

HISTORIC AND DESIGN REVIEW COMMISSION

January 15, 2025

HDRC CASE NO: 2024-339
ADDRESS: 418 FLORIDA ST
319 E CAROLINA ST
LEGAL DESCRIPTION: NCB 3011 BLK 9 LOT 20
ZONING: C-2, H
CITY COUNCIL DIST.: 1
DISTRICT: Lavaca Historic District
APPLICANT: David Ranjbar/Prime & Paradigm Construction, LLC.
TYPE OF WORK: Construction of a commercial structure and fuel canopy; site work
APPLICATION RECEIVED: October 01, 2024
60-DAY REVIEW: November 30, 2024 (Postponed to January 15, 2025, by applicant)
CASE MANAGER: Edward Hall

REQUEST:

The applicant is requesting conceptual approval to construct a commercial structure with a detached fuel canopy on the vacant lot addressed as 418 Florida and 319 E Carolina, located within the Lavaca Historic District.

APPLICABLE CITATIONS:

Historic Design Guidelines, Chapter 4, Guidelines for New Construction

1. Building and Entrance Orientation

A. FAÇADE ORIENTATION

- i. Setbacks*—Align front facades of new buildings with front facades of adjacent buildings where a consistent setback has been established along the street frontage. Use the median setback of buildings along the street frontage where a variety of setbacks exist. Refer to UDC Article 3, Division 2. Base Zoning Districts for applicable setback requirements.
- ii. Orientation*—Orient the front façade of new buildings to be consistent with the predominant orientation of historic buildings along the street frontage.

B. ENTRANCES

- i. Orientation*—Orient primary building entrances, porches, and landings to be consistent with those historically found along the street frontage. Typically, historic building entrances are oriented towards the primary street.

2. Building Massing and Form

A. SCALE AND MASS

- i. Similar height and scale*—Design new construction so that its height and overall scale are consistent with nearby historic buildings. In residential districts, the height and scale of new construction should not exceed that of the majority of historic buildings by more than one-story. In commercial districts, building height shall conform to the established pattern. If there is no more than a 50% variation in the scale of buildings on the adjacent block faces, then the height of the new building shall not exceed the tallest building on the adjacent block face by more than 10%.
- ii. Transitions*—Utilize step-downs in building height, wall-plane offsets, and other variations in building massing to provide a visual transition when the height of new construction exceeds that of adjacent historic buildings by more than one-half story.
- iii. Foundation and floor heights*—Align foundation and floor-to-floor heights (including porches and balconies) within one foot of floor-to-floor heights on adjacent historic structures.

B. ROOF FORM

- i. Similar roof forms*—Incorporate roof forms—pitch, overhangs, and orientation—that are consistent with those predominantly found on the block. Roof forms on residential building types are typically sloped, while roof forms on nonresidential building types are more typically flat and screened by an ornamental parapet wall.
- ii. Façade configuration*—The primary façade of new commercial buildings should be in keeping with established

patterns. Maintaining horizontal elements within adjacent cap, middle, and base precedents will establish a consistent street wall through the alignment of horizontal parts. Avoid blank walls, particularly on elevations visible from the street. No new façade should exceed 40 linear feet without being penetrated by windows, entryways, or other defined bays.

D. LOT COVERAGE

i. Building to lot ratio—New construction should be consistent with adjacent historic buildings in terms of the building to lot ratio. Limit the building footprint for new construction to no more than 50 percent of the total lot area, unless adjacent historic buildings establish a precedent with a greater building to lot ratio.

3. Materials and Textures

A. NEW MATERIALS

i. Complementary materials—Use materials that complement the type, color, and texture of materials traditionally found in the district. Materials should not be so dissimilar as to distract from the historic interpretation of the district. For example, corrugated metal siding would not be appropriate for a new structure in a district comprised of homes with wood siding.

ii. Alternative use of traditional materials—Consider using traditional materials, such as wood siding, in a new way to provide visual interest in new construction while still ensuring compatibility.

iii. Roof materials—Select roof materials that are similar in terms of form, color, and texture to traditionally used in the district.

iv. Metal roofs—Construct new metal roofs in a similar fashion as historic metal roofs. Refer to the Guidelines for Alterations and Maintenance section for additional specifications regarding metal roofs.

v. Imitation or synthetic materials—Do not use vinyl siding, plastic, or corrugated metal sheeting. Contemporary materials not traditionally used in the district, such as brick or simulated stone veneer and Hardie Board or other fiberboard siding, may be appropriate for new construction in some locations as long as new materials are visually similar to the traditional material in dimension, finish, and texture. EIFS is not recommended as a substitute for actual stucco.

4. Architectural Details

A. GENERAL

i. Historic context—Design new buildings to reflect their time while respecting the historic context. While new construction should not attempt to mirror or replicate historic features, new structures should not be so dissimilar as to distract from or diminish the historic interpretation of the district.

ii. Architectural details—Incorporate architectural details that are in keeping with the predominant architectural style along the block face or within the district when one exists. Details should be simple in design and should complement, but not visually compete with, the character of the adjacent historic structures or other historic structures within the district.

Architectural details that are more ornate or elaborate than those found within the district are inappropriate.

iii. Contemporary interpretations—Consider integrating contemporary interpretations of traditional designs and details for new construction. Use of contemporary window moldings and door surroundings, for example, can provide visual interest while helping to convey the fact that the structure is new. Modern materials should be implemented in a way that does not distract from the historic structure.

5. Garages and Outbuildings

A. DESIGN AND CHARACTER

i. Massing and form—Design new garages and outbuildings to be visually subordinate to the principal historic structure in terms of their height, massing, and form.

ii. Building size—New outbuildings should be no larger in plan than 40 percent of the principal historic structure footprint.

iii. Character—Relate new garages and outbuildings to the period of construction of the principal building on the lot through the use of complementary materials and simplified architectural details.

iv. Windows and doors—Design window and door openings to be similar to those found on historic garages or outbuildings in the district or on the principle historic structure in terms of their spacing and proportions.

v. Garage doors—Incorporate garage doors with similar proportions and materials as those traditionally found in the district.

B. SETBACKS AND ORIENTATION

i. Orientation—Match the predominant garage orientation found along the block. Do not introduce front-loaded garages or garages attached to the primary structure on blocks where rear or alley loaded garages were historically used.

ii. Setbacks—Follow historic setback pattern of similar structures along the streetscape or district for new garages and outbuildings. Historic garages and outbuildings are most typically located at the rear of the lot, behind the principal building. In some instances, historic setbacks are not consistent with UDC requirements and a variance may be required.

6. Mechanical Equipment and Roof Appurtenances

A. LOCATION AND SITING

i. *Visibility*—Do not locate utility boxes, air conditioners, rooftop mechanical equipment, skylights, satellite dishes, and other roof appurtenances on primary facades, front-facing roof slopes, in front yards, or in other locations that are clearly visible from the public right-of-way.

ii. *Service Areas*—Locate service areas towards the rear of the site to minimize visibility from the public right-of-way.

B. SCREENING

i. *Building-mounted equipment*—Paint devices mounted on secondary facades and other exposed hardware, frames, and piping to match the color scheme of the primary structure or screen them with landscaping.

ii. *Freestanding equipment*—Screen service areas, air conditioning units, and other mechanical equipment from public view using a fence, hedge, or other enclosure.

iii. *Roof-mounted equipment*—Screen and set back devices mounted on the roof to avoid view from public right-of-way.

Historic Design Guidelines, Chapter 5, Guidelines for Site Elements

Historic Design Guidelines, Chapter 5, Guidelines for Site Elements

B. NEW FENCES AND WALLS

i. *Design*—New fences and walls should appear similar to those used historically within the district in terms of their scale, transparency, and character. Design of fence should respond to the design and materials of the house or main structure.

ii. *Location*—Avoid installing a fence or wall in a location where one did not historically exist, particularly within the front yard. The appropriateness of a front yard fence or wall is dependent on conditions within a specific historic district. New front yard fences or wall should not be introduced within historic districts that have not historically had them.

iii. *Height*—Limit the height of new fences and walls within the front yard to a maximum of four feet. The appropriateness of a front yard fence is dependent on conditions within a specific historic district. New front yard fences should not be introduced within historic districts that have not historically had them. If a taller fence or wall existed historically, additional height may be considered. The height of a new retaining wall should not exceed the height of the slope it retains.

iv. *Prohibited materials*—Do not use exposed concrete masonry units (CMU), Keystone or similar interlocking retaining wall systems, concrete block, vinyl fencing, or chain link fencing.

v. *Appropriate materials*—Construct new fences or walls of materials similar to fence materials historically used in the district. Select materials that are similar in scale, texture, color, and form as those historically used in the district, and that are compatible with the main structure. Screening incompatible uses—Review alternative fence heights and materials for appropriateness where residential properties are adjacent to commercial or other potentially incompatible uses.

3. Landscape Design

A. PLANTINGS

i. *Historic Gardens*—Maintain front yard gardens when appropriate within a specific historic district.

ii. *Historic Lawns*—Do not fully remove and replace traditional lawn areas with impervious hardscape. Limit the removal of lawn areas to mulched planting beds or pervious hardscapes in locations where they would historically be found, such as along fences, walkways, or drives. Low-growing plantings should be used in historic lawn areas; invasive or large-scale species should be avoided. Historic lawn areas should never be reduced by more than 50%.

iii. Native xeric plant materials—Select native and/or xeric plants that thrive in local conditions and reduce watering usage. See UDC Appendix E: San Antonio Recommended Plant List—All Suited to Xeriscape Planting Methods, for a list of appropriate materials and planting methods. Select plant materials with a similar character, growth habit, and light requirements as those being replaced.

iv. Plant palettes—If a varied plant palette is used, incorporate species of taller heights, such informal elements should be restrained to small areas of the front yard or to the rear or side yard so as not to obstruct views of or otherwise distract from the historic structure.

v. Maintenance—Maintain existing landscape features. Do not introduce landscape elements that will obscure the historic structure or are located as to retain moisture on walls or foundations (e.g., dense foundation plantings or vines) or as to cause damage.

B. ROCKS OR HARDSCAPE

i. Impervious surfaces —Do not introduce large pavers, asphalt, or other impervious surfaces where they were not historically located.

ii. Pervious and semi-pervious surfaces—New pervious hardscapes should be limited to areas that are not highly visible, and should not be used as wholesale replacement for plantings. If used, small plantings should be incorporated into the design.

iii. Rock mulch and gravel - Do not use rock mulch or gravel as a wholesale replacement for lawn area. If used, plantings should be incorporated into the design.

D. TREES

i. Preservation—Preserve and protect from damage existing mature trees and heritage trees. See UDC Section 35-523 (Tree Preservation) for specific requirements.

ii. New Trees – Select new trees based on site conditions. Avoid planting new trees in locations that could potentially cause damage to a historic structure or other historic elements. Species selection and planting procedure should be done in accordance with guidance from the City Arborist.

5. Sidewalks, Walkways, Driveways, and Curbing

A. SIDEWALKS AND WALKWAYS

i. Maintenance—Repair minor cracking, settling, or jamming along sidewalks to prevent uneven surfaces. Retain and repair historic sidewalk and walkway paving materials—often brick or concrete—in place.

ii. Replacement materials—Replace those portions of sidewalks or walkways that are deteriorated beyond repair. Every effort should be made to match existing sidewalk color and material.

iii. Width and alignment—Follow the historic alignment, configuration, and width of sidewalks and walkways. Alter the historic width or alignment only where absolutely necessary to accommodate the preservation of a significant tree.

iv. Stamped concrete—Preserve stamped street names, business insignias, or other historic elements of sidewalks and walkways when replacement is necessary.

v. ADA compliance—Limit removal of historic sidewalk materials to the immediate intersection when ramps are added to address ADA requirements.

B. DRIVEWAYS

i. Driveway configuration—Retain and repair in place historic driveway configurations, such as ribbon drives.

Incorporate a similar driveway configuration—materials, width, and design—to that historically found on the site. Historic driveways are typically no wider than 10 feet. Pervious paving surfaces may be considered where replacement is necessary to increase stormwater infiltration.

ii. Curb cuts and ramps—Maintain the width and configuration of original curb cuts when replacing historic driveways. Avoid introducing new curb cuts where not historically found.

7. Off-Street Parking

A. LOCATION

i. Preferred location—Place parking areas for non-residential and mixed-use structures at the rear of the site, behind primary structures to hide them from the public right-of-way. On corner lots, place parking areas behind the primary

structure and set them back as far as possible from the side streets. Parking areas to the side of the primary structure are acceptable when location behind the structure is not feasible. See UDC Section 35-310 for district-specific standards.

ii. Front—Do not add off-street parking areas within the front yard setback as to not disrupt the continuity of the streetscape.

iii. Access—Design off-street parking areas to be accessed from alleys or secondary streets rather than from principal streets whenever possible.

B. DESIGN

i. Screening—Screen off-street parking areas with a landscape buffer, wall, or ornamental fence two to four feet high—or a combination of these methods. Landscape buffers are preferred due to their ability to absorb carbon dioxide. See UDC Section 35-510 for buffer requirements.

ii. Materials—Use permeable parking surfaces when possible to reduce run-off and flooding. See UDC Section 35-526(j) for specific standards.

iii. Parking structures—Design new parking structures to be similar in scale, materials, and rhythm of the surrounding historic district when new parking structures are necessary.

Standard Specifications for Windows in Additions and New Construction

Consistent with the Historic Design Guidelines, the following recommendations are made for windows to be used in new construction:

- **GENERAL:** Windows used in new construction should be similar in appearance to those commonly found within the district in terms of size, profile, and configuration. While no material is expressly prohibited by the Historic Design Guidelines, a high quality wood or aluminum-clad wood window product often meets the Guidelines with the stipulations listed below.
- **SIZE:** Windows should feature traditional dimensions and proportions as found within the district.
- **SASH:** Meeting rails must be no taller than 1.25". Stiles must be no wider than 2.25". Top and bottom sashes must be equal in size unless otherwise approved.
- **DEPTH:** There should be a minimum of 2" in depth between the front face of the window trim and the front face of the top window sash. This must be accomplished by recessing the window sufficiently within the opening or with the installation of additional window trim to add thickness. All windows should be supplied in a block frame and exclude nailing fins which limit the ability to sufficiently recess the windows.
- **TRIM:** Window trim must feature traditional dimensions and architecturally appropriate casing and sloped sill detail.
- **GLAZING:** Windows should feature clear glass. Low-e or reflective coatings are not recommended for replacements. The glazing should not feature faux divided lights with an interior grille. If approved to match a historic window configuration, the window should feature true, exterior muntins.
- **COLOR:** Wood windows should feature a painted finish. If a clad or non-wood product is approved, white or metallic manufacturer's color is not allowed and color selection must be presented to staff.

FINDINGS:

- a. The applicant is requesting a Certificate of Appropriateness for approval to construct a commercial structure with a detached fuel canopy on the vacant lot addressed as 418 Florida and 319 E Carolina, located within the Lavaca Historic District.
- b. **DESIGN REVIEW COMMITTEE** – This request was reviewed by the Design Review Committee on October 8, 2024. At that meeting, committee members commented on building setbacks, site configuration, architectural details, signage and lighting. This request was reviewed a second time by the Design Review Committee on October 29, 2024. At that meeting, committee members comments on the building's form and architecture, and made recommendations regarding façade arrangement, fenestration, and architectural details. This request was reviewed a third time by the Design Review Committee on November 12, 2024. At that meeting, the applicant provided an overview of design revisions, and committee members provided additional feedback and recommendations regarding awnings, architectural details, site access, and the dumpster location and enclosure.
- c. **CONTEXT & DEVELOPMENT PATTERN** – As noted in finding a, this lot is vacant and void of structures. The lot is bounded by Florida Street to the north, E Carolina Street to the south, the IH-27 Access Road to the east, and single-family residential structure to the west. Across both Florida and E Carolina are single-family residential structures. Both blocks of Florida and E Carolina are composed of historic, residential structures.

- d. **SETBACKS & ORIENTATION** – According to the Guidelines for New Construction, the front facades of new buildings are to align with front facades of adjacent buildings where a consistent setback has been established along the street frontage. The applicant has proposed to orient the proposed new construction to the east, towards IH-37. The applicant has noted that the proposed new construction will feature a setback on Florida Street that is greater than the front setbacks of the adjacent, historic structures. Staff finds the proposed setback from Florida Street to be appropriate; however, staff finds that architectural elements should be added to the north (Florida) façade to address Florida Street. The historic development pattern on Florida Street features historic structures that all feature architectural orientations towards Florida Street. Staff finds that the proposed new construction should feature architectural elements on its north façade that address Florida Street, such as architectural elements and details representative of entrances.
- e. **ENTRANCES** – Per the application drawings, three, front facing entrances have been proposed. These entrances are located within storefront systems and beneath an entrance canopy that spans the front façade. Staff finds the proposed entrances and their orientation to be appropriate and consistent with the Guidelines. In addition to the three, front facing entrances, the applicant has side utility doors on both the north and south facades. Entrance canopies have been added above these two doors.
- f. **SCALE & MASS** – Per the Guidelines for New Construction 2.A.i., a height and massing similar to historic structures in the vicinity of the proposed new construction should be used. In residential districts, the height and scale of new construction should not exceed that of the majority of historic buildings by more than one-story. The applicant has proposed for the new construction to feature one story in height; approximately twenty-four (24) feet. Generally, staff finds the proposed height to be appropriate; however, staff finds that a street elevation should be developed to show the proposed height of twenty-four (24) feet in context with the adjacent, single-story historic structures on E Carolina and Florida Streets.
- g. **FOUNDATION & FLOOR HEIGHTS** – According to the Guidelines for New Construction 2.a.iii., foundation and floor heights should be aligned within one (1) foot of neighboring structure’s foundation and floor heights. Generally, the applicant has proposed foundation and floor heights that are consistent with historic, commercial structures found within the Lavaca Historic District.
- h. **ROOF FORM** – The Guidelines for New Construction 2.B.i. note that roof forms that are consistent with those predominantly found on the block should be incorporated into new construction. Historic commercial structures found within the Lavaca Historic District feature flat roofs with parapet walls, which the applicant has proposed to incorporate within the new construction. Staff finds the proposed roof form to be appropriate.
- i. **LOT COVERAGE** – The Guidelines for New Construction 2.D.i. notes that new construction should be consistent with adjacent historic buildings in terms of the building to lot ratio. Footprints of new construction should be limited to no more than fifty (50) percent of the total lot area, unless adjacent historic buildings establish a precedent with a greater building to lot ratio. Per BCAD, the total lot size is .9298 acres, or 40,500 square feet. The applicant has proposed for the commercial structure to feature a footprint of 7,200 square feet and the fuel canopy to feature a footprint of 3,936 square feet. The proposed lot coverage is consistent with the Guidelines for New Construction.
- j. **MATERIALS** – The applicant has proposed materials that include stucco and brick. Along with these, the applicant has proposed metal façade canopies and storefront systems. Generally, staff finds the proposed materials to be appropriate and consistent with the Guidelines; however, staff finds that stucco should feature a traditional finish and profile. Brick should be true, dimensional brick, and storefront systems and canopies should be profiled and detailed to be consistent with those found historically within the Lavaca Historic District. Specifications of each elements should be submitted for review and approval. Materials and their profiles should reference those of historic, commercial structures in the Lavaca Historic District. Commercial, suburban elements and details should not be incorporated into the design. Staff finds that a red brick should be used in place of the proposed tan brick, as red brick is found historically throughout the Lavaca Historic District
- k. **FENESTRATION PROFILE** – The applicant has proposed fenestration that consists of a storefront system with transom windows. Generally, staff finds the proposed approach to fenestration to be reflective of fenestration found on historically on commercial structures within the Lavaca Historic District. Staff finds that the profiles of muntins, mullions and other storefront and transom frame elements should relate to those found historically on commercial structures within the Lavaca Historic District. Additionally, staff finds that fenestration should be added to the north facade, as facades front Florida that lack fenestration are not found historically on this block.
- l. **ARCHITECTURAL DETAILS** – Generally, staff finds that the proposed new construction features architectural elements that relate to those found on historic commercial structures within the Lavaca Historic District. As noted in the above findings, staff finds that additional design elements should be added to the north

façade, including fenestration, that all storefront and transom systems should feature profiles that relate to those found historically within the district, and that materials, such as brick and stucco relate to that found historically within the district. When returning to the Commission for final approval, the applicant should have fully developed construction documents and material details and specifications.

- m. LANDSCAPING – The applicant has provided a detailed landscaping plan; however, staff finds that all landscaping requirements of the Unified Development Code and the Historic Design Guidelines are to be met. This includes a minimum 15-foot buffer yard along the west property line between the building and the residential properties. Staff finds that the building setback should be increased to 15 feet, as required by the UDC, and that tall, evergreen shrubs or trees that screen the commercial use from residential properties should be incorporated into the landscape plan.
- n. FUEL CANOPY – The applicant has noted the installation of a fuel canopy to cover six (6) fuel pumps. The applicant has provided a site plan and renderings noting the location and general form and design of the fuel canopy. Staff finds that the canopy should feature simplified architectural elements with down lighting. The canopy should not feature internally illuminated signage, internally illuminated fascias, or excessive, commercial lighting. A complete construction document set for the proposed fuel canopy is to be submitted for review and approval when returning to the Commission for final approval.
- o. SITE & ARCHITECTURAL LIGHTING – The applicant has submitted information regarding building and fuel canopy lighting. Staff finds that a detailed site and architectural lighting plan should be developed and submitted for review and approval when returning to the Commission for final approval. Lighting should be developed in a manner that does not result in light pollution.
- p. SIGNAGE – The applicant has noted signage on the front façade of the proposed commercial structure, as well as signage on the fuel canopy, and one monument sign. Staff finds that a master signage plan should be submitted for review and approval prior to the installation of signage. Additionally, staff finds that all signage should be indirectly lit. Pole or pylon signs are prohibited by code and should not be requested. The proposed monument sign should not exceed six (6) feet in height. All signage should be designed to comply with the Guidelines for Signage.
- q. MECHANICAL & SERVICE EQUIPMENT – All mechanical equipment should be installed in a manner where it is screened from view from the right of way. Rooftop mechanical equipment should be entirely screened by the proposed parapet walls. The applicant is responsible for appropriately and adequately screening all mechanical equipment.
- r. DUMPSTER LOCATION – The applicant has proposed to install a dumpster in the southeast corner of the lot. The dumpster has been proposed to be located within a concrete masonry unit wall. Generally, staff is concerned regarding this location as it would be located directly in front of the historic structure at 318 E Carolina. Staff finds that the applicant should consider the relocation or repositioning of the dumpster, and that the applicant should apply stucco to the concrete masonry unit screening walls.
- s. VEHICULAR ACCESS – The applicant has proposed two vehicular access points into the site; one on E Carolina and one on Florida, which will feature individual entrance and exit lanes. The applicant has noted a curbcut width of twenty-five (25) feet on E Carolina; however, the applicant has not noted a total width of curb cuts on Florida. Generally, staff finds the proposed curb cuts to be appropriate; however, staff finds that no curb cut should exceed twenty-five (25) feet in width total.
- t. FENCING/WALL – The applicant has noted a wall to feature between six (6) and eight (8) feet in height to separate the proposed new construction from neighboring, single-family historic structures to the west. The applicant has note shown the proposed fencing/wall element on the site plan. Staff finds that construction documents should be developed for the proposed wall, and that it should be shown on the site and landscaping plan.
- u. ARCHAEOLOGY – The project area is partially located within the Lavaca Local Historic District. In addition, historical archival maps identify the Acequia del Alamo likely traversing the property. Therefore, an archaeological investigation is required. The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology, as applicable.

RECOMMENDATION:

Staff does not recommend conceptual approval at this time as the applicant has not met the Unified Development Code's setback requirements, as noted in finding m.

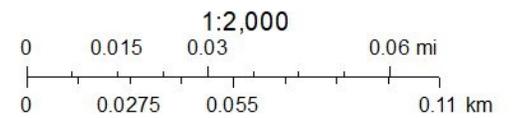
Staff recommends the following items be incorporated into the design prior to receiving a recommendation for conceptual approval:

- i. That a street elevation be developed to show the proposed height of twenty-four (24) feet in context with the adjacent, single-story historic structures on E Carolina and Florida Streets, as noted in finding f.
- ii. That brick be true, dimensional brick, and that stucco be applied in a traditional manner and feature a traditional finish and appearance, as noted in finding j.
- iii. That materials and their profiles should reference those of historic, commercial structures in the Lavaca Historic District. Commercial, suburban elements and details should not be incorporated into the design.
- iv. That the profiles of muntins, mullions and other storefront and transom frame elements relate to those found historically on commercial structures within the Lavaca Historic District.
- v. That fenestration should be added to the north facade, as facades front Florida that lack fenestration are not found historically on this block, as noted in finding k.
- vi. That a detailed master signage plan be proposed that features only one (1) monument sign, that all signage feature indirect lighting, and that no pole or pylon signs are proposed, as noted in finding o. All signage should be designed to be consistent with the Guidelines for Signage.
- vii. That all mechanical and service equipment be located in a manner than screens it from view from the public right of way, as noted in finding q.
- viii. That the applicant consider the relocation or repositioning of the dumpster, and that the applicant apply stucco to the concrete masonry unit screening walls, as noted in finding r.
- ix. That no curb cut exceed twenty-five (25) feet in width, as noted in finding s.
- x. That all setbacks as required by Zoning within the Unified Development Code are to be met. This includes a minimum 15-foot buffer yard along the west property line between the building and the residential properties.
- xi. That tall, evergreen shrubs or trees that screen the commercial use from residential properties should be incorporated into the landscape plan.
- xii. That construction documents should be developed for the proposed wall, and that it should be shown on the site and landscaping plan, as noted in finding t.
- xiii. That a detailed site and architectural lighting plan be developed and submitted for review and approval when returning to the Commission for final approval. Lighting should be developed in a manner that does not result in light pollution.
- xiv. **ARCHAEOLOGY** – An archaeological investigation is required. The project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology, as applicable.

City of San Antonio One Stop



October 31, 2024





CITY OF SAN ANTONIO
**OFFICE OF HISTORIC
PRESERVATION**

Historic and Design Review Commission
Design Review Committee Report

DATE: October 8, 2024

HDRC Case #:

Address: 419 Florida

Meeting Location: Webex

APPLICANT: David Ranjbar

DRC Members present: Jeff Fetzer, Monica Savino

Staff Present: Edward Hall, Bryan Morales

Others present: Rahil

REQUEST:

COMMENTS/CONCERNS:

MS: Questions regarding previous fuel canopy on site.

JF: Questions regarding operating hours. Rahil: closes at 11pm M-T, Midnight F, S.

JF: Questions regarding drainage. Will water drain underground from downspouts and scuppers, how will water be prevented from draining towards adjacent properties. DR: Water will be directed to the landscaped areas.

JF: Water drainage should not impact neighbors.

JF: The horizontal banding creates a parapet on the east side of the building; please show rooftop equipment in elevations and to show how the equipment will be screened.

Discussion regarding RTU's and their screening.

MS: To meet side setback, why not remove five feet from the building footprint?

MS: Has brick been considered to relate to historic structures within the historic district? DR: Design is being revised to include brick and reference historic examples.

JF: Questions regarding location of dumpster enclosure.

JF: Provide adjacent historic structures (across the street on Carolina and Florida) and adjacent on west property lines to provide additional context.

JF: Has a traffic study been conducted? DR: In process.

MS: Questions regarding tree requirements. RJ: Will follow required planting. All existing trees will remain; existing trees are within the right of way and will remain.

OVERALL COMMENTS:



CITY OF SAN ANTONIO
**OFFICE OF HISTORIC
PRESERVATION**

Historic and Design Review Commission
Design Review Committee Report

DATE: October 29, 2024

HDRC Case #: 2024-339

Address: 418 Florida

Meeting Location: Webex

APPLICANT: David Ranjbar

DRC Members present: Jeff Fetzer, Monica Savino, Karen Burgard

Staff Present: Edward Hall, Cory Edwards

Others present:

REQUEST:

Construction of a commercial structure, fuel canopy, site and landscaping work

COMMENTS/CONCERNS:

MS: The updated design has improved significantly from the previous review. Questions about how the building relates to historic buildings in Lavaca.

MS: The design needs additional detailing.

JF: Consider how the north elevation can be improved. It does not relate to the existing context of the block. Consider an upgrade in design elements.

OVERALL COMMENTS:



CITY OF SAN ANTONIO
**OFFICE OF HISTORIC
PRESERVATION**

Historic and Design Review Commission
Design Review Committee Report

DATE: November 12, 2024

HDRC Case #: 2024-339

Address: 418 Florida

Meeting Location: Webex

APPLICANT: David Ranjbar, Elizabeth Russell

DRC Members present: Monica Savino, Roland Mazuca

Staff Present: Edward Hall

Others present: Attended only by Lavaca Board, Brian Murphy, Lisa Garza

REQUEST: Construction of a commercial structure with fuel canopy and site work

COMMENTS/CONCERNS:

ER: Overview of revisions to the design to address previous comments from OHP staff and Commissioners.

MS: Consider notating the materials for the canopy and awning, dimension it, note how it is supported, how are the details referencing historic materials.

MS: Consider pursuing architectural details that reference historic structures

MS: Question about driveway on Florida.

MS: Comments on gate and dumpster enclosure.

OVERALL COMMENTS:











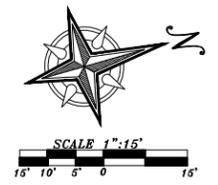
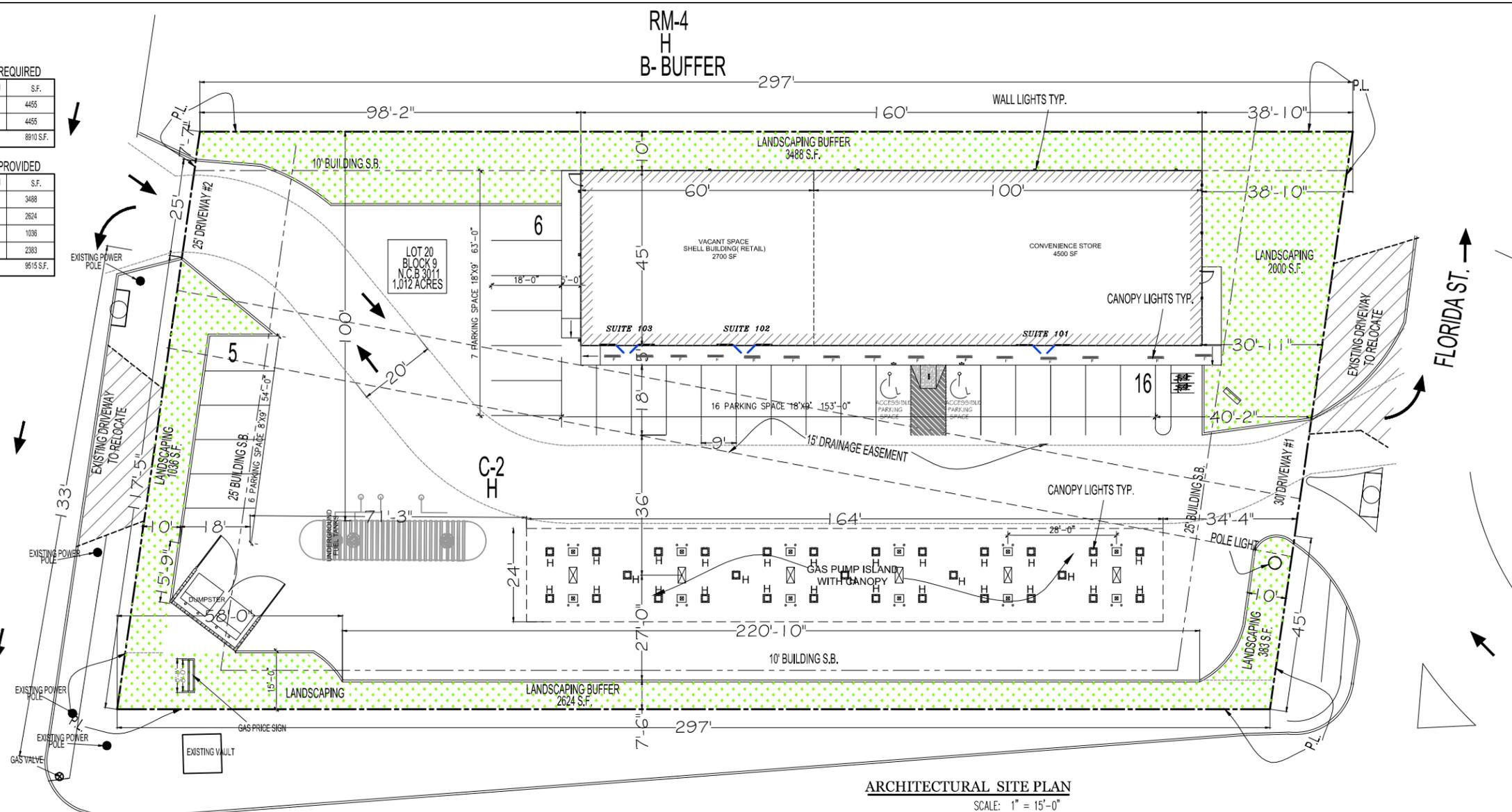




LANDSCAPING BUFFER REQUIRED		
LOCATION	CALCULATION	S.F.
REAR SIDE	15' X 297'	4455
FRONT SIDE	15' X 297'	4455
TOTAL		8910 S.F.

LANDSCAPING BUFFER PROVIDED		
LOCATION	CALCULATION	S.F.
REAR SIDE	10' X 297'	2970
FRONT SIDE	7.5' X 297'	2227.5
CAROLINA ST.	10' X 102'	1020
FLORIDA ST.	200' X 383'	76600
TOTAL		81197.5 S.F.

CAROLINA ST.



PROJECT SITE LOCATION MAP

FLORIDA ST.

ARCHITECTURAL SITE PLAN

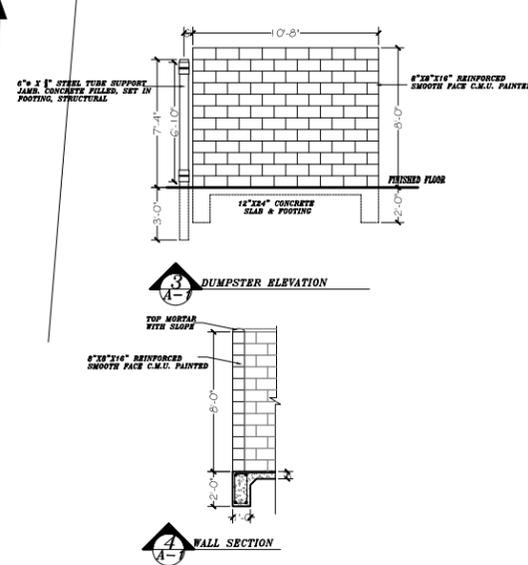
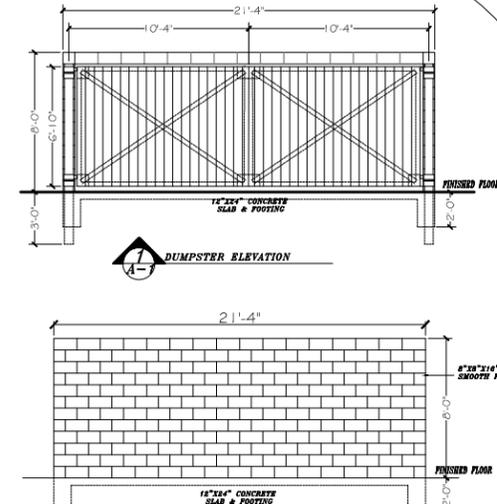
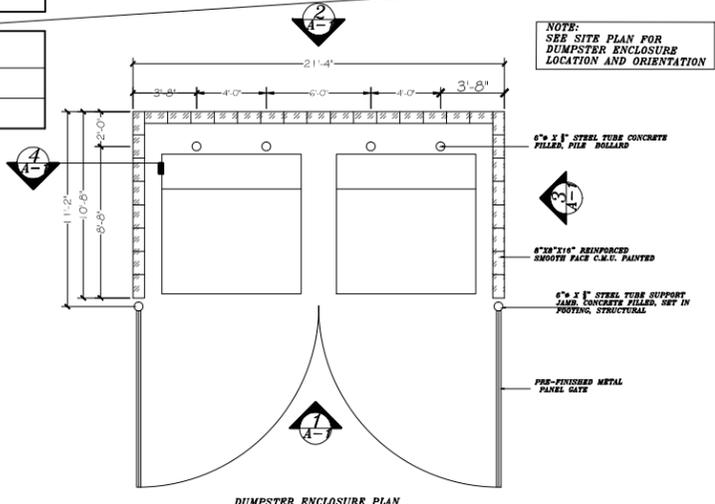
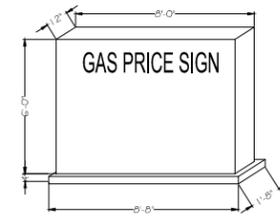
SCALE: 1" = 15'-0"

BASED ON UDC TABLE 526-3b

Use:	Area: SQFT	Minimum Vehicle Spaces
RETAIL		
Convenience Store	4500sqft	6 per 1000 S.F. GFA 4500 / 1000 x 4.5 = 27 spaces

Use:	Area: SQFT	Minimum Vehicle Spaces
RETAIL		
Retail	2700 sqft	1 per 300 S.F. GFA 2700 / 300 = 9 spaces

Minimum vehicle spaces required 36
 Vehicle spaces provided 27+ 12 under gas canopy=39
 Minimum accessible parking spaces required 1 standard and 1 van parking
 Accessible parking spaces provided 1 standard and 1 van parking



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 Certified Professional Building Designer
 3942 Pleasure Hill
 San Antonio, TX 78229
 Davidranjbar.ppc@gmail.com
 Phone 210-389-5510

PROJECT NO.
71424
 DATE
11/3/24

NEW
 CONVENIENCE STORE &
 RETAIL
 418 FLORIDA ST. SUITE 101
 SAN ANTONIO, TX. 78210

REVISIONS	
NO.	DATE
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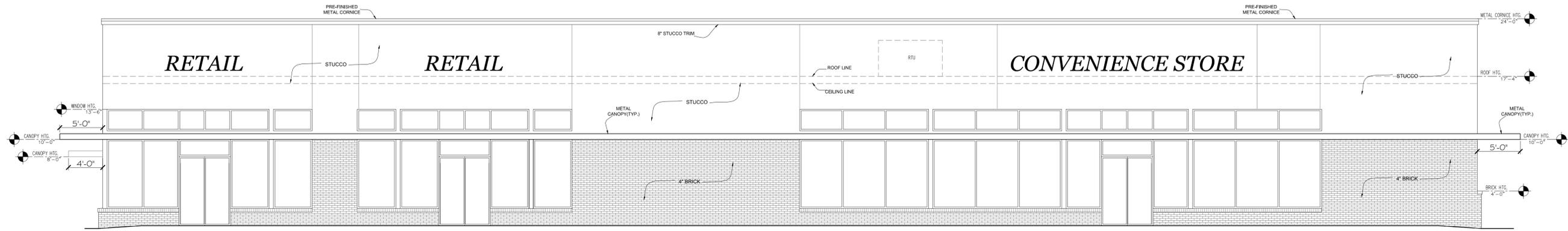
SHEET TITLE

ARCHITECTURAL SITE PLAN

SHEET NO.

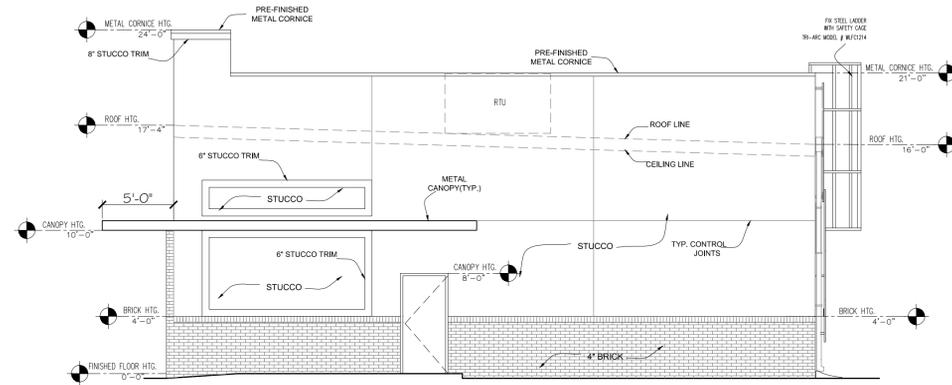
A-1 OF 4

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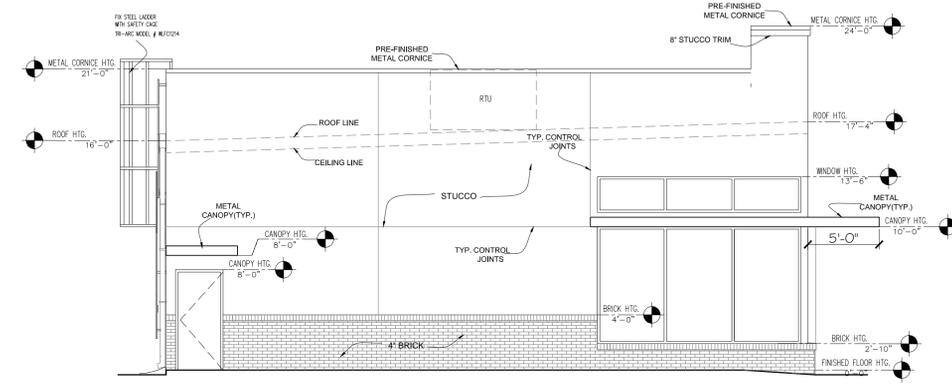
FRONT ELEVATION

SCALE: 1" = 6'-0"



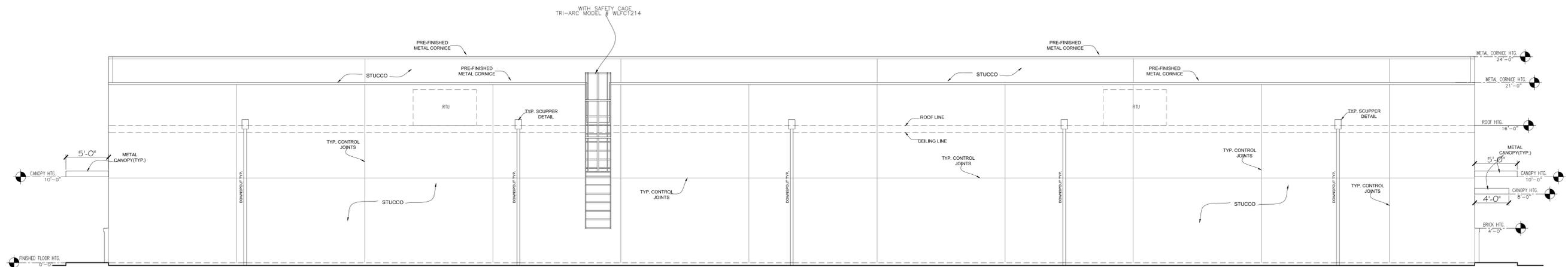
NORTH ELEVATION

SCALE: 1" = 6'-0"



SOUTH ELEVATION

SCALE: 1" = 6'-0"



REAR ELEVATION

SCALE: 1" = 6'-0"

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PROJECT NO.
 71424
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 11/3/24

NEW CONVENIENCE STORE & RETAIL
 418 FLORIDA ST. SUITE 101
 SAN ANTONIO, TX. 78210

REVISIONS
 NO. DATE

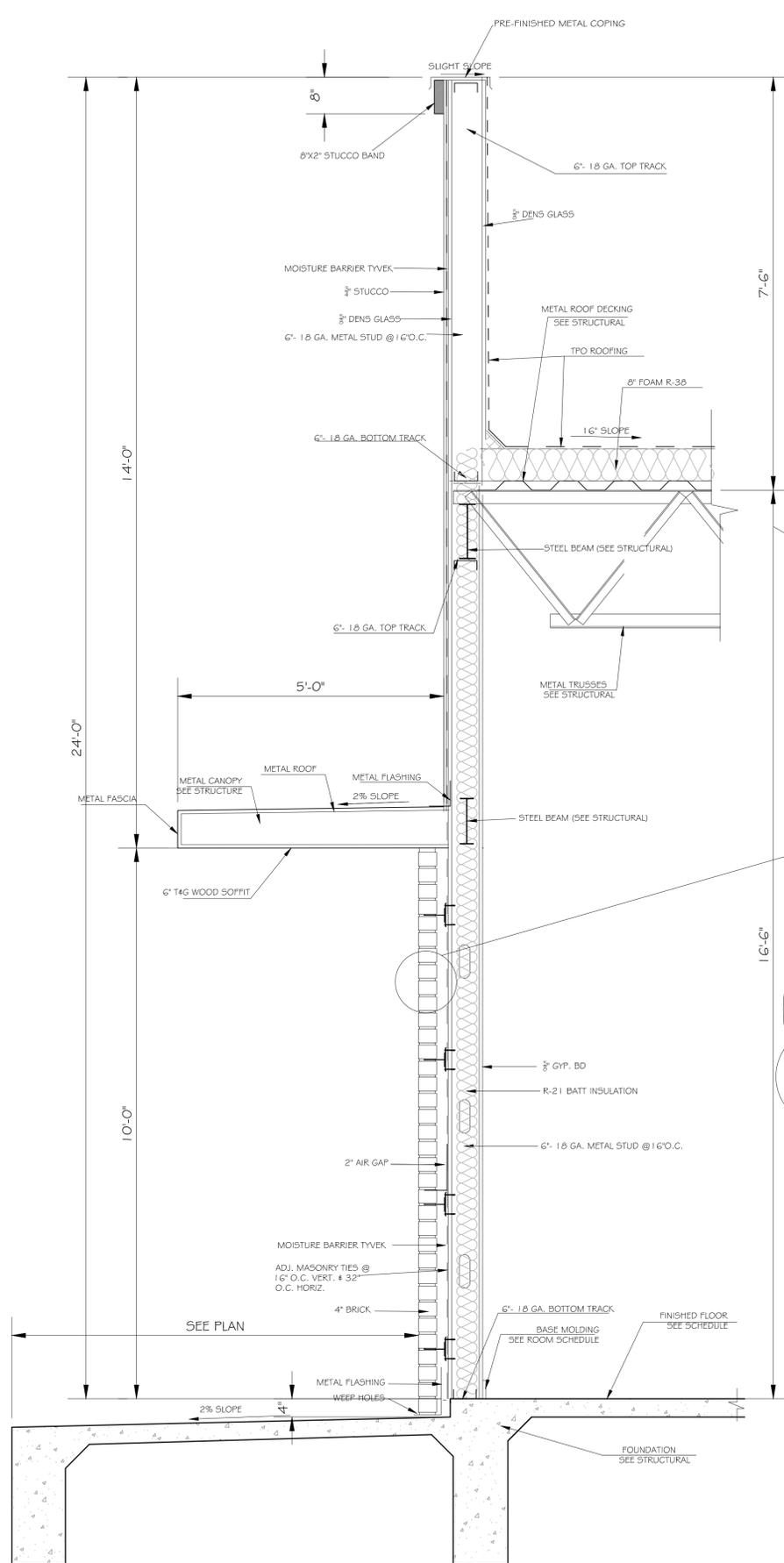
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SHEET TITLE

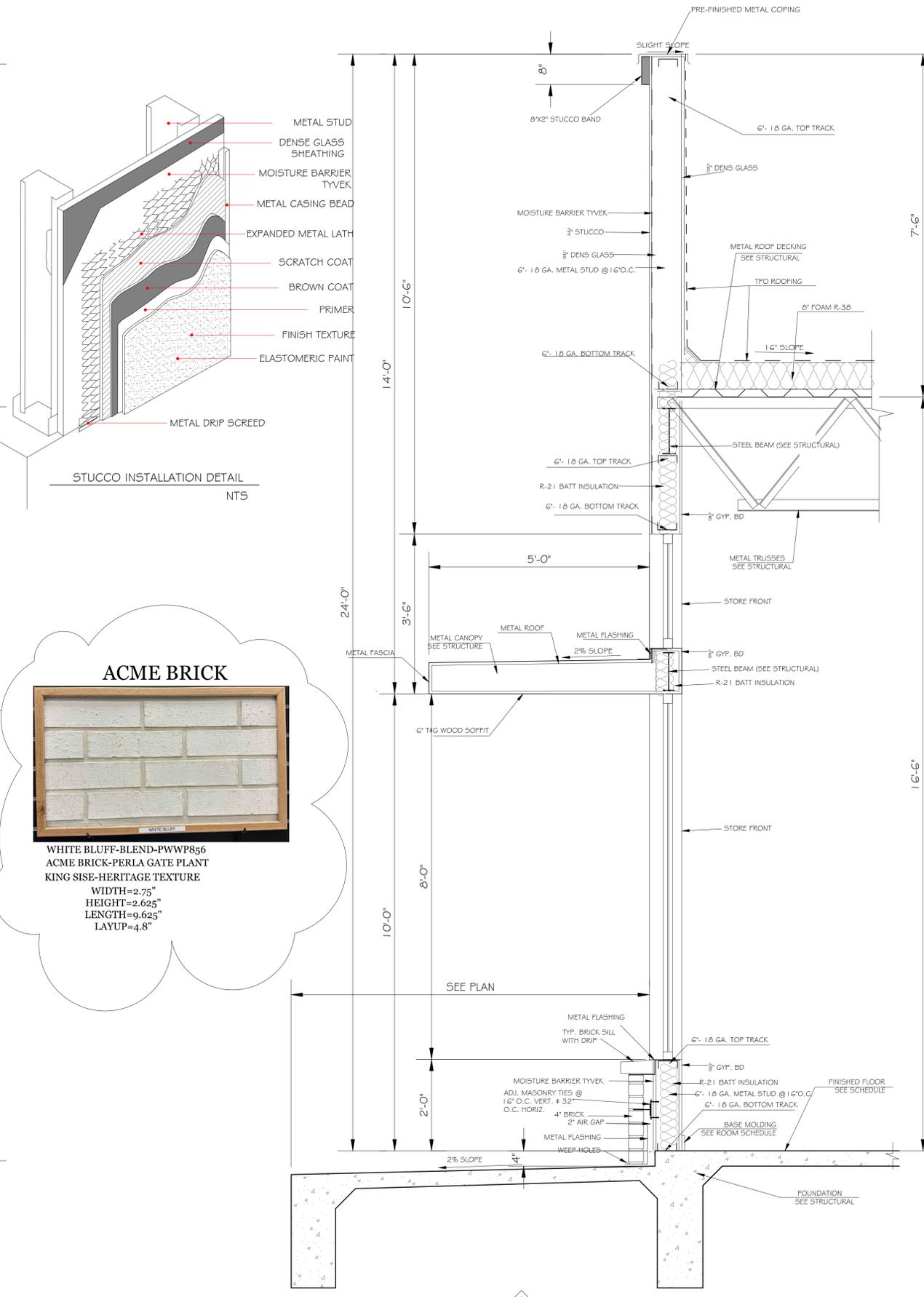
FLOOR PLAN

SHEET NO.

A-3 OF 4



E2
A4 EXTERIOR WALL SECTION
SCALE: 3/4" = 1'-0"



E1
A4 EXTERIOR WALL SECTION
SCALE: 3/4" = 1'-0"

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PROJECT NO.
71424
DATE
11/3/24

NEW
CONVENIENCE STORE &
RETAIL
418 FLORIDA ST. SUITE 101
SAN ANTONIO, TX. 78210

REVISIONS	
NO.	DATE
1	1/7/25
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SHEET TITLE
EXTERIOR WALL SECTIONS

SHEET NO.
A-4 OF 4

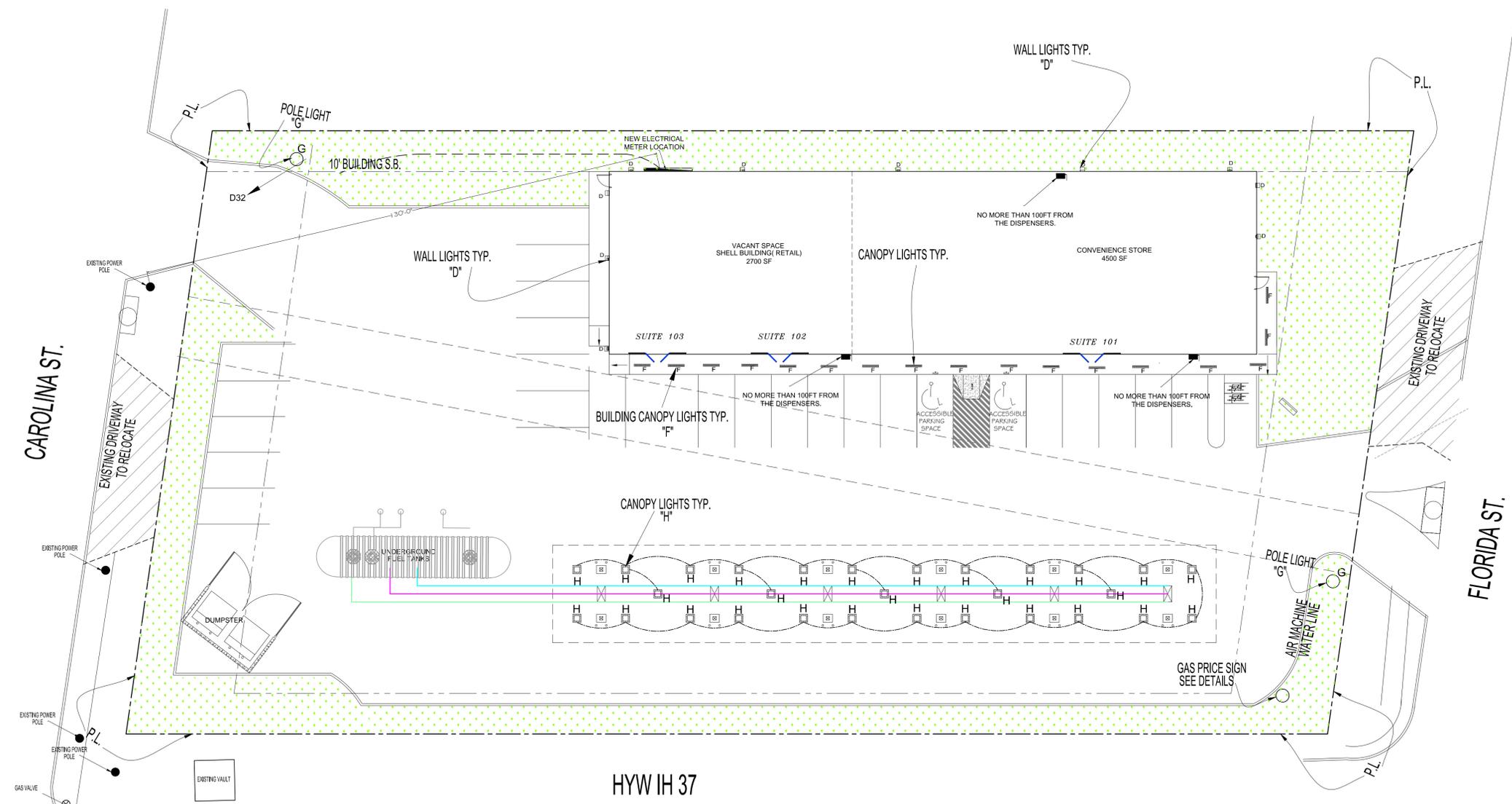
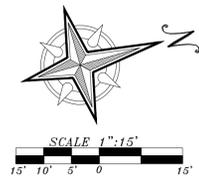
ACME BRICK



WHITE BLUFF-BLEND-PWWP856
ACME BRICK-PERLA GATE PLANT
KING SISE-HERITAGE TEXTURE

WIDTH=2.75"
HEIGHT=2.625"
LENGTH=9.625"
LAYUP=4.8"

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SITE LIGHTING PLAN
 SCALE: 1" = 15'-0"

LIGHTING FIXTURE SCHEDULE

Type Mark	Manufacturer	Model	wattage	Count	Description
G	LSI Industries	100W LED POLE Light	200W	2	High Efficiency LED
H	LSI Industries	CRUS-SC-LED-VLW-50	50W	29	High Efficiency LED for Recessed Installation
D	WALL MT		50W	10	EXTERIOR LIGHT LED
F	6"x48" LED LIGHT		50W	17	BUILDING CANOPY LIGHT LED

Seda Consulting Engineers, Inc.
 Firm Registration No: F 1601
 (210) 308-0057
 6735 IH 10 WEST
 San Antonio, Texas 78201
 e-mail: sedsa@satx.tx.com
 FAX: (210) 308-8842

PROJECT NO.
71424
 DATE
8/28/24

NEW CONVENIENCE STORE & RETAIL
 418 FLORIDA ST.
 SAN ANTONIO, TX. 78210

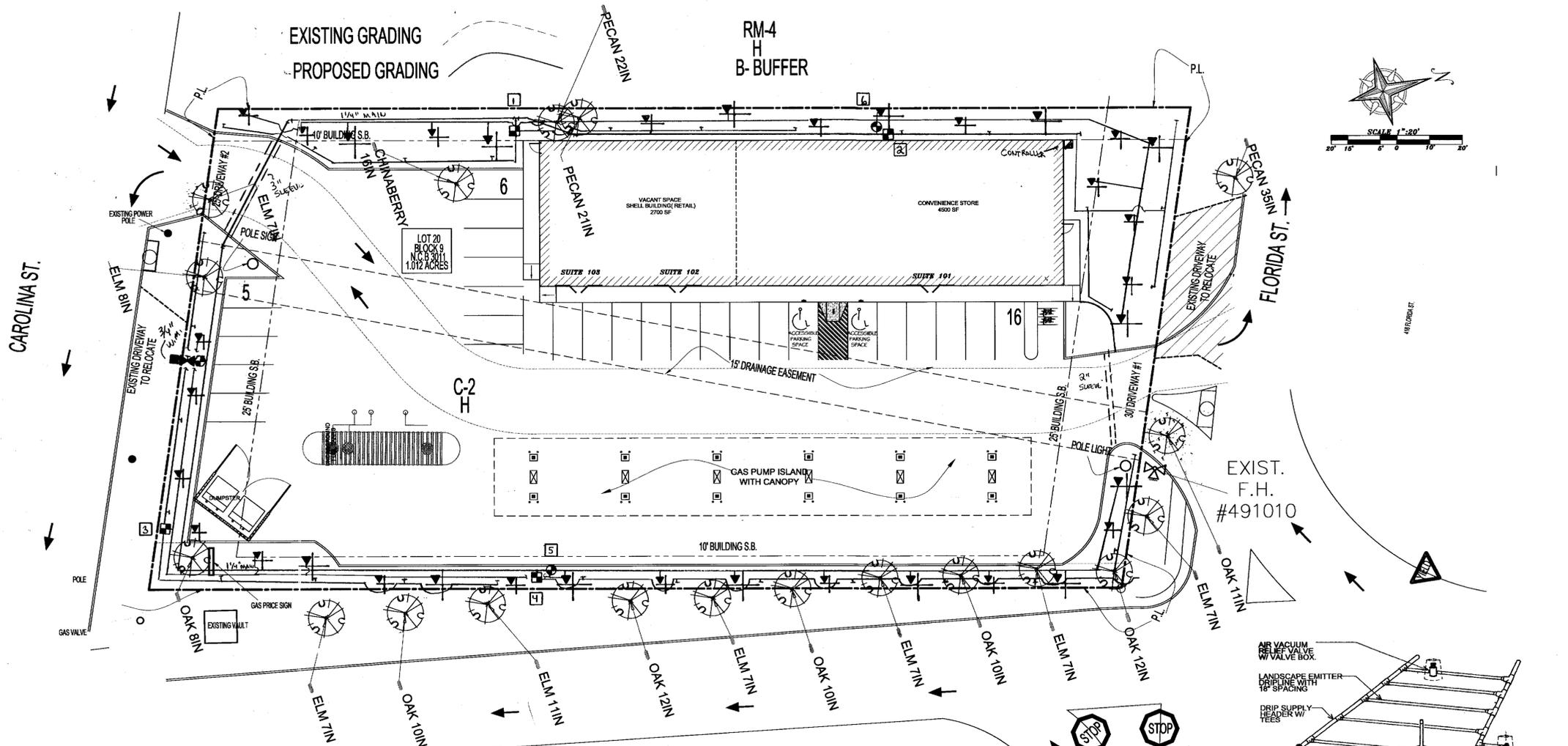
REVISIONS

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ARCHITECTURAL
 SHEET TITLE
 SITE PLAN

SHEET NO.
E-3 OF 4

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IRRIGATION PLAN KEY and NOTES I

SYMBOL	ITEM	NOTES
■	3/4" Inch Water Meter	Irrigation only
⊗	1 Inch Double Check Valve	
⊕	1 Inch Hunter ICV "Master Valve"	
⊖	Hunter ICZ 101 Drip Valve	Shrubs
⊗	1 Inch Hunter ICV Zone Valves	Trees
⊖	6" Hunter PRO S with 1/2" GPM Bubbler Nozzle	Trees
⊖	6" Hunter PRO S with 1" GPM Bubbler Nozzle	Trees
⊖	Hunter PRO C 6 Outdoor Mount Controller with conjunction with a Hunter WRF-CLICK WIRELESS RAIN/FREEZE Sensor	

- NOTES:
- Miscellaneous Materials:
 - A 1/4" SCH 40 Mainline
 - B 1", 3/4" & 1/2" Class 200 & 315 Laterals
 - C Sleeves SCH 40
 - D Wire is to be 14 gauge red & white
 - E 10" Valve Boxes on all Spray/Bubbler Valves
 - F 12" X 18" Valve Boxes on all Drip Valves
- General Guidelines:
- G Follow Hunter Installation Specs & Guidelines
 - H Water Meter by owner
 - I Electric for controller BY OWNER Verify Location on Site

PRESSURE LOSS CALC. Station #5 (12.5 GPM)

ZONE #5	12.5 GPM
3/4" Inch Water Meter	-2.4 PSI
1" Double Check Valve	-5.2 PSI
1-1/4" Main Line	-1.9 PSI
1" Master Valve	-3.0 PSI
1" Zone Valve	-3.0 PSI
Laterals	-3.0 PSI
Total Loss	-18.5 PSI

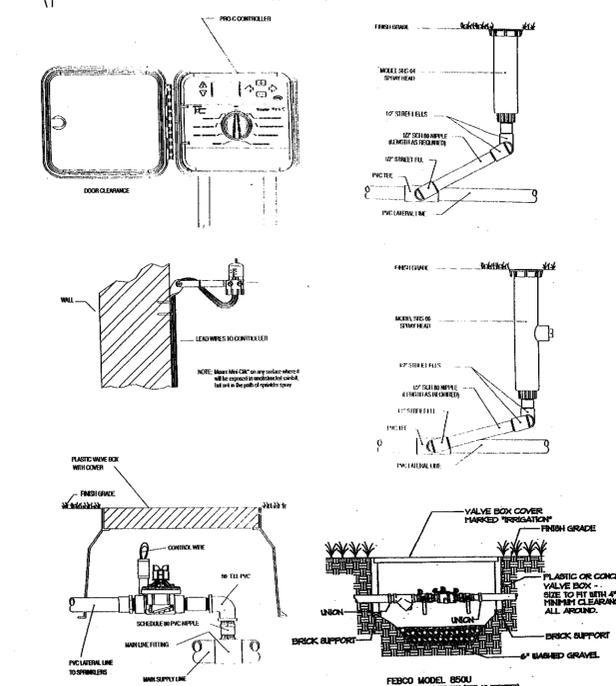
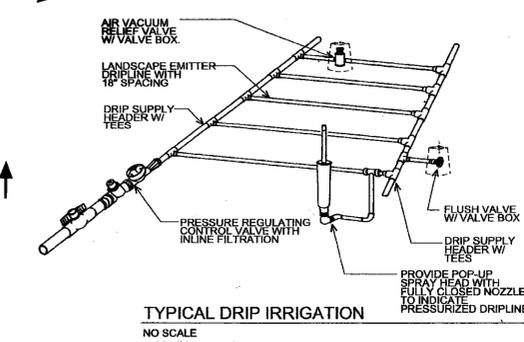
Note: 55 PSI Static PSI
Contractor to Verify on Site

IRRIGATION ZONE IDENTIFICATION

ZONE NUMBER	ZONE DESCRIPTION / TYPE	GPM - ZONE RUN TIME FOR 1" PER WEEK
#1	Shrubs / Drip	5.3 GPM - 120 Minutes/Week
#2	Shrubs / Drip	6.0 GPM - 120 Minutes/Week
#3	Shrubs / Drip	5.7 GPM - 120 Minutes/Week
#4	Shrub / Drip	5.4 GPM - 120 Minutes/Week
#5	Tree/Bubblers	12.5 GPM - 60 Minutes/Week
#6	Tree/Bubblers	12.0 GPM - 60 Minutes/Week

IRRIGATION NOTES:

- 1) Adjustable flow controls shall be required on circuit remote, valves and pressure regulation components shall be required where static pressure exceeded manufacturer's recommended operating range.
- 2) Valve and circuits shall be separated based on water use, so that turf and shrub areas can be watered separately from shrub and groundcover areas.
- 3) Sprinkler heads shall have matched precipitation rates within each control valve circuit.
- 4) Check valves shall be required where elevation differential may cause low head drainage.
- 5) Sprinkler head spacing shall be designed for head-to-head coverage or heads shall be spaced as per manufacturer's recommendations and adjusted for prevailing winds. The system shall be designed for minimum runoff and no overspray onto non-irrigated areas. (i.e. paving and structures).
- 6) All automatic irrigation systems shall be equipped with a controller capable of dual or multiple programming. Controllers shall have multiple cycle start capacity and a flexible calendar program. All automatic irrigation systems shall be equipped with rain sensor shut-off device.
- 7) Flexible swing joints required on all heads, both spray and rotor.
- 8) Irrigation system shown is diagrammatic only and depicts approximate number and location irrigation components.
- 9) This system to comply with all current City of San Antonio requirements for an irrigation system.
- 10) It is the Irrigation Contractor's responsibility to verify all conditions on site.
- 11) No cutting, filling, trenching, root disturbance, soil disturbance, or construction impacts shall be done within the RPZ radius unless done by hand.



IRRIGATION PLAN

City of San Antonio
Development Services
1901 South Alamo Street
San Antonio, TX 78283

To Whom It May Concern:

RE: Project Name: New Convenience Store & Retail
Project Address: 418 Florida St.
San Antonio, TX 78210

I, Patrick G. Covell, a licensed irrigator in the State of Texas do certify that the Irrigation plan submitted conforms to the irrigation design and equipment standards Set out in 35-510(j) and 35-511(c)(6) of the City of San Antonio Unified Development Code and also complies with the requirements of Chapter 344, 344.72 - 344.77 of the Texas Administrative Code.

If further information is needed, please feel free to contact me at (210) 496-1242.

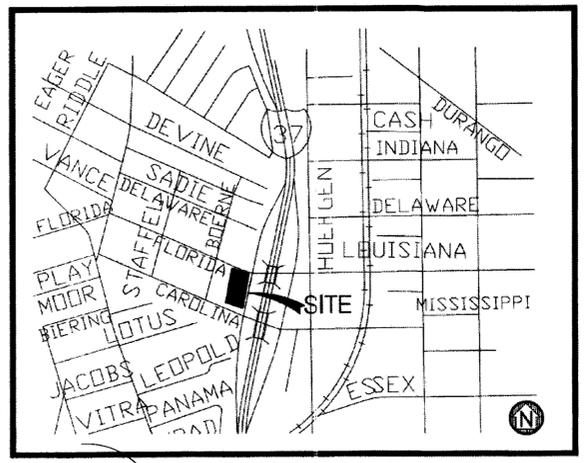
Yours Truly, *Patrick Covell*

Patrick Covell
Licensed Irrigator #1397



PIPE SIZING CHART

Pipe Size	GPM Amount
1/2 Inch PVC	0 - 5 GPM
3/4 Inch PVC	6 - 10 GPM
1 Inch PVC	11 - 15 GPM
1-1/4 Inch PVC	16 - 25 GPM
1-1/2 Inch PVC	26 - 35 GPM
2 Inch PVC	36 - 50 GPM



LOCATION MAP
NOT TO SCALE



RANDOLPH CHAVEZ
LANDSCAPE ARCHITECT
210-859-4867

PROJECT NO.
71424
DATE
11/3/24

NEW
CONVENIENCE STORE &
RETAIL
418 FLORIDA ST. SUITE 101
SAN ANTONIO, TX. 78210

REVISIONS

NO.	DATE
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SHEET TITLE
IRRIGATION PLAN

SHEET NO.

I-1 OF 2

PLANT LIST

QTY	KEY	COMMON NAME	BOTANICAL NAME	SIZE	SPACING
Trees:					
4	BUR	Burr Oak	<i>Quercus macrocarpa</i>	1.5" cal. 9'-10" ht.; 3'-4" spd.	Per Plan
4	SYC	Mexican Sycamore	<i>Platanus mexicana</i>	1.5" cal. 9'-10" ht.; 3'-4" spd.	Per Plan
3	MOK	Monterey Oak	<i>Quercus polymorpha</i>	1.5" cal. 9'-10" ht. 3'-4" spd.	Per Plan
3	ELM	Cedar Elm	<i>Ulmus Crassifolia</i>	1.5" cal. 9'-10" ht. 3'-4" spd.	Per Plan
Small Trees:					
9	YAU	Yaupon Holly P.O.H.	<i>Ilex vomitoria</i> 'Pride of Houston'	1.5" cal.; 6'-7" ht. 3-Trunk min.	Per Plan
11	MXP	Mexican Plum	<i>Frumus mexicana</i>	1.5" cal.; 6'-7" ht. Single Trunk	Per Plan
Large Shrubs:					
46	MTL	Mountain Laurel	<i>Saphora secundiflora</i>	5g	Per Plan
12	EGS	Evergreen Sumac	<i>Rhus Virens</i>	5g	Per Plan
Medium Shrubs:					
18	SKB	Skunk Bush	<i>Rhus aromatica</i>	5g	Per Plan
64	TXS	Texas Sage 'Green Cloud'	<i>Leucophyllum Futescens</i> 'Green Cloud'	5g	Per Plan
Small Shrubs:					
34	RYU	Red Yucca	<i>Yucca parviflora</i>	5g	3'o.c.
Ground Plane Perennials:					
10	LAN	Lantana 'New Gold'	<i>Lantana 'New Gold'</i>	1g	3'o.c.
Miscellaneous:					
STE		Steel Edging 12 Gauge Green, Supplied by "Adam's Supply" (210-822-3141) or approved equal.		lf	As Per Plan
GRA		"Texas blend" River Gravel 2" - 3" dia. Placed 3" deep. This Gravel shall be placed where areas as noted on this plan. Supplied by "Stone and Soil Depot" (210-688-9435) or Approved equal.		cy	As per Plan
GRN		Decomposed Granite 3" deep Supplied by "Stone and Soil Depot" (210-688-9435) or approved equal.		cy	
LFF		"Prospurn" Landscape Filter Fabric placed under all Gravel areas. Supplied by "Adam's Supply" (210-822-3141) or approved equal.		sf	
MUL		Native Fine Shredded Mulch 4" Deep in all planting beds and Tree wells Supplied by "Gardenville" (210-651-6113) or Approved equal.		cy	
MIX		"Superior Soil" Planting Mix to be used for pocket planting. Supplied by "Gardenville" (210-651-6113) or approved equal.		cy	
TOP		"Simple Soil" - Supplied by "Gardenville" (210-651-6113) or Approved equal Placed in all Bed and Bermuda sod areas to a Minimum of 6" deep, except as noted in "Planting Notes" #5 below.			

Landscape Requirements:

Tree Preservation Ordinance:

Tree Preservation:

Heritage Large Trees (Within R.O.W.)

Heritage Tree total:	1- Tree	(35Caliper Inches)
Tree #18 Pecan	35"	Preserved
Tree	00"	Removed 3-1 Mitigation
Heritage Tree Preservation:	100%	
Heritage Mitigation Balance:	0 Caliper Inches	

Heritage Large Trees (None Located Within Property)

Heritage Tree total:	0- Tree	(0Caliper Inches)
Tree		Removed 1-1 Mitigation
Heritage Tree Preservation:	0%	
Heritage Mitigation Balance:	0 Caliper Inches	

Significant Large Trees (Within R.O.W.)

Significant Tree total:	7- Trees	(74 Caliper Inches)
Tree #6	7" Cedar Elm	Persevered
Tree #7	10" Live Oak	Persevered
Tree #8	11" Cedar Elm	Persevered
Tree #9	12" Live Oak	Persevered
Tree #10	7" Cedar Elm	Persevered
Tree #11	10" Live Oak	Persevered
Tree #14	7" Cedar Elm	Removed
Tree #17	11" Live Oak	Removed
Significant Large Trees Inches Total:	74 Inches	
Significant Large Tree Inches Removed:	-11 Inches	Removed 1-1 Mitigation
Significant Large Trees Preserved:	63 Inches	
Significant Large Tree Preservation		
Required in R.O.W.:	100%	
Significant Large Tree Mitigation Balance:	11 Inches	1-1 Mitigation

Significant Understory Trees (None Found On Site)

Significant Understory Tree Total:	0-Trees	
Significant Understory Inches Total:	0 Inches	
Significant Understory Preserved:	0 Inches	
Significant Understory Tree Preservation:	0%	
Required Preservation (40%):	0"	
Significant Understory Mitigation Balance at:	0"	

Significant Large Trees (Within the Property)

Significant Large Tree Total:	9 Trees	
Significant Large Inches Total:	105 Inches	
Significant Large Preserved:	71 Inches	
Significant Large Tree Preservation:	68%	
Required Preservation (40%):	42.0"	
Significant Large Mitigation Balance:	-29.0"	

Non-Significant Medium and Large Tree Mitigation: (None Found On Site)

Total Mitigation Balance (Heritage and Significant) in R.O.W.: 11" Caliper Inches

Qty.	New Tree Description	(Planting) Size	Mitigation/Tree	Tot. Mitigation
4	Burr Oak	1.5" Caliper	0" Caliper	0
4	Mexican Sycamore	1.5" Caliper	0" Caliper	0
3	Monterey Oak	1.5" Caliper	0" Caliper	0
3	Texas Redbud	1.5" Caliper	0" Caliper	0
9	Yaupon Holly	1.5" Caliper	0" Caliper	0
11	Mexican Plum	1.5" Caliper	0" Caliper	0
MIT1 New Tree Mitigation Subtotal:				0.00
MIT2 Existing On Site Significant Tree Mitigation Available: 11"				
15	Live Oak 12"	12"	11"	11.00
MIT3 Existing Non-Significant				0.00
MIT4 Mitigation payment of Fee for the remaining on site				0.00
Mitigation Balance:				
0 Inches X \$200.00 = \$0.00				
into the Tree Mitigation Fund				
Total Inches Tree Mitigation Provided:				11.00

Tree Preservation Summary:

Heritage Large Trees (Within R.O.W.)

Heritage Tree total:	1- Tree	(35Caliper Inches)
Tree #18 Pecan	35"	Preserved
Tree	00"	Removed 3-1 Mitigation
Heritage Tree Preservation:	100%	
Heritage Mitigation Balance:	0 Caliper Inches	

Heritage Trees (None Exist on Site)

Significant Understory Trees (None Exist on Site)

Drainage Easement Significant Trees:

Total Number of Significant Trees:	1
Total Number of Significant Tree Inches:	8"
Total Number of Significant Tree Inches Removed:	0"
Total Number of Significant Tree Inches Preserved:	8"
Preservation Percentage of Significant Understory Tree:	100%
Total Amount of Significant Mitigation (1-1):	0

Heritage Understory Trees (No Heritage Trees On Site)

Total Number of Heritage Understory Trees:	0
Total Number of Heritage Understory Inches Removed:	0"
Total Number of Heritage Understory Inches Preserved:	0
Preservation Percentage of Heritage Understory Tree:	0%
Total Amount of Heritage Understory Heritage Mitigation (1-1):	0.0"
0" (1-1) = 0"	

Tree Preservation Details - Understory Significant Species: (None on Site)

Total Number of Understory Significant Trees:	0
Total Number of Understory Significant Tree Inches:	0"
Total Number of Understory Significant Tree Inches Removed:	0"
Total Number of Understory Significant Tree Inches Preserved:	0
Preservation Percentage of Understory Significant Trees:	0%
Total Amount of Significant Understory Mitigation (1-1):	0.0"

Tree Preservation Details - On Site Medium/Large Significant Species:

Total Number of Significant Trees:	9
Total Number of Significant Tree Inches:	105
Total Number of Significant Tree Inches Removed:	34
Total Number of Significant Tree Inches Preserved:	71
Preservation Percentage of Significant Large Trees:	68%
Total Amount of Significant Mitigation (1-1): Available	-29"

Non-Significant Medium and Large Tree Mitigation: (None Found on Site)

Tree #	0"
Mitigation Large Inches Total:	00.0 Inches
Non-Significant Med./Large Tree Mitigation Preserved:	00.0 Inches
Non-Significant Med./Large Tree Mitigation Provide:	00.0"

Total Tree Summary:

Total Tree Mitigation Required (Heritage and Significant):	11.00 Caliper Inches
Proposed New Tree Mitigation Provided:	0.00 Caliper Inches
Existing Significant Preservation (Available for Mitigation):	-11.00 Caliper Inches
Existing Non-Significant Trees Preserved (Avail. For Mitigation):	0.00 Caliper Inches
Proposed Tree Mitigation Balance:	-0.00 Caliper Inches
Proposed Tree Mitigation Balance Fee (0.0" x \$200.00):	\$0.00

Tree Canopy:

25% Tree Canopy Required		
Total Site:	44,082.72 SF	1,0120 AC
Required Canopy (25%):	11,020.00 SF	0.2529 AC
Existing Tree Canopy:	5,025.00 SF	0.1153 AC
Proposed Tree Canopy:	18,315.00 SF	.4204 AC
(See Parking Canopy Shading Chart for Detail)		
Total Tree Canopy Provided:	23,340.00 SF	.5358 AC 52.94%

Tree Canopy Summary: 11,020.00 SF Required

Qty.	Proposed New Trees	Tree Canopy at 100%	Tree Canopy At 90%	Tot. Tree Canopy
4	Burr Oak	1200.00	1080.00	4320.00
4	Mexican Sycamore	1200.00	1080.00	4320.00
3	Monterey Oak	875.00	787.50	2925.00
3	Cedar Elm	875.00	787.50	2925.00
9	Yaupon Holly	275.00	247.50	2227.50
11	Mexican Plum	275.00	247.50	2722.50
		0.00	0.00	0.00
New Tree Canopy Total:				18315.00
Existing Significant Tree Canopy: None on Site				0.00
1	Pecan 22"	1200	1200	1,200.00
2	Pecan 21"	1200	1200	1,200.00
	Cedar Elm 8" Drain Easement	875	875	875.00
4	Easement	875	875	875.00
5	Live Oak 8"	875	875	875.00
15	Live Oak 12"	875	875	875.00
Exist. Significant Tree Canopy: 5,025.00				0
Total Tree Canopy Provided:				23,340.00

Landscape Requirements:

Irrigation Plan: See Irrigation Plan sheets I-1 and I-2:

Buffers:

- Zoning Buffer: C-2H - Florida St. Does not require a Buffer. However, the frontage shall be used towards the East (rear) Property line and the HWY. IH-37. 'B' Buffers.
- Zoning Buffer: C-2H - Carolina St. Does Not Require a Buffer. However, the frontage shall be used towards the East (rear) Property line and the HWY. IH-37. 'B' Buffers.
- Zoning Buffer: C-2 H - R-4 H (310.5 LF East (rear) Property line + 38.7 Florida St. + 10.4 LF Carolina St. = 359.6 LF) requires a 15' wide 'B' Buffer. However, a variable width 'B' Buffer has been provided along all frontages. Thus, of the 4,657.5 SF of the Buffer required, 5,690.4 SF has been provided within the contiguous Planting Area.
 - a) 7.19 Canopy Trees are required. However, 2- Existing canopy trees and 5 - Understory Trees have been provided. Note: Due to the existing overhead Utilities located along the "Carolina St. frontage", only new understory trees have been provided in lieu of any new canopy trees.
 - b) 7.19 Understory Trees are required. 8 Understory Trees have been provided along the South State Hwy. 16 frontage.
 - c) 28.72 Large Shrubs are required. 29 Large Shrubs have been provided along South State Hwy. 16 frontage.
 - d) 43.08 Medium Shrubs are required. 44 Medium Shrubs have been provided along South State Hwy. 16 frontage.
- Adjoining Street Buffer: HWY. IH-37. Major collector frontage (Plantable Area) [311.31 LF IH-37 + 45.26 LF Florida St. + 122.5 LF Carolina St. = 479.3 LF] requires a 15' wide 'B' Buffer. However, a variable width 'B' Buffer has been provided along all frontages. Thus, of the 4,669.99 SF of the Buffer required, 4,686.29 SF has been provided within the contiguous Planting Area.
 - a) 9.58 Canopy Trees are required. 2 Existing canopy trees, 7 new canopy trees, and 1 new understory tree has been provided along Highway IH-37, Florida St., and Carolina St. frontages. See: Adjoining Street Buffer calculations above. Note: Due to the existing overhead Utilities located along the "Carolina St. frontage", only new understory trees have been provided in lieu of any new canopy trees.
 - b) 9.58 Understory Trees are required. 10 New understory trees have been provided along Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.
 - c) 28.74 Large Shrubs are required. 29 Large Shrubs have been provided along the Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.
 - d) 38.32 Medium Shrubs are required. 39 Medium Shrubs have been provided along Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.
 - e) 28.74 Small Shrubs are required. 29 Small Shrubs have been provided along Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.

Planting Units Required and Provided:

479.3 LF. (See Buffer Outline on the plan)

a) 9.58 Canopy Trees are required. 2 Existing canopy trees, 7 new canopy trees, and 1 new understory tree has been provided along Highway IH-37, Florida St., and Carolina St. frontages. See: Adjoining Street Buffer calculations above. Note: Due to the existing overhead Utilities located along the "Carolina St. frontage", only new understory trees have been provided in lieu of any new canopy trees.

b) 9.58 Understory Trees are required. 10 New understory trees have been provided along Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.

c) 28.74 Large Shrubs are required. 29 Large Shrubs have been provided along the Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.

d) 38.32 Medium Shrubs are required. 39 Medium Shrubs have been provided along Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.

e) 28.74 Small Shrubs are required. 29 Small Shrubs have been provided along Highway IH-37, Florida St., and Carolina St. frontages used in lieu of traditional width. See: Adjoining Street Buffer calculations above.

Landscape Electives:

Street Trees (ST)	25	Florida St. Frontage 367.4 LF. Thus: 367.4 LF X .75 (Approach Factor) = 275.55 LF. 275.55 / 50' o.c. = 5.51 Canopy Trees are required for this elective. Therefore, 3 canopy trees and 3 understory trees have been provided.
		HWY. IH-37. Frontage 311.31 LF. Thus: 311.31 / 50' o.c. = 6.22 Canopy Trees are required for this elective. Therefore, 2 existing Canopy Trees, 5 new canopy trees, and 6 new understory trees along the HWY. IH-37 frontage have been provided.
		Carolina St. Frontage 156.4 LF. Thus: 156.4 X .75 (Approach Factor) = 117.3 LF. Thus: 117.3 LF / 50' o.c. = 2.34 Canopy Trees are required for this elective. Therefore, 3 existing canopy trees, 2 new canopy trees and 3 new understory trees along the Carolina St. frontage have been provided.
Understory Preservation	15	Existing vegetation adjacent to parking lots or by planting new vegetation utilizing a mixture of canopy trees with understory trees (small trees) and large to small shrubs with ground plane perennials. Minimum area of understory preservation shall be 10ft x 20ft. Where understory does not exist on site under canopy trees, new understory plants from Appendix "e" may be installed to meet the above criteria. Area supplied: 70' Long x 18' Wide.
Parking Lot Shading (PLS)	20	Total of Parking Lot = 25 X 32,914.38 sf. = 8,228.59 SF. of parking lot shading required for this elective. 5,256 SF. has been supplied. See: "Parking Lot Shading Chart" on sheet L-2.
Tree Preservation	8	Preservation of existing healthy trees. (See "Tree Preservation in and Out Of Street Yard. See: Tree Preservation table L-2, for detailed calculations). Preservation outside of street yard (4 points achieved with 15 points maximum allowed). Preservation Within the street yard (4 points achieved with 40 points maximum allowed).
Parking Lot Screening	25	See landscape Plan, Sheet L1
Total Landscape Points	93	Points have been Provided (85 Elective points are Required for the Historic Preservation District Zoning)

Total Tree Preservation in and Out Of Street Yard (SY)

Label	Species	Tree Size	Tree Pres. In SY	Tree Pres. Out SY
Existing Significant Trees				
2	Pecan 21"	21"	0	4
15	Live Oak 12"	12"	4	0
Tree Preservation Per Category:				
			4	4

Parking Lot Shading (PLS) Summary: 8,228.59 SF Required (for 20 Points)

Qty.	Tree Percent of PLS Shading	Canopy at 100%	PLS / Tree	Total PLS
1	Burr Oak @ 75%	1200.00	900.00	900.00
3	Burr Oak @ 50%	1200.00	600.00	1800.00
3	Mexican Sycamore @ 50%	1200.00	600.00	1800.00
8	Mexican Plum @ 50%	275.00	137.50	1100.00
3	Cedar Elm @ 50%	875.00	437.50	1312.50
5	Yaupon Holly @ 50%	275.00	137.50	687.50
New Trees PLS Total:				7,600.00
Existing (Non-significant) PLS Total:				668.25
Total Parking Lot Shading Provided:				8,268.25

Zoning Overlay District: H - Historic Overlay District Site Development Standards (Landscape):

Landscaping: 85 Landscape Elective Points are Required. 85 Points Have been Provided (see Landscape Electives calculation above)

Parking Lot Screening: Parking lot screening has been Provided along Interstate Highway IH-37 frontage areas with a 15' Natural Buffer, Variable width Buffer 'B' along Highway IH-37, Florida St., and Carolina St. frontages has been used in lieu of traditional width. See: Adjoining Street Buffer: HWY. IH-37. Proposal detailed above.

Sealing Area within Landscape area: Located off the Florida St. entrance located adjacent to the Building.

TREE ABBREVIATIONS LEGEND

Abbreviation	Definition
WL	Warranty Letter
CS	Canopy Shading
PLS	Parking Lot Shading
ST	Street Trees
PRES	Preserved Tree (in R.O.W.)
BPU	Buffer Planting Unit



RANDOLPH CHAVEZ
LANDSCAPE ARCHITECT
210-859-4867

PROJECT NO. 71424
DATE 11/3/24

NEW CONVENIENCE STORE & RETAIL
418 FLORIDA ST. SUITE 101
SAN ANTONIO, TX. 78210

REVISIONS

NO.	DATE
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▲	

SHEET TITLE

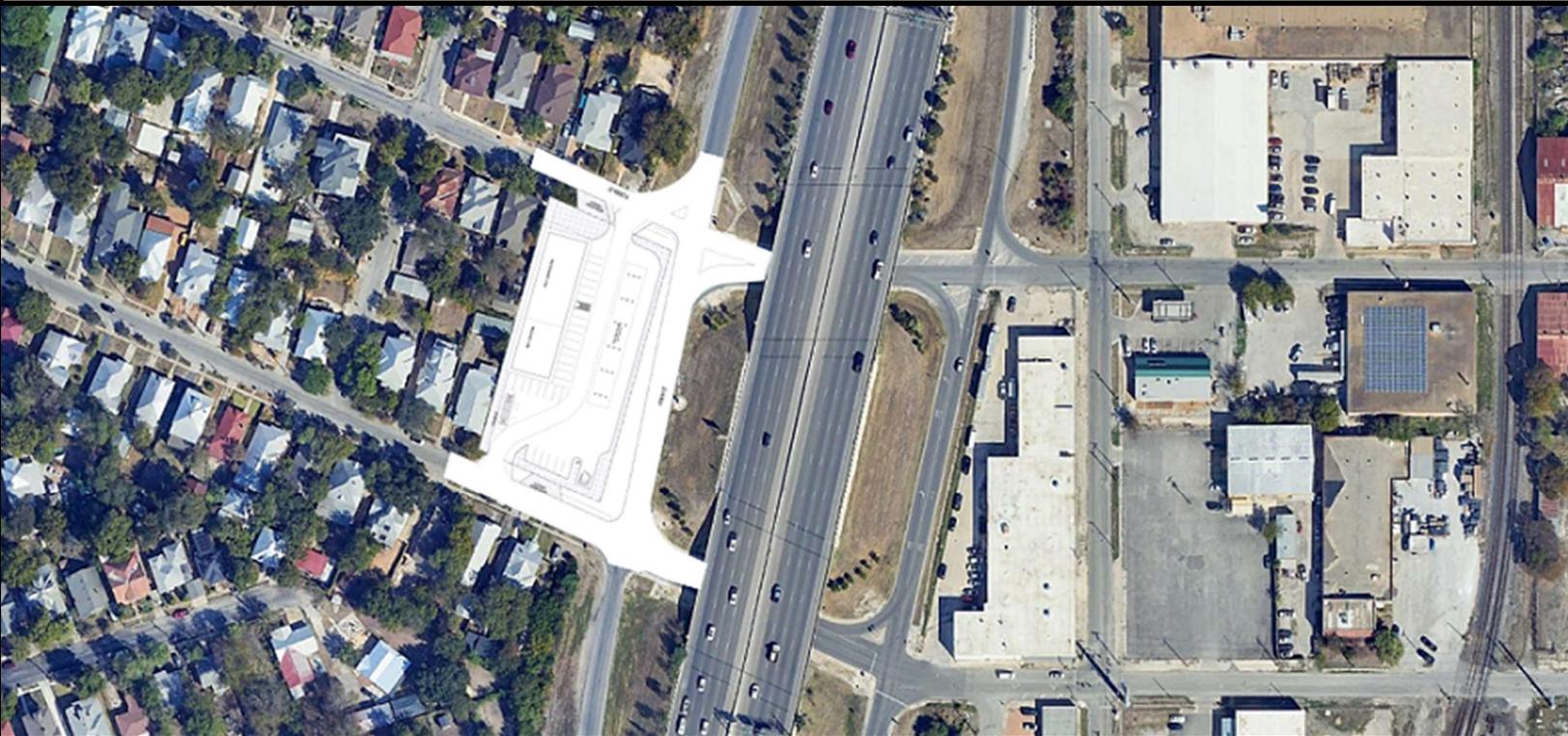
LANDSCAPE PLAN

SHEET NO. L-2 OF 2

TRAFFIC IMPACT ANALYSIS

418 Florida Convenience Store

418 Florida Street
San Antonio, Texas



Prepared for: Prime and Paradigm Construction, LLC
3942 Pleasure Hill
San Antonio, Texas 78229

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San Antonio, Texas 78255

LAND-TIA-24-12800042
COM-PRJ-APP24-39801450
Level 2 TIA

May 15, 2024
Project No. 2024001600

Revised: December 16, 2024



12/16/24

Texas TBPE Firm No. F-11727



TRAFFIC IMPACT ANALYSIS

**418 Florida Convenience Store
418 Florida Street
San Antonio, Texas**

**December 2024
Version 1
Revision 1**

Prepared by:



**AC Group, LLC
5828 Sebastian Place, Ste. 108
San Antonio, Texas 78249
(210) 535-3558
TBPE Firm Registration No. F-11727**

EXECUTIVE SUMMARY

Project Description

As per the requirements of the City of San Antonio Unified Development Code (UDC), a Traffic Impact Analysis (TIA) has been prepared on behalf of Prime and Paradigm Construction, LLC for the proposed 418 Florida Convenience Store to be located at 418 Florida Street in San Antonio, Texas. The proposed development will include a Super Convenience Market / Gas Station (ITE Code: 960) with as many as 12 fuel positions and 3,000 square feet of Shopping Center (ITE Code: 820). The proposed development is to be completed in 2025 and is projected to generate as many as 340 morning peak hour trips and 287 evening peak hour trips.

Access Driveways

Access to the proposed 418 Florida Convenience Store will include two existing access driveways, one left-in only driveway (Driveway No. 1) along Florida Street to be located approximately 40' west of the Interstate Highway 37 southbound frontage road, currently located 80' west of the Interstate highway 37 southbound frontage road, and one left-in/left-out access driveway (Driveway No. 2) along Carolina Street to be located approximately 140' west of the Interstate Highway 37 southbound frontage road, currently located 70' west of the Interstate highway 37 southbound frontage road.

Traffic Impact Analysis

Traffic simulation models developed for the 418 Florida Convenience Store demonstrated minor operational impacts to the surrounding roadway network at Build Out (2025) with no significant impact to the surrounding roadways. The Interstate Highway 37 southbound frontage road and Carolina Street intersection was shown to have an increase in delay along the eastbound Carolina Street approach from 14.3 seconds per vehicle (LOS B) to 26.4 seconds per vehicles (LOS D) during the morning peak hour and from 35.2 seconds per vehicle (LOS E) to 89.5 seconds per vehicles (LOS F) during the evening peak hour. Mitigation would be required which may include striping the existing 28' pavement width for two through lanes.

Mitigation Analysis

Restriping of the eastbound Carolina Street approach to the southbound Interstate Highway 37 frontage road, which is an existing 28' pavement width, for two through lanes was shown to improve the approach and overall control delay to acceptable levels-of-service.

Queue Analysis

A queue analysis determined an increase in queue lengths as a result of the additional trips entering each of the study intersections however it should be noted that the traffic analysis did not include a traffic volume reduction due to pass-by trips. The ITE Trip Generation Handbook – Second Edition shows that a convenience store may have as much as 56% trips from pass-by traffic, lessening the resulting queue lengths. The traffic simulation Queue Reports are also included in Appendix E of the report.

Turn Lane Analysis

The City of San Antonio UDC Section 35-502 (e)(2)(B) requires that a left or right-turn lane be required when daily (24-Hour) right or left turn volumes exceed 500 vehicles per day or 50 vehicles per hour during the peak hour.

Driveway No. 1 along Florida Street has a projected westbound left-turn volume of 145 vehicles per hour during the morning peak hour and 121 vehicles per hour during the evening peak hour.

A left-turn lane would be required for Driveway No. 1 along westbound Florida Street, however the installation of a left-turn lane would not be accommodated between the proposed access driveway and the southbound Interstate Highway 3 frontage road.

Rough Proportionality Analysis

The proposed development will have a Rough Proportionality “DEMAND” value of \$187,330 (total impact of demand placed on the thoroughfare system) and a Rough Proportionality “SUPPLY” of \$00 (total value of capacity/supply added to the thoroughfare system). Based on the results of the Rough Proportionality analysis, the anticipated impact of demand on the system exceeds the value of capacity (supply) provided by the proposed development therefore the roadway improvements required by the city are justified (i.e., the development is adding less capacity than needed to support the proposed development).

TRAFFIC IMPACT ANALYSIS
418 Florida Convenience Store
Florida Street

PROJECT SCOPE

As per the requirements of the City of San Antonio Unified Development Code (UDC) Article V (Development Standards), Division 2 (Infrastructure Standards), Section 305-502 (Traffic Impact Analysis and Rough Proportionate Determination Study), a Traffic Impact Analysis (TIA) has been prepared on behalf of Prime and Paradigm Construction, LLC for the proposed 418 Florida Convenience Store to be located at 418 Florida Street in San Antonio, Texas. The proposed development will include a Super Convenience Market / Gas Station (ITE Code: 960) with as many as 12 fuel positions and 3,000 square feet of Shopping Center (ITE Code: 820). The proposed development is to be completed in 2025 and is projected to generate as many as 340 morning peak hour trips and 287 evening peak hour trips. Figure 1 below shows a location map of the proposed 418 Florida Convenience Store.

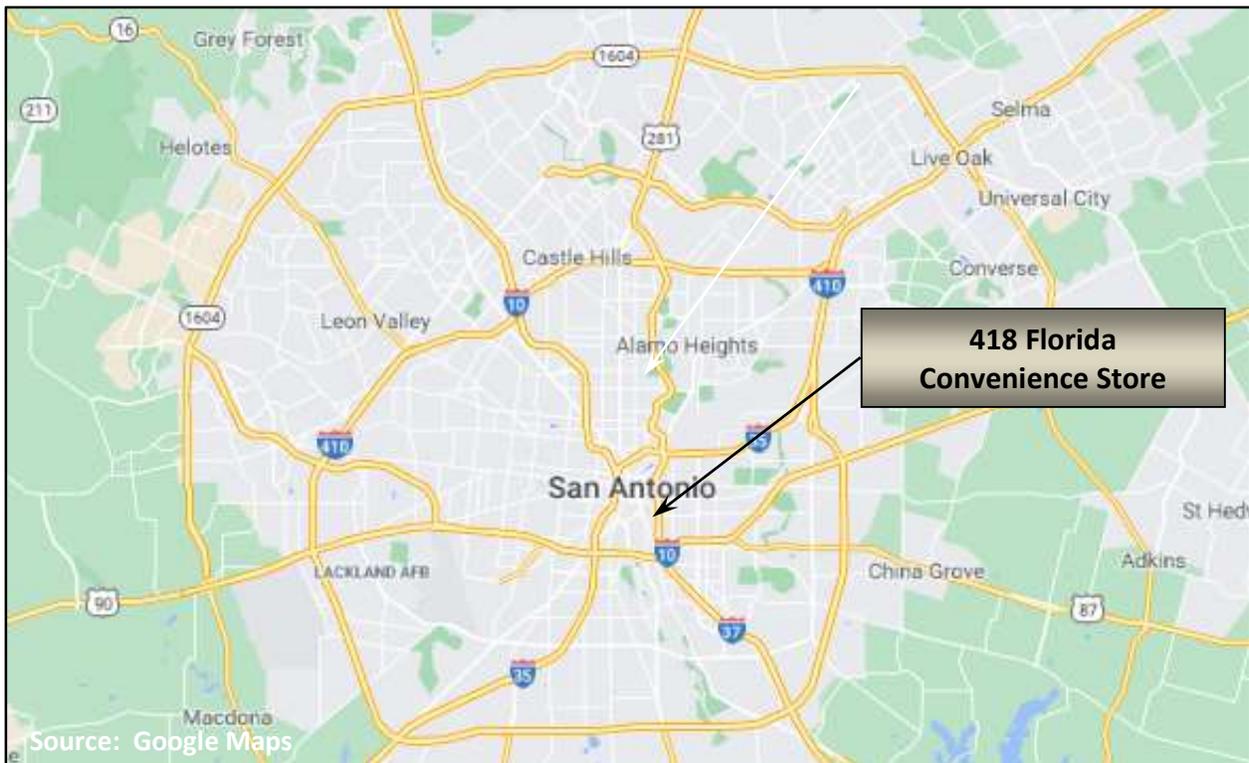


Figure 1. Location Map for the Proposed 418 Florida Convenience Store

Access to the proposed 418 Florida Convenience Store will include two existing access driveways, one left-in only driveway (Driveway No. 1) along Florida Street to be located approximately 40' west of the Interstate Highway 37 southbound frontage road, currently located 80' west of the Interstate highway 37 southbound frontage road, and one left-in/left-out access driveway (Driveway No. 2) along Carolina Street to be located approximately 140' west of the Interstate Highway 37 southbound frontage road, currently located 70' west of the Interstate highway 37 southbound frontage road. Figure 2 below shows an aerial location map of the proposed convenience store and Figure 3 shows a site layout of the proposed convenience store.



Figure 2. Aerial Location Map of the Proposed 418 Florida Convenience Store

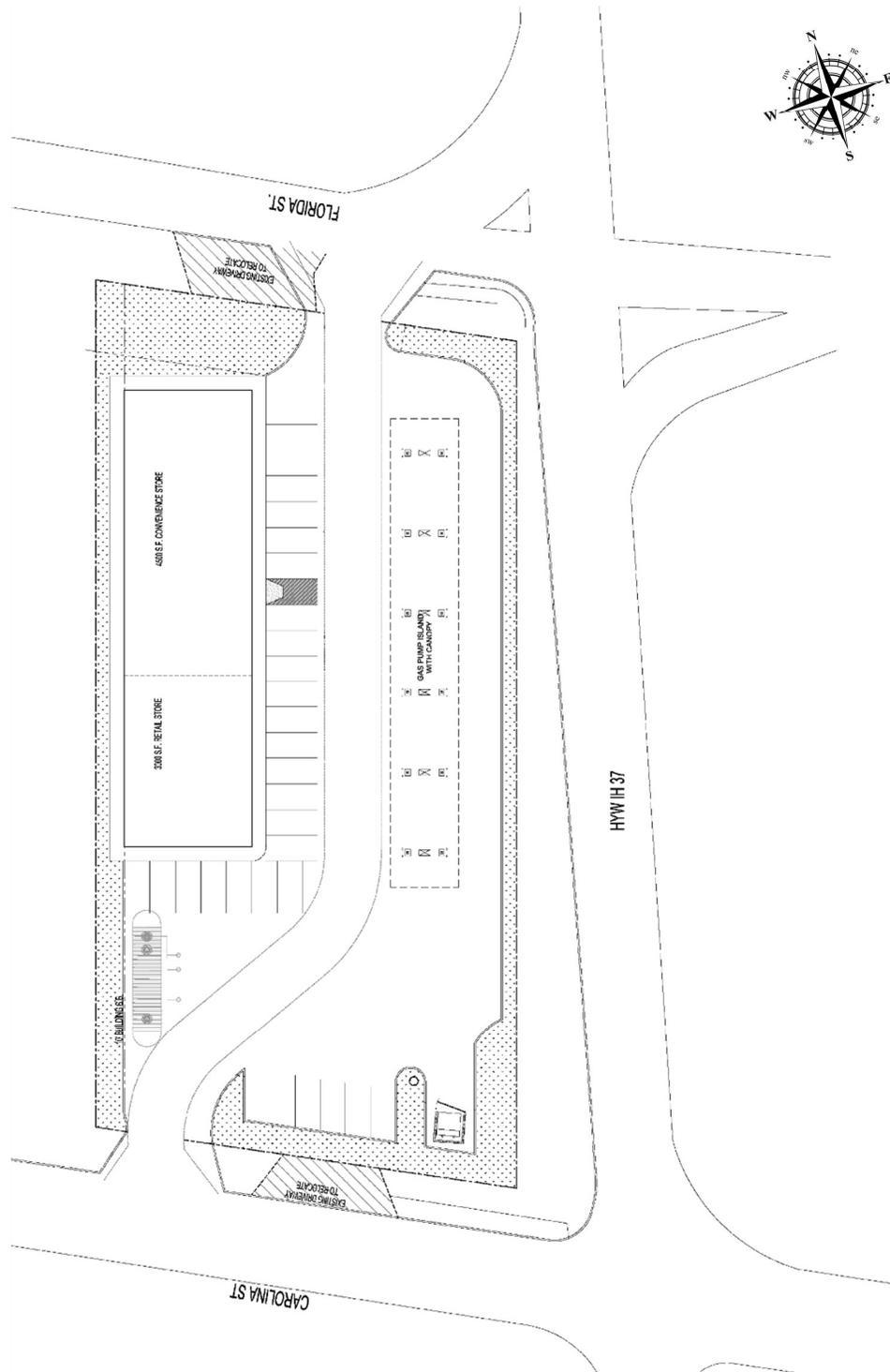


Figure 3. Site Plan for the Proposed 418 Florida Convenience Store

STUDY AREA

The study area for this traffic impact analysis includes the Interstate Highway 37 frontage road intersections with Florida Street and Carolina Street as well as each of the two proposed access driveways along Florida Street and Carolina Street. The proposed convenience store will be located along the Interstate Highway 37 southbound frontage road between Florida Street and Carolina Street. The surrounding areas include mostly commercial along Interstate Highway 37 and single-family residential west of the proposed development, as shown in Figure 4 below.

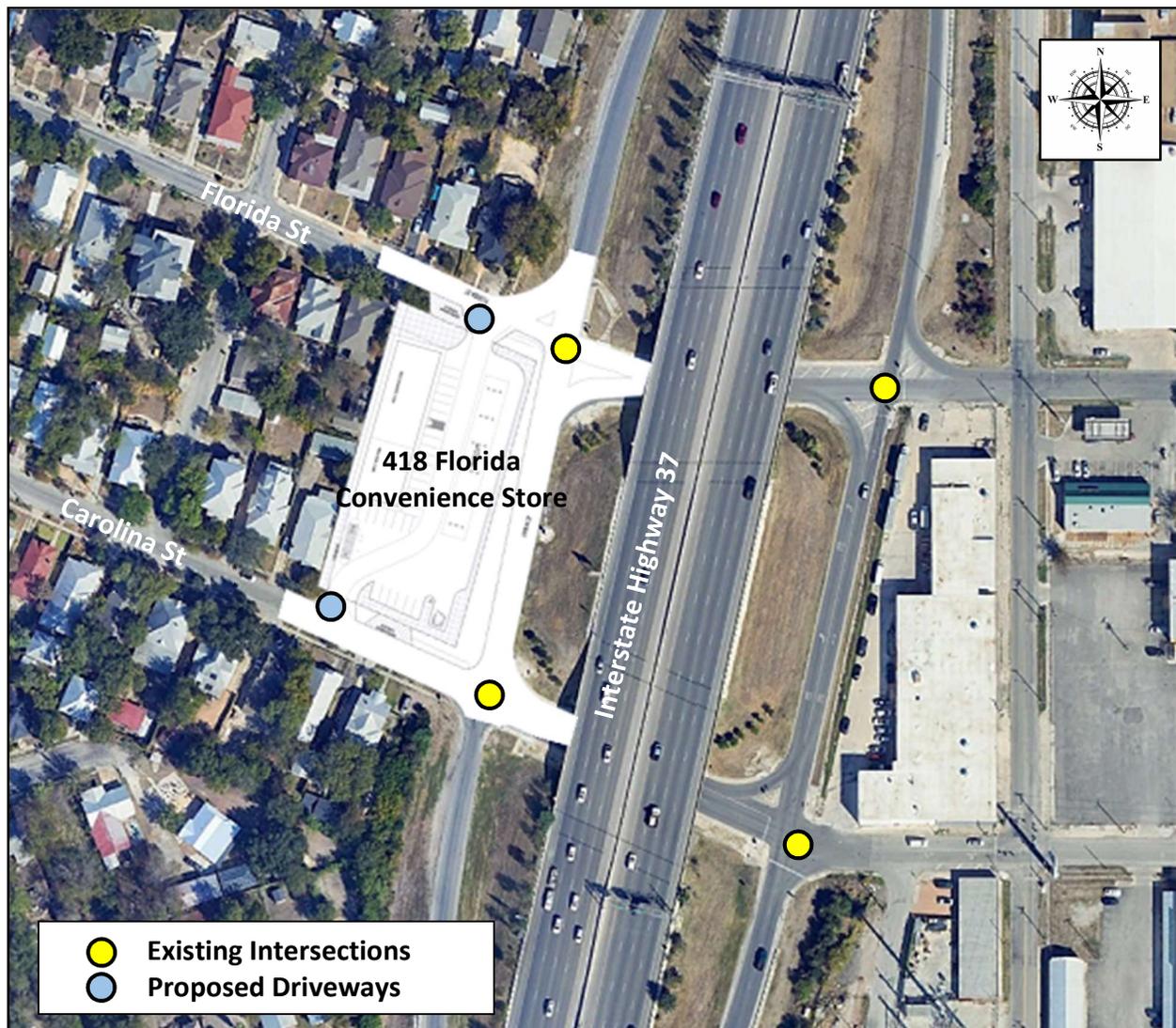


Figure 4. Study Intersections for the Proposed 418 Florida Convenience Store

LAND USE AND ZONING

The proposed site is zoned Commercial District (C-2) and has a legal description of NCB 3011 BLK 9 LOT 20. The areas surrounding the proposed development include Residential Mixed Districts (RM-4) with Historic District Overlay (H) to the north, west and south of the proposed site and General Industrial Districts (I-1) east of Interstate Highway 37, as shown in Figure 5 below.

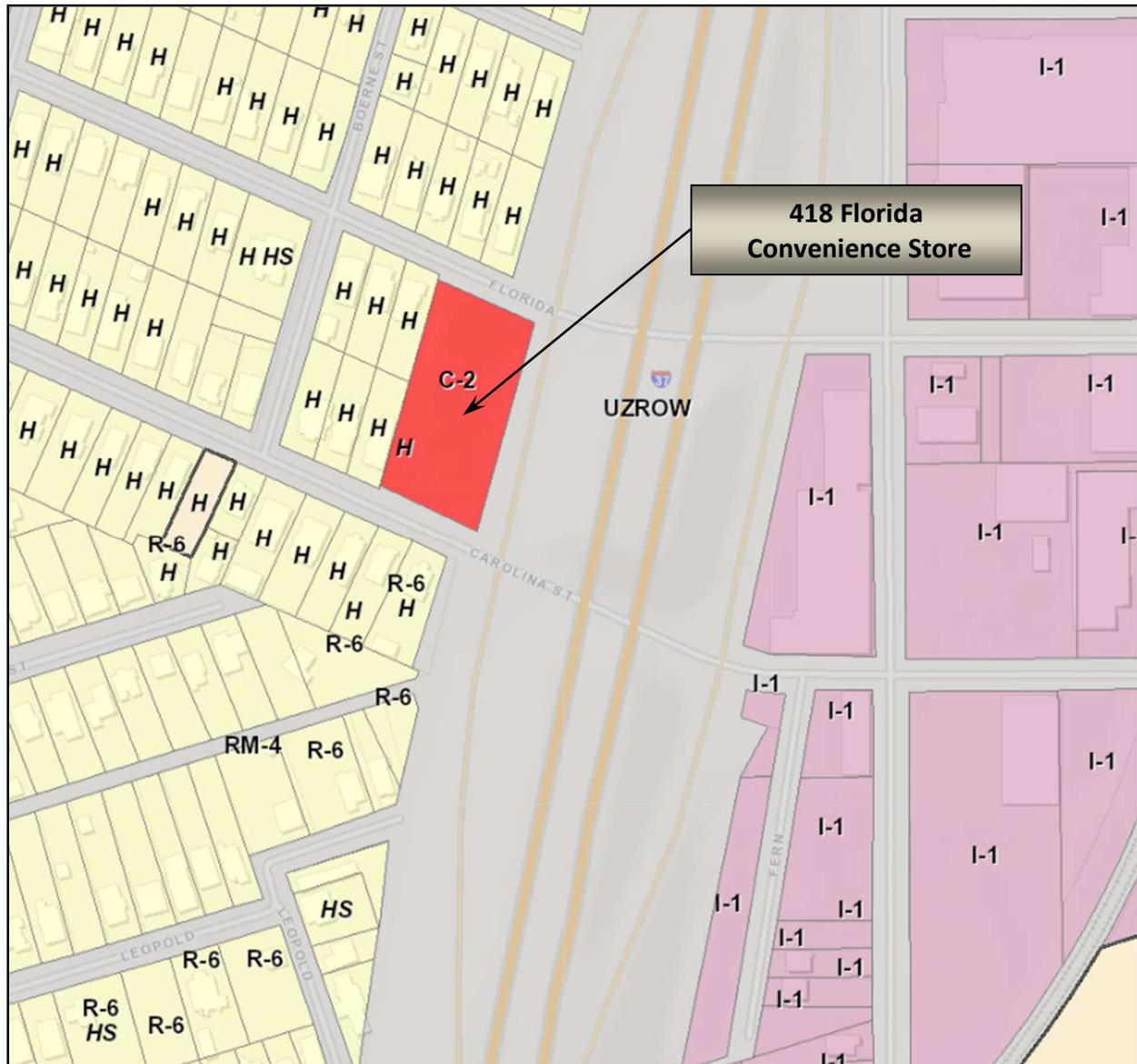


Figure 5. COSA Zoning in the Vicinity of the Proposed 418 Florida Convenience Store

EXISTING ROADWAYS

Florida Street is a curbed, 18' wide paved roadway with one westbound 12' lane and a 6' bicycle lane. Florida Street is classified as a Secondary Arterial Type B (86' ROW) on the City of San Antonio Major Thoroughfare Plan and has a posted speed limit of 30 miles per hour. Pavement conditions along Florida Street are good with no observed pavement failure and visible pavement markings. Florida Street has 4' sidewalks on both sides of the roadway. Figure 6 below shows Florida Street west of Interstate Highway 37 and adjacent to the proposed development.



Figure 6. Florida Street – Facing West from Interstate Highway 37

Carolina Street is a curbed, 28' wide paved roadway with one eastbound 14' lane and variable

width shoulders on both sides of the roadway. Carolina Street is classified as a Secondary Arterial Type B (86' ROW) on the City of San Antonio Major Thoroughfare Plan and has a posted speed limit of 30 miles per hour. Pavement conditions along Florida Street are good with minor longitudinal pavement failure and fading pavement markings. Carolina Street has 4' sidewalks on both sides of the roadway and no bicycle lanes. Figure 7 below shows Carolina Street west of Interstate Highway 37 and adjacent to the proposed development.



Figure 7. Carolina Street – Facing East Towards Interstate Highway 37

Interstate Highway 37 Southbound Frontage Road is a curbed, 28' wide paved roadway with

two southbound 13' lanes and a 2' outside shoulder. Interstate Highway 37 is classified as a Freeway (250-500' ROW) on the City of San Antonio Major Thoroughfare Plan and no posted speed limit along the southbound frontage road. The southbound Interstate Highway 37 frontage road has fair pavement conditions with longitudinal pavement failure and visible pavement markings. The southbound Interstate Highway 37 frontage road has no sidewalks and no bicycle lanes adjacent to the proposed development. Figure 8 below shows the southbound Interstate Highway 37 frontage road between Florida Street and Carolina Street, adjacent to the proposed development.



Figure 8. Interstate Highway 37 Southbound Frontage Road – Facing South Towards Carolina Street

EXISTING TRAFFIC DATA

The Texas Department of Transportation (TxDOT) Traffic Count Database System (TCDS) shows that Florida Street, west of Interstate Highway 37, had an average daily traffic (ADT) volume of 4,319 vehicles per day in 2015 and 4,353 vehicles per day in 2020. The TxDOT TCDS traffic data sheet and turning movement count (TMC) data sheets for traffic data collected on Wednesday, May 8, 2024 is included in Appendix D.

BACKGROUND TRAFFIC

An annual average growth rate (AAGR) was calculated at less than 1.00% per year based on historical average daily traffic (ADT) counts available on the Texas Department of Transportation (TxDOT) Traffic Count Database System (TCDS) for 2015 and 2020. Historical average daily traffic data was available for Florida Street, west of Interstate Highway 37. This rate represents the annual average growth rate (AAGR) for the area surrounding in the vicinity of the proposed development. The table below illustrates ADT data for Florida Street, west of Interstate Highway 37 and adjacent to the proposed development.

Table 1. Annual Average Growth Rate for Florida Street, West of Interstate Highway 37

Location	Year	ADT	Rate of Growth	Proposed AAGR (%)
	2015	4,319	-	
Florida St	2020	4,353	0.001569	1.00%

PROJECTED TRAFFIC DATA

Projected traffic volume data may be calculated for a 2025 project built-out using a 1.00% annual average growth rate (AAGR), as determined in the previous section. The 2025 projected average daily traffic (ADT) volume for Florida Street, west of Interstate Highway 37, was calculated as 4,575 vehicles per day.

TRIP GENERATION

Using the Tenth Edition of the ITE *TRIP GENERATION MANUAL* reference, the proposed 418 Florida Convenience Store will generate trips based on 12 fuel positions at the proposed Super Convenience Market / Gas Station (ITE Code: 960) and 3,000 square feet of Shopping Center (ITE Code: 820). Table 2 shows the projected trip generation calculations for the proposed 416 Florida Convenience Store.

The ITE Trip Generation Manual describes a **Shopping Center (ITE Code: 820)** as an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has at least 150,000 square feet of gross leasable area (GLA). It often has more than one anchor store. Various names can be assigned to a shopping center within this size range, depending on its specific size and tenants, such as community center, regional center, superregional center, fashion center, and power center.

A shopping center of this size typically contains more than retail merchandising facilities. Office space, a movie theater, restaurants, a post office, banks, a health club, and recreational facilities are common tenants.

A shopping center of this size can be enclosed or open-air. The vehicle trips generated at a shopping center are based upon the total GLA of the center. In the case of a similar center without an enclosed mall or peripheral buildings, the GLA is the same as the gross floor area of the building.

The ITE Trip Generation Manual describes a **Super Convenience Market/Gas Station (ITE Code: 960)** as a land use with significant business related to the sale of convenience items and the fueling of motor vehicles. Some commonly sold convenience items include newspapers, freshly brewed coffee, daily-made donuts, bakery items, hot and cold beverages, breakfast items, dairy items, fresh fruit, soups, light meals, ready-to-go and freshly made sandwiches and wraps, and ready-to-go salads. Stores typically also had automated teller machines (ATMs), and public restrooms. The sites included in this land use category have the following two specific characteristics: the gross floor area of the convenience market is at least 3,000 gross square feet and the number of vehicle fueling positions is at least ten (10).

Table 2. Trip Generation for the Proposed 418 Florida Convenience Store

TRIP GENERATION										
ITE Code	Weekday 24 Hour		Weekday AM Peak		Weekday PM Peak		Saturday 24 Hour		Saturday Peak Hour	
820	Shopping Center									
Rate / KSF	37.75		0.94		3.81		46.12		4.50	
KSF	3.000		3.000		3.000		3.000		3.000	
Trips	113		3		11		138		14	
% Enter/Exit	50%	50%	62%	38%	48%	52%	50%	50%	52%	48%
# Enter/Exit	56	57	2	1	5	6	69	69	7	7
960	Super Convenience Market / Gas Station									
Rate / VFP	230.52		28.08		22.96		291.67		23.26	
VFP	12		12		12		12		12	
Trips	2,766		337		276		3,500		279	
% Enter/Exit	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
# Enter/Exit	1,383	1,383	168	169	138	138	1,750	1,750	139	140
Total Trips	1,439	1,440	170	170	143	144	1,819	1,819	146	147
	2,879		340		287		3,638		293	

Source: ITE Trip Generation Manual, Tenth Edition

TRIP DISTRIBUTION

Trip distribution for the proposed 418 Florida Convenience Store was based on the surrounding roadway system and anticipated routes to and from the surrounding major roadway system, specifically along Interstate Highway 37, Florida Street and Carolina Street. Trip distribution for the proposed 418 Florida Convenience Store was forecasted as 35% from areas north of the proposed development along Interstate Highway 37, 35% from areas south of the proposed development along interstate Highway 37, 15% from areas west of the proposed development along Carolina Street, and 15% from areas east of the proposed development along Florida Street. Table 3 below shows the projected trip distribution for the proposed 418 Florida Convenience Store.

Table 3. Trip Distribution for the Proposed 418 Florida Convenience Store

TRIP DISTRIBUTION								
	Weekday AM Peak				Weekday AM Peak			
	NB IH 37	SB IH 37	EB Carolina	WB Florida	NB IH 37	SB IH 37	EB Carolina	WB Florida
Enter	35%	35%	15%	15%	35%	35%	15%	15%
	60	60	25	25	50	50	22	21
	170				143			
	Exit	35%	35%	15%	15%	35%	35%	15%
60		60	25	25	50	50	22	22
170				144				

DRIVEWAY ACCESS

Access to the proposed 418 Florida Convenience Store will include two existing access driveways, one left-in only driveway (Driveway No. 1) along Florida Street to be located approximately 40' west of the Interstate Highway 37 southbound frontage road, currently located 80' west of the Interstate highway 37 southbound frontage road, and one left-in/left-out access driveway (Driveway No. 2) along Carolina Street to be located approximately 140' west of the Interstate Highway 37 southbound frontage road, currently located 70' west of the Interstate highway 37 southbound frontage road. Figure 9 below shows the two proposed access driveways for the proposed 418 Florida Convenience Store.



Figure 9. Driveway Access for Proposed 418 Florida Convenience Store

TRAFFIC IMPACT ANALYSIS

In determining traffic impacts to the surrounding roadway system as a result of trips to be generated by the proposed 418 Florida Convenience Store, a microscopic traffic simulation model was developed to evaluate capacity and levels-of-service at each of the study intersections along Talley Road. Traffic simulation software was used to evaluate the Existing (2024), No Build (2025), and Build-Out (2025) traffic conditions with the proposed development. The results from the traffic simulation analysis are used to determine the need for appropriate traffic impact mitigation measures.

TRAFFIC SIMULATION ANALYSIS

The Synchro traffic signal simulation software was utilized for comparison of the alternative scenarios. The analysis process involved the development of a base model (network with existing conditions), calibration of the base model (validation of traffic conditions), and alternative comparisons to the base model (traffic impact assessment).

Development of the base model involves the development of a system network, also referred to as the link-node network. The network development inputs include: link-node assignment, traffic control, traffic signalization, roadway geometry, lane assignment, traffic volumes, and turning movements. The calibration of the base model requires the iterative adjustment of the network inputs to simulate existing roadway traffic conditions. Traffic data was collected on Wednesday, May 8, 2024. **The analysis periods were between 7:45 and 8:45 AM for the morning peak period and between 4:15 and 5:15 PM for the evening peak period.** Table 4 shows the level-of-service thresholds (from the 2010 Highway Capacity Manual) for signalized and un-signalized intersections.

A capacity analysis was conducted for the following intersections:

1. Interstate Highway 37 Southbound Frontage Road and Florida Street
2. Interstate Highway 37 Southbound Frontage Road and Carolina Street
3. Interstate Highway 37 Northbound Frontage Road and Florida Street
4. Interstate Highway 37 Northbound Frontage Road and Carolina Street
5. Florida Street and Access Driveway No. 1
6. Carolina Street and Access Driveway No. 2

TRAFFIC SIMULATION RESULTS

Results from the traffic simulation analysis are correlated to the level-of-service criteria shown in Table 4 and summarized in Tables 5 through 10. The tables show approach control delay (seconds per vehicle) and the overall average intersection delay (seconds per vehicle).

Table 4. Level-of-Service Criteria for Signalized and Unsignalized Intersections

Level-of-Service (LOS)	Control Delay (seconds/vehicle)		Description
	Signalized Intersections	Unsignalized Intersections	
A	≤10.0	≤10.0	Very low vehicle delay, free traffic flow, good signal progression
B	10.1 to 20.0	10.1 to 15.0	Good signal progression, more vehicle stops and higher delay than LOS A
C	20.1 to 35.0	15.1 to 25.0	Stable traffic flow, fair signal progression, significant number of vehicle stops
D	35.1 to 55.0	25.1 to 35.0	Noticeable traffic congestion, longer delays and unfavorable signal progression
E	55.1 to 80.0	35.1 to 50.0	Limit of acceptable vehicle delay, unstable traffic flow, poor signal progression
F	> 80.0	> 50.0	Unacceptable delay, extremely unstable flow, heavy congestion, traffic exceeds capacity

Source: [Highway Capacity Manual](#), Transportation Research Board, 2000.

Table 5. LOS Summary for Interstate Highway 37 Southbound Frontage and Florida Street

	Intersection Approaches									
	Northbound		Southbound IH 37		Eastbound		Westbound Florida St		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2024)			9.7	A			13.7	B	12.3	B
No Built (2025)			9.7	A			13.8	B	12.4	B
Built Out (2025)			11.4	B			15.2	C	13.4	B
PM Peak Period										
Existing (2024)			9.9	A			11.6	B	10.7	B
No Built (2025)			9.9	A			11.7	B	10.8	B
Built Out (2025)			19.3	C			14.2	B	17.5	C

Table 6. LOS Summary for Interstate Highway 37 Southbound Frontage and Carolina Street

	Intersection Approaches									
	Northbound		Southbound IH 37		Eastbound Carolina St		Westbound		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2024)			9.3	A	14.1	B			13.4	B
No Built (2025)			9.4	A	14.3	B			13.5	B
Built Out (2025)			9.9	A	26.4	D			24.4	C
PM Peak Period										
Existing (2024)			13.2	B	33.4	D			27.2	D
No Built (2025)			13.3	B	35.2	E			28.5	D
Built Out (2025)			14.1	B	89.5	F			69.3	F

Table 7. LOS Summary for Interstate Highway 37 Northbound Frontage and Florida Street

	Intersection Approaches									
	Northbound IH 37		Southbound		Eastbound		Westbound Florida St		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2024)	12.2	B					10.4	B	11.3	B
No Built (2025)	12.3	B					10.4	B	11.3	B
Built Out (2025)	14.5	B					11.4	B	13.0	B
PM Peak Period										
Existing (2024)	10.6	B					11.0	B	10.8	B
No Built (2025)	10.7	B					11.1	B	10.9	B
Built Out (2025)	11.9	B					12.1	B	12.0	B

Table 8. LOS Summary for Interstate Highway 37 Northbound Frontage and Carolina Street

	Intersection Approaches									
	Northbound IH 37		Southbound		Eastbound Carolina St		Westbound		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2024)	9.5	A			7.8	A			9.2	A
No Built (2025)	9.5	A			7.8	A			9.2	A
Built Out (2025)	10.3	B			8.2	A			9.9	A
PM Peak Period										
Existing (2024)	8.6	A			7.5	A			8.2	A
No Built (2025)	8.6	A			7.5	A			8.2	A
Built Out (2025)	9.1	A			7.8	B			8.7	A

Table 9. LOS Summary for the Florida Street and Access Driveway No. 1 Intersection

	Intersection Approaches									
	Northbound Driveway 1		Southbound		Eastbound		Westbound Florida St		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2023)										
No Built (2024)										
Built Out (2024)	0.0	A					0.0	A	0.0	A
PM Peak Period										
Existing (2023)										
No Built (2024)										
Built Out (2024)	0.0	A					0.0	A	0.0	A

Table 10. LOS Summary for the Carolina Street and Access Driveway No. 2 Intersection

	Intersection Approaches									
	Northbound		Southbound Driveway 2		Eastbound Carolina St		Westbound		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
Existing (2023)										
No Built (2024)										
Built Out (2024)			18.8	C	0.0	A			4.4	A
PM Peak Period										
Existing (2023)										
No Built (2024)										
Built Out (2024)			21.4	C	0.0	C			3.7	A

TRAFFIC SIMULATION OBSERVATIONS

Traffic simulation models developed for the 418 Florida Convenience Store demonstrated minor operational impacts to the surrounding roadway network at Build Out (2025) with no significant impact to the surrounding roadways. The Interstate Highway 37 southbound frontage road and Carolina Street intersection was shown to have an increase in delay along the eastbound Carolina Street approach from 14.3 seconds per vehicle (LOS B) to 26.4 seconds per vehicles (LOS D) during the morning peak hour and from 35.2 seconds per vehicle (LOS E) to 89.5 seconds per vehicles (LOS F) during the evening peak hour. Mitigation would be required which may include striping the existing 28' pavement width for two through lanes.



**Figure 10. Synchro Model for the Proposed 418 Florida Convenience Store
(Evening Peak Period - 2025)**

MITIGATION ANALYSIS

Restriping of the eastbound Carolina Street approach to the southbound Interstate Highway 37 frontage road, which is an existing 28' pavement width, for two through lanes was shown to improve the approach and overall control delay to acceptable levels-of-service, as shown in Table 11 below. No additional mitigation would be required.

Table 11. LOS Summary for Interstate Highway 37 Southbound Frontage and Carolina Street

	Intersection Approaches									
	Northbound		Southbound IH 37		Eastbound Carolina St		Westbound		Average	
	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS	Delay (Sec)	LOS
AM Peak Period										
No Built (2025)			9.4	A	14.3	B			13.5	B
Built Out (2025)			9.9	A	26.4	D			24.4	C
Mitigation ¹			9.8	A	11.9	B			11.6	B
PM Peak Period										
No Built (2025)			13.3	B	35.2	E			28.5	D
Built Out (2025)			14.1	B	89.5	F			69.3	F
Mitigation ¹			14.0	B	19.6	C			18.1	C

1 - Restripe Eastbound Carolina Street Approach for two Through Lanes

QUEUE ANALYSIS

A queue analysis determined an increase in queue lengths as a result of the additional trips entering each of the study intersections however it should be noted that the traffic analysis did not include a traffic volume reduction due to pass-by trips. The ITE Trip Generation Handbook – Second Edition shows that a convenience store may have as much as 56% trips from pass-by traffic, lessening the resulting queue lengths. The traffic simulation Queue Reports are also included in Appendix E of the report.

Table 12. Queue Summary for Interstate Highway 37 Southbound Frontage and Florida St

	Intersection Approaches									
	Northbound		Southbound IH 37		Eastbound		Westbound Florida St		Average	
	Max. Q (ft)	95 th Q (ft)	Max. Q (ft)	95 th Q (ft)	Max. Q (ft)	95 th Q (ft)	Max. Q (ft)	95 th Q (ft)		
AM Peak Period										
Existing (2024)			171	185			31	31		
No Built (2025)			329	380			31	31		
Built Out (2025)			329	328			54	55		
PM Peak Period										
Existing (2024)			329	358			31	31		
No Built (2025)			348	358			31	31		
Built Out (2025)			329	465			31	31		

Table 13. Queue Summary for Interstate Highway 37 Southbound Frontage and Carolina St

	Intersection Approaches									
	Northbound		Southbound IH 37		Eastbound Carolina St		Westbound		Average	
	Max. Q (ft)	95 th Q (ft)	Max. Q (ft)	95 th Q (ft)	Max. Q (ft)	95 th Q (ft)	Max. Q (ft)	95 th Q (ft)	Delay (Sec)	LOS
AM Peak Period										
Existing (2024)			97	101	70	74				
No Built (2025)			30	36	75	71				
Built Out (2025)			51	54	72	80				
PM Peak Period										
Existing (2024)			130	135	75	71				
No Built (2025)			118	125	75	71				
Built Out (2025)			65	60	75	75				

TURN LANE ANALYSIS

The City of San Antonio UDC Section 35-502 (e)(2)(B) requires that a left or right-turn lane be required when daily (24-Hour) right or left turn volumes exceed 500 vehicles per day or 50 vehicles per hour during the peak hour.

Driveway No. 1 along Florida Street has a projected westbound left-turn volume of 145 vehicles per hour during the morning peak hour and 121 vehicles per hour during the evening peak hour. **A left-turn lane would be required for Driveway No. 1 along westbound Florida Street, however the installation of a left-turn lane would not be accommodated between the proposed access driveway and the southbound Interstate Highway 3 frontage road.**

Driveway No. 2 along Carolina Street has a projected eastbound left-turn volume of 25 vehicles per hour during the morning peak hour and 22 vehicles per hour during the evening peak hour. A left-turn lane would not be required for Driveway No. 2 along eastbound Carolina Street.

COSA INFRASTRUCTURE MANAGEMENT PROGRAM (IMP) 2024-2028

The proposed 418 Florida Convenience Store is to be located within the City of San Antonio City Council District No. 1 and within the limits of the COSA Infrastructure Management Program for Fiscal years 2024 – 2028, as shown in Figure 11 below. Florida Street, east of Interstate Highway 37, is shown to have a Pavement Rehabilitation project scheduled for FY 2026. Carolina Street, west of Interstate Highway 37, is shown to have a Pavement Preservation project scheduled for FY 2027. Carolina Street, east of Interstate Highway 37, is also shown to have a Pavement Preservation project scheduled for FY 2028.

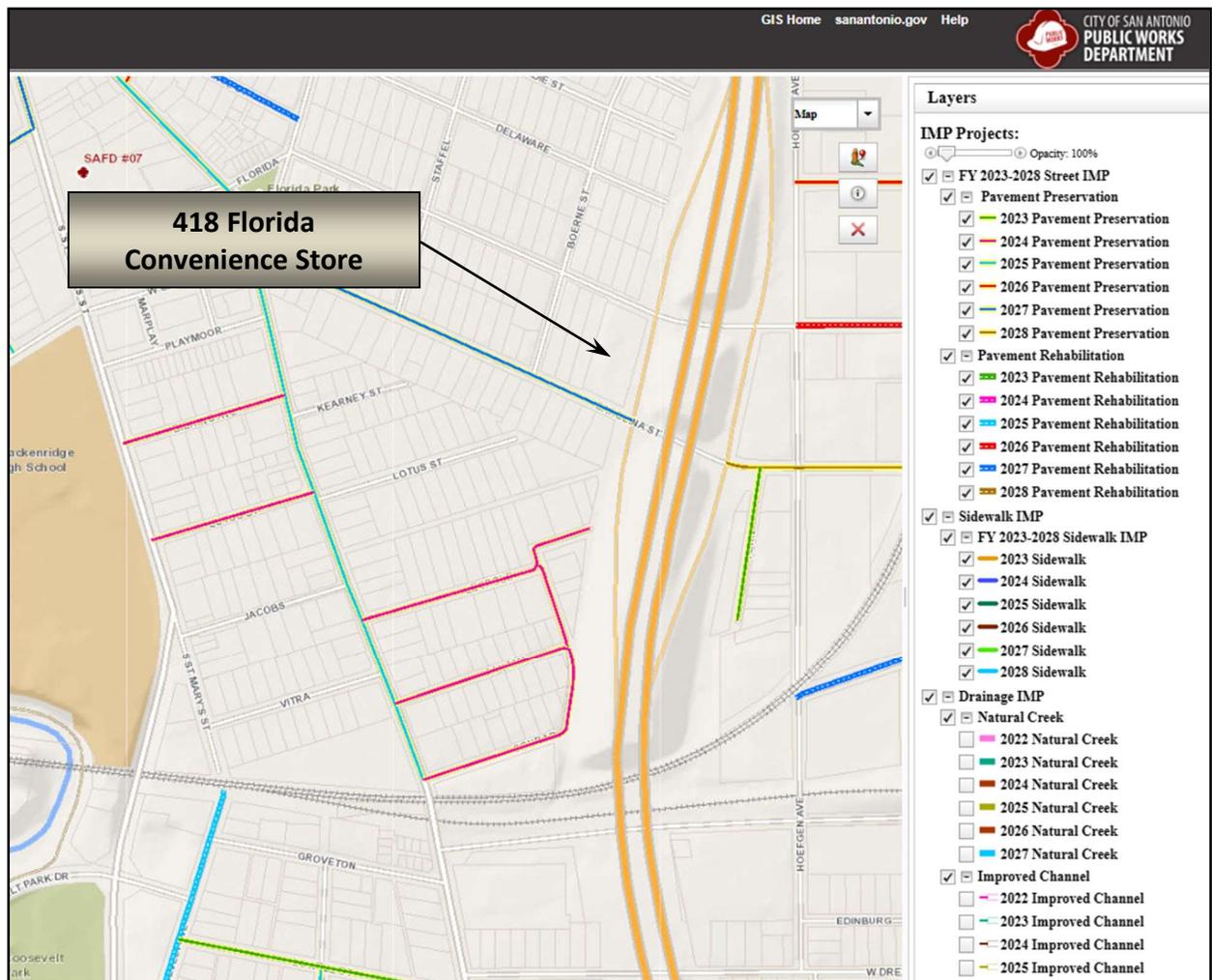


Figure 11. City of San Antonio Infrastructure Management Program 2024 – 2028 Map

ROUGH PROPORTIONALITY ANALYSIS

The proposed development will have a Rough Proportionality “DEMAND” value of \$187,330 (total impact of demand placed on the thoroughfare system) and a Rough Proportionality “SUPPLY” of \$00 (total value of capacity/supply added to the thoroughfare system). Based on the results of the Rough Proportionality analysis, the anticipated impact of demand on the system exceeds the value of capacity (supply) provided by the proposed development therefore the roadway improvements required by the city are justified (i.e., the development is adding less capacity than needed to support the proposed development).

CONCLUSION

Based on trip generation and distribution projections for the proposed 418 Florida Convenience Store, the development would not have a significant operational impact on the surrounding roadway system, specifically the Interstate Highway 37, Florida Street and Carolina Street.

Traffic Impact Analysis

Traffic simulation models developed for the 418 Florida Convenience Store demonstrated minor operational impacts to the surrounding roadway network at Build Out (2025) with no significant impact to the surrounding roadways. The Interstate Highway 37 southbound frontage road and Carolina Street intersection was shown to have an increase in delay along the eastbound Carolina Street approach from 14.3 seconds per vehicle (LOS B) to 26.4 seconds per vehicles (LOS D) during the morning peak hour and from 35.2 seconds per vehicle (LOS E) to 89.5 seconds per vehicles (LOS F) during the evening peak hour. Mitigation would be required which may include striping the existing 28' pavement width for two through lanes.

Mitigation Analysis

Restriping of the eastbound Carolina Street approach to the southbound Interstate Highway 37 frontage road, which is an existing 28' pavement width, for two through lanes was shown to improve the approach and overall control delay to acceptable levels-of-service.

Queue Analysis

A queue analysis determined an increase in queue lengths as a result of the additional trips entering each of the study intersections however it should be noted that the traffic analysis did not include a traffic volume reduction due to pass-by trips. The ITE Trip Generation Handbook – Second Edition shows that a convenience store may have as much as 56% trips from pass-by traffic, lessening the resulting queue lengths. The traffic simulation Queue Reports are also included in Appendix E of the report.

Turn Lane Analysis

The City of San Antonio UDC Section 35-502 (e)(2)(B) requires that a left or right-turn lane be required when daily (24-Hour) right or left turn volumes exceed 500 vehicles per day or 50 vehicles per hour during the peak hour.

Driveway No. 1 along Florida Street has a projected westbound left-turn volume of 145 vehicles per hour during the morning peak hour and 121 vehicles per hour during the evening peak hour.

A left-turn lane would be required for Driveway No. 1 along westbound Florida Street, however the installation of a left-turn lane would not be accommodated between the proposed access driveway and the southbound Interstate Highway 3 frontage road.

Rough Proportionality Analysis

The proposed development will have a Rough Proportionality “DEMAND” value of \$187,330 (total impact of demand placed on the thoroughfare system) and a Rough Proportionality “SUPPLY” of \$00 (total value of capacity/supply added to the thoroughfare system). Based on the results of the Rough Proportionality analysis, the anticipated impact of demand on the system exceeds the value of capacity (supply) provided by the proposed development therefore the roadway improvements required by the city are justified (i.e., the development is adding less capacity than needed to support the proposed development).



Prepared by:

A handwritten signature in blue ink, appearing to read "Rene Arredondo".

Rene Arredondo, P.E., P.T.O.E.

APPENDIX INDEX

Appendix A Site Layout - Exhibit A

Appendix B Aerial Photo – Exhibit B

Appendix C Trip Distribution Exhibits – Exhibits C, D, E, F, G and H

Appendix D Traffic Data Sheets

Appendix E Synchro Output Reports

Appendix F TIA Threshold Worksheet

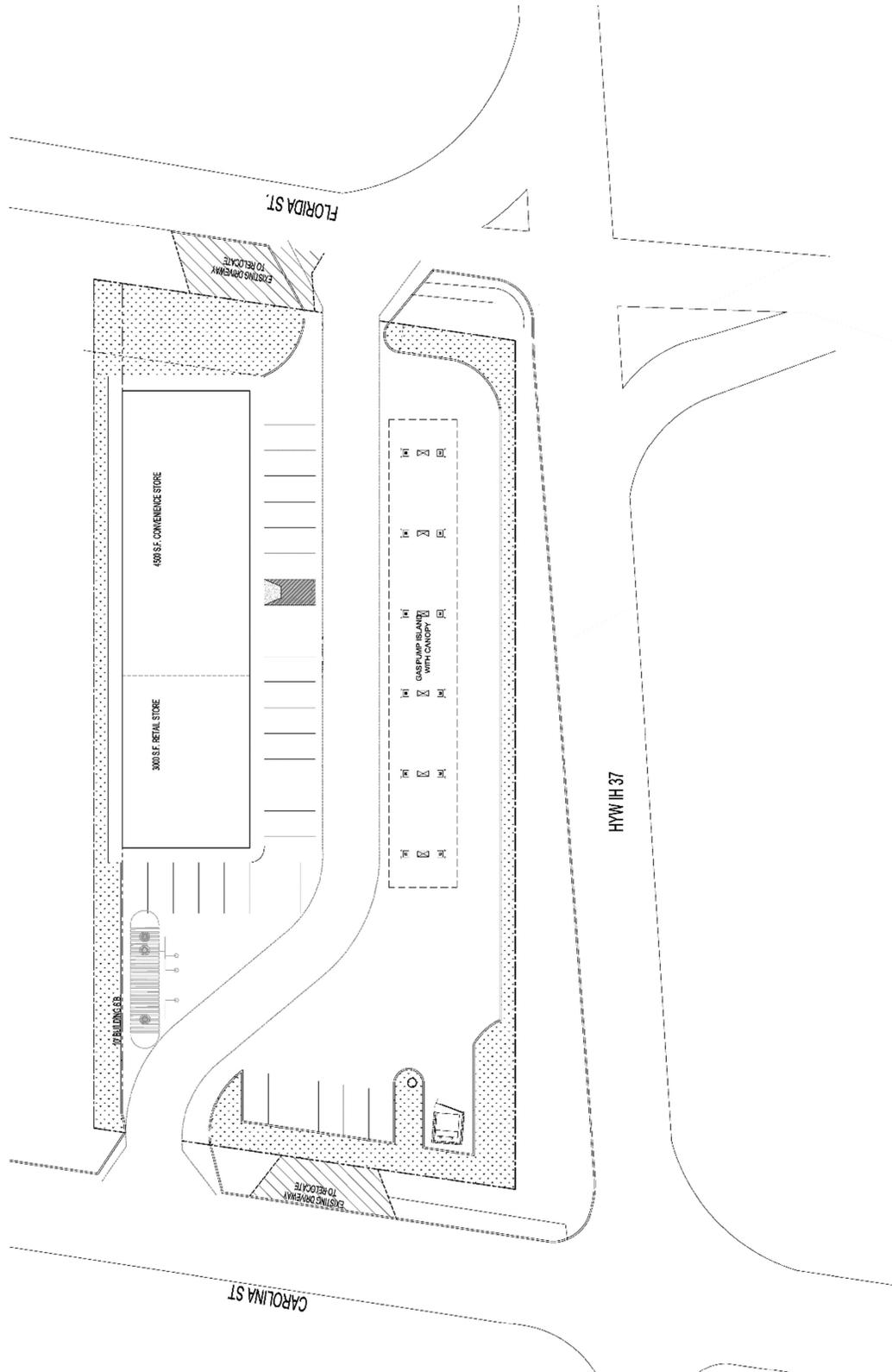
Appendix G TIA Rough Proportionality Worksheet

Appendix H TIA Scoping Meeting Documents

SITE LAYOUT

EXHIBIT A

APPENDIX A



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78253

Office: (210) 255-2447
Fax: (210) 503-9680

SITE LAYOUT

418 FLORIDA CONVENIENCE STORE



NORTH

EXHIBIT A

AERIAL PHOTOGRAPH

EXHIBIT B

APPENDIX B



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78253

Office: (210) 255-2447
Fax: (210) 509-9680

AERIAL PHOTOGRAPH

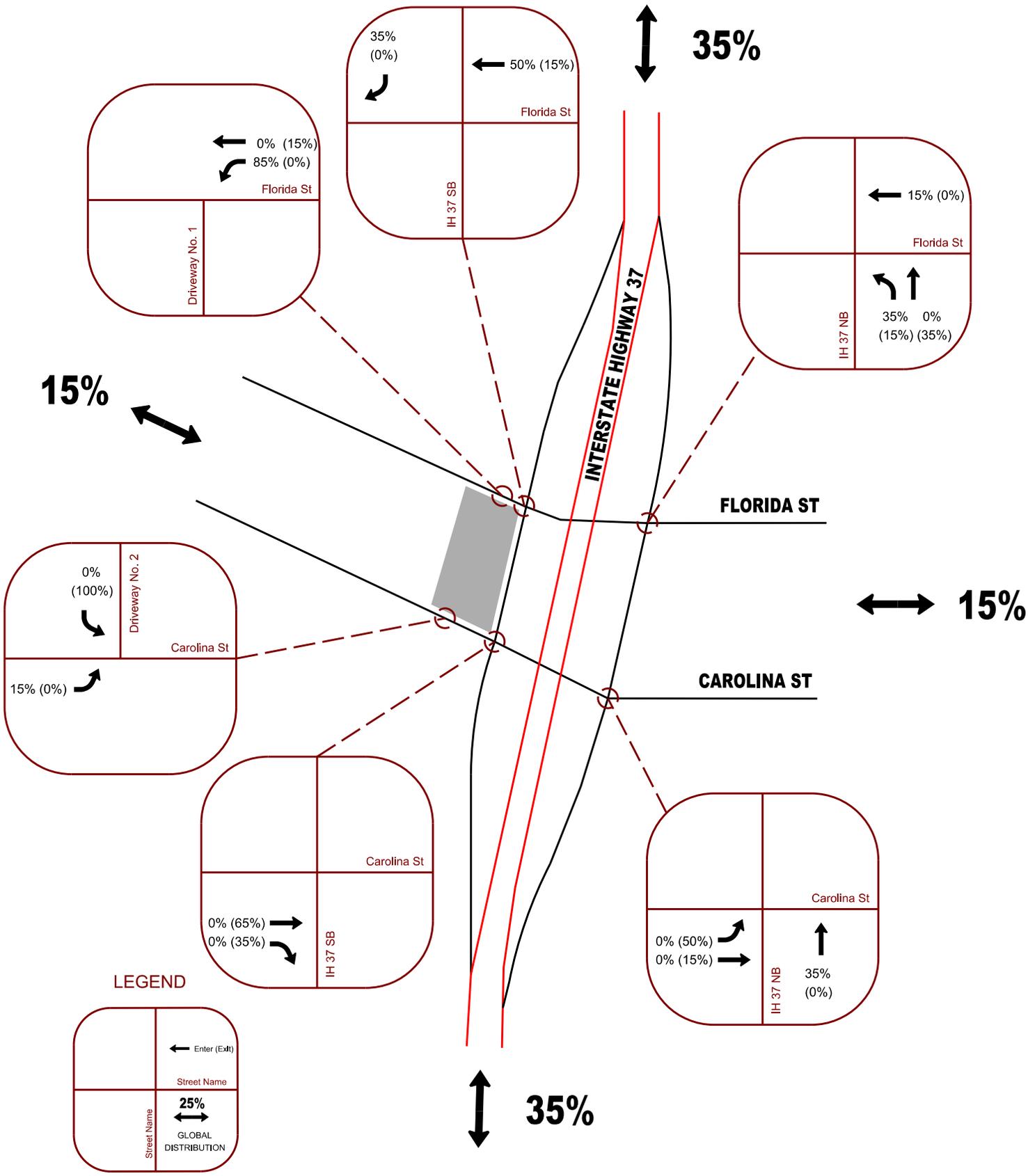
418 FLORIDA CONVENIENCE STORE



EXHIBIT B

TRIP DISTRIBUTION EXHIBITS

- Exhibit C – Trip Generation and Distribution Percentages
- Exhibit D – Trip Generation and Distribution Volumes
- Exhibit E – Existing Traffic Volumes (2024)
- Exhibit F – No Build Traffic Volumes (2025)
- Exhibit G – Build Out Traffic Volumes (2025)



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

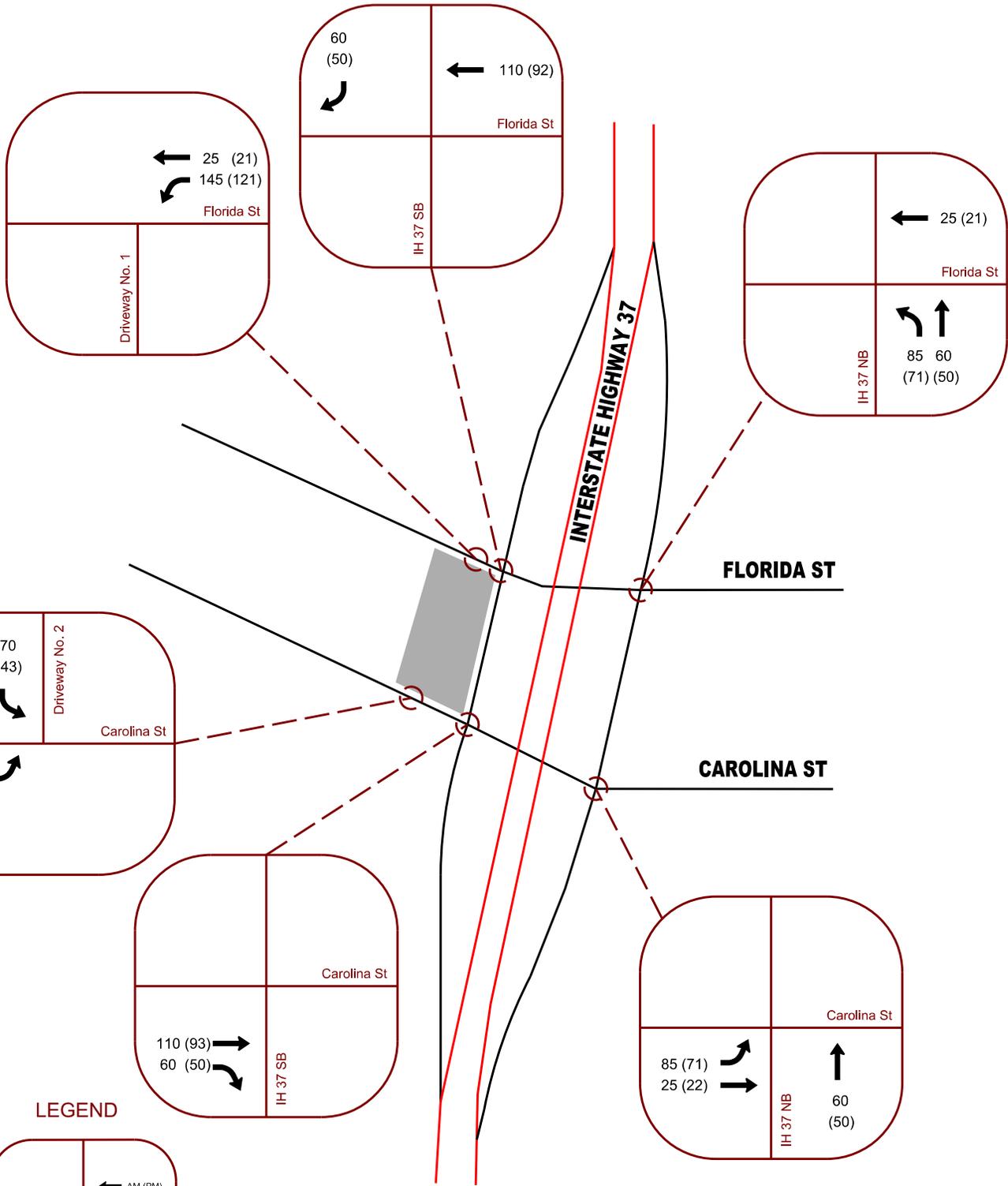
Office: (210) 256-2447
Fax: (210) 509-9680

TRIP DISTRIBUTION (PERCENTAGES)

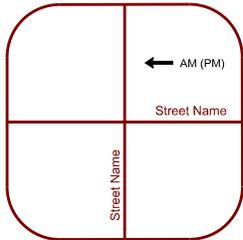
418 FLORIDA CONVENIENCE STORE



EXHIBIT C



LEGEND



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

Office: (210) 256-2447
Fax: (210) 509-9680

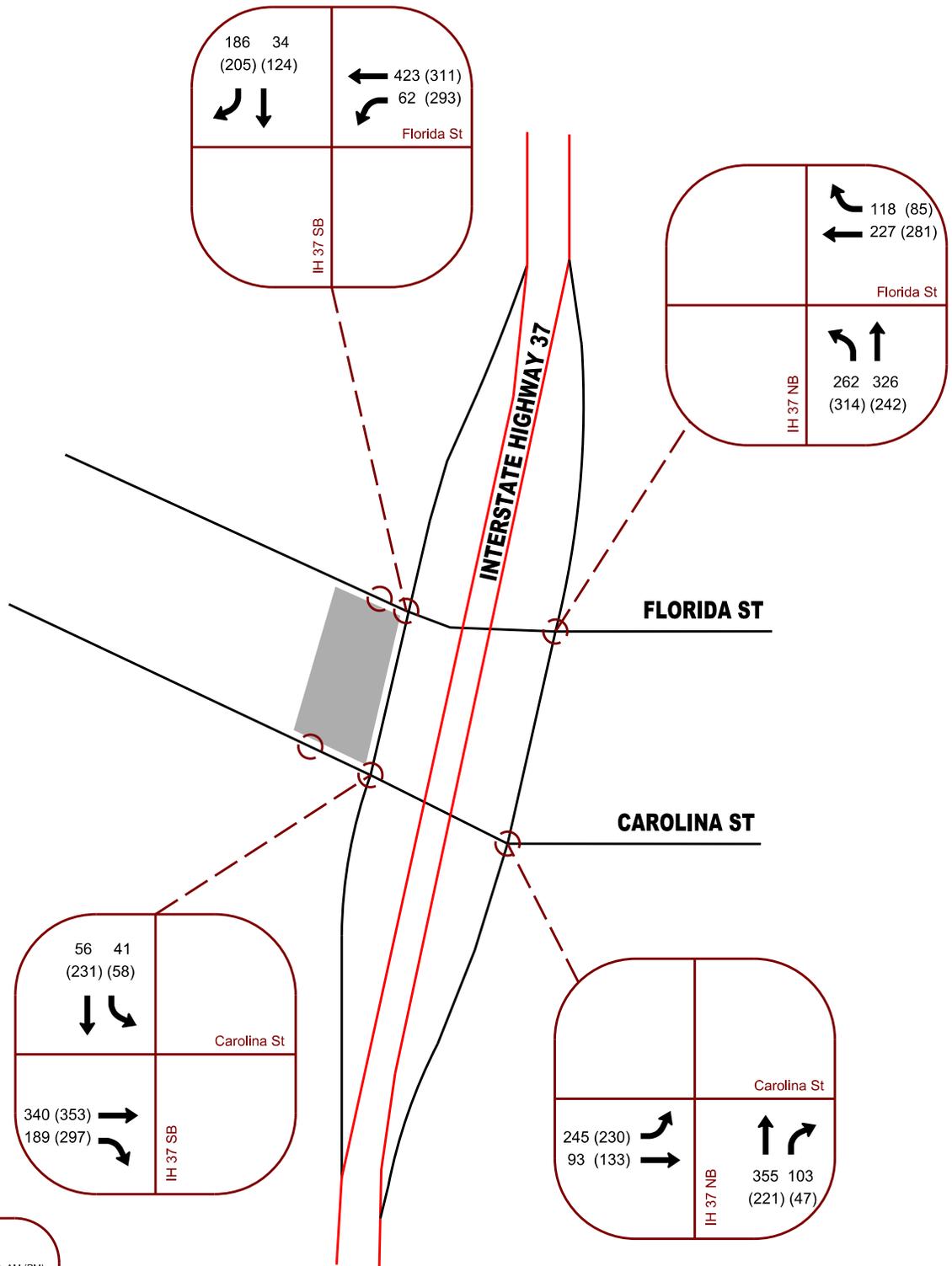
TRIP DISTRIBUTION (VOLUMES)

418 FLORIDA CONVENIENCE STORE

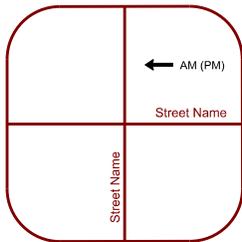


NORTH

EXHIBIT D



LEGEND



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

Office: (210) 256-2447
Fax: (210) 509-9680

EXISTING TRAFFIC VOLUMES

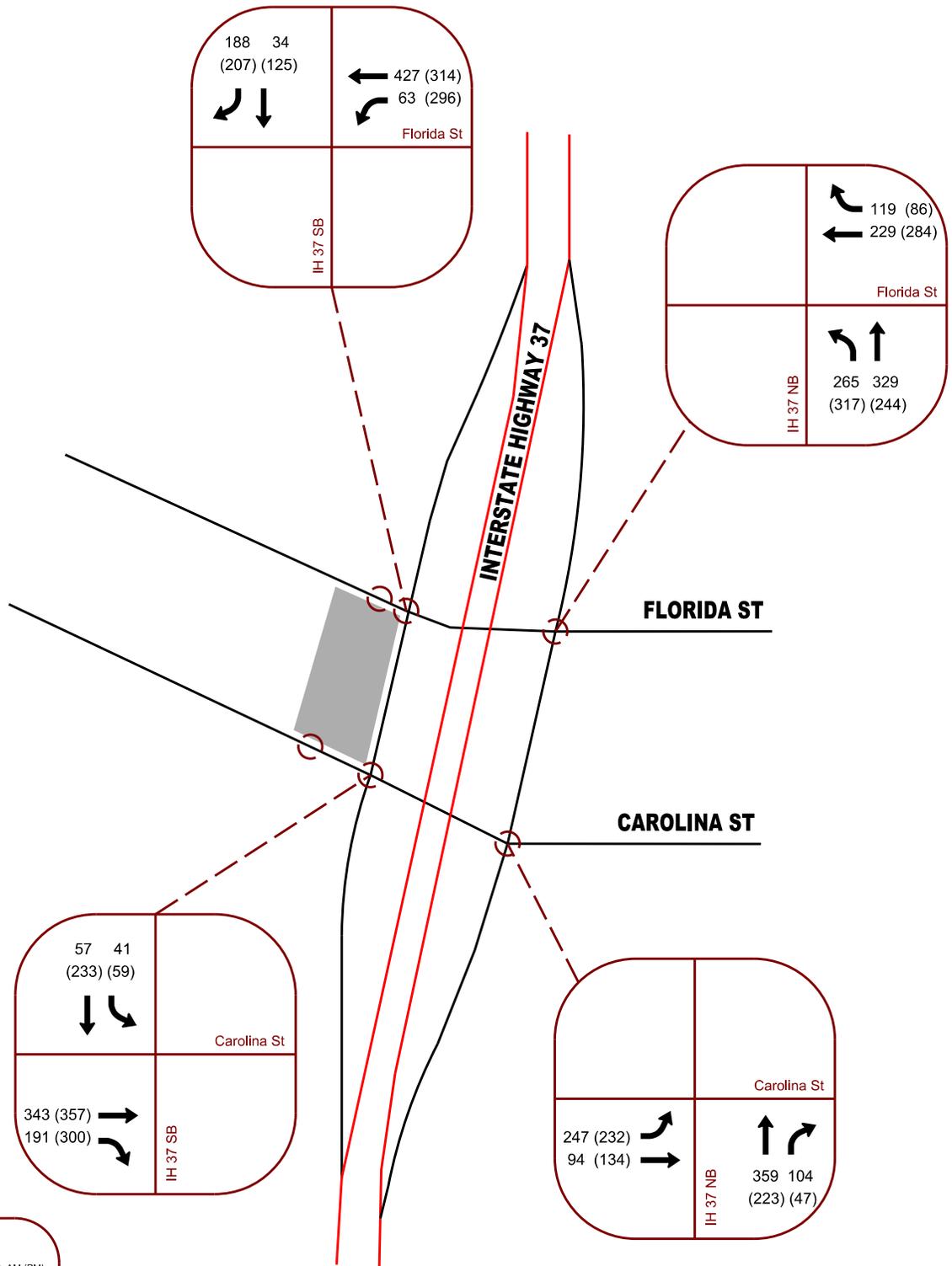
418 FLORIDA CONVENIENCE STORE

(2024)



NORTH

EXHIBIT E



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

Office: (210) 256-2447
Fax: (210) 509-9680

NO BUILD TRAFFIC VOLUMES

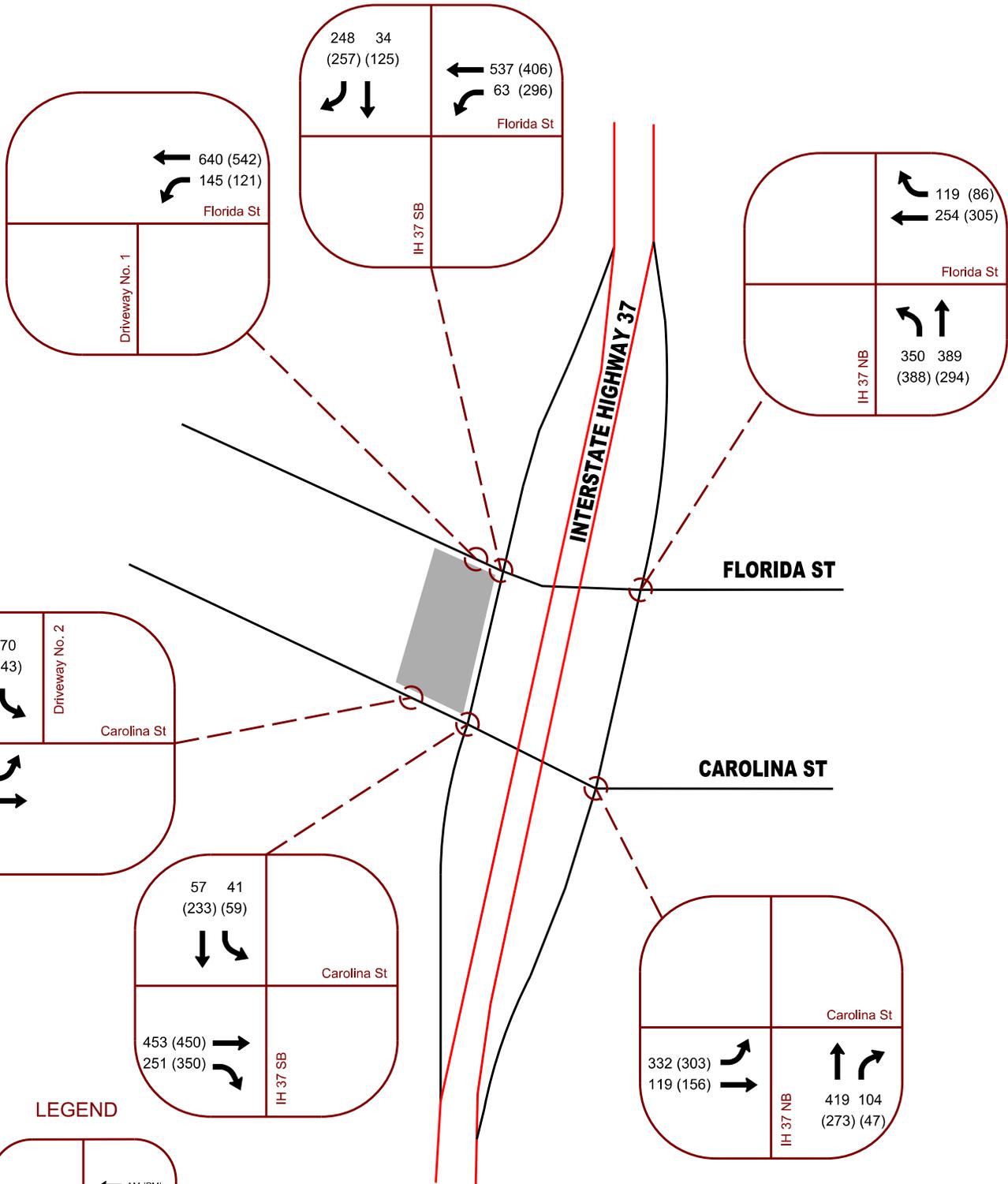
418 FLORIDA CONVENIENCE STORE

(2025)

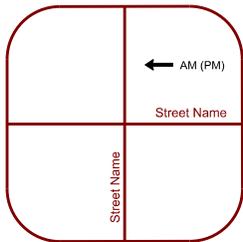


NORTH

EXHIBIT F



LEGEND



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

Office: (210) 256-2447
Fax: (210) 509-9680

BUILD TRAFFIC VOLUMES

418 FLORIDA CONVENIENCE STORE

(2025)



NORTH

EXHIBIT G

TRAFFIC DATA SHEETS

APPENDIX D

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List View All DIRs of 1 [Goto Record](#)

[Record](#) [MPO ID](#) [go](#) [Report Center](#)

Location ID	15HP5084	MPO ID	28
Type	SPOT	HPMS ID	ASSIGNED
SF Group	SAN ANTONIO FC 4	Route Type	FC
AF Group	OFFSYSTEM (Urban) FC 4	Route	0000
GF Group	SAN ANTONIO FC 4	Active	Yes
Class Dist Grp	SAN ANTONIO	Category	URBAN ACR
WM Group			
QC Group	Volume Group 2		
Funct Class	4/Minor Arterial		
Located On	Florida St		
Loc On Alias	298652		

[More Detail](#)

STATION DATA

Directions: [E-WAY](#) [WB](#)

Year	AAADT	DHV-30	K %	D %	PA	BC	Src
2020	4,353	623	14				
2015	4,319	623	14				
2010	5,440						

Travel Demand Model

Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV

VOLUME COUNT

Date	Int	Total	Annual Growth
Wed 2/26/2020	15	5,313	0%
Mon 2/2/2015	15	5,159	-5%

VOLUME TREND

Year	Annual Growth
2020	0%
2015	-5%

SPEED

Date	Int	Pace	85th	Total
		No Data		No Data

WEIGH-IN-MOTION

Date	Axes	Avg GVW	Total
		No Data	No Data

GAP

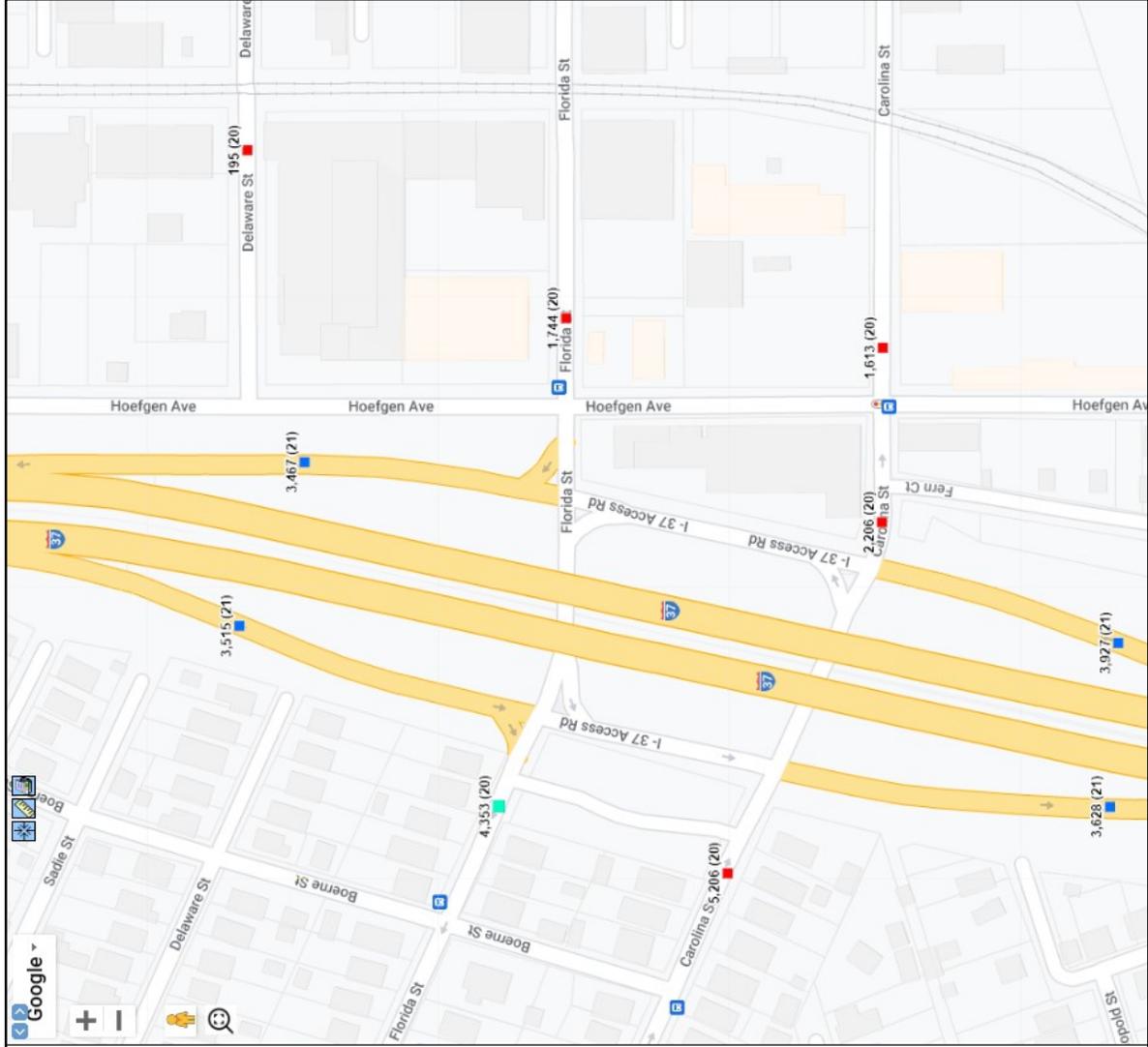
Date	Int	Total
	No Data	No Data

PARTIAL COUNT

Date	Int	24-Hr Total
	No Data	No Data

NOTES/FILES

Date	Note



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[+ Locate](#) [+ Locate All](#)

[Auto-Locate ON](#)

Volume Count Report

LOCATION INFO

Location ID	15HP5084
Type	SPOT
Funct'l Class	4
Located On	Florida St
Loc On Alias	259352
Direction	1-WAY
County	Bexar
Community	San Antonio
MPO ID	28
HPMS ID	ASSIGNED
Agency	Texas DOT

INTERVAL:15-MIN

Time	15-min Interval				Hourly Count
	1st	2nd	3rd	4th	
0:00-1:00	17	9	9	7	42
1:00-2:00	6	5	5	1	17
2:00-3:00	3	2	3	4	12
3:00-4:00	3	3	0	6	12
4:00-5:00	1	5	1	6	13
5:00-6:00 	9	4	18	19	50
 6:00-7:00	18	29	34	60	141
7:00-8:00	61	88	116	152	417
8:00-9:00	166	166	169	122	623
9:00-10:00	86	63	86	75	310
10:00-11:00	74	57	77	64	272
11:00-12:00	74	71	66	76	287
12:00-13:00	97	84	76	81	338
13:00-14:00	78	86	61	85	310
14:00-15:00	81	78	82	86	327
15:00-16:00	90	88	94	110	382
16:00-17:00	138	146	83	60	427
17:00-18:00	77	66	85	82	310
18:00-19:00	81	115	106	72	374
19:00-20:00	71	50	41	47	209
20:00-21:00	47	31	40	45	163
21:00-22:00	36	24	25	26	111
22:00-23:00	29	31	23	16	99
23:00-24:00	19	15	17	16	67
Total					5,313
AADT					4,353
AM Peak					07:45-08:45 653
PM Peak					15:30-16:30 488

COUNT DATA INFO

Count Status	Accepted
Holiday	No
Start Date	Wed 2/26/2020
End Date	Thu 2/27/2020
Start Time	6:15:00 AM
End Time	6:15:00 AM
Direction	
Notes	
Station	
Study	
Speed Limit	
Description	
Sensor Type	Axle/Tube
Source	TCDS_COUNT_IMPORT_COMBINE
Latitude, Longitude	

Interstate 37 Northbound Frontage Road and Florida Street

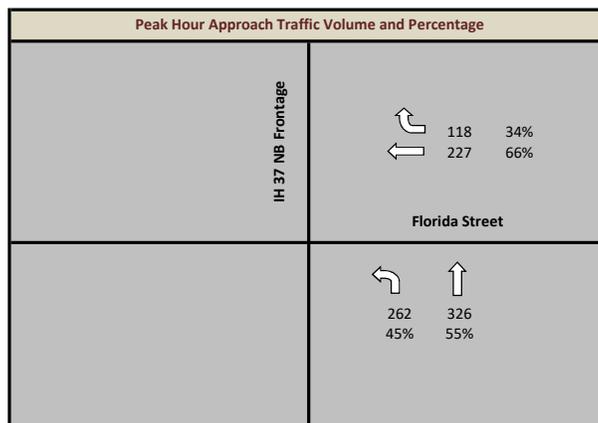
Intersection: North/South Street : IH 37 NB Frontage
 East/West Street : Florida Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 1 7:00 AM - 9:00 AM
 Peak Hour: 7:45 AM to 8:45 AM

Start Time	Intersection Approaches																Traffic Control			
	IH 37 NB Frontage				IH 37 NB Frontage				Florida Street				Florida Street				Total	Hourly Total		
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound					
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U					
7:00 AM	34	31											24	16			105	745		
7:15 AM	48	57											30	42			177			
7:30 AM	49	88											42	40			219			
7:45 AM	53	82											60	49			244			
8:00 AM	54	94											40	21			209			
8:15 AM	73	79											66	26			244			
8:30 AM	82	71											61	22			236			
8:45 AM	47	52											42	23			164		853	
Total																				
Peak Total	262	326	0	0	0	0	0	0	0	0	0	0	0	227	118	0				
Peak Turn Percent	45%	55%	0%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	66%	34%	0%			
Peak Approach Total	588				0				0				345							
FORMULA	328	376	0	0	0	0	0	0	0	0	0	0	0	264	196					
PHF	0.7988	0.867	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.8598	0.602					
Comments																				



Interstate 37 Northbound Frontage Road and Florida Street

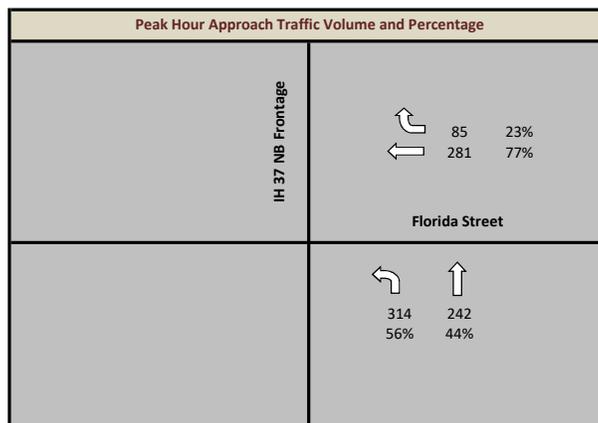
Intersection: North/South Street : IH 37 NB Frontage
 East/West Street : Florida Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 3 4:00 PM - 6:00 PM
 Peak Hour: 4:15 PM to 5:15 PM

Start Time	Intersection Approaches																Traffic Control			
	IH 37 NB Frontage				IH 37 NB Frontage				Florida Street				Florida Street				Total	Hourly Total		
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound					
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U					
4:00 PM	97	54												70	24			245	917	
4:15 PM	101	57												69	24			251		
4:30 PM	53	73												70	19			215		
4:45 PM	81	46												59	20			206		
5:00 PM	79	66												83	22			250		
5:15 PM	89	51												65	27			232		
5:30 PM	81	38												48	15			182		
5:45 PM	56	44												41	16			157		821
Total																				
Peak Total	314	242	0	0	0	0	0	0	0	0	0	0	0	0	281	85	0			
Peak Turn Percent	56%	44%	0%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	77%	23%	0%			
Peak Approach Total	556				0				0				366							
FORMULA	404	292	0		0	0	0		0	0	0		0	332	96					
PHF	0.7772	0.8288	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!		#DIV/0!	0.8464	0.8854					
Comments																				



Interstate 37 Southbound Frontage Road and Florida Street

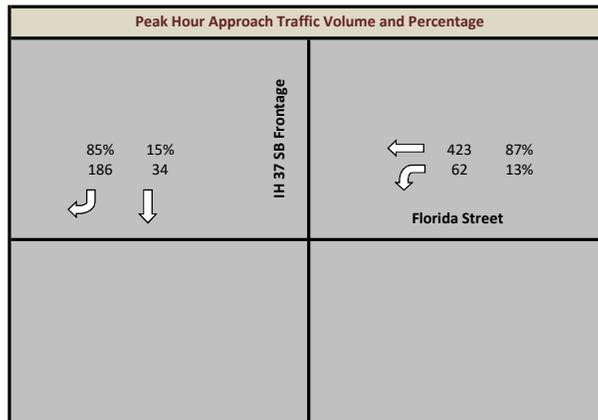
Intersection: North/South Street : IH 37 SB Frontage
 East/West Street : Florida Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 1 7:00 AM - 9:00 AM
 Peak Hour: 7:45 AM to 8:45 AM

Start Time	Intersection Approaches																Traffic Control	
	IH 37 SB Frontage				IH 37 SB Frontage				Florida Street				Florida Street				Total	Hourly Total
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound			
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM					8	28							20	36			92	517
7:15 AM					14	34							15	62			125	
7:30 AM					10	37							20	73			140	
7:45 AM					7	38							14	101			160	
8:00 AM					6	36							9	87			138	
8:15 AM					10	61							27	109			207	
8:30 AM					11	51							12	126			200	
8:45 AM					11	50							8	86			155	700
Total																		
Peak Total	0	0	0	0	0	77	335	0	0	0	0	0	125	680	0	0		
Peak Turn Percent	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	15%	85%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	13%	87%	0%	0%		
Peak Approach Total	0				220				0				485					
FORMULA	0	0	0	0	0	44	244		0	0	0	0	108	504	0			
PHF	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.7727	0.7623		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.5741	0.8393	#DIV/0!			
Comments																		



Interstate 37 Southbound Frontage Road and Florida Street

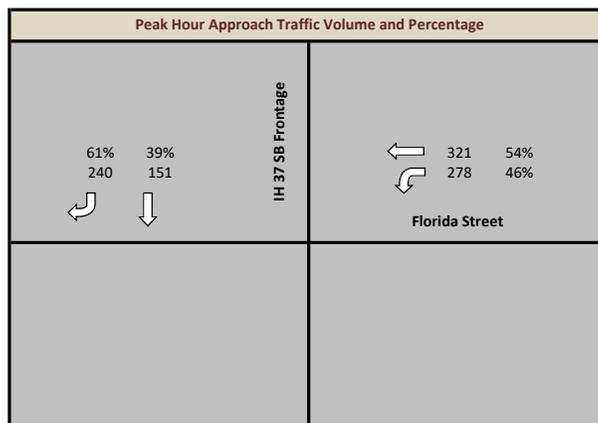
Intersection: North/South Street : IH 37 SB Frontage
 East/West Street : Florida Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 3 4:00 PM - 6:00 PM
 Peak Hour: 4:45 PM to 5:45 PM

Start Time	Intersection Approaches																Traffic Control	
	IH 37 SB Frontage				IH 37 SB Frontage				Florida Street				Florida Street				Total	Hourly Total
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound			
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM					31	74							56	120			281	965
4:15 PM					35	59							72	98			264	
4:30 PM					23	48							64	66			201	
4:45 PM					31	46							67	75			219	
5:00 PM					35	52							90	72			249	
5:15 PM					40	68							70	85			263	
5:30 PM					45	74							51	89			259	
5:45 PM					15	78							35	68			196	
Total	0	0	0	0	0	255	499	0	0	0	0	0	505	673	0	0		
Peak Total	0	0	0	0	0	151	240	0	0	0	0	0	278	321	0	0		
Peak Turn Percent	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0%	39%	61%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	46%	54%	0%	0%		
Peak Approach Total	0				391				0				599					
FORMULA	0	0	0	0	0	180	296		0	0	0	0	360	356	0			
PHF	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.8389	0.8108		#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.7722	0.9017	#DIV/0!			
Comments																		



Interstate 37 Northbound Frontage Road and Carolina Street

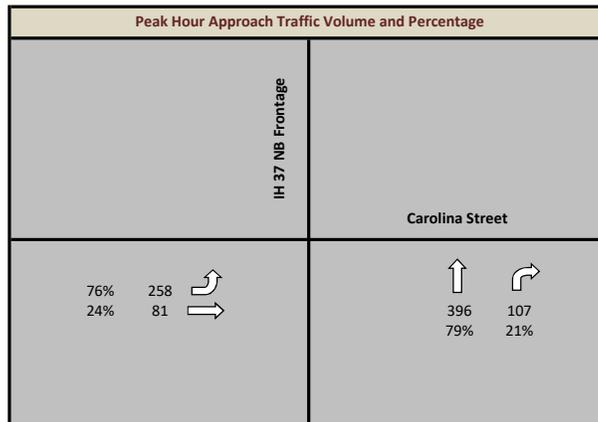
Intersection: North/South Street : IH 37 NB Frontage
 East/West Street : Carolina Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 1 7:00 AM - 9:00 AM
 Peak Hour: 7:30 AM to 8:30 AM

Start Time	Intersection Approaches																Traffic Control	
	IH 37 NB Frontage				IH 37 NB Frontage				Carolina Street				Carolina Street				Total	Hourly Total
	Northbound				Southbound				Eastbound				Westbound					
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	27	10								32	14					83		
7:15 AM	65	25								43	23					156		
7:30 AM	91	16								58	13					178	639	
7:45 AM	101	39								64	18					222		
8:00 AM	104	29								68	31					232		
8:15 AM	100	23								68	19					210		
8:30 AM	50	12								45	25					132		
8:45 AM	48	15								53	29					145	719	
	Northbound				Southbound				Eastbound				Westbound				Total	Hourly Total
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM																0		
7:15 AM																0		
7:30 AM																0	0	
7:45 AM																0		
8:00 AM																0		
8:15 AM																0		
8:30 AM																0		
8:45 AM																0	0	
	Northbound				Southbound				Eastbound				Westbound				Total	Hourly Total
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	27	10								32	14					83		
7:15 AM	65	25								43	23					156		
7:30 AM	91	16								58	13					178	639	
7:45 AM	101	39								64	18					222		
8:00 AM	104	29								68	31					232		
8:15 AM	100	23								68	19					210		
8:30 AM	50	12								45	25					132		
8:45 AM	48	15								53	29					145	719	
Total	0	586	169	0	0	0	0	0	431	172	0	0	0	0	0	0		
Peak Total	0	396	107	0	0	0	0	0	258	81	0	0	0	0	0	0		
Peak Turn Percent	0%	79%	21%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	76%	24%	0%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Peak Approach Total	503				0				339				0					
FORMULA	0	416	156		0	0	0		272	124	0		0	0	0			
PHF	#DIV/0!	0.9519	0.6859		#DIV/0!	#DIV/0!	#DIV/0!		0.9485	0.6532	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!			
Comments																		



Interstate 37 Northbound Frontage Road and Carolina Street

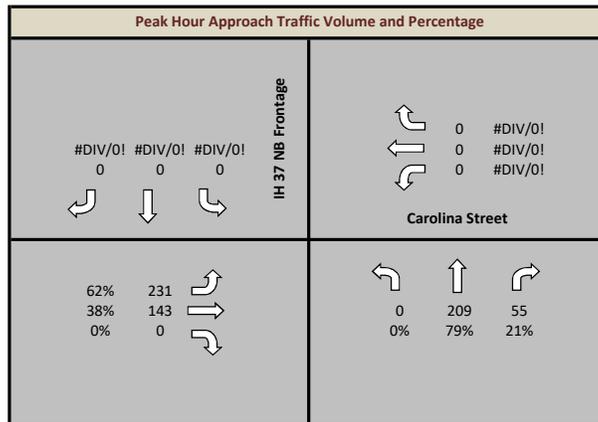
Intersection: North/South Street : IH 37 NB Frontage
 East/West Street : Carolina Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 3 4:00 PM - 6:00 PM
 Peak Hour: 4:00 PM to 5:00 PM

Start Time	Intersection Approaches																Traffic Control	
	IH 37 NB Frontage				IH 37 NB Frontage				Carolina Street				Carolina Street				Total	Hourly Total
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound			
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	59	17						63	33							172	638	
4:15 PM	52	13						52	50							167		
4:30 PM	41	17						71	31							160		
4:45 PM	57	8						45	29							139		
5:00 PM	71	9						62	23							165		
5:15 PM	81	17						48	23							169		
5:30 PM	79	13						44	24							160		
5:45 PM	70	15						35	22							142		
Total	0	510	109	0	0	0	0	0	0	0	0	420	235	0	0	0	0	
Peak Total	0	209	55	0	0	0	0	0	0	0	0	231	143	0	0	0	0	
Peak Turn Percent	0%	79%	21%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	62%	38%	0%	0%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
Peak Approach Total	264				0				374				0					
PHF	0	0.8856	0.8088		#DIV/0!	#DIV/0!	#DIV/0!		0.8134	0.715	#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!			
Comments																		



Interstate 37 Southbound Frontage Road and Carolina Street

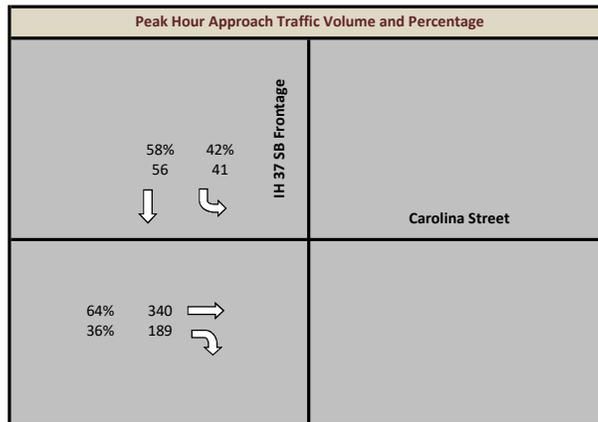
Intersection: North/South Street : IH 37 SB Frontage
 East/West Street : Carolina Street



City / State: San Antonio, Texas
 Project No.: 2024003100
 Date Recorded: Wednesday, May 8, 2024

Peak Period : 1 7:00 AM - 9:00 AM
 Peak Hour: 7:45 AM to 8:45 AM

Start Time	Intersection Approaches																Traffic Control	
	IH 37 SB Frontage				IH 37 SB Frontage				Carolina Street				Carolina Street				Total	Hourly Total
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound			
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM					11	13				35	18						77	
7:15 AM					16	16				53	24						109	
7:30 AM					10	13				63	38						124	
7:45 AM					7	17				85	38						147	457
8:00 AM					8	16				95	47						166	
8:15 AM					14	14				93	46						167	
8:30 AM					12	9				67	58						146	
8:45 AM					7	10				77	46						140	619
STOP																		
	Northbound				Southbound				Eastbound				Westbound				Total	Hourly Total
7:00 AM																	0	
7:15 AM																	0	
7:30 AM																	0	0
7:45 AM																	0	
8:00 AM																	0	
8:15 AM																	0	
8:30 AM																	0	
8:45 AM																	0	0
	Northbound				Southbound				Eastbound				Westbound				Total	Hourly Total
7:00 AM					11	13				35	18						77	
7:15 AM					16	16				53	24						109	
7:30 AM					10	13				63	38						124	
7:45 AM					7	17				85	38						147	457
8:00 AM					8	16				95	47						166	
8:15 AM					14	14				93	46						167	
8:30 AM					12	9				67	58						146	
8:45 AM					7	10				77	46						140	619
Total	0	0	0	0	85	108	0	0	0	568	315	0	0	0	0	0		
Peak Total	0	0	0	0	41	56	0	0	0	340	189	0	0	0	0	0		
Peak Turn Percent	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	42%	58%	0%	0%	0%	64%	36%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Peak Approach Total	0				97				529				0					
FORMULA	0	0	0	0	56	68	0	0	0	380	232	0	0	0	0	0		
PHF	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.7321	0.8235	#DIV/0!	#DIV/0!	#DIV/0!	0.8947	0.8147	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Comments																		



Interstate 37 Southbound Frontage Road and Carolina Street

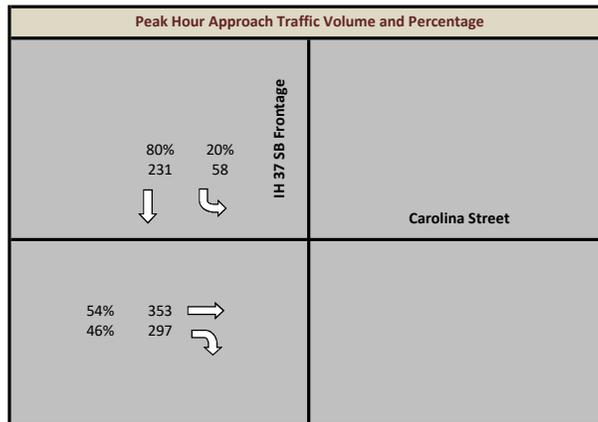
Intersection: North/South Street : **IH 37 SB Frontage**
 East/West Street : **Carolina Street**



City / State: **San Antonio, Texas**
 Project No.: **2024003100**
 Date Recorded: **Wednesday, May 8, 2024**

Peak Period : **3** **4:00 PM - 6:00 PM**
 Peak Hour: **4:15 PM to 5:15 PM**

Start Time	Intersection Approaches																Traffic Control	
	IH 37 SB Frontage				IH 37 SB Frontage				Carolina Street				Carolina Street				Total	Hourly Total
	Northbound		Southbound		Eastbound		Westbound		Northbound		Southbound		Eastbound		Westbound			
Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM					16	41				86	47						190	
4:15 PM					17	37				100	88						242	
4:30 PM					15	42				103	75						235	883
4:45 PM					13	58				63	82						216	
5:00 PM					13	94				87	52						246	
5:15 PM					8	81				73	49						211	
5:30 PM					12	105				63	37						217	
5:45 PM					14	67				53	41						175	849
Total	0	0	0	0	108	525	0	0	0	628	471	0	0	0	0	0		
Peak Total	0	0	0	0	58	231	0	0	0	353	297	0	0	0	0	0		
Peak Turn Percent	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	20%	80%	0%	0%	0%	54%	46%	0%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Peak Approach Total	0				289				650				0					
FORMULA	0	0	0	0	68	376	0	0	0	412	352	0	0	0	0	0		
PHF	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	0.8529	0.6144	#DIV/0!	#DIV/0!	#DIV/0!	0.8568	0.8438	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!		
Comments																		



SYNCHRO OUTPUT REPORTS

APPENDIX E

Intersection	
Intersection Delay, s/veh	12.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↑↑	
Traffic Vol, veh/h	0	0	0	0	426	0	0	0	0	0	34	186
Future Vol, veh/h	0	0	0	0	426	0	0	0	0	0	34	186
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	463	0	0	0	0	0	37	202
Number of Lanes	0	0	0	0	1	0	0	0	0	0	2	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	2	0
HCM Control Delay	13.7	9.7
HCM LOS	B	A

Lane	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	6%
Vol Right, %	0%	0%	94%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	426	23	197
LT Vol	0	0	0
Through Vol	426	23	11
RT Vol	0	0	186
Lane Flow Rate	463	25	214
Geometry Grp	2	7	7
Degree of Util (X)	0.582	0.039	0.296
Departure Headway (Hd)	4.527	5.637	4.971
Convergence, Y/N	Yes	Yes	Yes
Cap	796	634	721
Service Time	2.562	3.385	2.718
HCM Lane V/C Ratio	0.582	0.039	0.297
HCM Control Delay	13.7	8.6	9.8
HCM Lane LOS	B	A	A
HCM 95th-tile Q	3.8	0.1	1.2

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔								↔	↔	
Traffic Vol, veh/h	0	340	189	0	0	0	0	0	0	41	56	0
Future Vol, veh/h	0	340	189	0	0	0	0	0	0	41	56	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	370	205	0	0	0	0	0	0	45	61	0
Number of Lanes	0	1	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	1
HCM Control Delay	14.1	9.3
HCM LOS	B	A

Lane	EBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	0%
Vol Thru, %	64%	0%	100%
Vol Right, %	36%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	529	41	56
LT Vol	0	41	0
Through Vol	340	0	56
RT Vol	189	0	0
Lane Flow Rate	575	45	61
Geometry Grp	2	7	7
Degree of Util (X)	0.644	0.078	0.097
Departure Headway (Hd)	4.034	6.271	5.766
Convergence, Y/N	Yes	Yes	Yes
Cap	897	571	621
Service Time	2.044	4.013	3.507
HCM Lane V/C Ratio	0.641	0.079	0.098
HCM Control Delay	14.1	9.5	9.1
HCM Lane LOS	B	A	A
HCM 95th-tile Q	4.8	0.3	0.3

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑				
Traffic Vol, veh/h	0	0	0	0	227	118	0	326	0	0	0	0
Future Vol, veh/h	0	0	0	0	227	118	0	326	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	247	128	0	354	0	0	0	0
Number of Lanes	0	0	0	0	1	1	0	1	0	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	2
HCM Control Delay	10.4	12.2
HCM LOS	B	B

Lane	NBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	326	227	118
LT Vol	0	0	0
Through Vol	326	227	0
RT Vol	0	0	118
Lane Flow Rate	354	247	128
Geometry Grp	2	7	7
Degree of Util (X)	0.474	0.371	0.168
Departure Headway (Hd)	4.819	5.416	4.71
Convergence, Y/N	Yes	Yes	Yes
Cap	748	661	758
Service Time	2.859	3.171	2.465
HCM Lane V/C Ratio	0.473	0.374	0.169
HCM Control Delay	12.2	11.4	8.4
HCM Lane LOS	B	B	A
HCM 95th-tile Q	2.6	1.7	0.6

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑				
Traffic Vol, veh/h	0	93	0	0	0	0	0	355	103	0	0	0
Future Vol, veh/h	0	93	0	0	0	0	0	355	103	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	101	0	0	0	0	0	386	112	0	0	0
Number of Lanes	0	2	0	0	0	0	0	2	0	0	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	2
Conflicting Approach Right	NB	
Conflicting Lanes Right	2	0
HCM Control Delay	7.8	9.5
HCM LOS	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	53%	100%	100%
Vol Right, %	0%	47%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	237	221	47	47
LT Vol	0	0	0	0
Through Vol	237	118	47	47
RT Vol	0	103	0	0
Lane Flow Rate	257	241	51	51
Geometry Grp	7	7	7	7
Degree of Util (X)	0.336	0.293	0.079	0.055
Departure Headway (Hd)	4.707	4.381	5.646	3.9
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	756	811	638	924
Service Time	2.49	2.164	3.346	1.6
HCM Lane V/C Ratio	0.34	0.297	0.08	0.055
HCM Control Delay	9.9	9	8.8	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.5	1.2	0.3	0.2

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↑↑	
Traffic Vol, veh/h	0	0	0	0	311	0	0	0	0	0	124	205
Future Vol, veh/h	0	0	0	0	311	0	0	0	0	0	124	205
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	338	0	0	0	0	0	135	223
Number of Lanes	0	0	0	0	1	0	0	0	0	0	2	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	2	0
HCM Control Delay	11.6	9.9
HCM LOS	B	A

Lane	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	17%
Vol Right, %	0%	0%	83%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	311	83	246
LT Vol	0	0	0
Through Vol	311	83	41
RT Vol	0	0	205
Lane Flow Rate	338	90	268
Geometry Grp	2	7	7
Degree of Util (X)	0.446	0.134	0.356
Departure Headway (Hd)	4.755	5.372	4.785
Convergence, Y/N	Yes	Yes	Yes
Cap	757	666	750
Service Time	2.793	3.116	2.529
HCM Lane V/C Ratio	0.446	0.135	0.357
HCM Control Delay	11.6	9	10.2
HCM Lane LOS	B	A	B
HCM 95th-tile Q	2.3	0.5	1.6

Intersection	
Intersection Delay, s/veh	27.2
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Traffic Vol, veh/h	0	353	297	0	0	0	0	0	0	58	231	0
Future Vol, veh/h	0	353	297	0	0	0	0	0	0	58	231	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	384	323	0	0	0	0	0	0	63	251	0
Number of Lanes	0	1	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	1
HCM Control Delay	33.4	13.2
HCM LOS	D	B

Lane	EBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	0%
Vol Thru, %	54%	0%	100%
Vol Right, %	46%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	650	58	231
LT Vol	0	58	0
Through Vol	353	0	231
RT Vol	297	0	0
Lane Flow Rate	707	63	251
Geometry Grp	2	7	7
Degree of Util (X)	0.896	0.119	0.44
Departure Headway (Hd)	4.568	6.813	6.305
Convergence, Y/N	Yes	Yes	Yes
Cap	784	530	575
Service Time	2.641	4.513	4.005
HCM Lane V/C Ratio	0.902	0.119	0.437
HCM Control Delay	33.4	10.4	13.9
HCM Lane LOS	D	B	B
HCM 95th-tile Q	11.9	0.4	2.2

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑				
Traffic Vol, veh/h	0	0	0	0	281	85	0	242	0	0	0	0
Future Vol, veh/h	0	0	0	0	281	85	0	242	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	305	92	0	263	0	0	0	0
Number of Lanes	0	0	0	0	1	1	0	1	0	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	2
HCM Control Delay	11	10.6
HCM LOS	B	B

Lane	NBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	242	281	85
LT Vol	0	0	0
Through Vol	242	281	0
RT Vol	0	0	85
Lane Flow Rate	263	305	92
Geometry Grp	2	7	7
Degree of Util (X)	0.357	0.441	0.115
Departure Headway (Hd)	4.88	5.194	4.49
Convergence, Y/N	Yes	Yes	Yes
Cap	737	690	795
Service Time	2.915	2.94	2.235
HCM Lane V/C Ratio	0.357	0.442	0.116
HCM Control Delay	10.6	12	7.8
HCM Lane LOS	B	B	A
HCM 95th-tile Q	1.6	2.3	0.4

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑				
Traffic Vol, veh/h	0	133	0	0	0	0	0	221	47	0	0	0
Future Vol, veh/h	0	133	0	0	0	0	0	221	47	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	145	0	0	0	0	0	240	51	0	0	0
Number of Lanes	0	2	0	0	0	0	0	2	0	0	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	2
Conflicting Approach Right	NB	
Conflicting Lanes Right	2	0
HCM Control Delay	7.5	8.6
HCM LOS	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	61%	100%	100%
Vol Right, %	0%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	147	121	67	67
LT Vol	0	0	0	0
Through Vol	147	74	67	67
RT Vol	0	47	0	0
Lane Flow Rate	160	131	72	72
Geometry Grp	7	7	7	7
Degree of Util (X)	0.213	0.164	0.105	0.07
Departure Headway (Hd)	4.779	4.505	5.228	3.486
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	741	786	690	1034
Service Time	2.566	2.293	2.928	1.186
HCM Lane V/C Ratio	0.216	0.167	0.104	0.07
HCM Control Delay	8.9	8.2	8.5	6.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.6	0.4	0.2

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↑↑	
Traffic Vol, veh/h	0	0	0	0	427	0	0	0	0	0	34	188
Future Vol, veh/h	0	0	0	0	427	0	0	0	0	0	34	188
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	464	0	0	0	0	0	37	204
Number of Lanes	0	0	0	0	1	0	0	0	0	0	2	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	2	0
HCM Control Delay	13.8	9.7
HCM LOS	B	A

Lane	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	6%
Vol Right, %	0%	0%	94%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	427	23	199
LT Vol	0	0	0
Through Vol	427	23	11
RT Vol	0	0	188
Lane Flow Rate	464	25	217
Geometry Grp	2	7	7
Degree of Util (X)	0.584	0.039	0.299
Departure Headway (Hd)	4.533	5.641	4.974
Convergence, Y/N	Yes	Yes	Yes
Cap	794	633	719
Service Time	2.567	3.389	2.721
HCM Lane V/C Ratio	0.584	0.039	0.302
HCM Control Delay	13.8	8.6	9.8
HCM Lane LOS	B	A	A
HCM 95th-tile Q	3.8	0.1	1.3

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔								↔	↔	
Traffic Vol, veh/h	0	343	191	0	0	0	0	0	0	41	57	0
Future Vol, veh/h	0	343	191	0	0	0	0	0	0	41	57	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	373	208	0	0	0	0	0	0	45	62	0
Number of Lanes	0	1	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	1
HCM Control Delay	14.3	9.4
HCM LOS	B	A

Lane	EBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	0%
Vol Thru, %	64%	0%	100%
Vol Right, %	36%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	534	41	57
LT Vol	0	41	0
Through Vol	343	0	57
RT Vol	191	0	0
Lane Flow Rate	580	45	62
Geometry Grp	2	7	7
Degree of Util (X)	0.651	0.078	0.099
Departure Headway (Hd)	4.037	6.283	5.777
Convergence, Y/N	Yes	Yes	Yes
Cap	900	570	620
Service Time	2.047	4.027	3.521
HCM Lane V/C Ratio	0.644	0.079	0.1
HCM Control Delay	14.3	9.6	9.2
HCM Lane LOS	B	A	A
HCM 95th-tile Q	5	0.3	0.3

Intersection	
Intersection Delay, s/veh	11.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑				
Traffic Vol, veh/h	0	0	0	0	229	119	0	329	0	0	0	0
Future Vol, veh/h	0	0	0	0	229	119	0	329	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	249	129	0	358	0	0	0	0
Number of Lanes	0	0	0	0	1	1	0	1	0	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	2
HCM Control Delay	10.4	12.3
HCM LOS	B	B

Lane	NBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	329	229	119
LT Vol	0	0	0
Through Vol	329	229	0
RT Vol	0	0	119
Lane Flow Rate	358	249	129
Geometry Grp	2	7	7
Degree of Util (X)	0.479	0.375	0.17
Departure Headway (Hd)	4.827	5.426	4.72
Convergence, Y/N	Yes	Yes	Yes
Cap	744	660	755
Service Time	2.868	3.181	2.475
HCM Lane V/C Ratio	0.481	0.377	0.171
HCM Control Delay	12.3	11.4	8.5
HCM Lane LOS	B	B	A
HCM 95th-tile Q	2.6	1.7	0.6

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑				
Traffic Vol, veh/h	0	94	0	0	0	0	0	359	104	0	0	0
Future Vol, veh/h	0	94	0	0	0	0	0	359	104	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	102	0	0	0	0	0	390	113	0	0	0
Number of Lanes	0	2	0	0	0	0	0	2	0	0	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	2
Conflicting Approach Right	NB	
Conflicting Lanes Right	2	0
HCM Control Delay	7.8	9.5
HCM LOS	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	54%	100%	100%
Vol Right, %	0%	46%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	239	224	47	47
LT Vol	0	0	0	0
Through Vol	239	120	47	47
RT Vol	0	104	0	0
Lane Flow Rate	260	243	51	51
Geometry Grp	7	7	7	7
Degree of Util (X)	0.34	0.296	0.08	0.056
Departure Headway (Hd)	4.707	4.381	5.657	3.911
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	754	810	637	921
Service Time	2.494	2.168	3.357	1.611
HCM Lane V/C Ratio	0.345	0.3	0.08	0.055
HCM Control Delay	9.9	9	8.8	6.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.5	1.2	0.3	0.2

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↑↑	
Traffic Vol, veh/h	0	0	0	0	314	0	0	0	0	0	125	207
Future Vol, veh/h	0	0	0	0	314	0	0	0	0	0	125	207
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	341	0	0	0	0	0	136	225
Number of Lanes	0	0	0	0	1	0	0	0	0	0	2	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	2	0
HCM Control Delay	11.7	9.9
HCM LOS	B	A

Lane	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	17%
Vol Right, %	0%	0%	83%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	314	83	249
LT Vol	0	0	0
Through Vol	314	83	42
RT Vol	0	0	207
Lane Flow Rate	341	91	270
Geometry Grp	2	7	7
Degree of Util (X)	0.451	0.135	0.36
Departure Headway (Hd)	4.761	5.38	4.793
Convergence, Y/N	Yes	Yes	Yes
Cap	754	665	749
Service Time	2.801	3.126	2.538
HCM Lane V/C Ratio	0.452	0.137	0.36
HCM Control Delay	11.7	9	10.2
HCM Lane LOS	B	A	B
HCM 95th-tile Q	2.4	0.5	1.6

Intersection	
Intersection Delay, s/veh	28.5
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Traffic Vol, veh/h	0	357	300	0	0	0	0	0	0	59	233	0
Future Vol, veh/h	0	357	300	0	0	0	0	0	0	59	233	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	388	326	0	0	0	0	0	0	64	253	0
Number of Lanes	0	1	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	1
HCM Control Delay	35.2	13.3
HCM LOS	E	B

Lane	EBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	0%
Vol Thru, %	54%	0%	100%
Vol Right, %	46%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	657	59	233
LT Vol	0	59	0
Through Vol	357	0	233
RT Vol	300	0	0
Lane Flow Rate	714	64	253
Geometry Grp	2	7	7
Degree of Util (X)	0.908	0.122	0.445
Departure Headway (Hd)	4.577	6.837	6.329
Convergence, Y/N	Yes	Yes	Yes
Cap	786	528	572
Service Time	2.653	4.537	4.029
HCM Lane V/C Ratio	0.908	0.121	0.442
HCM Control Delay	35.2	10.5	14
HCM Lane LOS	E	B	B
HCM 95th-tile Q	12.4	0.4	2.3

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑				
Traffic Vol, veh/h	0	0	0	0	284	86	0	244	0	0	0	0
Future Vol, veh/h	0	0	0	0	284	86	0	244	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	309	93	0	265	0	0	0	0
Number of Lanes	0	0	0	0	1	1	0	1	0	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	2
HCM Control Delay	11.1	10.7
HCM LOS	B	B

Lane	NBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	244	284	86
LT Vol	0	0	0
Through Vol	244	284	0
RT Vol	0	0	86
Lane Flow Rate	265	309	93
Geometry Grp	2	7	7
Degree of Util (X)	0.36	0.446	0.117
Departure Headway (Hd)	4.891	5.202	4.498
Convergence, Y/N	Yes	Yes	Yes
Cap	735	691	795
Service Time	2.926	2.946	2.241
HCM Lane V/C Ratio	0.361	0.447	0.117
HCM Control Delay	10.7	12.1	7.8
HCM Lane LOS	B	B	A
HCM 95th-tile Q	1.6	2.3	0.4

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑				
Traffic Vol, veh/h	0	134	0	0	0	0	0	223	47	0	0	0
Future Vol, veh/h	0	134	0	0	0	0	0	223	47	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	146	0	0	0	0	0	242	51	0	0	0
Number of Lanes	0	2	0	0	0	0	0	2	0	0	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	2
Conflicting Approach Right	NB	
Conflicting Lanes Right	2	0
HCM Control Delay	7.5	8.6
HCM LOS	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	61%	100%	100%
Vol Right, %	0%	39%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	149	121	67	67
LT Vol	0	0	0	0
Through Vol	149	74	67	67
RT Vol	0	47	0	0
Lane Flow Rate	162	132	73	73
Geometry Grp	7	7	7	7
Degree of Util (X)	0.215	0.165	0.106	0.071
Departure Headway (Hd)	4.782	4.511	5.233	3.491
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	785	689	1033
Service Time	2.57	2.298	2.933	1.191
HCM Lane V/C Ratio	0.218	0.168	0.106	0.071
HCM Control Delay	8.9	8.2	8.6	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.8	0.6	0.4	0.2

Intersection	
Intersection Delay, s/veh	18.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↑↑	
Traffic Vol, veh/h	0	0	0	0	537	0	0	0	0	0	34	248
Future Vol, veh/h	0	0	0	0	537	0	0	0	0	0	34	248
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	584	0	0	0	0	0	37	270
Number of Lanes	0	0	0	0	1	0	0	0	0	0	2	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	2	0
HCM Control Delay	21.6	11.6
HCM LOS	C	B

Lane	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	4%
Vol Right, %	0%	0%	96%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	537	23	259
LT Vol	0	0	0
Through Vol	537	23	11
RT Vol	0	0	248
Lane Flow Rate	584	25	282
Geometry Grp	2	7	7
Degree of Util (X)	0.765	0.041	0.414
Departure Headway (Hd)	4.721	5.961	5.283
Convergence, Y/N	Yes	Yes	Yes
Cap	759	596	674
Service Time	2.784	3.746	3.068
HCM Lane V/C Ratio	0.769	0.042	0.418
HCM Control Delay	21.6	9	11.8
HCM Lane LOS	C	A	B
HCM 95th-tile Q	7.3	0.1	2

Intersection	
Intersection Delay, s/veh	24.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Traffic Vol, veh/h	0	453	251	0	0	0	0	0	0	41	57	0
Future Vol, veh/h	0	453	251	0	0	0	0	0	0	41	57	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	492	273	0	0	0	0	0	0	45	62	0
Number of Lanes	0	1	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	1
HCM Control Delay	26.4	9.9
HCM LOS	D	A

Lane	EBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	0%
Vol Thru, %	64%	0%	100%
Vol Right, %	36%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	704	41	57
LT Vol	0	41	0
Through Vol	453	0	57
RT Vol	251	0	0
Lane Flow Rate	765	45	62
Geometry Grp	2	7	7
Degree of Util (X)	0.862	0.083	0.106
Departure Headway (Hd)	4.054	6.68	6.173
Convergence, Y/N	Yes	Yes	Yes
Cap	895	534	578
Service Time	2.069	4.446	3.938
HCM Lane V/C Ratio	0.855	0.084	0.107
HCM Control Delay	26.4	10.1	9.7
HCM Lane LOS	D	B	A
HCM 95th-tile Q	10.9	0.3	0.4

Intersection	
Intersection Delay, s/veh	13
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑				
Traffic Vol, veh/h	0	0	0	0	254	119	0	389	0	0	0	0
Future Vol, veh/h	0	0	0	0	254	119	0	389	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	276	129	0	423	0	0	0	0
Number of Lanes	0	0	0	0	1	1	0	1	0	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	2
HCM Control Delay	11.4	14.5
HCM LOS	B	B

Lane	NBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	389	254	119
LT Vol	0	0	0
Through Vol	389	254	0
RT Vol	0	0	119
Lane Flow Rate	423	276	129
Geometry Grp	2	7	7
Degree of Util (X)	0.577	0.429	0.176
Departure Headway (Hd)	4.91	5.598	4.891
Convergence, Y/N	Yes	Yes	Yes
Cap	731	638	727
Service Time	2.962	3.375	2.667
HCM Lane V/C Ratio	0.579	0.433	0.177
HCM Control Delay	14.5	12.6	8.7
HCM Lane LOS	B	B	A
HCM 95th-tile Q	3.7	2.2	0.6

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑				
Traffic Vol, veh/h	0	119	0	0	0	0	0	419	104	0	0	0
Future Vol, veh/h	0	119	0	0	0	0	0	419	104	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	129	0	0	0	0	0	455	113	0	0	0
Number of Lanes	0	2	0	0	0	0	0	2	0	0	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	2
Conflicting Approach Right	NB	
Conflicting Lanes Right	2	0
HCM Control Delay	8.2	10.3
HCM LOS	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	57%	100%	100%
Vol Right, %	0%	43%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	279	244	60	60
LT Vol	0	0	0	0
Through Vol	279	140	60	60
RT Vol	0	104	0	0
Lane Flow Rate	304	265	65	65
Geometry Grp	7	7	7	7
Degree of Util (X)	0.411	0.336	0.104	0.073
Departure Headway (Hd)	4.87	4.571	5.803	4.055
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	744	792	618	883
Service Time	2.57	2.271	3.53	1.782
HCM Lane V/C Ratio	0.409	0.335	0.105	0.074
HCM Control Delay	10.9	9.6	9.2	7.1
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	2	1.5	0.3	0.2

Intersection						
Int Delay, s/veh	4.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4			4	
Traffic Vol, veh/h	25	534	0	0	170	0
Future Vol, veh/h	25	534	0	0	170	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	580	0	0	185	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	0	0	634	-
Stage 1	-	-	0	-
Stage 2	-	-	634	-
Critical Hdwy	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	-	443	0
Stage 1	-	-	-	0
Stage 2	-	-	529	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	443	-
Mov Cap-2 Maneuver	-	-	443	-
Stage 1	-	-	-	-
Stage 2	-	-	529	-

Approach	EB	SB
HCM Control Delay, s		18.8
HCM LOS		C

Minor Lane/Major Mvmt	EBL	EBT	SBLn1
Capacity (veh/h)	-	-	443
HCM Lane V/C Ratio	-	-	0.417
HCM Control Delay (s)	-	-	18.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑						↑↑	
Traffic Vol, veh/h	0	0	0	0	406	0	0	0	0	0	125	257
Future Vol, veh/h	0	0	0	0	406	0	0	0	0	0	125	257
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	441	0	0	0	0	0	136	279
Number of Lanes	0	0	0	0	1	0	0	0	0	0	2	0

Approach	WB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		WB
Conflicting Lanes Left	0	1
Conflicting Approach Right	SB	
Conflicting Lanes Right	2	0
HCM Control Delay	15.2	11.4
HCM LOS	C	B

Lane	WBLn1	SBLn1	SBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	14%
Vol Right, %	0%	0%	86%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	406	83	299
LT Vol	0	0	0
Through Vol	406	83	42
RT Vol	0	0	257
Lane Flow Rate	441	91	325
Geometry Grp	2	7	7
Degree of Util (X)	0.602	0.142	0.455
Departure Headway (Hd)	4.907	5.651	5.043
Convergence, Y/N	Yes	Yes	Yes
Cap	733	630	708
Service Time	2.967	3.424	2.815
HCM Lane V/C Ratio	0.602	0.144	0.459
HCM Control Delay	15.2	9.4	12
HCM Lane LOS	C	A	B
HCM 95th-tile Q	4.1	0.5	2.4

Intersection	
Intersection Delay, s/veh	69.3
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕								↕	↕	
Traffic Vol, veh/h	0	450	350	0	0	0	0	0	0	59	233	0
Future Vol, veh/h	0	450	350	0	0	0	0	0	0	59	233	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	489	380	0	0	0	0	0	0	64	253	0
Number of Lanes	0	1	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	1
HCM Control Delay	89.5	14.1
HCM LOS	F	B

Lane	EBLn1	SBLn1	SBLn2
Vol Left, %	0%	100%	0%
Vol Thru, %	56%	0%	100%
Vol Right, %	44%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	800	59	233
LT Vol	0	59	0
Through Vol	450	0	233
RT Vol	350	0	0
Lane Flow Rate	870	64	253
Geometry Grp	2	7	7
Degree of Util (X)	1.118	0.123	0.452
Departure Headway (Hd)	4.627	7.254	6.744
Convergence, Y/N	Yes	Yes	Yes
Cap	783	497	537
Service Time	2.678	4.954	4.444
HCM Lane V/C Ratio	1.111	0.129	0.471
HCM Control Delay	89.5	11	14.9
HCM Lane LOS	F	B	B
HCM 95th-tile Q	24.5	0.4	2.3

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑	↑		↑				
Traffic Vol, veh/h	0	0	0	0	305	86	0	294	0	0	0	0
Future Vol, veh/h	0	0	0	0	305	86	0	294	0	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	332	93	0	320	0	0	0	0
Number of Lanes	0	0	0	0	1	1	0	1	0	0	0	0

Approach	WB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	NB	
Conflicting Lanes Left	1	0
Conflicting Approach Right		WB
Conflicting Lanes Right	0	2
HCM Control Delay	12.1	11.9
HCM LOS	B	B

Lane	NBLn1	WBLn1	WBLn2
Vol Left, %	0%	0%	0%
Vol Thru, %	100%	100%	0%
Vol Right, %	0%	0%	100%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	294	305	86
LT Vol	0	0	0
Through Vol	294	305	0
RT Vol	0	0	86
Lane Flow Rate	320	332	93
Geometry Grp	2	7	7
Degree of Util (X)	0.44	0.492	0.12
Departure Headway (Hd)	4.962	5.345	4.639
Convergence, Y/N	Yes	Yes	Yes
Cap	722	670	767
Service Time	3.007	3.104	2.398
HCM Lane V/C Ratio	0.443	0.496	0.121
HCM Control Delay	11.9	13.2	8
HCM Lane LOS	B	B	A
HCM 95th-tile Q	2.3	2.7	0.4

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑				
Traffic Vol, veh/h	0	156	0	0	0	0	0	273	47	0	0	0
Future Vol, veh/h	0	156	0	0	0	0	0	273	47	0	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	170	0	0	0	0	0	297	51	0	0	0
Number of Lanes	0	2	0	0	0	0	0	2	0	0	0	0

Approach	EB	NB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left		EB
Conflicting Lanes Left	0	2
Conflicting Approach Right	NB	
Conflicting Lanes Right	2	0
HCM Control Delay	7.8	9.1
HCM LOS	A	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	66%	100%	100%
Vol Right, %	0%	34%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	182	138	78	78
LT Vol	0	0	0	0
Through Vol	182	91	78	78
RT Vol	0	47	0	0
Lane Flow Rate	198	150	85	85
Geometry Grp	7	7	7	7
Degree of Util (X)	0.271	0.196	0.126	0.085
Departure Headway (Hd)	4.933	4.694	5.364	3.62
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	732	770	670	990
Service Time	2.633	2.394	3.083	1.339
HCM Lane V/C Ratio	0.27	0.195	0.127	0.086
HCM Control Delay	9.5	8.5	8.9	6.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.7	0.4	0.3

Intersection

Int Delay, s/veh 3.7

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations		4			4	
Traffic Vol, veh/h	22	657	0	0	143	0
Future Vol, veh/h	22	657	0	0	143	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	714	0	0	155	0

Major/Minor Major1 Minor2

Conflicting Flow All	0	0	762	-
Stage 1	-	-	0	-
Stage 2	-	-	762	-
Critical Hdwy	4.12	-	6.42	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.42	-
Follow-up Hdwy	2.218	-	3.518	-
Pot Cap-1 Maneuver	-	-	373	0
Stage 1	-	-	-	0
Stage 2	-	-	461	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	373	-
Mov Cap-2 Maneuver	-	-	373	-
Stage 1	-	-	-	-
Stage 2	-	-	461	-

Approach EB SB

HCM Control Delay, s 21.4
 HCM LOS C

Minor Lane/Major Mvmt EBL EBT SBLn1

Capacity (veh/h)	-	-	373
HCM Lane V/C Ratio	-	-	0.417
HCM Control Delay (s)	-	-	21.4
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	2

Intersection	
Intersection Delay, s/veh	11.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑								↑	↑	
Traffic Vol, veh/h	0	453	251	0	0	0	0	0	0	41	57	0
Future Vol, veh/h	0	453	251	0	0	0	0	0	0	41	57	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	492	273	0	0	0	0	0	0	45	62	0
Number of Lanes	0	2	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	2
HCM Control Delay	11.9	9.8
HCM LOS	B	A

Lane	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%
Vol Thru, %	100%	38%	0%	100%
Vol Right, %	0%	62%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	302	402	41	57
LT Vol	0	0	41	0
Through Vol	302	151	0	57
RT Vol	0	251	0	0
Lane Flow Rate	328	437	45	62
Geometry Grp	7	7	7	7
Degree of Util (X)	0.444	0.538	0.082	0.105
Departure Headway (Hd)	4.868	4.43	6.631	6.126
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	742	817	540	584
Service Time	2.588	2.15	4.377	3.872
HCM Lane V/C Ratio	0.442	0.535	0.083	0.106
HCM Control Delay	11.4	12.2	10	9.6
HCM Lane LOS	B	B	A	A
HCM 95th-tile Q	2.3	3.3	0.3	0.4

Intersection

Intersection Delay, s/veh	18.1
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑								↑	↑	
Traffic Vol, veh/h	0	450	350	0	0	0	0	0	0	59	233	0
Future Vol, veh/h	0	450	350	0	0	0	0	0	0	59	233	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	489	380	0	0	0	0	0	0	64	253	0
Number of Lanes	0	2	0	0	0	0	0	0	0	1	1	0

Approach	EB	SB
Opposing Approach		
Opposing Lanes	0	0
Conflicting Approach Left	SB	
Conflicting Lanes Left	2	0
Conflicting Approach Right		EB
Conflicting Lanes Right	0	2
HCM Control Delay	19.6	14
HCM LOS	C	B

Lane	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	0%	0%	100%	0%
Vol Thru, %	100%	30%	0%	100%
Vol Right, %	0%	70%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	300	500	59	233
LT Vol	0	0	59	0
Through Vol	300	150	0	233
RT Vol	0	350	0	0
Lane Flow Rate	326	543	64	253
Geometry Grp	7	7	7	7
Degree of Util (X)	0.508	0.772	0.126	0.461
Departure Headway (Hd)	5.611	5.117	7.053	6.547
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	646	712	509	552
Service Time	3.311	2.817	4.783	4.277
HCM Lane V/C Ratio	0.505	0.763	0.126	0.458
HCM Control Delay	14	22.9	10.8	14.8
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	2.9	7.4	0.4	2.4

Queuing and Blocking Report

Baseline

12/18/2024

Intersection: 5: IH 37 SB Frontage & Florida St

Movement	WB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	31	29	171
Average Queue (ft)	31	28	81
95th Queue (ft)	31	29	185
Link Distance (ft)	31	314	314
Upstream Blk Time (%)	15		
Queuing Penalty (veh)	46		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: IH 37 SB Frontage & Carolina St

Movement	EB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	70	68	97
Average Queue (ft)	58	44	53
95th Queue (ft)	74	76	101
Link Distance (ft)		250	250
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: IH 37 NB Frontage & Florida St

Movement	WB	NB
Directions Served	T	T
Maximum Queue (ft)	55	31
Average Queue (ft)	49	31
95th Queue (ft)	64	31
Link Distance (ft)	291	28
Upstream Blk Time (%)		20
Queuing Penalty (veh)		49
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

12/18/2024

Intersection: 5: IH 37 SB Frontage & Florida St

Movement	WB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	31	324	329
Average Queue (ft)	31	81	171
95th Queue (ft)	31	283	358
Link Distance (ft)	31	314	314
Upstream Blk Time (%)	21	1	11
Queuing Penalty (veh)	66	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: IH 37 SB Frontage & Carolina St

Movement	EB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	75	28	130
Average Queue (ft)	56	22	72
95th Queue (ft)	71	40	135
Link Distance (ft)		250	250
Upstream Blk Time (%)	2		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: IH 37 NB Frontage & Florida St

Movement	WB	NB
Directions Served	T	T
Maximum Queue (ft)	56	54
Average Queue (ft)	55	36
95th Queue (ft)	57	51
Link Distance (ft)	291	28
Upstream Blk Time (%)		14
Queuing Penalty (veh)		34
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: IH 37 SB Frontage & Florida St

Movement	WB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	31	29	329
Average Queue (ft)	31	6	302
95th Queue (ft)	31	25	380
Link Distance (ft)	31	314	314
Upstream Blk Time (%)	28		71
Queuing Penalty (veh)	120		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: IH 37 SB Frontage & Carolina St

Movement	EB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	75	29	30
Average Queue (ft)	56	6	12
95th Queue (ft)	71	25	36
Link Distance (ft)		250	250
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: IH 37 NB Frontage & Florida St

Movement	WB	NB
Directions Served	T	T
Maximum Queue (ft)	77	54
Average Queue (ft)	58	40
95th Queue (ft)	87	59
Link Distance (ft)	291	28
Upstream Blk Time (%)		27
Queuing Penalty (veh)		88
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

12/18/2024

Intersection: 5: IH 37 SB Frontage & Florida St

Movement	WB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	31	329	348
Average Queue (ft)	31	82	207
95th Queue (ft)	31	287	358
Link Distance (ft)	31	314	314
Upstream Blk Time (%)	23	8	16
Queuing Penalty (veh)	71	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: IH 37 SB Frontage & Carolina St

Movement	EB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	75	28	118
Average Queue (ft)	56	22	77
95th Queue (ft)	71	40	125
Link Distance (ft)		250	250
Upstream Blk Time (%)	2		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: IH 37 NB Frontage & Florida St

Movement	WB	NB
Directions Served	T	T
Maximum Queue (ft)	56	54
Average Queue (ft)	55	35
95th Queue (ft)	57	51
Link Distance (ft)	291	28
Upstream Blk Time (%)		13
Queuing Penalty (veh)		31
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report

Baseline

12/18/2024

Intersection: 5: IH 37 SB Frontage & Florida St

Movement	WB	SB
Directions Served	T	TR
Maximum Queue (ft)	54	329
Average Queue (ft)	39	325
95th Queue (ft)	55	328
Link Distance (ft)	31	314
Upstream Blk Time (%)	28	96
Queuing Penalty (veh)	151	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: IH 37 SB Frontage & Carolina St

Movement	EB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	72	29	51
Average Queue (ft)	68	23	22
95th Queue (ft)	80	41	54
Link Distance (ft)	71	250	250
Upstream Blk Time (%)	9		
Queuing Penalty (veh)	62		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: IH 37 NB Frontage & Florida St

Movement	WB	WB	NB
Directions Served	T	R	T
Maximum Queue (ft)	116	141	49
Average Queue (ft)	57	66	34
95th Queue (ft)	109	159	47
Link Distance (ft)	291	291	28
Upstream Blk Time (%)			23
Queuing Penalty (veh)			89
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Baseline

12/18/2024

Intersection: 5: IH 37 SB Frontage & Florida St

Movement	WB	SB	SB
Directions Served	T	T	TR
Maximum Queue (ft)	31	329	329
Average Queue (ft)	31	268	325
95th Queue (ft)	31	465	337
Link Distance (ft)	31	314	314
Upstream Blk Time (%)	25	58	80
Queuing Penalty (veh)	102	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: IH 37 SB Frontage & Carolina St

Movement	EB	SB	SB
Directions Served	TR	L	T
Maximum Queue (ft)	75	28	65
Average Queue (ft)	74	23	37
95th Queue (ft)	75	41	60
Link Distance (ft)	71	250	250
Upstream Blk Time (%)	9		
Queuing Penalty (veh)	73		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: IH 37 NB Frontage & Florida St

Movement	WB	NB
Directions Served	T	T
Maximum Queue (ft)	57	31
Average Queue (ft)	52	31
95th Queue (ft)	61	31
Link Distance (ft)	291	28
Upstream Blk Time (%)		22
Queuing Penalty (veh)		64
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

TIA THRESHOLD WORKSHEET

APPENDIX F

Traffic Impact Analysis (TIA) Threshold Worksheet

Complete this form as an aid to determine if your project requires a Traffic Impact Analysis Study in accordance with UDC 35-502(b)(2). ITE 10th Edition.

Project Name: 418 Florida Convenience Store
 Project Location: 418 Florida Street
 Email: r-arredondo@acgroupllc.com
 Jurisdiction: COSA ICL COSA ETJ Other:
 TIA Record Number (if applicable):

Worksheet Prepared by: Rene Arredondo
 Company: AC Group, LLC
 Address: 5828 Sebastian Place, Suite 108
 Associated Record Type: Zoning MDP Plat Building Permit
 Associated Record Number:

Proposed Type of Development:			Critical Peak Hour:		Peak Hour Override:	
Land Use	ITE Code	Project Size	Unit	Peak Hour Trip Rate	Peak Hour Trips (PHT)	
Shopping Center	820	3.00	1,000 SF GLA	0.94	3	
Super Convenience Market/Gas St	960	12.00	Fueling Position	28.08	337	

The rates and critical peak hour are automatically calculated in this section based on the linear rates of ITE 10th edition. To change the automatic peak hour calculator, check the Peak Hour Override box and input the correct peak hour. For custom or additional fields, please use the second page of the worksheet.

Previous Development on Site:			Critical Peak Hour:		Peak Hour Override:	
Land Use	ITE Code	Project Size	Unit	Peak Hour Trip Rate	Peak Hour Trips (PHT)	

Total Trips: Please ensure land uses for all lots/parcels are included in the above sections.

Proposed Development	Previous Development	Difference in PHT
340		340 100%

Previous TIA Report (if property has a TIA on file)

Proposed Development	Approved TIA PHTs	TIA Number:
340		TIA Name:

If there is an increase of 76 PHT and an increase of 10% of the total PHT, a new TIA is required

*** ITEMS BELOW THIS LINE ARE FOR OFFICIAL USE ONLY. DO NOT WRITE BELOW THIS LINE. ***

Turn Lane Requirements for Developments with Less than 76 PHT per UDC 35-502(e)(2) (For more than 76 PHT, this analysis will be included in the TIA)

Right Turn Lanes Required at _____ at _____
 Left Turn Lanes Required at _____ at _____

Comments:

This development is located on a TxDOT roadway. TxDOT review of ROW and access is required. Please submit the plat and other associated documents (site plan etc.) to TxDOT for review and approval.

Florida St and Carolina St - City of San Antonio ROW identified on the City's Major Thoroughfare Plan as Secondary Arterial TYPE A (86' ROW - 43' from centerline: 48' of pavement - 24' from centerline). HWY 281 (IH 37) - TxDot ROW. ROW dedication and pavement construction may be required. Bike facilities are required on all collector roadways and above per Table 506-3, note 5, 8, 13, & 14.

- A TIA Report is Required. A TIA Report is Not Required
- A TIA Update is Required A Circulation Study is Required

Reviewed by: June Puente Date: 4/24/2024



FIRM FBPE No. F111727

5826 Sebastian Place, Suite 438
San Antonio, Texas 78250

Office: (214) 255-2447
Fax: (214) 509-9690

AERIAL PHOTOGRAPH

418 FLORIDA CONVENIENCE STORE



EXHIBIT B

TIA ROUGH PROPORTIONALITY WORKSHEET

APPENDIX G



Rough Proportionality Worksheet for Roadway Infrastructure Improvements City of San Antonio, Texas

Development Name: 418 Florida Convenience Store
Applicant: SEDA Consulting Engineers, Inc.
Legal Description (Lot, Block): NCB 3011 BLK 9 LOT 20
Case / Plat Number: Pending **Date:** May 15, 2024

Worksheet Last Updated: 05/14/2010

DEMAND - Traffic Generated by Proposed Development:

Peak Period to Analyze:

AM Peak
 PM Peak

Trip Generation Method:

Linear Rates
 Regression Equations

Land Use Type ¹ :	Development Unit:	Intensity ² :	Peak Hour Trip Rate ³ :	Internal Capture Rate ⁴ :	Trip Length ⁵ : (miles)	Demand: (vehicle-miles)	Impact of Development ⁶ : (\$)
Shopping Center	1,000 SF GFA	3	2.46	0%	1.50	11.07	\$25,367
Gasoline/Service Station w/ Conv Market	Fueling Position	12	5.89	0%	1.00	70.68	\$161,963

This row allows for the entry of unique or uncommon land uses not included within the current ITE Trip Generation; or when circumstances require manual entry of the development unit and/or trip rate. It shall only be used when (a) sufficient data is available to support an alternative calculation; and (b) it is agreed to by the City during the TIA scoping meeting.

--	--	--	--	--	--

IMPACT OF DEMAND PLACED ON THOROUGHFARE SYSTEM: 81.75 \$187,330
Estimated Average Cost Per Vehicle-Mile⁷: \$ 2,291.50

Notes: ¹ Per the ITE Trip Generation Manual; ² Intensity is the amount of the development unit that is proposed; ³ Trip Rate is the trip generation rate with a reduction for pass-by's per the ITE Trip Generation Handbook. When regression equations are used, the rate is derived from the equation at the given intensity. When this results in a negative value, the rate defers back to the linear method and the cell is shaded blue. For uses without a regression equation, the rate defers back to the linear method and the cell is shaded gray. ITE does not have data available for all land uses during the AM Peak; when data is unavailable the PM Peak Period may be used. ⁴ Internal Capture should only be used when supported by a traffic study; ⁵ Trip length shall not (1) exceed the SA/BC MPO Modeled Trip Length, (2) exceed 1.5 miles, or (3) be less than 1.0 mile; ⁶ Based on an estimated average cost to provide the capacity (construction, engineering, and right-of-way dedication) for one vehicle mile. ⁷ Estimated average cost per vehicle-mile is derived from the 'Summary of Roadway Costs' worksheet.

Roadway Supply- Off-Site Roads to be Built or Funded by the Applicant:

Roadway Name:	Classification:	Roadway Length: (Feet)	Number of Thru Lanes:	Supply Cost Estimate ⁸ : (\$)	Cost Estimate based on Detailed OPCC ⁹ : (\$)

ROADWAY SUPPLY ADDED TO SYSTEM SUBTOTAL: \$0

Intersection Improvements - Specific Improvements to be Built or Funded by the Applicant:

Intersection:	Description of Improvement:	Estimated Cost ¹⁰ : (\$)

INTERSECTION IMPROVEMENTS ADDED TO SYSTEM SUBTOTAL: \$0

Right-of-Way Dedication - ROW to be dedicated by the Applicant:

ROW Dedication:	General Description of ROW Dedication:	Estimated Cost ¹¹ : (\$)

RIGHT-OF-WAY DEDICATION SUPPLY ADDED TO SYSTEM SUBTOTAL: \$0
TOTAL VALUE OF SUPPLY ADDED TO THOROUGHFARE SYSTEM: \$0

Notes: ⁸ Based on an estimated cost to provide the roadway supply (construction and engineering) based on the classification; ⁹ Revised cost estimate, if available, for construction and engineering based on more detailed preliminary engineering and/or design; ¹⁰ Estimated intersection improvement costs; ¹¹ Cost of right-of-way should be estimated using Appraisal District values (number of square feet of dedication multiplied by the unimproved land values).

SUPPLY / DEMAND COMPARISON:

A comparison of the capacity provided by a development against the traffic impacts of the proposed development.

	Cost	Comparison
TOTAL IMPACT OF DEMAND PLACED ON THOROUGHFARE SYSTEM:	\$187,330	
TOTAL VALUE OF CAPACITY (SUPPLY) ADDED TO THOROUGHFARE SYSTEM:	\$0	

Note: Minimum Standards for access to and from a development may supersede the results of this analysis.

TIA SCOPING MEETING DOCUMENTS

APPENDIX H

TIA Scoping Meeting Worksheet



Reference # _____

This worksheet was developed to facilitate the TIA scoping process, as per Section 35-502 of the UDC. The developer's representative shall complete the background information section and developer proposed portion of the TIA parameter section and submit this worksheet to the City with requested supplemental information two weeks prior to the scoping meeting.

Background Information

Project Name: 418 Florida Convenience Store

Developer Representative: Rene Arredondo, P.E.

Representative's Contact Information: Phone: 210.535.3558 Email: r-arredondo@acgroupllc.com

Proposed land uses: Shopping Center (ITE: 820), Super C-Store (ITE: 960)

Is the project located in the ETJ? Yes No (if yes, then County will be involved in the review)

Include with worksheet: Trip generation worksheet Preliminary Trip Distribution and Assignment Diagrams
 Site plan with driveway locations Basis for background traffic growth rate

TIA Parameters

Parameter	Developer Proposed	City Concurrence?		If no, identify modifications required
		Yes	No	
Trip Generation Method	ITE Trip Generation (10 th Edition)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Site Build Out Year (indicate any phasing)	2025	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Background Traffic Growth Rate	1.00%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Proposed Peak Periods	AM: <input checked="" type="checkbox"/> PM: <input checked="" type="checkbox"/> Other: _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Scenarios for Evaluation (e.g. Existing, No Build, Build, or Phased Build Conditions)	1) Existing (2024)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	2) No Build (2025)			
	3) Build Out (2025)			
Intersections for Analysis (in addition to all site driveways; if more than 6 intersections please attach list)	1) IH 37 NB and Carolina St	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	2) IH 37 NB and Florida St			
	3) IH 37 SB and Florida St			
	4) IH 37 SB and Carolina St			
	5) _____			
	6) _____			

Additional Comments/Concerns to be Addressed in the TIA

Florida & Carolina Streets are both Secondary Arterial Type B 86' ROW
Driveway No.1 to be limited to right-in only
Fuel Tanks must be a minimum of 100' from residential

Agreement on TIA Parameters

TIA Type: Study Level (> 500 acres) Level 1 (76-250 PHT) Level 2 (251-1,000 PHT) Level 3 (1,001 or more)

Note: TIA Levels are differentiated for fee purposes only

Date: 05 / 03 / 2024

City of San Antonio

Bexar County (if applicable)

Developer's Representative

Marc A Courchesne
 Printed Name of Representative

Printed Name of Representative

Rene Arredondo, P.E.
 Printed Name of Representative

Trip Generation

TRIP GENERATION										
ITE Code	Weekday 24 Hour		Weekday AM Peak		Weekday PM Peak		Saturday 24 Hour		Saturday Peak Hour	
820	Shopping Center									
Rate / KSF	37.75		0.94		3.81		46.12		4.50	
KSF	3.000		3.000		3.000		3.000		3.000	
Trips	113		3		11		138		14	
% Enter/Exit	50%	50%	62%	38%	48%	52%	50%	50%	52%	48%
# Enter/Exit	56	57	2	1	5	6	69	69	7	7
960	Super Convenience Market / Gas Station									
Rate / VFP	230.52		28.08		22.96		291.67		23.26	
VFP	12		12		12		12		12	
Trips	2,766		337		276		3,500		279	
% Enter/Exit	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
# Enter/Exit	1,383	1,383	168	169	138	138	1,750	1,750	139	140
Total Trips	1,439	1,440	170	170	143	144	1,819	1,819	146	147
	2,879		340		287		3,638		293	

Source: ITE Trip Generation Manual, Tenth Edition

Trip Distribution

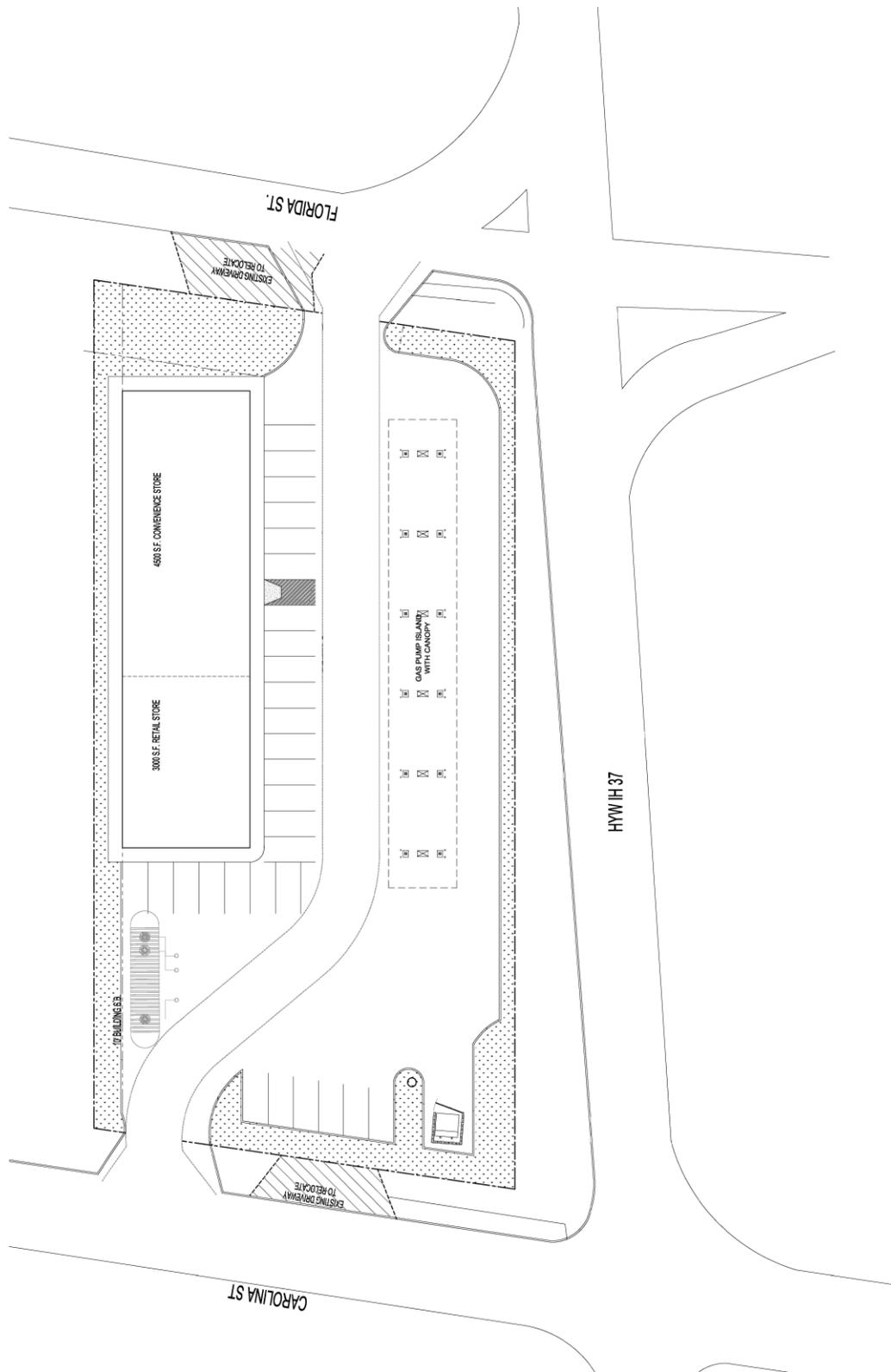
TRIP DISTRIBUTION								
	Weekday AM Peak				Weekday AM Peak			
	NB IH 37	SB IH 37	EB Carolina	WB Florida	NB IH 37	SB IH 37	EB Carolina	WB Florida
Enter	35%	35%	15%	15%	35%	35%	15%	15%
	60	60	25	25	50	50	22	21
	170				143			
Exit	NB IH 37	SB IH 37	EB Carolina	WB Florida	NB IH 37	SB IH 37	EB Carolina	WB Florida
	35%	35%	15%	15%	35%	35%	15%	15%
	60	60	25	25	50	50	22	22
	170				144			

Background Growth

An annual average growth rate (AAGR) was calculated at less than 1.00% per year based on historical average daily traffic (ADT) counts available on the Texas Department of Transportation (TxDOT) Traffic Count Database System (TCDS) for 2015 and 2020. Historical average daily traffic data was available for Florida Street, west of Interstate Highway 37. This rate represents the annual average growth rate (AAGR) for the area surrounding in the vicinity of the proposed development. The table below illustrates ADT data for Florida Street, west of Interstate Highway 37 and adjacent to the proposed development.

Table 1. Annual Average Growth Rate for Florida Street, West of Interstate Highway 37

Location	Year	ADT	Rate of Growth	Proposed AAGR (%)
	2015	4,319	-	
Florida St	2020	4,353	0.001569	1.00%



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

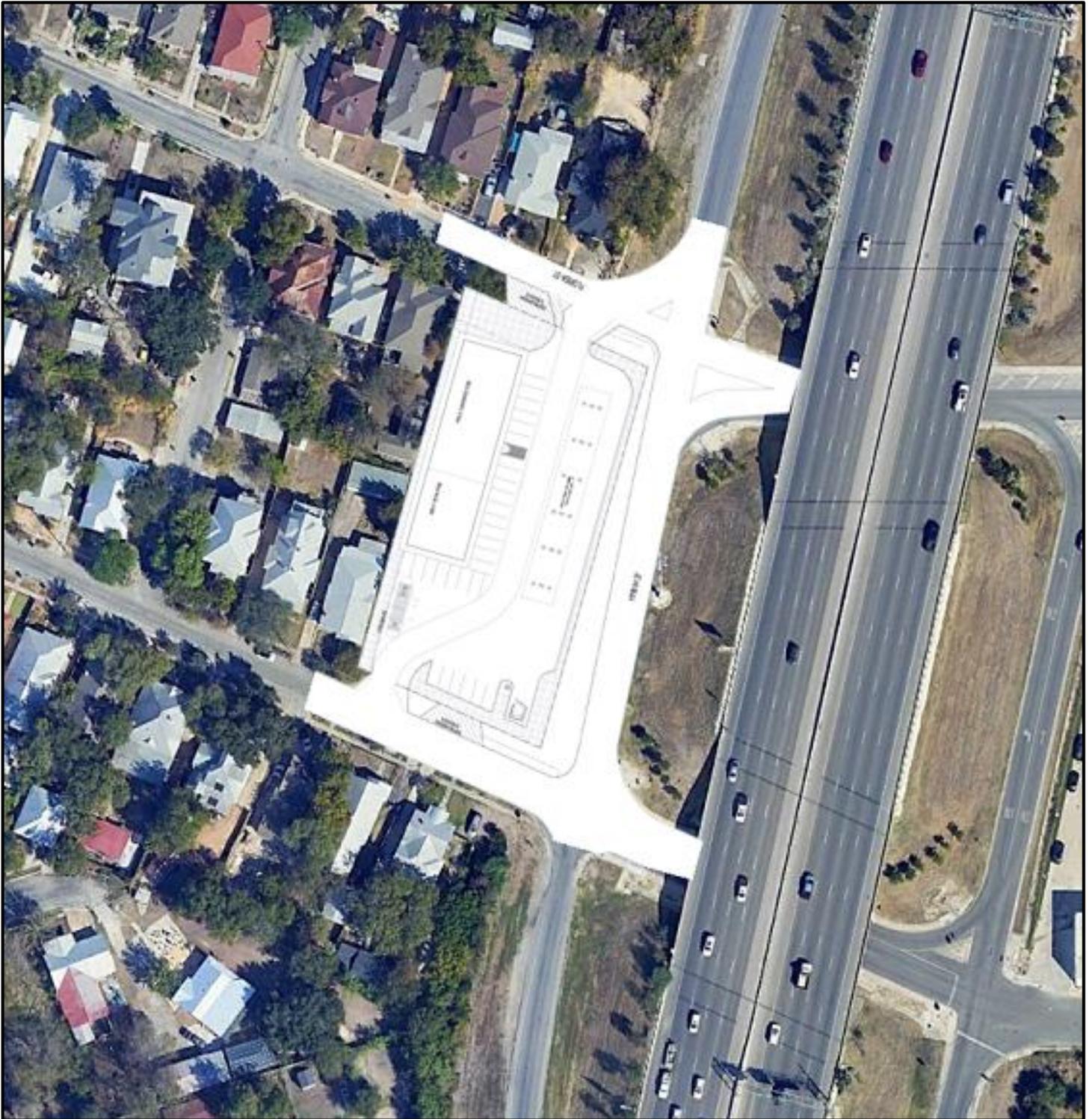
Office: (210) 255-2447
Fax: (210) 509-9680

SITE LAYOUT

418 FLORIDA CONVENIENCE STORE



EXHIBIT A



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78253

Office: (210) 258-2447
Fax: (210) 509-9680

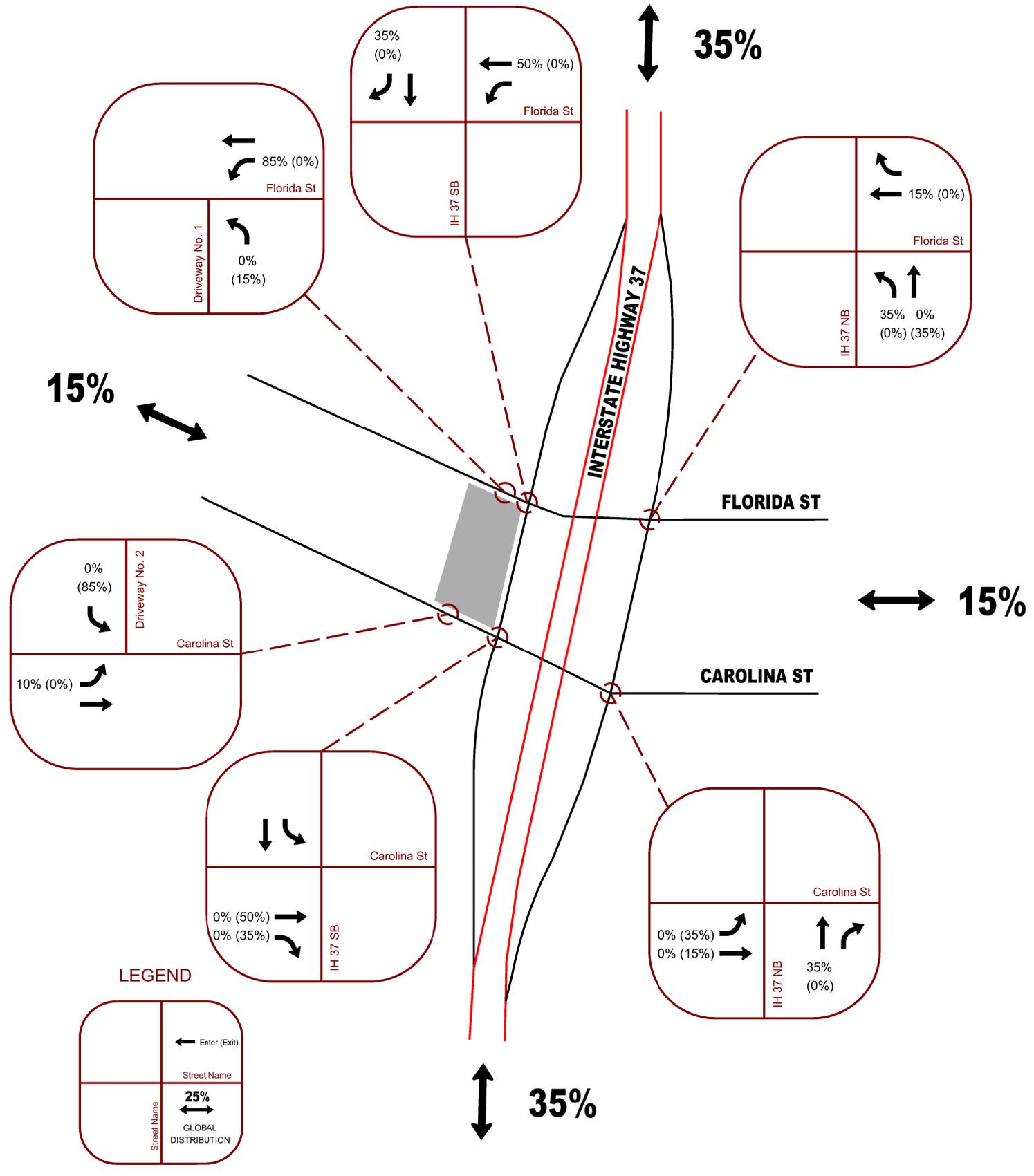
AERIAL PHOTOGRAPH

418 FLORIDA CONVENIENCE STORE



NORTH

EXHIBIT B



LEGEND



TRIP DISTRIBUTION (PERCENTAGES)

418 FLORIDA CONVENIENCE STORE

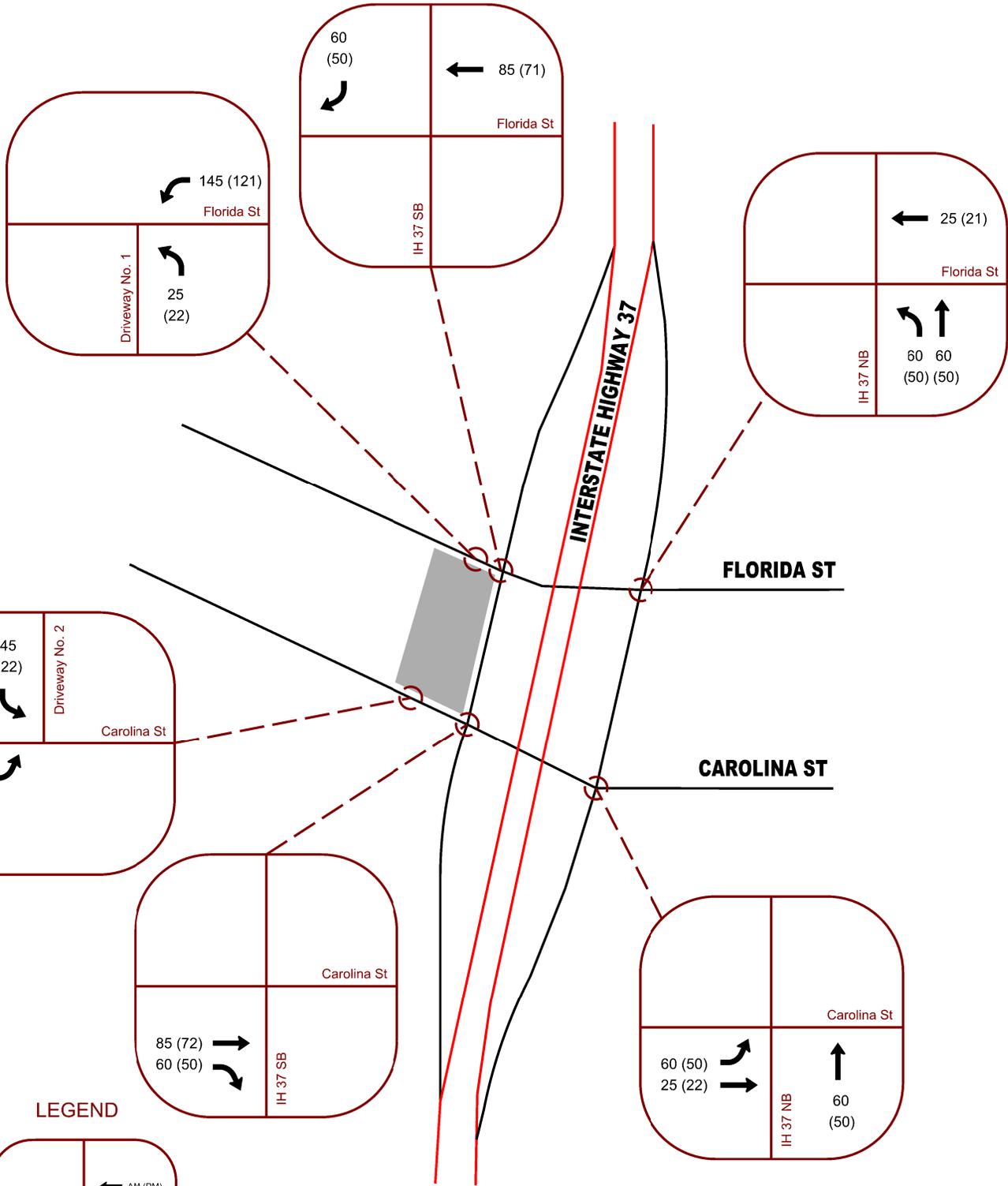


FIRM TBPE No. F-11727

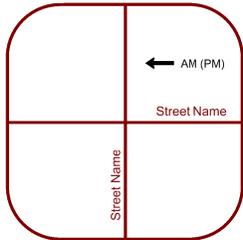
5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

Office: (210) 256-2447
Fax: (210) 509-9680

EXHIBIT C



LEGEND



FIRM TBPE No. F-11727

5828 Sebastian Place, Suite 108
San Antonio, Texas 78250

Office: (210) 256-2447
Fax: (210) 509-9680

TRIP DISTRIBUTION (VOLUMES)

418 FLORIDA CONVENIENCE STORE



NORTH

EXHIBIT D

Traffic Impact Analysis (TIA) Threshold Worksheet

Complete this form as an aid to determine if your project requires a Traffic Impact Analysis Study in accordance with UDC 35-502(b)(2). ITE 10th Edition.

Project Name: 418 Florida Convenience Store
 Project Location: 418 Florida Street
 Email: r-arredondo@acgroupllc.com
 Jurisdiction: COSA ICL COSA ETJ Other:
 TIA Record Number (if applicable):

Worksheet Prepared by: Rene Arredondo
 Company: AC Group, LLC
 Address: 5828 Sebastian Place, Suite 108
 Associated Record Type: Zoning MDP Plat Building Permit
 Associated Record Number:

Owner Owner's Agent
 Date: 4/18/2024

Proposed Type of Development:			Critical Peak Hour:	AM	PM	Peak Hour Override:
Land Use	ITE Code	Project Size	Unit	Peak Hour Trip Rate	Peak Hour Rate	Peak Hour Trips (PHT)
Shopping Center	820	3.00	1,000 SF GLA	0.94		3
Super Convenience Market/Gas St	960	12.00	Fueling Position	28.08		337

The rates and critical peak hour are automatically calculated in this section based on the linear rates of ITE 10th edition. To change the automatic peak hour calculator, check the Peak Hour Override box and input the correct peak hour. For custom or additional fields, please use the second page of the worksheet.

Previous Development on Site:			Critical Peak Hour:	AM	PM	Peak Hour Override:
Land Use	ITE Code	Project Size	Unit	Peak Hour Trip Rate	Peak Hour Rate	Peak Hour Trips (PHT)

Total Trips: Please ensure land uses for all lots/parcels are included in the above sections.

Proposed Development	Previous Development	Difference in PHT
340		340 100%

Previous TIA Report (if property has a TIA on file)

Proposed Development	Approved TIA PHTs	TIA Number:
340		
		TIA Name:

If there is an increase of 76 PHT and an increase of 10% of the total PHT, a new TIA is required

*** ITEMS BELOW THIS LINE ARE FOR OFFICIAL USE ONLY. DO NOT WRITE BELOW THIS LINE. ***

Turn Lane Requirements for Developments with Less than 76 PHT per UDC 35-502(e)(2) (For more than 76 PHT, this analysis will be included in the TIA)

Right Turn Lanes Required at _____ at _____
 Left Turn Lanes Required at _____ at _____

Comments:

This development is located on a TxDOT roadway. TxDOT review of ROW and access is required. Please submit the plat and other associated documents (site plan etc.) to TxDOT for review and approval.

- A TIA Report is Required. A TIA Report is Not Required
- A TIA Update is Required A Circulation Study is Required

Reviewed by: _____ Date: _____

