying in the south right of way (R-O-W) line of County Road 100 (width varies) also known as Old Massey Ranch Road;

THENCE S03°07'56"E, along the common line of said Residue Tract and said 128.86 acre tract at 9.84 feet pass a 1/2" iron rod found and continuing for a distance in all of **459.56 feet** to a 5/8" iron rod found for southeast corner, being the southeast corner of said Residue Tract and northeast corner of a tract which was called 12.90 acres conveyed to Peter Ferdin, et al, by an instrument of record in Clerks File #2022048104, BCOPR;

THENCE S87°24'13"W, 712.74 feet along the common line of said Residue Tract and said 12.90 acre tract to a 3/8" iron rod set for southwest corner, being the southwest corner of said Residue Tract and southeast corner of a tract which was called 2.00 acres conveyed to Ronaldo Xavier Hernandez, by an instrument of record in Clerks File #2018019305, BCOPR;

THENCE N02°57'07"W, 216.48 feet along the common line of said Residue Tract and said 2.00 acre tract to a 3/8" iron rod set for a northwest corner, being a northwest corner of said Residue Tract and northeast corner of said 2.00 acre tract, lying in the south line of a tract which was called 3.00 acres conveyed to Smart Buyers, by an instrument of record in Clerks File #2017023044, BCOPR;

THENCE N87°37'51"E, 106.95 feet along the common line of said Residue Tract and said 3.00 acre tract to a 3/8" iron rod (1184) found for an interior corner, being an interior corner of said Residue Tract and southeast corner of said 3.00 acre tract;

THENCE N02°41'37"W, 243.27 feet along the common line of said Residue Tract and said 3.00 acre tract to a 3/8" iron rod set for northwest corner, being the northwest corner of said Residue Tract and northeast corner of said 3.00 acre tract, lying in the south R-O-W line of said CR 100;

THENCE N87°23'19"E, 603.25 feet along the common line of said Residue Tract and said CR 100 to the **PLACE OF BEGINNING**, containing **6.910 acre** of land, more or less.

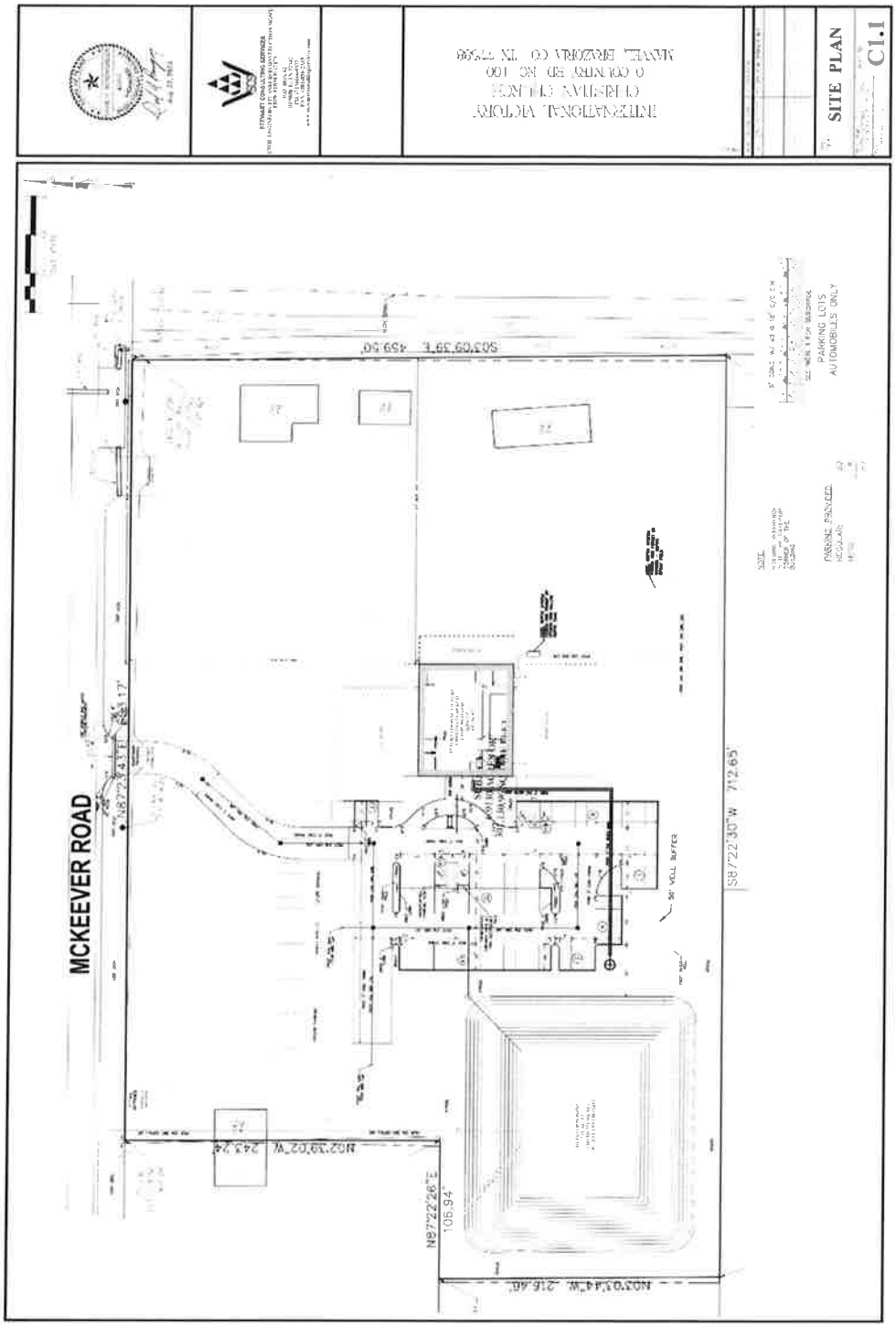
Exhibit B

CONDITIONS FOR NAICS USE - 813110 "RELIGIOUS ORGANIZATIONS"

1. A plat shall be prepared and approved in conformance with Chapter 62 – *Subdivisions*, prior to developing the subject site for the proposed church;
2. The site development shall generally conform to the attached site plan. However, changes necessary to conform to any adopted City of Manvel codes and ordinances shall be made part of the construction plan and building permit review process;
3. Outdoor lighting shall be shielded and shall conform with the Illuminating Engineering Society of North America ("IES") criteria for full cut-off fixtures, which is 100 percent of light output below 90 degrees, and 90 percent of light output below 80 degrees from a vertical line through the fixture;
4. Outdoor lighting shall be deflected, shaded, and focused away from abutting properties and shall not be a nuisance to abutting properties, and shall be designed so that any overspill of lighting onto abutting properties shall not exceed three-tenths foot-candles, measured vertically and horizontally;
5. Buildings shall be designed in conformance with all adopted technical codes, including Building and Fire Codes.

Exhibit C

INTERNATIONAL VICTORY CHRISTIAN CHURCH SITE PLAN



MANVEL PD&Z DATA SHEET

MEETING DATE: October 27, 2025

TOPIC: Subdivision variance request for an approximate 1.5491-acre tract of land generally located along the southern side of Morris Avenue / State Highway 6, east of the Sonic at 17518 Morris Avenue / State Highway 6, Manvel, TX, for Manvel ER, seeking to vary the requirements of Chapter 62, Section 111 - *Additional Street Requirements*, and Section 62-113 - *Sidewalks*.

BACKGROUND: The subject site, approximately 1.5491 acres in size (Property ID # 167427), is located along the south side of Morris Avenue / State Highway 6, adjacent to the Sonic located at 17518 Morris Avenue / State Highway 6. The subject site was rezoned to Light Commercial with the Specific Use Permit (LC-SUP) in October 2024 for NAICS use "Ambulatory Health Care Services" and was advised of the city ordinance requirements for developing the site. The pump detention serving the subject site was also approved in March 2025.

In March 2025, a plat for the subject site was submitted, and as part of the plat review process, staff provided the applicable street construction requirements under the Subdivision Ordinance. In combination, *Sections 62-111* and *62-113* of the subdivision ordinance require construction of one-half of all perimeter (abutting) roads as concrete, curb, and gutter with sidewalks in accordance with the City's Design Criteria Manual and Major Thoroughfare Plan. There is an unimproved 40-foot-wide right-of-way (ROW) along the southern boundary of the subject site would therefore be required to be improved under these standards. To seek relief from this requirement, the applicant, John English of Rekha Engineering, Inc., on behalf of the property owner, Brazos Real Estate Holdings, LLC, has submitted this Subdivision Variance request to escrow funds for future roadway and sidewalk construction, allowing the proposed plat to proceed with approval without immediate ROW improvements.

The applicant has indicated that:

- Constructing a roadway along the 544-foot south property line is not feasible due to drainage and detention constraints within the existing 40-foot ROW.
- Engineering analysis indicates that the required 15-foot berms on both sides would leave only approximately 10 feet of functional area, which is insufficient to accommodate proper drainage and detention. For this reason, the applicant has requested not to construct the roadway at this time.
- The ROW terminates at the Brazoria Drainage District No. 4 (BDD4) ditch, where a bridge would be needed to provide connectivity.
- A road in this location would not offer meaningful circulation or public street benefit to properties south of the site. (Please see attached request letter for more details)

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

- Special Circumstances: The unimproved 40-foot-wide ROW extends from Morris Avenue / State Highway 6 on the east and continues westward to State Highway 288; however, there is no direct access to the ROW from either highway. Additionally, a Brazoria Drainage District No. 4 (BDD4) ditch runs through the middle of the ROW, and a bridge would be required to provide connectivity.
- Strict Enforcement: Strict enforcement of the ordinance would require immediate

construction of full concrete roadway and sidewalk improvements. By escrowing the required funds, the developer complies with the ordinance while deferring construction until such time as roadway connectivity is practical.

- Impact on Public Welfare: 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. All properties located on the north side of the ROW currently access State Highway 6 directly. Properties to the south side of the ROW, which also abut Morris Avenue / State Highway 6, are under single ownership, consist of undeveloped land, and currently have no known or established means of access.

RECOMMENDATION: Staff recommends approval of the variance request to *Chapter 62, Chapter 62, Section 111 - Additional Street Requirements and Section 62-113 – Sidewalks* with the following conditions:

1. Fund 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 plat approval;
2. The plat for the subject site shall include a plat note indicating the variance approval and escrow arrangement;
3. The variance shall expire and escrowed funds shall be refunded to the applicant if the construction of the proposed development does not start within 2 years from the date of approval.

ATTACHMENTS: Application Form, Letter of Requests, Cost Estimate, Proposed Plat, Vicinity Aerial Map, Zoning Map, Major Thoroughfare Plan Map, Proposed Site Plan, and Development Agreement.

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 _____**

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

SUBDIVISION VARIANCE APPLICATION

SITE INFORMATION

Project Name: Manvel ER

Site Address or Legal Description: 17626 Higway 6 Manvel TX 77578

Parcel/Tax ID# (s): 767427 Property Platted: YES ☐ NO ☒

Current Zoning: LC Total Acreage: 1.5491 Total Lots: 1

Project Description: Part of lot 233, H.T. & , RR CO Survey, Section 65 Abstract No. 285

OWNER & APPLICANT INFORMATION

Applicant Name: Amir Bashiri Company Name: Brazos Real Estate Holdings, LLC

Address: 1006 W. 22nd St City: Houston State: TX Zip: 77008

Phone #: Email:

Owner Name: Brazos Real Estate Holdings, LLC Company Name: Brazos Real Estate Holdings, LLC

Address: 1006 W. 22nd St City: Houston State: TX Zip: 77008

Phone #: Email:

SUBDIVISION VARIANCE INFORMATION

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

Request for escrow for future road south in 40' ROW (Sec .62.5)

Are there special circumstances or conditions affecting the property?

See Attachment A

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

yes- no access is planned to this existing right of way from the 1.54 AC tract or other northerly tracts.

(1)

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- it is not a benefit to thie public and not a benefit to the adjacent property owner of this location with the present location of the right of way.

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.

X Agent REKHA Emery 10.1.25

Applicant Signature Date

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)
(1) Completed Subdivision Variance Application (with all signatures)	✓
(2) 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)	✓
(3) Two (2) Copies of Recorded Plat (if platted)	✓
(4) Two (2) Copies of Legal Description (metes & bounds if not platted)	✓
(5) Two (2) Copies of Proposed Plat	✓
(6) Letter of Authorization (if applicable)	✓
(7) PDF format on disc containing all application documents rotated and formatted	✓
(8) Paid Application Fee of $500.00 (non-refundable)	✓
(9) Exhibit Street and Estimated Cost (2)	✓

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.

(X) _____ agent 10.1.25

Applicant Signature Date

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

LETTER OF AUTHORIZATION

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

Amir Bashiri
Owner Name

1006 W. 22nd St
Owner Address

Houston TX 77008
Owner City, State Zip

09/30/2025
Date

Development Services Department
20025 Highway 6
Manvel, TX 77578

Dear City of Manvel Development Services,

I, Amir Bashiri, certify that I am the owner of the project property located at _____ 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 John H English with the company REKHA ENGINEERING, INC. (if applicable) to act as my representative for this application. 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 variance request – up to and including rejecting the application and forfeiting any fees paid.

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

Sincerely,

Owner Name Amir Bashiri

Owner Signature Amir Bashiri

REKHA ENGINEERING, INC.
CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS

ATTACHMENT A

Hardships for the proposed variance for construction of roadway

The existing 40 foot wide right of way (ROW) was dedicated in 1912 by plat and based on today developments which has occurred in the area of this 40 foot ROW does not benefit the public based on:

a) Right Of Way connection into Highway 6 at angle
b) Right Of Way Ends at a Brazoria Drainage Ditch No. 4 which will require the city to build a bridge
c) Does not provide the proper circulation of a public street to benefit the development tract to the south and other adjacent tracts
d) Construction of the roadway at this location based on just the length of the south property line (544') of our 1.5 acre tract cannot provide proper drainage and detention within the 40° Right Of Way to outfall into the Brazoria Drainage Ditch No. 4 ditch. For a detention pond, 15' berms would be required on both sides minimum so 40' wide minus 15' berms x 2 leaves 10' wide strip for detention.
e) Additional offsite right of way is needed from Existing Sonic Restaurant and others adjoins this Right Of Way
f) City of Manvel and this Right Of Way does not benefit the zoning of projects in this area where the 1912 Right of Way exist
g) Only site that would benefit the exist Right of Way is the southern tract for no access to north tract could connect

TBPE FIRM NO. F-3712 TBPLS FIRM NO. 10133800
7676 HILLMONT ST. SUITE 350 - HOUSTON, TEXAS 77040
PHONE: (Website: www.rekhaengineering.com

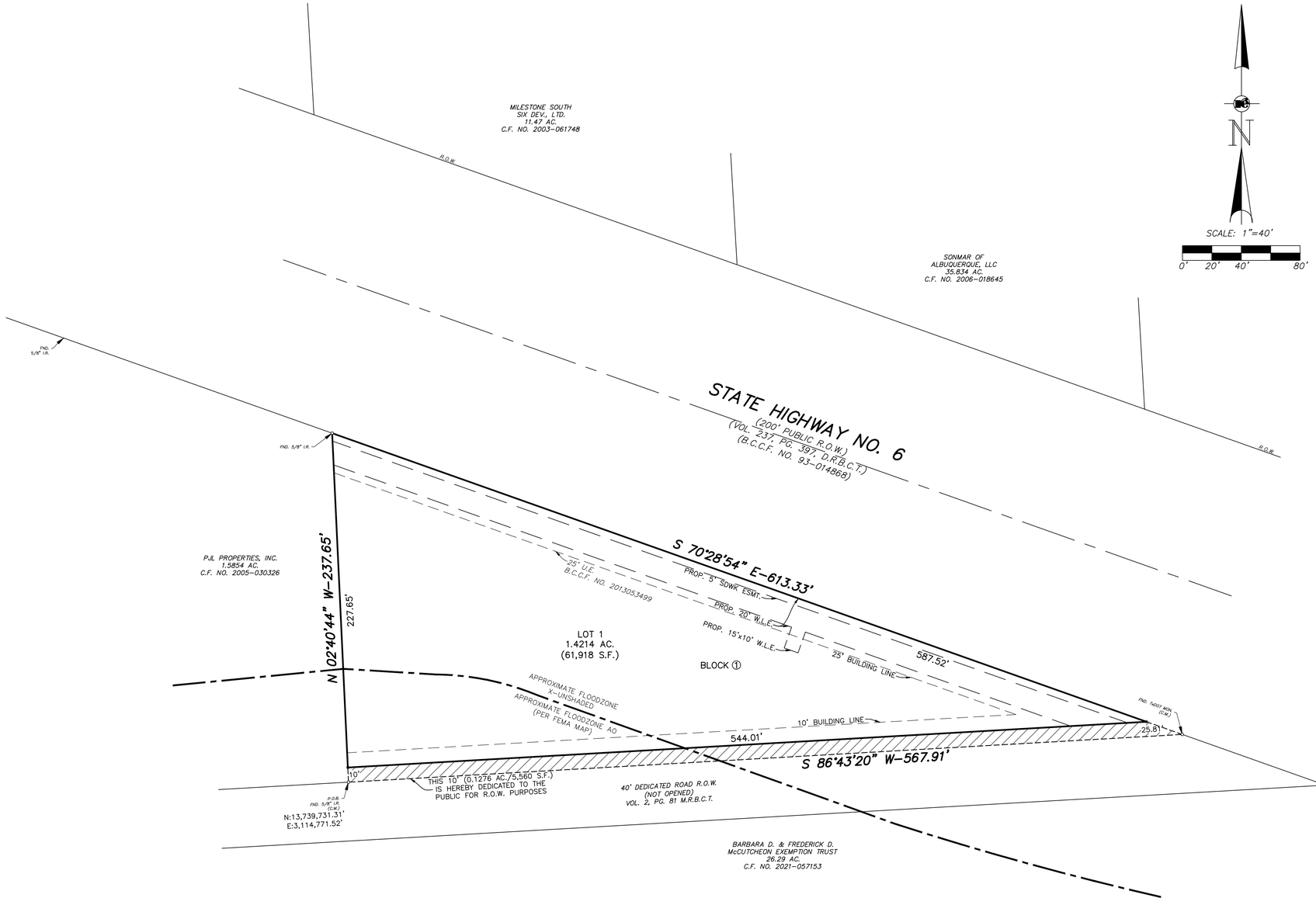
COST ESTIMATE

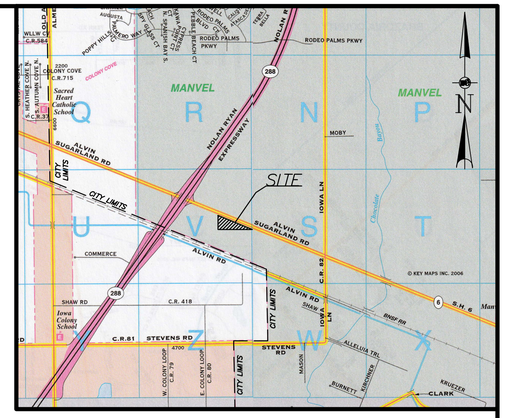
SECTION I - PAVING

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	Concrete Pavement (7")	SY	847	$52.00	$44,044.00
2	6" Lime Stabilized Subgrade	SY	970	$4.00	$3,880.00
3	Reinforced Concrete Curb (6")	LF	544	$6.00	$3,264.00
4	Excavation	CY	485	$2.00	$970.00
5	Lime (55LBS/SY)	TON	27	$245.00	$6,615.00
6	5' Wide Sidewalk	SY	302	$50.00	$15,100.00
7	Street Sign	EA	1	$500.00	$500.00
				Subtotal of Section I	**$74,373.00**

SECTION II - STORM SEWER

8	Trench Safety (5' to 10')	LF	250	$3.00	$750.00
9	Reinforced Concrete Pipe, C76, Class III, Rubber Gasket (24")	LF	250	$75.00	$18,750.00
10	Type C Inlet	EA	1	$3,500.00	$3,500.00
11	24" Plug	EA	1	$500.00	$500.00
12	Clearing & Grubbing	AC	0.37	$2,000.00	$740.00
13	Stake Centerline & Set TBM	LS	1	$2,000.00	$2,000.00
14	Reinforced Filter Fabric Barrier (60% of unit cost for furnish and installation and 40% of unit cost for removal)	LF	544	$3.50	$1,904.00
15	Testing Services	LS	1	$2,000.00	$2,000.00
16	Hydromulch Street ROW	AC	0.11	$4,500.00	$495.00
17	Striping & Buttons	LS	1	$1,500.00	$1,500.00
18	Inlet Protection Barrier (Stage 1, With Fiber Rolls; 60% of unit cost for furnish and installation, and 40% of unit cost for removal)	LF	16	$70.00	$1,120.00
19	Stabilized Construction Access (Type 1-Rock; 60% of unit cost for furnish and installation, and 40% of unit cost for removal))	EA	1	$15.00	$15.00
20	Concrete Truck Washout Structures (60% of unit cost for furnish and installation, and 40% of unit cost for removal)	LS	1	$1,000.00	$1,000.00
21	Inlet Protection Barrier (For Stage II Inlets, Gravel Bags; 60% of unit cost for furnish and installation, and 40% of unit cost removal)	LF	16	$5.00	$80.00
				Subtotal of Section II	**$34,354.00**
				Total Cost	**$108,727.00**





VICINITY MAP

SCALE: 1"=1/2 MILE
KEY MAP NO. 652V
ZIP CODE: 77578

LEGEND

AC.	ACRES
A.E.	AERIAL EASEMENT
B.C.C.F. NO.	BRAZORIA COUNTY CLERK'S FILE NUMBER
C.M.	CONTROLLING MONUMENT
D.R.B.C.T.	DEED RECORDS OF BRAZORIA COUNTY, TEXAS
ESMT.	EASEMENT
FND.	FOUND
I.R.	IRON ROD
MON.	MONUMENT
M.R.B.C.T.	MAP RECORDS BRAZORIA COUNTY, TEXAS
NO.	NUMBER
O.R.B.C.T.	OFFICIAL RECORDS OF BRAZORIA COUNTY, TEXAS
P.O.B.	POINT OF BEGINNING
P.R.B.C.T.	PLAT RECORDS OF BRAZORIA COUNTY, TEXAS
PROP.	PROPOSED
R.O.W.	RIGHT OF WAY
SDWK.	SIDEWALK
S.F.	SQUARE FEET
T.B.M.	TEMPORARY BENCH MARK
TxDOT	TEXAS DEPARTMENT OF TRANSPORTATION
U.E.	UTILITY EASEMENT
VOL., PG.	VOLUME, PAGE
W.L.E.	WATER LINE EASEMENT

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NO. 48039C0110K, REVISED DATE DECEMBER 30, 2020, THE SUBJECT PROPERTY LIES WTHIN ZONE X (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AND ZONE AO, FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOOD ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.

100 YEAR FLOOD ELEVATION (BFE) = 52.00'
500 YEAR FLOOD ELEVATION (DFE) = 52.25'

BENCHMARK – NGS MONUMENT No. AW5684, LOCATED IN MANVEL, AT THE JUNCTION OF THE GULF, COLORADO AND SANTA FE RAILROAD AND FARM ROAD 1128, 17.2 METERS (56.4 FT) NORTHWEST OF THE CENTERLINE OF THE ROAD, 5.0 METERS (16.4 FT) SOUTHWEST OF THE SOUTHWEST RAIL, 4.6 METERS (15.1 FT) WEST OF THE NORTHWEST CORNER OF A 6 BY 6-FOOT METAL BUILDING, 1.4 METERS (4.6 FT) WEST OF A UTILITY POLE. NOTE--ACCESS TO DATUM POINT IS HAD THROUGH A 5-INCH LOGO CAP. ELEVATION IS 53.49 FEET, NAVD 1988 DATUM, 2001 ADJUSTMENT..

TEMPORARY BENCHMARK (TBM) – THE TOP OF RIM ELEVATION OF A SANITARY MANHOLE LOCATED AT THE NORTHERLY WEST POINT OF THE SUBJECT TRACT, ALONG THE THE SOUTH R.O.W. OF STATE HIGHWAY NO. 6, IN FRONT OF SONIC DRIVE IN, 17518 STATE HIGHWAY NO. 6, MANVEL, TEXAS 77578, ELEVATION IS 55.25 FEET, NAVD 1988 DATUM, 2001 ADJUSTMENT.

FINAL PLAT
OF

MANVEL MEDICAL

A SUBDIVISION OF A 1.5491 ACRES
SITUATED IN THE H.T. & B. R.R. COMPANY SURVEY, SECTION 65, ABSTRACT 285, BEING THAT PORTION OF LOT 233, EMIGRATION LAND COMPANY SUBDIVISION, THEREOF RECORDED IN VOLUME 2, PAGE 81, PLAT RECORDS OF BRAZORIA COUNTY, TEXAS

SCALE: 1"=40' 1 BLOCK 1 LOT DATE: SEPTEMBER 11, 2025

OWNER:
BRAZOS REAL PROPERTY HOLDINGS, LLC, a Texas limited liability company
AMIR BASHIRI, PRESIDENT
1006 W. 22ND STREET
HOUSTON, TEXAS 77088
(832) 428-7740

PREPARED BY
CIVIL ENGINEERING AND LAND SURVEYING FIRM:

REKHA ENGINEERING, INC.
7676 Hillmont Street, Suite 350
Houston, Texas 77040
713-895-8080
713-895-8081
Job No.: 1123-4541
TBPLS FIRM NO. 10133800
TBPE NO. F-3712
Contact: John H. English, Sr. Vice President
jake1@pdq.net

File Info: L:\V541 BBH- Manvel Medical ER - Hwy 6 & of Hwy 288 - civil-survey\FLAT\V541-PLAT.dwg Sep 12, 2025 - 1:13pm CAD2

STATE OF TEXAS
COUNTY OF BRAZORIA

KNOW ALL MEN BY THESE PRESENTS:

WE, Brazos Real Property Holdings, LLC, acting by and through Amir Bashiri, President, hereinafter referred to as owners of the property subdivided in the above and foregoing plat of MANVEL MEDICAL, a subdivision consisting of 1.5491 acres, a subdivision in Brazoria County, Texas, do hereby make subdivision of said property, according to the lines, lots, streets, alleys, reserves, parks, and easements as shown hereon and dedicate for public use as such the streets, alleys, parks, and easements shown hereon forever, and do hereby waive all claims for damages occasioned by the establishment of grades as approved for the streets and drainage easements dedicated, or occasioned by the alteration of the surface, or any portion of the streets or drainage easements to conform to such grades, and do hereby bind ourselves, our heirs, successors and assigns to warrant and defend the title to the land so dedicated.

FURTHER, owners have dedicated and by these presents do dedicate to the use of the public, for public utility purposes forever, unobstructed aerial easements. The aerial easements shall extend horizontally an additional eleven feet, six inches (11' 6") for ten feet (10' 0") perimeter ground easements or seven feet, six inches (7' 6") for fourteen feet (14' 0") perimeter ground easements or five feet, six inches (5' 6") for sixteen feet (16' 0") perimeter ground easements, from a plane sixteen feet (16' 0") above ground level upward, located adjacent to and adjoining said public utility easements that are designated with aerial easements (U.E. and A.E.) as indicated and depicted hereon, whereby each aerial easement totals twenty-one feet, six inches (21' 6") in width.

FURTHER, owners have dedicated and by these presents do dedicate to the use of the public, for public utility purposes forever, unobstructed aerial easements. The aerial easements shall extend horizontally an additional ten feet (10' 0") back-to-back ground easements, or eight feet (8' 0") for fourteen feet (14' 0") back-to-back ground easements or seven feet (7' 0") for sixteen feet (16' 0") back-to-back ground easements, from a plane sixteen feet (16' 0") above ground level upward, located adjacent to both sides and adjoining said public utility easements that are designated with aerial easements (U.E. and A.E.) as indicated and depicted hereon, whereby each aerial easement totals thirty feet (30' 0") in width.

FURTHER, owners do hereby make and establish said subdivision according to the easements, lines, lots, and notations thereof shown and designate said subdivision as MANVEL MEDICAL, and do hereby bind ourselves, our heirs, successors, and assigns to warrant and forever defend the title to the land so dedicated.

FURTHER, owners of the property subdivided in the above and foregoing plat of MANVEL MEDICAL, have complied with, or will comply with, the existing regulations heretofore on file and adopted by the City of Manvel, Brazoria County, Texas.

IN TESTIMONY HERETO, Brazos Real Property Holdings, LLC, has caused these presents to be signed by Amir Bashiri, President, this _____ day of _____, 2025.

By: _____
Brazos Real Property Holdings, LLC
Amir Bashiri, President

STATE OF TEXAS
COUNTY OF BRAZORIA

BEFORE ME, the undersigned authority, on this day personally appeared Amir Bashiri, President, known to me to be the person whose name is subscribed to the above and foregoing instrument and acknowledged to me that one executed the same for the purposes and considerations therein.

Given under my hand and seal of office,
this ___ day of _____, 2025.

_____
Notary Public
in and for the State of Texas
Commission Expires _____

CERTIFICATE OF SURVEYOR

I, Todd J. Slaton, am registered under the laws of the State of Texas to practice the profession of surveying and hereby certify that all bearings, distances, and other associated boundary information on the above subdivision is true and correct; was prepared from an actual survey of the property made under my supervision on the ground; that all boundary corners, angle points, points of curvature and other points of reference have been marked with iron (or other permanent metal) pipes or rods having an outside diameter of not less than three-quarter inch and a length of not less than three (3) feet unless otherwise noted, and that the plat boundary corners have been tied to the nearest survey corner.

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

_____
Todd J. Slaton
Registered Professional Land Surveyor
Texas Registration No. 5082

STATE OF TEXAS · REGISTERED · TODD J. SLATON · 5082 · PROFESSIONAL · LAND SURVEYOR

CITY OF MANVEL CERTIFICATION

This is to certify that this is a minor plat under the provisions of the Texas Local Government Code Section 212.0065 and meets all the requirements of the subdivision ordinance of the City of Manvel. The City of Manvel has approved this plat of Manvel Medical as shown hereon and authorizes the recording of this plat this ____ day of _____, 2025.

_____
Daniel S. Johnson,
City Manager

LOT 1
1.5491 ACRES OF LAND
LOCATED IN THE H.T. & B. R.R. COMPANY SURVEY, SECTION 65,
ABSTRACT NO. 285
CITY OF MANVEL,
BRAZORIA COUNTY, TEXAS

FIELD NOTES DESCRIPTION OF 1.5491 ACRES LOCATED IN THE H.T. & B. R.R. COMPANY SURVEY, SECTION 65, ABSTRACT 285, BRAZORIA COUNTY, TEXAS, BEING THAT PORTION OF LOT 233, EMIGRATION LAND COMPANY SUBDIVISION AS SHOWN ON THE PLAT THEREOF RECORDED IN VOLUME 2, PAGE 81, PLAT RECORDS OF BRAZORIA COUNTY, TEXAS, LYING SOUTHERLY OF STATE HIGHWAY 6 RIGHT- OF- WAY, AND BEING THE RESIDUE OF A CALLED 2.323 ACRE TRACT CONVEYED BY DEED FROM LOWELL E. ROBERTS AND WIFE, JANIE L. ROBERTS TO TWO THIRTY-THREE ASSOCIATES, LTD., DATED DECEMBER 30, 1982, AS RECORDED IN VOLUME 1686, PAGE 947, DEED RECORDS OF BRAZORIA COUNTY, TEXAS, SAVE AND EXCEPT THAT CALLED 0.769 ACRES TAKEN FOR THE WIDENING OF SAID STATE HIGHWAY 6 AS SHOWN ON RIGHT-OF-WAY SKETCH CSJ0192-02 DATED MARCH 1990 (THIS TAKING IS AS SET FORTH HEREIN), SAID 1.5491 ACRES BEING DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING at a 5/8 inch iron rod found on the North line of a 40 foot road, dedicated per above said plat (road not open) at the Southwest corner of said Lot 233, the Southwest corner of said 2.323 acre tract, and the Southeast corner of a called 1.5458 acre tract conveyed to PJ PROPERTIES, INC., as recorded under Brazoria County Clerk's File No. 2005030326;

THENCE NORTH 02°40'44" WEST, with the West line of said Lot 233 and said 2.323 acre tract, same being the East line of said Lot 234 and said 1.5458 acre tract, a distance of 237.65 feet to a 5/8 inch iron rod found on the Southerly right-of-way line of State Highway 6, (200' R.O.W.);

THENCE SOUTH 70°28'54" EAST, along said right-of-way line, a distance of 613.33 feet to a Texas Department of Transportation disk in concrete for corner;

THENCE SOUTH 86°43'20" WEST, with the South line of said Lot 233, same being the North line of said 40 foot road, a distance of 567.91 feet to the PLACE OF BEGINNING and containing 1.5491 acres of land, more or less.

NOTES:

1. Building permits: electrical, plumbing construction, culvert, etc. are purchased at City Hall, City of Manvel, Texas.

2. No structures shall be built that impede the flow of existing drainage and fences will not be allowed to obstruct/cross drainage or detention easements.

3. Any Development of this tract will require an approved drainage plan.

4. In accordance with Section 212.046 of the Texas Local Government Code, any improvements to this property are subject to the City of Manvel's building codes and ordinances therefore permits will be required.

5. All corners are set 1/2 inch iron rods unless otherwise noted..

6. Minimum Finished Floor Elevation will be required to meet the City Ordinances in place at the time of Development.

7. The development regulations and city permits are required on all property.

8. Building permits will not be issued until all storm drainage improvements, which may include detention ponds, have been constructed.

9. Plat will expire in two years after final approval by city manager if construction of the improvements has not commenced within the two-year initial period or the one-year extension period granted by Planning Development and Zoning Commission.

10. Boundary closure is a minimum of 1:15,000.

11. According to the Federal Emergency Management Agency Flood Insurance Rate Map No. 48039C0110K, revised date December 30, 2020, the subject property lies within Zone X (unshaded), areas determined to be outside the 0.2% annual chance floodplain and Zone AO, flood depths of 1 to 3 feet (usually sheet flood on sloping terrain); average depths determined. for areas of alluvial fan flooding, velocities also determined.

100 year flood elevation (BFE) = 52.00'
500 year flood elevation (DFE) = 52.25'

12. Any governmental body for purposes of drainage work may use drainage easements and fee strips provided the district is properly notified.

13. Permanent structures, including fences and permanent landscaping, shall not be erected in a drainage easement or fee strips.

14. Property in this plat lies in the City of Manvel, Alvin ISD and Brazoria County Drainage District #4.

15. This plat has been prepared to meet the requirements of the State of Texas, Brazoria County and the City of Manvel from the information provided by Texas American Title Company, File Number 2791025-03049, effective date April 3, 2025 and dated April 10, 2025.

16. All bearings are based on the survey prepared by Adams Surveying Co., dated March, 2008.

17. There is no evidence of any pipelines within the boundary of this property.

18. All lots and reserves shall have a minimum side and rear building setbacks as specified in Chapter 77-Zoning of the City Code of Ordinances.

19. Request for Variance ID# 23-000043 waiving the requirement for the Applicant to show a North arrow on this plat was approved by the Districts Board of Commissioners on 05/03/2023.

20. Brazos Real Property Holdings, LLC will be responsible for the maintenance of the detention pond(s) shown on this Drainage Plan/Plat.

21. Sidewalks shall be constructed as part of the issuance of a building permit for each tract.

22. All landscaping and structures, including fences at intersections shall conform to the City of Manvel and AASHTO site distance requirements for motorists.

23. Utility easement 22' in width granted to Houston Lighting & Power Company, filed for record under Volume 780, Page 536, of the Deed Records of Brazoria County, Texas, cannot be shown as it does not apply to this property.

24. Benchmark – NGS Monument No. AW5684, located in Manvel, at the junction of the Gulf, Colorado and Santa Fe Railroad and Farm Road 1128, 17.2 meters (56.4 ft) northwest of the centerline of the road, 5.0 meters (16.4 ft) southwest of the southwest rail, 4.6 meters (15.1 ft) west of the northwest corner of a 6 by 6-foot metal building, 1.4 meters (4.6 ft) west of a utility pole. note-access to Datum point is had through a 5-inch logo cap. elevation is 53.49 feet, NAVD 1988 Datum, 2001 adjustment..

Temporary Benchmark (TBM) – the top of rim elevation of a sanitary manhole located at the northerly west point of the subject tract, along the the south R.O.W. of State Highway No. 6, in front of Sonic Drive in, 17518 State Highway No. 6, Manvel, Texas 77578, elevation is 55.25 feet, NAVD 1988 Datum, 2001 adjustment.

25. All grid coordinates are referenced to the Texas State Plane Coordinate System, South Central Zone, NAD83.

APPROVED BY THE BOARD OF COMMISSIONERS ON _____.

_____
Brazoria Drainage District No. 4

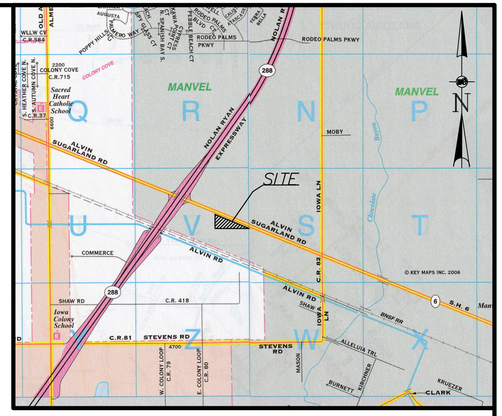
_____
District Engineer

THE SIGNATURES ABOVE ARE EVIDENCE THAT THE DISTRICT'S BOARD OF COMMISSIONERS APPROVED THIS SUBMISSION ON THE DATE PROVIDED ABOVE BASED UPON THE RECOMMENDATION OF THE DISTRICT'S ENGINEER WHO HAS REVIEWED THE SHEETS PROVIDED AND FOUND THEM TO BE IN GENERAL COMPLIANCE WITH THE DISTRICT'S "RULES, REGULATIONS, AND GUIDELINES". THE APPROVAL OF A FINAL DRAINAGE PLAN OR REQUEST FOR VARIANCE WILL TYPICALLY EXPIRE ONE YEAR AFTER THE DATE OF BOARD APPROVAL. THE APPROVAL OF A DRAINAGE IMPACT ANALYSIS, MASTER DEVELOPMENT PLAN, OR FINAL PLAT WILL TYPICALLY EXPIRE TWO YEARS AFTER THE DATE OF APPROVAL. SEE SECTION 12 IN THE DISTRICT'S RULES, REGULATIONS, AND GUIDELINES FOR ADDITIONAL INFORMATION REGARDING THE EXPIRATION OF APPROVALS. AFTER EXPIRATION, RE-APPROVAL IS REQUIRED. PLEASE NOTE THAT THE DISTRICT APPROVAL DOES NOT NECESSARILY MEAN THAT ALL INFORMATION IN THE SUBMITTAL HAS BEEN CHECKED AND VERIFIED. IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY BETWEEN THE DISTRICT'S "RULES, REGULATIONS, AND GUIDELINES" AND THIS APPROVED SUBMITTAL, THE DISTRICT'S "RULES, REGULATIONS, AND GUIDELINES" SHALL PREVAIL. ANY BOARD APPROVED DEVIATIONS FROM DISTRICT CRITERIA SHALL BE ITEMIZED ON THE COVER PAGE AND OTHER APPROPRIATE SHEETS. ANY SUBMITTAL PREPARED BY A PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR HAS TYPICALLY BEEN SIGNED AND SEALED BY THAT LICENSED PROFESSIONAL. THAT SIGNATURE AND SEAL CONVEYS RESPONSIBILITY AND ACCOUNTABILITY TO THAT ENGINEER OR SURVEYOR.

BDD4 Ref. ID#: 25-000013.

Brazoria Drainage District No. 4 Notes:

1. Any governmental body for purposes of drainage work may use drainage easements and fee strips provided the DISTRICT is properly notified.
2. Permanent structures, including fences and permanent landscaping, shall not be erected in a drainage easement, access easement or fee strip.
3. Maintenance of detention facilities is the sole responsibility of the owner of the property. The DISTRICT will provide maintenance of regional facilities owned and constructed by the DISTRICT, or sub regional facilities constructed by developer(s) for which ownership has been transferred to the DISTRICT with the DISTRICT'S approval. The DISTRICT is responsible only for the maintenance of facilities owned by the DISTRICT unless the DISTRICT specifically contracts or agrees to maintain other facilities.
4. Contractor shall notify the DISTRICT'S Inspector at least forty-eight (48) hours before beginning work and twenty-four (24) hours before placing any concrete.
5. The DISTRICT'S personnel shall have the right to enter upon the property for inspection at any time during construction or as may be warranted to ensure the detention facility and drainage system are operating properly.
6. Appropriate cover for the side slopes, bottom and maintenance berm shall be established prior to acceptance of the construction by the DISTRICT. At least 95% germination of the grass must be established prior to acceptance of construction by the DISTRICT.
7. Any future development of this property must be in conformance with the DISTRICT'S Rules, Regulations & Guidelines.
8. The DISTRICT'S approval of the Final Drainage Plan (and Final Plat if required) does not affect the property rights of third parties. The developer is responsible for obtaining and maintaining any and all easements, fee strips, and/or any other rights-of-way across third parties' properties for purposes of moving excess runoff to the DISTRICT'S drainage facilities as contemplated by the Final Drainage Plan and Final Plat.
9. Drainage Easements shall be used only for the purposes of constructing, operating, maintaining, repairing, replacing, and reconstructing of a drainage facility, and any and all related equipment and facilities together with any and all necessary incidentals and appurtenances thereto in, upon, over, across, and through the Easement Area. The DISTRICT'S successors, assigns, agents, employees, workmen, and representatives shall at all present and future times, have the right and privilege of ingress and egress in, upon, over, across, and through the Easement Area.
10. Access Easements shall be used for ingress and egress to the DISTRICT'S drainage facilities and shall be kept clear of any and all obstructions.
11. An As-Built Certificate and As-Built Survey are required to be submitted to the DISTRICT before a Certificate of Compliance can be issued. Contact the DISTRICT'S Inspector for further clarification.
12. All drainage plans and plats shall be in conformance with the DISTRICT'S Rules, Regulations & Guidelines. Board approval of a drainage plan or plat does not constitute permission to deviate. Deviation from the DISTRICT'S Rules, Regulations & Guidelines is only authorized and allowed by a separate Request for Variance which was approved by the Board. Any Board approved variance shall be referenced on the plan cover page and on the appropriate sheet where applicable. The use of the term "Guidelines" herein does not affect the mandatory nature of these Rules, Regulations & Guidelines.



VICINITY MAP

SCALE: 1"=1/2 MILE
KEY MAP NO. 652V
ZIP CODE: 77578

FINAL PLAT
OF

MANVEL MEDICAL

A SUBDIVISION OF A 1.5491 ACRES
SITUATED IN THE H.T. & B. R.R. COMPANY SURVEY, SECTION 65, ABSTRACT 285, BEING THAT PORTION OF LOT 233, EMIGRATION LAND COMPANY SUBDIVISION, THEREOF RECORDED IN VOLUME 2, PAGE 81, PLAT RECORDS OF BRAZORIA COUNTY, TEXAS

SCALE: 1"=40' 1 BLOCK 1 LOT DATE: SEPTEMBER 11, 2025

OWNER:
BRAZOS REAL PROPERTY HOLDINGS, LLC, a Texas limited liability company
AMIR BASHIRI, PRESIDENT
1006 W. 22ND STREET
HOUSTON, TEXAS 77088
(832) 428-7740

PREPARED BY
CIVIL ENGINEERING AND LAND SURVEYING FIRM:

REKHA ENGINEERING, INC.
7676 Hillmont Street, Suite 350
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Job No.: 1123-4541
TBPLS FIRM NO. 10133800
TBPE NO. F-3712
Contact: John H. English, Sr. Vice President
jake1@pdq.net

File Info: L:\4541 BBW- Manvel Medical ER - Hwy 6 E of Hwy 288 - civil+survey\PLAT\4541-PLAT.dwg Sep 12, 2025 - 1:12pm CAD2

Manvel ER

Manvel ER

Parcels

City of Manvel ETJ

City of Manvel City Limits

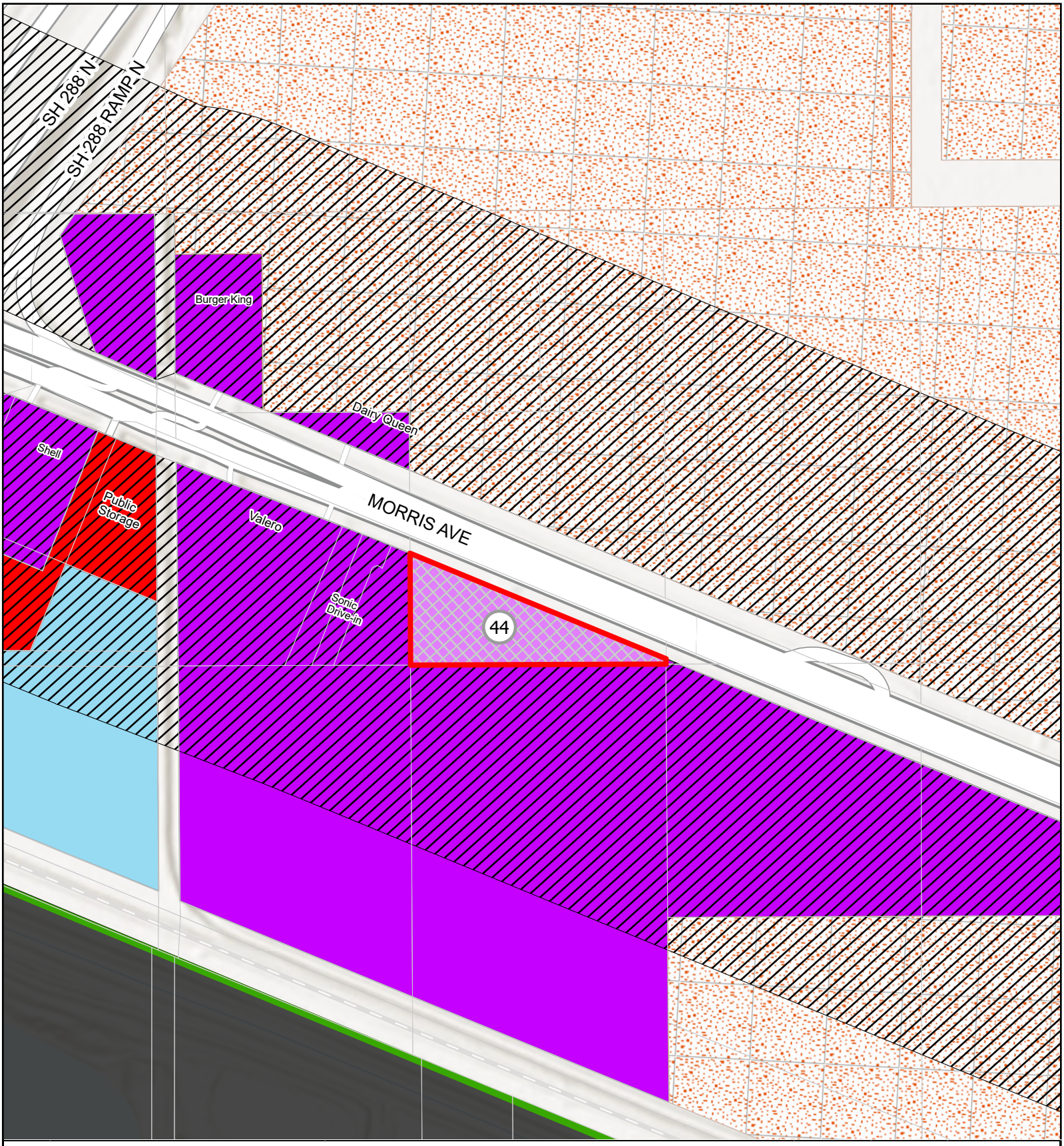
US Feet

0 200 400 800 1,200 1,600

N W E S

This map is made available for reference purposes only and should not be substituted for a survey product. The City of Manvel will not accept liability of any kind in conjunction with its use.

Date: October 2025
Reference: 2025070
Data Source: City of Manvel, Brazoria County Open Data



SPECIFIC USE PERMITS LEGEND

Label No	Address	Specific Use Description	Ordinance No	Effective Date	Zoning Classification
44	17518 Morris Avenue	NAICS use 621493 “Ambulatory health Care Services”	2024-O-26	10/21/2024	LC/SH6-SUP

Manvel ER

- Manvel ER
- Parcels
- City of Manvel ETJ
- City of Manvel City Limits
- Specific Use Permits
- State Highway 6 Overlay District
- Heavy Commercial District
- Light Commercial District
- Multi-Family District
- Planned Unit Development
- Open - Planned Unit Development

US Feet

0 200 400 800 1,200 1,600

N W E S

This map is made available for reference purposes only and should not be substituted for a survey product. The City of Manvel will not accept liability of any kind in conjunction with its use.

Date: October 2025
Reference: 2025070
Data Source: City of Manvel, Brazoria County Open Data

Manvel ER

Parkway (120' ROW)
Proposed Parkway (120' ROW)
Major Thoroughfare (120' ROW)
Manvel ER
Parcels
City of Manvel ETJ
City of Manvel City Limits

N
W E
S

US Feet
0 200 400 800 1,200 1,600

This map is made available for reference purposes only and should not be substituted for a survey product. The City of Manvel will not accept liability of any kind in conjunction with its use.

Date: October 2025
Reference: 2025070
Data Source: City of Manvel, Brazoria County Open Data

SCALE: 1"=20'

0' 10' 20' 40'

N

GENERAL NOTES

1. Location of existing utilities is the responsibility of the contractor and shall be located prior to excavation. Contact the CITY OF MANVEL PERMITS Engineer prior to excavating in existing street right-of-way or easements.

2. All work, materials, services and labor shall conform to the rules and regulations of CITY OF MANVEL criteria governs.

3. All permits to be obtained shall be the responsibility of the contractor unless otherwise specified.

4. All proposed driveways connecting into the road with be in accordance with the rules and regulations of CITY OF MANVEL PERMITS.

5. Contractor to verify all horizontal and vertical locations of all existing utilities which are proposed connection points for proposed utilities prior to commencement of construction. Contractor to contact engineer in writing prior to start of construction and give the engineer 72 hours to respond to contractor if there are any difference in existing conditions which may effect the design of the engineers plan.

6. The location of some utilities were not field verified and were taken from drawings provided by private utility companies. Contractor to verify all locations of all utilities and shall be fully responsible for for any damage to all utility lines.

7. Contractor to contact engineer 72 hours prior to beginning of construction if there are any difference in existing conditions which may effect the design of the engineers plan.

8. Contractor shall make note and avoid contact or damage to any and all overhead power lines.

9. Existing pavement, curbs, sidewalks, and driveways damaged or removed during construction shall be replaced at the contractors expense and to CITY OF MANVEL Standards. If any, all underground storage tanks will be removed prior to construction.

10. All Pipe Quantities shown hereon (pipe lengths) are for the Engineers use Only. It is the Responsibility of the Contractor to Calculate his own quantities for this

PAVEMENT NOTES

11. For paving details, dimensions, etc., see Civil Details Sheet.

12. All curbs to be 6 inches in height from top of curb to gutter.

13. Subgrade shall be test rolled to locate soft spot areas. Soft areas shall be removed and repaired prior to placement of concrete.

14. Concrete to have minimum compressive strength of 3500 psi at 28 days (Note: Control Joint spacing at 15' and Expansion Joint at 60' intervals)

15. Parking Spaces shall be painted white 6" wide by 19'-0" in length or as called on plans.

16. If wet subgrade soils are encountered at the time of construction, use 6% cement by dry weight to stabilize the soils. This results in an application rate of 36 pounds per square yard per 6-inch of compacted thick.

17. Proposed Driveways will be constructed in accordance with TxDOT PERMITS.

18. Demolition and Site Dimension Plan by ARCHITECT.

19. A Topographic Survey and existing utilities for this site was performed by REKHA Engineering, Boundary by Others.

20. Storm Sewer Pipe shall be HDPE with smooth bore and with rubber gasket fittings (onsite) or R.C.P., Type III, C-76 Rubber Gasket Bell (in R.O.W.).

21. The CITY OF MANVEL Spec requires the final 1.0' of soil fill to be "select fill" under pavement.

22. Fill shall be placed in 8" lifts & compacted to 95% Standard Proctor Density prior to construction of pavement. (Typ.)

23. Dowel #5-15" long rebar @ 1 ft into the existing pavement and expose the remaining 1 foot of rebar as part of the pavement pour or top of curb pour. Grout to secure rebar dowel. Sawcut pavement prior to placement.

24. Proposed Filter Fabric Fence to be placed around the perimeter of the site and Sand Bags shall be placed around all inlets at the start of the construction phase and to remain in place until the end.

25. On this civil engineering paving and drainage plan, the horizontal location of all proposed storm lines at the place where they connect to proposed down spouts on the outside face of the building are accurate within five (5) feet (see plumbing plans).

26. All appurtenances or any other structures that are constructed within paved areas, the Rim Elevations are to be equal to the proposed pavement with appropriate block outs to be installed per City of Manvel Standards.

27. On all Proposed Inlets, add Fiber Board where the inlet meets the proposed pavement.

28. All Open Trenches shall confirm to OSHA Safety Standards & per the Design of the Soils Report.

29. All concrete reinforcing steel are to be held up by the highway type saddles WHC or Aztec E-2 or equal TxDOT highway grade saddles.

STATE HIGHWAY NO. 6
(200' R.O.W.)

EX. SANITARY FORCE MAIN

EX. 24" CULVERT

EX. CONC DRWY

EX. POWER POLE
"KB54 25K 8656"
35KV OH 1PH

EDGE OF CONCRETE

EX. CENTERPOINT ENERGY
4" IP PLA. OR STL
GAS MAIN

R.O.W.

PROP. 5' PUBLIC SDWK ESMT

PROP. 20' PUBLIC W.L.E.

25' B.L.

S70° 28' 54"E 587.52'

N02° 40' 44"W 227.65'

1.4214 AC.
(61,918 S.F.)

SURYA ACQUISITIONS, LLC.
C.F. NO. 2007-045744

PROPOSED
1 STORY - EMERGENCY
CENTER
(BLDG FINISH FLOOR=56.00)
APPROX. TOTAL GROSS SF:
7,700 S.F

DUMPSTER

AMBULANCE ENTRY

GENERATOR

HIGHBANK

TOE OF BANK

FLOWLINE

TOE OF BANK

HIGHBANK

EX. SANITARY FORCE MAIN

OVERHEAD POWER

FND. TxDOT MON.

10' B.L.

2' FROM ROW

5' SDWK.

9'

14' CONC. PVMT.

10' R.O.W. DEDICATION (BY PLAT)

250LF~24" RCP @ 0.25%

24" PLUG

7" CONC. PVMT. W/LIME STABILIZED SUBGRADE

30' TO THE CL OF PVMT.

CL OF PVMT.

60' MAX.

"C" INLET

S86° 43' 20"W 544.01'

544'

40' DEDICATED ROAD R.O.W.
(NOT USED)
VOL. 2, PG. 81 B.C.M.R.

30'

APPROXIMATE FLOODZONE X-UNSHADED

APPROXIMATE FLOODZONE AO
(PER FEMA MAP)

NOTE:
ALL UTILITIES SHOWN HEREON ARE BASED ON ABOVE GROUND OBSERVATIONS ONLY. FOR UTILITY IN THE AREA CALL 1-800-DIG-TESS.

NOTE:
ALL EXISTING LINES UNDERGROUND (SANITARY, WATER, STORM, OPTIC, GAS, ETC...) SHALL BE LOCATED AND EXPOSED PRIOR TO ANY NEW CONSTRUCTION OF THE STORM, WATER, SANITARY, ETC. TO CONFIRM FLOWLINE AND HORIZONTAL ELEVATIONS AND LOCATIONS. (PER NOTE 5) ALL FLOWLINES WILL BE PROVIDED TO ENGINEER

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE TO INSURE OWNER THAT ALL PROPERTY CORNERS ARE TO REMAIN DURING ALL OF DEMOLITION. CONTRACTOR TO REPLACE AT HIS OWN EXPENSE ANY PROPERTY CORNERS DESTROYED OR DISTURBED DURING DEMOLITION OR CONSTRUCTION OF THE SITE IMPROVEMENTS.

NOTE:
THESE PLANS, PREPARED BY REKHA ENGINEERING INC. DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REKHA ENGINEERING INC. REGISTERED PROFESSIONAL ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY THE "HOUSE BILLS 662 AND 665" ENACTED BY THE TEXAS LEGISLATURE IN THE 70th LEGISLATION - REGULAR SESSION.

PROVIDE A 1-INCH DEPRESSION PER EVERY 1-FOOT OF TRANSVERSE SLOP WITH REDWOOD HEADERS SPACED EVERY 40 FEET

DOWNSTREAM PIPE, DITCH OR SYSTEM WILL NOT BE ADVERSELY IMPACTED BY CONSTRUCTION AND DEVELOPMENT

ACCESSIBILITY SLOPE REQUIREMENTS:
LANDINGS: 1:50 MAX. SLOPE ANY DIRECTION.
ACCESSIBLE PARKING AISLE AND SPACE: 1:50 MAX. SLOPE ANY DIRECTION.
ACCESSIBLE ROUTE: 1:20 MAX. RUNNING SLOPE, 1:48 MAX CROSS SLOPE.

ALL CONSTRUCTION SHALL BE CONSTRUCTED ACCORDING TO ALL CRITERIA OF THE CITY OF MANVEL PERMITS

ALL PROPOSED CONSTRUCTION SHALL CONFORM TO THIS REFERENCED SET OF CONSTRUCTION PLANS, DETAILS, AND ANY AND ALL PERMITS ISSUED BY ANY GOVERNMENT AGENCY FOR THIS REFERENCED PROJECT.

NOTE:
1 STORM PUMP FOR COMMERCIAL DEVELOPMENT
2 NO RESIDENCE WITHIN 1,000 FEET
3 A BACK UP GAS GENERATOR PROVIDED FOR PUMP FACILITY
4 50% PUMP, 50% GRAVITY
5 BDD #4 APPROVAL FOR PUMP STATION
6 MAINTENANCE OF PUMP BY OWNER

LEGEND

PROP. 14' PAVEMENT

BENCHMARK

BENCHMARK – NGS MONUMENT No. AW5684, LOCATED APPROXIMATELY 17.2 METERS NORTHWEST OF THE JUNCTION OF THE GULF, COLORADO AND SANTA FE RAILROAD AND FM 1128. NAVD 88, ELEVATION OF 53.49

TEMPORARY BENCHMARK (TBM) – THE TOP OF RIM ELEVATION OF A SANITARY MANHOLE LOCATED AT THE NORTHLERY WEST POINT OF THE SUBJECT TRACT, ALONG THE THE SOUTH R.O.W. OF STATE HIGHWAY NO. 6, IN FRONT OF SONIC DRIVE IN, 17518 STATE HIGHWAY NO. 6, MANVEL, TEXAS 77578, TBM HAS AN ELEVATION OF 55.25'

FLOOD PLAIN: ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP NO. 48039C0110K, REVISED DATE DECEMBER 30, 2020, THE SUBJECT PROPERTY LIES WITHIN ZONE X (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AND ZONE AO, FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOOD ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED.
100 YEAR FLOOD ELEVATION (BFE) = 52.00'
500 YEAR FLOOD ELEVATION (BFE) = 52.25'

MANVEL EMERGENCY CENTER

17626 HWY 6, MANVEL, TEXAS 77578

REVISIONS

REV.	DESCRIPTION	DATE

EXHIBIT FOR FUTURE PAVEMENT AND DRAINAGE INFRASTRUCTURE IN STREET ROW

SCALE: 1"=20'

DATE: 09/23/25

REKHA ENGINEERING INC.

CIVIL ENGINEERS AND LAND SURVEYORS
7676 Hillmont St, Suite 350
Houston, Texas 77040
Phone: 713-895-8080/81
Email: jake1@pdq.net
Website: www.rekhaengineering.com
CONTACT: JOHN H. ENGLISH SR. VICE PRESIDENT

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TBPLS No. 10133800 | TBPE No. F-3712

DRAWN BY: AMM | CHECKED BY: JHE

APPROVED BY: DNE | JOB No. 1123-4541

CLIENT: BB+W ARCHITECTS

SHEET No. C1

file info: P:\Work\4541\Exhibit\4541Exhibit.dwg Sep 26, 2025 ninth

MANVEL
PD&Z COMMISSION
DATA SHEET

MEETING DATE: October 27, 2025

TOPIC: Public Hearing followed by consideration of 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 BCS Capital Group, 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 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.

Additional details and staff analysis are included in the attached staff report.

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.

ATTACHMENTS: Staff Report, proposed PUD document, proposed Traffic Impact Analysis

FUNDING ISSUES

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

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

STAFF REPORT TO PLANNING, DEVELOPMENT, AND ZONING COMMISSION

Planned Unit Development

Agenda of:	October 27, 2025	**Initiated By:**	Jose Abraham Director, Development Services
Subject:	Establishing a PUD with State Highway 6 Overlay (PUD/SH6)	**Presented By:**	Jose Abraham Director, Development Services
Recommended Action:	A Public Hearing followed by consideration and action to provide a recommendation to City Council.		

SUMMARY

The subject site, located at the northwest corner of Kirby Drive and State Highway 6/Morris Avenue (Property IDs: 1676950 & 167695), 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 in size, is currently undeveloped and located outside the City limits within Manvel's Extraterritorial Jurisdiction (ETJ). The applicant, EHRA Engineering, on behalf of the property owner, BCS Capital Group, is requesting annexation of the subject tract into the City of Manvel and the establishment of a Planned Unit Development (PUD) district. The proposed PUD, titled "Manvel Crossing," is intended to facilitate a mixed-use commercial development that includes light commercial uses such as hotels, retail, offices, and restaurants. 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.

Staff Recommendation: Staff supports the approval of a PUD for the subject site upon annexation, however, the proposed PUD document requires changes for staff to recommend approval.

EXHIBITS

Aerial Vicinity Map, Zoning Vicinity Map, Major Thoroughfare Plan Map, Letter of Request, and Public Hearing Notice. (Attachment – Survey, Service unit equivalency, PUD application, proposed TIA)

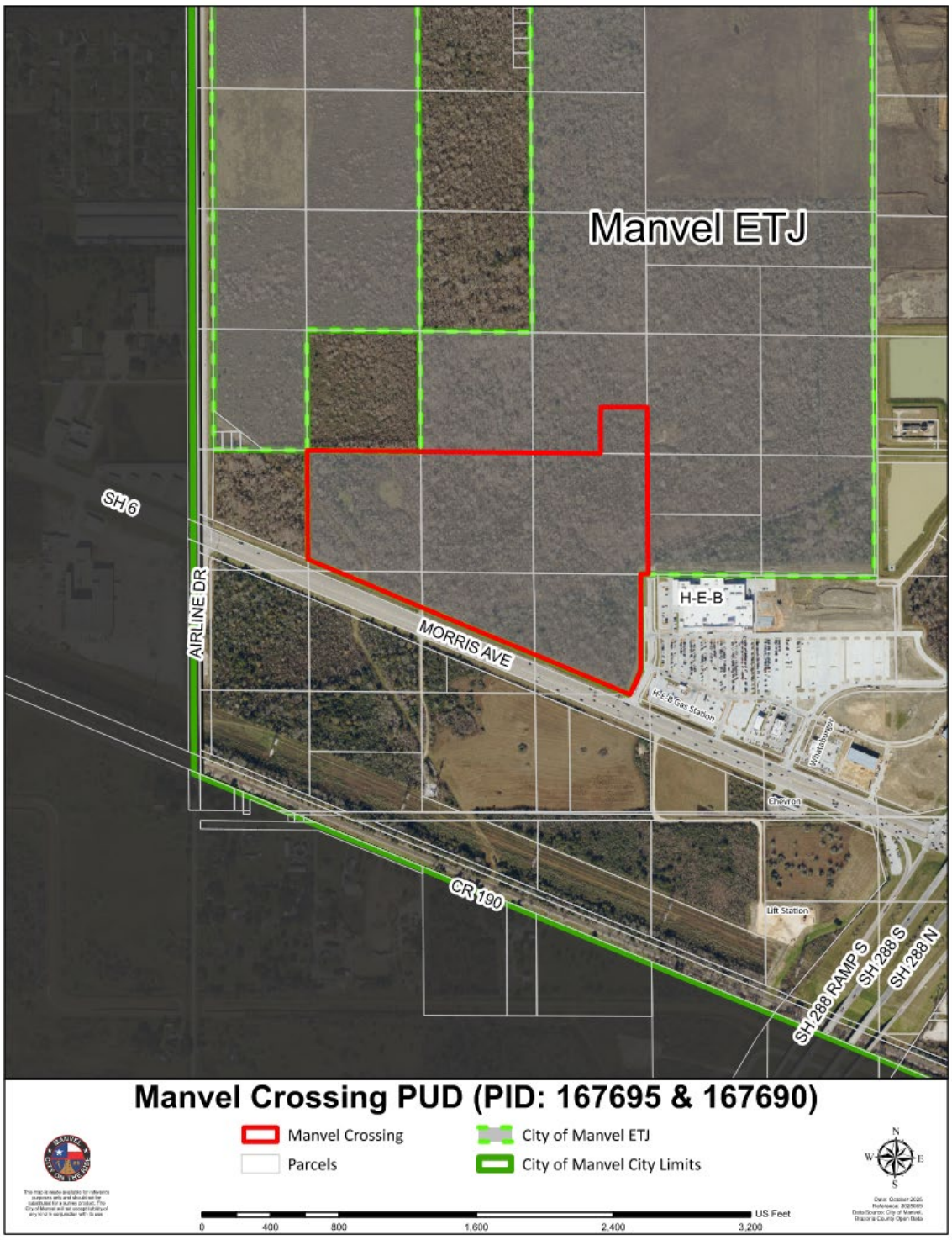
GENERAL SITE INFORMATION

The following is a summary of general site information.

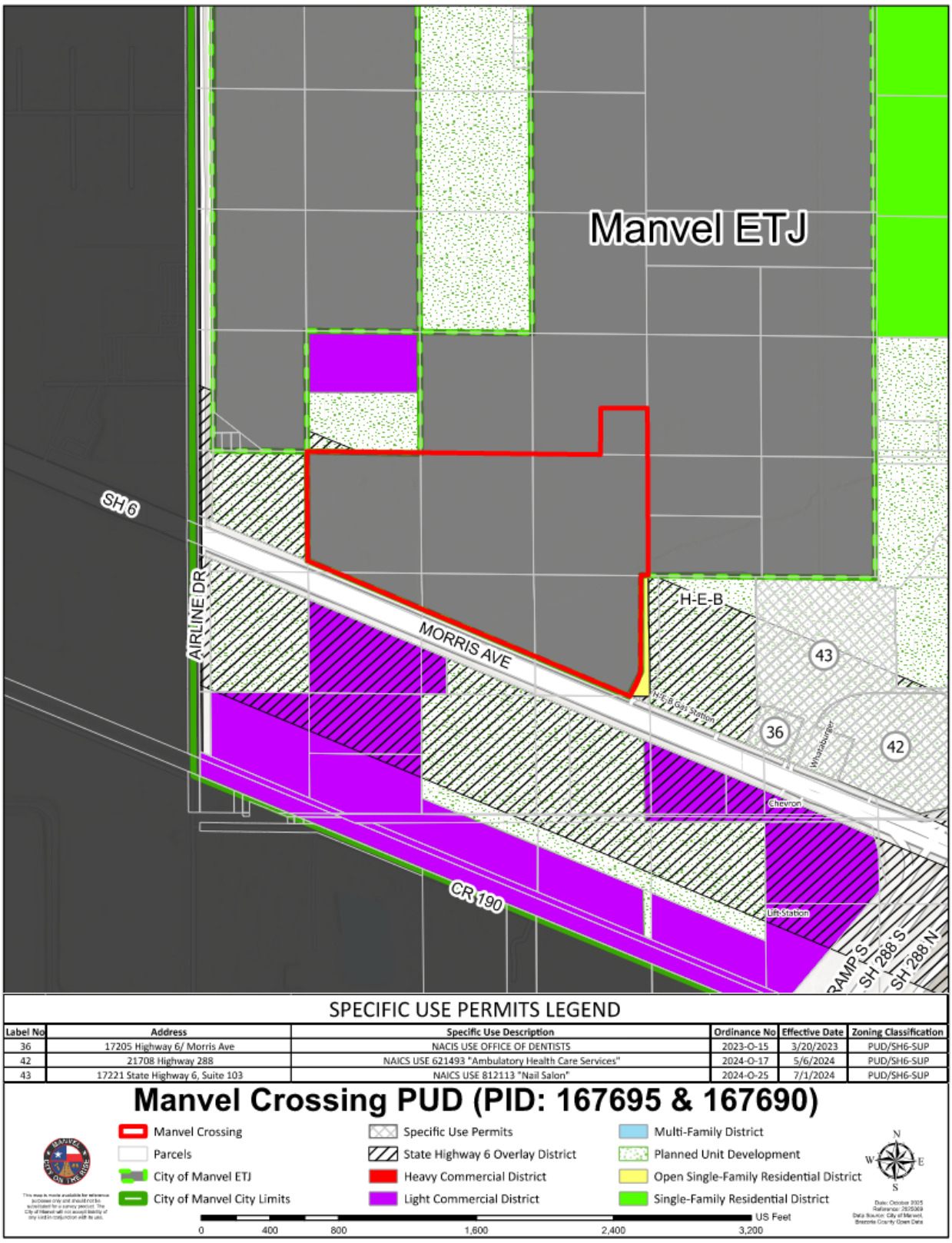
Surrounding Property Zoning	**North:** City of Manvel's Extra Territorial Jurisdiction (ETJ) / Planned Unit Development (PUD) / Light Commercial District (LC) / State Highway 6 Overlay District (SH6) **South:** PUD / LC / SH6 **East:** ETJ / PUD / SH6 **West:** PUD / SH6
Surrounding Land Use	**North:** Future Manvel Town Center / Future Primrose Residential Development **South:** Future Manvel Town Center / undeveloped land / Chevron gas station with convenience store **East:** Manvel Town Center HEB / Future Primrose Residential Development **West:** Future Manvel Town Center

Major Thoroughfare	Subject site is located along State Highway 6/Morris Avenue and Kirbey Drive.

AERIAL VICINITY MAP



ZONING VICINITY MAP



SPECIFIC USE PERMITS LEGEND

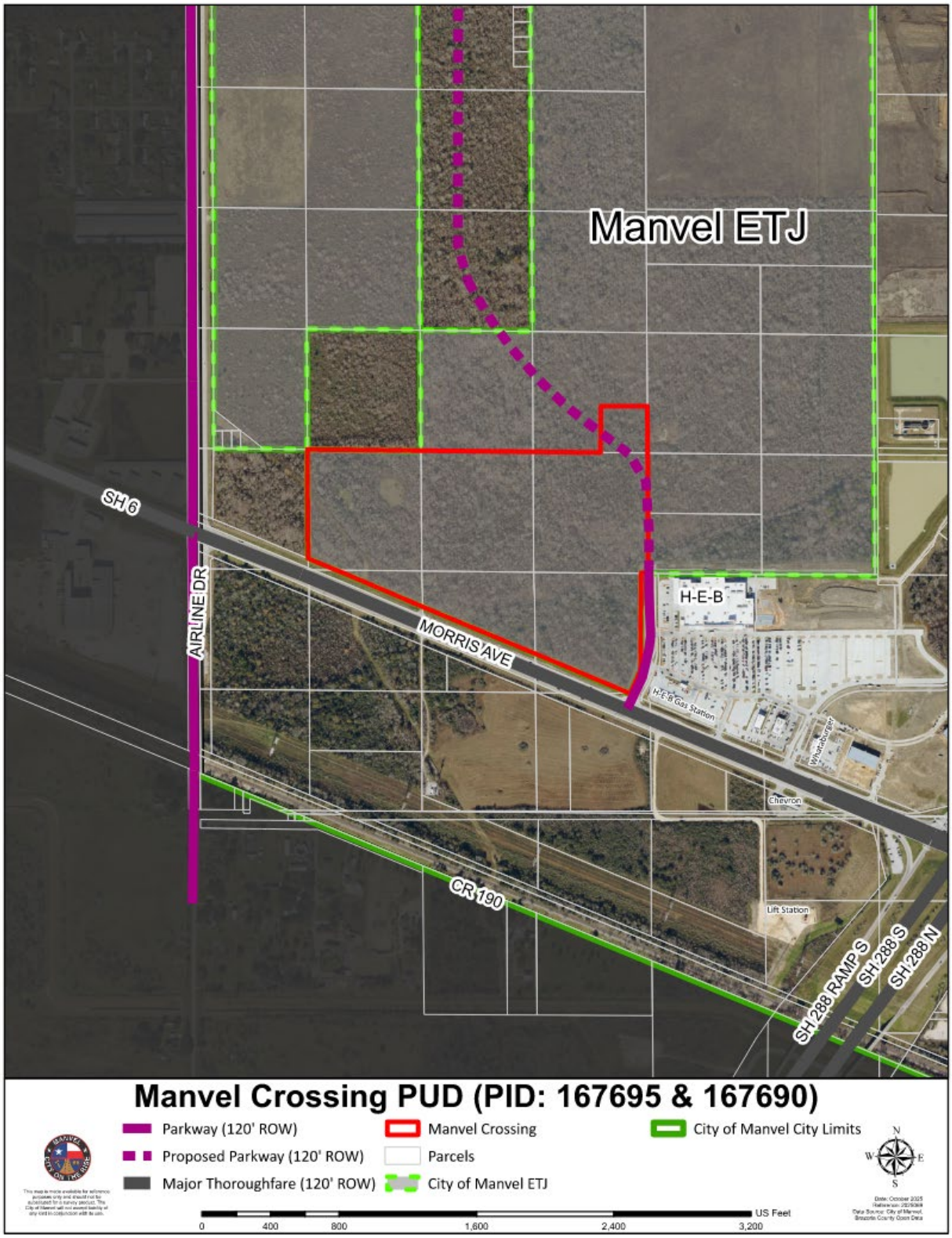
Label No	Address	Specific Use Description	Ordinance No	Effective Date	Zoning Classification
36	17205 Highway 6/ Morris Ave	NACIS USE OFFICE OF DENTISTS	2023-O-15	3/20/2023	PUD/SH6-SUP
42	21708 Highway 288	NAICS USE 621493 "Ambulatory Health Care Services"	2024-O-17	5/6/2024	PUD/SH6-SUP
43	17221 State Highway 6, Suite 103	NAICS USE 812113 "Nail Salon"	2024-O-25	7/1/2024	PUD/SH6-SUP

Manvel Crossing PUD (PID: 167695 & 167690)

- Manvel Crossing
- Parcels
- City of Manvel ETJ
- City of Manvel City Limits
- Specific Use Permits
- State Highway 6 Overlay District
- Heavy Commercial District
- Light Commercial District
- Multi-Family District
- Planned Unit Development
- Open Single-Family Residential District
- Single-Family Residential District

US Feet: 0, 400, 800, 1,600, 2,400, 3,200

MAJOR THOROUGHFARE PLAN MAP



ZONING ORDINANCE PROVISIONS FOR ANNEXATION

In the Section 77-79, *Zoning at time of annexation,* of the Zoning Ordinance, it states: "*the default zoning district for any area annexed into the city for full purposes shall be open single-family residential (O-SFR). Notwithstanding the foregoing, the council may establish a different zoning district for land being annexed into the city, based on the city's comprehensive plan, at the same time as the land is annexed into the city limits."*

The applicant is requesting establishing a Manvel Crossing Planned Unit Development for the subject site proposed for annexation into City of Manvel City Limits. State Highway 6 Overlay district (PUD/SH6) will apply to a large portion of the subject site.

PURPOSE AND INTENT OF THE PROPOSED ZONING DISTRICT

According to the section 77-29, *Planned Unit Development (PUD) district*, of the Zoning Ordinance purpose of PUD "*is to promote diversity and creativity in site design. The PUD process is provided as an option to encourage unique developments which may combine a mixture of residential and non-residential land uses and building functions. The PUD allows flexibility in the application of development standards by permitting departures from the conventional siting, setback, and density requirements of a particular zoning district in the interest of achieving site development not otherwise possible."*

PROJECT DETAILS

The proposed Manvel Crossing PUD encompasses approximately 47.3156 acres located at the northwest corner of Kirby Drive and State Highway 6. According to the ordinance, the project qualifies as a Medium PUD Development based on its total area. The project is designed as a master-planned, mixed-use commercial development intended to establish a cohesive destination for retail, dining, and professional services in the growing Manvel area. The PUD proposes a combination of light commercial uses including retail centers, restaurants, hotels, offices, and supporting services, creating an active commercial corridor along Highway 6 that complements nearby developments such as Manvel Town Center.

The development will feature a comprehensive internal circulation network with multiple access points from Highway 6 and Kirby Drive, supported by pedestrian connections and landscaped public areas. The PUD establishes detailed architectural and site design standards to ensure high-quality development, including masonry requirements, signage criteria, and landscape buffering. Stormwater management will be provided through on-site detention facilities designed to meet City and Brazoria County Drainage District No. 4 requirements. Upon annexation, the site will be served by City water and wastewater infrastructure. Overall, Manvel Crossing aims to provide expanded commercial amenities, employment opportunities, and tax base growth while maintaining the "town and country" character of Manvel through consistent design and landscaping standards.

Establishing the Manvel Crossing PUD for the subject property would allow for the following land uses:

1. Abstract or Title Company
2. Accounting, Tax Preparation, Bookkeeping, and Payroll Services
3. Administrative Support Services
4. Advertising Agency
5. Ambulatory Health Care Services

6. Antique Store
7. Art Gallery
8. Arts and Crafts Store
9. Automobile Repair and Maintenance
10. Automotive Part and Accessory Retailers
11. Bakery (Retail)
12. Banks and Financial Institutions (including drive-through and outdoor ATM)
13. Barber or Beauty Shop
14. Bookstore
15. Building Material, Garden Equipment, and Supplies Dealers
16. Cafeteria
17. Catering Services
18. Cellular Phone Sales and Repair Store
19. Childcare Facility
20. Clinic
21. Clothing Store (no re-used clothing)
22. Collection Agency
23. Computer Sales and Repair Store
24. Convenience Store (with or without gasoline, liquor, or beer and wine sales)
25. Dance Studio
26. Delivery Service
27. Dental Clinic
28. Department Store
29. Drafting Service
30. Drinking Places (Alcoholic Beverages)
31. Drug Store (with or without liquor, beer, or wine sales)
32. Dry Cleaning Storefront (no dry-cleaning plant)
33. Educational Support Services
34. Electronic Sales and Repair Store
35. Filling or Service Station (including oil change and inspection)
36. Fitness and Recreational Sports Centers (including martial arts, dance, etc.)
37. Florist Shop
38. Full-Service Restaurant
39. Food and Beverage Store
40. Furniture Store
41. Gasoline Station with Convenience Retail
42. General Merchandise Retailers
43. Gift Shop
44. Gun Shop
45. Grocery Store
46. Hardware Store
47. Home Improvement Store
48. Home Appliance Store
49. Housewares and Linens Store
50. Mini-Warehouse / Self-Storage (Lessor of)
51. Locksmith

52. Maintenance Facility
53. Medical and Healthcare Services
54. Medical Supply Store
55. Microbrewery (with or without food service)
56. Minor Utilities
57. Mixed-Use Development
58. Mortgage Company
59. Motel or Hotel
60. Motion Picture Theater / Dinner Theater
61. Motor Vehicles and Parts Sales
62. Musical Instrument Store
63. Nursery, Garden Center, or Farm Supply Retailer
64. Office Supply and Machinery Store / Repairs
65. Optician or Optometrist
66. Personal Services (salon, spa, etc.)
67. Personal Climate-Controlled Self-Storage
68. Personal and Household Goods Store
69. Pharmacy
70. Postal Service
71. Professional Office
72. Public Facilities
73. Public Safety Site
74. Radio Sales and Repair
75. Radio Studio (excluding tower)
76. Real Estate Office
77. Record and Tape Store
78. Recreational Facilities
79. Religious Assembly
80. Restaurant with Microbrewery
81. Restaurant (Limited or Quick Service, with or without drive-thru)
82. Retail (General)
83. Retail Warehouse Clubs and Supercenters
84. Scientific and Technical Services
85. Shoe Store or Repair Shop
86. Sporting Goods Store
87. Studio (Art, Music, or Photo)
88. Tailor
89. Tavern
90. Telecommunication Towers
91. Temporary Uses (as allowed under Section 77-29)
92. Toy Store
93. Travel Agency
94. Veterinary Services
95. Video Arcade
96. Warehouse and Storage – ancillary to primary use

The following sections provide staff's analysis of the proposed Manvel Crossing PUD and some key points for consideration.

1. *The proposal is unique in design to warrant the use of a PUD and the development is not possible using the existing zoning regulation of the property*:
   The Manvel Crossing proposal represents a master-planned commercial development integrating retail, office, hotel, and restaurant uses with coordinated architecture, internal circulation, shared drainage, and unified signage. These features cannot be achieved under standard Light Commercial (LC) zoning. The PUD is necessary to:
   - Combine multiple uses with shared infrastructure and coordinated design.
   - Allow flexibility in setbacks, signage, and drainage placement.
   - Accommodate building heights up to 150 feet for office/medical uses, exceeding the standard 60-foot LC limit.

2. *The project depicts creative land development, providing a variety in the development patterns of the city which conform to the intended purpose of the city's comprehensive plan and vision statement*:

   The PUD introduces a master-planned commercial development that aligns with the City of Manvel Comprehensive Plan, promoting economic growth and a balanced land-use mix. Key elements include:
   - Multi-parcel layout with internal connectivity to reduce SH6 driveway congestion.
   - Architectural and landscape guidelines creating a unified visual character.
   - Enhanced pedestrian routes and landscape design promoting walkability.

3. *Mixed uses and building functions if proposed shall be complementary, and pose minimal impact to adjacent uses or function*:

   The PUD's land uses—retail, office, hotel, and restaurants—are designed to complement surrounding areas, including Manvel Town Center and nearby residential developments. Standards include:
   - Shared parking and access to minimize traffic impacts.
   - Buffers and landscaping along the site perimeter.
   - Restrictions on incompatible uses and transitions in height and materials.

4. *Development within the PUD encourages the use of alternative transportation circulation between structures and open spaces, including pedestrian and bicyclist*:

   The PUD includes an Internal Circulation Plan (Exhibit 2) providing public access easements (PAEs) parallel and perpendicular to SH6, which allow interconnectivity among parcels and adjacent tracts. Additionally:
   - The plan encourages walkable retail nodes and shared pedestrian corridors between buildings. However, sidewalks along SH6 are not currently proposed, limiting pedestrian connectivity and access to nearby developments.
   - Landscape buffers and shaded pedestrian routes enhance comfort and connectivity.

5. *Landscaping areas shall visually enhance the structures within the development and conform to the city's comprehensive plan and vision statement*:

The PUD includes landscaping standards to enhance site aesthetics and create a cohesive development. Features include: Street trees, parking lot landscaping, and trees along SH6.

6. *The proposed project is in compliance with the minimum development requirements described in the PUD Manual:*

   In general, the PUD demonstrates conformance with the City's PUD Manual. However, some outstanding items must be verified or revised and are required to be addressed, including:
   - Legal description and acreage.
   - Permitted and prohibited uses.
   - Infrastructure, architectural, signage, and landscape standards.
   - Drainage coordination with adjacent properties.
   - Master Plan.
   - Future phase plan.
   - Site plan.

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. (Proposed Ordinance No. 2025-O-33).

Following are some of the significant items that need reconsideration/discussion:

- Provision of residential use;
- Allowance of uses that would generally require a SUP;
- Considering NAICS Code for Landuse allowances;
- Application of codes as amended from time to time;
- Consideration of future deviations, interpretation, and appeal to administrative interpretation;
- Certain clarification for Sign requirements;
- Clarification on Tree Preservation provisions;
- Clarification on deviation from LC district height allowance;
- Clarification on Temporary uses,
- Parking stall dimensions, parking ratios, use of parking spaces for temporary storage and display of merchandise.

PUBLIC HEARING

The Notice of Public Hearing was published in the newspaper of general circulation. All property owners within 200 feet of the property were notified. At the time of writing this report, staff has received one informational inquiry and is not aware of any opposition to the request.

REQUEST LETTER

EHRA
ENGINEERING THE FUTURE
SINCE 1936

TBPE No. F-726
TBPLS No. 10092300

October 8, 2025

Jose Abraham
Director of Development Services
City of Manvel
20031 Highway 6
Manvel, TX 77578

Re: BCS Commercial Project - Planned Unit Development (PUD)

Jose,

On behalf of our client, BCS Capital Group, I respectfully request the Manvel Crossing Planned Unit Development located adjacent to Kirby Dr and Highway 6, west of State Highway 288, and generally east of County Road 46. A metes and bounds description and survey can be found attached to this application.

This request is for a Planned Unit Development, with the intent of creating a commercial shopping center that will offer amenities to the surrounding area. The site is roughly forty-nine 49 acres, composed of 13 commercial lots, with three detention reserves. With this request, deviations from the original regulations will be requested to provide the city with unique quality development not limited to a mixture of retail, commercial services, and food options. The deviation table can be found in the draft PUD document.

The developer intends to construct a portion of Kirby Dr due north, as well as build a stub out for future Rodeo Dr as part of the project. Please refer to the exhibits in the draft PUD for reference.

Should any additional information or supporting documentation be required, please do not hesitate to contact me. I would be happy to assist in any way necessary.

Thank you for your consideration,

Regards.

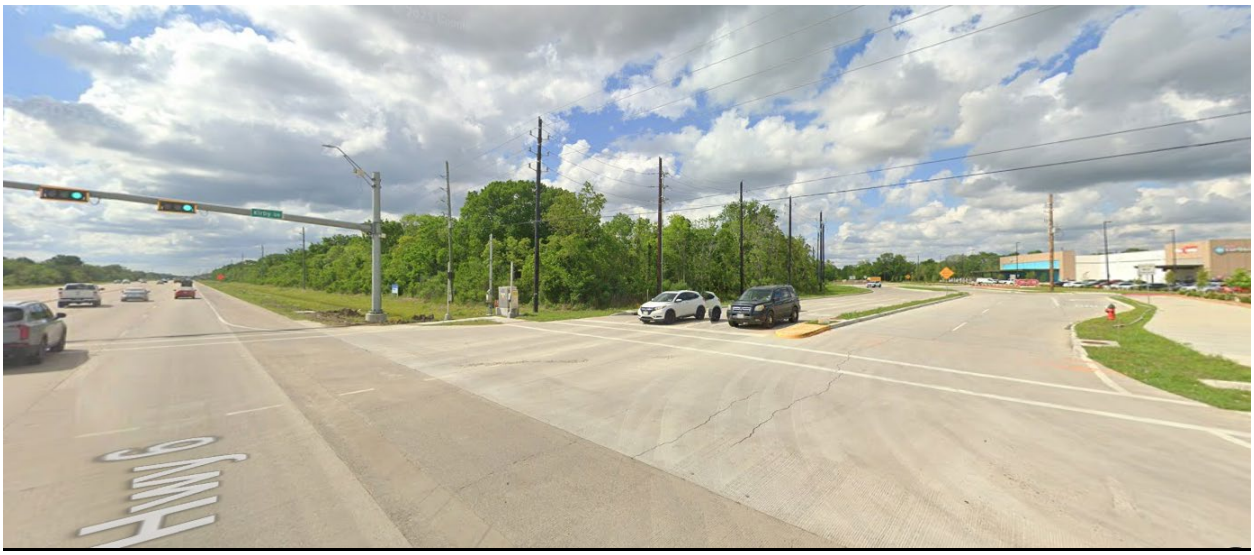
Ian Knox
Planner III | Planning and Visioning
EHRA Engineering

Attachment: Draft PUD Document
Attachment: Survey and Metes and Bounds
Attachment: Letters of Consent

PUBLIC HEARING NOTICE PUBLISHED ON SUNDAY 10/19/2025

A PUBLIC HEARING WILL BE HELD AT MANVEL CITY HALL, 20031 HWY 6, MANVEL, TX 77578 AT 6:00 P.M. ON MONDAY, OCTOBER 27, 2025 BEFORE THE MANVEL PLANNING, DEVELOPMENT, AND ZONING COMMISSION AND AT 6:00 P.M., ON MONDAY, NOVEMBER 03, 2025 BEFORE THE MANVEL CITY COUNCIL 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, HT&B RR 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. /S/ TAMMY BELL, CITY SECRETARY.

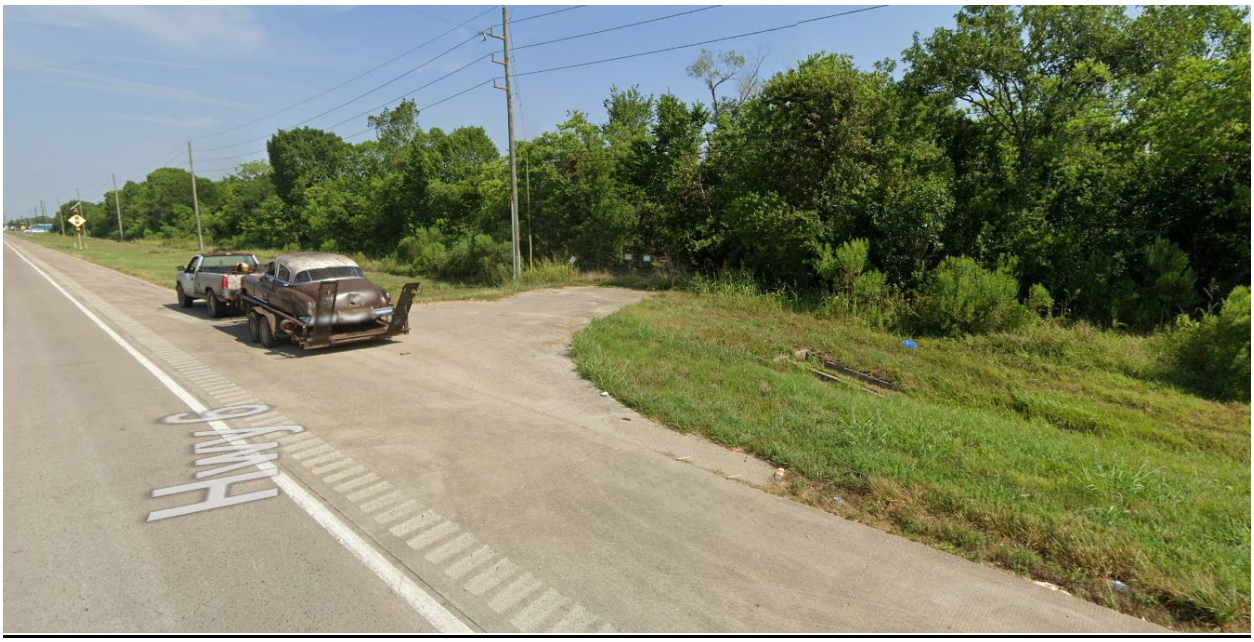
SITE PICTURES



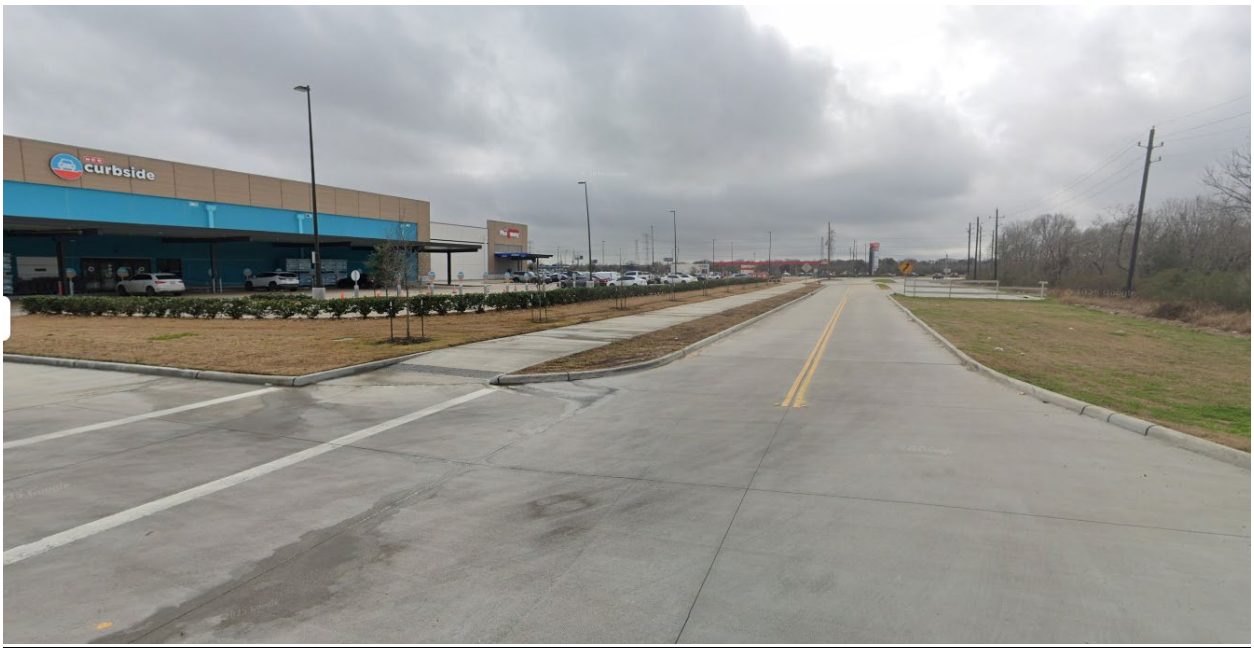
View of the subject site from Highway 6 (south east corner)

View of the subject site from Highway 6 (south west corner)

SITE PICTURES



View of the subject site from Highway 6 (40 foo undeveloped ROW)



View of Kirby Drive from North to the south

SITE PICTURES

View of the subject site from Manvel Town Center - HEB

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.

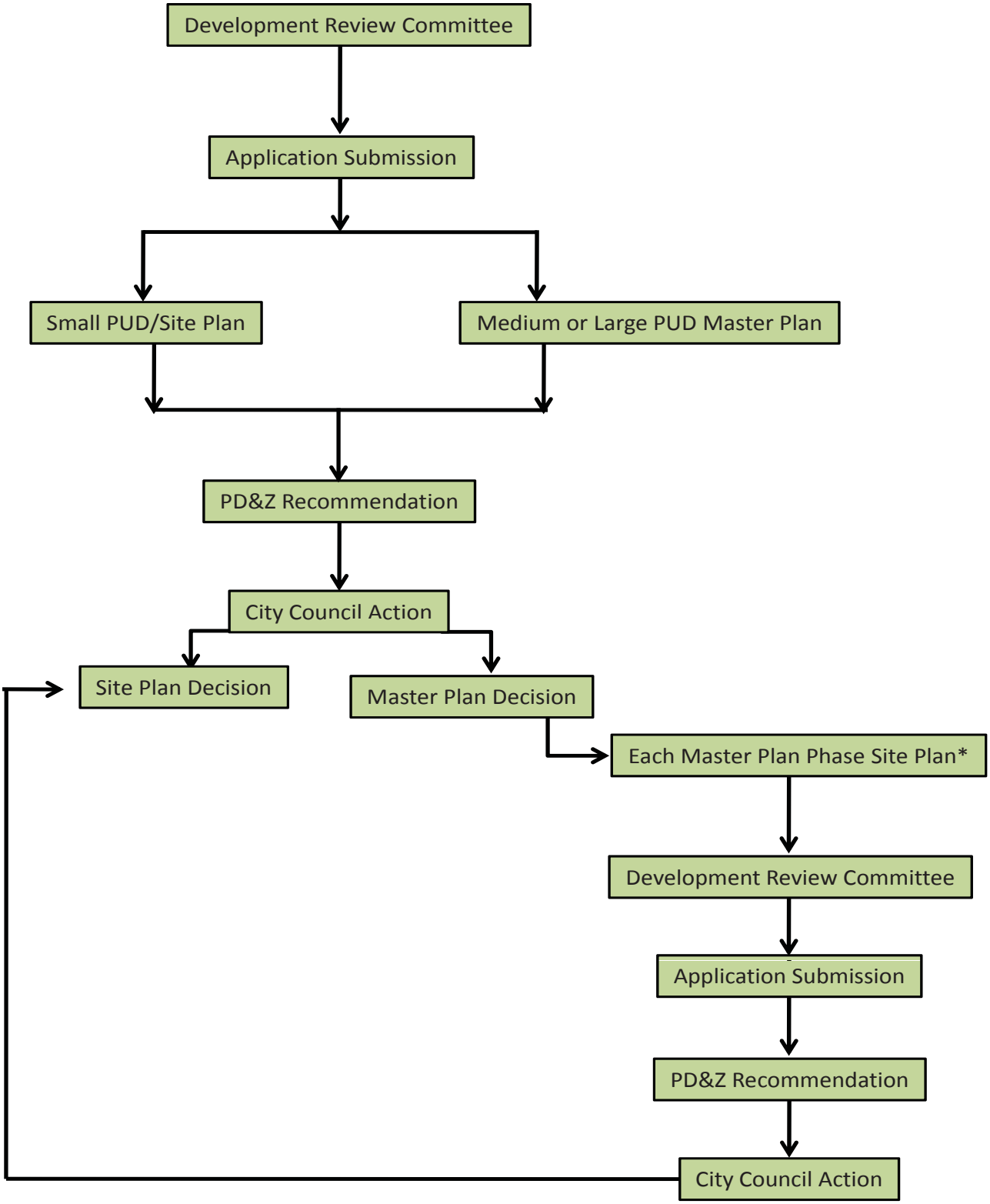
Public Notice Fee: A One Hundred and Fifty Dollar ($150) fee will be charged to the applicant for any review process that requires a public notification.

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.

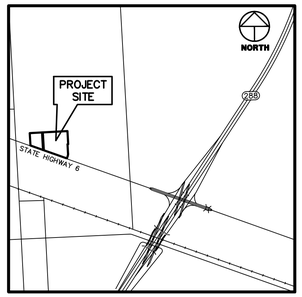
10/06/2025
Date

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.



CITY OF MANVEL, BRAZORIA COUNTY, TEXAS

VICINITY MAP

SCALE: 1" = 2000

NORTH

GRAPHIC SCALE: 1" = 100'

100 0 100 150 200 Feet

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°30'32" 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'

LOT 5
CALLED 201.0164 ACRES
NEW RODEO 288, LTD.
B.C.C.F. NO. 2005039091
VOL.1181, PG. 884 B.C.C.F.
VOL. 2, PG. 81, B.C.P.R.

TRACT 13
EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
HT & B RR. CO. SURVEY
ABSTACT 291,
VOL. 2, PG. 81-82, B.C.P.R.

LOT 13
CALLED 10.30 ACRES
J.W. WINZELER AND LESLIE R. WINZELER
B.C.C.F. NO. 2005039091

CALLED 201.0164 ACRES
NEW RODEO 288, LTD.
B.C.C.F. NO. 2005039091
VOL.1181, PG. 884 B.C.C.F.
VOL. 2, PG. 81, B.C.P.R.

LOT 21
CALLED 19.0062 ACRES
NEW RODEO 288, LTD..
VOL. 2, PG. 81, B.C.P.R.
B.C.C.F. NO. 2006043836

TRACT 29
EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
HT & B RR. CO. SURVEY
ABSTACT 291,
VOL. 2, PG. 81, B.C.P.R.

PORTION OF LOT 29
CALLED 1.6366 ACRES
CATHERINE KECK WAGGONER.
B.C.C.F. NO. 2020042539
VOL. 2, PG. 81, B.C.P.R.

TRACT 34
EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
HT & B RR. CO. SURVEY
ABSTACT 291,
VOL. 2, PG. 81-82, B.C.P.R.

SET 5/8 IRC "WINDROSE"

N 86°53'57" E 639.16'

FND 5/8 IR FOR REFERENCE (S 16°54'59" W, 0.30')

SET 5/8 IRC "WINDROSE"

N 86°53'57" E 1,280.25'

FND 5/8 IRC FOR REFERENCE (S 16°18'34" W, .366')

LOT 7
CALLED 10.36432 ACRES
LOT 6
CALLED 8.28689 ACRES
JERRY A. ARGOVITZ
VOL.1151, PG. 839 B.C.C.F.
VOL. 2, PG. 81, B.C.P.R.

11.3999 ACRES
496,581 SQ.FT.

EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
VOL. 2, PG. 81-82, B.C.P.R.
B.C.P.R. NO. 2022037379

PART TWO "TRACT FOUR"
CALLED 11.395 ACRES
TH PROPERTY, INC.
B.C.C.F. NO. 2002056335
B.C.P.R. NO. 2022037379

N 03°21'05" W 644.48'

S 03°15'50" E 910.78'

N 03°15'50" W 927.47'

40' R.O.W. (UNIMPROVED)
VOL. 2, PG. 81-82, B.C.P.R.

34.2791 ACRES
1,493,196 SQ.FT.

EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
VOL. 2, PG. 81-82, B.C.P.R.
B.C.P.R. NO. 2022037379

PART ONE "TRACT ONE"
CALLED 35.905 ACRES
TH PROPERTY, INC.
B.C.C.F. NO. 2002056335
B.C.P.R. NO. 2022037379

FUTURE KIRBY DRIVE
(PROPOSED 120' WIDE R.O.W.)
B.C.C.F. NO. 2022037379

40' R.O.W. (UNIMPROVED)
VOL. 2, PG. 81-82, B.C.P.R.
ABANDONED PER
B.C.C.F. NO. 2019057985
B.C.C.F. NO. 2019057983

S 03°15'50" E 681.87'

FND 5/8 IRC "BGE INC"

L1

SET 5/8 IRC "WINDROSE"

FND 5/8 IR

FND 5/8 IR

N 70°28'31" W 692.21'

P.O.B. FND 5/8 IR

40°

FND 5/8 IR

STATE HIGHWAY 6
200' R.O.W.
PLAT NO. 2022037379, B.C.P.R

N 70°28'07" W 1,291.68'

N 70°28'31" W 1,248.34'

S 03°20'28" E 499.85'

KIRBY DRIVE
120' WIDE R.O.W.
PLAT NO. 2022037379, B.C.P.R.

FND 5/8 IR FOR REFERENCE (S 46°58'53" W, 0.27')

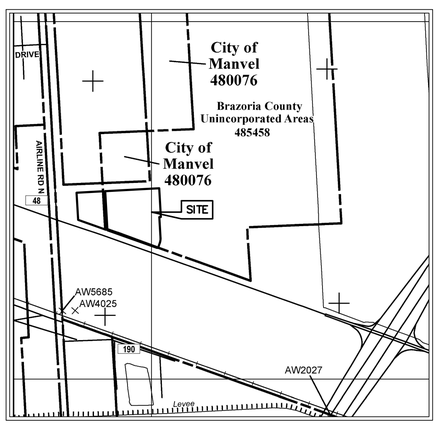
FND 5/8 IRC "BGE INC"

C1

L2 S 19°31'29" W 119.23'

FND 5/8 IR

P.O.B. FND 5/8 IRC "BGE"



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	485456	0110	K
IOWA COLONY, CITY OF	481071	0110	K
MANVEL, CITY OF	480075	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.

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

10/30/2023

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

DATE

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	

MANVEL CROSSING Planned Unit Development District

The City of Manvel

Ordinance #XXXXXX
Submitted: 10/14/2025

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

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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 community 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 base zoning of Light Commercial with a PUD overlay will be assigned. In addition to the base zone, a large portion, approximately 33 acres, of the site will be added to the Highway 6 Overlay District.

F. Out Parcel

Located to the northwest of the project is a 10 acre parcel of land that is not owned or controlled by the developer. This tract of land is adjacent to the project area but is not a part of this PUD and therefore is not subject to any of the regulations contained herein. Access to the tract will be provided by a minimum of sixty (60) feet of frontage along a public right-of-way as part of the development of the adjacent area or by other means determined to be suitable by the City's Designated Official, unless added to this PUD in which case access can be provided by other means.

G. Surrounding Land Use

The majority of properties surrounding the project are undeveloped, or agricultural in nature. To the east of the site is a development similar in nature to Manvel Crossing 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.

H. 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.

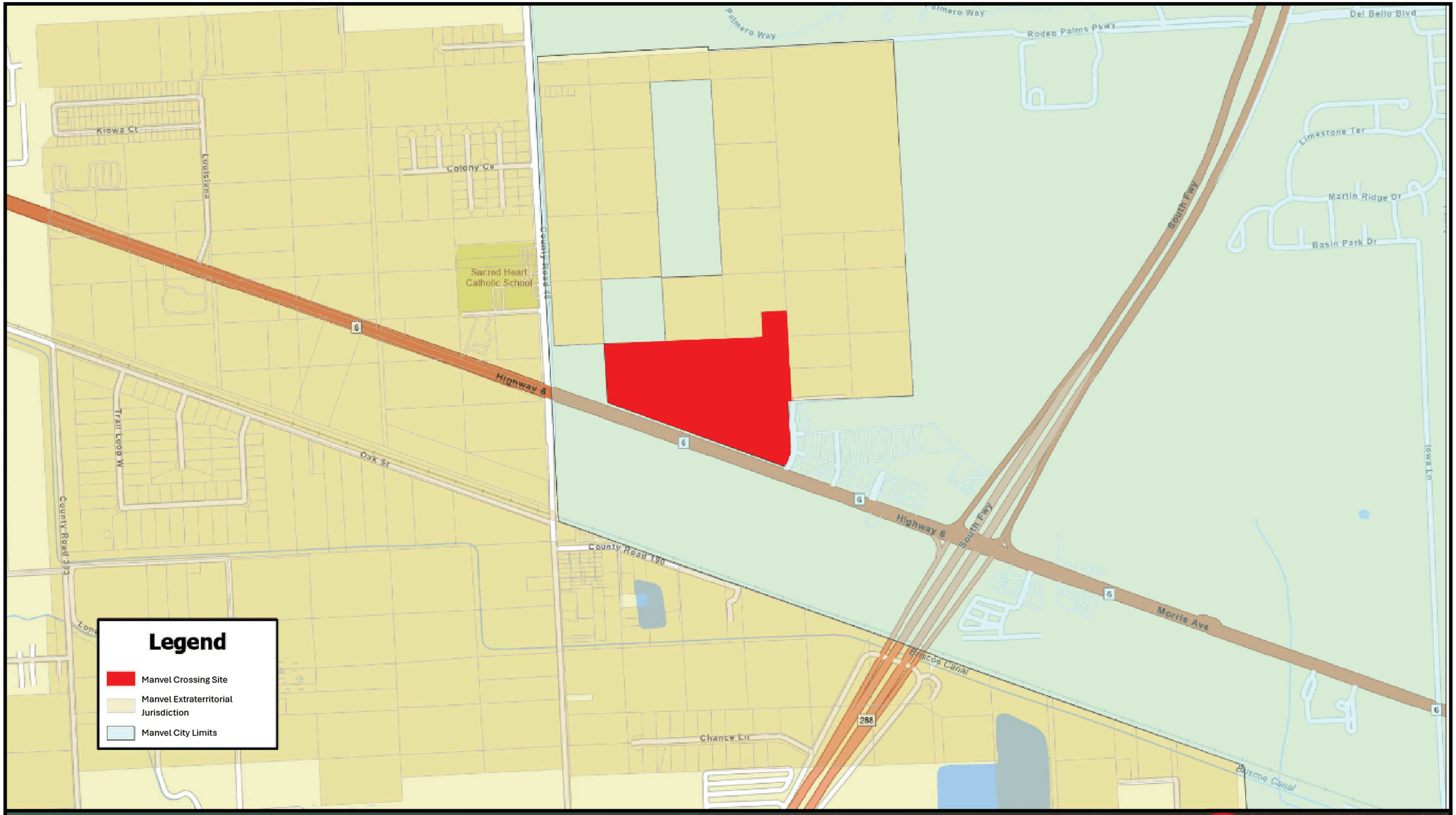

Exhibit 1 - Manvel Crossing Vicinity Map

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

F:\EHRA CAD Support\EHRA Planning CAD Support\Templates\M-Color\M-Color Template_Base_Concept_Letting.dwt Oct 01, 2025-4:48pm Edited by: ilmox

October, 2025

0 250' 500' 1,000'

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

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 community 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 community.

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 in order 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, 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. Preserve the "Town and Country" Lifestyle

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.

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

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.

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.

Rodeo Drive shall be classified as a local street and constructed within a 60-foot right-of-way, it will be a tertiary entry point for the Foxtail Palms single-family development. The roadway will consist of a 28-foot-wide pavement section, accompanied by 6-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. 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 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 will be submitted to and subject to approval by the City of Manvel.

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 access easement that will grant access to all the businesses, including the two (2) proposed businesses at the rear of the site. There are four (4) planned entrances from Highway 6, and a side-site entrance to the east from Kirby Drive.

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 cross-access easement(s) which provide for public access and 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 to meet the requirements of the City of Manvel Design Criteria Manual and will also 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.

4. Sidewalks

Sidewalks are not required along Highway 6, and to the southeast there are no sidewalks that would provide a connection. Fee-in-lieu of construction said sidewalks will be paid to the city prior to recordation of the first final plat associated with this PUD. Furthermore, the location of the existing open ditch drainage provides challenges to any attempt to install sidewalks along the Highway. Internal sidewalks must meet American Disability Act (ADA) and Texas Accessibility Standards (TAS). Any internal sidewalk must be a minimum of 4 feet wide and 4 inches thick with steel reinforcement, unless otherwise required in the City's approved Master Thoroughfare Plan.

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 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 may be temporarily located as the site develops. Any temporary detention capacity shall be filed at the County with the off-site property owner's acknowledgement and approval.

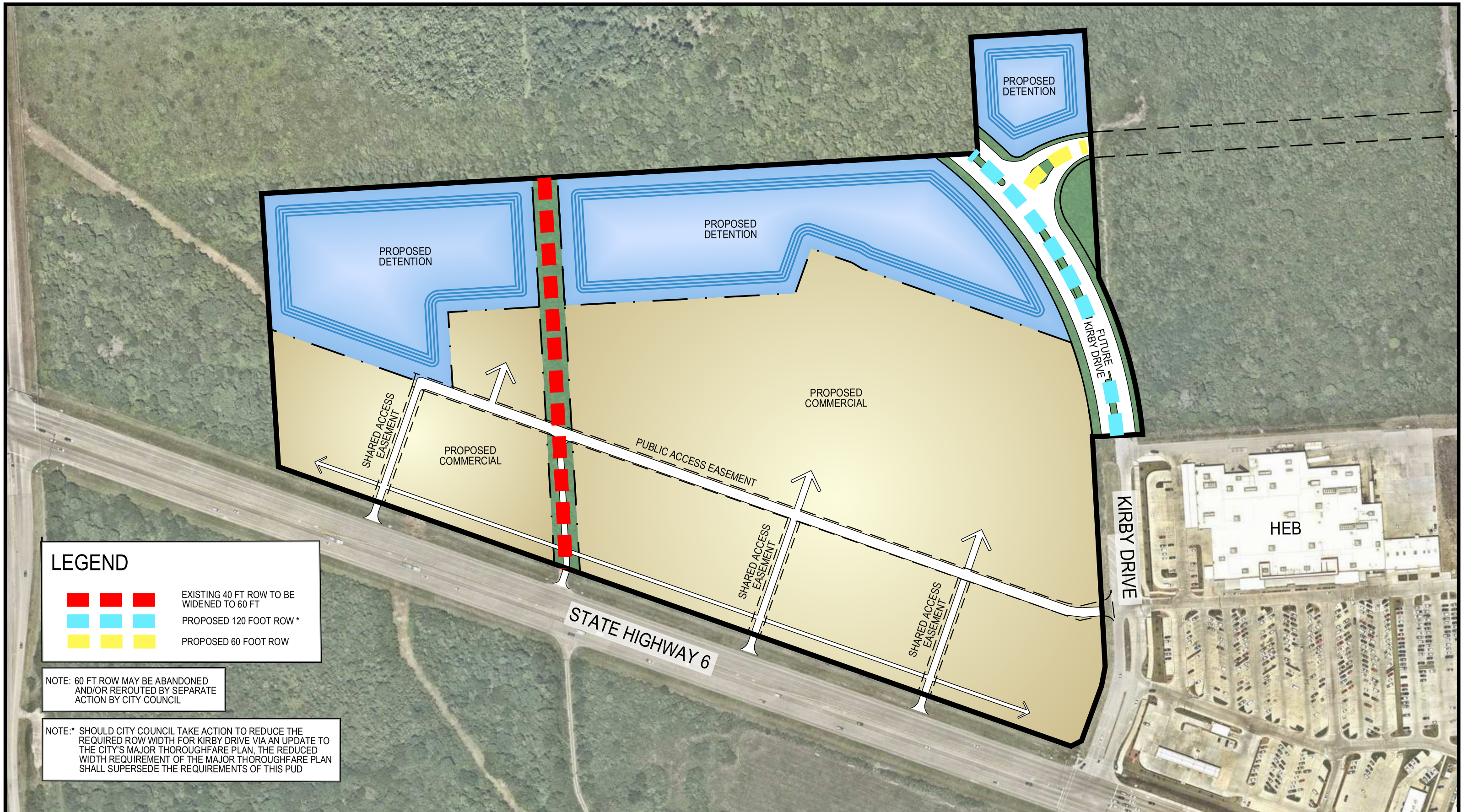

Exhibit 2 - Internal Circulation Plan

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.

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Exhibit 3 - Preliminary Drainage Plan

October, 2025

0 125 250

SCALE: 1"=250
TRUE SCALE AT 11" x 17"

NORTH

EHRA JOB NO.
231-085-00

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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.

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.

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 while providing a reasonable amount 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, except as modified within this PUD.

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 Designated 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. Additional Uses

In the event that a proposed use has not specifically been listed as being a permitted use in a particular land use category within the PUD, it shall be the duty of the City's Designated Official to determine if said use is: 1) consistent with the intent of the zone; and 2) compatible with other listed permitted uses.

3. Existing Utilities

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

4. Clearing and Grading

The developer shall be permitted to commence grading of the property, including clearing and grubbing upon the City's review of tree survey samples, in preparation of development upon preliminary plat approval. For road construction, grading may commence upon the submittal of construction drawings. However, prior to any grading activity a Storm Water Pollution Plan must be submitted and any required City of Manvel grading permits must be obtained. The City may issue the necessary permits prior to the approval of construction plans and plat recordation with the understanding that any grading performed under these circumstances shall be at the risk of the developer.

5. Temporary Uses

Temporary uses conducted in connection with the development of the property shall not require zoning permits from the city, but will require health and safety permits (electrical, plumbing, structural, HVAC, etc.). However, all temporary uses must be approved by the developer or the Architectural Review Committee. These uses may include, but are not limited to:

a. Sales office
b. Construction office
c. Construction/storage yards
d. Construction roads
e. Fencing
f. Water pumps and ponds
g. Concrete batch plants or rock crushing operations and equipment for the processing of on-site materials provided such operations:
   i. Maintain a 1,000-foot separation between all operations or storage and the nearest occupied residence;
   ii. Limit hours of operation to between 7:00 a.m. and dusk, Monday through Friday;
   iii. Do not include the import or export of materials except as to be used on the property or for off-site improvements related to the project.
   iv. Are enclosed by a fence having a minimum height of six (6) feet.

6. 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.

7. 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 4” for an example of multi-tenant signage (subject to change). The following regulations shall apply:

a. *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 (50) 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 sign message area shall not be less than ten (10) feet above the surrounding finished grade level.
   iii. Each 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. Three total multi-tenant signs are permitted along Highway 6 are equal spacing along the property line.

b. *Single-Tenant Monument/Pylon Signs* – A single-tenant sign is defined as a freestanding sign advertising a single use.
   i. Single-tenant signs may be constructed up to six (6) feet in height and 36 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.

c. *Fuel Station Signage*
   i. Fuel stations may have canopy signage, as follows:
      1. Signage may be incorporated on all sides of the canopy so long as it does not cover more than 50% of the total canopy area.
      2. Maximum letter height - Twenty-four (24) inches for one line of text, eighteen (18) inches for two lines of text.
      3. The face of any LED fuel pricing sign will not exceed one hundred (100) SF. Signage may include the fuel station's graphics, logos, and similar branding.

d. *Wall Mounted Signage* – A Wall sign is defined as a sign anchored to a wall elevation of a business.
   i. Wall signs are limited to 25% of the elevation they are placed on. All parts of the elevation are used in this calculation.
   ii. No wall sign can extend above the parapet.
   iii. For individual uses greater than 8,000 square feet in gross floor area, up to one hundred twenty inches (120) of letter height is permitted.

iv. For buildings over one 120,000 square feet of gross floor area Wall mounted signage lettering may not exceed one-hundred thirty (130) inches in overall height.
v. Wall mounted logos, symbols, and related branding shall not exceed one-hundred ninety-eight (198) inches in height.

e. 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 not limited in size, height or number or minimum distance requirements.
iv. Temporary Signage: Temporary signage shall be subject to the regulations listed in Section 53-10 of the City of Manvel Code of Ordinances in effect November 20, 2017.
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 November 20, 2017, is prohibited.

8. 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.

9. Design Criteria Manual

The Project shall abide by the version of the City of Manvel Design Criteria Manual dated May 6, 2024.

Exhibit 4 - Manvel Crossing Multi-tenant Sign

October, 2025

EHRA JOB NO. 231-085-00

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Development Standards

1. Permitted Land Use Table

1. Abstract or title company	25. Dance studio
2. Accounting, tax preparation, bookkeeping and payroll services	26. Delivery service
3. Administrative Support Services	27. Dental clinic
4. Advertising agency	28. Department store
5. Ambulatory Health Care Services	29. Drafting service
6. Antique store	30. Drinking Places (Alcoholic Beverages)
7. Art gallery	31. Drug store, with or without liquor or beer and wine sales
8. Arts and crafts store	32. Dry cleaning storefront, but not dry-cleaning plant
9. Automobile repair and maintenance	33. Educational Support Services
10. Automotive part and accessory retailers	34. Electronic sales and repair store
11. Bakery (Retail)	35. Filling station or service station, including oil change and inspection services
12. Banks and financial institutions, including drive-through and outdoor ATM facilities	36. Fitness and Recreational Sports Centers (including martial arts, dance studios, ballet, etc.)
13. Barber or beauty shop	37. Florist shop
14. Bookstore	38. Full-service restaurant
15. Building material, garden equipment, and supplies dealers	39. Food and Beverage Store
16. Cafeteria	40. Furniture store
17. Catering	41. Gasoline station with convenience retail
18. Cellular phone sales and repair store	42. General Merchandise Retailers
19. Child care facility	43. Gift shop
20. Clinic	44. Gun shop
21. Clothing store (no re-used clothing)	45. Grocery store
22. Collection agency	46. Hardware store
23. Computer sales and repair store	47. Home improvement store
24. Convenience store with or without gasoline, liquor or beer and wine sales	48. Home appliance store

49. House wares and linens store	73. Public safety site
50. Lessor of mini-warehouse and self-storage	74. Radio sales and repair
51. Locksmith	75. Radio studio (excluding tower)
52. Maintenance facility	76. Real Estate
53. Medical and healthcare services	77. Record and tape store
54. Medical supply store	78. Recreational facilities
55. Micro-Brewery, with or without food service	79. Religious assembly
56. Minor utilities	80. Restaurant with micro-brewery
57. Mixed use	81. Restaurants (limited service and quick service), with or without drive-thru.
58. Mortgage company	82. Retail
59. Motels and hotels	83. Retail warehouse clubs and supercenters
60. Motion picture theaters and dinner theaters	84. Scientific and Technical Services
61. Motor Vehicles and Parts	85. Shoe store and repair shop
62. Musical instrument store	86. Sporting goods store
63. Nursery, Garden center, and farm supply retailers	87. Studio (art, music or photo)
64. Office supply and machinery store and repairs	88. Tailor
65. Optician or optometrist	89. Taverns
66. Personal services	90. Telecommunication towers
67. Personal climate controlled self-storage	91. Temporary uses
68. Personal and household goods store	92. Toy store
69. Pharmacy	93. Travel agency
70. Postal Service	94. Veterinary Services
71. Professional office	95. Video arcade
72. Public facilities	96. Warehouse and Storage – ancillary to primary use

2. Non-Permitted Land Use Table

1. Auction	9. Self-service car wash
2. Automobile repair, major, with outside work or storage	10. Sexually oriented businesses
3. Billboards	11. Swap meet
4. Cemeteries	12. Tattoo shops
5. Drive-in theater	13. Taxidermist
6. Feed store	14. Upholstery shop
7. Kennel (Commercial)	15. Vape shop
8. Pawn shop	

3. 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: 0 feet
- Rear: 0 feet
- Corner Side: 5 feet

Adjacent to Commercial:

- Side: 0 feet
- Rear: 0 feet

Adjacent to Residential:

- Side: 10 feet
- Rear: 10 feet

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

C. Architectural Standards:

1. Maximum Building Height:

Pad Sites:

- Maximum 35 feet

Commercial Anchor Tenants:

- Maximum 60 feet

Mixed use/Office/Medical:

- Maximum 150 feet

2. Building Materials:

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% 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.

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. *Open Storage:* Open storage is permitted within the parking lot for temporary seasonal sales or temporary promotional events. Additionally, 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. No permits are required for temporary storage.

D. 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 the land use "Building Material and Garden Equipment and Supplies Dealers", NAICS 444, at the rate of 3 spaces per 1,000 gross square feet.

Deviations from the above requirements shall be considered by the City's Designated Official on a case-by-case basis. 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.

The City's Designated Official 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.

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:

Shared Parking Schedule					
	Weekdays			Weekends	
Use	Night Midnight – 6 a.m.	Day 9 a.m. – 4 p.m.	Evening 6 p.m. - Midnight	Day 9 a.m. – 4 p.m.	Evening 6 p.m. - Midnight
Retail	5%	50%	90%	100%	70%
Hotel/Motel	80%	80%	100%	80%	100%
Office	5%	100%	10%	10%	5%
Restaurant / Tavern	10%	50%	100%	50%	100%
Entertainment / Recreation	10%	40%	100%	80%	100%
All Others	100%	100%	100%	100%	100%

3. Calculate the column total for each time period;

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

E. Landscaping

1. Minimum 10% of site (excluding building footprint) must be landscaped. Specific tree and shrub spacing and screening requirements apply. Upon verification of protected trees found on the site from sample surveys conducted per Sec. 77-44.(b)(7)(d) of the Zoning Ordinance, a fee-in-lieu will be paid for the percentage of protected trees identified in the samples. All pervious area shall be counted toward the total landscape area, including the maintenance berm of detention ponds. The design of detention pond maintenance berms shall 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.

2. 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.

3. 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

    iii. The maximum allowed spacing between trees is forty-five (45) feet.

    iv. Trees may be grouped or placed at regular intervals so long as the spacing requirements listed above are met.

4. 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 SF.

        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.

5. 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 powerlines.

    1) Crape myrtles may constitute up to 30% of the small and ornamental trees planted.

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

    1) Evergreen trees shall constitute a minimum of 10% of trees planted.

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

F. 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 - 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.

Convenience store – any retail establishment offering for sale gasoline and a limited line of groceries and household items intended for the convenience of the neighborhood. Automotive washing is permitted as an accessory use. The sale of alcohol is permitted as an accessory use.

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 consumer electronics like phones, computers, and televisions.

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

Filling station or service station, including oil change and inspection services – a business that offers fuel and basic vehicle maintenance services such as oil changes, inspections, and minor repairs.

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

Gasoline stations with convenience retail - a business that sells automotive fuels alongside a variety of non-fuel items such as snacks, drinks, basic groceries, and other everyday consumer goods. Alcohol sales are permitted with the appropriate permits as required by the Texas Alcoholic Beverage Code.

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.

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 outpatient 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.

Mixed-use – A tract of land, building, or structure developed for two or more different uses such as, but not limited to, residential, 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 or residential 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.

Personal climate controlled self-storage - facilities or units rented by individuals for storing personal belongings.

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 46 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.

Religious assembly – A building or group of buildings used or proposed to be used for conducting organized religious services and accessory uses directly associated with the use.

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 residential, 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.

Temporary use – Any use allowed for a specific period of time. A use that is not of a permanent nature.

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 commercial and residential 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.

GENERAL ADMINISTRATION & AMENDMENTS

A. Purpose

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

B. 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 Designated Official as the basis to resolve the issue.

C. 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. Table 7 describes the requested variances and their corresponding section of the subdivision ordinance. These variances shall apply to all property within the PUD.

D. 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.

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: 0 feet, Rear: 0 feet, Corner Side: 5 feet *Adjacent to Commercial:* Side: 0 feet, Rear: 0 feet *Adjacent to Residential:* Side: 10 feet, Rear: 10 feet 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 10-foot reduction for rear 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.	*Mixed use/Office/Medical:* Maximum 150 feet	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 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*	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 40%** 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 at up to 40% of the elevations utilizing cementitious 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

	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	The addition of a 3 per 1,000 gross square feet parking requirement for NAICS 444 (Building Material and Garden Equipment and Supplies Dealers)	Added a use to the parking table	This will allow a reasonable amount of parking for the NAICS 444 classified use, should one be located at this site
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. Stall size: a 50%/50% mix of 9 ft x 19 ft. and 10 ft x 20 ft.	Allowed Shared parking to satisfy all required parking when necessary. Reduced 50% of the parking spaces provided to 9 ft x 9 ft	Both changes will allow for a reduction of unused parking, creating less pavement, and allowing for more business at this location
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. The design of detention pond maintenance berms shall incorporate landscaping and pedestrian trails where feasible, to enhance connectivity and visual appeal. Landscaping within these areas shall be consistent with the overall	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. Maximum of 45 feet spacing for tree groups or single trees. Street trees do not need to be evenly spaced and may be grouped.	More diversity in tree types will enhance the streetscape, and the addition of landscaping around detention ponds will accomplish a similar outcome

		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 iv. The maximum allowed spacing between trees is forty-five (45) feet. v. Trees may be grouped or placed at regular intervals so long as the spacing requirements listed above are met. No more than 30% of street trees may be crape myrtle along Highway 6. Staggering of trees along the highway is required adjacent to powerlines. Examples of tree types are given.	A limit on the number of crape myrtles allowed to be planted.	

Manvel Design Criteria Manual Deviation

Design Manual reference	Requirement	Proposed	Difference	Justification
1.04 Design Requirements (A) (10) (e)	The design and dimensions of off-street parking areas shall be in accordance with the following table of minimum dimensions. The minimum size of the parking spaces shall be 10 (ten) feet wide and twenty (20) feet long.	A mix of 50%/50% 10 ft x 20 ft spaces and 9 ft x 19 ft spaces.	Half of the spaces provided will be a foot less in width and depth.	Not all spaces are required for larger vehicles, and a halfway split will provide for more space on the site for other needs and uses

D. Interpretation

The City's Designated Official shall be responsible for interpreting the provisions of the PUD. Appeals to the Designated 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.

E. Administrative Approval

Certain changes to the provisions may be made administratively by the City of Manvel Designated Official, provided such changes are consistent with the intent and general purpose of the PUD and do not result in the reduction of open space by more than ten (10) percent within the project or exceed the maximum number of dwelling units permitted.

Decisions by the Designated Official 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 community infrastructure phasing and alignment, such as roads, drainage, water and sewer systems, excluding water and sewer plant locations.
- Changes or modifications in lot sizes and/or configuration, provided that the lots meet the minimum requirements established in the development standards for their respective land use.
- Changes to development regulations that are in the interest of the community and do not affect health or safety issues.
- Placement and/or construction of community identity or character features not addressed in the City of Manvel Sign Ordinance, such as entry monuments, neighborhood signage, community art, mailboxes, etc.

- 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.

The City's Designated Official shall have the authority to make a determination whether an administrative approval is appropriate regarding any situations or circumstances that are not specifically listed here.

F. 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.

G. 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. All fees shall be fair and reasonable.

Appendix 1
Metes & Bounds Description and Boundary Map

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:

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;

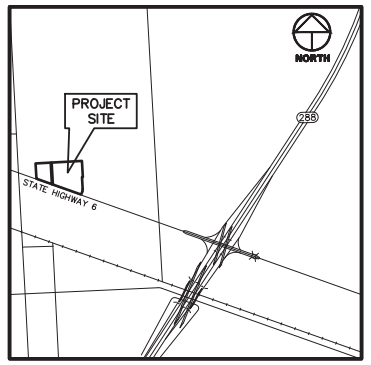
THENCE, CONTIUNING ALONG THE COMMON LINE OF SAID KIRBY DRIVE AND SAID 35.905 ACRE TRACT, WITH A CURVE TO THE RIGHT, HAVING A RADIUS OF 270.05 FEET, A CENTRAL ANGLE OF 22 DEG. 51 MIN. 57 SEC., AN ARC LENGTH OF 107.77 FEET, AND A CHORD BEARING AND DISTANCE OF SOUTH 08 DEG. 05 MIN. 31 SEC. WEST, - 107.06 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:



CITY OF MANVEL, BRAZORIA COUNTY, TEXAS

VICINITY MAP

SCALE: 1" = 2000

NORTH

GRAPHIC SCALE: 1" = 100'

100 0 100 150 200 Feet

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'

LOT 5
CALLED 201.0164 ACRES
NEW RODEO 288, LTD.
B.C.C.F. NO. 2005039091
VOL.1181, PG. 884 B.C.C.F.
VOL. 2, PG. 81, B.C.P.R.

LOT 7
CALLED 10.36432 ACRES
LOT 6
CALLED 8.28689 ACRES
JERRY A. ARGOVITZ
VOL.1151, PG. 839 B.C.C.F.
VOL. 2, PG. 81, B.C.P.R.

TRACT 13
EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
HT & B RR. CO. SURVEY
ABSTACT 291,
VOL. 2, PG. 81–82, B.C.P.R.

LOT 13
CALLED 10.30 ACRES
J.W. WINZELER AND LESLIE R. WINZELER
B.C.C.F. NO. 2005039091

CALLED 201.0164 ACRES
NEW RODEO 288, LTD.
B.C.C.F. NO. 2005039091
VOL.1181, PG. 884 B.C.C.F.
VOL. 2, PG. 81, B.C.P.R.

LOT 21
CALLED 19.0062 ACRES
NEW RODEO 288, LTD..
VOL. 2, PG. 81, B.C.P.R.
B.C.C.F. NO. 2006043836

TRACT 29
EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
HT & B RR. CO. SURVEY
ABSTACT 291,
VOL. 2, PG. 81, B.C.P.R.

PORTION OF LOT 29
CALLED 1.6366 ACRES
CATHERINE KECK WAGGONER.
B.C.C.F. NO. 2020042539
VOL. 2, PG. 81, B.C.P.R.

TRACT 34
EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
HT & B RR. CO. SURVEY
ABSTACT 291,
VOL. 2, PG. 81–82, B.C.P.R.

SET 5/8 IRC "WINDROSE"

N 86°53'57" E 639.16'

FND 5/8 IR FOR REFERENCE (S 16°54'59" W, 0.30')

SET 5/8 IRC "WINDROSE"

N 86°53'57" E 1,280.25'

FND 5/8 IRC FOR REFERENCE (S 16°18'34" W, .366')

40' R.O.W. (UNIMPROVED) VOL. 2, PG. 81–82, B.C.P.R.

FUTURE KIRBY DRIVE (PROPOSED 120' WIDE R.O.W.) B.C.C.F. NO. 2022037379

40' R.O.W. (UNIMPROVED) VOL. 2, PG. 81–82, B.C.P.R. B.C.C.F. NO. 2019057985 B.C.C.F. NO. 2019057983

11.3999 ACRES
496,581 SQ.FT.

EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
VOL. 2, PG. 81–82, B.C.P.R.
B.C.P.R. NO. 2022037379

PART TWO "TRACT FOUR"
CALLED 11.395 ACRES
TH PROPERTY, INC.
B.C.C.F. NO. 2002056335
B.C.P.R. NO. 2022037379

34.2791 ACRES
1,493,196 SQ.FT.

EMIGRATION LAND
COMPANY SUBDIVISION
SECTION 71
VOL. 2, PG. 81–82, B.C.P.R.
B.C.P.R. NO. 2022037379

PART ONE "TRACT ONE"
CALLED 35.905 ACRES
TH PROPERTY, INC.
B.C.C.F. NO. 2002056335
B.C.P.R. NO. 2022037379

N 03°21'05" W 644.48'

S 03°15'50" E 910.78'

N 03°15'50" W 927.47'

S 03°15'50" E 681.87'

FND 5/8 IR

FND 5/8 IRC "BGE INC"

SET 5/8 IRC "WINDROSE"

FND 5/8 IR

N 70°28'31" W 692.21'

P.O.B. FND 5/8 IR

40'

FND 5/8 IR

S 03°20'28" E 499.85'

KIRBY DRIVE
120' R.O.W.
PLAT NO. 2022037379, B.C.P.R.

STATE HIGHWAY 6
200' R.O.W.
PLAT NO. 2022037379, B.C.P.R

N 70°28'07" W 1,291.68'

N 70°28'31" W 1,248.34'

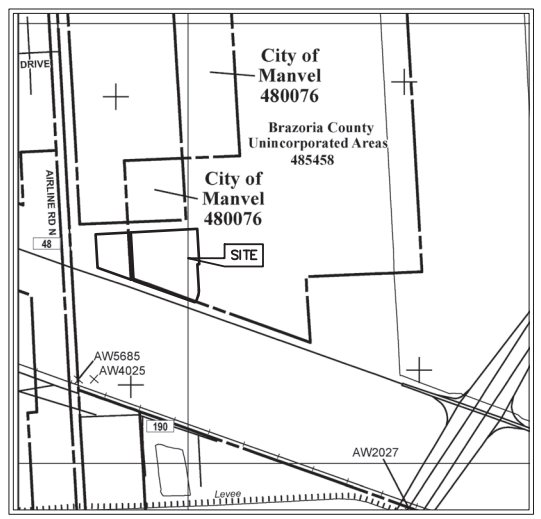
FND 5/8 IR FOR REFERENCE (S 46°58'53" W, 0.27')

FND 5/8 IRC "BGE INC"

L2 S 19°31'29" W 118.23'

FND 5/8 IR

P.O.B. FND 5/8 IRC "BGE"



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	485461	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.

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

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

10/30/2023
DATE

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

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)

Traffic Impact Analysis

Manvel Commercial Development

SH 6 at Kirby Drive

Manvel, Texas 77578

Dustin W. Qualls, PE, PTOE

October 9, 2025

-prepared by-

QUALLS DESIGN

TBPE Firm: F-23500

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.

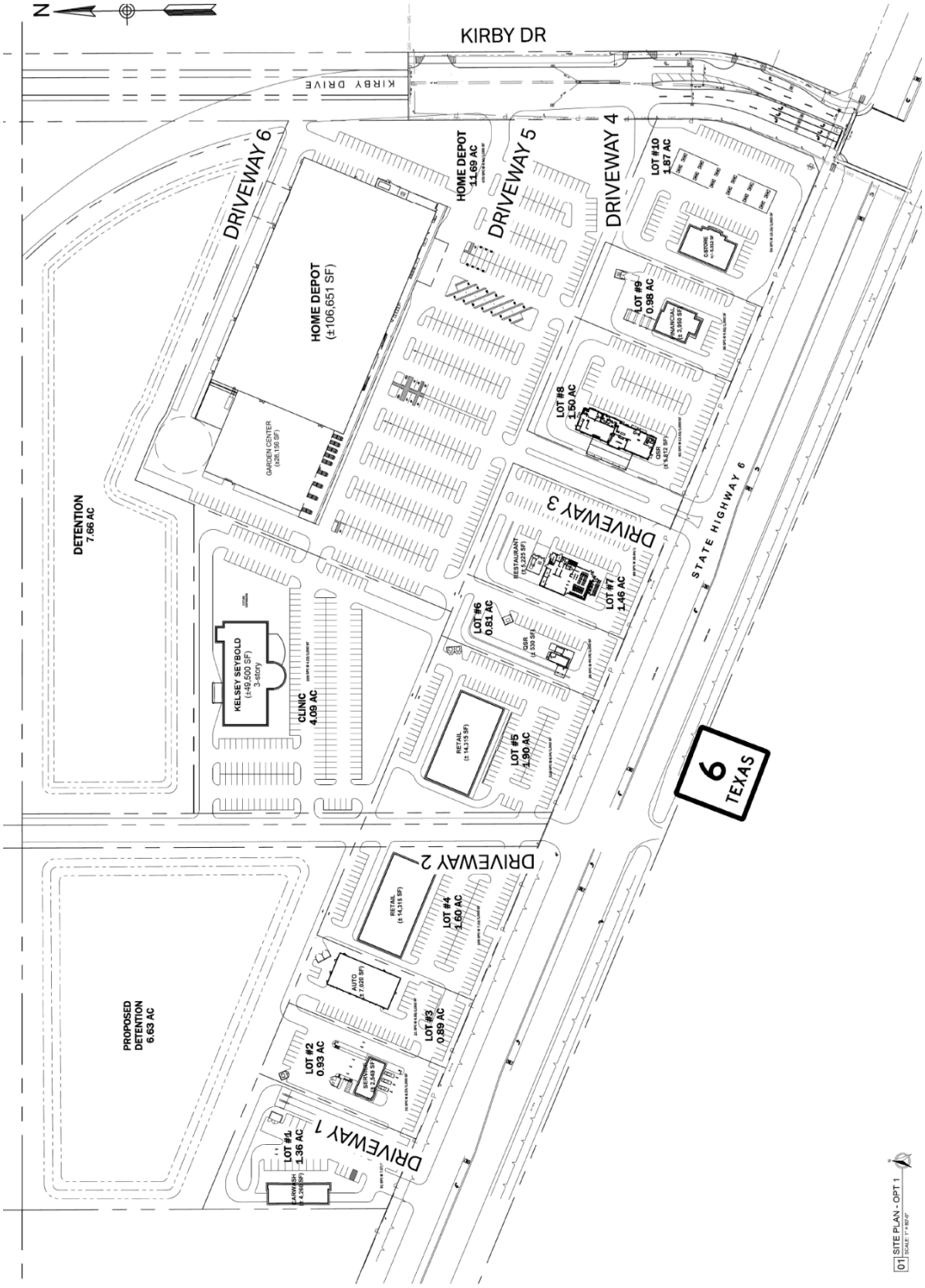

Figure 2: Manvel Commercial Proposed Site Plan

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.

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Introduction

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**.

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.

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:

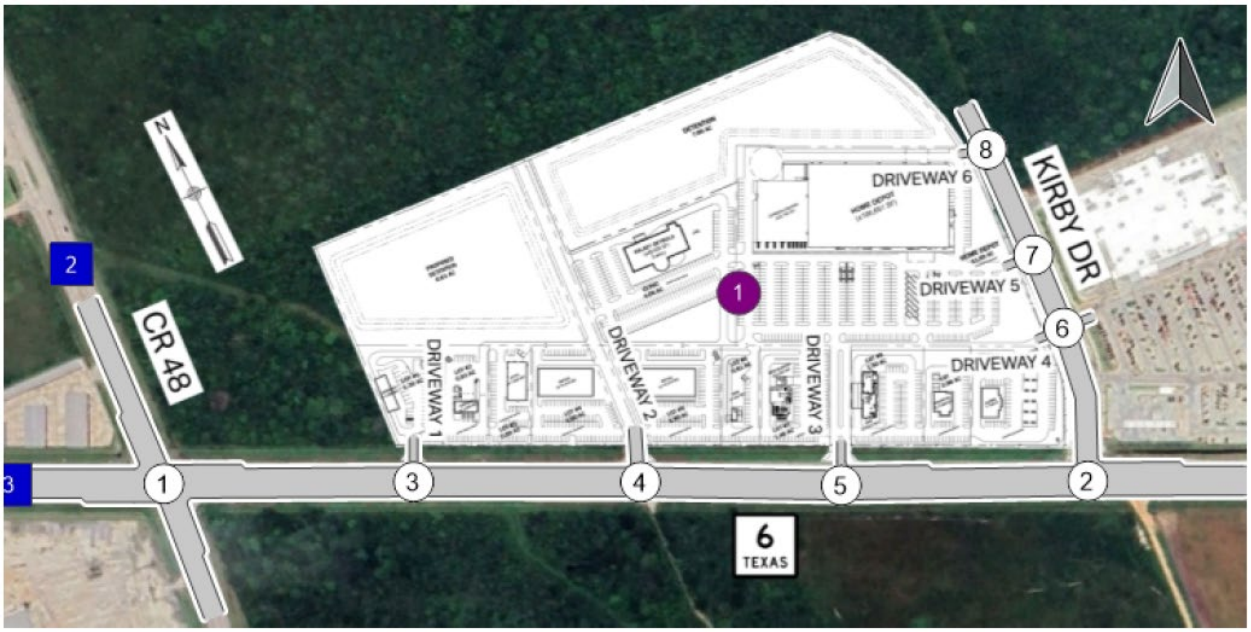
- Typical 2-lane, undivided collector roadway
- Drainage provided by open drainage ditches on both sides of the roadway
- Posted speed limit: 40 MPH
- A sidewalk is present along the east side of Kirby Drive
- Kirby Drive terminates as a dead-end north of the proposed site driveways; this project will 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.



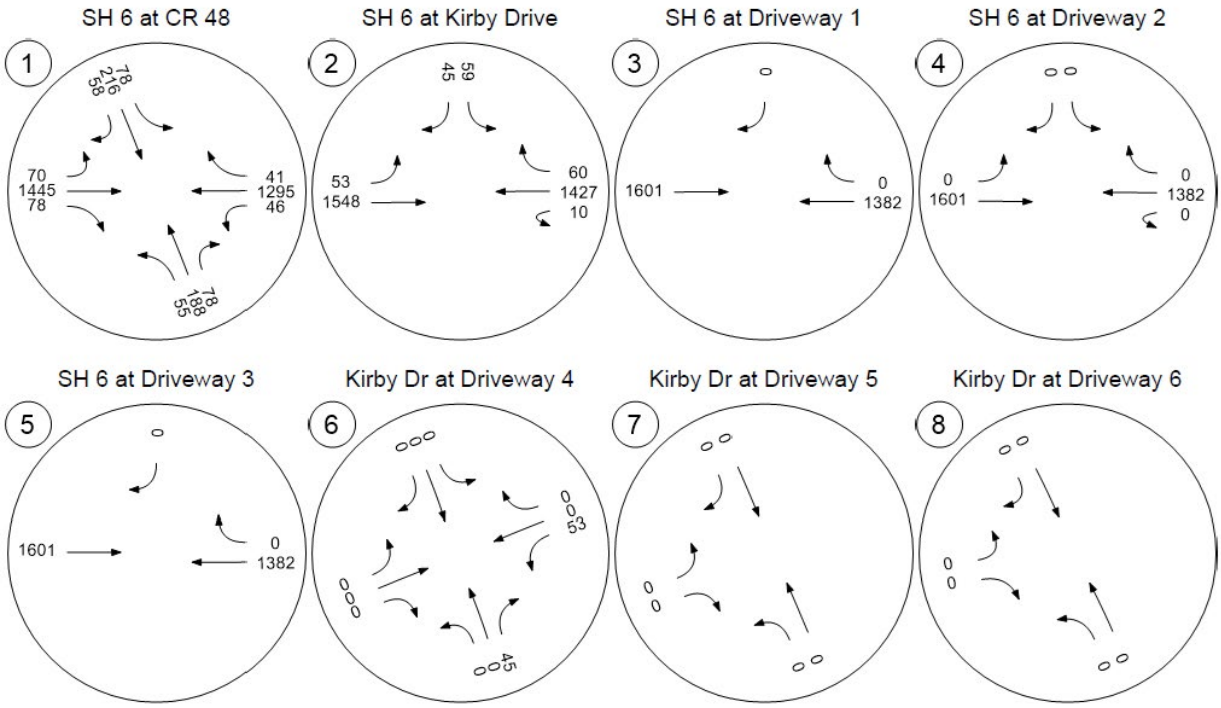
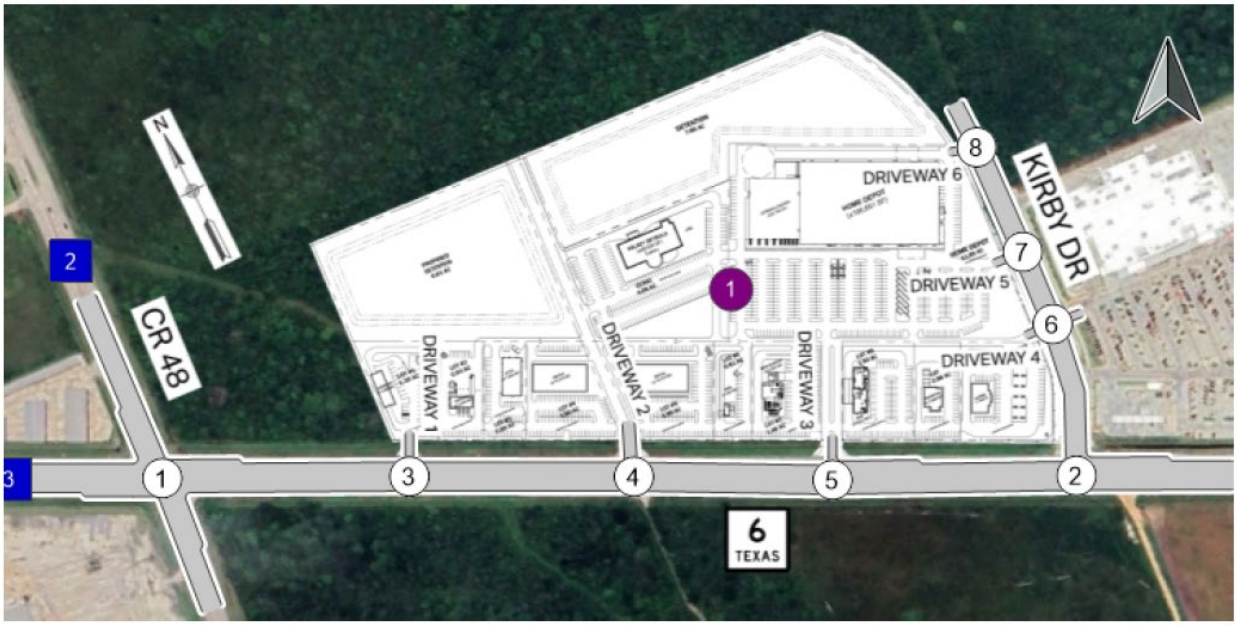


Figure 3: Existing AM Peak Hour TMCs (2025)



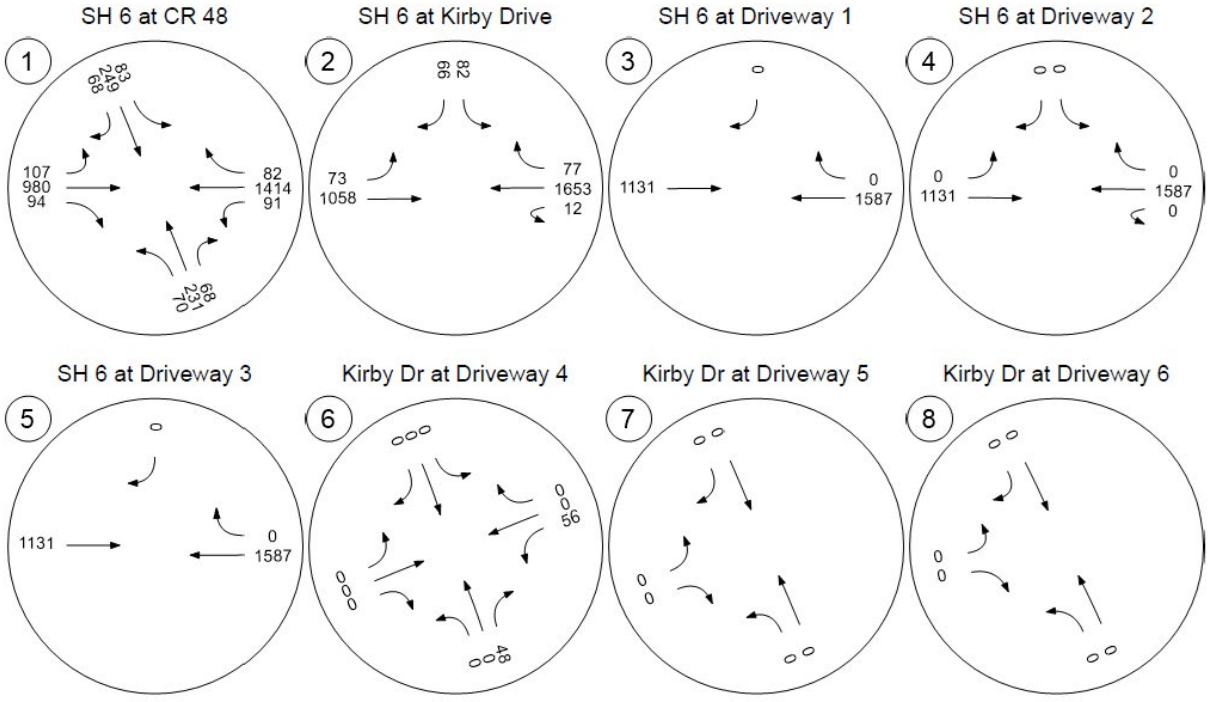


Figure 4: Existing PM Peak Hour TMCs (2025)

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

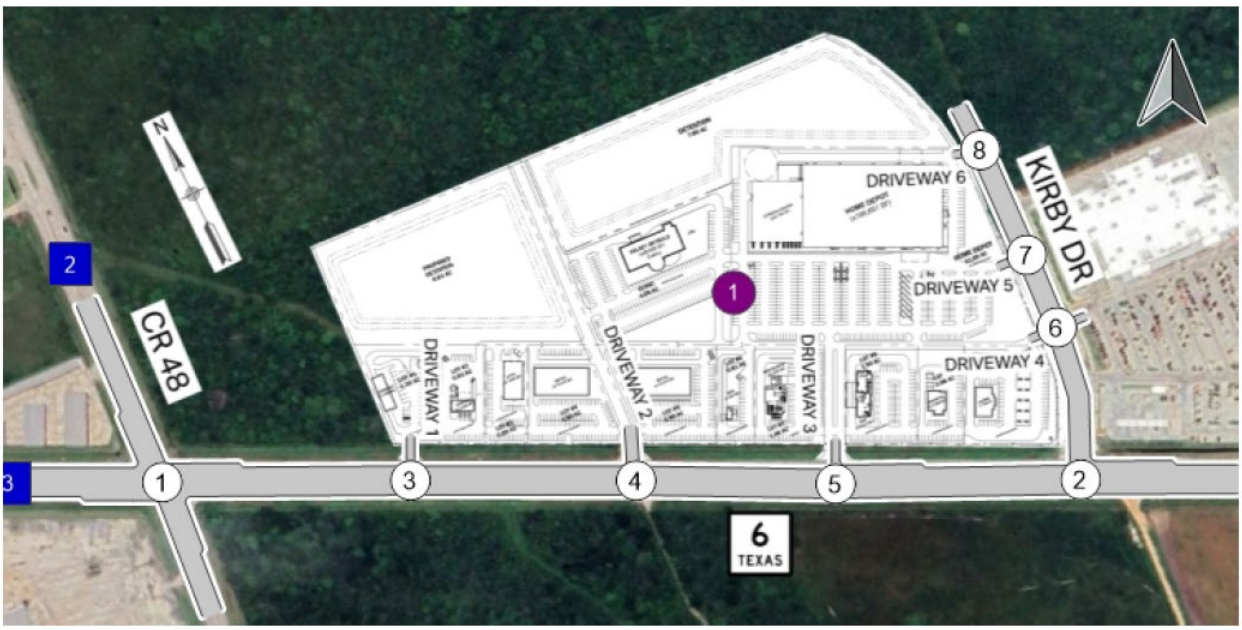
The methodology to calculate the no-build traffic volumes involves collecting existing traffic volumes, combining them with known future background volume generation from adjacent developments, and then growing the traffic volumes up to the design year of the development. The no-build projected traffic 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.



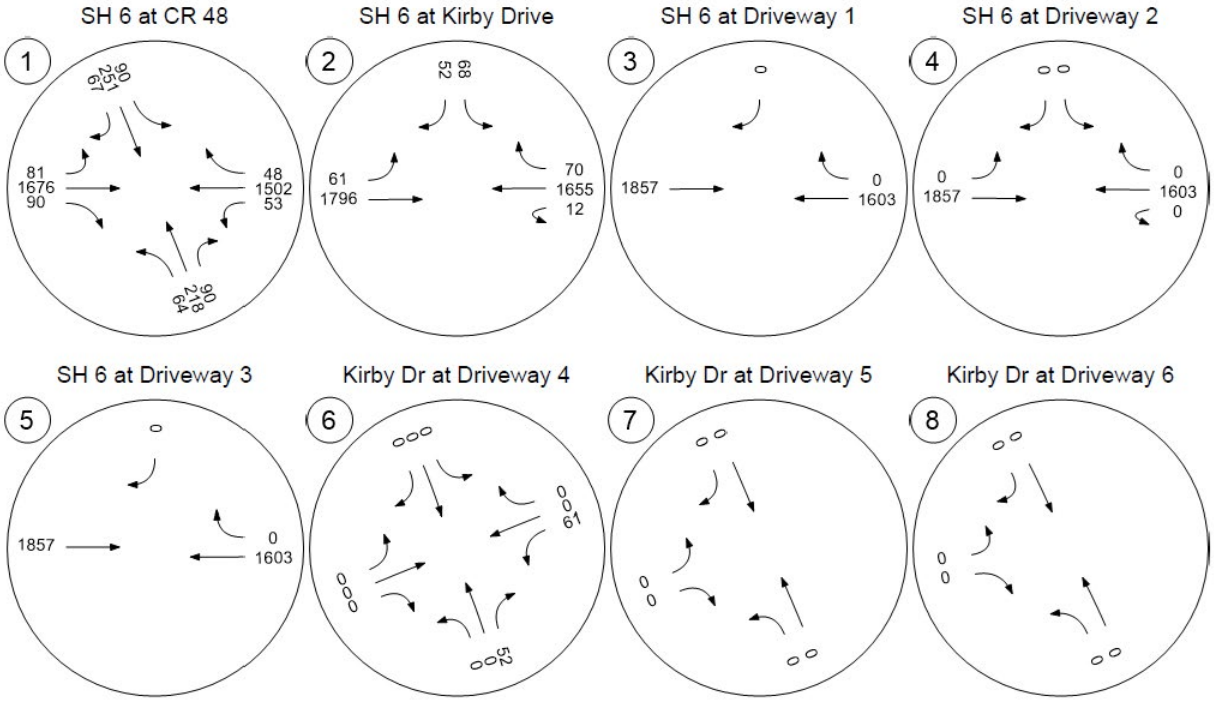
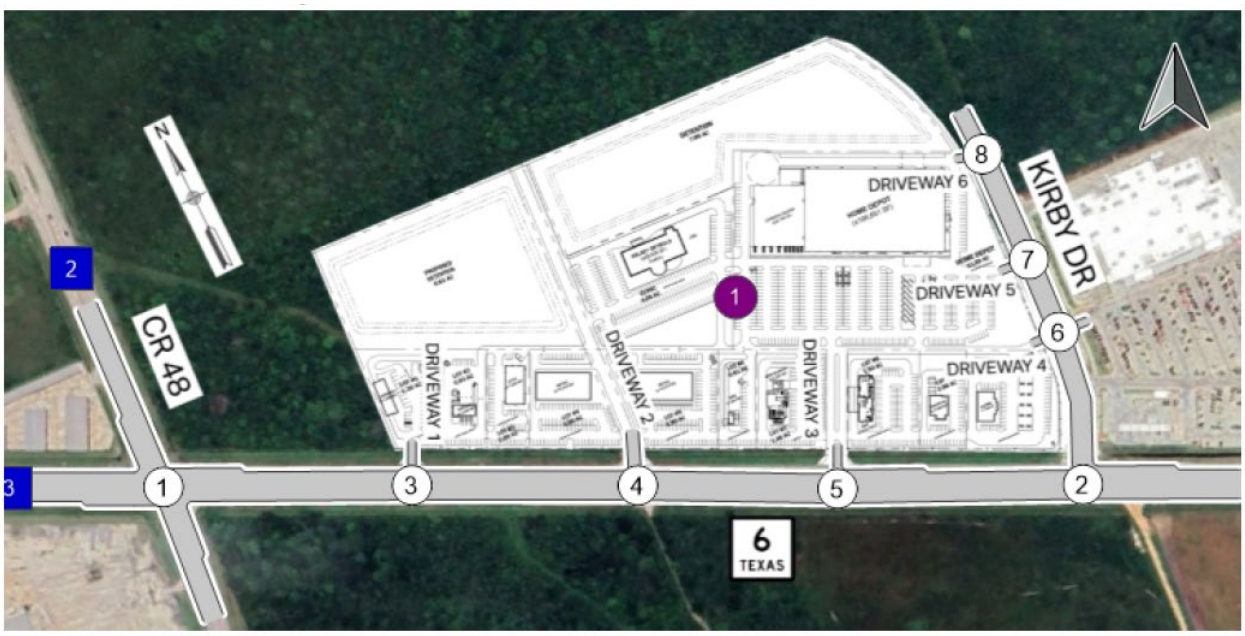


Figure 5: No-Build AM Peak Hour TMCs (2028)



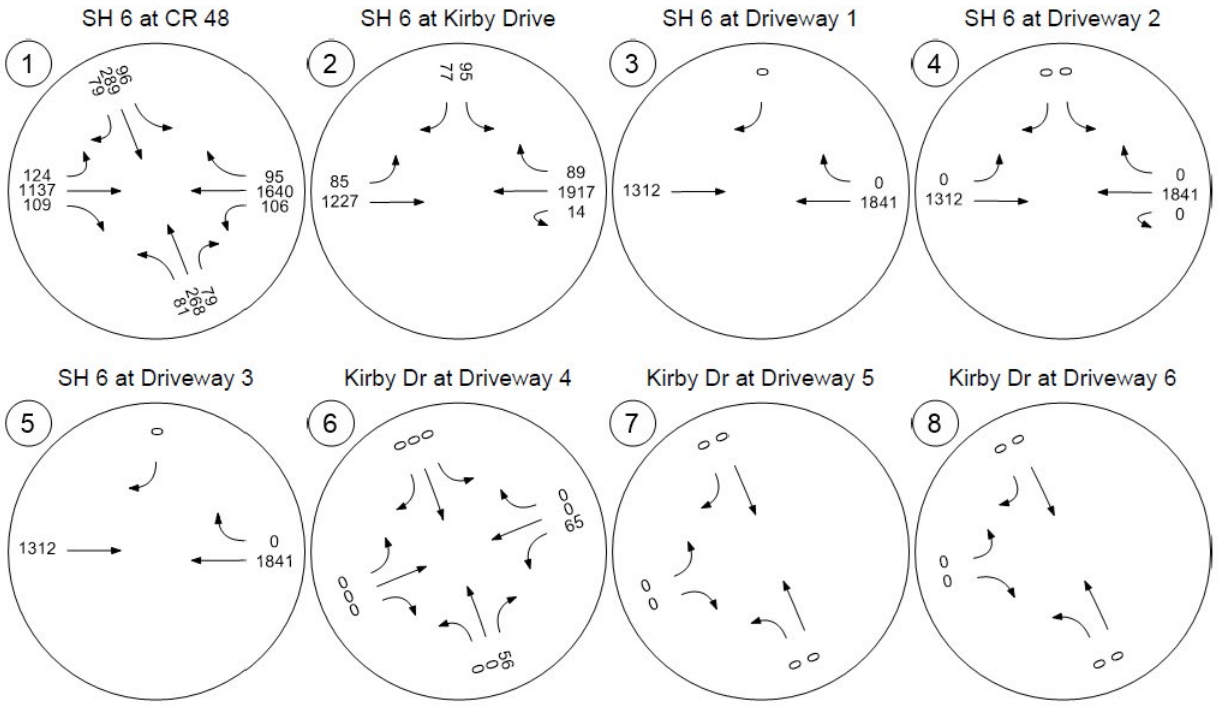


Figure 6: No-Build PM Peak Hour TMCs (2028)

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.

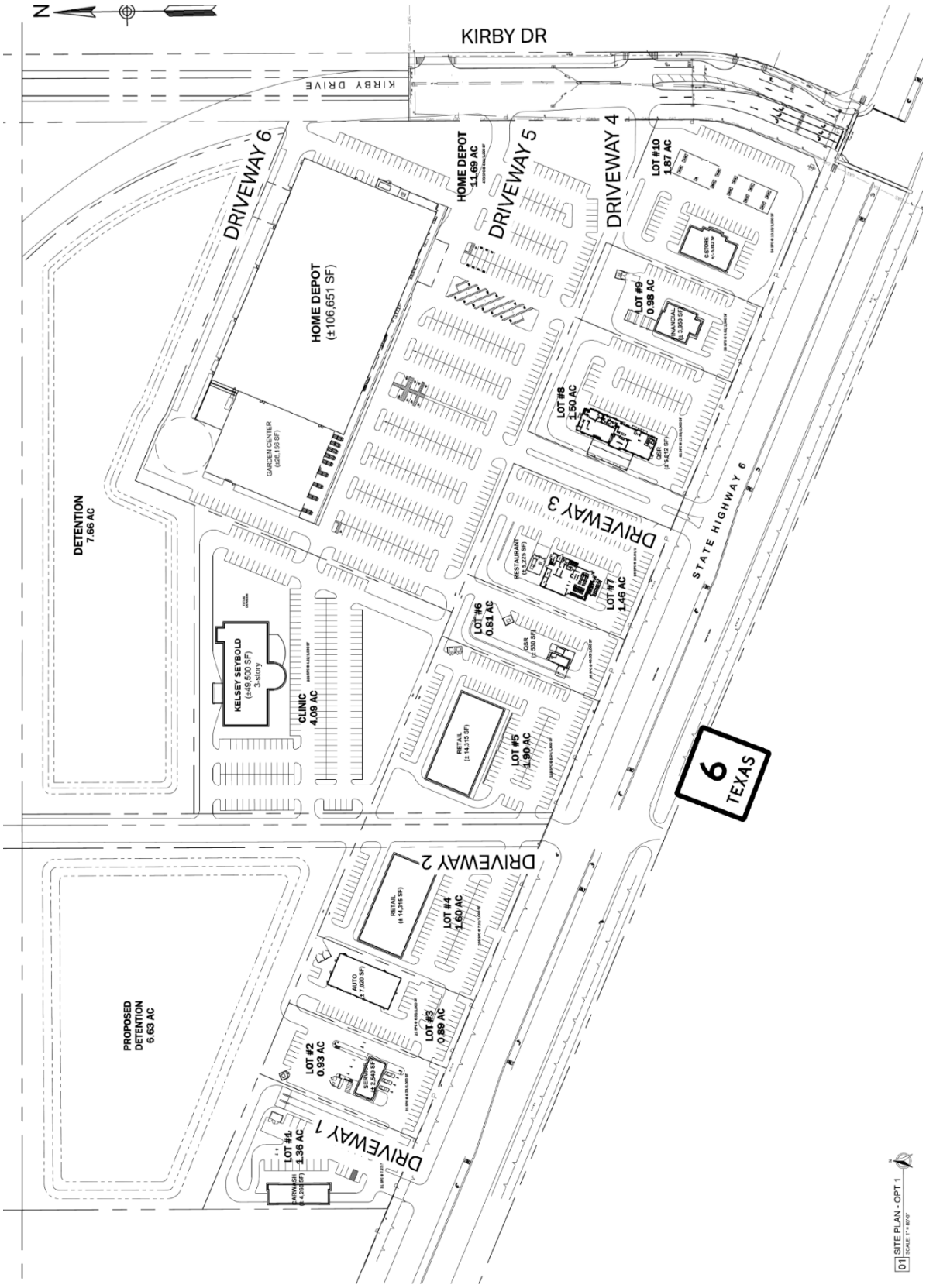


Figure 7: Manvel Commercial Proposed Site Plan

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:

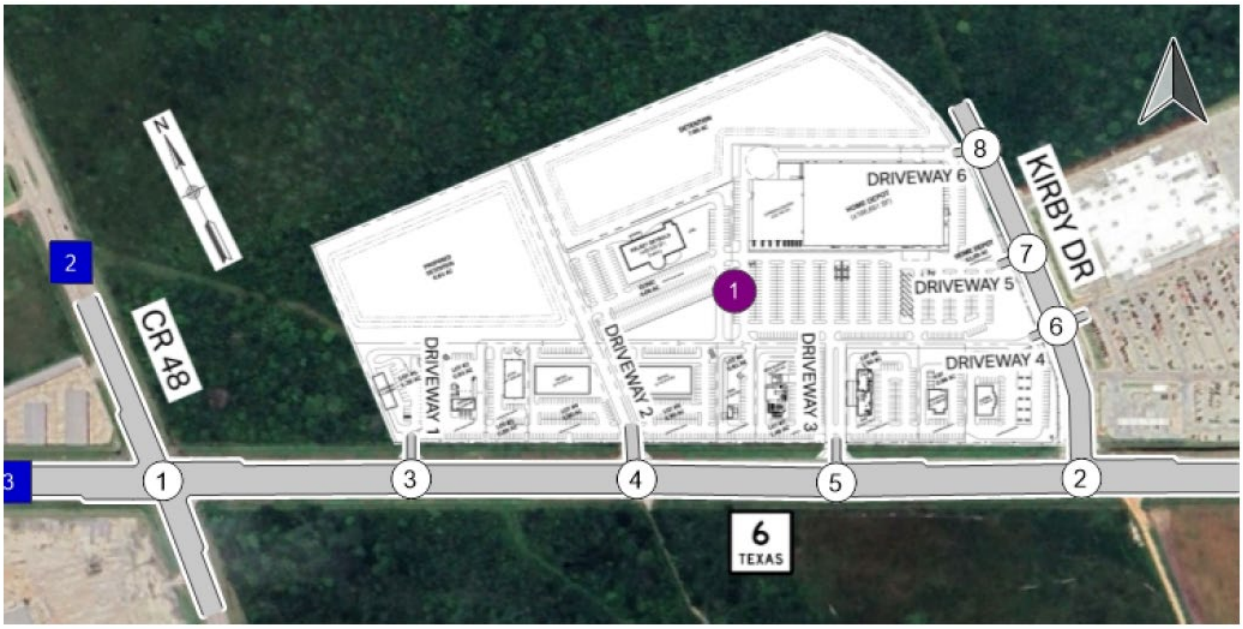
- 50% to/from the east of the development via SH 6
- 35% to/from the west of the development via SH 6
- 10% to/from the northwest of the development via County Road 48
- 5% to/from the southwest of the development via County Road 48

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.



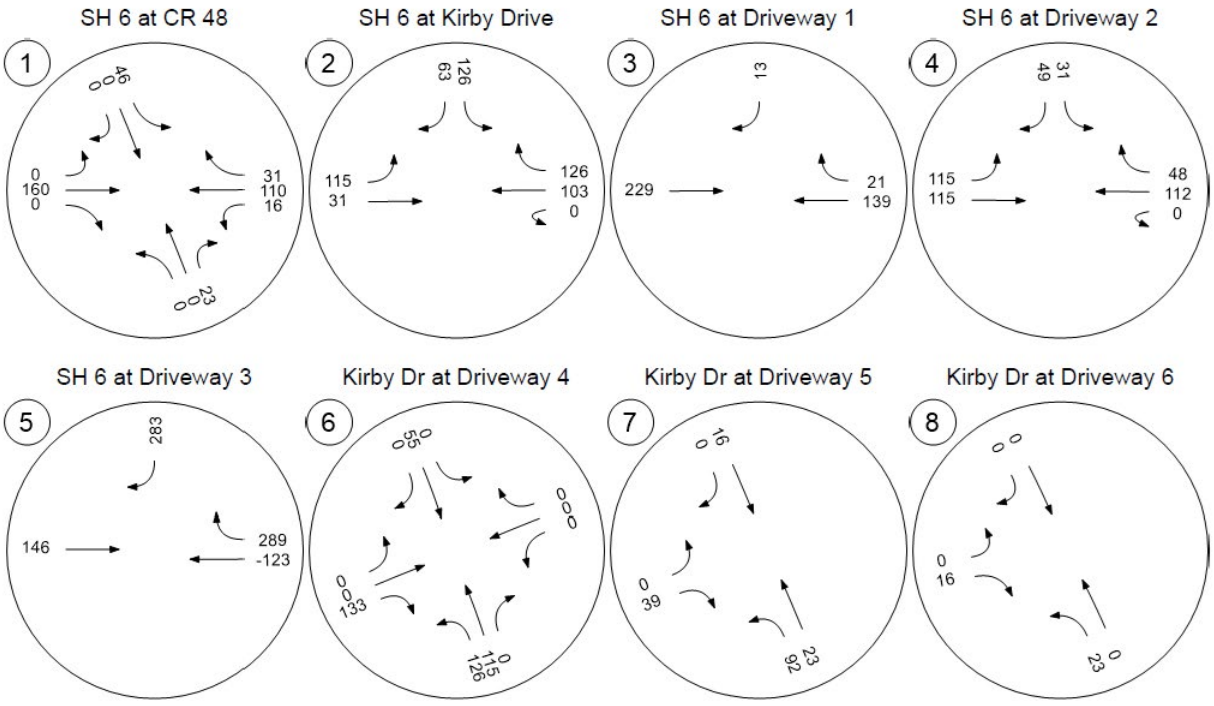
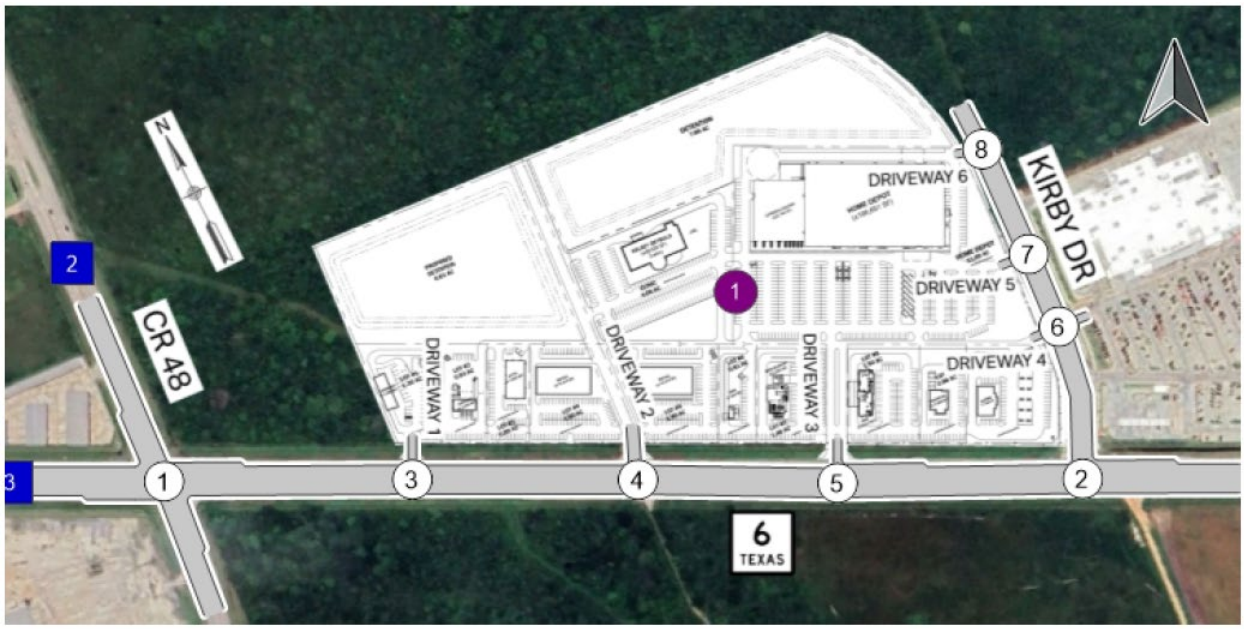


Figure 8: AM Peak Hour Generated Trips by Intersection



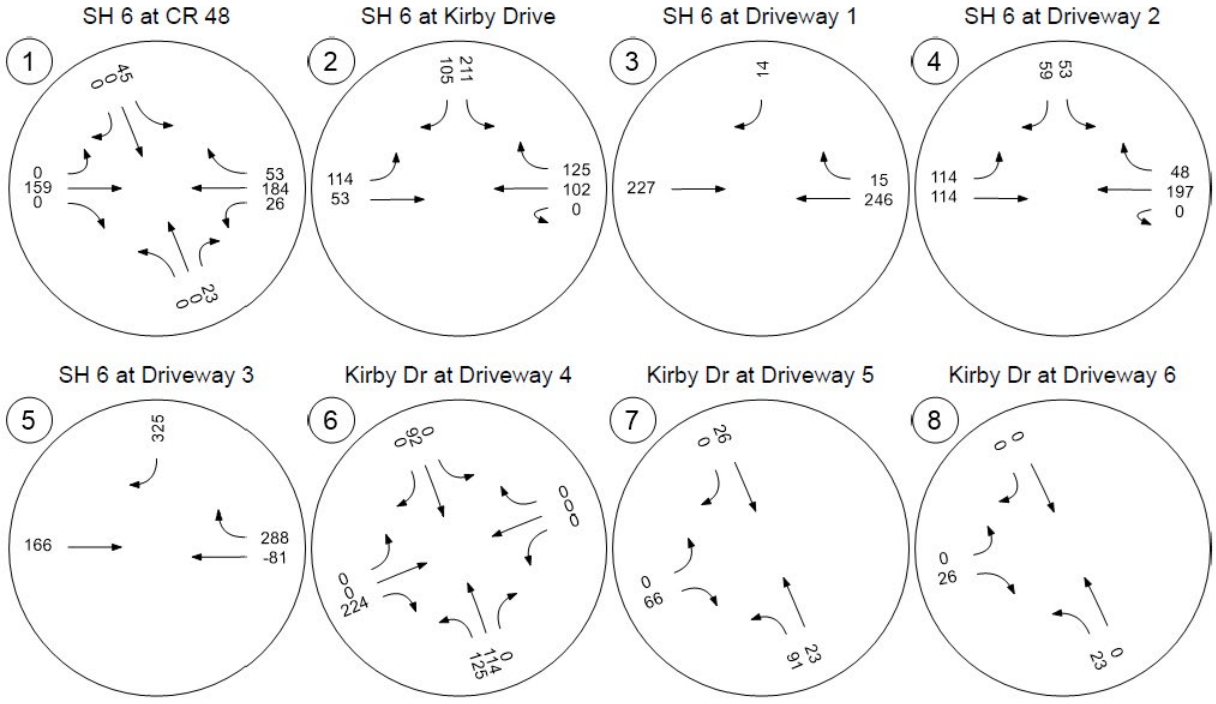


Figure 9: PM Peak Hour Generated Trips by Intersection

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.

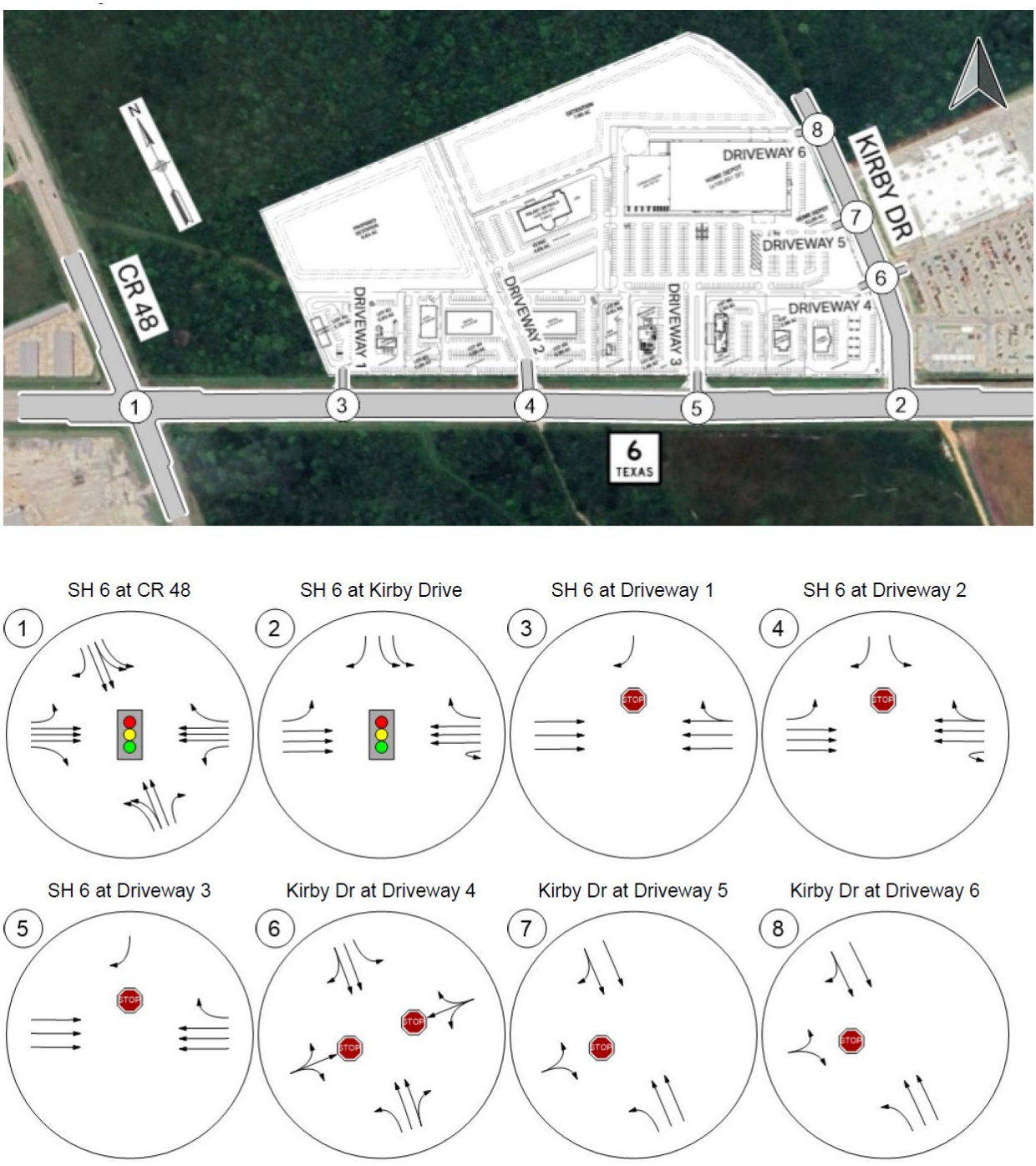
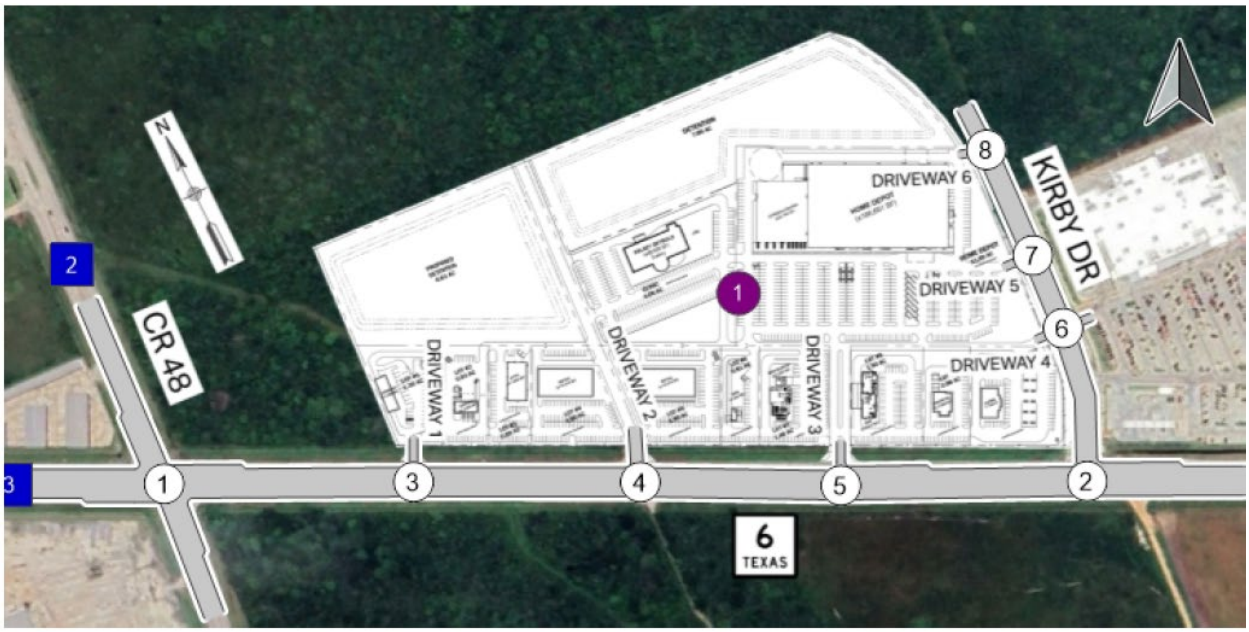


Figure 10: Lane Assignments and Traffic Control

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**.



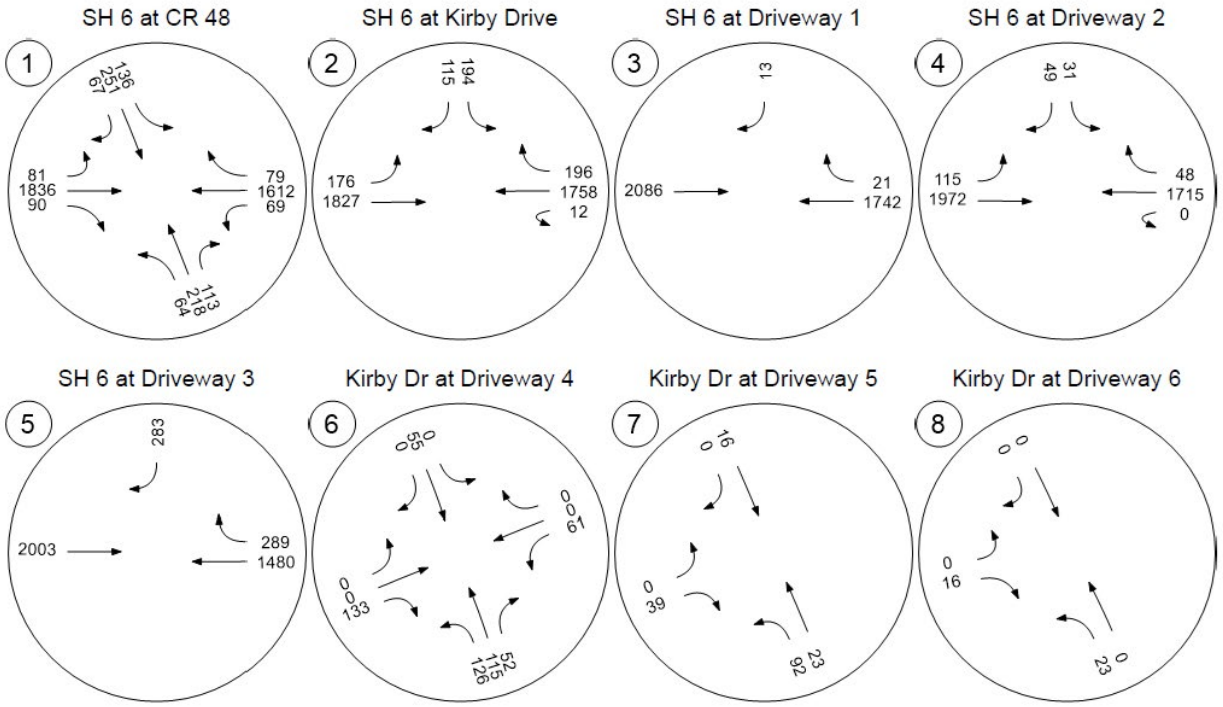
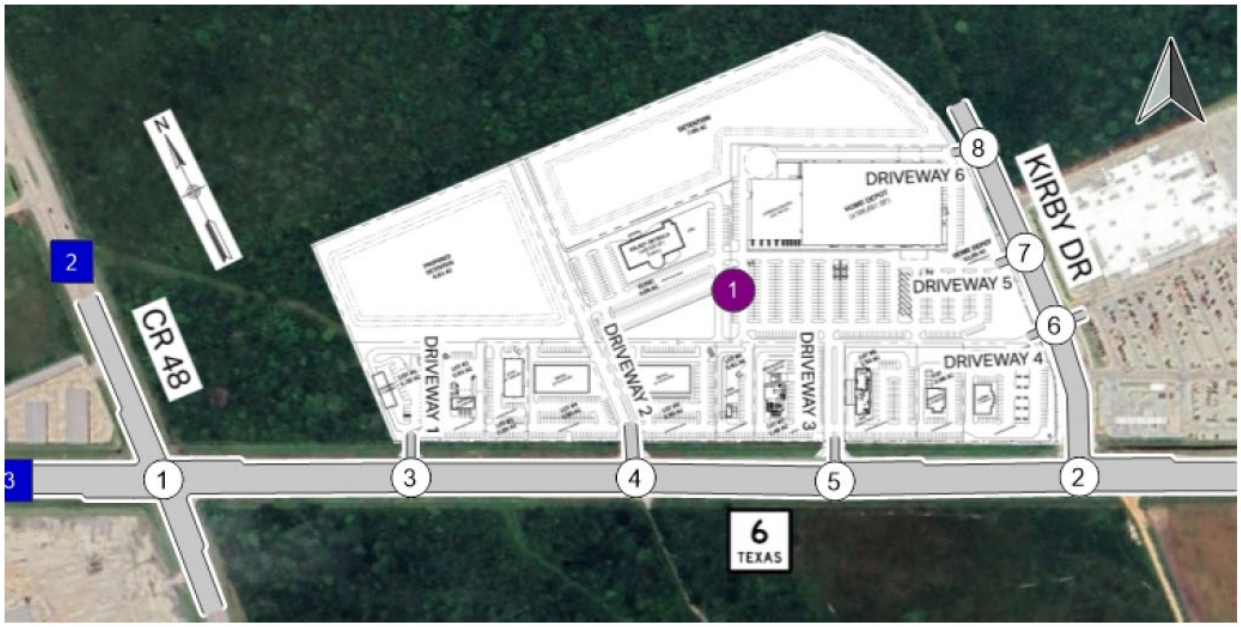


Figure 11: Buildout AM Peak Hour TMCs (2028)



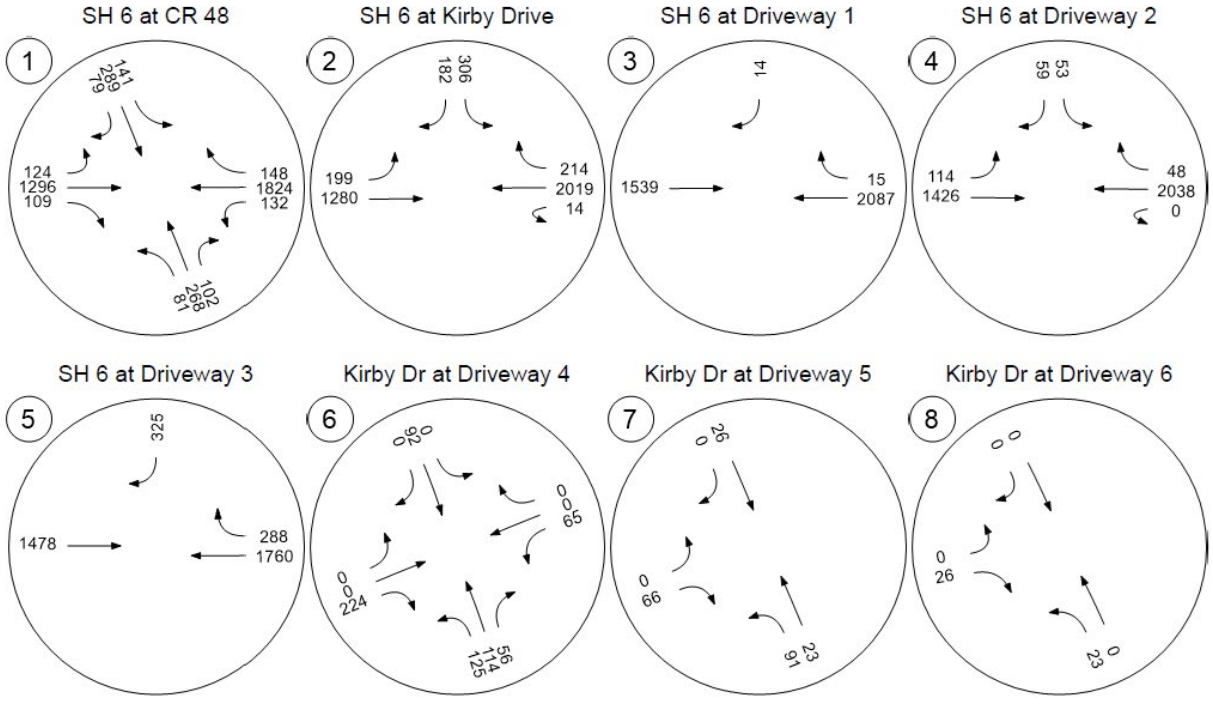


Figure 12: Buildout PM Peak Hour TMCs (2028)

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

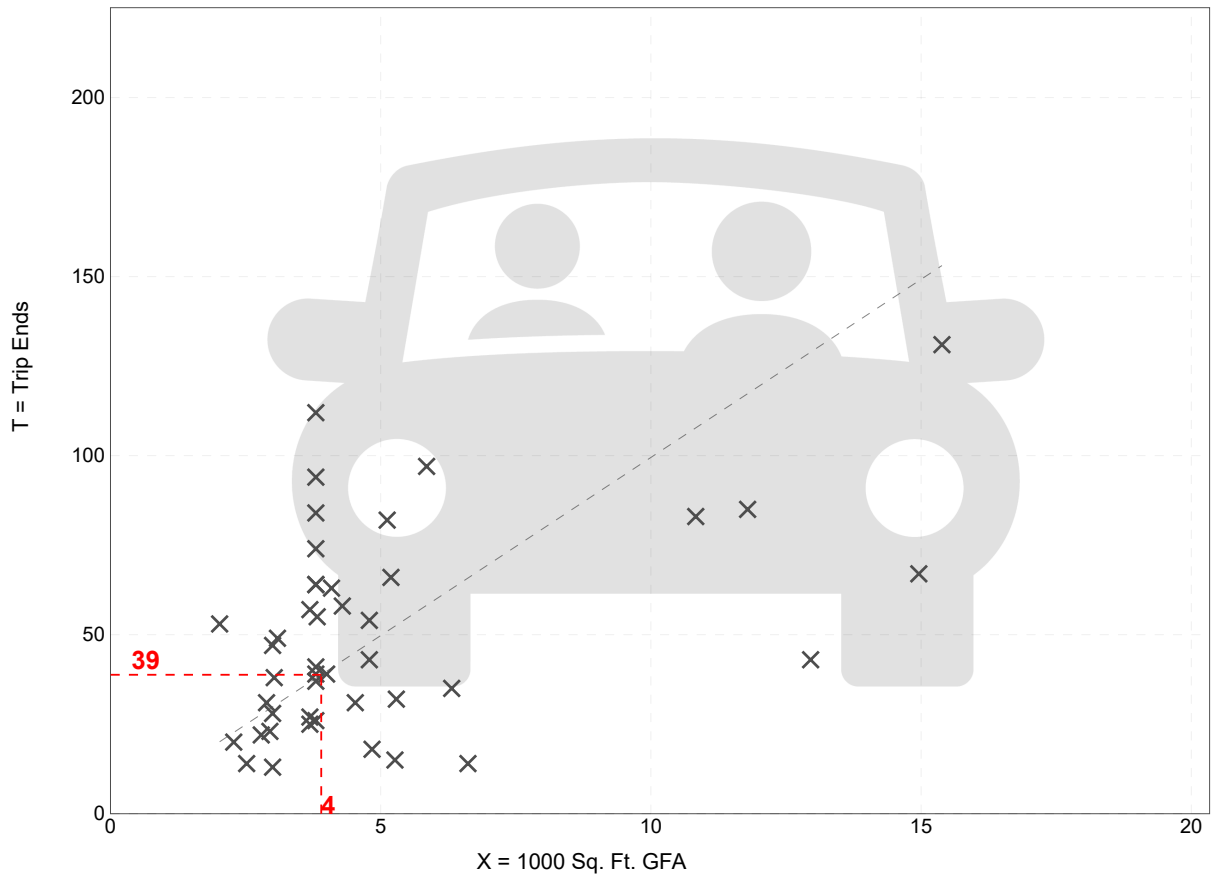
Drive-in Bank
(912)

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= ****

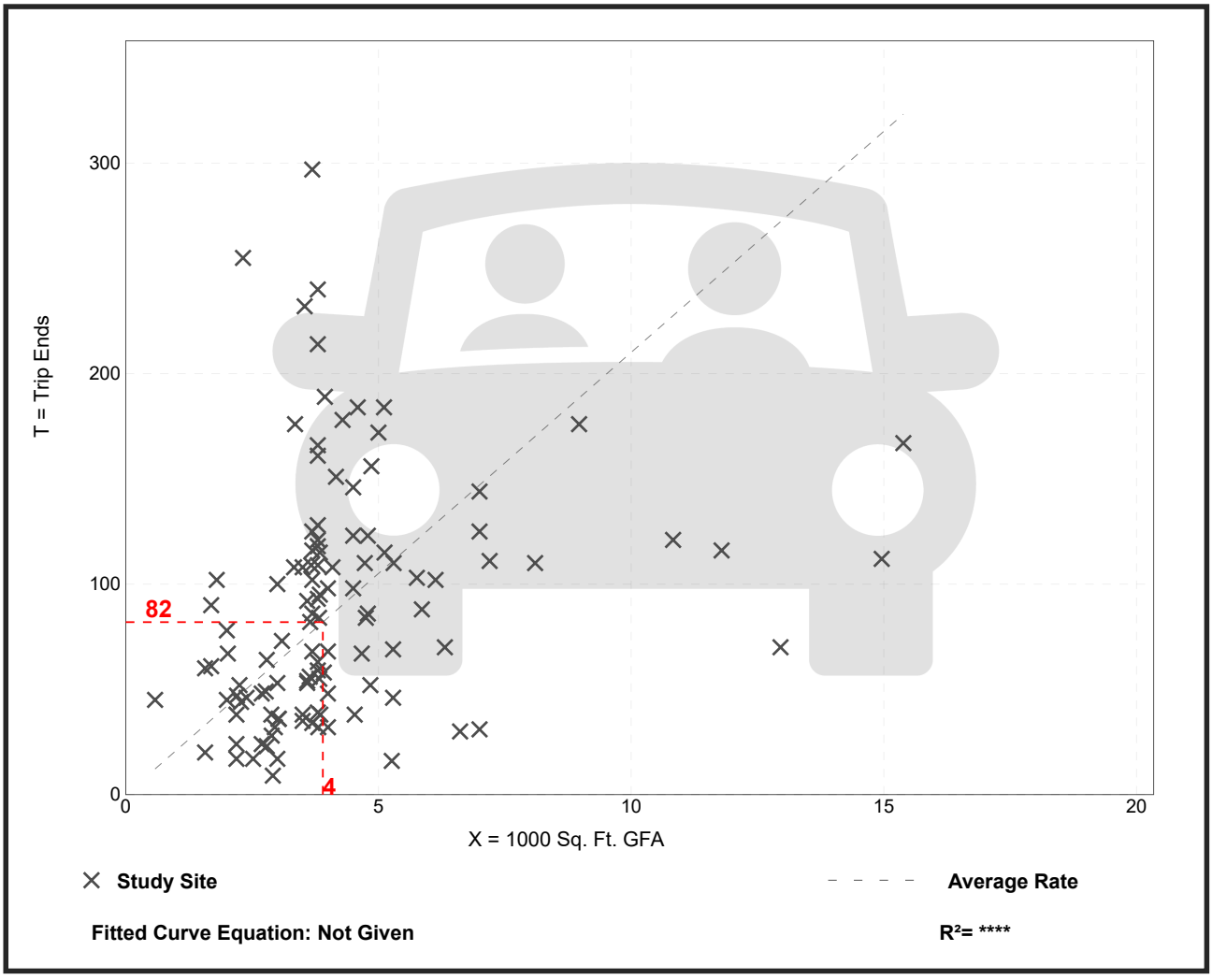
Drive-in Bank
(912)

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)

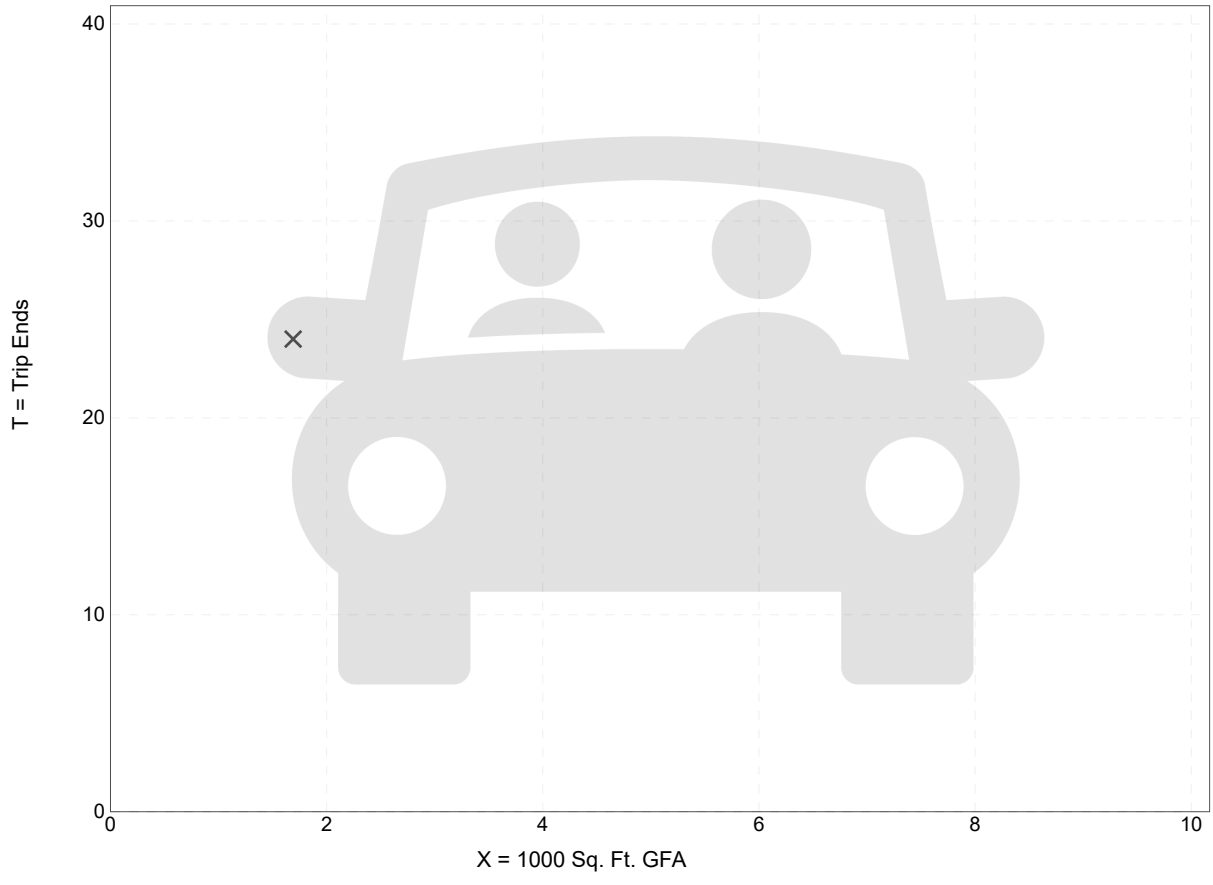
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 2
Directional Distribution: 50% entering, 50% exiting

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= **

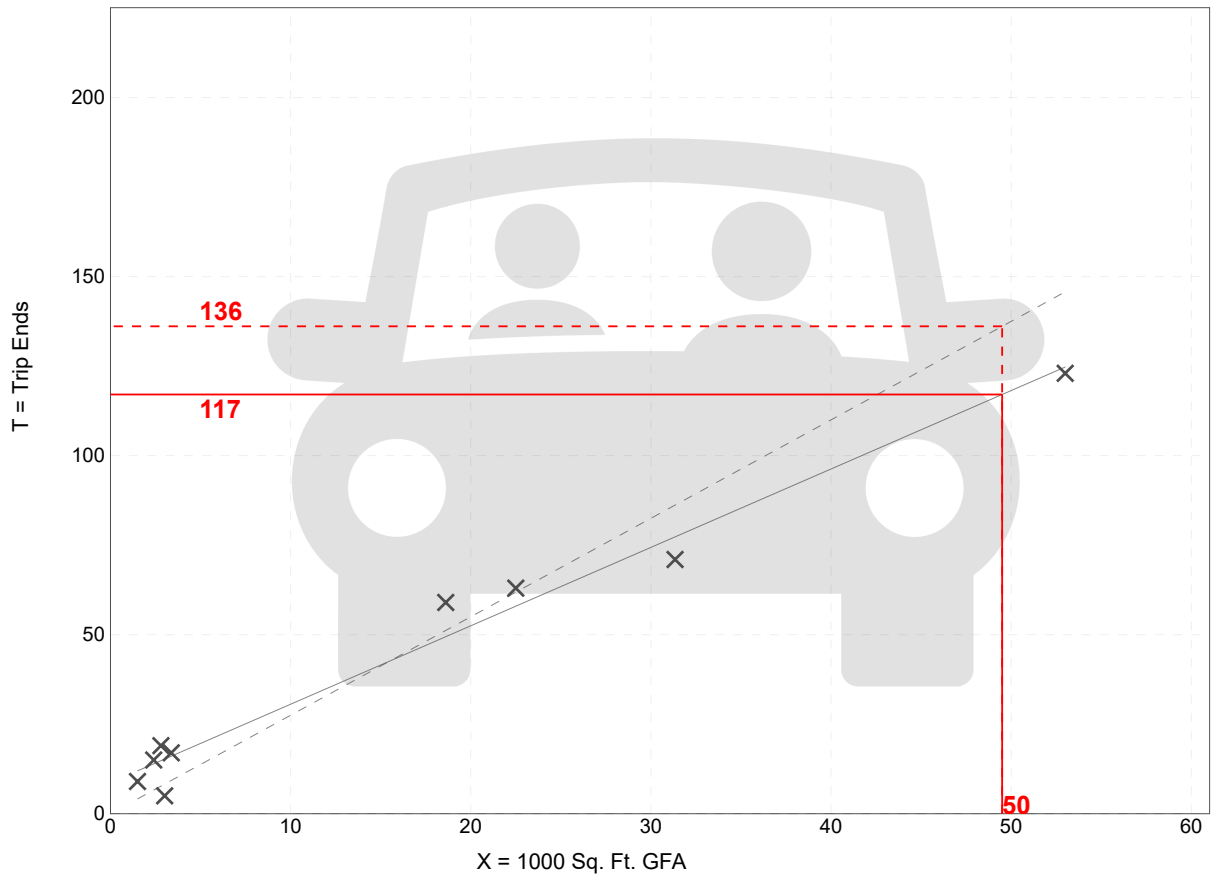
Clinic
(630)

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

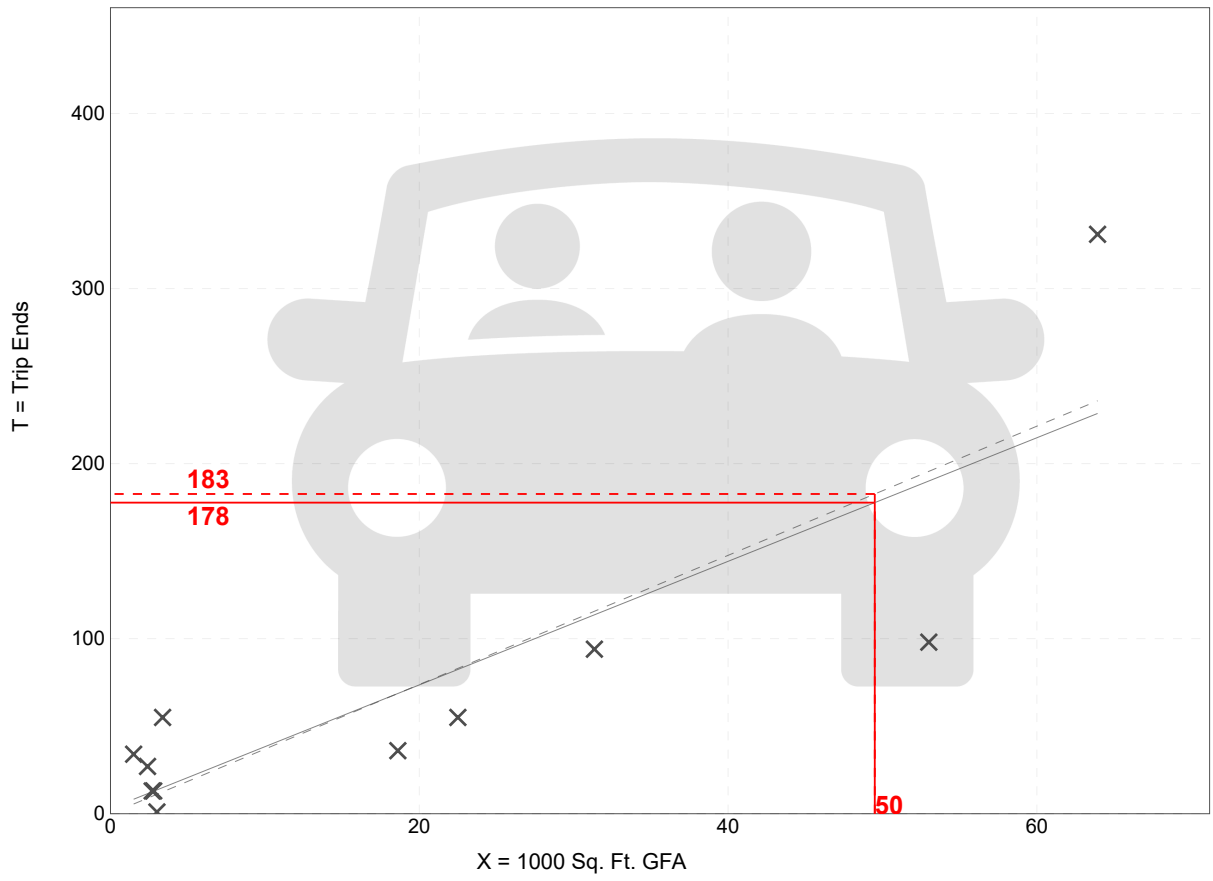
Clinic
(630)

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

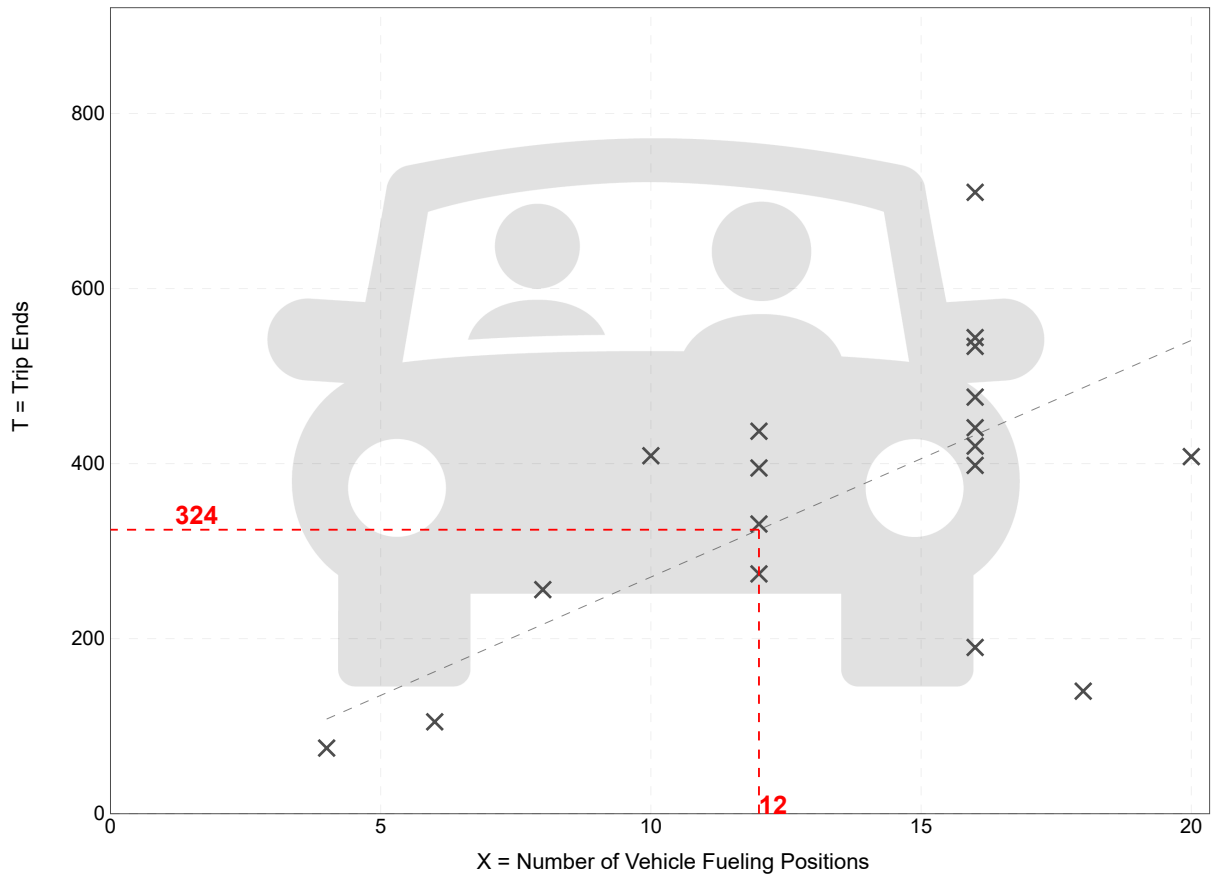
Convenience Store/Gas Station - GFA (4-5.5k)
(945)

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= ****

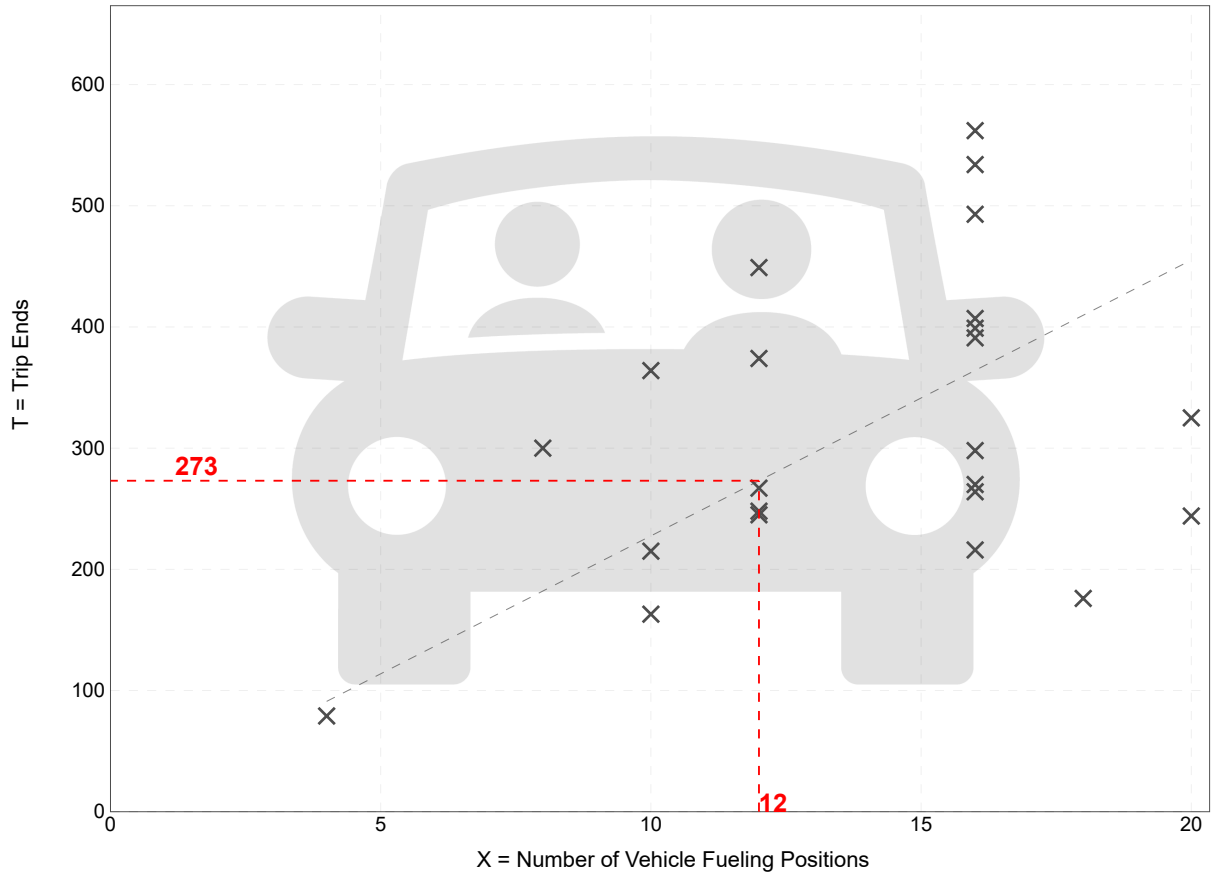
Convenience Store/Gas Station - GFA (4-5.5k)
(945)

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= ****

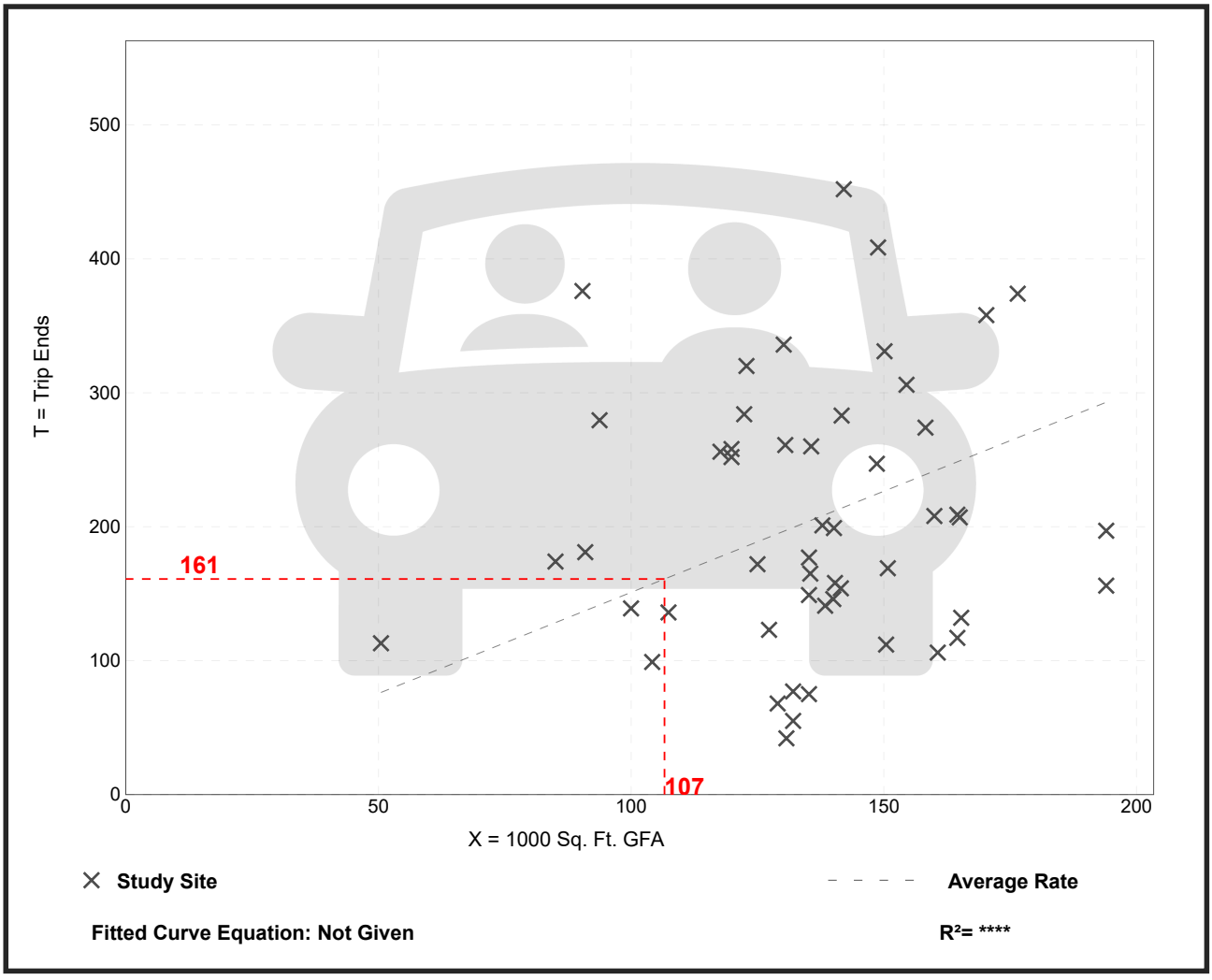
Home Improvement Superstore
(862)

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



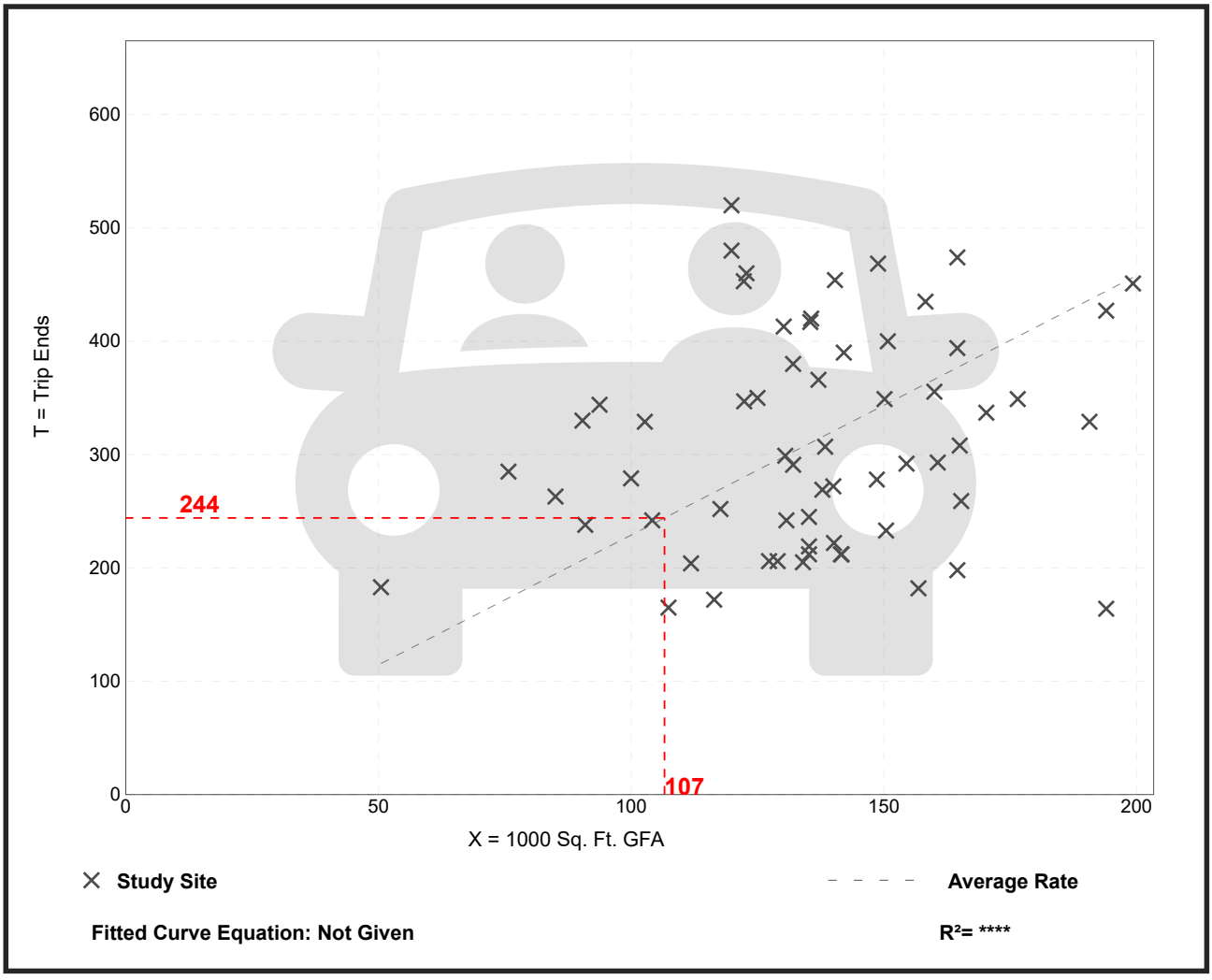
Home Improvement Superstore
(862)

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)

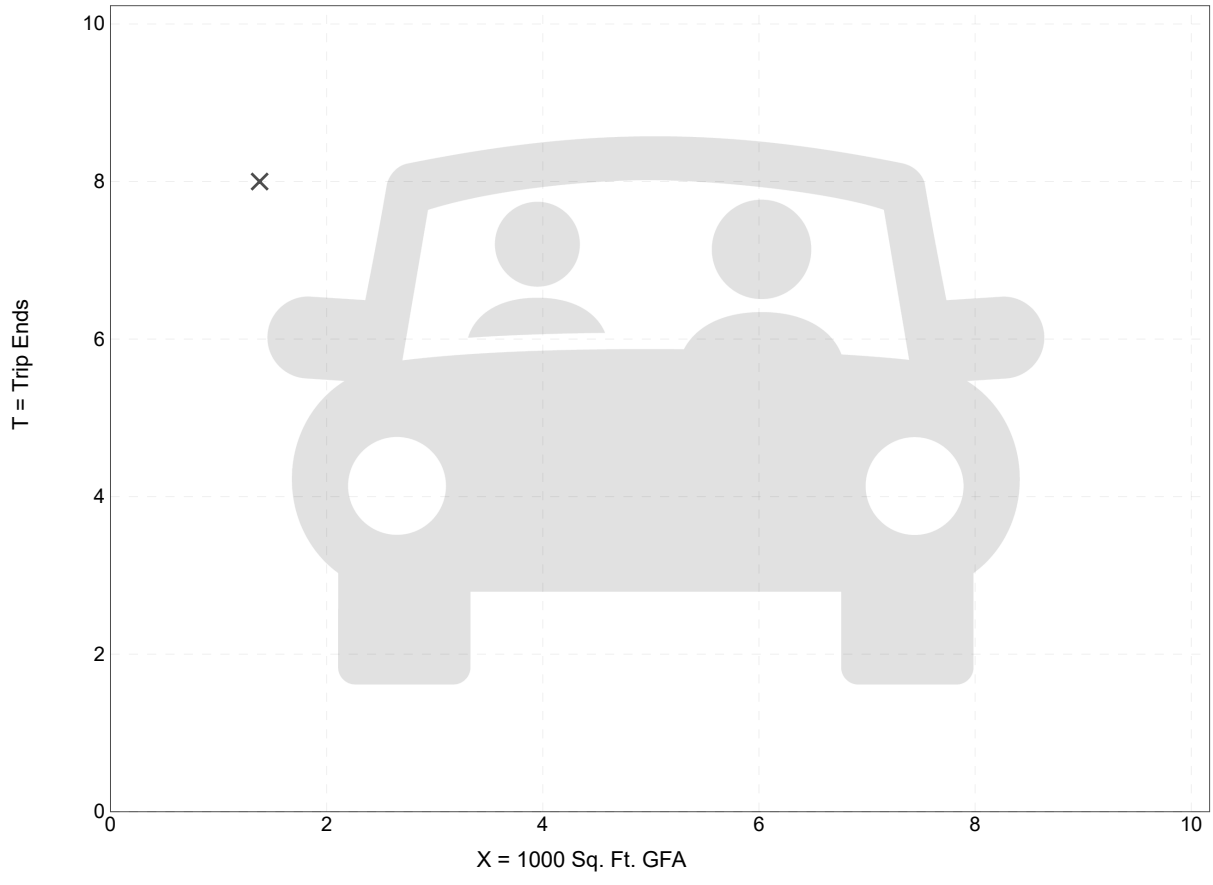
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 75% entering, 25% exiting

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)

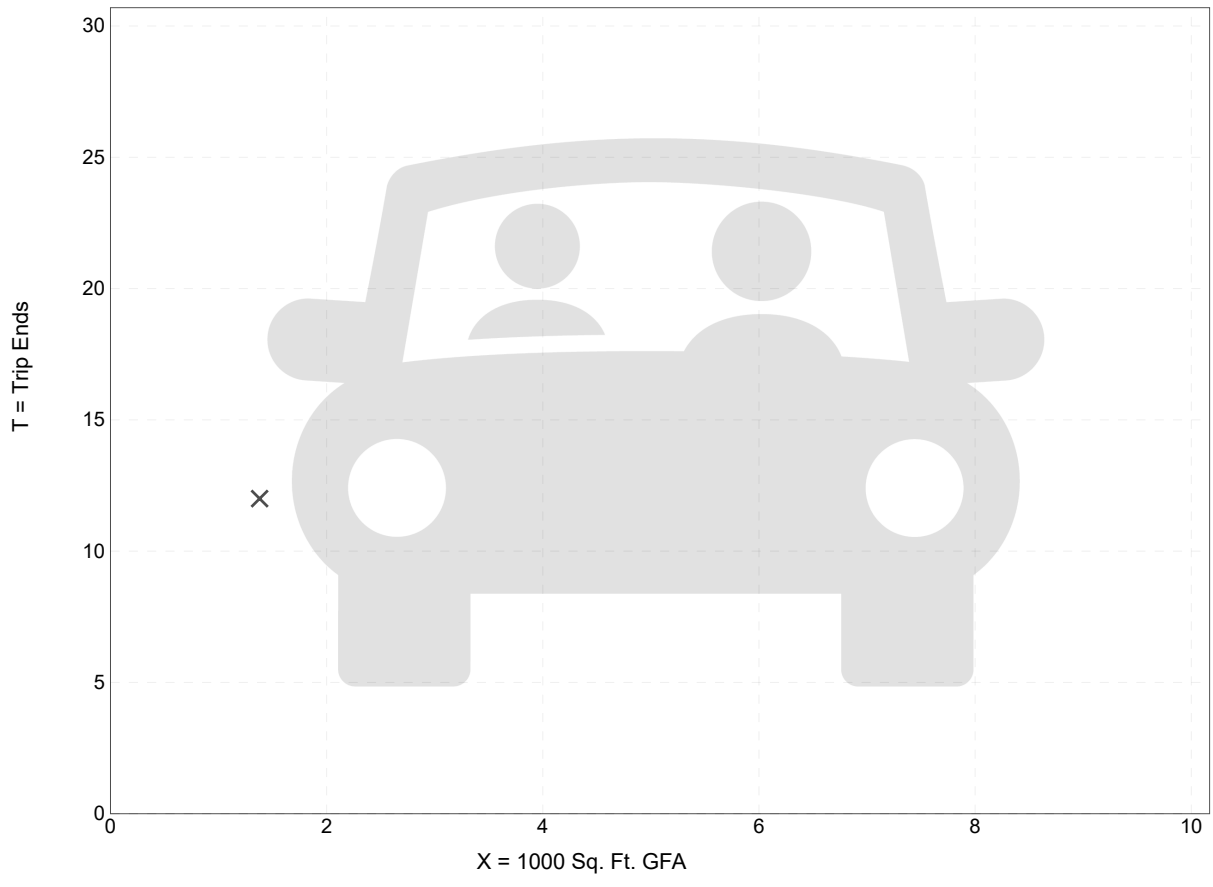
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 1
Avg. 1000 Sq. Ft. GFA: 1
Directional Distribution: 42% entering, 58% exiting

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= **

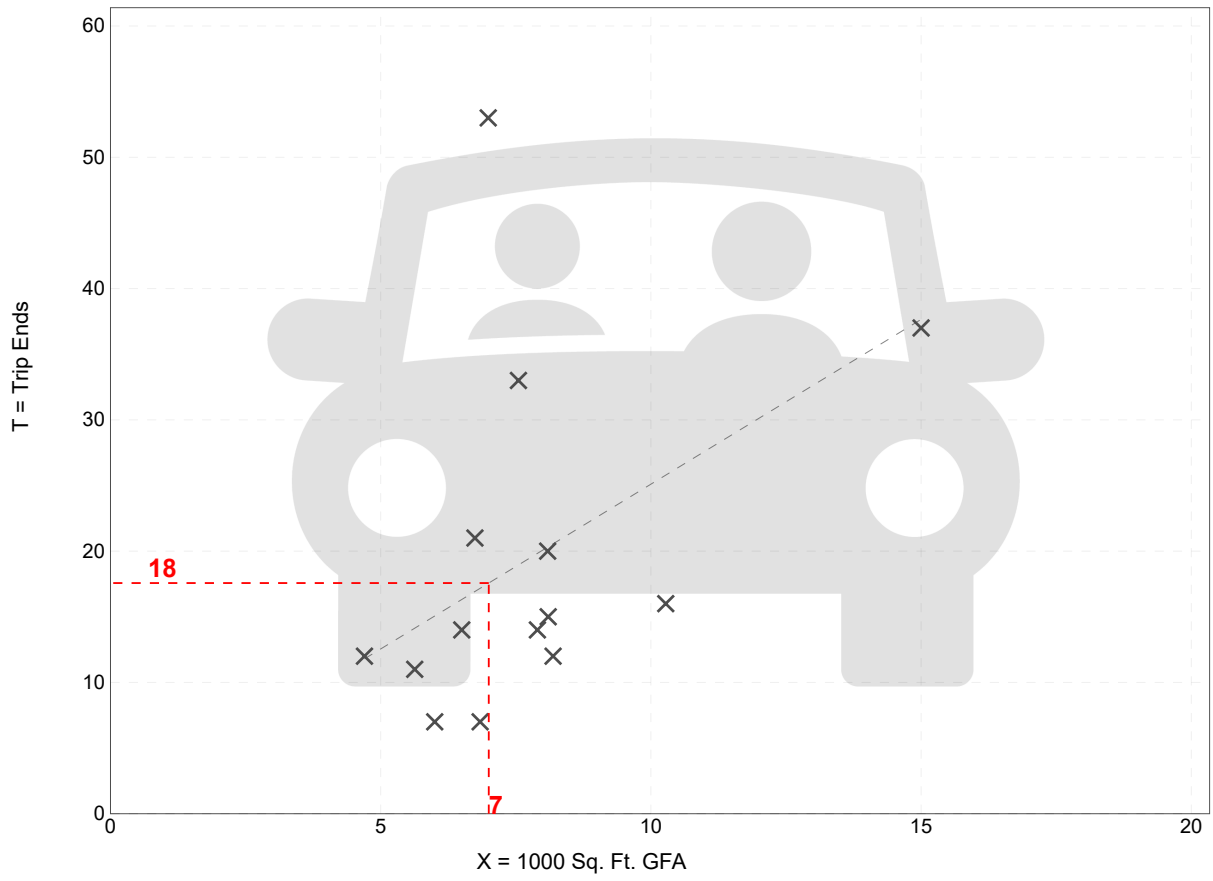
Automobile Parts Sales
(843)

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= ****

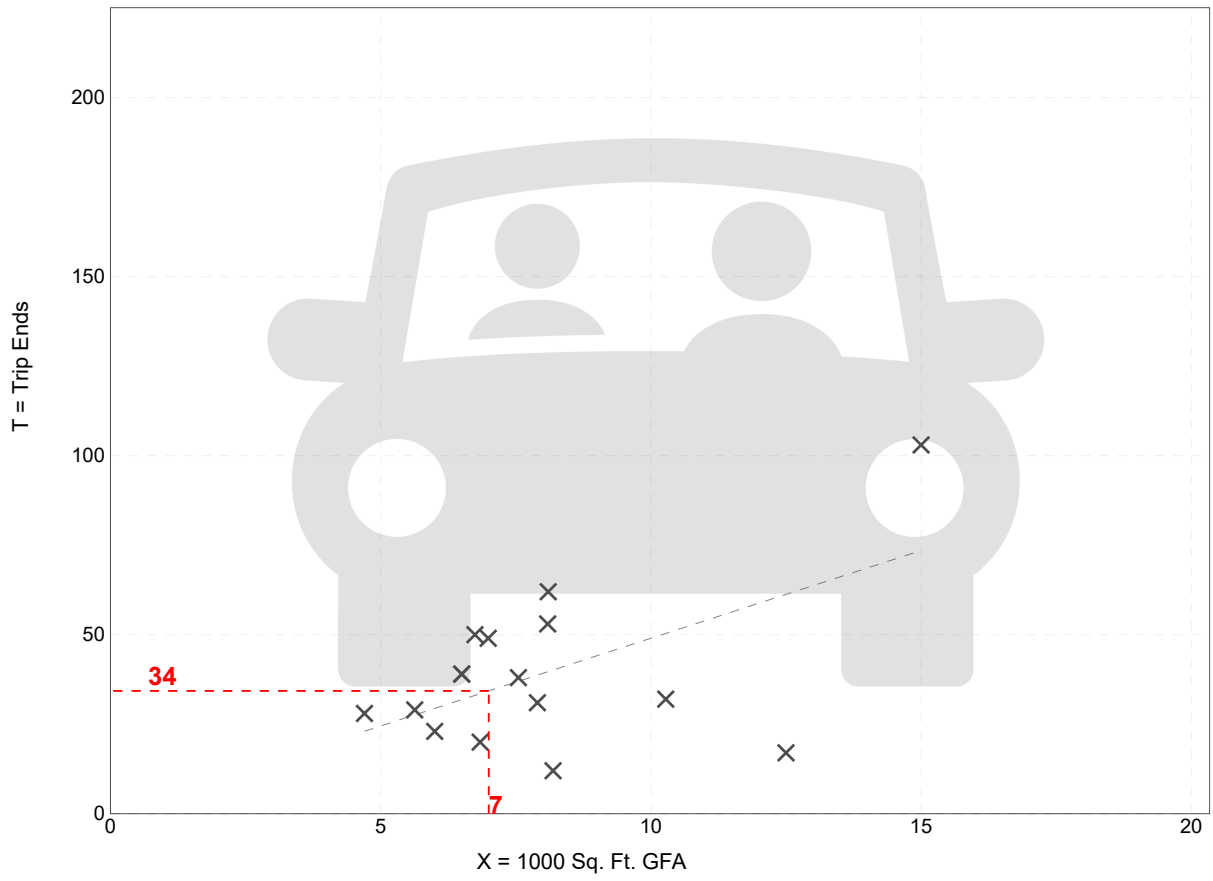
Automobile Parts Sales
(843)

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= ****

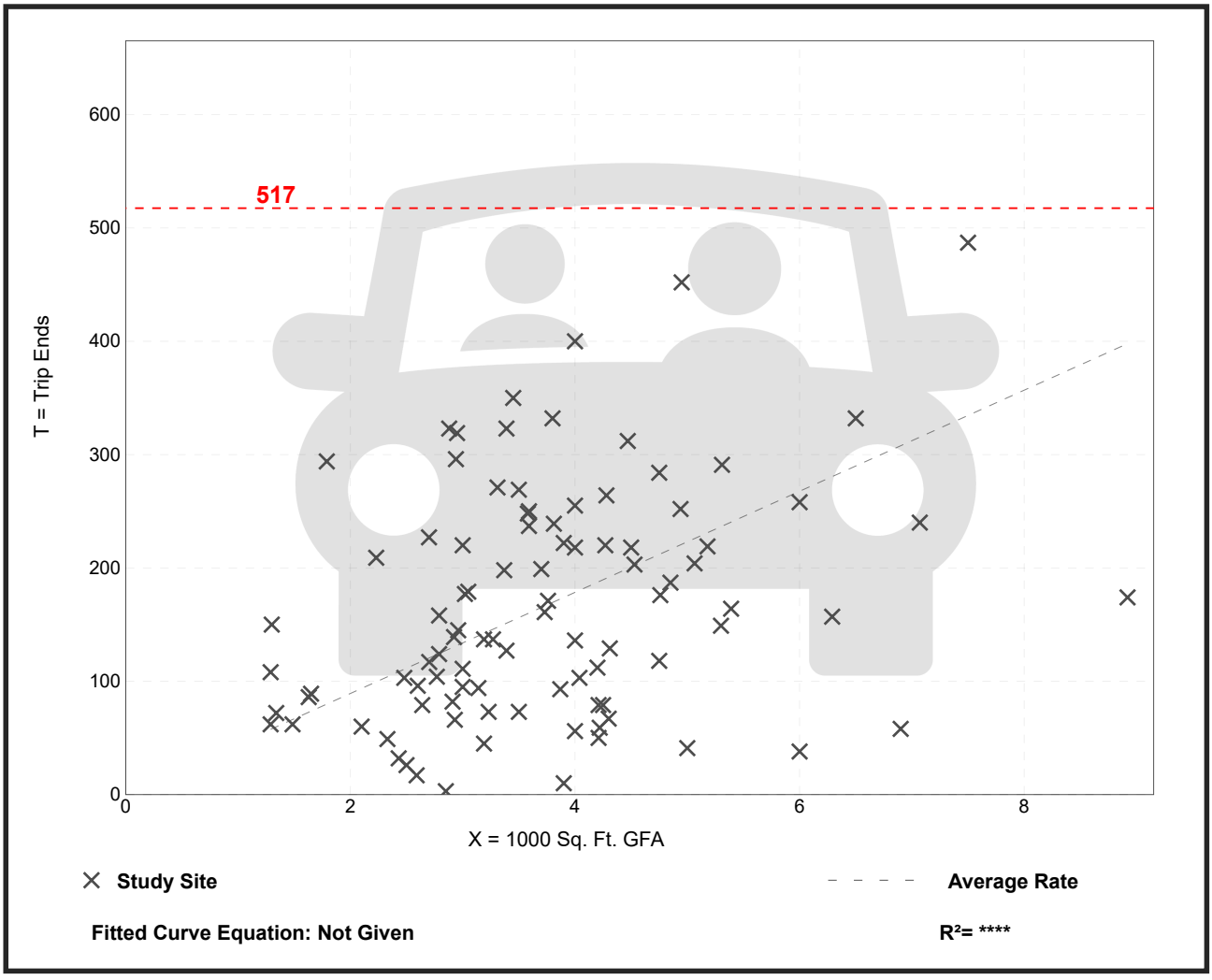
Fast-Food Restaurant with Drive-Through Window
(934)

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



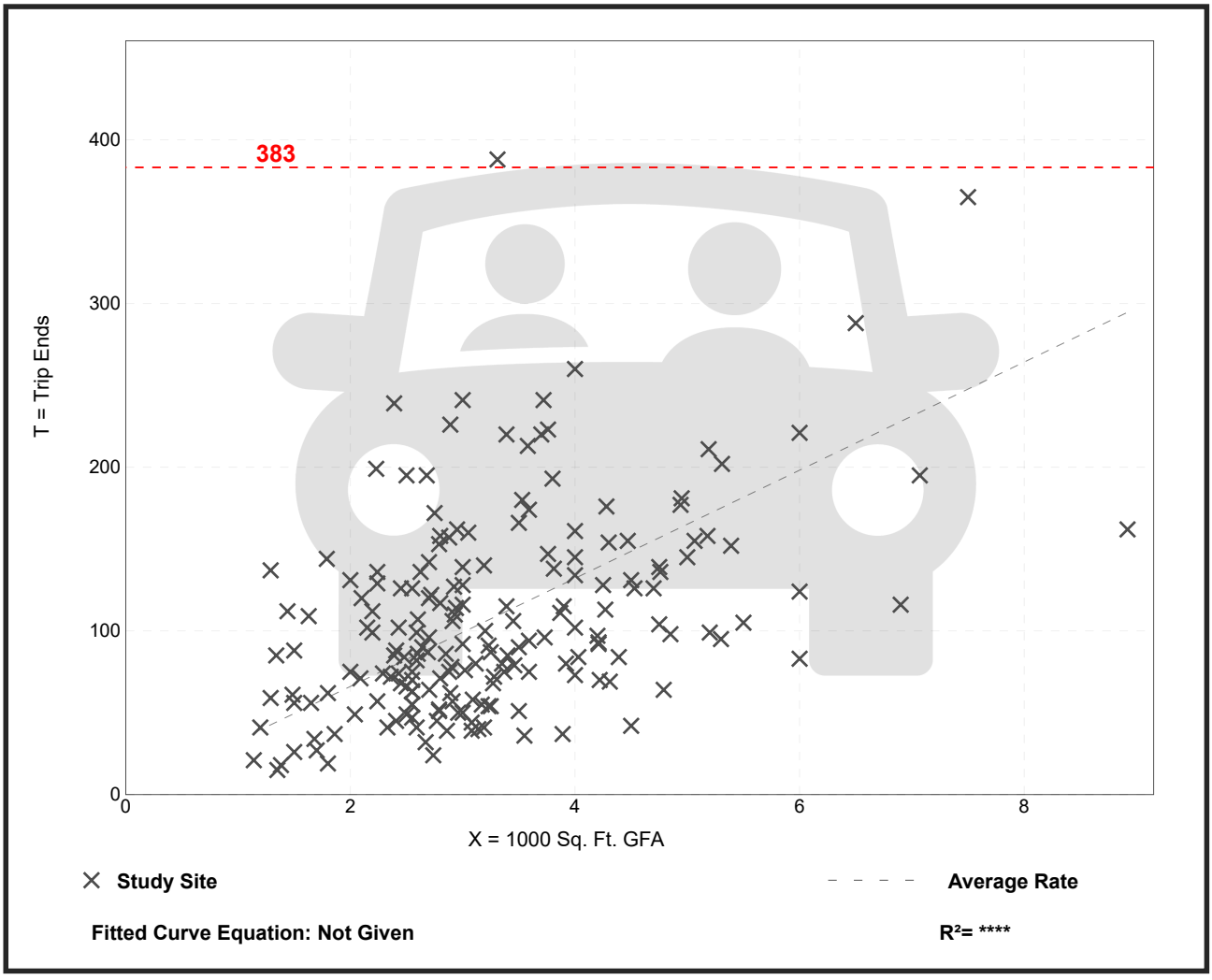
Fast-Food Restaurant with Drive-Through Window
(934)

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



Strip Retail Plaza (<40k)
(822)

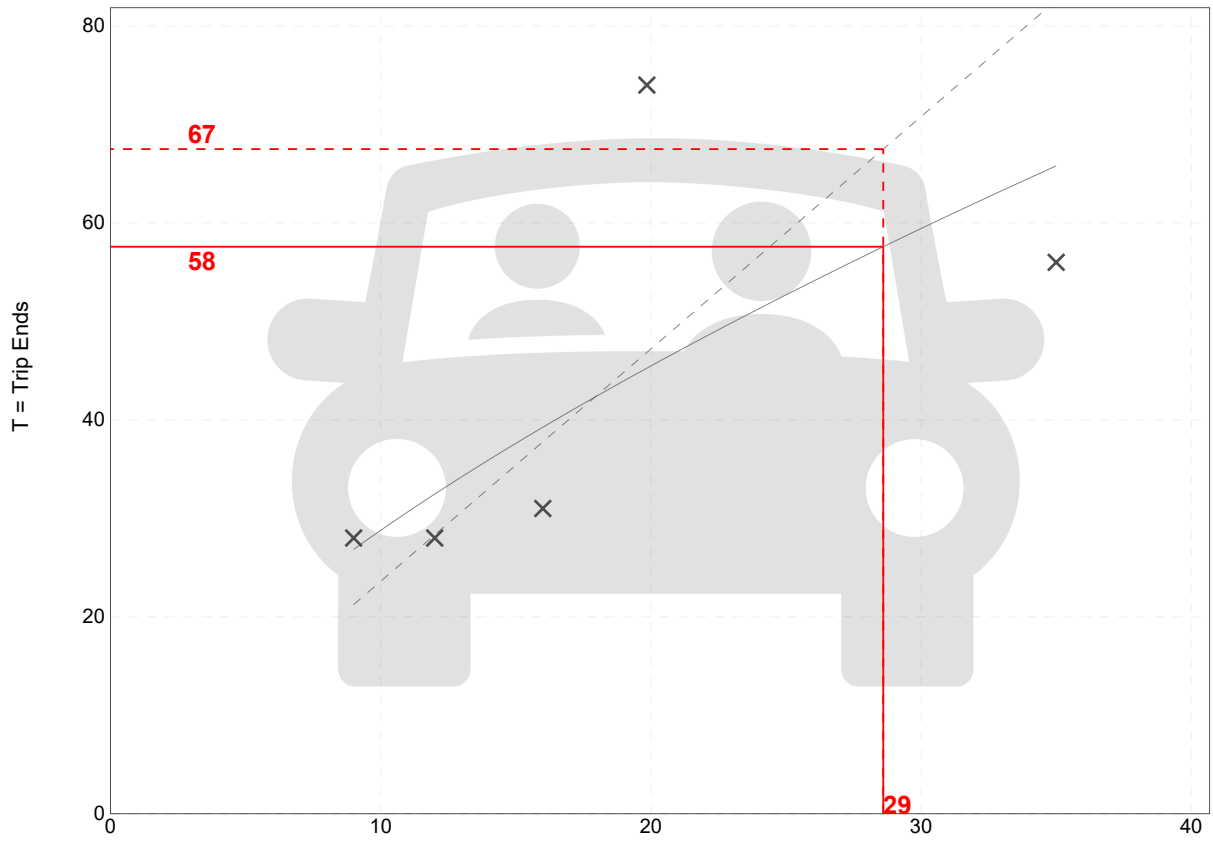
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

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

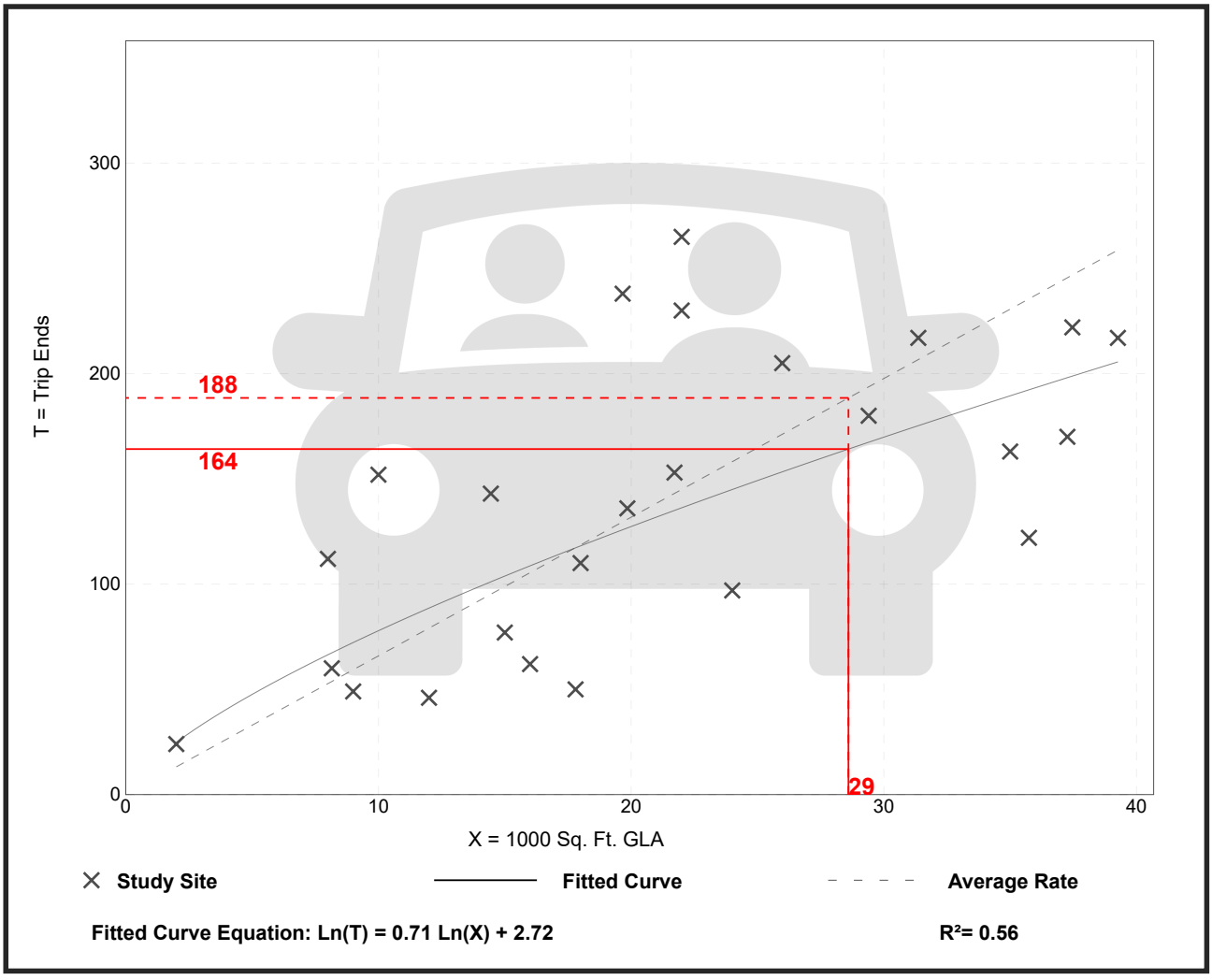
Strip Retail Plaza (<40k)
(822)

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	
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]	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

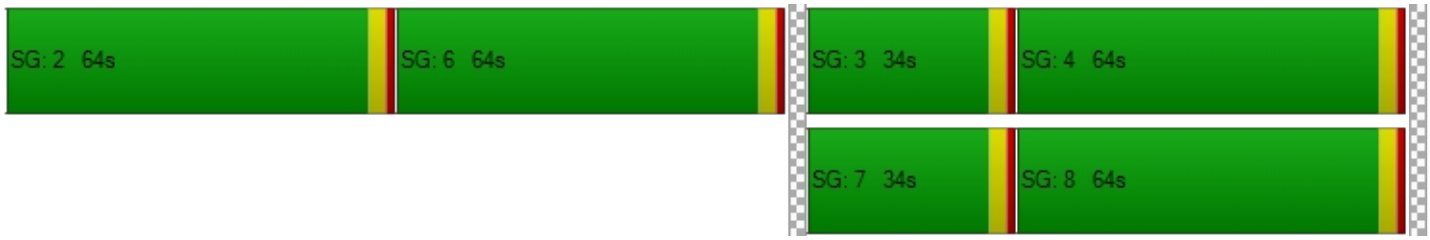
d_M, Delay for Movement [s/veh]	36.62	37.65	37.51	37.19	38.01	36.87	82.65	35.96	23.09	76.02	32.17	23.21
Movement LOS	D	D	D	D	D	D	F	D	C	E	C	C
d_A, Approach Delay [s/veh]	37.44			37.64			37.38			33.37		
Approach LOS	D			D			D			C		
d_I, Intersection Delay [s/veh]	35.92											
Intersection LOS	D											
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

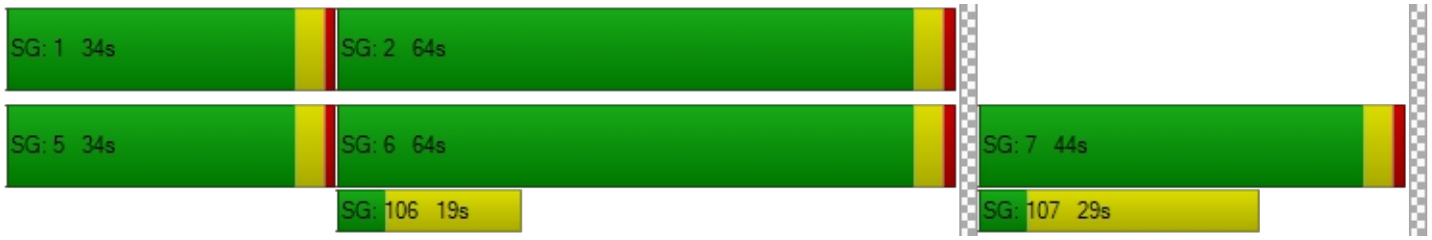
d_M, Delay for Movement [s/veh]	22.90	25.04	22.32	4.59	27.01	6.67	4.71
Movement LOS	C	C	C	A	C	A	A
d_A, Approach Delay [s/veh]	23.83		5.17		6.73		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	6.51						
Intersection LOS	A						
Intersection V/C	0.376						

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	

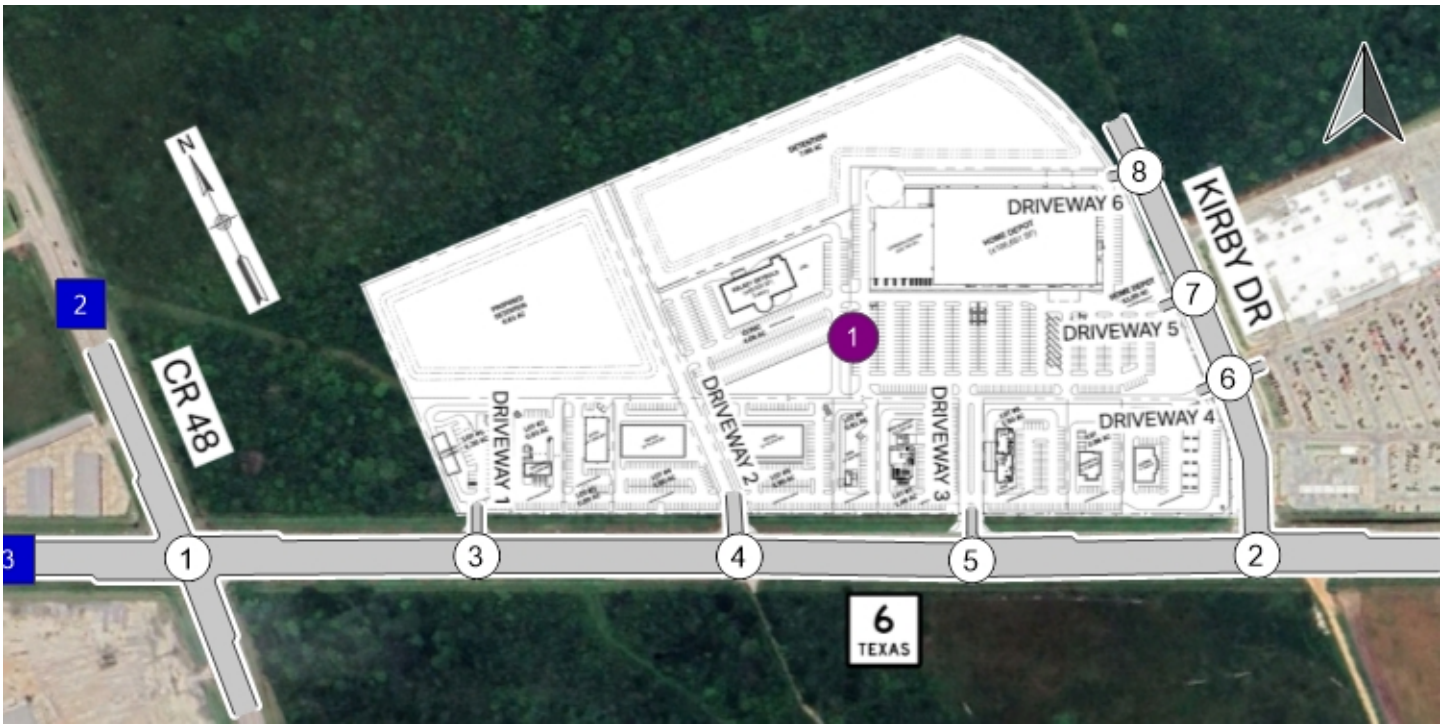
Intersection Settings

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

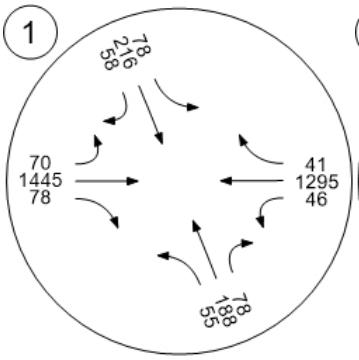
Movement, Approach, & Intersection Results

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						

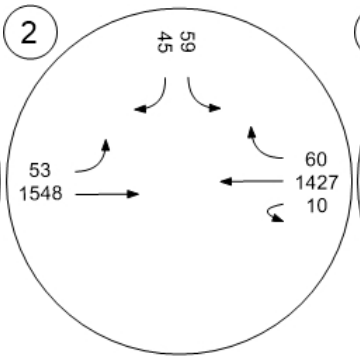
Traffic Volume - Base Volume



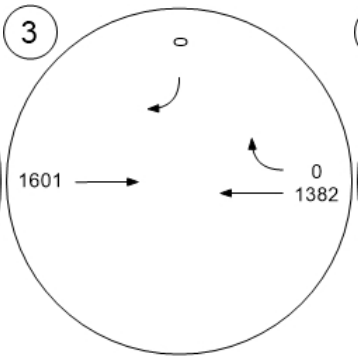
SH 6 at CR 48



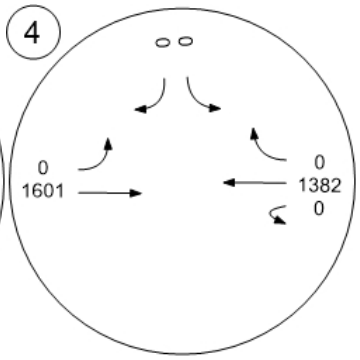
SH 6 at Kirby Drive



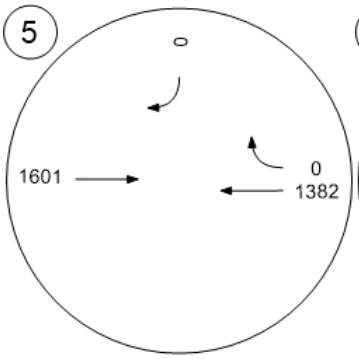
SH 6 at Driveway 1



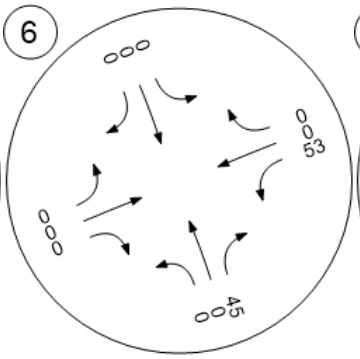
SH 6 at Driveway 2



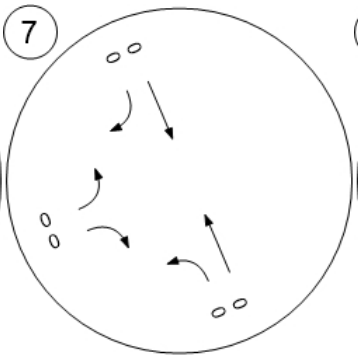
SH 6 at Driveway 3



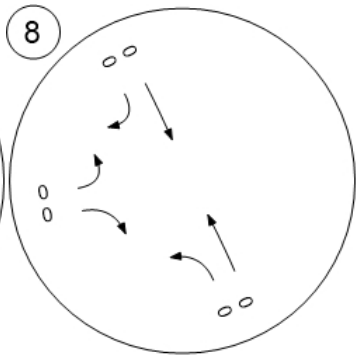
Kirby Dr at Driveway 4



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

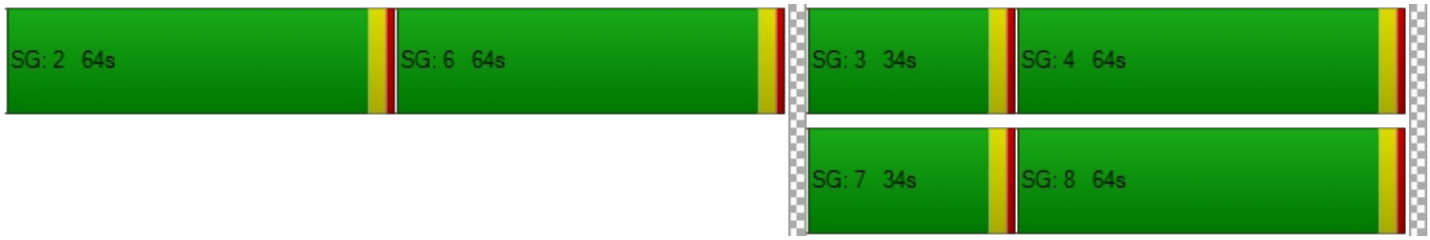
d_M, Delay for Movement [s/veh]	39.01	40.33	40.12	39.72	40.81	39.31	88.01	59.02	21.94	79.57	35.52	22.33
Movement LOS	D	D	D	D	D	D	F	F	C	E	D	C
d_A, Approach Delay [s/veh]	40.05			40.32			58.47			36.58		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	46.84											
Intersection LOS	D											
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

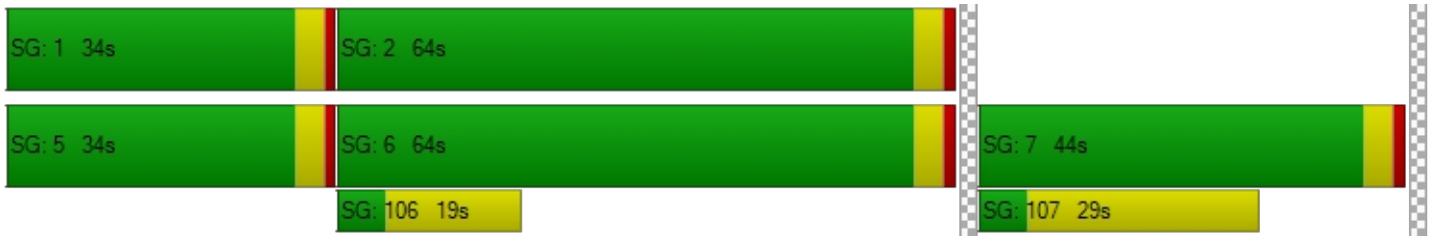
d_M, Delay for Movement [s/veh]	23.21	25.73	22.36	5.21	27.00	7.63	5.01
Movement LOS	C	C	C	A	C	A	A
d_A, Approach Delay [s/veh]	24.30		5.78		7.66		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	7.26						
Intersection LOS	A						
Intersection V/C	0.436						

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	

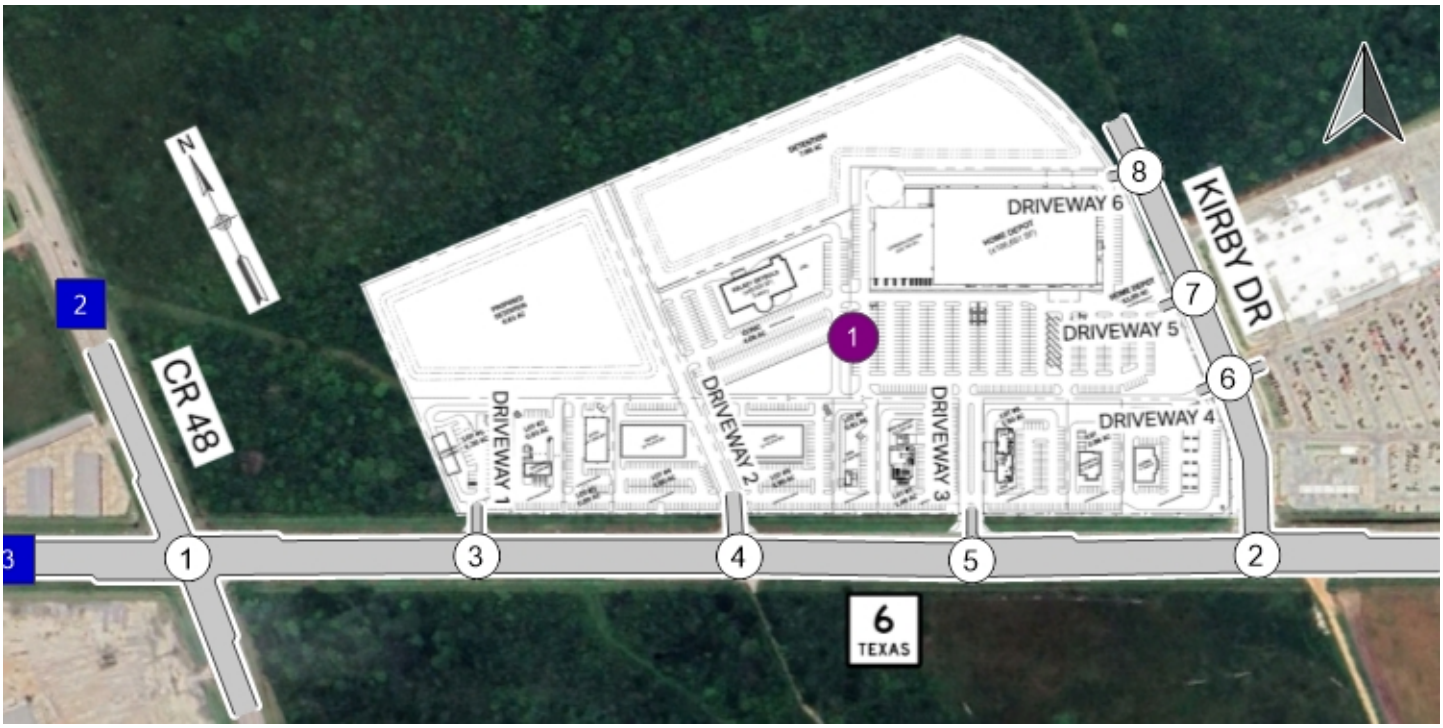
Intersection Settings

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

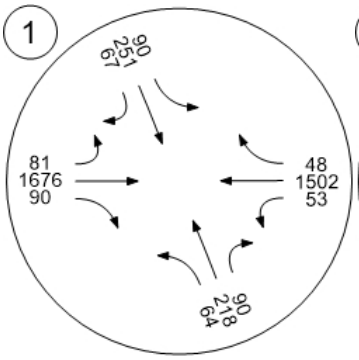
Movement, Approach, & Intersection Results

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						

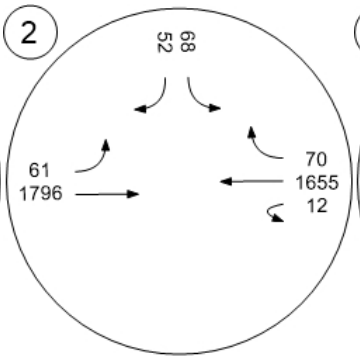
Traffic Volume - Future Background Volume



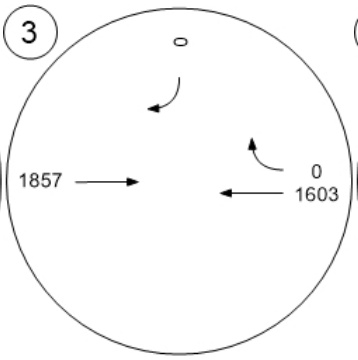
SH 6 at CR 48



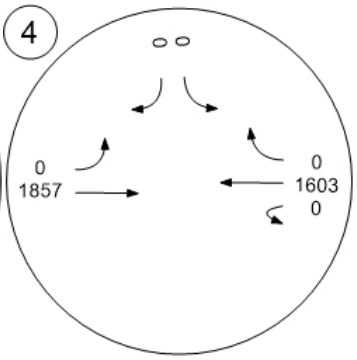
SH 6 at Kirby Drive



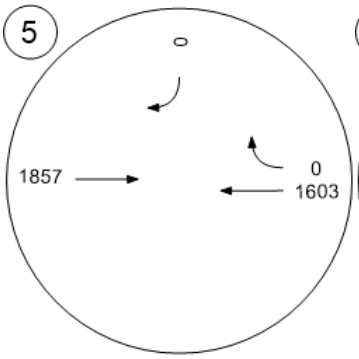
SH 6 at Driveway 1



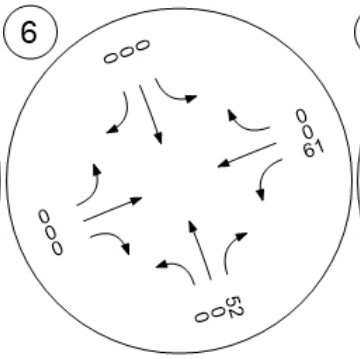
SH 6 at Driveway 2



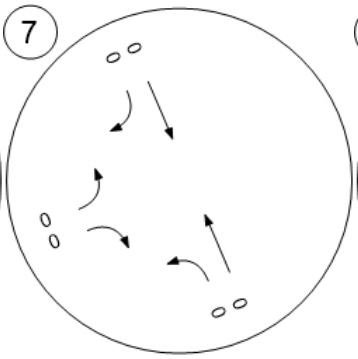
SH 6 at Driveway 3



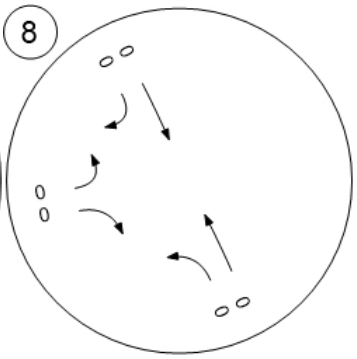
Kirby Dr at Driveway 4



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

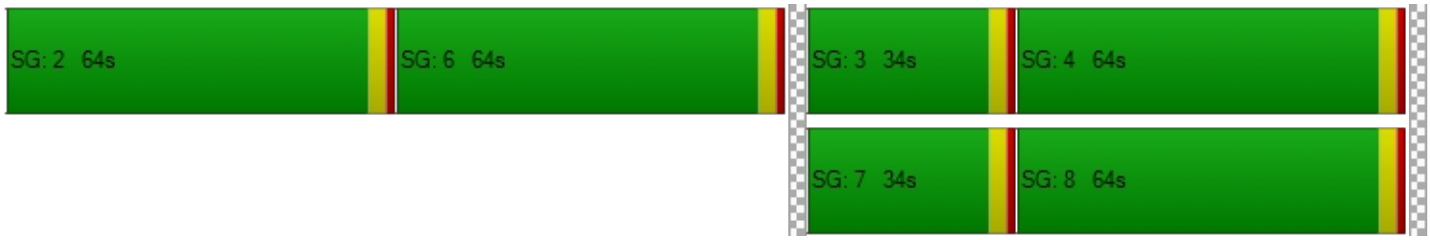
d_M, Delay for Movement [s/veh]	34.17	35.28	35.83	35.70	35.85	34.43	87.36	88.78	14.91	83.87	32.88	15.50
Movement LOS	C	D	D	D	D	C	F	F	B	F	C	B
d_A, Approach Delay [s/veh]	35.25			35.59			85.40			34.08		
Approach LOS	D			D			F			C		
d_I, Intersection Delay [s/veh]	54.67											
Intersection LOS	D											
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

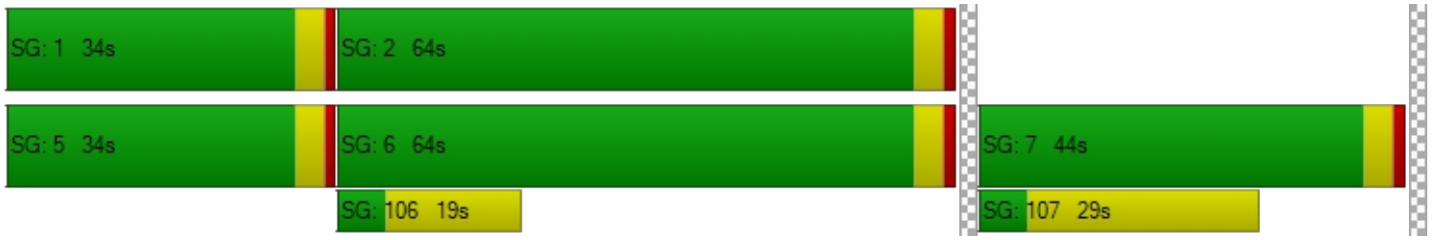
d_M, Delay for Movement [s/veh]	28.55	32.41	32.29	6.24	34.10	11.05	7.81
Movement LOS	C	C	C	A	C	B	A
d_A, Approach Delay [s/veh]	29.99		8.53		10.87		
Approach LOS	C		A		B		
d_I, Intersection Delay [s/veh]	11.16						
Intersection LOS	B						
Intersection V/C	0.574						

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)

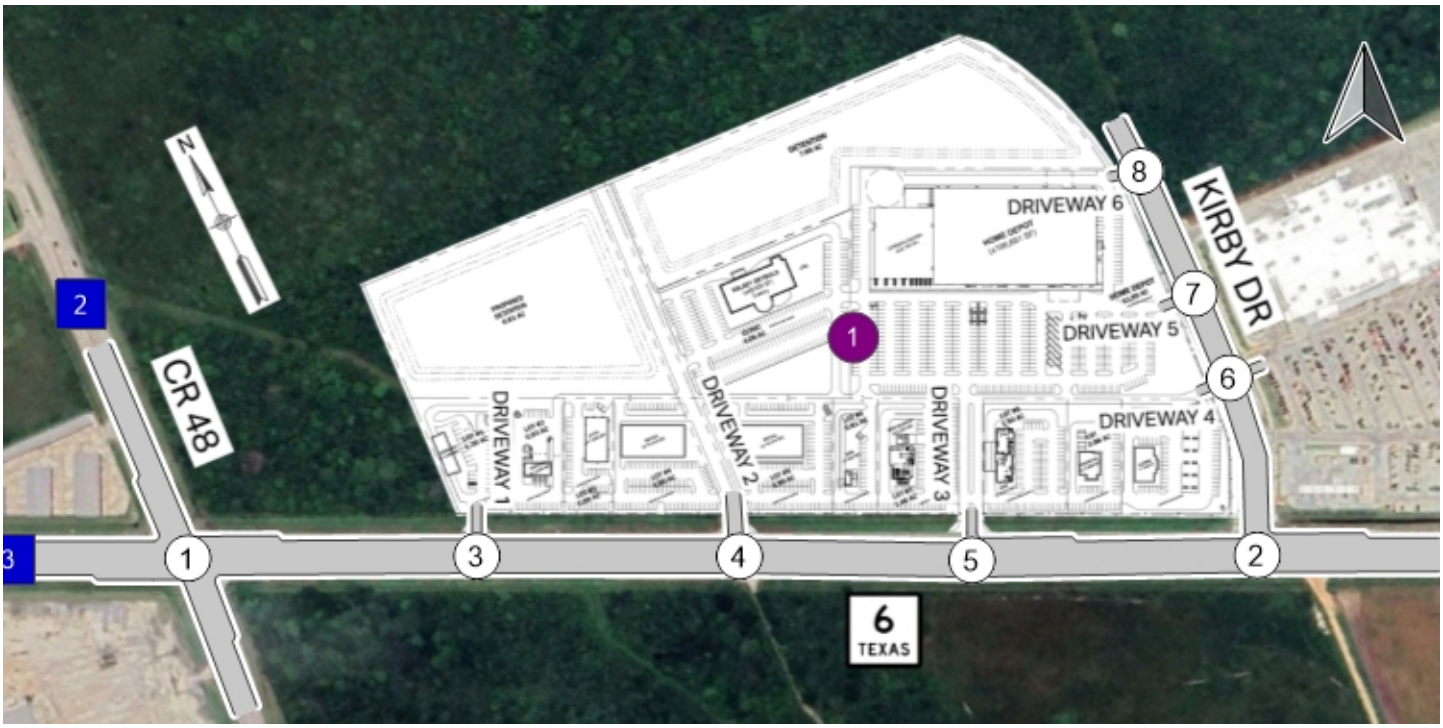
Vistro File: C:\...\vistro-manvel commercial.vistro
Report File: C:\...\vistro-03-am-buildout.pdf

Scenario 1 AM Peak Hour
10/9/2025

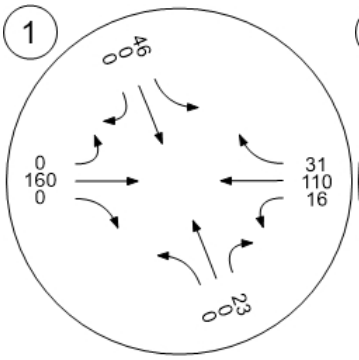
Trip Distribution summary

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**

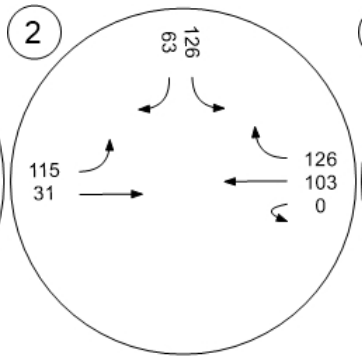
Traffic Volume - Net New Site Trips



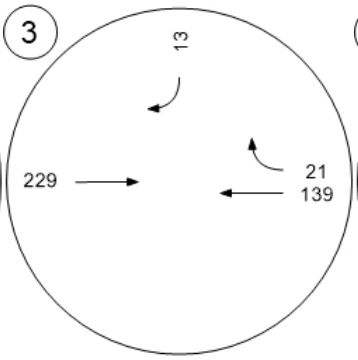
SH 6 at CR 48



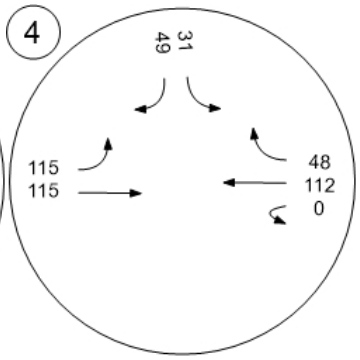
SH 6 at Kirby Drive



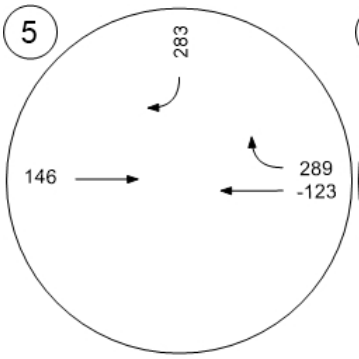
SH 6 at Driveway 1



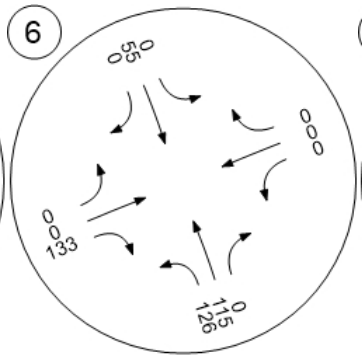
SH 6 at Driveway 2



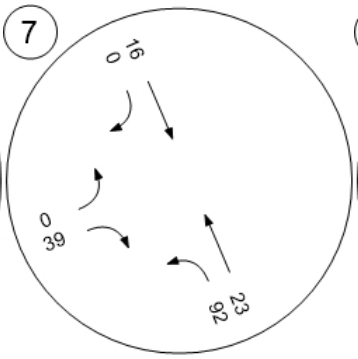
SH 6 at Driveway 3



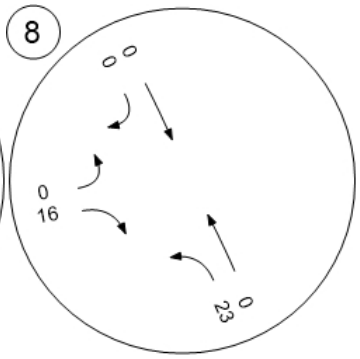
Kirby Dr at Driveway 4



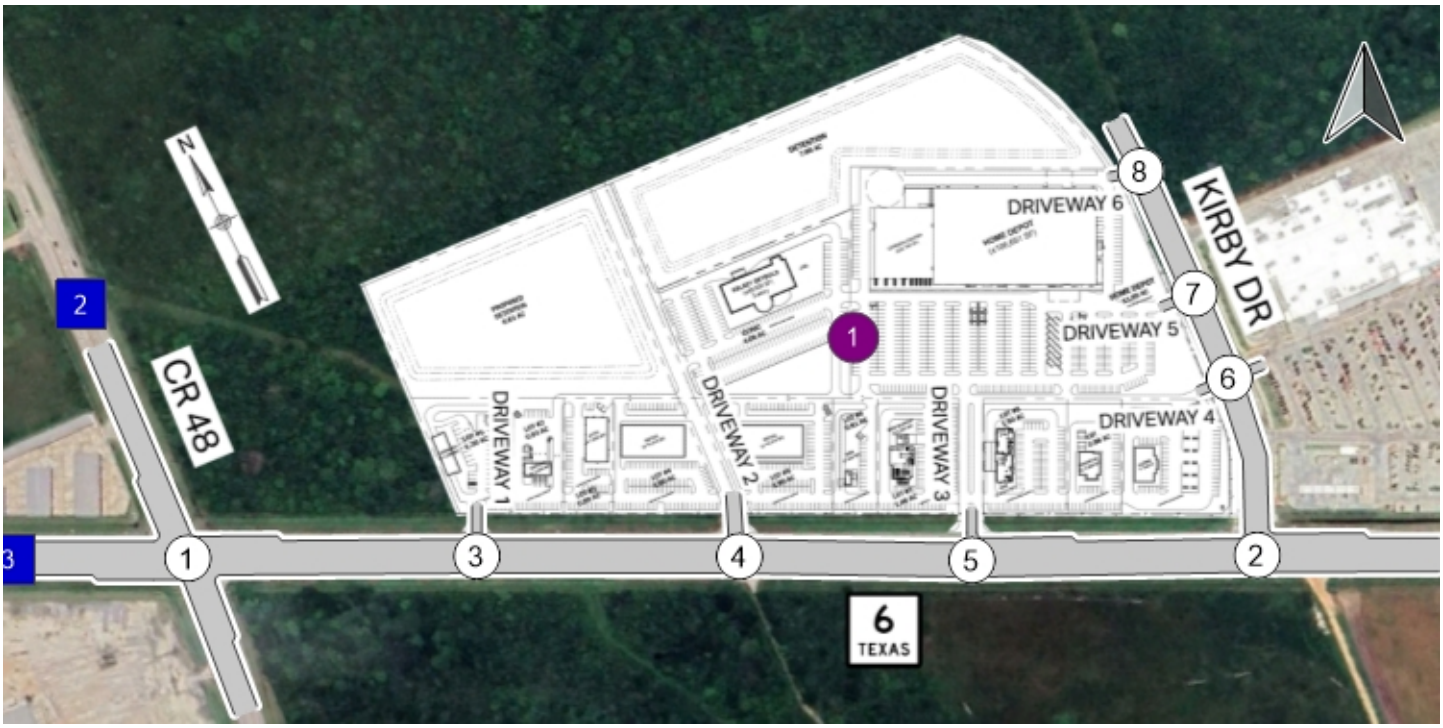
Kirby Dr at Driveway 5



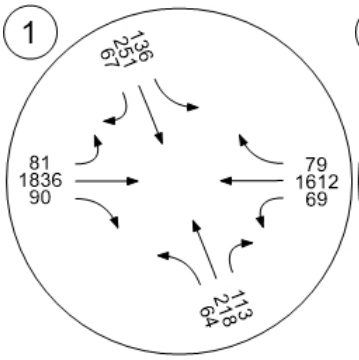
Kirby Dr at Driveway 6



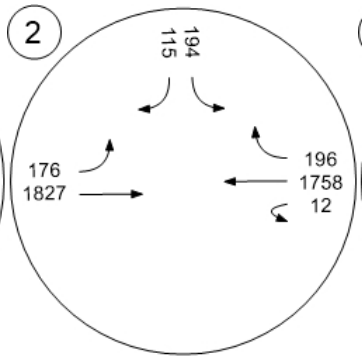
Traffic Volume - Future Total Volume



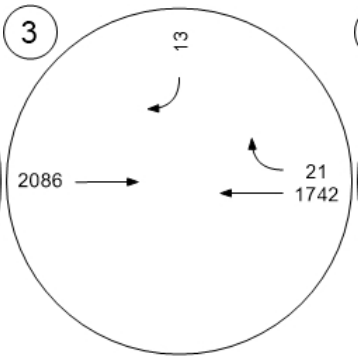
SH 6 at CR 48



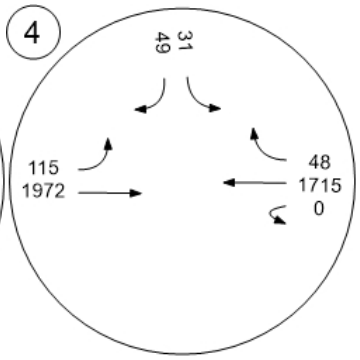
SH 6 at Kirby Drive



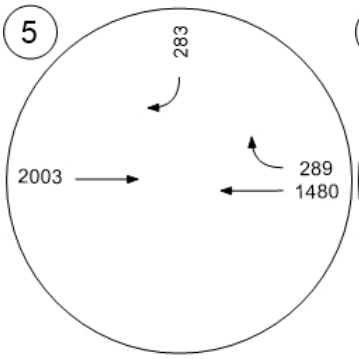
SH 6 at Driveway 1



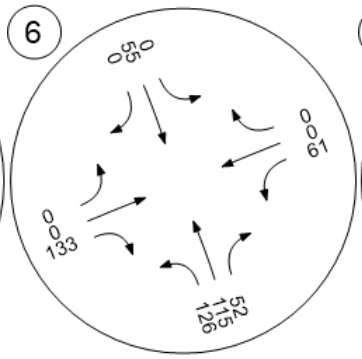
SH 6 at Driveway 2



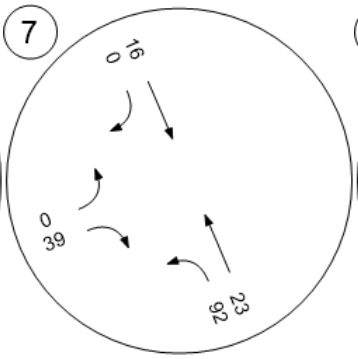
SH 6 at Driveway 3



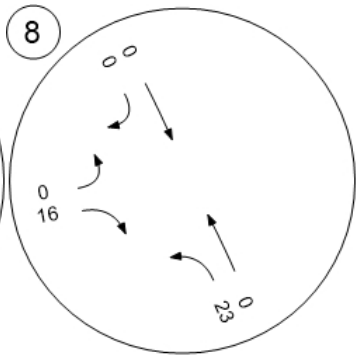
Kirby Dr at Driveway 4



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

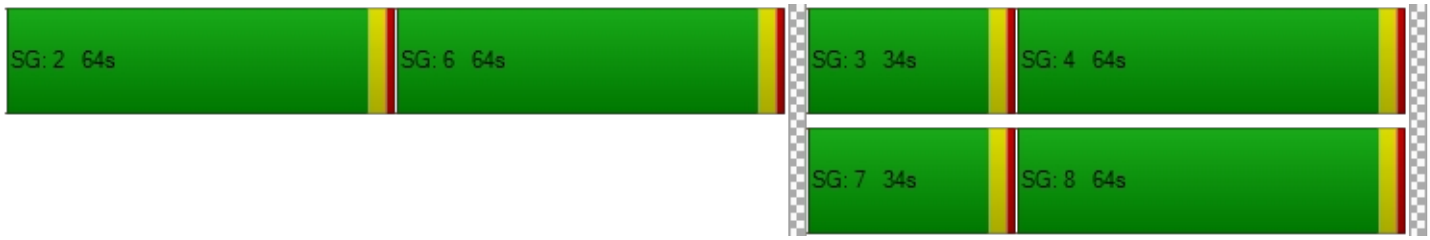
d_M, Delay for Movement [s/veh]	39.37	40.69	39.57	39.79	41.11	39.63	85.38	27.97	23.69	87.38	38.55	25.04
Movement LOS	D	D	D	D	D	D	F	C	C	F	D	C
d_A, Approach Delay [s/veh]	40.23			40.58			32.84			40.66		
Approach LOS	D			D			C			D		
d_I, Intersection Delay [s/veh]	37.99											
Intersection LOS	D											
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

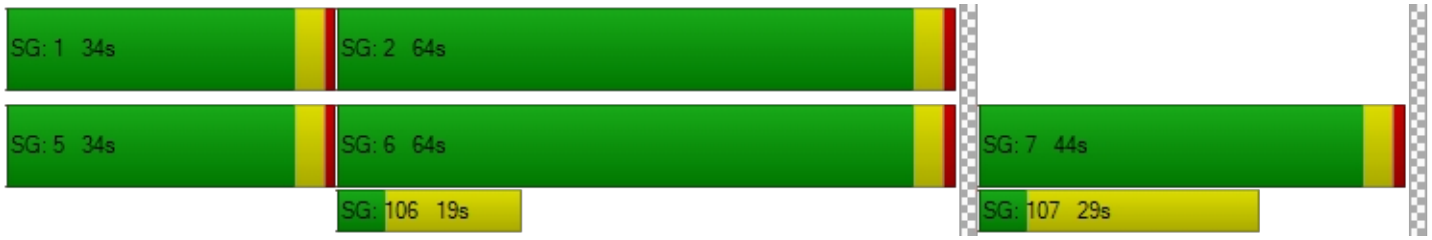
d_M, Delay for Movement [s/veh]	23.60	27.23	22.42	4.10	27.57	8.15	5.38
Movement LOS	C	C	C	A	C	A	A
d_A, Approach Delay [s/veh]	25.22		5.28		8.16		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	7.92						
Intersection LOS	A						
Intersection V/C	0.452						

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	

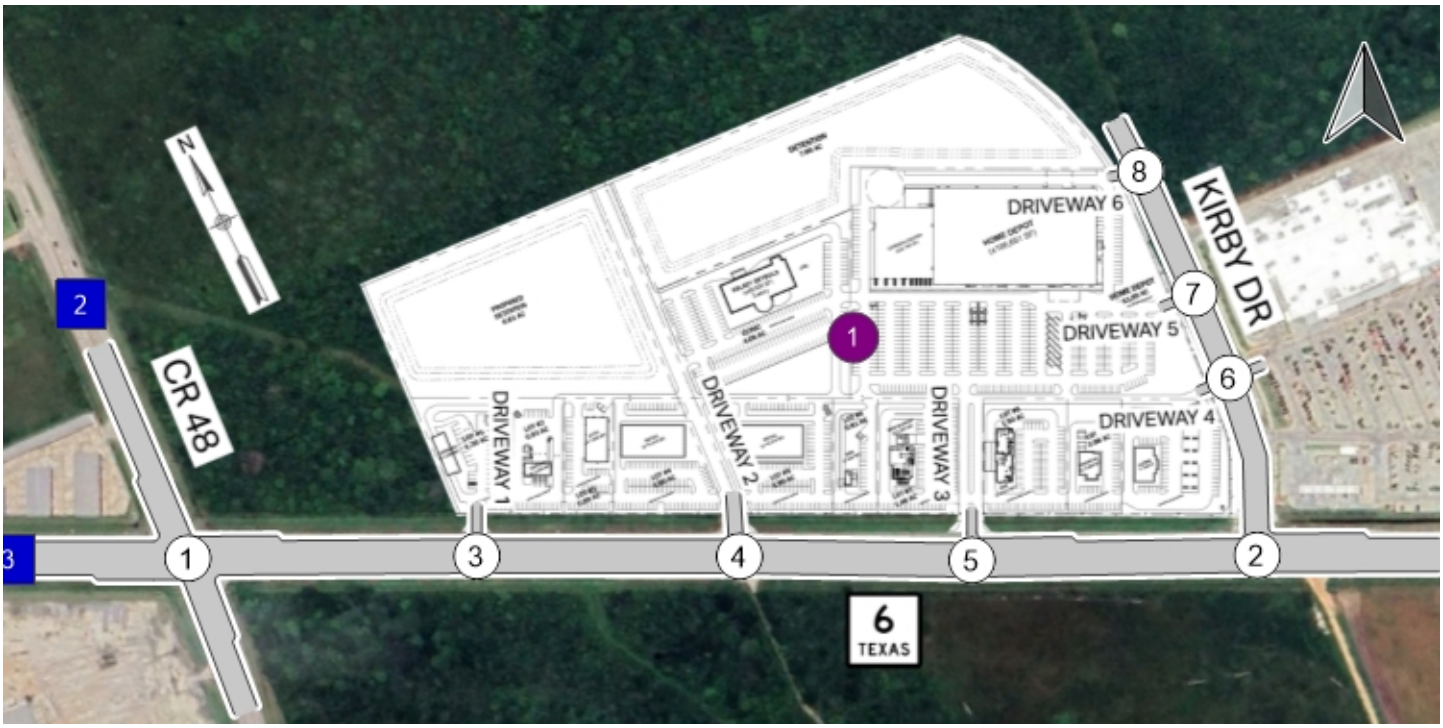
Intersection Settings

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

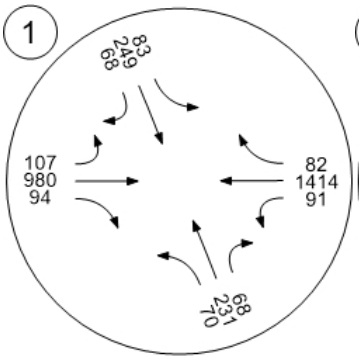
Movement, Approach, & Intersection Results

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						

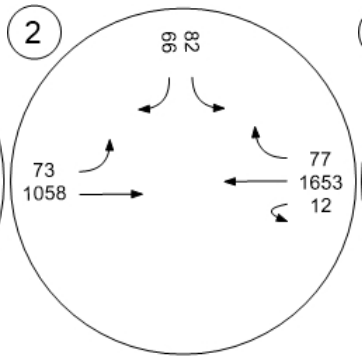
Traffic Volume - Base Volume



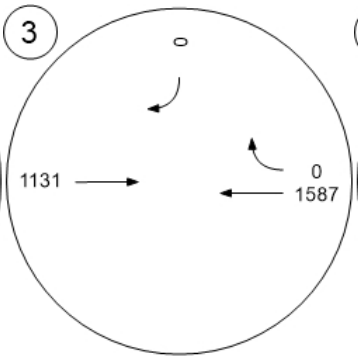
SH 6 at CR 48



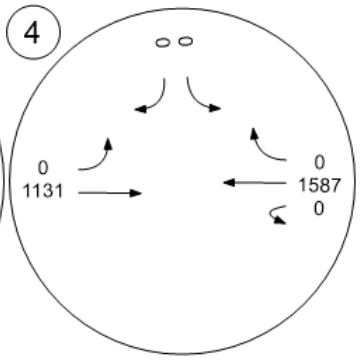
SH 6 at Kirby Drive



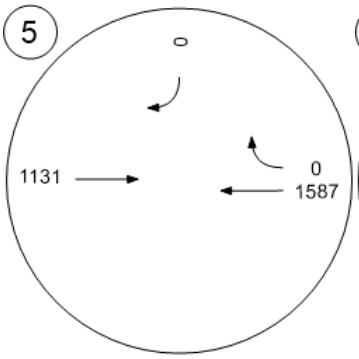
SH 6 at Driveway 1



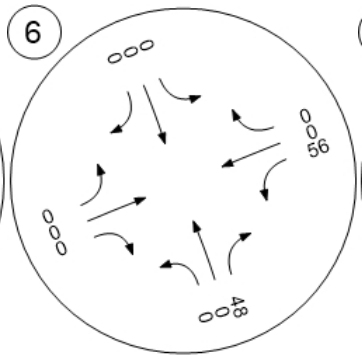
SH 6 at Driveway 2



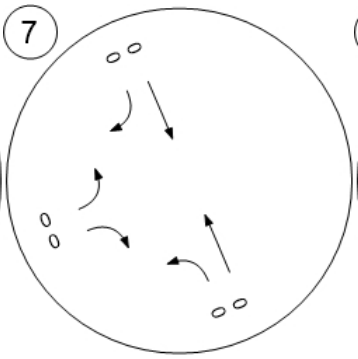
SH 6 at Driveway 3



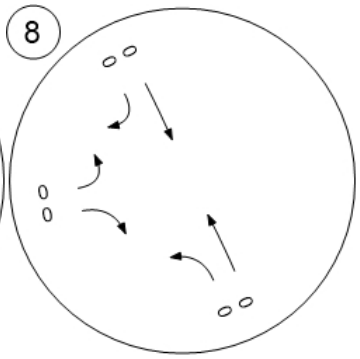
Kirby Dr at Driveway 4



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

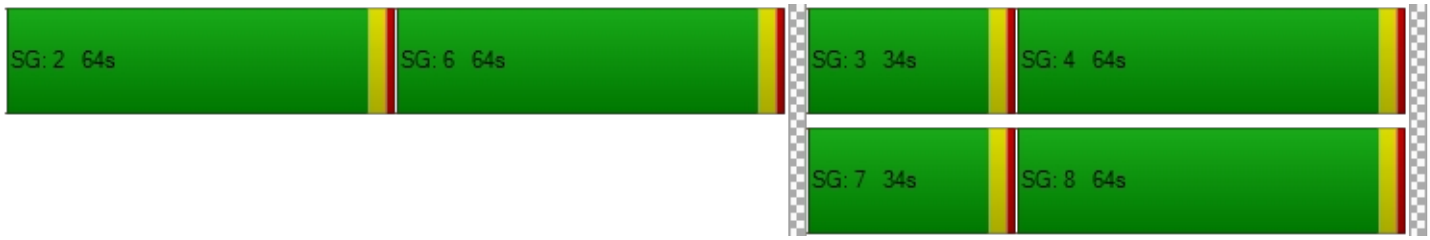
d_M, Delay for Movement [s/veh]	42.62	44.41	42.90	43.19	44.97	43.00	86.41	28.73	23.32	88.49	70.68	24.90
Movement LOS	D	D	D	D	D	D	F	C	C	F	F	C
d_A, Approach Delay [s/veh]	43.79			44.27			33.54			69.34		
Approach LOS	D			D			C			E		
d_I, Intersection Delay [s/veh]	51.77											
Intersection LOS	D											
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

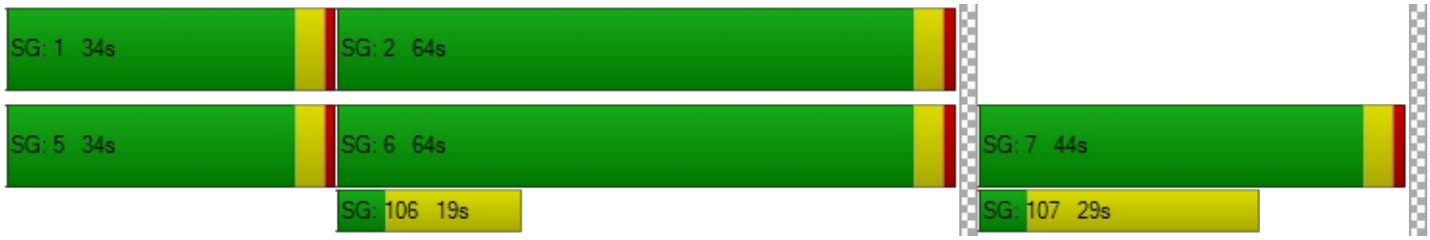
d_M, Delay for Movement [s/veh]	31.40	36.79	30.99	4.09	35.62	8.56	5.20
Movement LOS	C	D	C	A	D	A	A
d_A, Approach Delay [s/veh]	33.81		5.84		8.60		
Approach LOS	C		A		A		
d_I, Intersection Delay [s/veh]	8.80						
Intersection LOS	A						
Intersection V/C	0.525						

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	

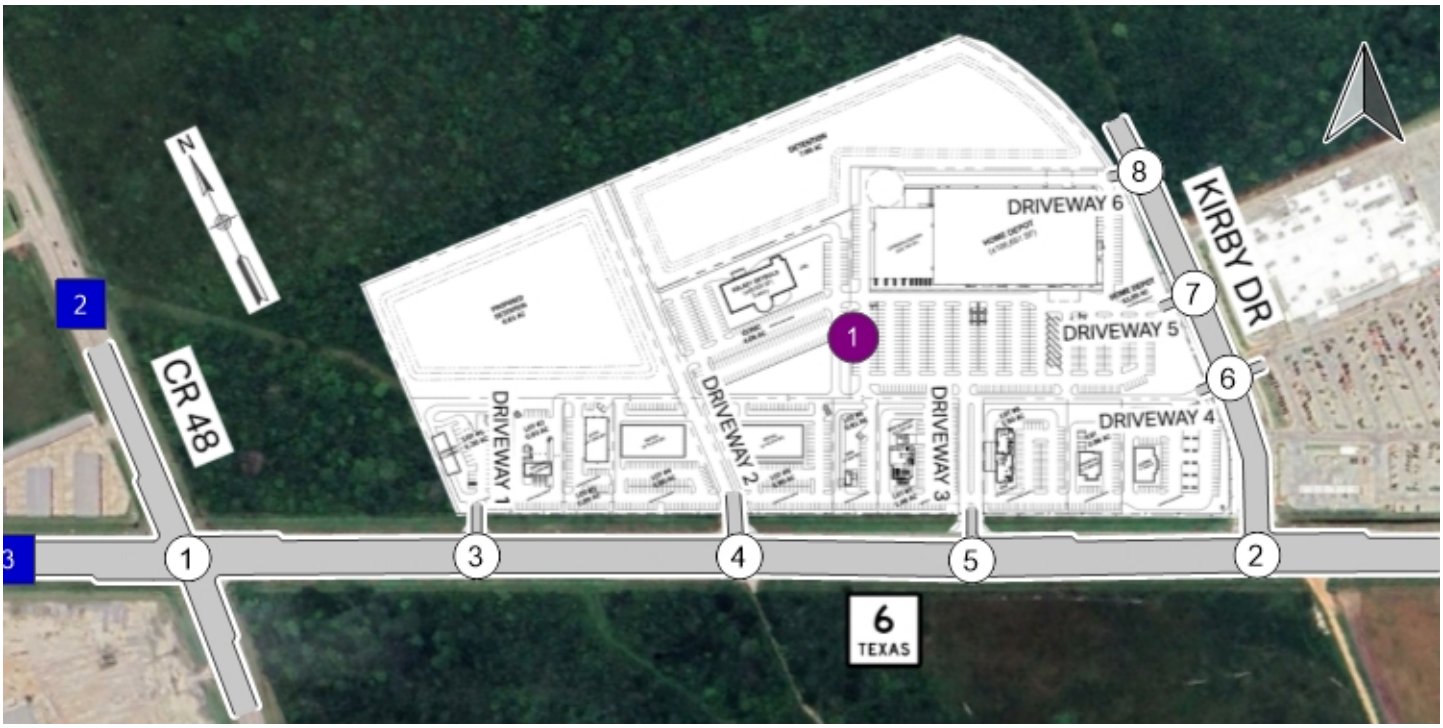
Intersection Settings

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

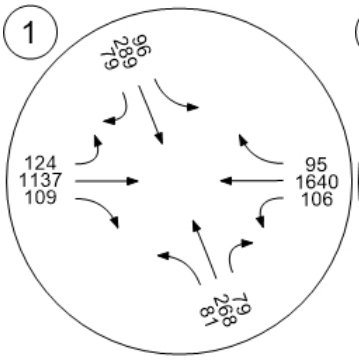
Movement, Approach, & Intersection Results

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						

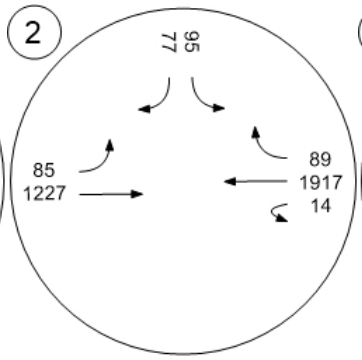
Traffic Volume - Future Background Volume



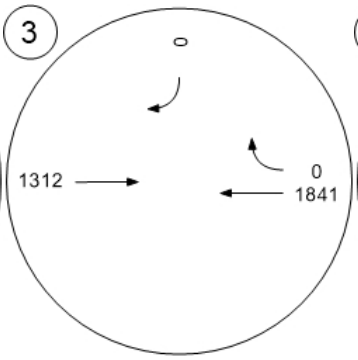
SH 6 at CR 48



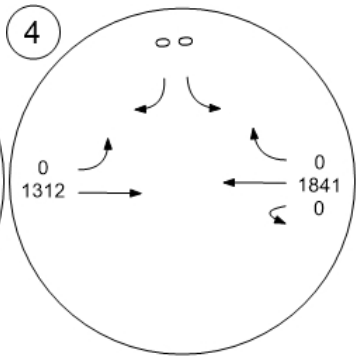
SH 6 at Kirby Drive



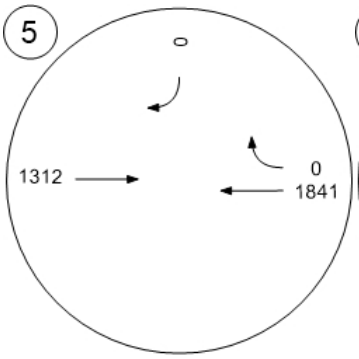
SH 6 at Driveway 1



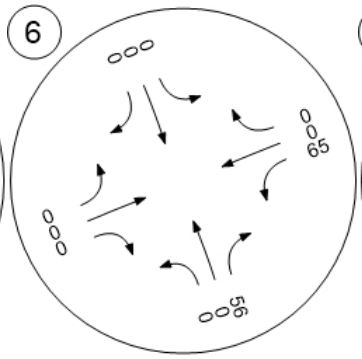
SH 6 at Driveway 2



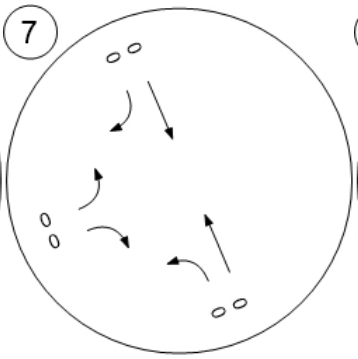
SH 6 at Driveway 3



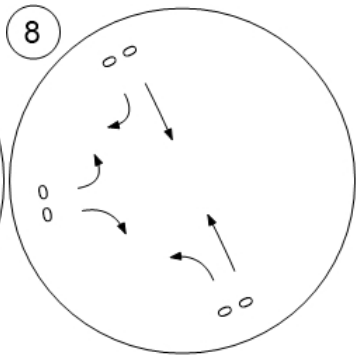
Kirby Dr at Driveway 4



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

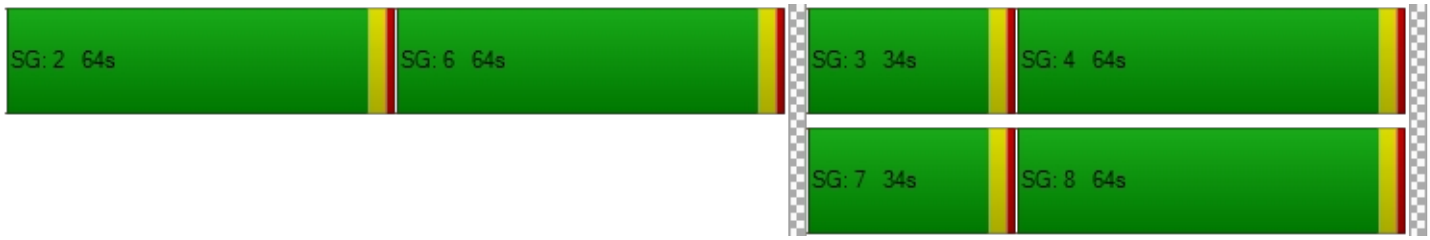
d_M, Delay for Movement [s/veh]	37.05	38.55	38.00	38.86	39.06	37.37	84.22	25.24	18.62	83.46	112.56	18.41
Movement LOS	D	D	D	D	D	D	F	C	B	F	F	B
d_A, Approach Delay [s/veh]	38.16			38.75			29.57			104.11		
Approach LOS	D			D			C			F		
d_I, Intersection Delay [s/veh]	54.30											
Intersection LOS	D											
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

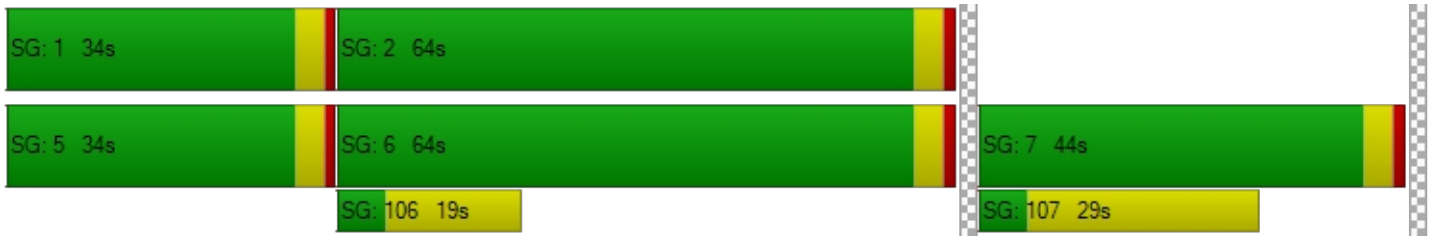
d_M, Delay for Movement [s/veh]	39.80	46.42	49.39	6.75	48.90	16.36	10.61
Movement LOS	D	D	D	A	D	B	B
d_A, Approach Delay [s/veh]	42.27		12.48		16.02		
Approach LOS	D		B		B		
d_I, Intersection Delay [s/veh]	17.82						
Intersection LOS	B						
Intersection V/C	0.692						

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)

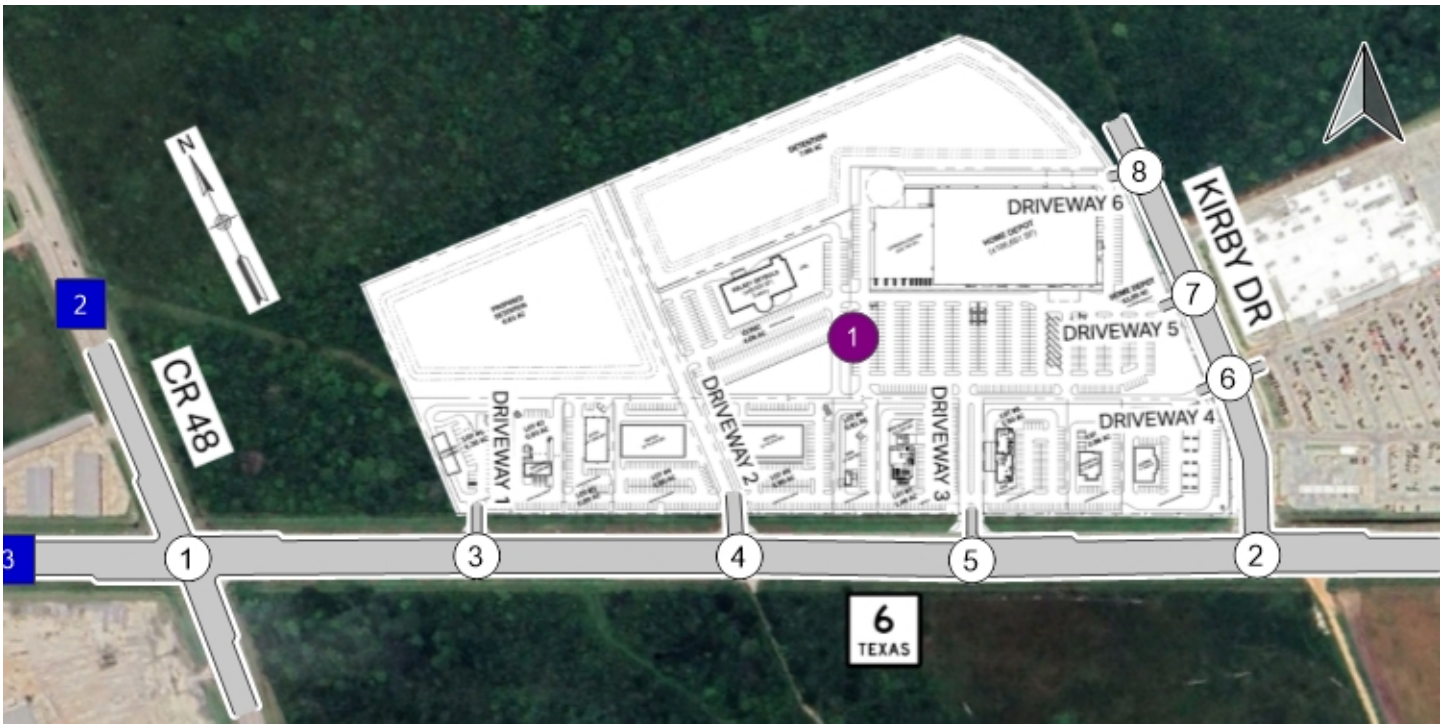
Vistro File: C:\...\vistro-manvel commercial.vistro
Report File: C:\...\vistro-06-pm-buildout.pdf

Scenario 2 PM Peak Hour
10/9/2025

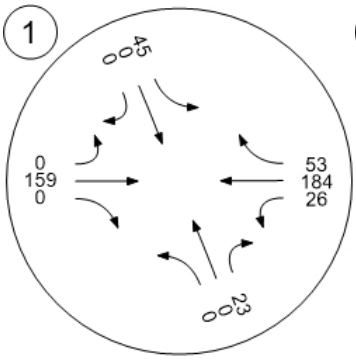
Trip Distribution summary

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**

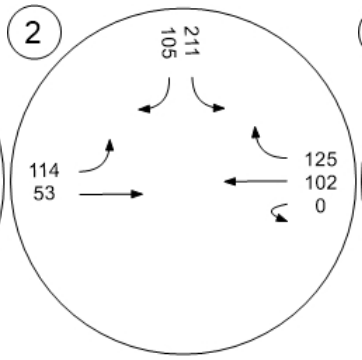
Traffic Volume - Net New Site Trips



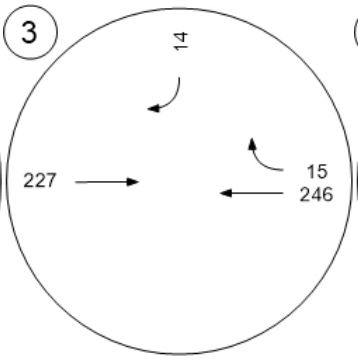
SH 6 at CR 48



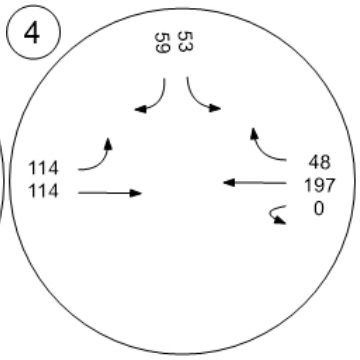
SH 6 at Kirby Drive



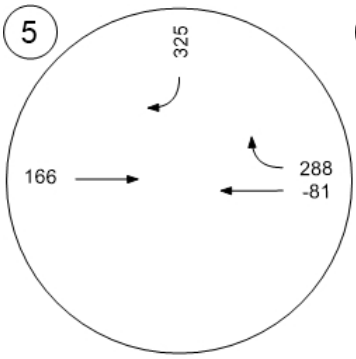
SH 6 at Driveway 1



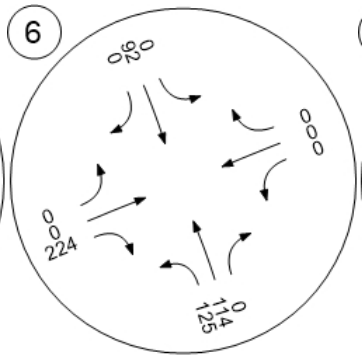
SH 6 at Driveway 2



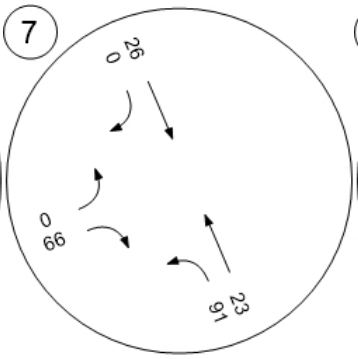
SH 6 at Driveway 3



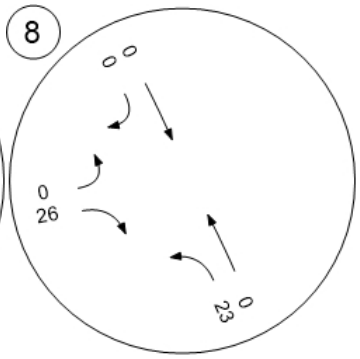
Kirby Dr at Driveway 4



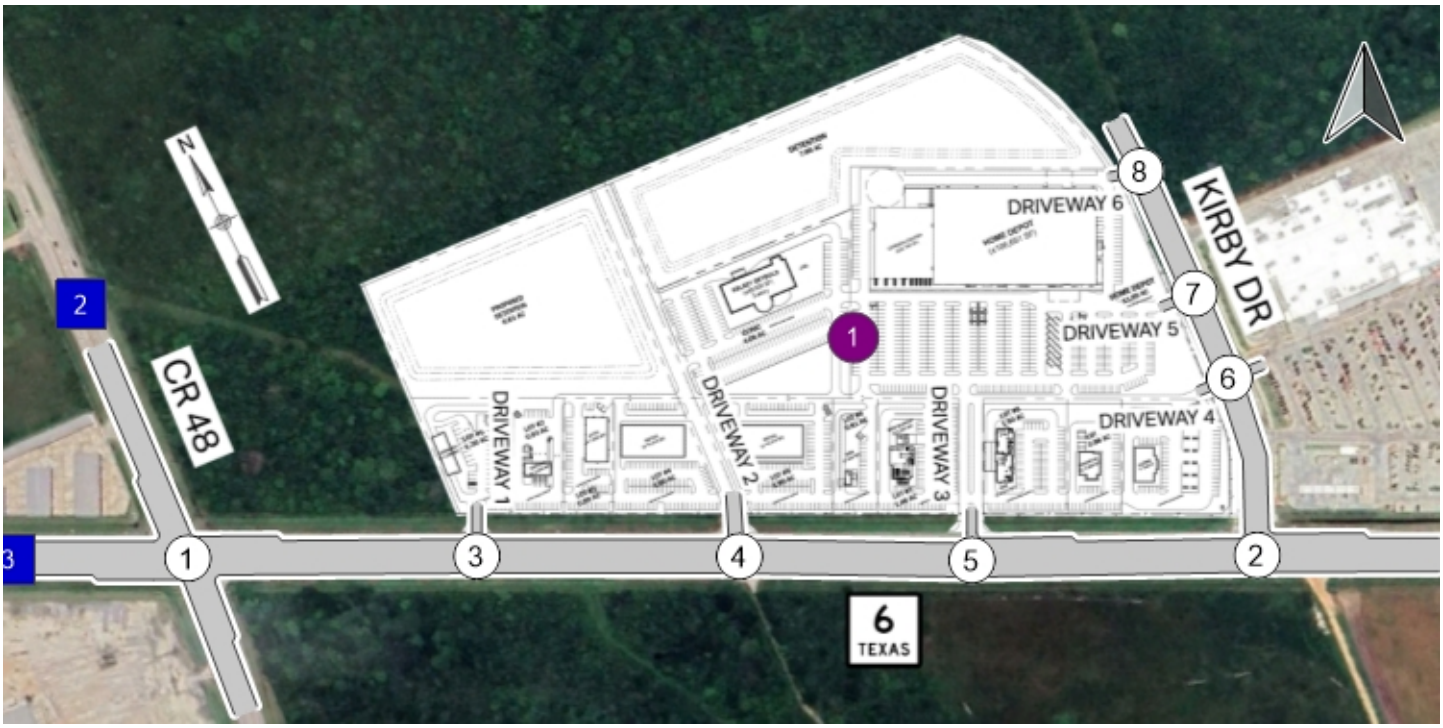
Kirby Dr at Driveway 5



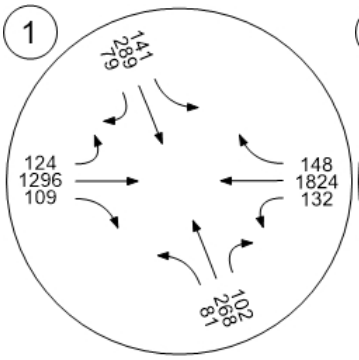
Kirby Dr at Driveway 6



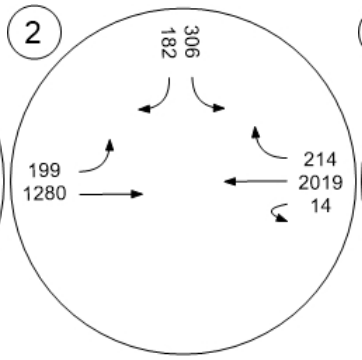
Traffic Volume - Future Total Volume



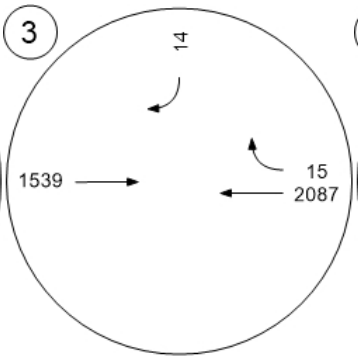
SH 6 at CR 48



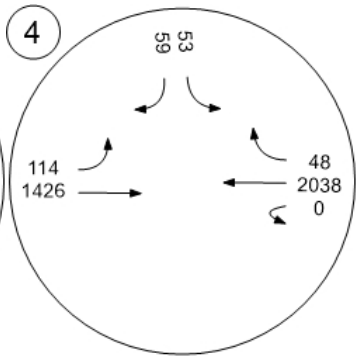
SH 6 at Kirby Drive



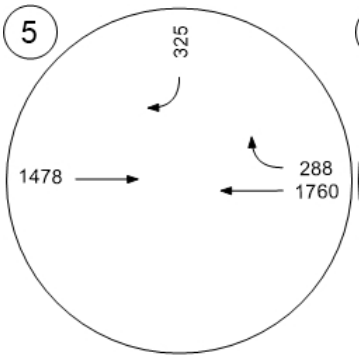
SH 6 at Driveway 1



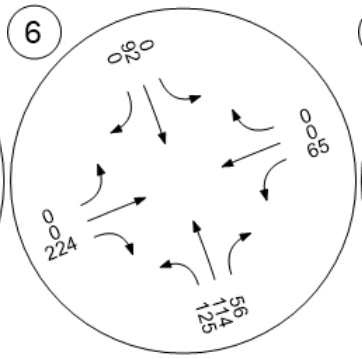
SH 6 at Driveway 2



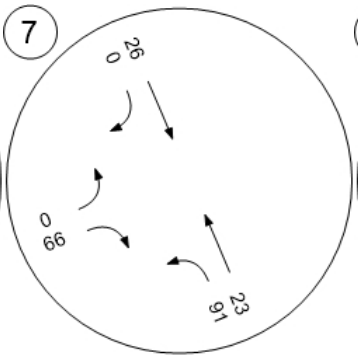
SH 6 at Driveway 3



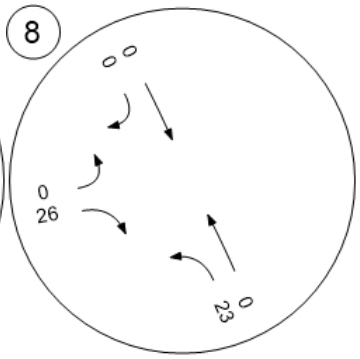
Kirby Dr at Driveway 4



Kirby Dr at Driveway 5



Kirby Dr at Driveway 6



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

DEVELOPMENT SERVICES DEPARTMENT
20025 Highway 6, Manvel, TX 77578 | Ph: 281-489-0630

DEVELOPMENT UPDATES TO THE PLANNING AND ZONING COMMISSION

September 20, 2025 – October 27, 2025

The following table provides an overview of Development Services Department activities from September 20, 2025, through October 27, 2025

PRE-DEVELOPMENT MEETINGS		
LOCATION	LAND USE	DESCRIPTION
CR 48 & Highway 6 *(LC/SH6 District/MTC)*	Gas Station & Convenience Store	• *Follow up meeting, the applicant is asking for assistance regarding utilities comments.*
22102 Highway 6 (HC*/SH6 District/*SUP)	Hartmann Carless Facility	• *Owners are demolishing and closing the facility.*
9822 Uzzell Road *(O-SFR district)*	Land Development	• *The applicant is looking to purchase and develop a 50-acre land into 1-acre tracts.* • *Doing due diligence of requirements.*
20350 Morris Avenue *(LC/SH6 District)*	Outdoor Sports & Family Fun	• *Follow up meeting, the applicant is asking for assistance regarding zoning and engineering comments.*
7347 Large Avenue *(LC/SH6 District)*	Car Repair	• *The applicant is looking to purchase and develop 1-acre tract into a Car Repair facility.* • *Doing due diligence of requirements.*

CERTIFICATE OF OCCUPANCY APPROVALS		
LOCATION	**DATE ISSUED**	**BUSINESS NAME**
9115 North Inspiration Way	9/15/2025	Kiddie Academy - 10,500 Sq Ft Building
3806 Bailey Avenue	9/23/2025	ARK Motors - 2,685 Sq Ft Building
10447 Bailey Road, Suite 140	10/01/2025	Pristine Care Cleaners - 1,225 Sq Ft Building

COMMERCIAL CONSTRUCTION APPROVALS		
LOCATION	**DATE ISSUED**	**DESCRIPTION**
10421 Bailey Road	9/30/2025	McDonald's • 4,226 Sq. Ft. Building • Civil & Building Plans Approved • Building Permit Approved • Ready to commence work

DEVELOPMENT SERVICES DEPARTMENT
20025 Highway 6, Manvel, TX 77578 | Ph: 281-489-0630

OTHER UPDATES

- City Council workshop for Comprehensive Master Plan and Major Thoroughfare Plan Update Workshop will be held in December.
- City Council made a proclamation that October is National Planning Month.