



**CITY OF FRIENDSWOOD
PLANNING AND ZONING COMMISSION
THURSDAY, OCTOBER 22, 2020 - 7:00 PM**

AGENDA

NOTICE IS HEREBY GIVEN OF A FRIENDSWOOD REGULAR MEETING TO BE HELD AT 910 S. FRIENDSWOOD DRIVE, FRIENDSWOOD, TEXAS, FRIENDSWOOD CITY HALL, COUNCIL CHAMBERS, REGARDING THE ITEMS OF BUSINESS ACCORDING TO THE AGENDA LISTED BELOW:

- 1. Call to order**
- 2. Communication from the public/committee liaisons**
(To comply with provisions of the Open Meetings Act, the Commission may not deliberate on subjects discussed under this agenda item. However, the Commission may direct such subjects be placed on a later regular Commission agenda for discussion and/or possible action)
- 3. Discussion Items**
 - A. Work shop with Friendswood Downtown Economic Development Corporation (FDEDC) to get an update on the progress of projects and discuss the Downtown Improvement Plan, Zoning Ordinance Section 8.N. Downtown District, and Design Criteria Manual - Appendix E Downtown District Amenities
- 4. Consideration and possible action regarding future Planning and Zoning Commission meeting dates**
 - A. Thursday, November 12, 2020 - Regular Meeting
Thursday, November 26, 2020 - No Meeting; City Holiday
- 5. Communications**
 - A. From Commissioners - suggestions for future agenda items, general comments and/or updates from liaison assignments
 - B. From Planning Subcommittee – update on tasks
 - C. From Ordinance Subcommittee – update on tasks
 - D. From City Council Liaison, Robert Griffon - general comments and communication from City Council

- E. From Staff - GIS Hub on Web Site, commercial and residential project updates, City Council action and ordinance updates

6. Adjournment



Aubrey Harbin, LEED AP
Director of Community Development/City Planning

This facility is wheelchair accessible and accessible parking spaces are available. Requests for accommodations or interpretive service must be made **two (2)** business days or more prior to this meeting. Please contact the City Secretary's Office at (281) 996-3270 for further information.

**I, MELINDA WELSH, CITY SECRETARY OF THE CITY OF FRIENDSWOOD DO
HEREBY CERTIFY THAT THE ABOVE NOTICE OF MEETING OF THE
FRIENDSWOOD PLANNING AND ZONING WAS POSTED IN A PLACE
CONVENIENT TO THE GENERAL PUBLIC IN COMPLIANCE WITH CHAPTER 551,
TEXAS GOVERNMENT CODE, ON**

DATE

AT TIME

MELINDA WELSH, TRMC
CITY SECRETARY

All meetings of the Planning & Zoning Commission are open to the public, except when there is a necessity to meet in an Executive Session (closed to the public) under the provisions of Section 551, Texas Government Code. The Planning & Zoning Commission reserves the right to convene into Executive Session to hear any of the above described agenda items that qualifies for an executive session by publicly announcing the applicable section number of the Open Meetings Act.



FRIENDSWOOD PLANNING & ZONING COMMISSION

AGENDA ITEM FORM

Meeting Date: October 22, 2020

Subject: Work shop with Friendswood Downtown Economic Development Corporation (FDED) to get an update on the progress of projects and discuss the Downtown Improvement Plan, Zoning Ordinance Section 8.N. Downtown District, and Design Criteria Manual - Appendix E Downtown District Amenities

Action: Significant

SUMMARY / ORIGINATING CAUSE

Presentation by FDED of update on progress of projects in the Downtown District: TxDOT Sidewalk, Curb and Ramp Grant (includes replacing wire span traffic signals with black powder coated mast arms in the four intersections of the DD); Downtown Lighting

Questions to be answered:

Sidewalks

TxDOT, as part of the sidewalks, curb and ramp program will be installing sidewalks in the Downtown District on any tract that does not currently have sidewalks. For ADA purposes, they will not install the 8-ft brick paved sidewalks, so instead, they are willing to install 6ft concrete sidewalks with 1 foot of brick pavers on each side. (See attached TxDOT 95% lighting set).

Q: Should we change the requirement to match TxDOT or allow both options of sidewalks by adding both to the Design Criteria Manual?

Lighting Plan

A lighting plan has been prepared by Gandy. For the most part, their recommendation is that pedestrian lights be installed 75 feet apart and street lights/pedestrian light combos be installed 150ft apart (see attached Friendswood Lighting Plan for more details).

FDED has hired HDR to plan for installation of electrical conduit. The idea is that while the sidewalks are being installed, FDED can piggy back on the project and possibly save some dollars by hiring the contractor for additional work while the ground is already disturbed for the sidewalk project. TxDOT will pay to install the conduit. FDED will fund wiring, lighting foundations, and lighting installation (See attached TxDOT FM 518 Lighting Set).

Current Zoning Ordinance requires minimum 2 benches, 2 lights per tract and only requires pedestrian lighting. Owners are not required to install street lighting.

Q: Do we change the Zoning Ordinance to require installation per an approved lighting plan?

Q: What if an owner/developer wants to install more, do we tell them no?

Light Poles

FDDEC has selected a different light pole per the Downtown Improvement Plan (adopted October 2018) for both pedestrian lighting and the combo lighting of pedestrian/street lighting.

or % already installed vs vacant (staff will provide this info)

Q: Do we change the requirement for light poles? If yes, when should we change it?

Approximate cost of fixtures – pedestrian light and pedestrian/street light combo (pending)

Q: If removed, do we need to allow for amortization of light poles installed by owners? If so, how long? (obtaining answer from legal counsel)

Q: Should/can the City take over paying for the lighting and assume responsibility for replacement when damaged (this would require a change to the Zoning Ordinance)?

IMMINENT CONSEQUENCES / BENEFIT TO COMMUNITY

Consistency and improvements in the Downtown District.

RECOMMENDATIONS

None at this time.

ATTACHMENTS

1. Friendswood-Downtown-District-Improvement-Plan-PDF
2. TxDOT FM 518 LIGHTING 95% SET (1)
3. G2LD - Cutsheet Package - 071720
4. G2LD Friendswood Lighting Plan 072020



Friendswood Downtown District Improvement Plan



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Lauren Griffith Associates *Landscape Architecture and Planning*



CORE DESIGN STUDIO



Executive Summary

The mission of the Friendswood Downtown Economic Development Corporation, FDEDC, is to communicate and engage with Friendswood citizens, make well planned and strategic recommendations to City Council regarding improvements to the Downtown District, and exercise fiduciary responsibilities to the tax payers. In May 2016, Friendswood voters approved a one-eighth (1/8) of one cent Type B sales tax to promote new or expanded business in the downtown area as defined by the City of Friendswood Downtown District Map, including but not limited to streets, targeted infrastructure, paved sidewalks, pedestrian amenities including lighting, benches, signage, and other related public improvements, and the maintenance and operations expenses for any of the above-described projects. Current annual revenue projections are \$450,000.

The FDEDC retained Lauren Griffith Associates to assist with their Downtown District Improvement Plan in order to identify and prioritize projects that will promote economic development, attract businesses and patrons, provide more retail and entertainment options in town, foster community, and create a vibrant, distinct downtown district that enhances Friendswood's appeal.

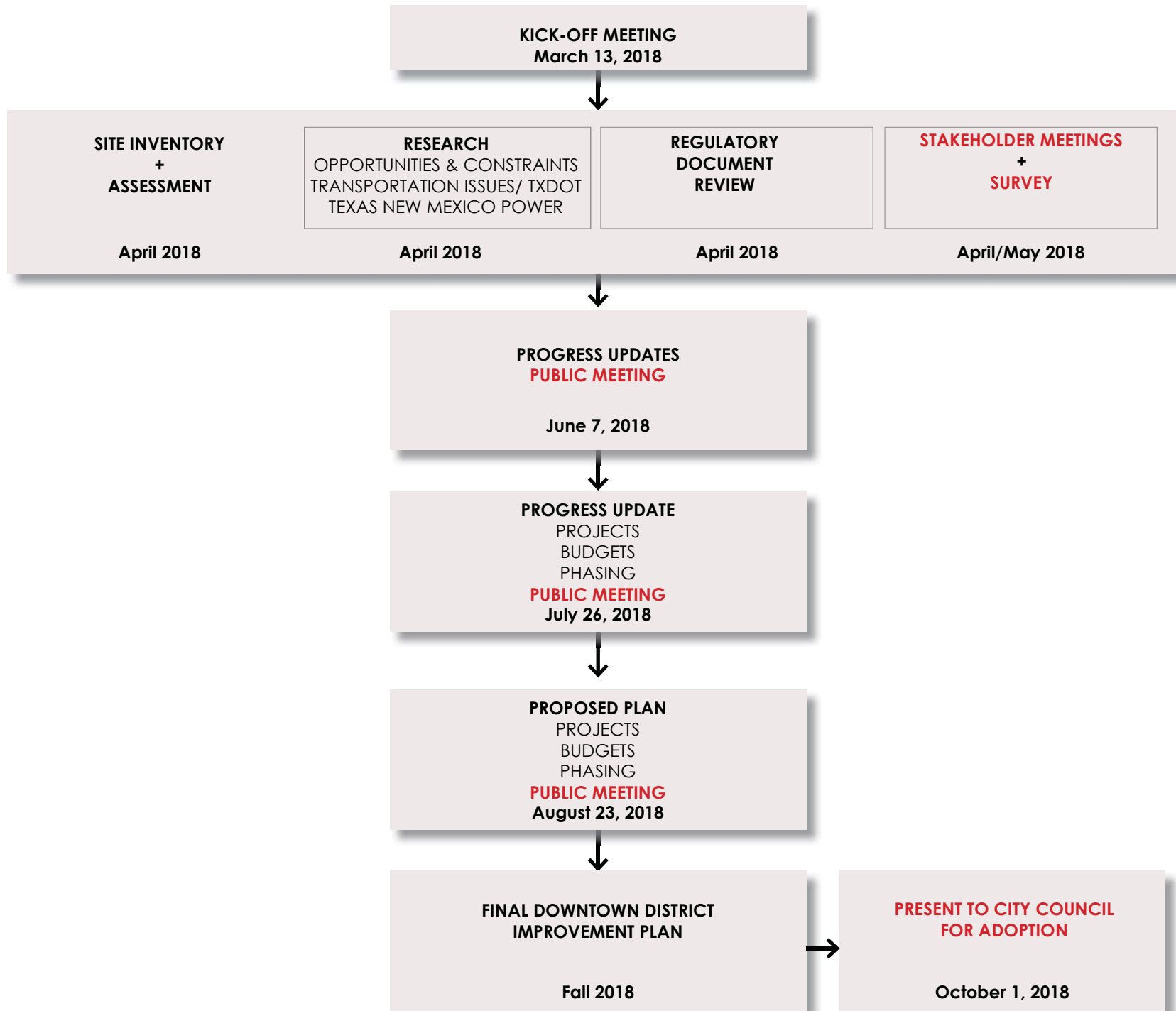
The Downtown District faces several challenges. TXDOT controls FM 581, the wide, heavily traveled S. Friendswood Drive which bisects the District. It must efficiently convey traffic through the District, not just to it. In addition, the "downtown" is not like a traditional, older downtown. It lacks a strong historical architectural fabric. Because the city was founded by Quaker missionary farmers, buildings other than the church, the home and the school were not developed early in Friendswood's history. Most commerce took place in nearby towns. Opportunities within the District, are possible because of the amount of vacant or underutilized land ripe for development, the affluent population who will patronize downtown, strong civic organizations supporting its enhancement, and the contributions of TXDOT to its beautification and maintenance.

Lauren Griffith Associates' comprehensive study involves documentation of goals and objectives, site analysis, research and review of ordinances affecting the Downtown District, and a thorough public process determining the needs and desires of the community. Our team includes Traffic Engineers, Inc., Gandy² Lighting Design, and Core Design Studio graphic designers. We have identified projects and opportunities throughout the district; projects are improvements within the public realm and District boundaries that the FDEDC can fund,

while opportunities are improvements that would have to be made by partners within and around the District. While these projects are in a general order of priority, they may be implemented in any order or configuration as funding becomes available.

The FDEDC is hoping to use the sales tax monies they collect as matching funds for grants and other funding mechanisms in order to implement the improvements more quickly. Our team is identifying opportunities to apply for such funding. Public improvement projects are already underway in the District. The FDEDC has begun a program of burying overhead utility lines on the south side of S. Friendswood Drive to reduce visual clutter and allow the planting of street trees to create a more pedestrian scale. In addition, this Downtown Improvement Plan includes branding concepts to be applied to the District as whole.

There is a strong sense of community and family in Friendswood, and community events such as festivals and parades are currently its unifying force. Stevenson Park and the Library are significant amenities that serve the city well. Citizens are proud of their history and still honor the founding values of faith, family and education. They view the area at S. Friendswood Drive and Spreading Oaks that encompasses Friends Church and Cemetery and the library as the heart of the District and especially value the old Live Oaks. Many participants in the public process expressed their desire for a charming, quaint, "small town feel" downtown. Our team came to understand that it is the warm quality of the interactions that Friendswoodians experience when shopping or dining downtown that they want to preserve and enhance. Our goal is to create a walkable, charming streetscape that will unify the district, inspire appropriate development and foster opportunities for more such interactions within a vibrant Downtown District.



GOALS AND OBJECTIVES

PUBLIC INPUT PROCESS



Downtown District Goals

(Why we want to improve the District)

- Foster community by providing opportunities for residents to interact and get to know each other within Friendswood.
- Reduce necessity of traveling out of town for entertainment and retail needs.
- Provide opportunities for families with young children, teenagers, young adults, empty-nesters and senior citizens that can be accessed without highway travel.
- Enhance Friendswood's identity, appearance, and appeal to potential residents by creating a "heart of the city."
- Attract businesses consistent with the vision and mission of the FEEDC.
- Attract patrons creating a vibrant downtown district.
- Create a memorable downtown district identity that is expressed in all aspects of public improvements.

Downtown District Objectives

(How we will achieve our goals)

- Create a comfortable, safe, walkable, bike-able downtown district.
- Manage vehicular traffic to enhance pedestrian experience.
- Create a downtown district that is active both day and night.
- Identify opportunities for additional open space.
- Identify opportunities for linking to potential trail systems along creek.
- Attract mixed-use development to increase property and sales tax revenues.

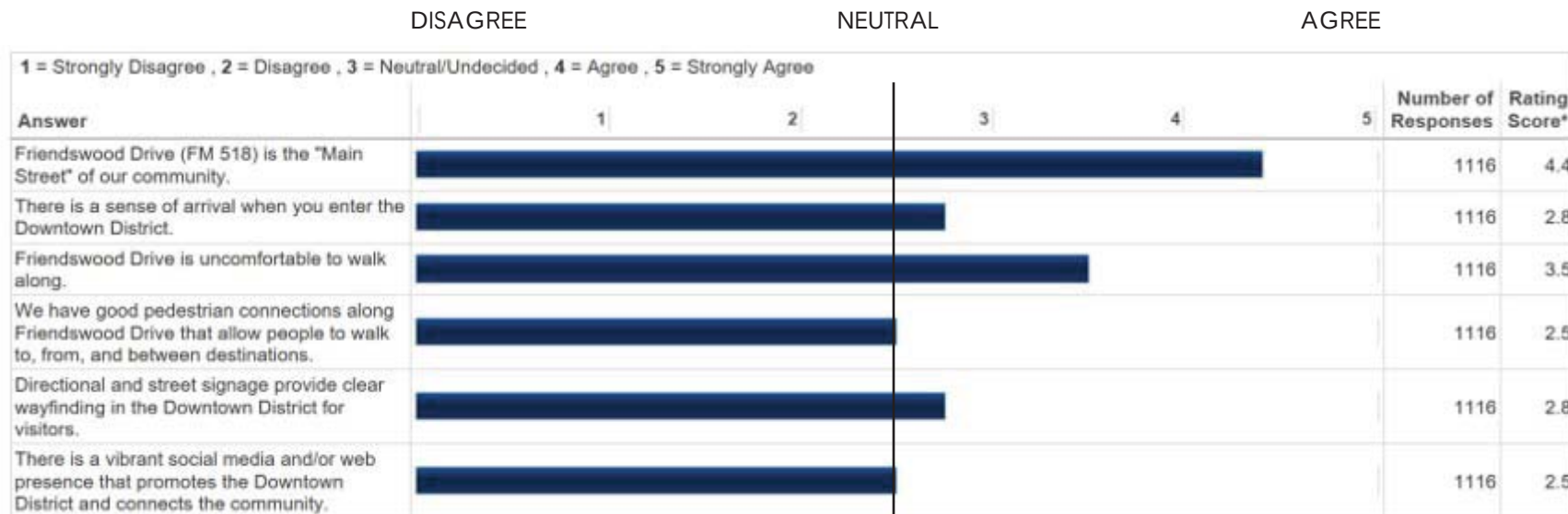
Survey

Through email blasts and posts on the City's website, the community was invited to participate in a 10-question survey that addressed program elements, uses and events for the Downtown District. The survey was a means to broadly engage the community and give feedback to the consultants prior to public meetings. It solicited information on how respondents experienced the District, why they went there, how often they visited and how they got there, how they would like to get there, how they described Friendswood and what makes it unique, and what sorts of amenities and improvements they would like to see. More than 1,000 people responded, a significant number in a community of 40,000.

The results clearly indicate that the respondents value the small town character of the District and want to see it preserved and enhanced. Improving walkability, increasing dining options, preserving and adding trees, and attracting more shops and small businesses were their top priorities.

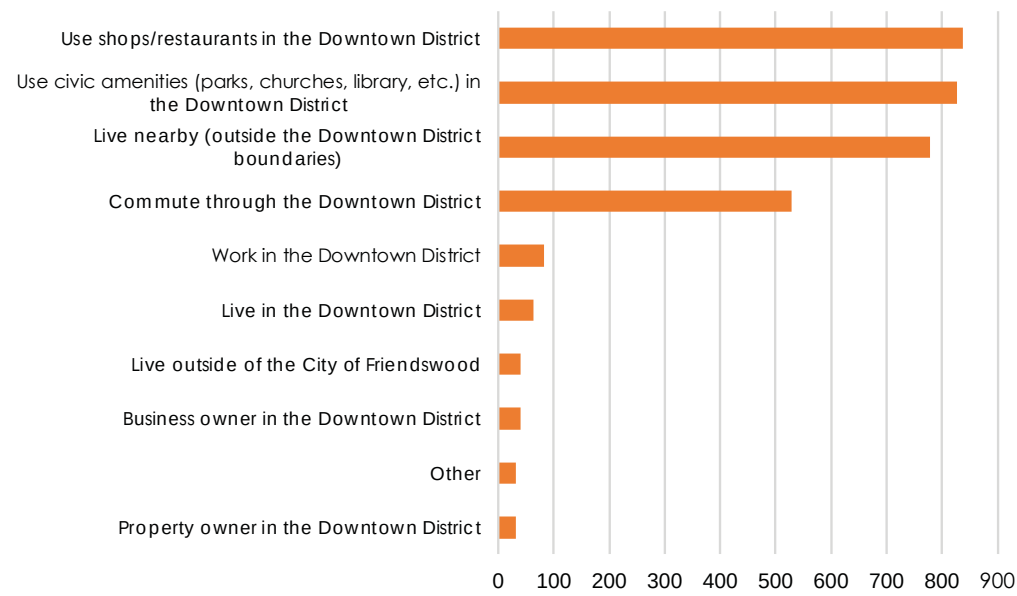
Interestingly, the word "small" was used 938 times in the responses. Residents feel strongly about a small town feel, small shops and small businesses. They prefer unique shops and food service establishments over chains and enjoy warm, personal interactions when conducting business or dining.

1. Do you agree or disagree with the following statements?

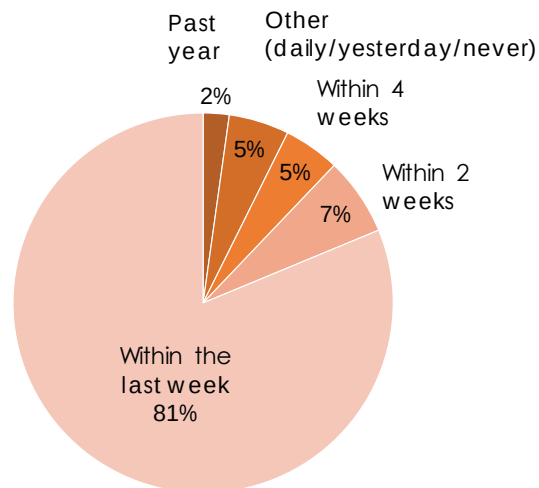


*The Rating Score is the weighted average calculated by dividing the sum of all weighted ratings by the number of total responses.

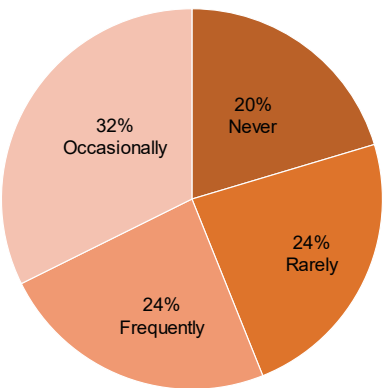
2. Please tell us your connection to the Downtown District.
 Select all that apply.



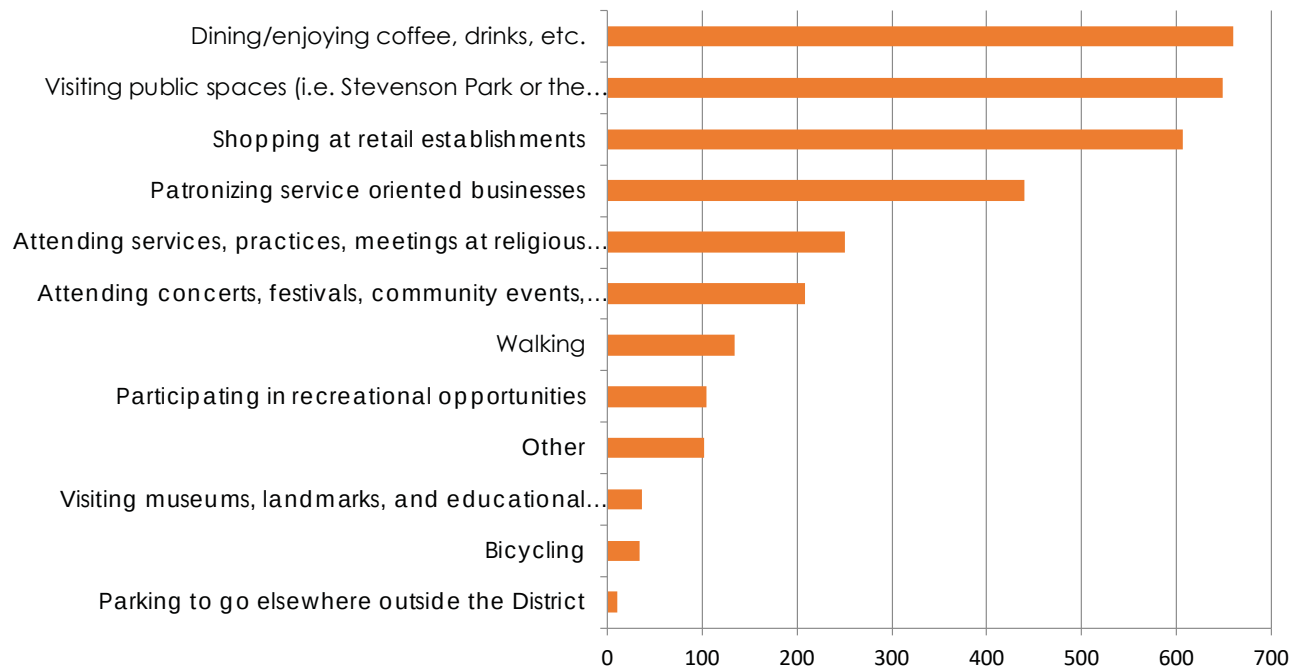
3. How long ago was your most recent visit to the Downtown District?



4. How often would you prefer walking or riding a bike as opposed to driving a car within an improved Downtown District?



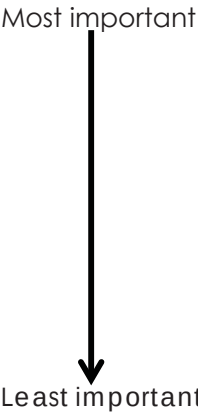
5. What were the purposes of your most recent three (3) visits to the Downtown District?



6. What additional offerings and amenities would make you or your family more likely to visit the Downtown District?

Offerings and Ammenities

- More walkable development and destinations**
- Better pedestrian accommodations**
- Better pedestrian crossings**
- Improvements to traffic signal timing
- Security lighting
- More shade trees
- Underground utility lines
- to replace overhead lines
- Protected bike lanes
- More travel lanes (fewer medians)
- Slower traffic speeds



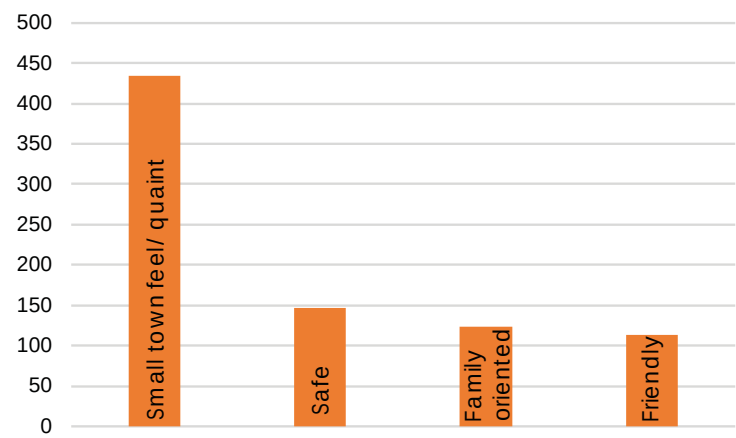
7. What overall improvements would do the most to make the Downtown District safer and more attractive for all people?

Overall Improvements

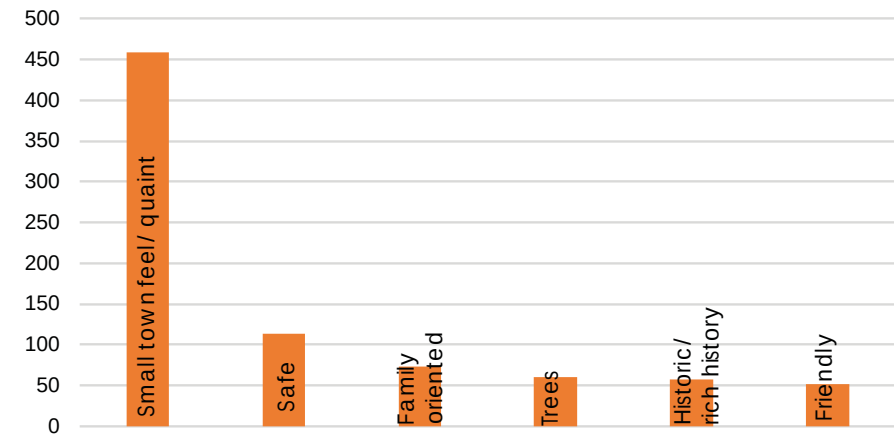
- Dining options**
- Retail choices**
- Concerts, festivals, community events, and entertainment
- Public open spaces
- Recreational opportunities
- Pedestrian oriented streets
- Service oriented businesses
- Museums, landmarks, and educational opportunities
- Safe bike routes
- Parking



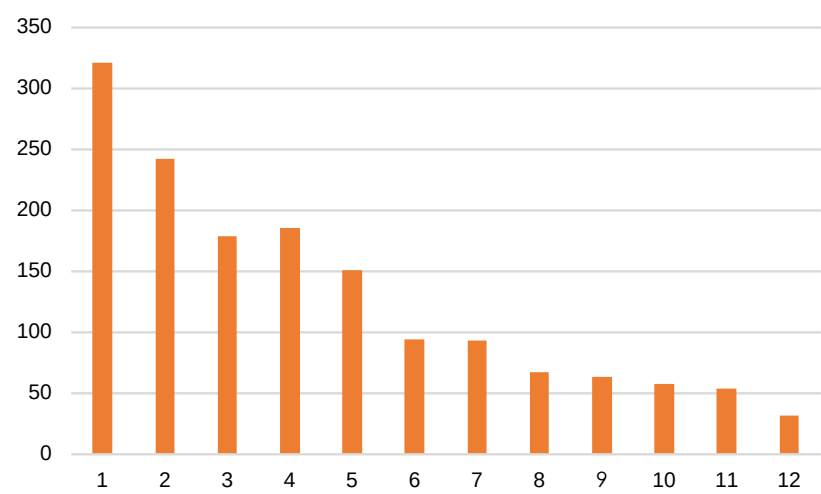
8. How is Friendswood different from nearby cities?
What makes it unique?



9. How would you describe Friendswood to someone who has never visited?



10. Please share your vision for the future Downtown District.
What would you preserve, modify, or add?



- 1. Sidewalks/walking
- 2. More restaurants/dining
- 3. More/preserve trees
- 4. More shops
- 5. More businesses (small)
- 6. More parking
- 7. Signs (reduce commercial signs, add signs)
- 8. More bike routes
- 9. Preserve history
- 10. Family oriented
- 11. Better lighting
- 12. Improve medians

Stakeholder Meetings

Stakeholders are people who have a particular interest in the Downtown District. The consultants worked with the FDEDC board to identify groups and individuals to be invited to contribute to the public discussion of potential District improvements. The Economic Development Coordinator issued the invitations.

In general, the groups were eager to discuss their visions and concerns. The consultant team had to emphasize that the Downtown District improvements could only be implemented on public property.

Identified Stakeholders

City Senior Staff, Keep Friendswood Beautiful, Planning and Zoning Commission, EMS, School Administration, Library Board, Senior Center Advisory, Community and Economic Committee, Masons, Historical Society, Friendswood Friends Church, Friendswood Fine Arts, Art in the Park, Friendswood Methodist Church, Heritage Gardeners, Mary Queen Church, New Hope Church, Farmers Market, Friends of Downtown Friendswood Association, Rotary Club, Reach Church, First Baptist Friendswood, Friendswood Chamber of Commerce.



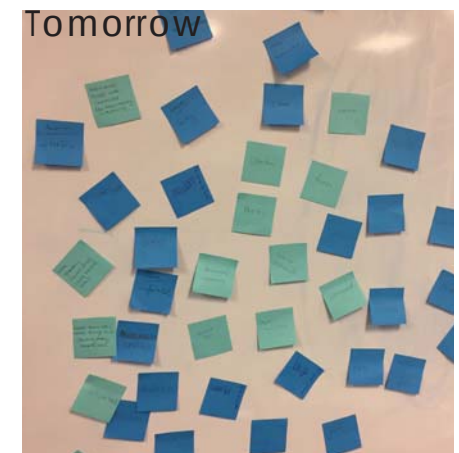
Stakeholder Input

City Staff: City staff members met with the team of landscape architects, urban designers, and traffic engineers to discuss issues and identify opportunities and constraints within the public realm. 23 attended. 04/04/18.

Interest Groups: Discussion of who programmed events, shared parking, shared food service facilities, bike safety, medians, lack of district identity, pride in community history and values, desire to maintain warmth and character of the community – small town feel defined by the interactions among the people rather than by the architecture. 21 attended. 04/04/18, 04/11/18 (morning and afternoon sessions).

Businesses: Business and property owners within the District engaged in a thoughtful discussion of its positive and negative aspects, concluding that consistency in appearance and branding is key to attracting quality development. Distinctive, uniform lighting and brick sidewalks were the priorities. No one objected to the District's funding of these improvements going forward. 30 attended. 04/17/18.

High Schools: 36 Students from Friendswood HS, Clear Brook HS, Clear Springs HS, participated in workshops to convey how they see the District now and what they would like to see in the future. Students noted they would like to see more activities (movies), more food service (something between Whataburger and fine dining), and more color/ less brown appearance (buildings, etc.) in the Downtown District. 04/11/18 and 05/08/18.





Public Meetings

Three public meetings were held at City Hall about a month apart. They were advertised by Facebook newspaper email, website, and through meeting public notice.

The landscape architects, urban designers, planners and traffic engineers presented summaries of the survey and stakeholder meetings at the first public meeting, along with lighting and traffic research and site analysis documentation. The presentation included images of places survey respondents liked, along with images of Tomball and Rosenberg, Texas, two similar towns with downtown districts bisected by state highways. Following the presentation, citizens had the opportunity to examine the exhibits closely and talk with the consultants one on one. 20 people attended. The overall response was positive.



The landscape architects, urban designers and planners presented the preliminary Projects identified as priority improvements for the Downtown District in the second meeting, along with precedent images of similar amenities and general budgets. Opportunities for supporting improvements spearheaded and funded by others were also presented. Again, citizens examined exhibits and gave feedback to the consultants after the presentation. 20 people attended. Participation was lively, and there was general enthusiasm for the projects. No significant input was received that necessitated revising the plans.

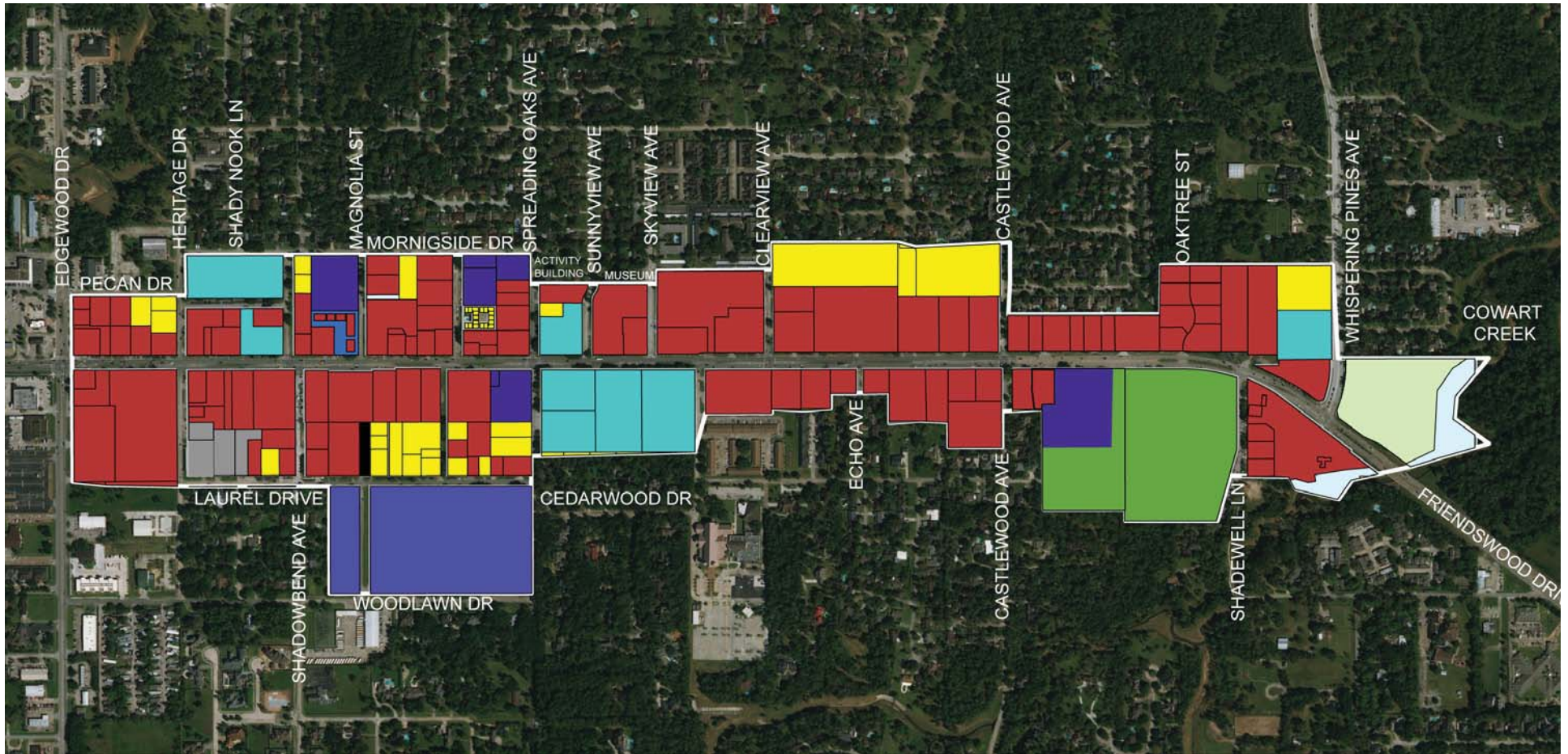


The landscape architects, urban designers and planners presented the preliminary Projects and Opportunities identified as priority improvements for the Downtown District again in the third meeting, along with precedent images and general budgets. In addition, the team's graphic designers presented branding concepts for the Downtown District, including a logo, banners, entry features, intersection treatments and shop window treatments. Following the presentation, participants joined the consultant team to examine the exhibits more closely and discuss their thoughts one on one.

27 people attended, including all but one City Council member. The response was very enthusiastic, and it was determined that the consultant team should move forward with documenting the Downtown District Improvement Plan for adoption by City Council.

SITE INVENTORY + ASSESSMENT RESEARCH REGULATORY REVIEW





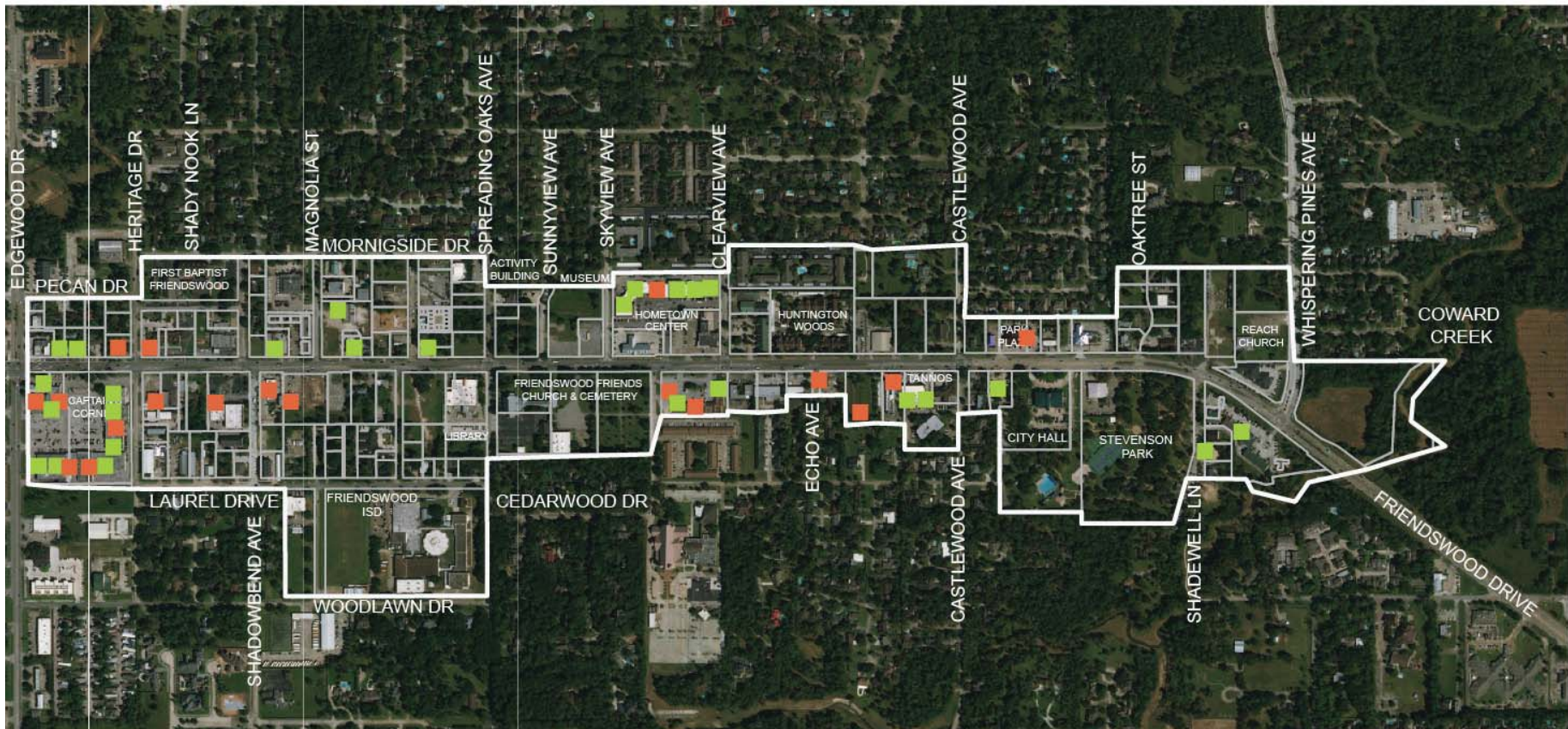
Land Uses

The majority of the properties in the Downtown District are commercial, especially along S. Friendswood Drive. Notable exceptions are Friends Church and Cemetery, Friendswood Public Library and City Hall, and Stevenson Park along S. Friendswood Drive, and the US Post Office, the Friendswood Activity Center, the First Baptist Church and the Friendswood Independent School District properties on side streets. Multi-family residential and a small amount of light industrial comprise the rest of the District.

Surrounding land uses are primarily single-family residential. There are a number of vacant and underutilized lots along S. Friendswood Drive. Reach Church's parcel and the undeveloped land on the creek along Whispering Pines are ideally located to transform the eastern entry to the Downtown District. In the "heart of the downtown district," several properties are currently being developed for mixed-use. Other lots are being offered for sale, contributing to the transformation of the District.

Legend

■ Civic/Community	■ Church
■ Park	■ Light Industrial
■ Commercial	■ Open Space
■ Residential	■ Flood Plain



Retail/ Food Service

Retail and food service establishments currently are distributed along S. Friendswood Drive, with most being concentrated toward the east end and the center of the District. Survey respondents and stakeholders expressed a strong desire for more retail and dining options. Breakfast places and options for casual food service experiences between fast food and fine dining were the most frequently requested. Friendswoodians prefer small, unique retail establishments, as well.

Creating an urban streetscape that is attractive to more retail and dining establishments will both encourage development and generate more foot traffic for existing businesses, creating a vibrant, sustainable District. The additional dollars spent in the District will build the sales tax revenue used to fund future improvements.

Legend

- Retail
- Food Service



Destinations/ Points of Interest

While Friendswoodians are justifiably proud of their history, only a few historical points of interest exist in the District. The Nathan and Mary Perry Home, Friends Church and Cemetery and the Junior High School Museum are within the District. The Frank J. Brown Heritage Museum and Barn are adjacent to it. The Quaker Trail as mapped by the Friendswood Historical Society has a total of 11 points of interest.

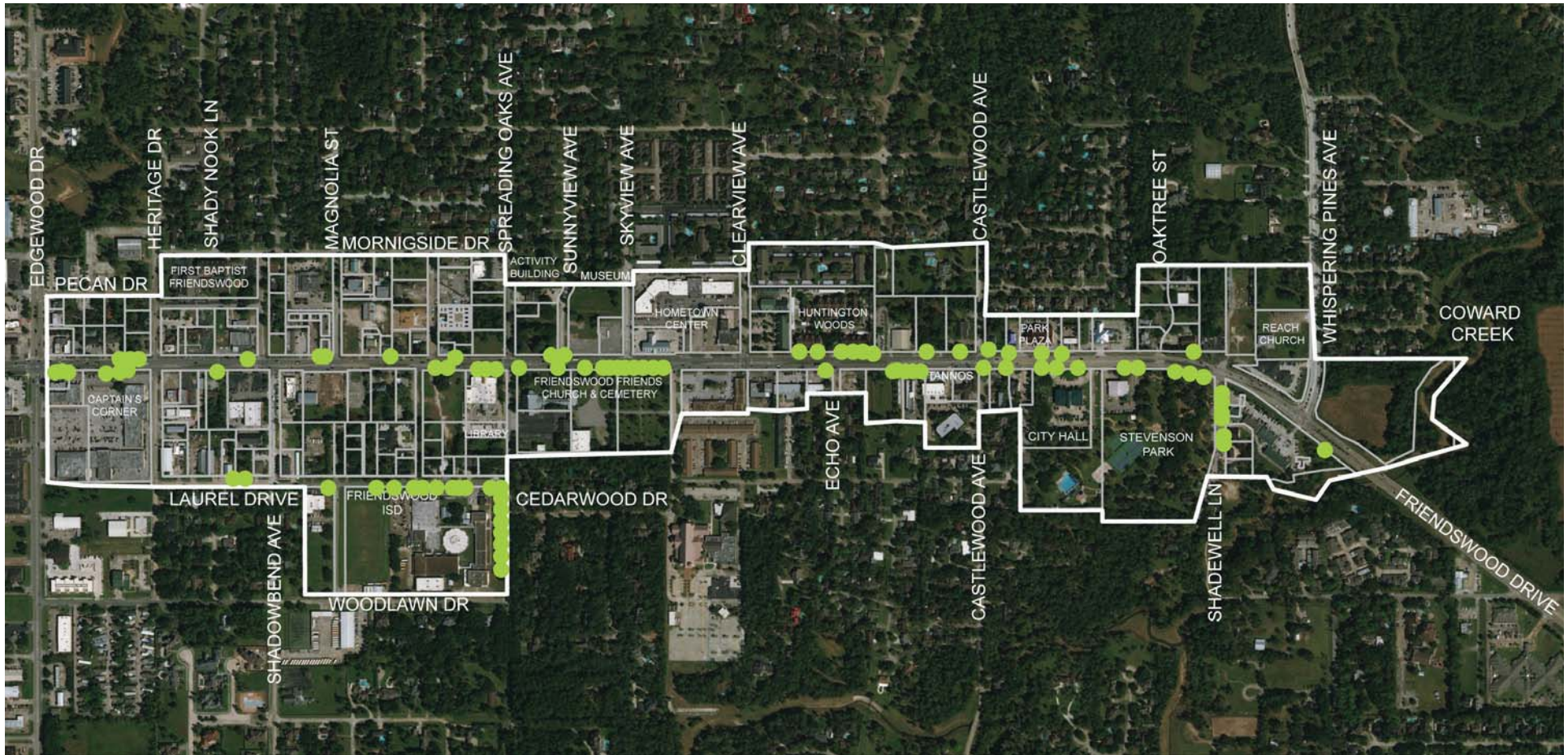
Friendswood City Hall, Public Library, Activity Center and Post Office are destinations for citizens. Beloved Stevenson Park is well used year round and a prime destination for traditional city celebrations. Creating more destinations and small moments of surprise within the District is a goal of the Downtown Improvement Plan.



Overhead Utilities

Like many state highways, S. Friendswood Drive is lined with overhead utility lines, creating visual clutter and limiting the ability to plant street trees. The FDEDC has begun a program of burying overhead lines on the south side of the street with good success. Unfortunately, burying the electrical power lines on the north side of the street will be prohibitively expensive.

In addition, traffic signals hanging from lines across the intersections contribute to the clutter. Mast arm traffic signals would give a cleaner, more contemporary look to the District.



Street trees

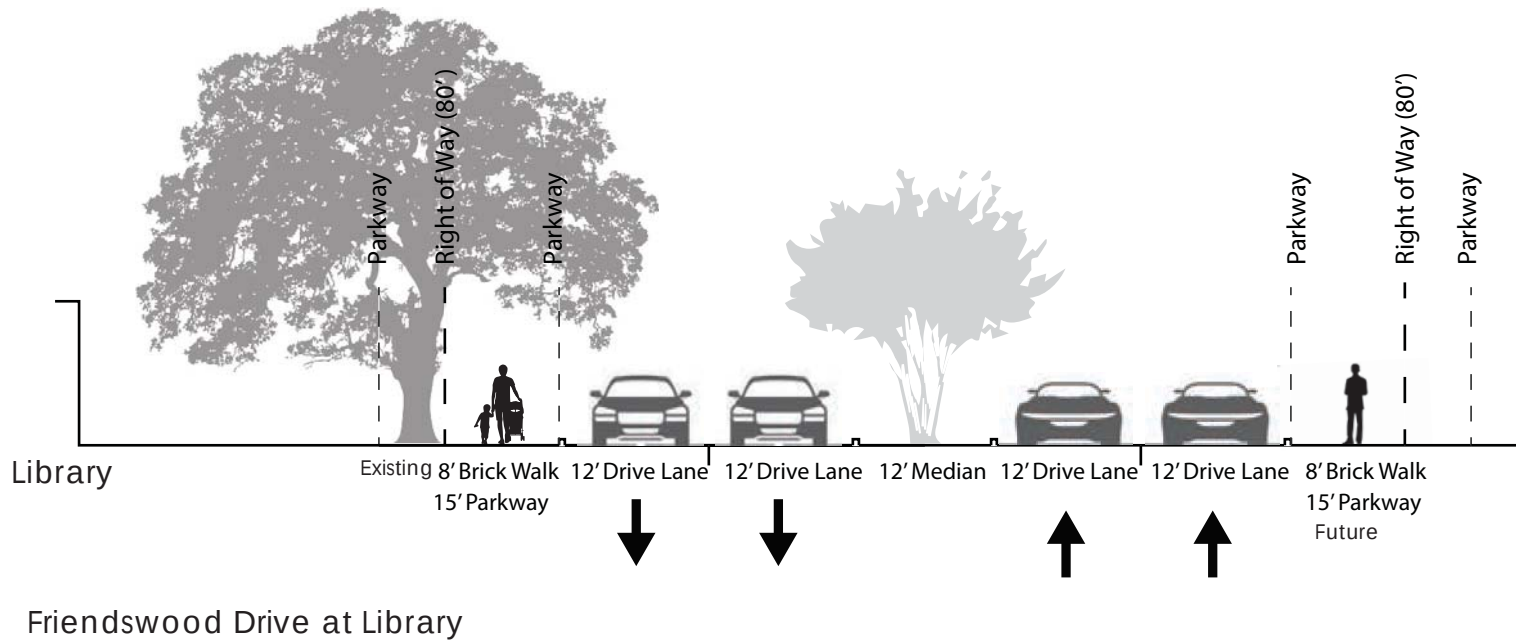
Friendswoodians cherish the Live Oaks along S. Friendswood Drive and identify with them strongly. Stakeholders, survey respondents, and the public felt strongly that the Live Oaks at the Cemetery defined the heart and image of the Downtown. The community agreed that street trees, especially the historic Live Oaks, needed to be preserved and added to the District.

Friendswood's City Ordinance requires every property to plant a Class II or Class III street tree every 25'. The "Qualified Street Tree List" of the City's Design Guidelines describes the classes of trees. Class I contains the tallest street trees, while Class III contains the smallest street trees. Given the 80' R.O.W. width, Class III street trees do not provide enough

shade for pedestrian comfort.

As utilities are buried along the south side of FM 518, the Planning and Zoning Commission may consider allowing Class I trees (where appropriate). Live Oaks are considered Class 1 trees.

While overhead lines on the north side of the street prohibit planting of large trees under them, if there is room to plant Live Oaks within the adjacent private property, it is encouraged. Alternatively, a consistent planting of American Hollies would create a pleasant rhythm and evergreen canopy, offering a consistent visual experience along S. Friendswood Drive.



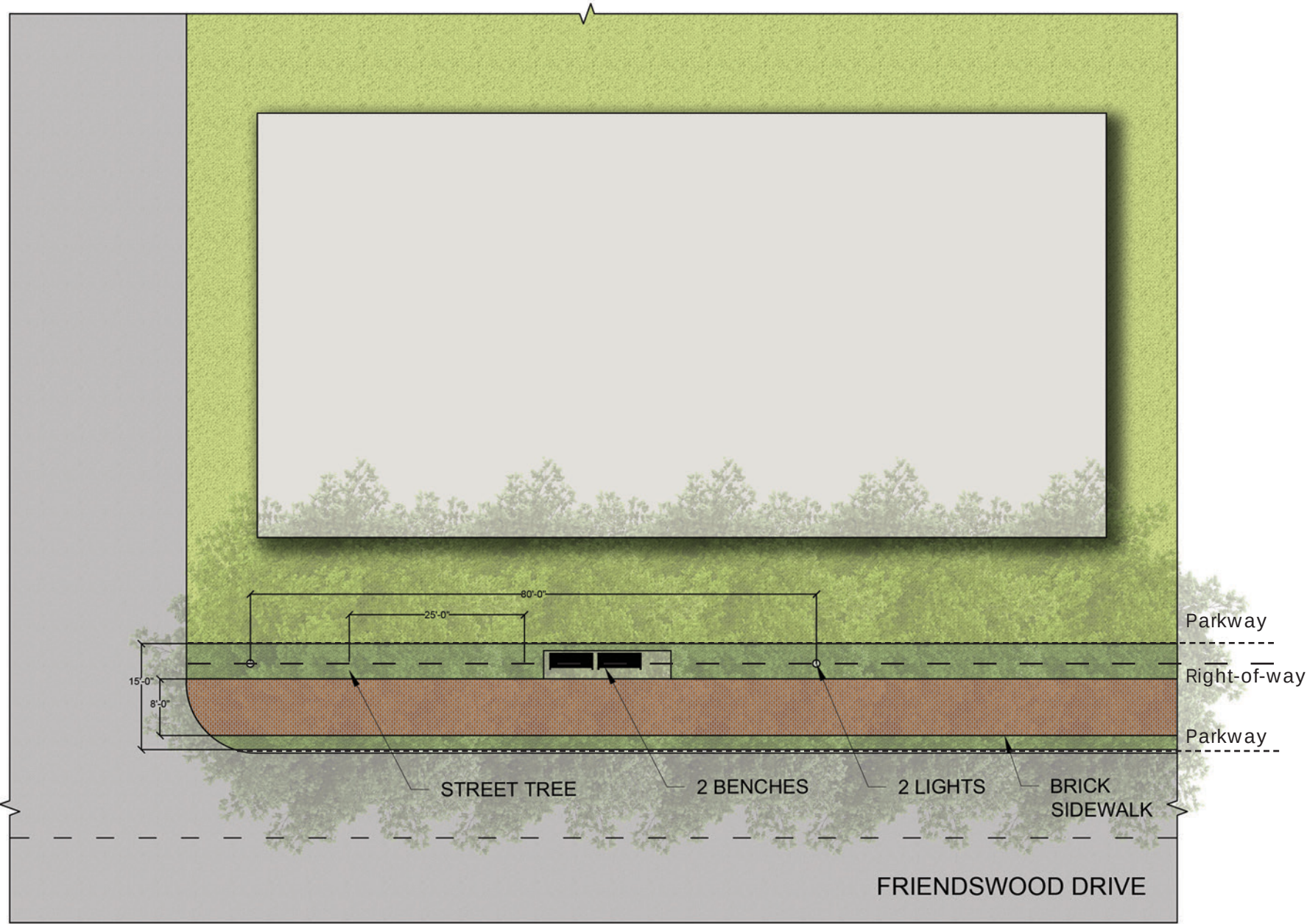
Friendswood Streetscape Design Guidelines

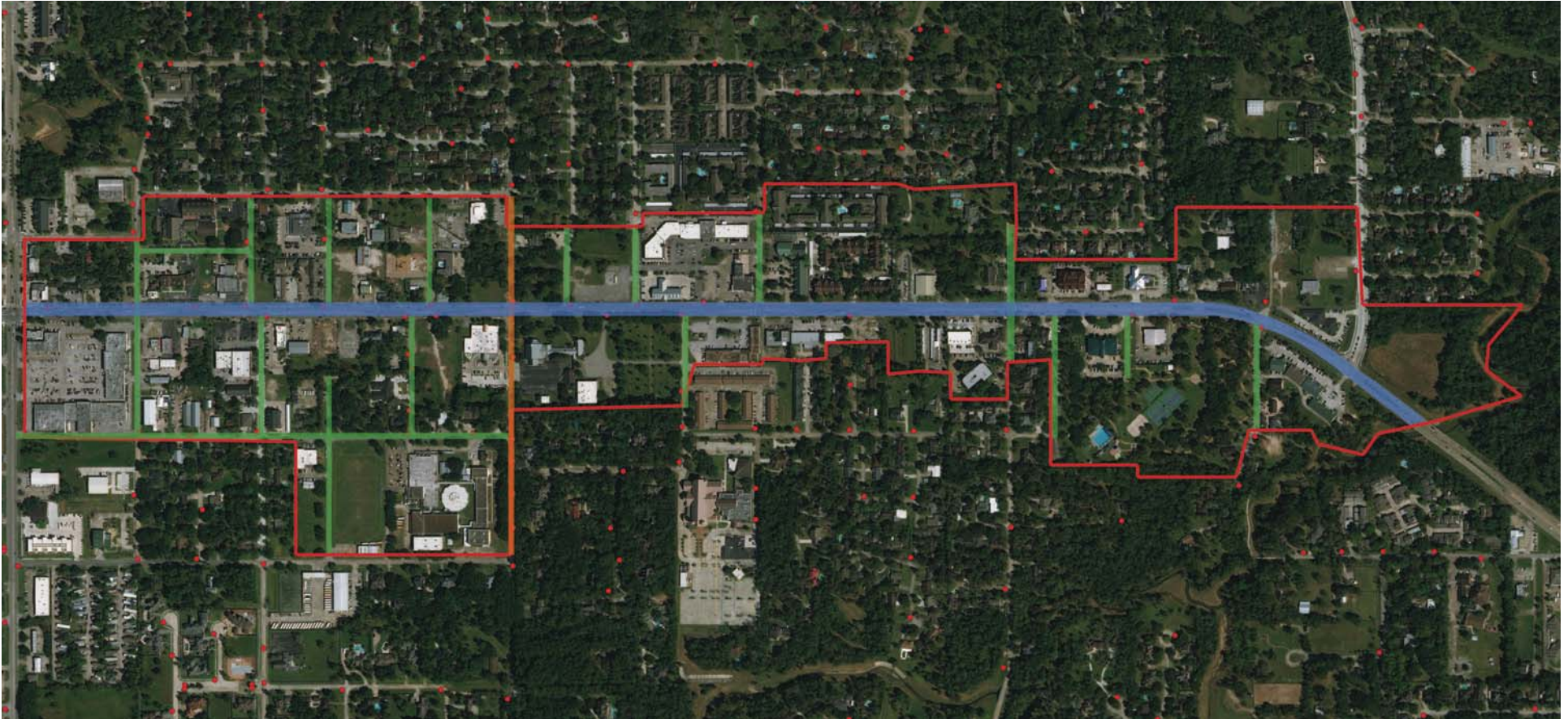
Friendswood's Code of Ordinances, Appendix C – Zoning, Section 8 – Supplementary District Regulations, states that every property fronting Friendswood Drive within the Downtown District must include a 15' wide parkway extending into the property from the curb. This parkway may extend beyond the FM 518 right-of-way. The parkway shall have an 8' brick sidewalk, one tree every 25', two lights, and two benches. Properties within the district but along the side streets require a 10' landscape buffer extending into the property from the curb. The buffer must include a 6' concrete sidewalk and one tree every 25'.

Inconsistent implementation of the required improvements has resulted in an inconsistent streetscape. Materials and products vary from

property to property. This lack of consistency detracts from the image of a unified district.

Friendswood Streetscape Design Guidelines





Lighting Assessment

Existing lighting conditions are inconsistent and of poor quality overall. The color temperatures vary wildly from ~2200K from the TNMP (Texas New Mexico Power) approved standard roadway lights, to the district improvement pedestrian pole lights at ~5500K. Neither temperature is appropriate for their intended uses.

Ideally, roadway lighting would be between 3000K - 4000K so that the light color is a slightly warm to neutral white. Studies have shown that blue wavelengths of the visible light spectrum cause our bodies suppress melatonin, which helps keep drivers awake and alert. There has also been significant pushback from the medical community in recent years concerning the poor effect that excessive blue wave lengths have on

our health. Additionally, the cooler the color and more blue that color contains, the less inviting and coherent the lit area becomes. Therefore, selecting a color temperature greater than 4000K is not recommended.

Ideally, pedestrian lighting would be between 2700K – 3500K so that the light color is reminiscent of candlelight-warm to almost neutral white. This creates a welcoming atmosphere. With pedestrian lighting, color rendering (CRI) becomes more important too as it contributes to colors being more vibrant and distinguishable. Shop owners will appreciate their products looking better, as will the pedestrians because perception will improve.

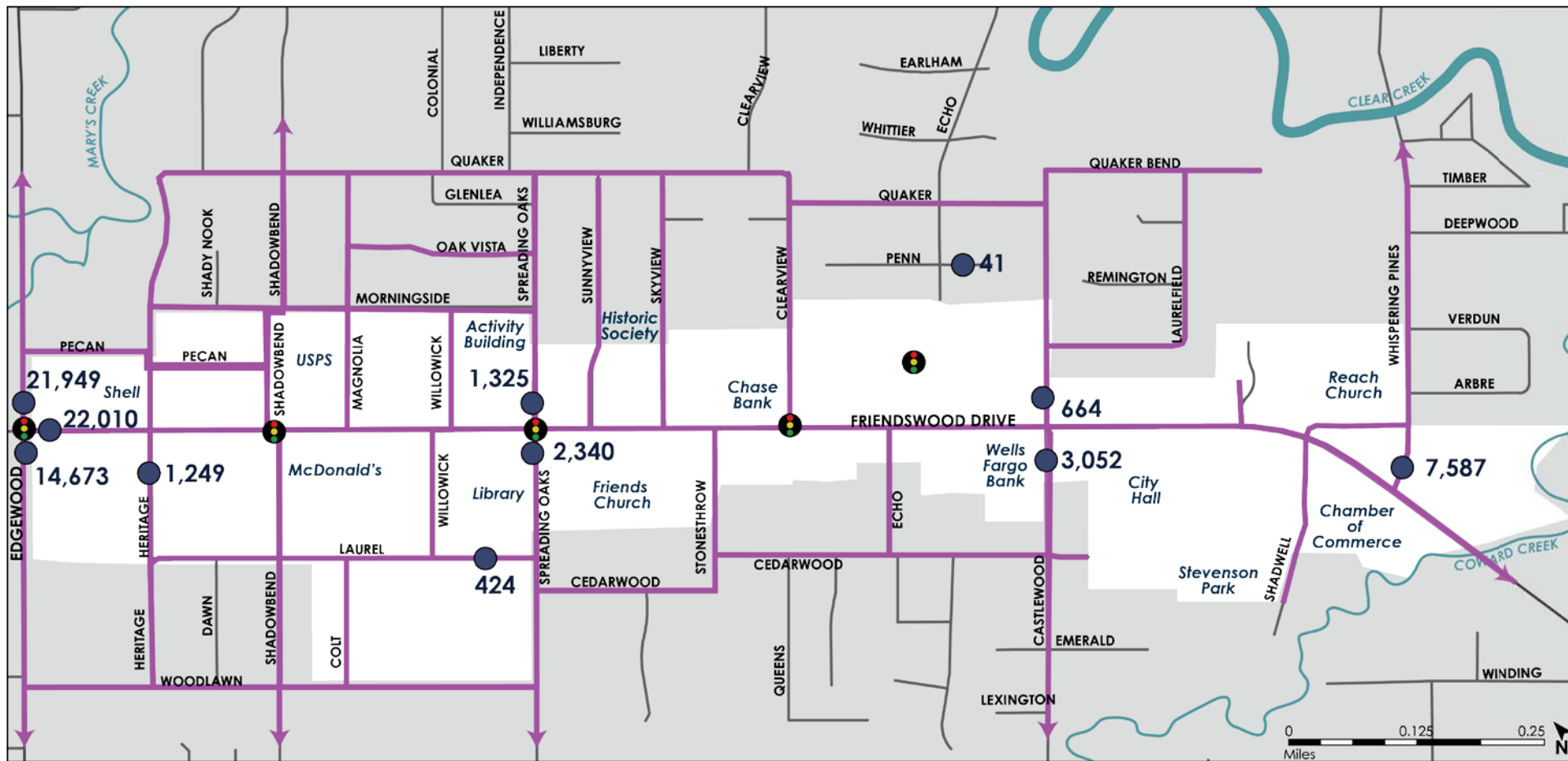


Mobility Assessment

Friendswood's Downtown District is centered along Friendswood Drive (FM 518*) bound by Edgewood Drive (FM 2351*) on the west limit, to Coward's Creek on the east limit with at least one block to the north and south sides of FM 518 for the length of the district. The mobility assessment for the Friendswood Downtown District Improvement Plan provides existing conditions for driving, walking, and biking, as well as project recommendations that support an inviting, walkable, bikeable downtown experience.

The following pages provide the mobility characteristics of the District including an evaluation of corridor and intersection operations, average daily traffic, crash history, driveway density, median locations, parking availability, existing sidewalks and crosswalks, and regional bicycle circulation. Assessment of these existing mobility characteristics provide a baseline understanding of the District. The assessment will help identify public infrastructure improvements that support the vision of the Downtown District that can be implemented over time.

*FM 518 and FM 2351 are TxDOT-owned roadways. Improvements within the TxDOT right-of-way must be coordinated with TxDOT.



Source: TxDOT Urban Saturation Counts, 2016

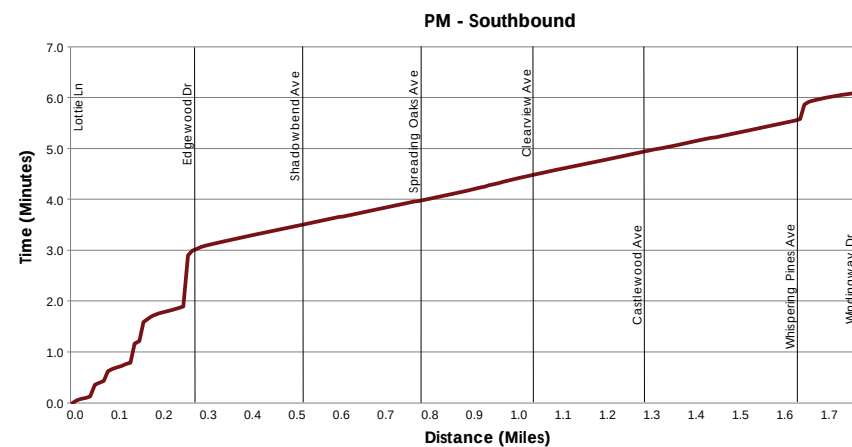
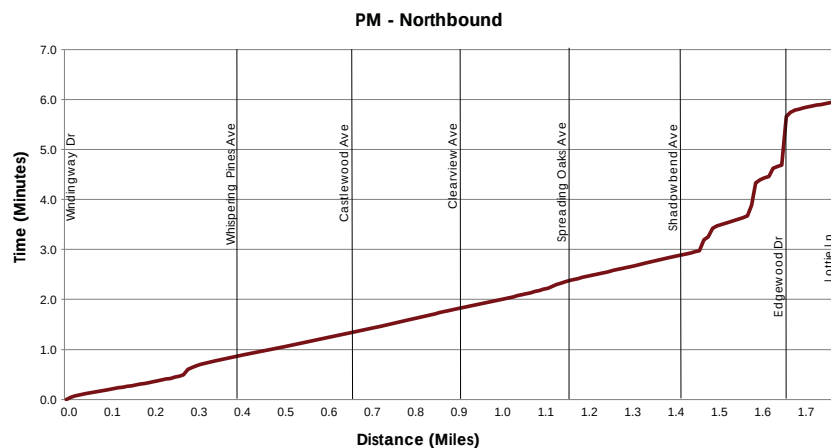
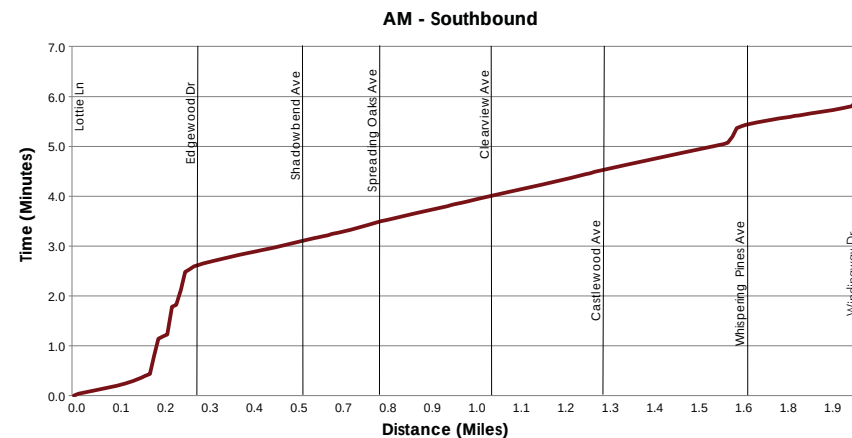
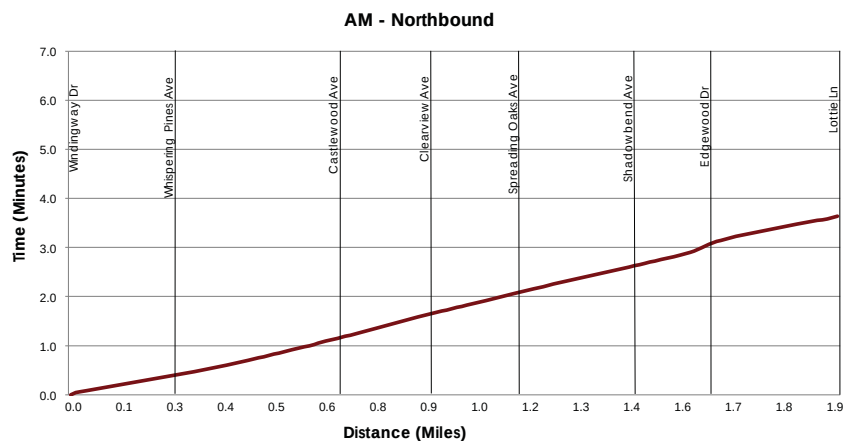
Corridor Operations

FM 518 is a four lane divided curb and gutter roadway with raised medians. The corridor is maintained by TxDOT. Right-of-way (ROW) is approximately 80 feet along the corridor, however it is wider in some locations. There are six signalized intersections along the corridor. Average Daily Traffic (ADT) for FM 518 and the surrounding roadways are included in the figure above. FM 518 has an ADT of 22,010 vehicles per day. Planning level level-of-service (LOS) values from the Highway Capacity Manual (HCM) Exhibit 16-14 were used to determine capacity along the corridor. The LOS for the corridor within the study area is LOS D, an acceptable LOS for a corridor within an active suburban area with high commercial activity.

The Downtown District has five span-wire signalized intersections along FM 518 including Edgewood, Spreading Oaks, Clearview, Castlewood, and Whispering Pines, and one signalized intersection that has a galvanized mast arm at Shadowbend. Replacing the span wire at the five intersections with black powder coated mast arms would contribute to a more cohesive look and

Legend

- Connected Street Grid
- ● Signalized Intersection
- 24-hour Average Daily Traffic (ADT) Count (TxDOT - 2017)



Source: Team Analysis

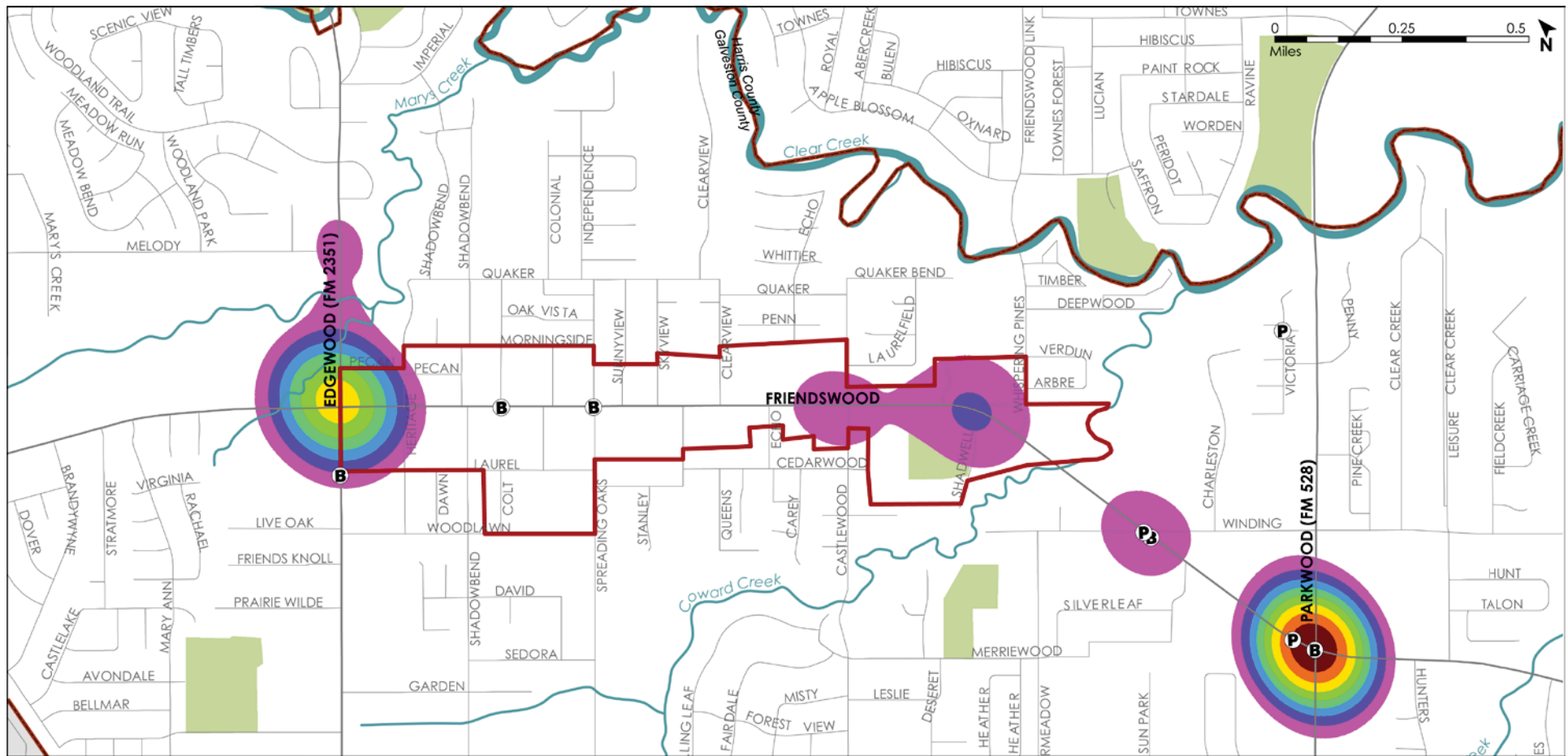
Speed Limit

The current speed limit along FM 518 is 30 mph. Directly outside of the District boundaries north and south along Friendswood Drive, the speed limit is 45 mph. There is little to no transition between the 45-mph roadway and the 30-mph District. There are opportunities to provide better signage and warning of a speed limit change as well as opportunities to designate the gateway of entering downtown Friendswood. According to the public survey for this effort, residents expressed the need for both speed limit enforcement and red light enforcement.

Adjacent corridor speed limits vary from 20 mph to 30 mph.

Travel Time Runs

To better understand how the traffic flows along the main corridor, travel time runs were performed along FM 518 at peak times of the day (7:00 to 8:00 am and 4:00 to 5:00 PM) during the school year. Driving the corridor from one end of the Downtown District to the other at an average speed of 30 to 35 mph, the signal timing coordinated well with the posted speed limit and traffic flow was unobstructed. The only obstruction to traffic flow was at the FM 2351 (Edgewood) and FM 518 intersection approaching the Downtown District. During peak times, there was delay at the intersection and vehicles were required to wait through multiple signal cycles.



Source: TxDOT CRIS Database, 2010-2017

Vehicular Crashes

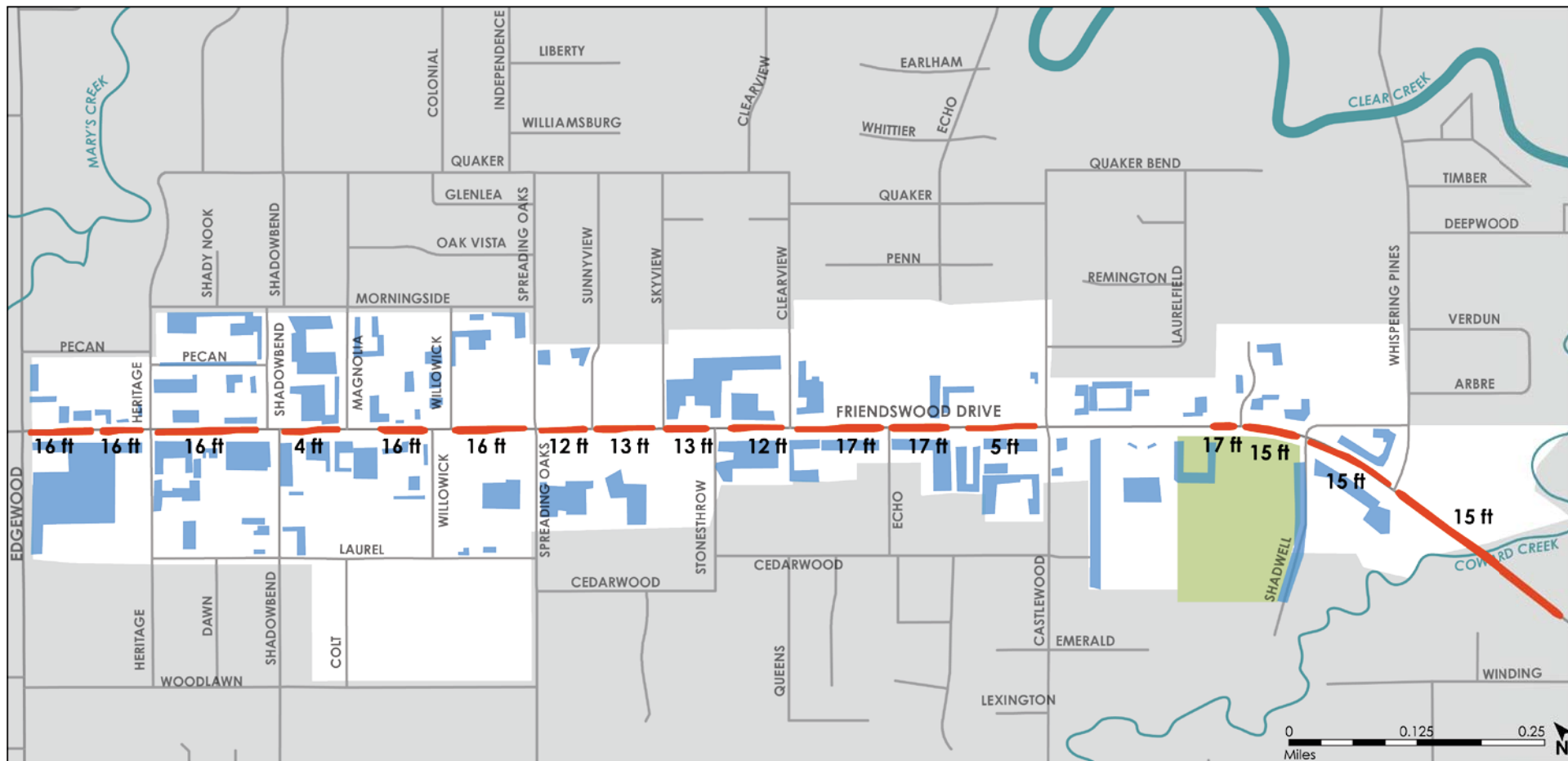
Crashes within the study area from 2010 to 2017 were collected from the TxDOT CRIS database and analyzed. A density map was developed to indicate areas with a high concentration of crashes. The heat map above depicts two hotspots within the study area, both at signalized intersections. The intersection of FM 518 at FM 2351 has a crash rate of 0.85 crashes per million entering vehicles (MEV). The intersection of FM 518 at Whispering Pines has a crash rate of 0.74 crashes per MEV.

The corridor crash rate along FM 518 within the study area is 349.08 crashes per 100 million vehicle miles. This value is greater than the TxDOT average for similar urban FM roadways (301.42 per 100 million vehicle miles) as well as higher than the average for a 4-lane urban divided roadways (193.14 per 100 million vehicle miles).

The map above also indicates locations of pedestrian and vehicle crashes. There were two crashes that involved a bicyclist along FM 518.

Legend

- Ⓑ Bicycle Crash Location
- Ⓟ Pedestrian crash Location
- Downtown District Boundary
- County Line
- Crash Density
- Less Crashes → More Crashes



Source: Team Analysis

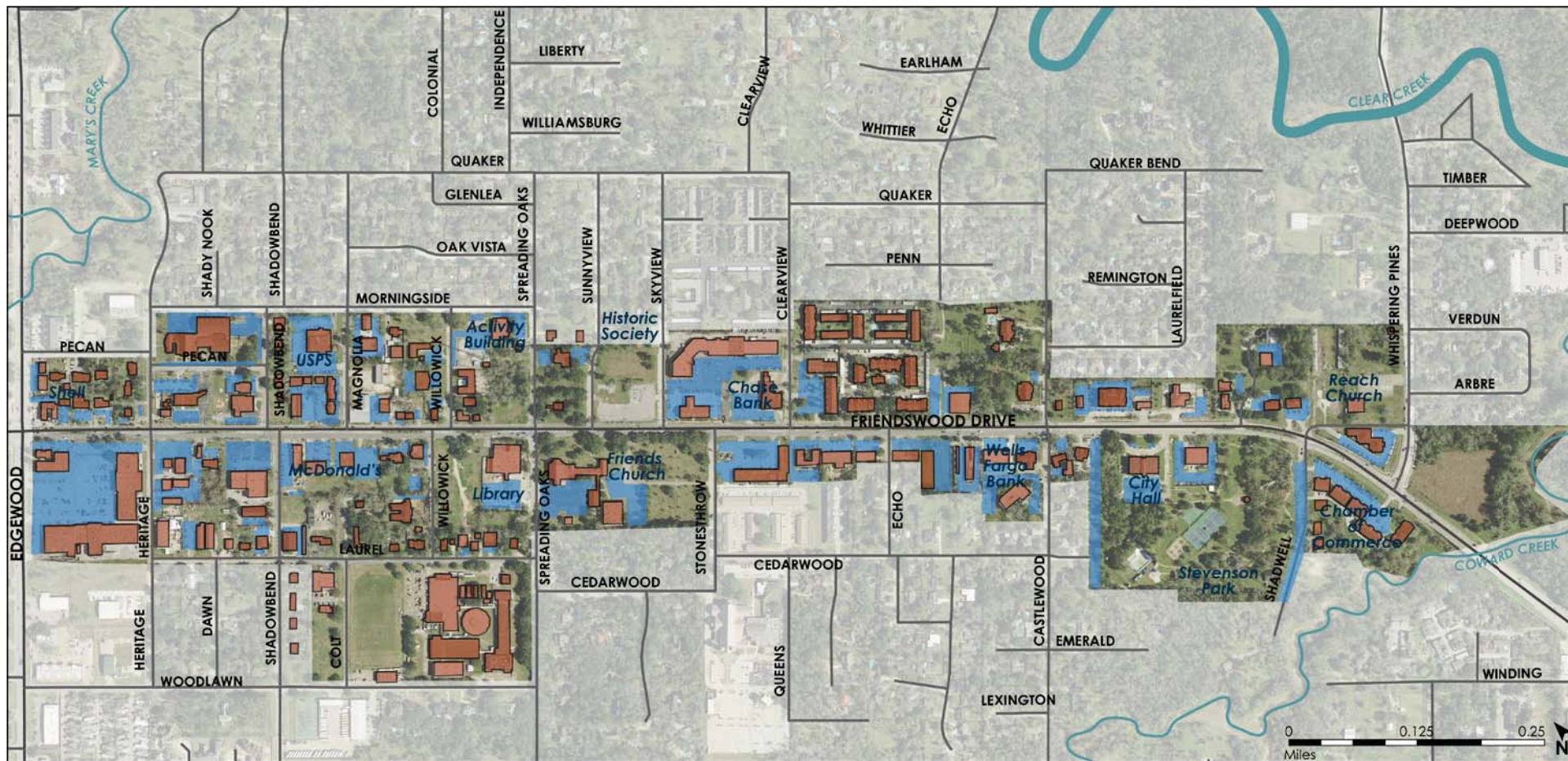
Driveways and Median Widths

Mitigation for a high corridor crash rate can include access management. Access management is focused on improving safety and traffic flow through median installation, turning restrictions, and reduction of driveways. The figure above depicts the existing medians along FM 518 and all parking lots to illustrate destinations and driveway density.

TxDOT's Access Management Manual indicates that 200 feet is needed between an intersection and the first driveway on a corridor such as FM 518; less driveways provide for a safer corridor due to less points of conflict. Given the spacing of intersections along the corridor, meeting the TxDOT guidelines would amount to approximately one driveway per block. The TxDOT guidelines are not one-size-fits-all. There are additional variables to consider including the number of parcels within each block and how people access the businesses within those parcels. Reducing driveways and providing cross-access between parcels requires support from property owners. It is recommended that the FDEDC encourage property owners to consider decreased driveways and cross-access with neighbors as sites develop. However, a corridor wide driveway consolidation plan is likely to require a full traffic study which would be costly nor a priority.

Legend

- Raised Median
- 5 ft** Maximum Median Width
- Surface Parking Lot



Source: Team Analysis

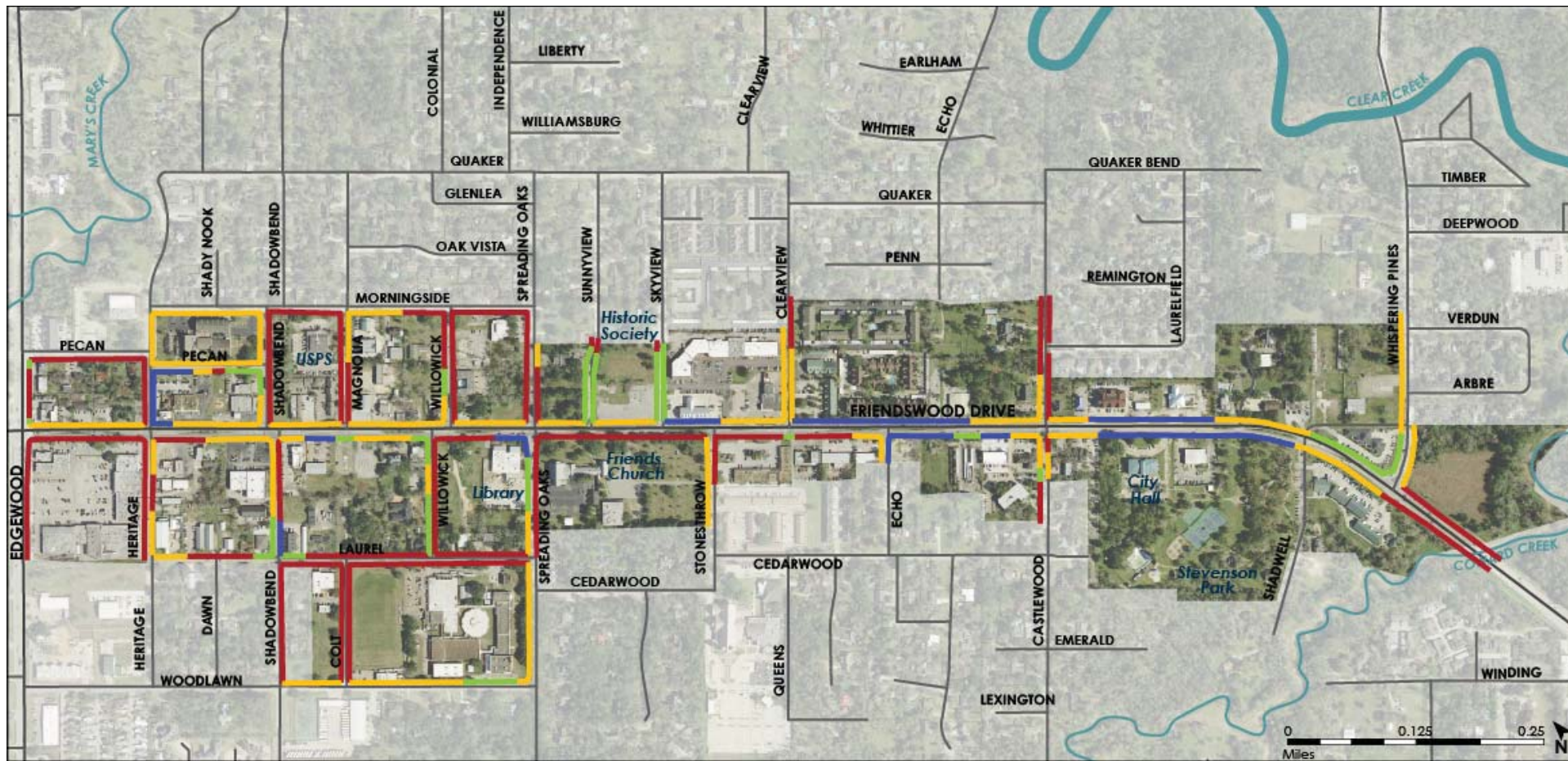
Parking

On a day to day basis, parking that serves downtown destinations is adequate. However, parking can be challenging or even scarce during larger downtown events. A parking inventory was created to illustrate the existing surface lots within the Downtown District to identify any shortages or potential opportunities to encourage shared parking. The only on-street parking opportunities are located near Stevenson Park. The mapped surface lots add up to approximately 30.5 acres of parking for the Downtown District. Parking was a key topic discussed at public meetings verifying that parking day to day is adequate, but parking for larger events is problematic.

The parking lot conditions are a maintenance and aesthetic concern. There are surface lots within the Downtown District that could be resurfaced or improved to enhance the overall look. There are also opportunities for the City to perform a parking study to identify areas where shared parking would help daily use as well as provide formalized coordination for satellite parking with shuttles for large Downtown events.

Legend

- Building Footprint
- Surface Parking Lot



Source: Team Analysis

Sidewalks and Walkability

Walkability was a shared priority for the Downtown District Improvement Plan. Comfortable, consistent, and connected sidewalks allow people to walk to and between downtown destinations. Currently, there are many gaps in the existing downtown sidewalk network where no sidewalks exist, as well as sidewalks that are narrow, uncomfortable, and often unsafe to walk on today. Through the sidewalk inventory, it is apparent where improvements could be made to complete the walkable downtown network.

Photos of the existing pedestrian conditions downtown can be seen on the following page illustrating the variety of existing sidewalks, poor curb ramps, and other pedestrian hazards that make walking Downtown undesirable. There are certain segments of downtown that have recently been improved under the Downtown District's design guidelines and requirements to provide red brick paver sidewalks that support a consistent look and feel.

Legend

Existing Sidewalks and Lengths

- Brick (5,329')
- 5' Wide & Good Condition (4,157')
- Poor or Narrow Condition (14,575')
- No Sidewalk Present (18,862')



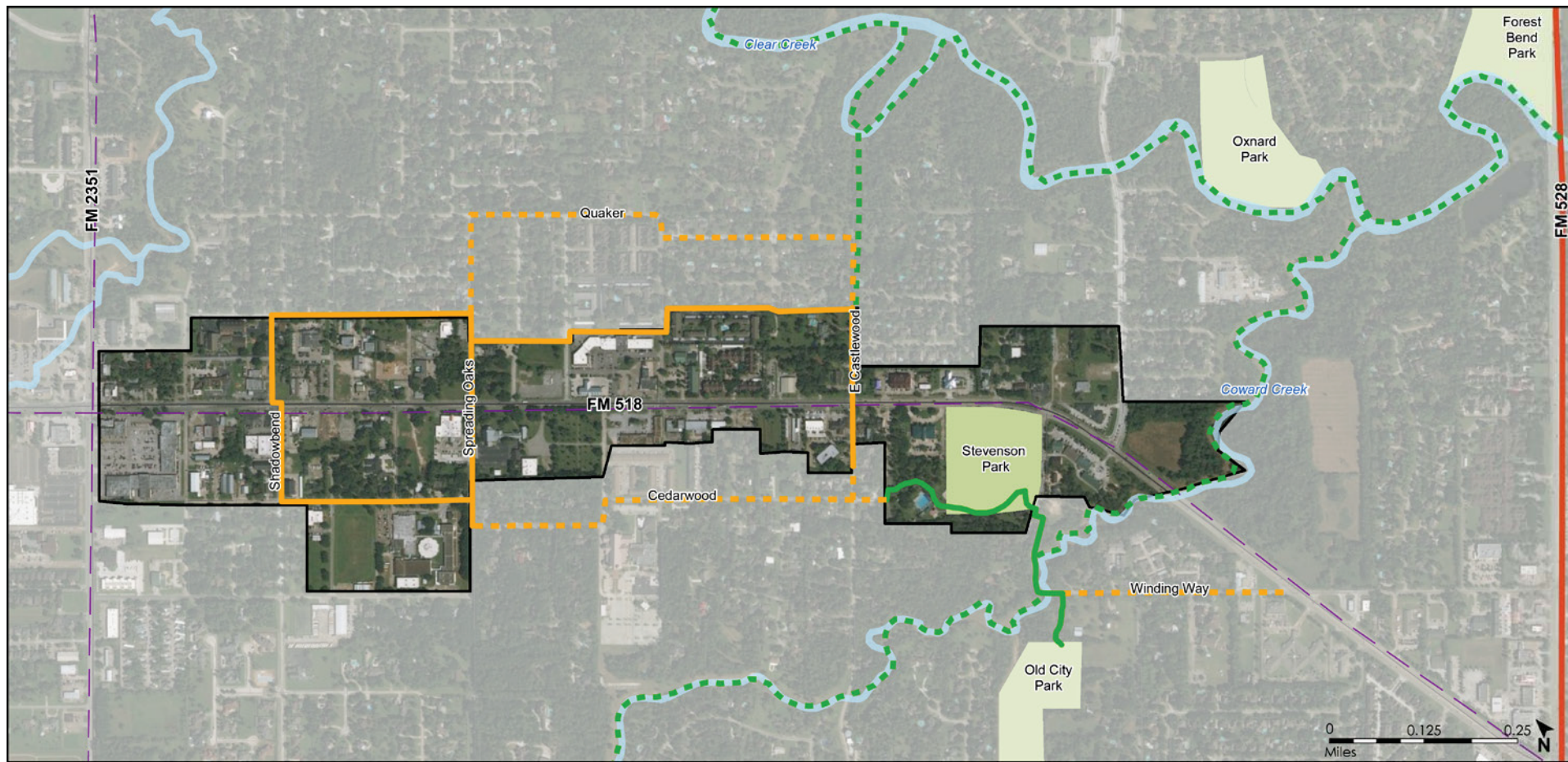
Sidewalk Conditions and Pedestrian Ramps

Curb ramps and crosswalks are also important for accessibility and walkability, especially as it relates to people using wheelchairs, walkers, or strollers. Numerous curb ramps at the signalized intersections are not ADA accessible with either no ramp, or a ramp that is inadequate or has been destroyed. Many of the ramp locations at the intersections direct the pedestrian into the middle of the intersection instead of safely onto the designated crosswalk. Improvements to the overall sidewalk network must also include curb ramps, access across driveways, and safe crosswalks at intersections.

Redesign of the signalized intersections would include ADA compliant ramps, wide well-marked crosswalks, pedestrian crossing priority, and clearly marked stop bars for cars to stop in advance of the crosswalk.

Legend - FM 518 Existing Sidewalks

- A** - Narrow sidewalk adjacent roadway
- B** - Poor driveway acting as sidewalk
- C** - Poor curb ramp, non-ADA
- D** - No connecting sidewalk; poor ramp
- E** - Poor driveway, narrow sidewalk
- F** - Downtown standard brick pavers



Bicycle Circulation

Through stakeholder engagement, public survey, and public meetings, people want to bike to the Downtown District destinations and would prefer there are designated and safe places to do so. Through the Houston-Galveston Area Council's regional bikeway viewer map, there are two lines designating an "Identified Bikeway Need" along FM 2351 and FM 518 within the Downtown District. Unfortunately, FM 518 have the right-of way for bike lanes, but there are opportunities to circulate bicycles towards the Downtown District without heavy vehicular conflicts on the major roadways. Currently, there are no signed bike routes near the Downtown District. However, this map presents a few potential corridors where signed bike routes could be considered in partnership with the City and the FDEDC, as the recommendations fall outside of the Downtown District boundary. Connections along Coward's Creek could also provide an off-street shared use path connecting Old City Park, Stevenson Park, and other neighborhoods and locations outside of the Downtown District. In addition to providing opportunities for bicyclists to get to Downtown from outlying areas, businesses within the district could also consider providing bicycle parking to encourage people to ride and stay a while.

Legend

- Existing Trail
- Existing Bike Lane
- Proposed Bike Route within Downtown District
- Proposed Bike Route Outside Downtown District
- Regional Proposed Shared Use Path/Trail
- H-GAC Regional Bikeway Needs

Source: Team Analysis & H-GAC Regional Bicycle Plan

Mobility Recommendations

The mobility characteristics assessed for the Downtown District Improvement Plan expands on previous improvements made and identifies public infrastructure-related improvements to be made to enhance the District improving safety, making it more inviting, and more accessible. Below are a few mobility-related recommendations identified as a result of this assessment. Many recommendations can be grouped into "intersection improvements" including curb ramps, mast arms, crosswalks, and pedestrian signals. However, each of these are discussed individually on the following pages.

Sidewalks

To provide a more consistent walkable Downtown experience, it is recommended that the FDEDC prioritize completing the entire sidewalk network along FM 518 using the eight-foot wide brick paver design standards, and implementing six-foot wide standard concrete sidewalks along the adjacent streets off of FM 518.

Filling in the gaps of the sidewalk network is a priority.



Existing



Recommended 8' wide sidewalks

Curb Ramps

To provide a safe, walkable, accessible Downtown experience, it is recommended that the FDEDC improve all curb ramps to allow people in wheelchairs, walkers, and people pushing strollers, safer access at intersections and driveways. The current curb ramps are substandard and prohibits pedestrian connectivity.



Existing



Recommended

Source: blog.unitboston.org

Mobility Recommendations Continued

Mast Arms at Intersections

The majority of the signalized intersections in Downtown are on span wire. To provide a more cohesive look throughout Downtown, replacing the span wire with black powder coated mast arms is recommended at the following intersections:

Edgewood
Spreading Oaks
Clearview
Castlewood
Whispering Pines
Shadowbend will need black powder coating only.



Existing



Recommended

Crosswalks and Pedestrian Signals

There are faded crosswalks at the signalized intersections Downtown, and eventual intersection reconstruction could allow for new crosswalks and other enhancements. Stamped concrete within the standard white crosswalk lines could be one option during reconstruction.

In the interim, repainting the crosswalks with a pattern or stylized paint may be considered.



Existing



Recommended

Mobility Recommendations Continued

Signed Bicycle Routes

There are opportunities to implement signed bicycle routes on low-speed, low-traffic corridors, to access and circulate within the Downtown District. Per the proposed bikeways map, signed bicycle routes are recommended within the district along Shadowbend, Morningside, Spreading Oaks, Laurel, and East Castlewood. Signed bicycle routes outside of the district that connect to the district are recommended along Quaker, Cedarwood, and Winding Way. Coordination will be required with the City outside the FDEDC boundaries.



Existing Low-Traffic Downtown Street



Recommended Bike Route Signage

FM 2351 Intersection Study

Travel time runs indicated considerable delay at the intersection of FM 2351 and FM 518. Residents also expressed frustration with delay at the intersection as well as concerns of adequate storage for left-turning vehicles. It is recommended the FDEDC request TxDOT to study the intersection to improve signal operations.



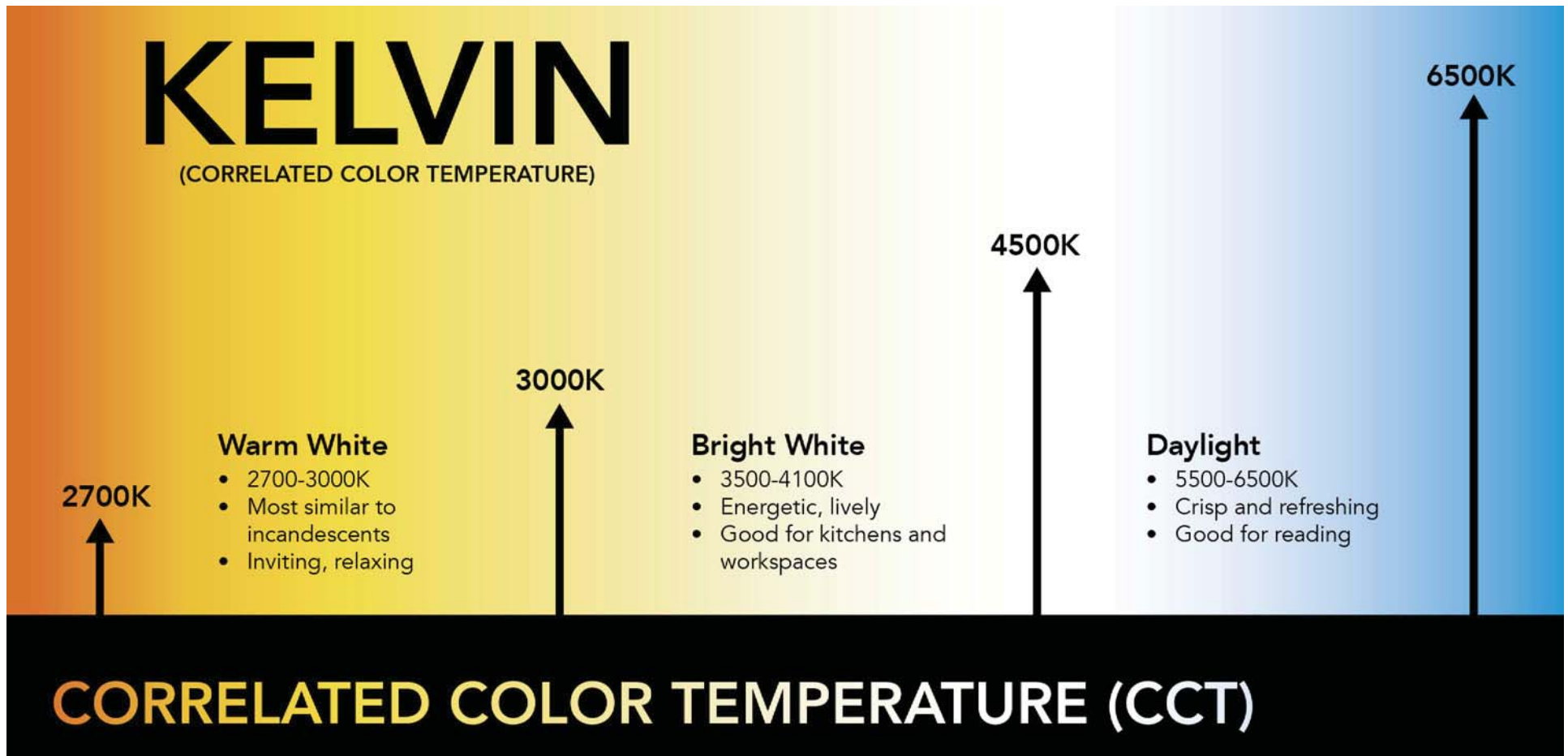
Existing FM 2351 Intersection

Downtown Shared Parking Study

Parking is not usually an issue, but for major events and other parking concerns, a shared parking study could be performed to facilitate parking agreements between businesses.



Existing Parking at Major Events



High Pressure Sodium vs. LED Lighting

High Pressure Sodium (HPS), which is currently in use by TNMP, is a type of lamp that has been used heavily for roadway lighting since the mid-60's but it can no longer compete with the quality and performance of LED technology. LED lighting provides a more efficient source of light, thus a lower utility bill as less energy is needed to run them. They also provide several color temperatures (CCT) to choose from, and better color rendering (CRI). The higher the CRI the more the colors will pop.

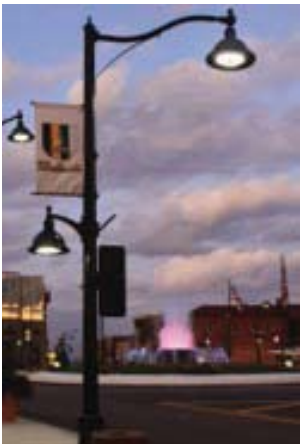




Texas-New Mexico Power Flood Lights

Texas-New Mexico Power (TNMP) only offers 100 watt and 200 watt HPS flood lights which have several major flaws:

- Lamp Life of HPS vs LED (24,000 hours vs up to 100,000 hours)
- Low color rendering (HPS rates only 24 for color rendering ability, while LED street lights are typically in the 80s—100 is a perfect score),
- An overly yellow color temperature and poor beam control causes excessive light trespass and light pollution. Light pollution means the overall amount of light in an area increases, which is why we can't see as many stars in the sky the closer we are to cities. Light trespass means unwanted light spills onto adjacent properties. We want to keep the light where it belongs and try to avoid letting it go where it doesn't.



Lighting Recommendation

The district should also enforce what Correlate Color Temperature (CCT) range should be allowed in certain areas to keep the consistent lighting approach long after this phase of development is complete.

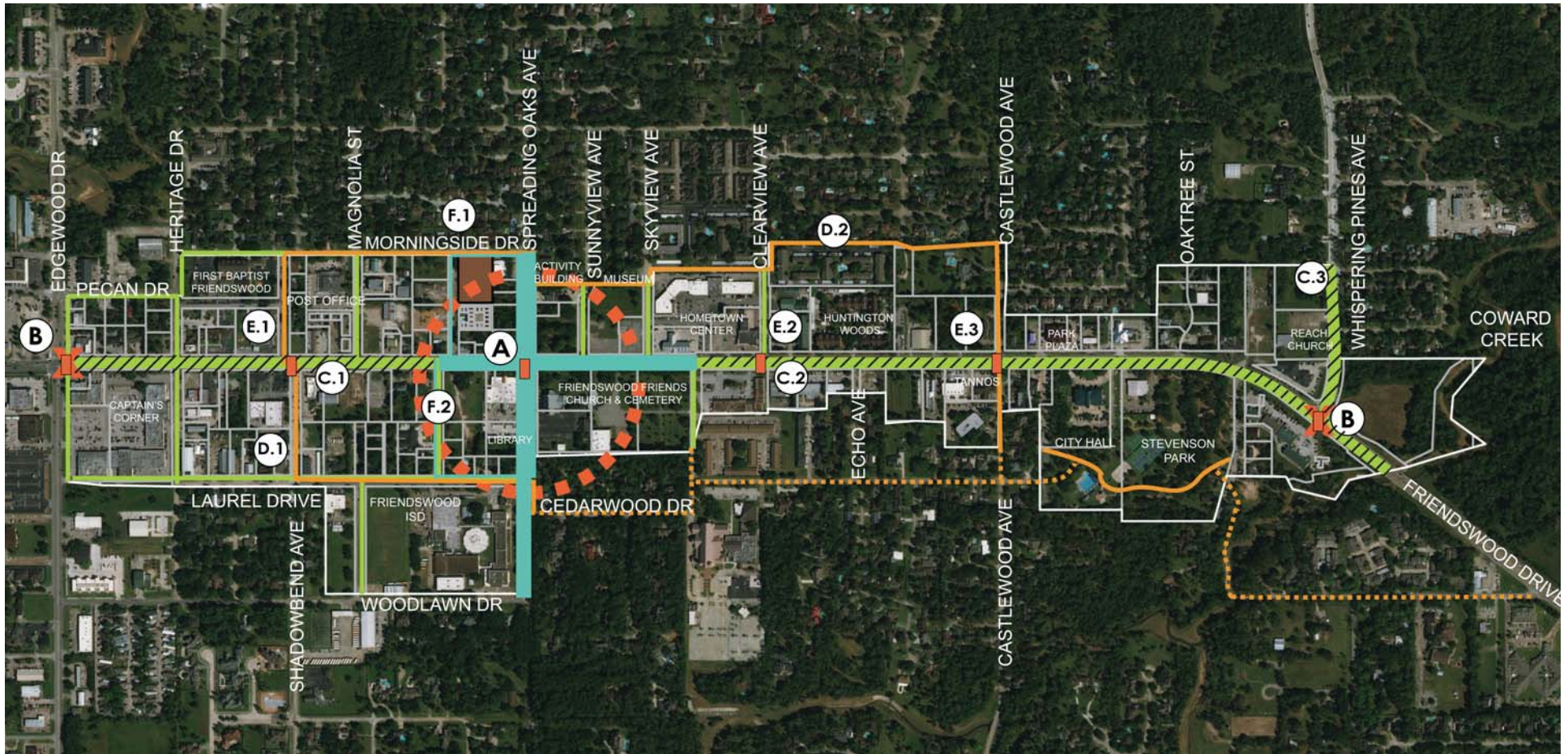
Unfortunately, existing pedestrian lights have metal halide lamps, an outdated technology that may become unavailable in the future. In addition, the requirement to have 2 lights per property can result in uneven spacing, leading to distracting light and dark spots along the corridor. Replacing all lights with LED fixtures at a consistent spacing will create a uniform, consistent, appearance. Residents, workers, and visitors will feel safe and welcome, leading to an active evening district.

Because Friendswoodians cherish the old Live Oaks at Friends Church and Cemetery in the "Heart of the District", uplighting those trees will enhance their status as symbols of the community and create a stunning signature element for the district.

Note that specific light poles and fixtures have not been selected, but the general scale and spacing are proposed.

PROJECTS AND OPPORTUNITIES



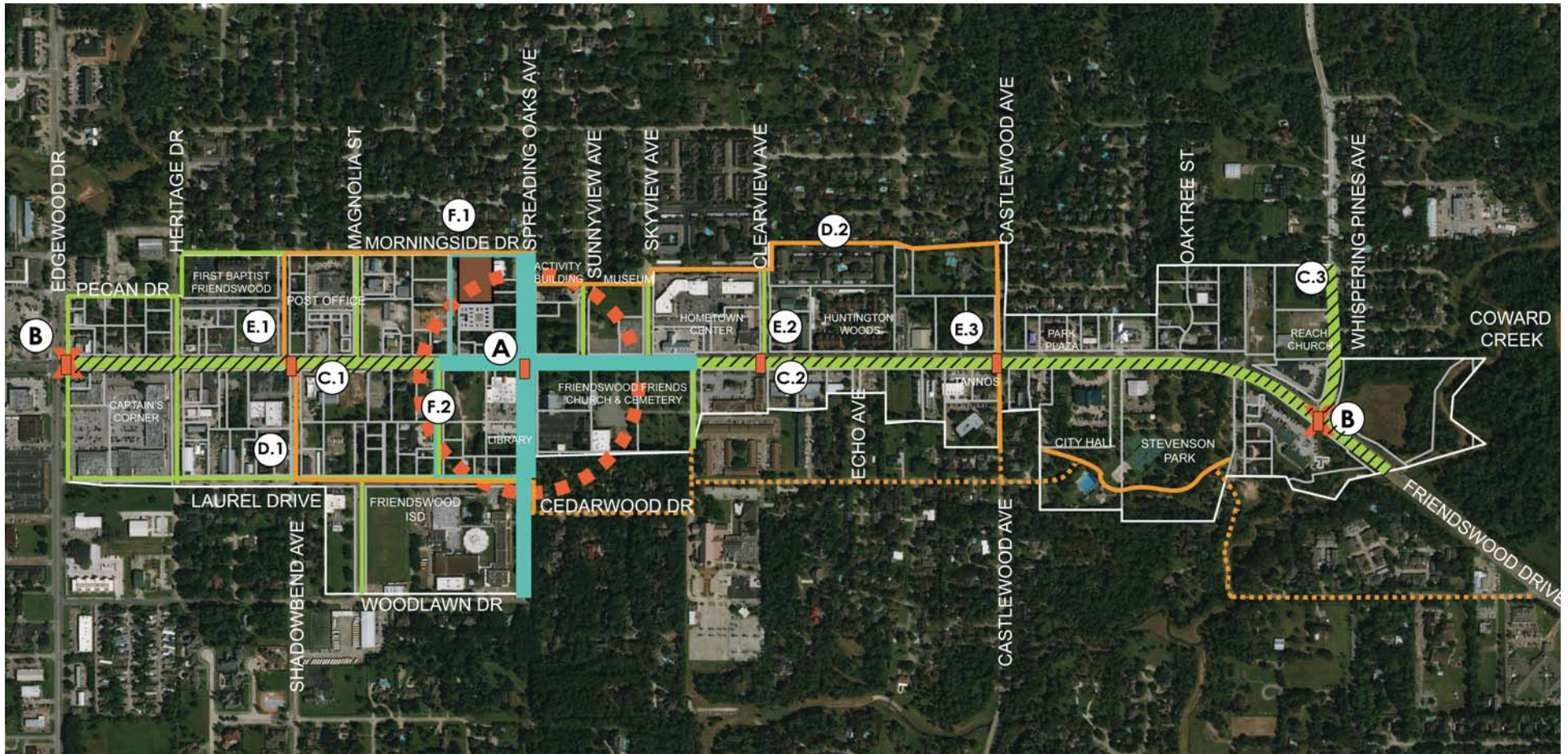


Downtown District Improvement Plan

The Downtown District Improvement Plan identifies projects within the District Boundaries that can be funded and implemented by the FDEDC. The projects must be within the public realm and contribute to the economic development of the District. Through our process, we have identified projects that will bring a cohesive, consistent appearance to the District's streetscape, creating a distinct identity and sense of place. This recognizable framework will allow the architectural styles of buildings on private property to vary within it without detracting from the District's identity. These improvements will attract appropriate development and bring people Downtown, creating a vibrant, active area that will support both existing and new businesses.

The design guidelines for the Downtown District currently require developers to build brick and concrete sidewalks, plant street trees, and install benches and pedestrian scaled lights. These improvements have been implemented in a piecemeal, inconsistent fashion over time as properties have been developed. Undeveloped properties often have substandard or no sidewalks or pedestrian lighting, creating gaps in a safe, walkable district. Having the FDEDC fund and implement these improvements will result in a cohesive streetscape that serves the entire District.

Improvements within the proposed projects include brick paver sidewalks, concrete sidewalks on side streets, pedestrian and roadway lighting, street trees, landscaping, branding elements, crosswalks and mast arm traffic signals. The specification of actual materials and products would be part of the proposed projects.



Projects

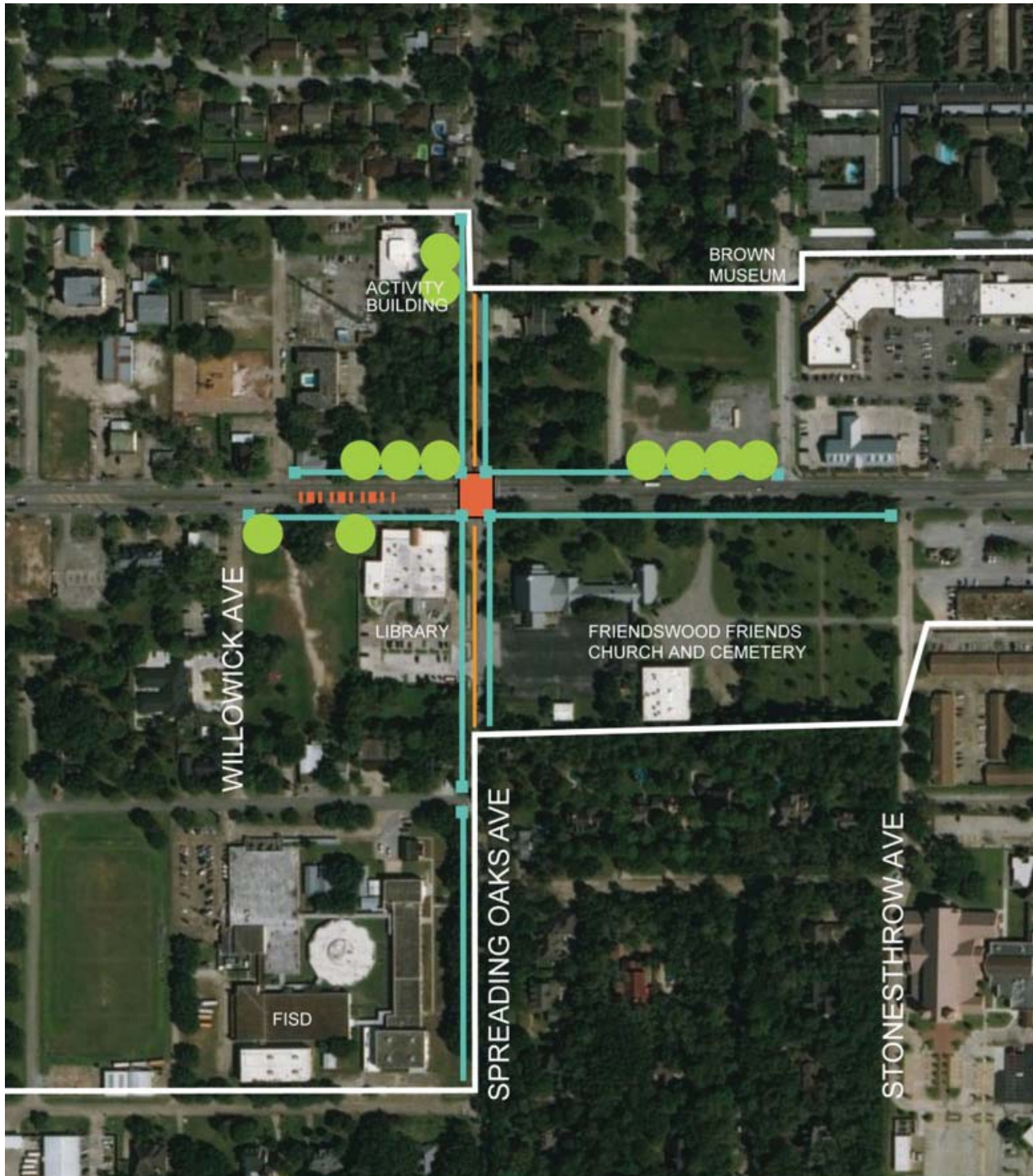
The projects are keyed in alphabetical order in a general order of priority, but they may be implemented in any order as funding becomes available. We believe constructing all improvements in the Heart of the District at S. Friendswood Drive and Spreading Oaks would create an inspiring precedent, but improvements may be implemented in layers rather than zones if funding dictates such an approach. For example, it is possible to construct the sidewalks throughout the District before improving the lighting or planting additional street trees rather than constructing a complete streetscape in a particular area. In addition, intersections may be improved independently of other projects.

Branding concepts are an independent project that will apply to the District as a whole. The branding concepts have been developed in

conjunction with the Downtown District Improvement Plan and can be found in the Appendix.

In addition, we recommend that the City request a traffic study of FM 518 from TXDOT. Timed runs through the District at morning and evening rush hours indicated that traffic moves through fairly quickly at 30 mph, becoming congested primarily at the Edgewood Drive intersection on the western end. Perhaps the lights could be timed differently or existing lanes could be designated as turn lanes only to move traffic through the intersection more efficiently without major reconstruction.

Note that 30 mph is an appropriate speed for both commuting and noticing attractive businesses along the way. This speed should be consistently enforced.



Project A

Heart of the Downtown

Friendswoodians identified this area as the heart of downtown throughout our public input process. In addition to the historic church, cemetery and Live Oaks, the well-used library is located on S. Friendswood Drive. Two new, mixed-use development projects are also underway. The City of Friendswood Activity Center anchors the area on the north, while the Friendswood Independent School District property anchors it on the south. This property has great potential for shared use or development, pulling activity into the quieter side streets and away from the traffic on FM 518.

Care must be taken to preserve the existing Live Oaks in front of Friends Church and Cemetery. Consider setting the brick sidewalk further from the curb to preserve roots through obtaining easements on the property. Uplighting these Live Oaks will highlight their historical value and create a magical nighttime feature for Downtown.

Add street trees on the north side of S. Friendswood Drive to create a green ceiling for the parkway. Add consistently spaced pedestrian and street lights throughout. Add site furnishings in appropriate locations. The median in front of the library is wide enough to accommodate a feature of some sort. Larger trees, sculpture or branding elements may be considered.

Overhead utility lines should be buried where possible.

A completed streetscape with an upgraded intersection featuring enhanced crosswalks and mast arm traffic signals would serve as a prototype for the rest of the District.



Project A

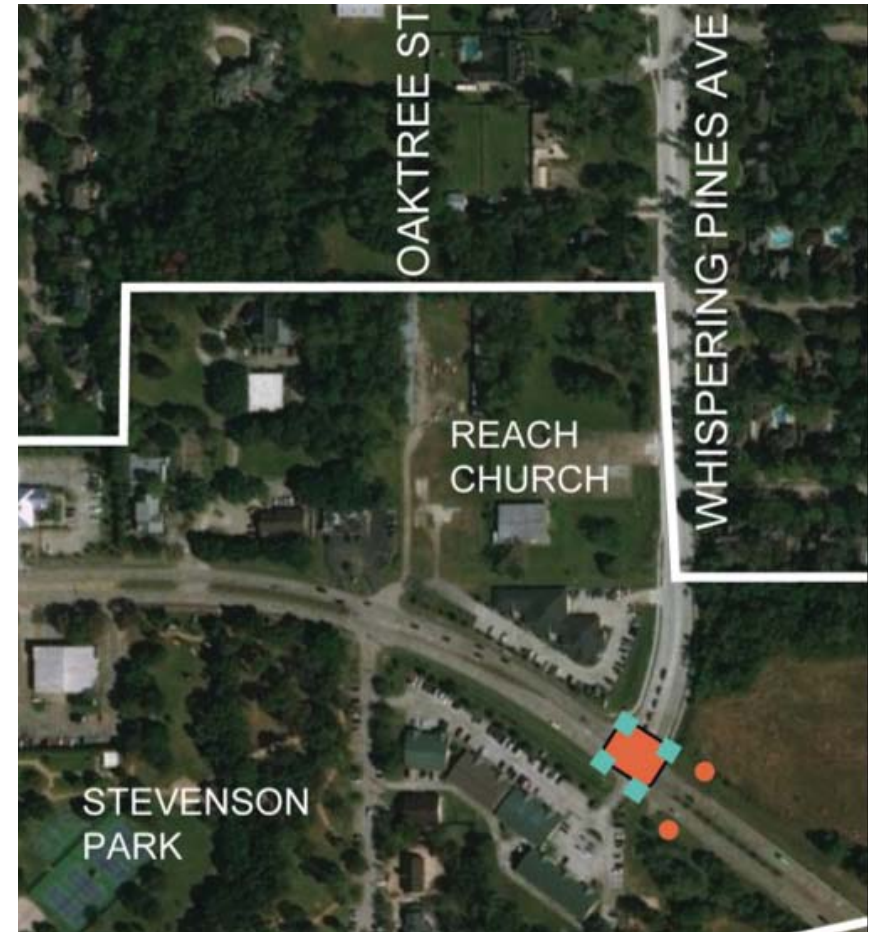
Brick sidewalks
Lighting
Street
Pedestrian
Historic Live Oaks
Feature

Signed bike route on
Spreading Oaks
Intersection improvements
Crosswalks
Traffic signals
Site amenities
Street furniture
Features

Trees and landscaping

Buried utility lines





Project B

Gateways/ Intersections

Many members of the public commented that they did not know where Downtown Friendswood is. If citizens of Friendswood do not know where it is, commuters traveling through certainly do not. Establishing gateways at the east and west ends of the District along Friendswood Drive will define its major boundaries and alert drivers that they are entering a special area. Improved intersections with mast arm traffic signals and updated crosswalks, along with branding elements such as gateway pylons and painted bridge walls, will signify the District's major entries.

Note that specific design of the improvements would be part of the project. The images pictured here are just precedents.



Project B Gateways/ Intersections

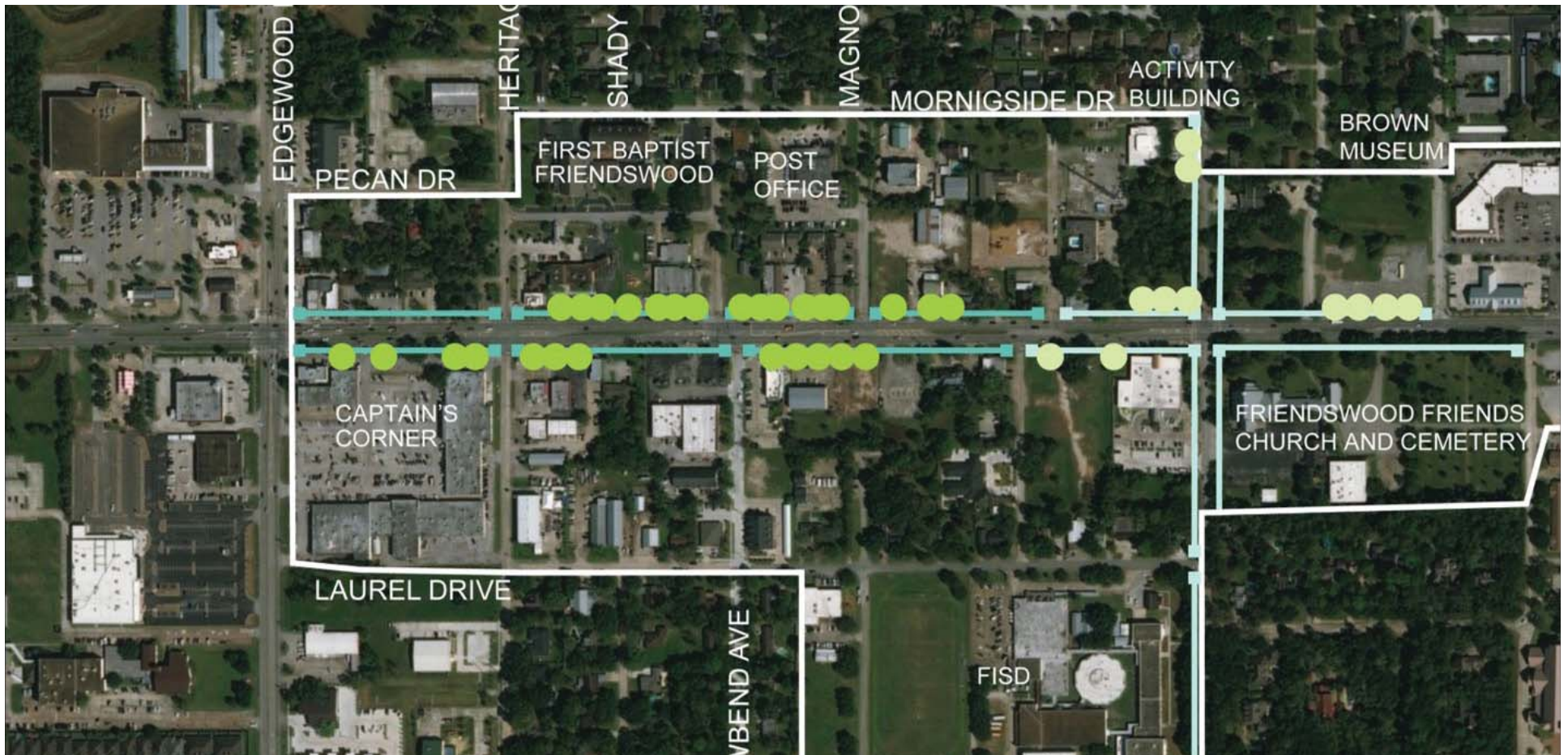
Branding elements

Intersection improvements

Crosswalks

Traffic signals

Buried utility lines

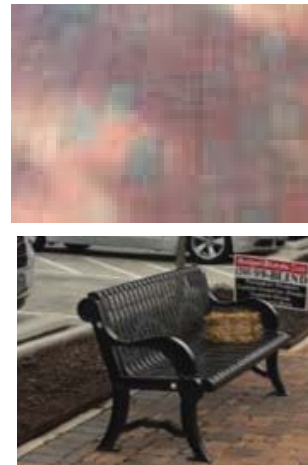
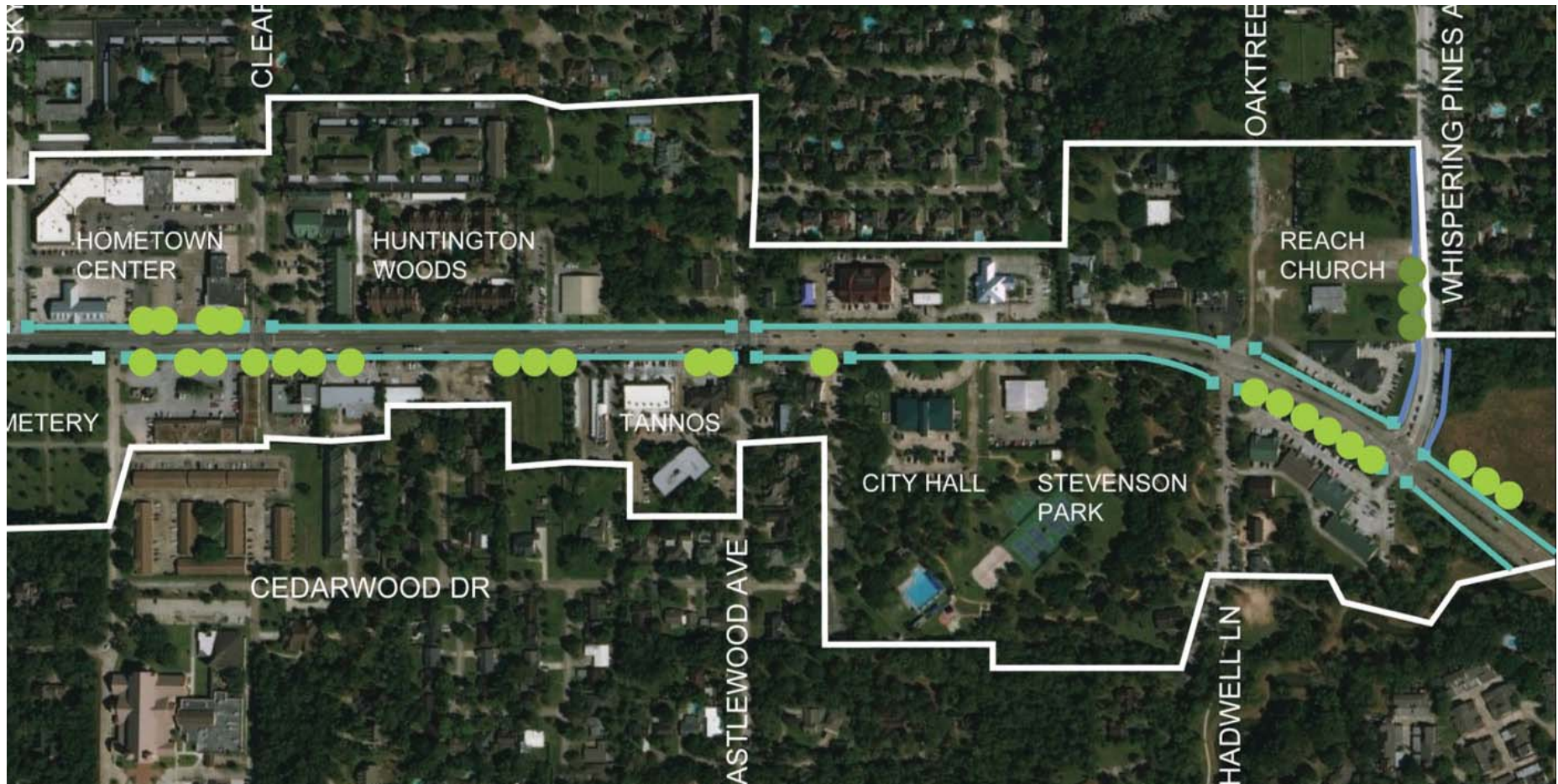


Project C

Streetscape Enhancements

Connecting the Heart of Downtown with the Gateways through consistent streetscape enhancements on the remaining stretches of S. Friendswood Drive would achieve the cohesive identity the District is seeking. Extending the streetscape improvements to the north on Whispering Pines would capture that area with developable properties, welcoming drivers entering from the north into the District at its boundary.

Streetscape enhancements will include brick sidewalks, pedestrian and street lights, street trees and landscaping, and site furnishings. Overhead utility lines should be buried where possible. Note that specific design of the improvements would be part of the project. The images pictured here are just precedents.



Brick sidewalks

Lighting

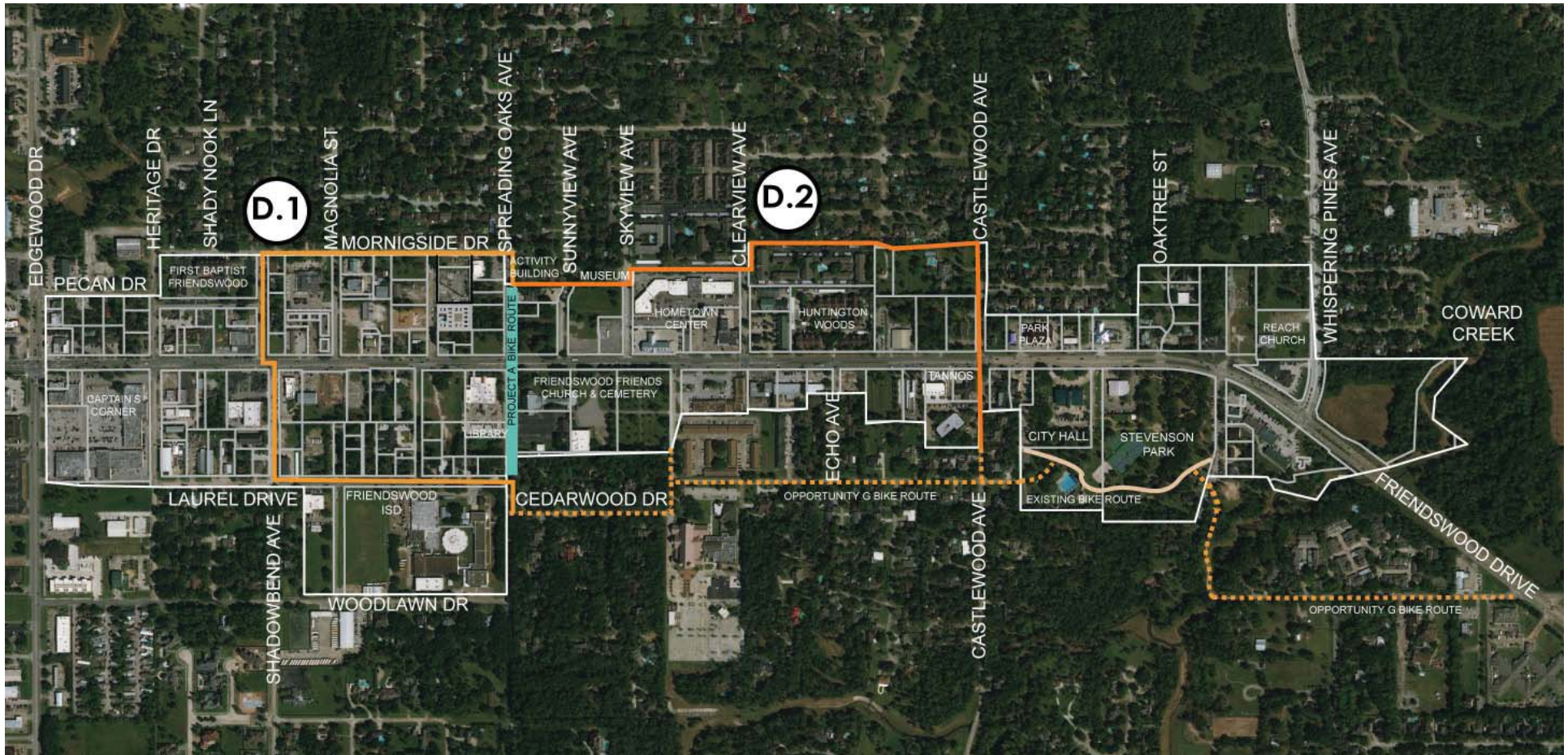
Street
Pedestrian

Site amenities

Street furniture
Features

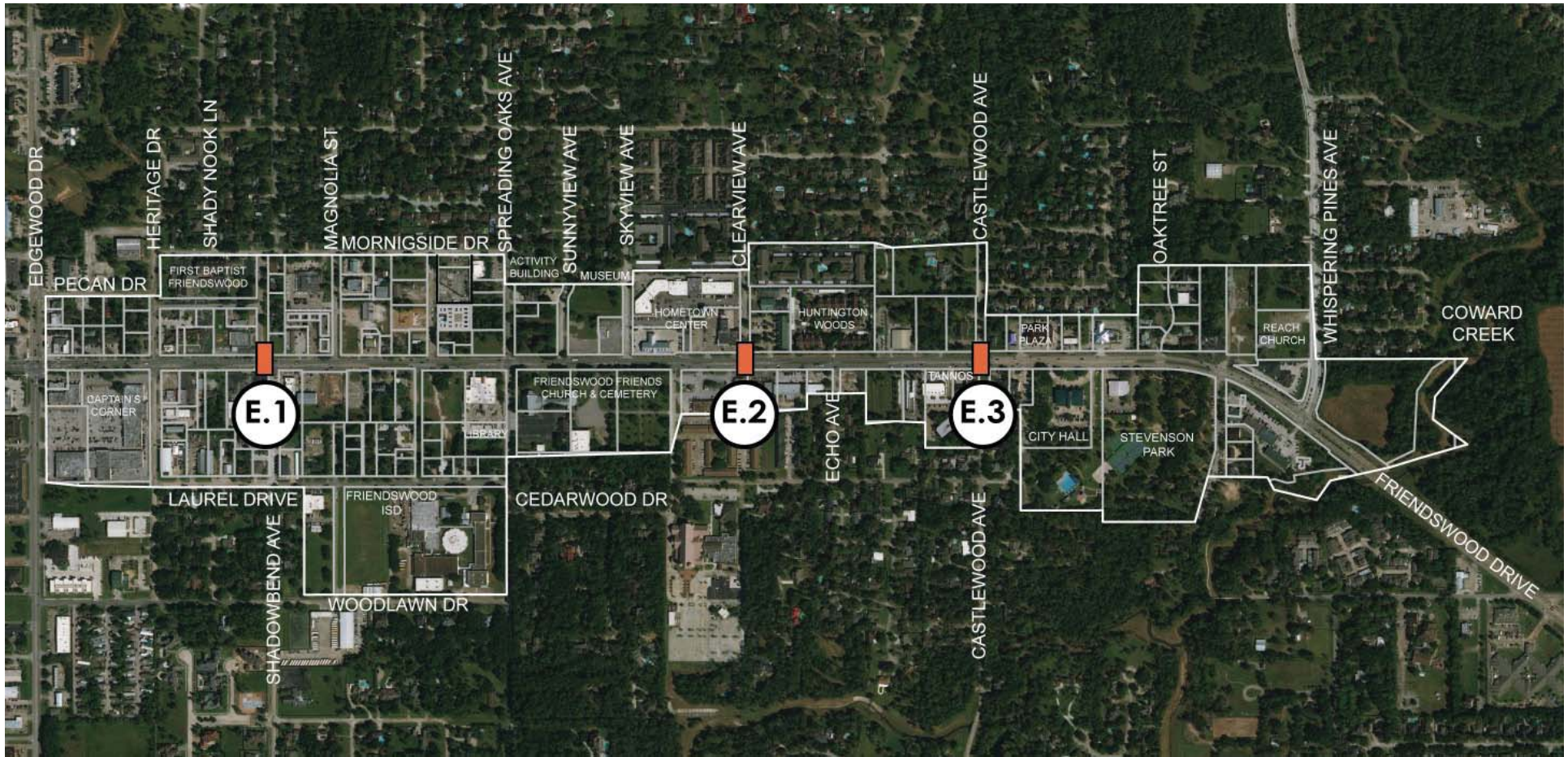
Trees and landscaping

Buried utility lines



Project D Cycling Routes

Connectivity throughout the region is key to the Downtown District's success. Many members of the public commented on the difficulty they have cycling safely to restaurants and events downtown. Others responded positively to the survey question asking if they would bike to downtown in the future. Our team identified safe, efficient routes connecting through and around the District and on to proposed regional bike trails. Because the existing streets are fairly narrow and lightly traveled at this time, no bike lanes are proposed. Signage identifying cycling routes is proposed on streets within the District boundaries. Additional signage outside the boundaries to complete the routes would have to be funded and implemented by another entity.



Project E Intersection Improvements

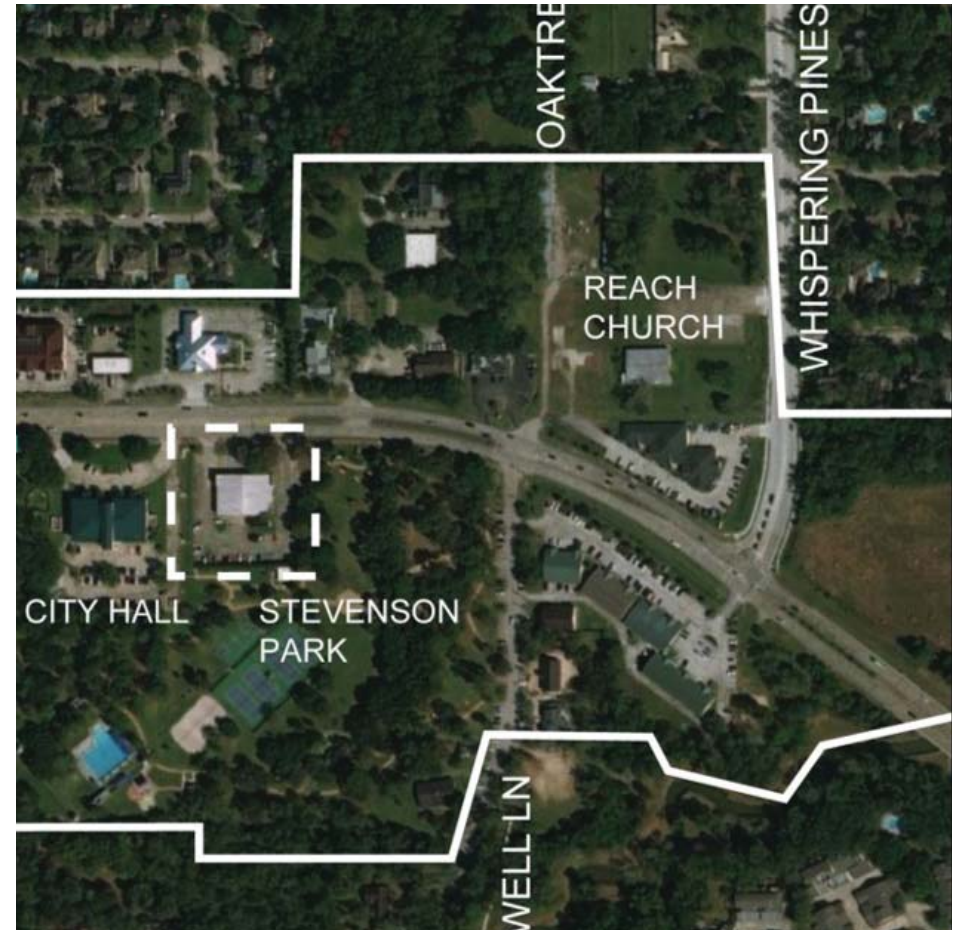
The remaining intersections on S. Friendswood Drive should be enhanced with mast arm traffic signals and upgraded crosswalks to be consistent with previous intersection improvements.





Project F
Activity Center Project

The Activity Center has underutilized land where a structure previously stood. Developing this area into a multi-purpose space that could be programmed for activities and special events would draw visitors into the side streets of the District and increase pedestrian and cycling traffic. Consider collaborating on events with the Masonic Lodge across the street by making use of their outdoor barbecue pit and picnic area.



Project G
Project Next to Stevenson Park

The area next door to City Hall where the Fire Station previously stood is within the District and could be improved with FDEDC funds. Because that area is already under study by another organization, however, it is not considered a priority for the FDEDC.



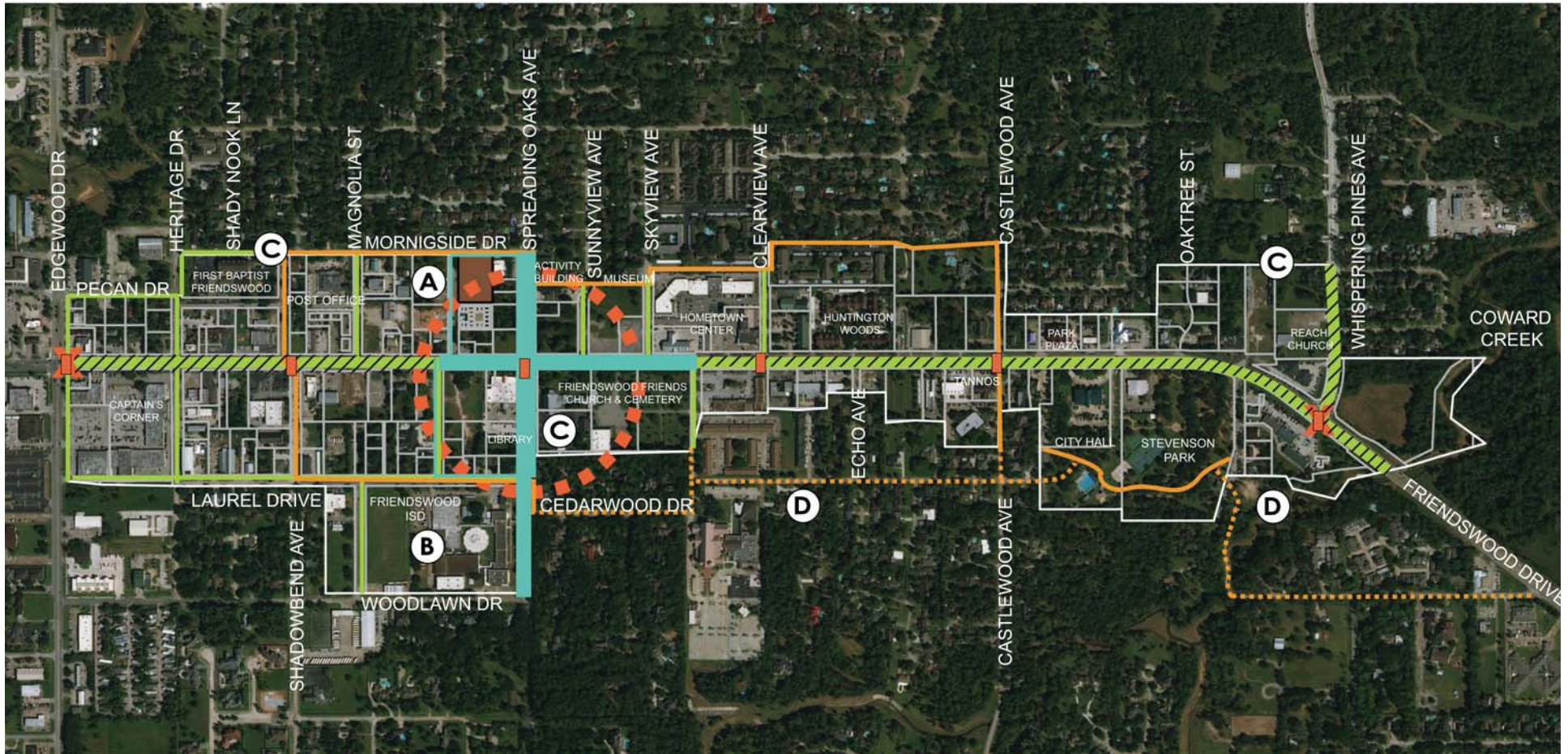
Project H Street Signs and Stop Signs

Carrying the branding throughout the District by including the logo, fonts and colors on street signs and upgrading the stop signs to include uniform posts and black backs will reinforce the Downtown identity.



Project I Banner Program

Introducing the branding concepts to the District through an upgraded banner program will unify and enliven Downtown.



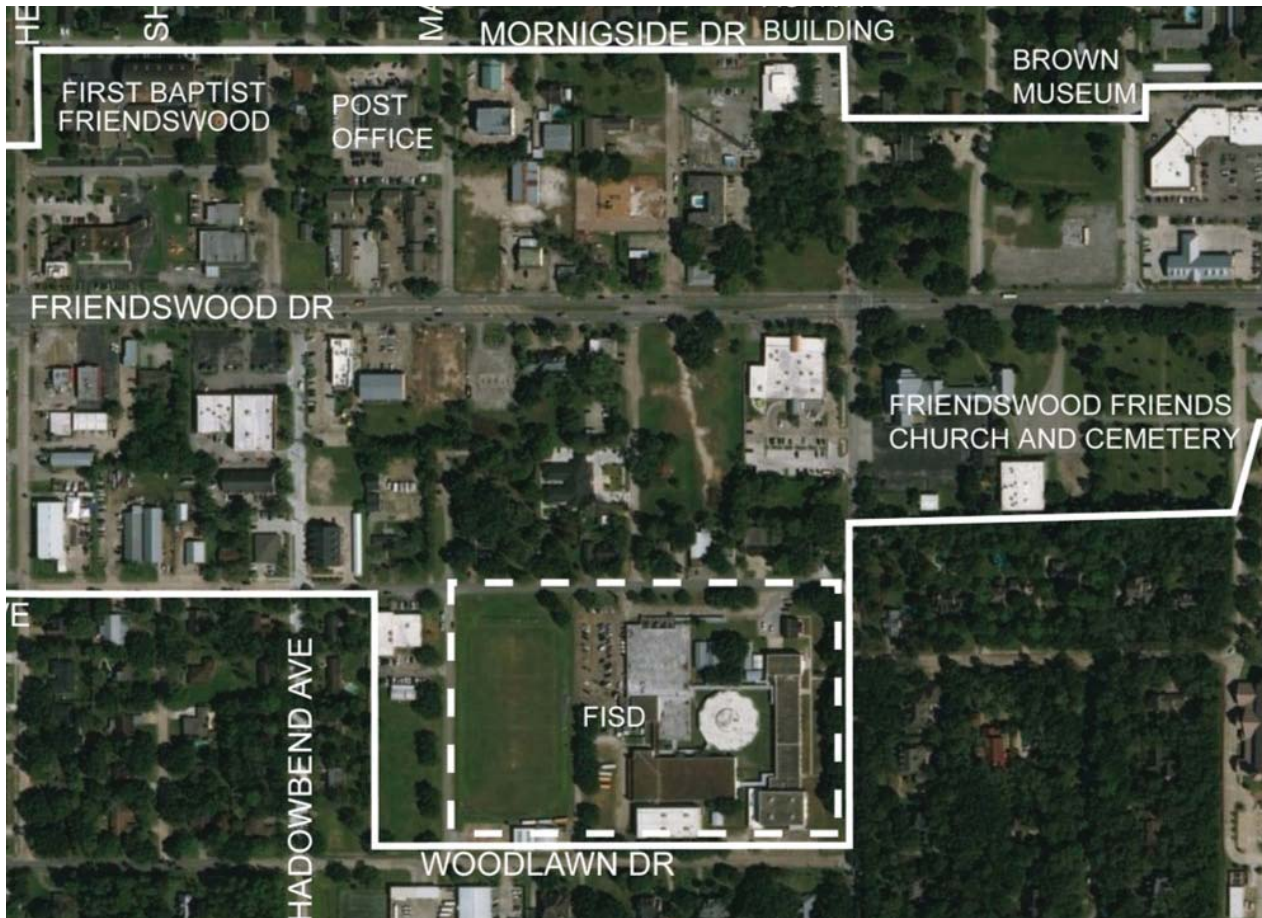
Opportunities

Opportunities are projects that would support the development of the Downtown District as an active, engaging area but that cannot be implemented with FDEDC funds, either because they are on private property or outside the District boundaries. The following recommendations originated in discussions with stakeholders.



Opportunity A Food Service

The Anson Jones Lodge, Friendswood's Masonic Lodge, has a large outdoor barbecue pit, picnic area and commercial kitchen that are available for use by other organizations. With some minor improvements, the facilities could function as a weekend breakfast spot, Sunday afternoon barbecue spot, or special event food service facility to supplement the Activity Center. Activating the side streets of the District by providing more food service options will encourage development away from the traffic along FM 581, creating the slower paced, smaller scaled, "quaint" district that Friendswoodians desire.



Opportunity B Shared Facilities

Friendswood Independent School District owns a large parcel in the Heart of Downtown. A former school, the facilities are now partially used by FISH, partially leased, and partially a museum that is open only occasionally. In addition to buildings, included a cafeteria, the property includes sports fields. Activating these spaces through special events would draw visitors to the District, increasing the customer base for businesses.

The open space serves as a green counterpart to Stevenson Park and could potentially be programmed with more teen-oriented activities and special events, such as movies in the park, music festivals, parkour and yoga classes, etc. High school students in our stakeholder meetings mentioned that they love Stevenson Park but find the movies and activities geared toward younger children.

Increasing traffic to the area by opening more of the property up to businesses or mixed-use development would benefit the District, as well.



Opportunity D

Signed Bike Route

As discussed in Project D, the proposed cycling routes extend beyond the District boundaries. Another entity will need to fund and implement a signage program identifying the routes in those areas.





Opportunity E Storefront Branding

Engaging the District businesses in promoting the District brand will strengthen and reinforce it. Opportunities exist throughout the District for adding logos and branding material to active storefronts and even vacant building fronts. Creating unique displays, such as the annual scarecrow contest, will draw visitors to the District.



PROBABLE COSTS



<i>Heart of the Downtown</i>				
Demo existing sidewalk	1814	sy	25.00	\$45,350.00
8' Brick Sidewalks: Including 4.5" concrete base under pavers and 4" edge along pavers	4,563	lf	133.33	\$608,400.00
Curb Ramps	27	ea	2700.00	\$72,900.00
Demo existing driveway	466	sy	26.00	\$12,107.33
Driveways Paved: 7" concrete	466	sy	70.00	\$32,596.67
Driveway: 6" curb	480	lf	15.00	\$7,200.00
Intersection Rebuild: Including mast arms, ped signals, curb ramps, striping	1	ls	250000.00	\$250,000.00
Intersection Crosswalks: Stamped Concrete	222	sy	85.00	\$18,888.89
Streetscape Lighting	1440	lf	75.00	\$108,000.00
Tree Uplighting	14	ea	1000.00	\$14,000.00
Median Installation	1	ls	200000.00	\$200,000.00
Landscape	1440	lf	80.00	\$115,200.00
Irrigation	20160	sf	0.85	\$17,136.00
Engineering/Design (15%)				\$225,266.83
Mobilization for Intersection Rebuild (10%)				\$26,888.89
Mobilization for Sidewalks Rebuild (3%)				\$23,356.62
30% Contingency				\$410,832.87
Project A Sub-Total				\$2,188,124.10

<i>Gateways and Intersection Improvements</i>				
Intersection Rebuild, Edgewood: Including mast arms, ped signals, curb ramps, striping	1	ls	300000.00	\$300,000.00
Intersection Rebuild, Whispering Pines: Including mast arms, ped signals, curb ramps, striping	1	ls	250000.00	\$250,000.00
Intersection Crosswalks, Edgewood: Stamped Concrete	290	sy	85.00	\$24,631.11
Intersection Crosswalks, Whispering Pines: Stamped Concrete	234	sy	85.00	\$19,871.11
Entry Markers	5	ls	50000.00	\$250,000.00
Entry Marker Lighting	5	ea	3000.00	\$15,000.00
Graphics	1	ls	20000.00	\$20,000.00
Engineering/Design (15%)				\$131,925.33
Mobilization for Intersection Rebuild (10%)				\$59,450.22
30% Contingency				\$257,850.67
Project B Sub-Total				\$1,328,728.44

<i>Pedestrian Enhancements 1</i>					
Demo exsiting sidewalk	1973	sy	25.00	\$49,325.00	
8" Brick Sidewalks: Including 4.5" concrete base under pavers	4,332	lf	133.33	\$577,600.00	
Curb Ramps	72	ea	2700.00	\$194,400.00	
Demo existing driveway	760	sy	26.00	\$19,765.78	
Driveways Paved: 7" concrete	760	sy	70.00	\$53,215.56	
Driveway: 6" curb	840	lf	15.00	\$12,600.00	
Intersection Crosswalks, Shadow Bend : Stamped Concrete	195	sy	85.00	\$16,546.67	
Streetscape Lighting	2080	lf	75.00	\$156,000.00	
Wire Relocation	1	ls	125400.00	\$125,400.00	
Landscape	2080	lf	80.00	\$166,400.00	
Irrigation	29120	sf	0.85	\$24,752.00	
Engineering/Design (15%)				\$209,400.75	
Mobilization for Sidewalks Rebuild (3%)				\$27,703.59	
30% Contingency				\$361,455.90	
Project C.1 Sub-Total				\$1,994,565.24	

<i>Pedestrian Enhancements 2</i>					
Demo exsiting sidewalk	2664	sy	25.00	\$66,600.00	
8" Brick Sidewalks: Including 4.5" concrete base under pavers	5,265	lf	133.33	\$702,000.00	
Curb Ramps	41	ea	2700.00	\$110,700.00	
Demo existing driveway	847	sy	26.00	\$22,022.00	
Driveways Paved: 7" concrete	847	sy	70.00	\$59,290.00	
Driveway: 6" curb	66	lf	15.00	\$990.00	
Streetscape Lighting	4050	lf	75.00	\$303,750.00	
Wire Relocation	1	ls	125400.00	\$125,400.00	
Landscape	4050	lf	40.00	\$162,000.00	
Irrigation	28350	lf	0.85	\$24,097.50	
Engineering/Design (15%)				\$236,527.42	
Mobilization for Sidewalks Rebuild (3%)				\$28,848.06	
30% Contingency				\$417,225.60	
Project C.2 Sub-Total				\$2,259,450.58	

<i>Pedestrian Enhancements 3</i>					
Demo exsiting sidewalk	417	sy	25.00	\$10,425.00	
8" Brick Sidewalks: Including 4.5" concrete base under pavers	953	lf	133.33	\$127,061.33	
Curb Ramps	4	ea	2700.00	\$10,800.00	
Demo existing driveway	51	sy	26.00	\$1,326.00	
Driveways Paved: 7" concrete	51	sy	70.00	\$3,570.00	
Driveway: 6" curb	80	lf	15.00	\$1,200.00	
Streetscape Lighting	835	lf	75.00	\$62,625.00	
Wire Relocation	1	ls	125400.00	\$125,400.00	
Landscape	835	lf	80.00	\$66,800.00	
Irrigation	11690	sf	0.85	\$9,936.50	
Engineering/Design (15%)				\$62,871.57	
Mobilization for Sidewalks Rebuild (3%)				\$4,631.47	
30% Contingency				\$102,722.20	
Project C.3 Sub-Total				\$589,369.08	

<i>Cycling Route 1</i>					
Signage	0.75	mile	50000.00	\$37,500.00	
30% Contingency				\$11,250.00	
Project D.1 Sub-Total				\$48,750.00	

<i>Cycling Route 2</i>					
Signage	1	mile	50000.00	\$50,000.00	
30% Contingency				\$15,000.00	
Project D.2 Sub-Total				\$65,000.00	

<i>Clearview Intersection</i>				
Intersection Rebuild: Including mast arms, ped signals, curb ramps, striping, etc	1	ls	250000.00	\$250,000.00
Intersection Crosswalks: Stamped Concrete	201	sy	85.00	\$17,075.56
Engineering/Design (15%)				\$40,061.33
Mobilization for Intersection Rebuild (10%)				\$26,707.56
30% Contingency				\$80,122.67
Project E.1 Sub-Total				\$413,967.11

<i>Shadowbend Intersections</i>				
Powder coat existing mast arm				TBD
Project E.2 Sub-Total				TBD

<i>Castlewood Intersection</i>				
Intersection Rebuild: Including mast arms, ped signals, curb ramps, striping	1	ls	250000.00	\$250,000.00
Intersection Crosswalks: Stamped Concrete	213	sy	85.00	\$18,133.33
Engineering/Design (15%)				\$40,220.00
Mobilization for Intersection Rebuild (10%)				\$26,813.33
30% Contingency				\$80,440.00
Project E.3 Sub-Total				\$415,606.67

<i>Heart of the Downtown - Phase 2 (Project next to Activity Center)</i>				
	Scope not determined			
Project F.1 Sub-Total				TBD

Heart of the Downtown - Phase 2 (Willowick Streetscape)					
	Demo exsiting sidewalk	1,163	sy	25.00	\$29,075.00
	6' Concrete (4.5")	1,163	sy	60.00	\$69,780.00
	Ramps	24	ea	2700.00	\$64,800.00
	Demo existing driveway	310	sy	26.00	\$8,060.00
	Driveways Paved: 7" concrete	310	sy	70.00	\$21,700.00
	Driveway: 6" curb	390	lf	15.00	\$5,850.00
	Streetscape Lighting	1,199	lf	75.00	\$89,925.00
	Landscape	1,199		80.00	\$95,920.00
	Irrigation	1,199			\$1,199.00
	Engineering/Design (15%)				\$57,946.35
	Mobilization for Sidewalks Rebuild (3%)				\$5,977.95
	30% Contingency				\$86,757.00
Project F.2 Sub-Total					\$536,990.30

Street name poles and traffic signs					
	Fabrication and Installation				\$90,000.00
Project H Sub-Total					\$90,000.00

Banner Program					
	Banners	20	ea	350.00	\$7,000.00
	30% Contingency				\$2,100.00
Project I Sub-Total					\$9,100.00

APPENDIX



BRANDING

Downtown Friendswood

Lauren Griffith Associates

CORE Design Studio

Why we are here.

We are here to recommend a brand expression for Downtown Friendswood that reflects the existing mission and goals established by the district while addressing feedback and analysis from the community. This brand expression will define Downtown Friendswood as a unique, cohesive, and lively area that will attract new businesses and enhance the downtown experience for the residents of Friendswood.

We did this by

- :: Reviewing the district's existing environment and understanding the community's history and progress.
- :: Meeting with stakeholders and the community to get to know the people and Friendswood's legacy.
- :: Gaining an understanding of the desired future state of Downtown Friendswood.

What we heard.

“Downtown Friendswood will be a visually appealing, pedestrian friendly, safe, traditional Texas small town that integrates cultural, commercial and residential activities that is recognized as the heart of the community.”

Values, Faith, Family, Education, Friends Church, Oak trees, Liberty Oak, Fig industry, Small Shops, Restaurants, Stevenson Park, Meeting/Gathering spaces, Curated Public Art, Web Presence, Walking and Biking.

TODAY

- :: Friendly, hometown feeling
- :: Small, bland, and boring
- :: Close-knit and safe
- :: No clear downtown entry points
- :: No cohesive district brand or image
- :: Not pedestrian-friendly

TOMORROW

- :: Active, busy, dynamic, exciting
- :: Fun opportunities and activities
- :: Small town charm, clean, safe
- :: Local shops, businesses, restaurants, events, gathering spaces
- :: Distinct from neighboring cities

What we recommend.

- :: A consistent and cohesive brand expression for Downtown Friendswood.
- :: A signage program that will become the public voice of Downtown Friendswood, projecting a positive and vibrant district image to residents, and current and future businesses.
- :: The use of signage, banners, public art, and other visual elements, lets visitors know they are in a unique area and promotes a pedestrian-friendly experience.

The Brand Promise.

Downtown Friendswood is a space for sharing ideas and strengthening relationships. Family, friendship, and faith are at the core of Friendswood's history. These values have built and maintained the community and its spirit. The district will foster an environment that continues to strengthen those values and build a solid future for generations to come.

The Brand Personality.

Friendly, Authentic, Small-Town Charm, Timeless, Vibrant

BRANDING

About your new Downtown logo.

The Visual Identity.

With the community's feedback, we developed a visual vocabulary that will be the foundation for Downtown Friendswood's brand. The most significant cultural, historical and physical references that inform the brand are derived from Friendswood's origin as a Quaker community, and in the representation of the Live Oak tree.



The circular form of the Downtown Friendswood logo pays compliment to the City of Friendswood’s iconic seal with the Live Oak tree. The circle is a traditional shape of city seals, and with the combination of bright colors, a new icon, pattern and typefaces it references the past, but moves the district forward.

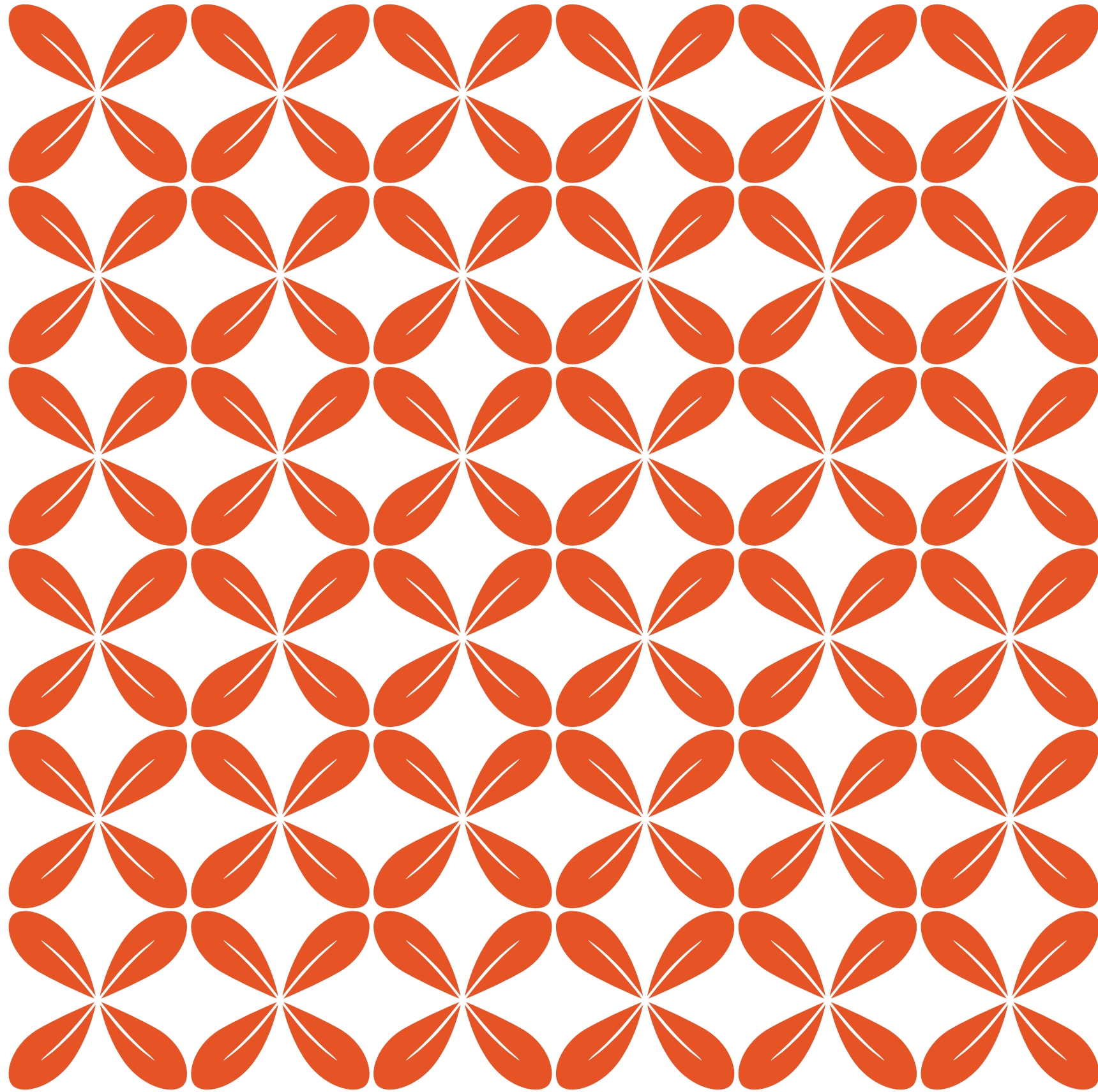
Where Friends Meet.

Based on the feedback we received regarding what downtown means to your community, Downtown has been and always should continue to be a place “where friends meet.”

DOWNTOWN FRIENDSWOOD : BRANDING

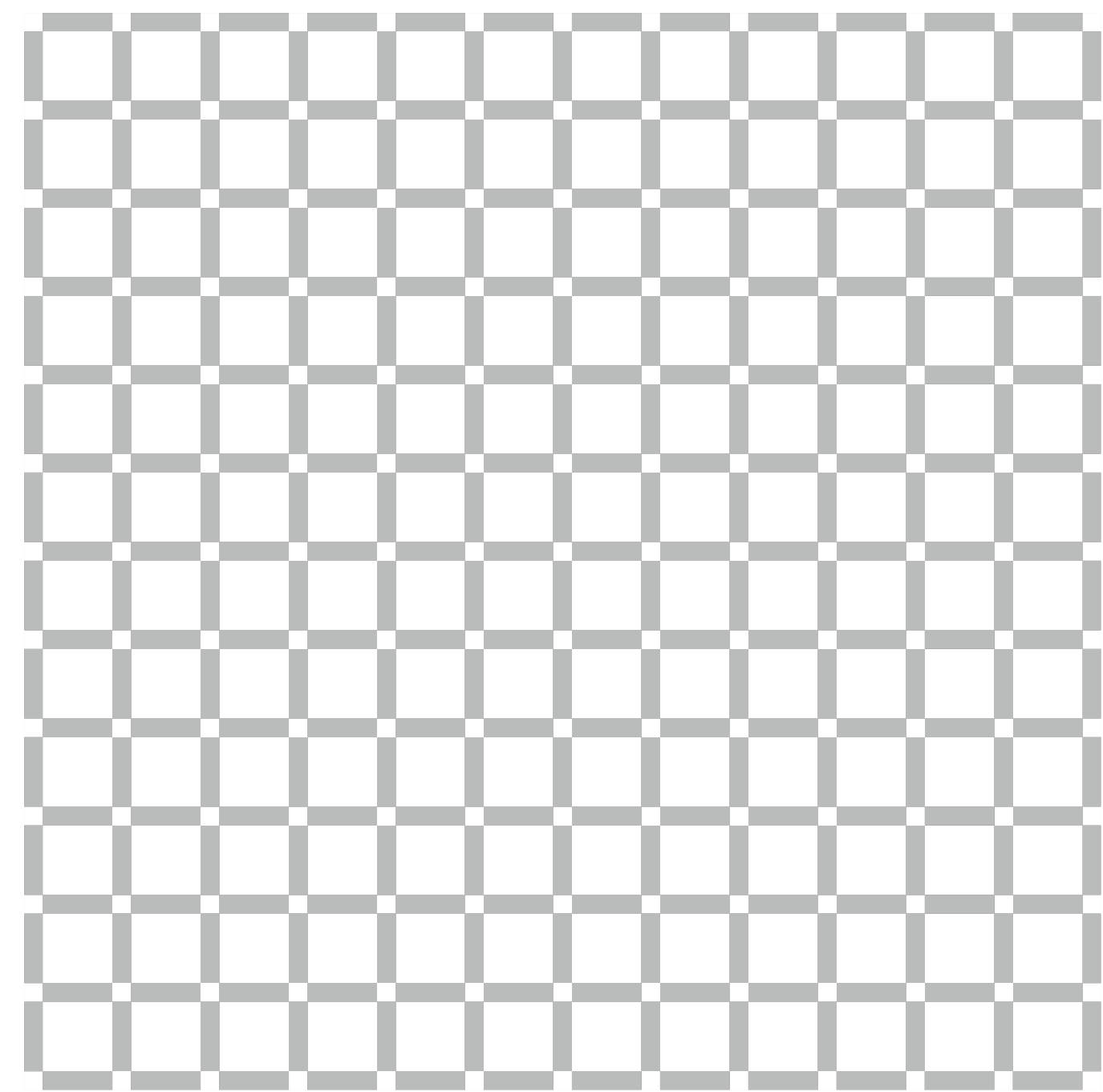


The medallion’s patterned background is comprised of shapes derived from the leaf of the Live Oak tree and are arranged in a quadrant that forms a traditional, but playful pattern.



The palette is warm, vibrant, and distinct from neighboring communities. The primary color orange is a bold statement of the district’s rebirth.

DOWNTOWN FRIENDSWOOD : BRANDING



DOWNTOWN FRIENDSWOOD :: MARK

The acorn of the Live Oak tree represents renewal, growth and potential in the district. It is a symbol of things to come.

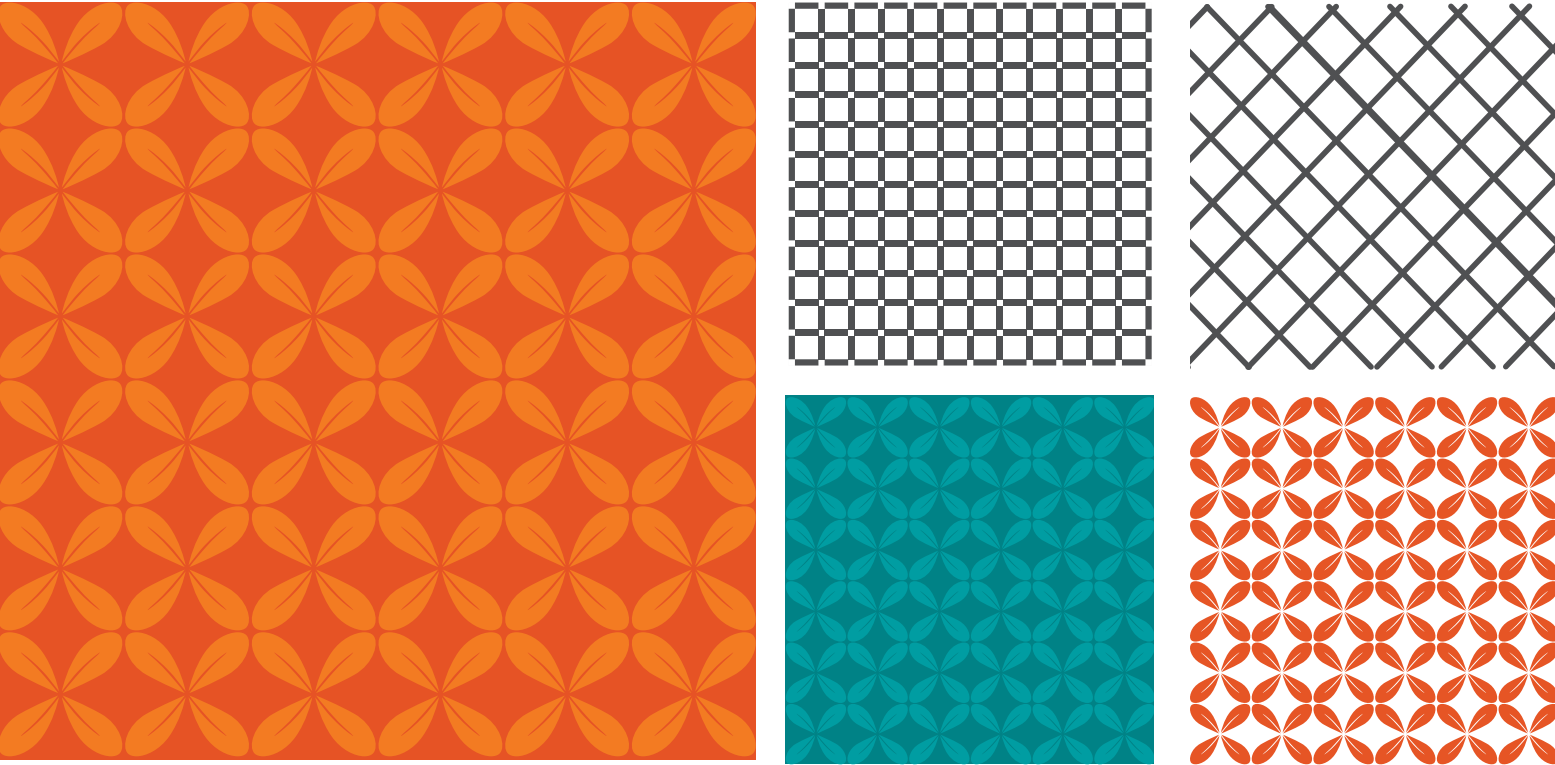
The acorn’s cap is inspired by the grid-based infrastructure of the district and represents the numerous intersections, both real and virtual, “where friends meet.”

DOWNTOWN FRIENDSWOOD : BRANDING

COLOR PALETTE



PATTERN



TYPEFACE

PRIMARY
ERNESTINE PRO
LIGHT
LIGHT ITALIC
REGULAR
ITALIC
DEMIBOLD
DEMIBOLD ITALIC
BOLD
BOLD ITALIC

SECONDARY
RIFT
LIGHT
LIGHT ITALIC
REGULAR
ITALIC
MEDIUM
MEDIUM ITALIC
DEMI
DEMI ITALIC
BOLD
BOLD ITALIC

TERTIARY
Abril Text italic

TAGLINE

WHERE FRIENDS MEET

QUOTES

PLAY *friendly*
WORK *friendly*
DINE *friendly*
FAMILY *friendly*
LIVE *friendly*
BIKE *friendly*
SHOP *friendly*
WALK *friendly*

:: BRAND GUIDELINES

Color Palette: Warm and fresh. Uplifting. Expresses vibrancy of a renewed downtown experience.

Patterns: Oak leaves, street grids and other patterns that refer to the natural and built environment, such as the Friends Cemetery gateway.

Typefaces: A blend of bold, legible sans serifs and a friendly, traditional slab serif reflect an active downtown with a nod to tradition.

Brand voice: A collection of “friendly” phrases encapsulates the quality of life one can expect in Downtown Friendswood.

BRANDING DESIGN

Downtown's Wayfinding Family.

Wayfinding.

A signage system creates a sense of place and visual unity for the district, and directs both vehicular and pedestrian traffic into and around downtown.

The forms, materials, and colors are inspired by the purposefulness of the Quaker aesthetic blended with a fresh, vibrant attitude that expresses the future of the downtown district.

DOWNTOWN FRIENDSWOOD : BRANDING DESIGN





Lantern Gateway on Bridge Wall

Entry Gateway

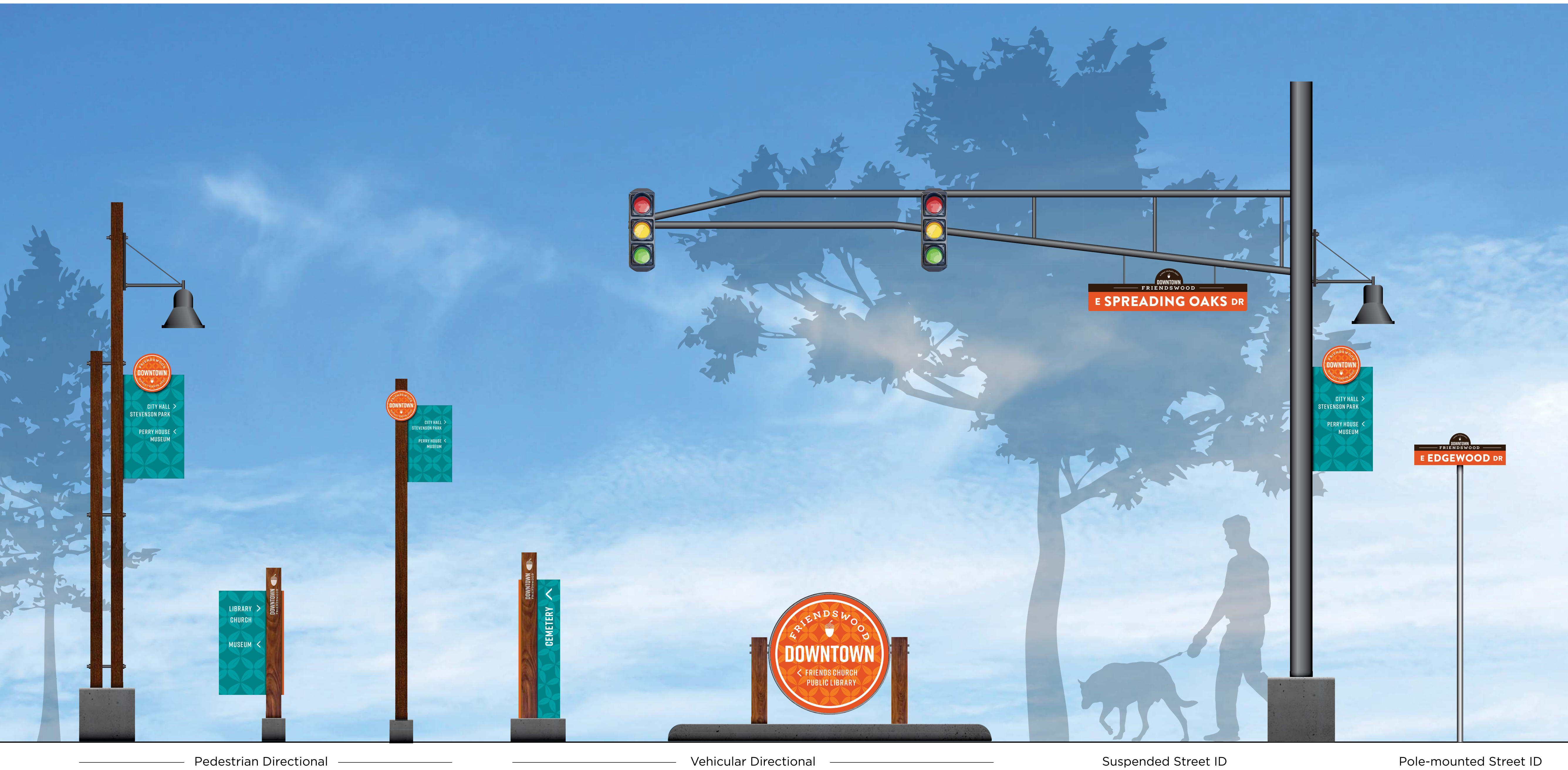
Pole Accent

Esplanade Gateway

High Profile

Low Profile





BRANDING

Downtown's Placemaking Graphics.

DOWNTOWN FRIENDSWOOD : PLACEMAKING



QUOTES _____

- PLAY *friendly*
- WORK *friendly*
- DINE *friendly*
- FAMILY *friendly*
- LIVE *friendly*
- BIKE *friendly*
- SHOP *friendly*
- WALK *friendly*

DOWNTOWN FRIENDSWOOD : PLACEMAKING



DOWNTOWN FRIENDSWOOD : PLACEMAKING



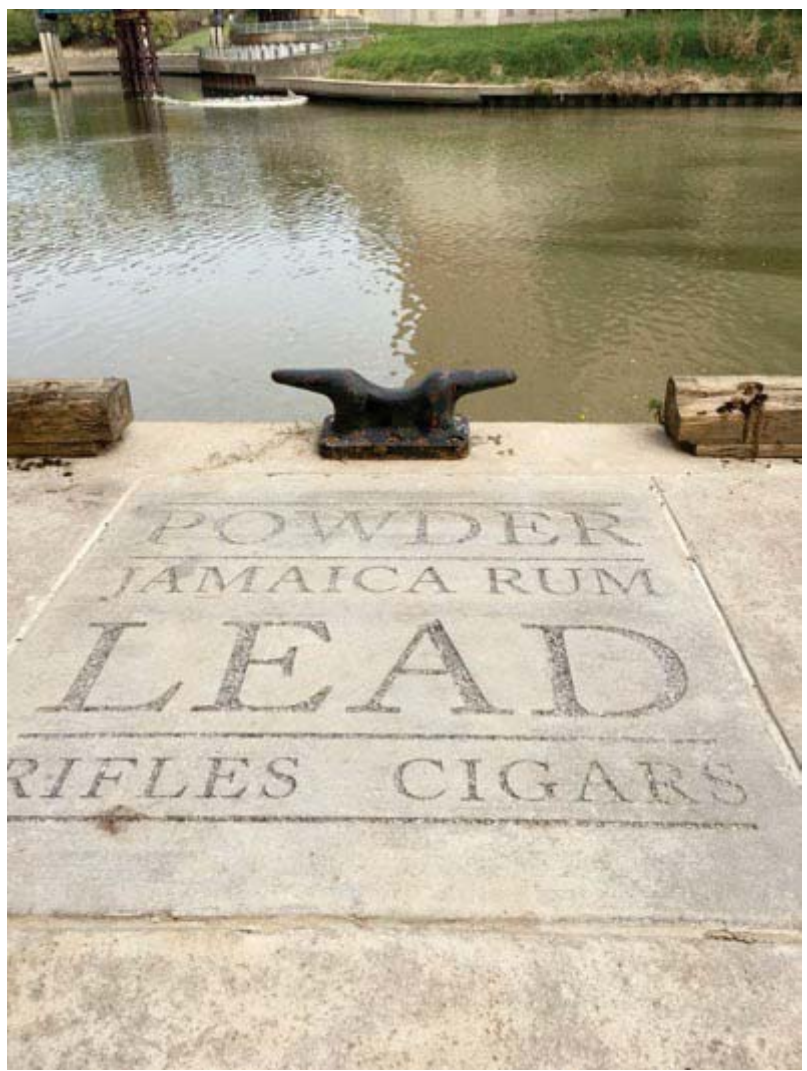
DOWNTOWN FRIENDSWOOD : PLACEMAKING



WASTE RECEPTACLES



SIDEWALK INSERTS







DOWNTOWN FRIENDSWOOD : BRANDING GUIDELINES

Maintaining the integrity of Downtown Friendswood's new brand expression is key to creating a strong and lasting identity. Adhering to the following guidelines will ensure the brand remains consistent across multiple applications and platforms.

CORE DESIGN STUDIO



INDEX :

- 4 Visual Identity
- 6 Lockups
- 8 Mark
- 10 Tagline
- 12 Language
- 14 Color
- 16 Pattern
- 18 Typography
- 20 Wayfinding
- 24 Signage
- 26 Placemaking
- 30 Partners



The Visual Identity.

The circular form of the Downtown Friendswood logo pays compliment to the City of Friendswood's iconic seal with the Live Oak tree. The circle is a traditional shape of city seals, and with the combination of bright colors, a new icon, pattern and typefaces it references the past, but moves the district forward.



Lockups.

Variations in lockup are used in multiple applications like signage, banners, public art, and other visual elements.



Mark.

The acorn of the Live Oak tree represents renewal, growth and potential in the district. It is a symbol of things to come. The acorn's cap is inspired by the grid-based infrastructure of the district and represents the numerous intersections, both real and virtual, "where friends meet."



Tagline.

Downtown has been and always should continue to be a place
“where friends meet.”

WHERE FRIENDS MEET



Language.

A collection of “friendly” phrases encapsulates the quality of life one can expect in Downtown Friendswood.

PLAY friendly
WORK friendly
DINE friendly
FAMILY friendly
LIVE friendly
BIKE friendly
SHOP friendly
WALK friendly

*Wherever friendly paths intersect
the whole world looks like home
for a time.* Hermann Hesse

*There are no strangers here; only friends
you haven’t yet met.* William Butler Yeats

*We are all travelers in the wilderness of
this world, and the best we can find in our
travels is an honest friend.* Robert Louis Stevenson

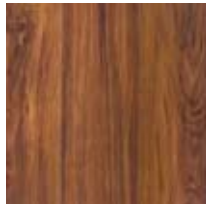
*Stick around long enough to become
someone's best friend.* Vera Nazarian

Friend, where were you for so long? Gulzar



Color.

The palette is vibrant, and visually distinct from neighboring communities. The brand’s primary color orange presents a warm and bold statement of the district’s rebirth while providing contrast with the environment making it more visible and affective.

					
CMYK: 3, 79, 100, 0 RGB: 233, 91, 36 PMS: 166 HEX: E95B24	CMYK: 83, 30, 44, 5 RGB: 28, 134, 139 PMS: 321 HEX: 1C868B	CMYK: 3, 44, 98, 0 RGB: 242, 157, 32 PMS: 715 HEX: F29D20	CMYK: 32, 0, 98, 0 RGB: 186, 214, 54 PMS: 583 HEX: BAD636	CMYK: 48, 71, 86, 66 RGB: 67, 39, 19 PMS: 476 HEX: 432713	WOODTONE



Pattern.

The medallion’s patterned background is comprised of oak shapes derived from the leaf of the Live Oak tree, arranged in a quadrant that forms a traditional, but playful pattern. Oak leaves, street grids and other patterns refer to the natural and built environment that is Downtown Friendswood, such as the Friends Cemetery gateway.



DOWNTOWN FRIENDSWOOD



Typography.

A blend of bold and legible sans serifs, and a friendly, traditional serif reflect an active downtown with a nod to tradition.

DOWNTOWN FRIENDSWOOD

PRIMARY TYPEFACE

ERNESTINE PRO

LIGHT
LIGHT ITALIC
REGULAR
ITALIC
DEMIBOLD
DEMIBOLD ITALIC
BOLD
BOLD ITALIC

TERTIARY

Abril Text italic
BRANDON GROTESQUE BLACK

SECONDARY TYPEFACE

RIFT
LIGHT
LIGHT ITALIC
REGULAR
ITALIC
MEDIUM
MEDIUM ITALIC
DEMI
DEMI ITALIC
BOLD
BOLD ITALIC



Wayfinding.

A strong wayfinding family creates a sense of place and visual unity for the district, and directs both vehicular and pedestrian traffic into and around downtown.

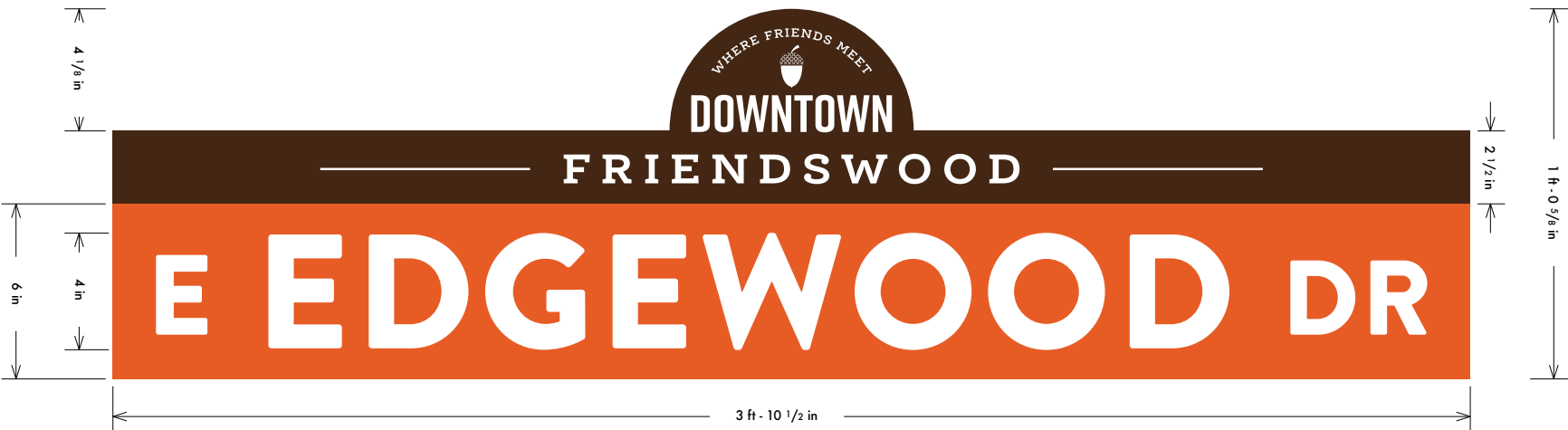
The forms, materials, and colors are inspired by the purposefulness of the Quaker aesthetic blended with a fresh, vibrant attitude that expresses the future of the downtown district.





Signage.

Consistent use of color, typography and mark will visually define the Downtown Friendswood District and reinforce the brand in its application across multiple sign types.



DOWNTOWN FRIENDSWOOD _____
Typical Suspended or Pole-mounted Street Sign

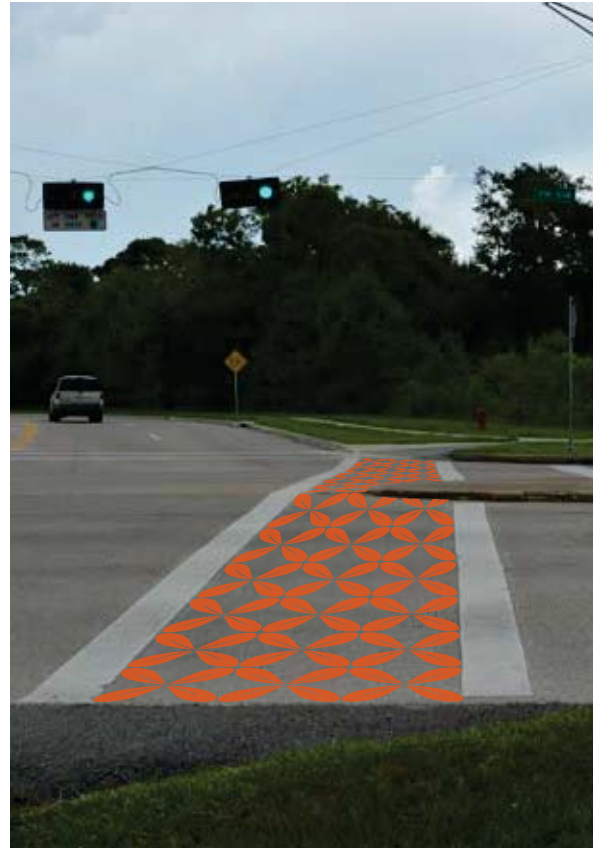
Placemaking.

The use of signage, banners, public art, and other visual elements, lets visitors know they are in a unique area and promotes a pedestrian-friendly experience.

DOWNTOWN FRIENDSWOOD

Pole-mounted Banners





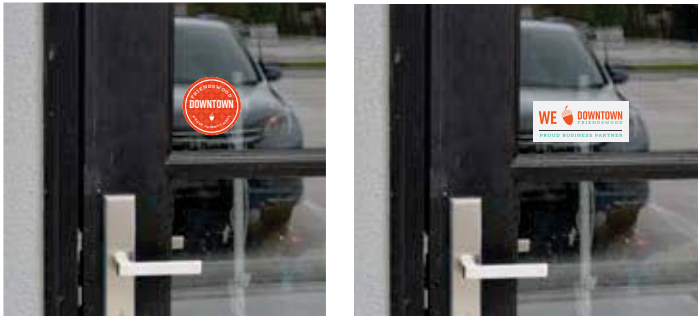
Precedent Images

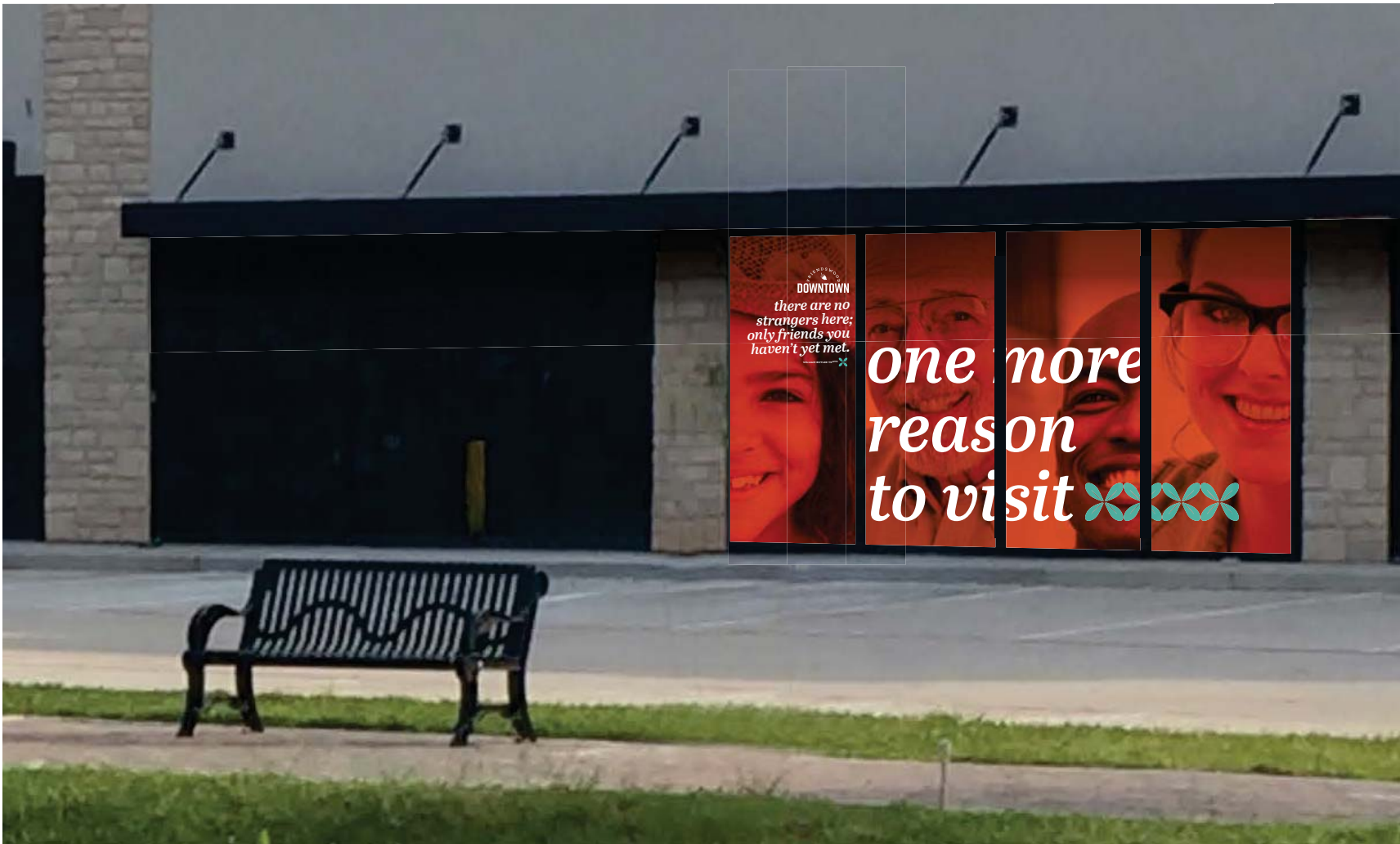
DOWNTOWN FRIENDSWOOD

Waste Receptacles + Sidewalk Inserts + Crosswalk Graphics

Partners.

Local merchants show support for Downtown Friendswood by displaying “Partner” window decals. Large, inviting storefront window graphics activate empty or “available” storefronts in the downtown district.





DOWNTOWN FRIENDSWOOD ————— Storefront Window Graphics



CORE DESIGN STUDIO 



West University Place, TX



West University Place, TX



Bryan, TX



Georgetown, TX



The Strand, Galveston, TX



League City, TX



Houston Heights, TX



Austin, TX



Frisco, TX



Dallas, TX



Froberg's, Alvin, TX



San Marcos, TX



La Grange, TX



Granbury, TX



Fredericksburg, TX

Precedent Downtown Development



Lauren Griffith Associates



CORE DESIGN STUDIO



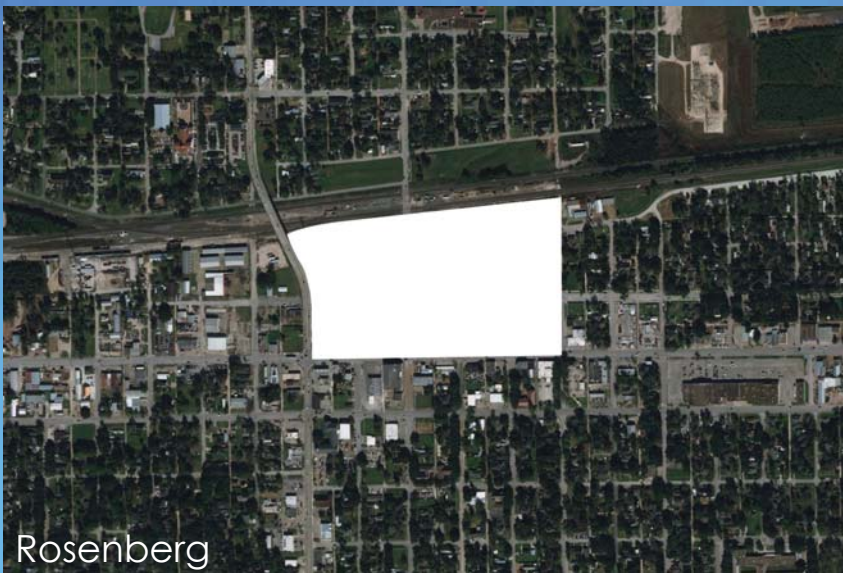
G2LD gandy® lighting design



Friendswood
9 million sf

Rosenberg
< 2 million sf

Tomball
6.5 million sf



Downtown District Comparisons



Lauren Griffith Associates



CORE DESIGN STUDIO



gandy® lighting design



Natural materials
Non-hierarchical
Plain (comfortable) vs. minimalist
Places of restfulness/ reflection

Contemporary Quaker Architecture



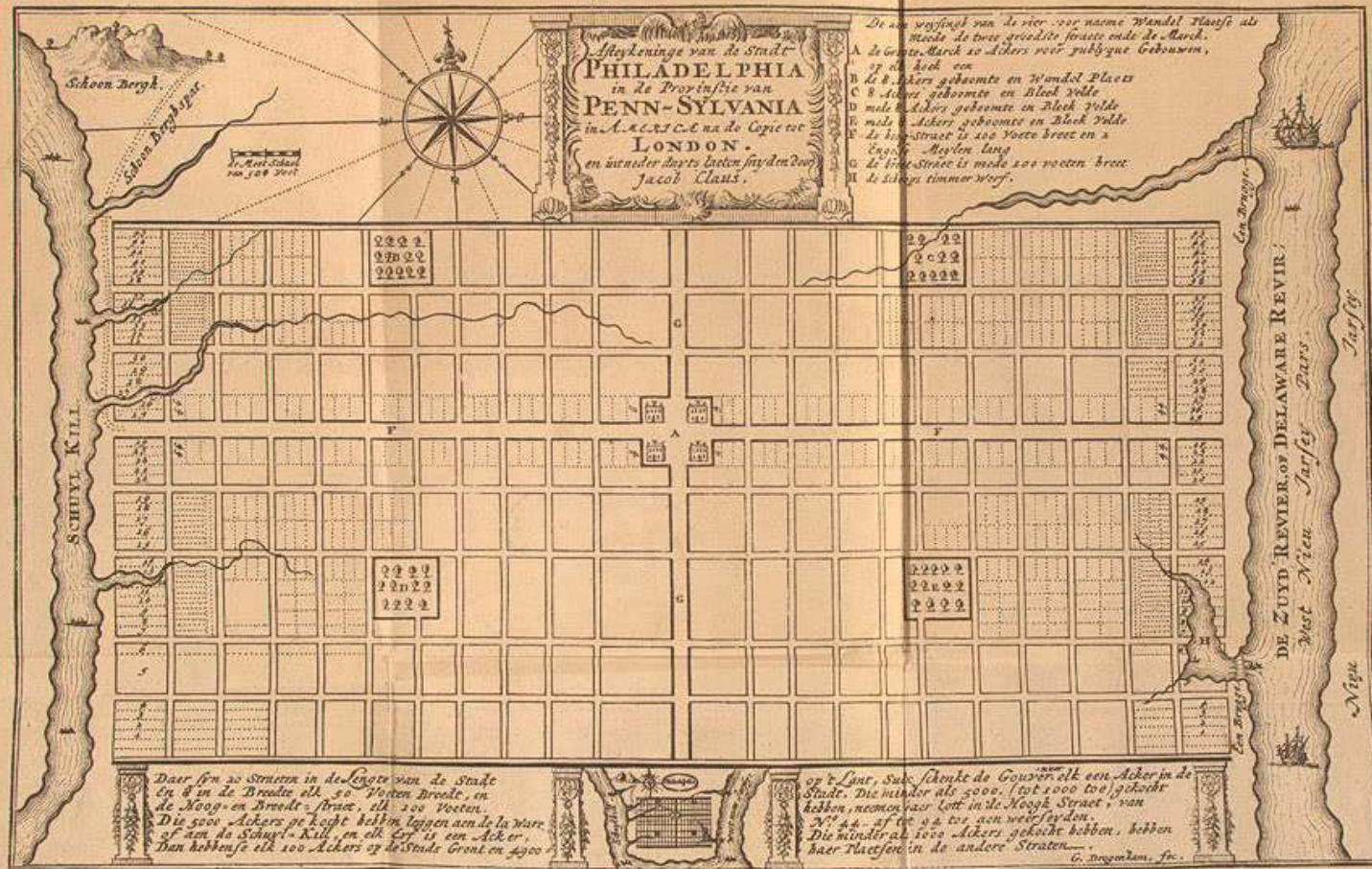
Lauren Griffith Associates



CORE DESIGN STUDIO



G2LD gandy® lighting design



Quaker Town Plan - Philadelphia



Lauren Griffith Associates

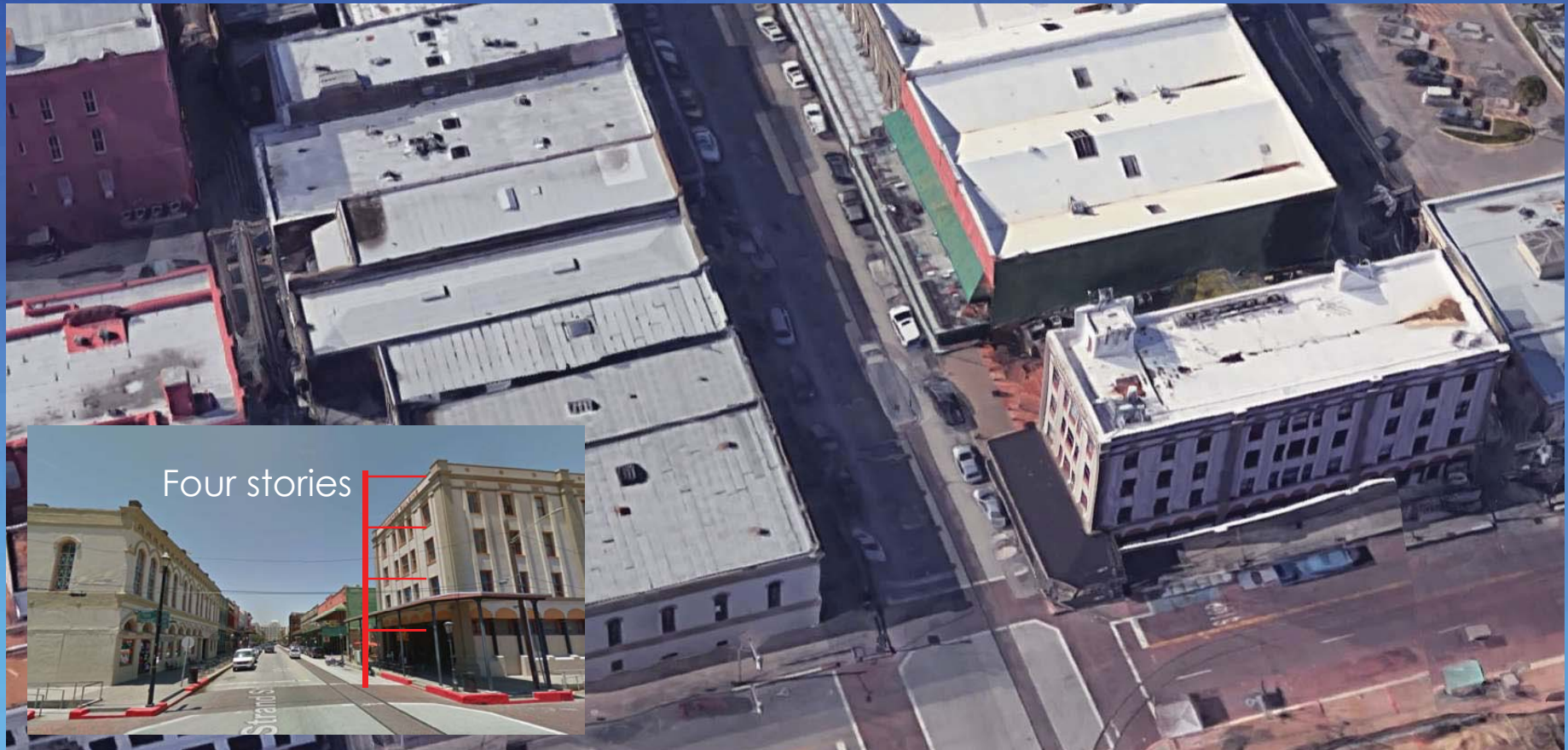


CORE DESIGN STUDIO



G2LD gandy® lighting design

Architectural fabric at the Strand, Galveston, TX



Public input: places Friendswoodians admire



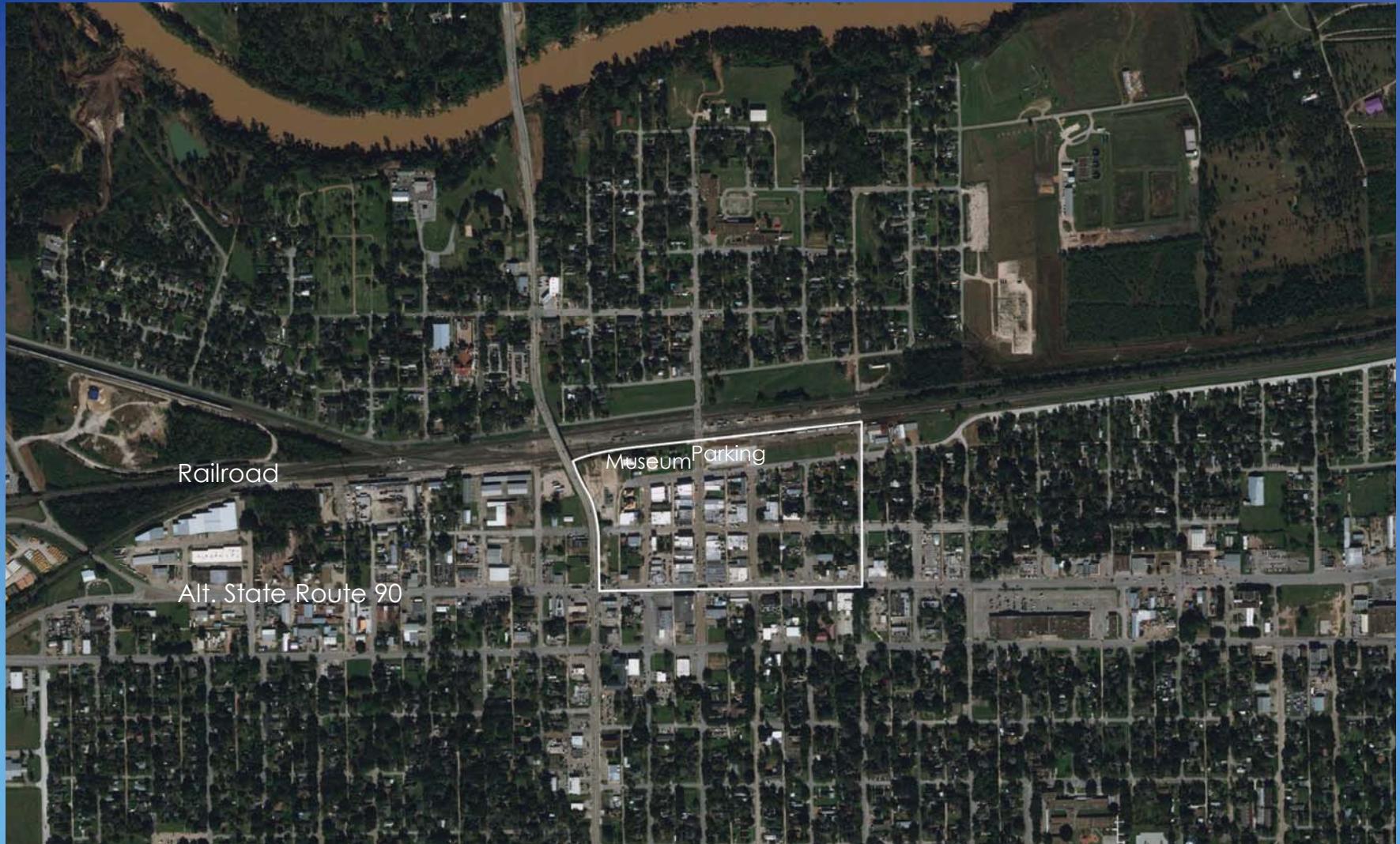
Lauren Griffith Associates



CORE DESIGN STUDIO



gandy[®] lighting design



Rosenberg, Texas



Lauren Griffith Associates



CORE DESIGN STUDIO



gandy² lighting design



Rosenberg, Texas



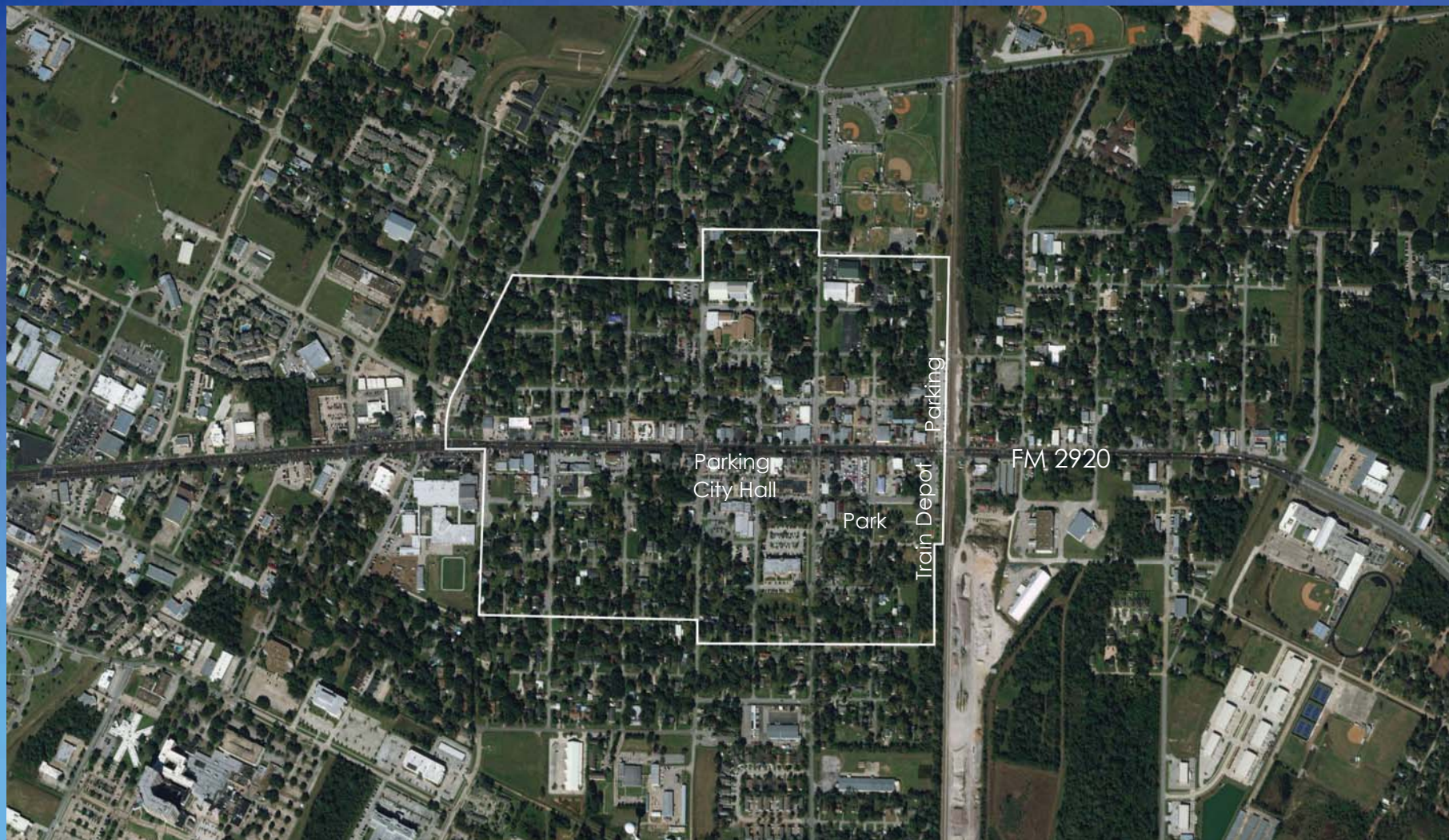
Lauren Griffith Associates



CORE DESIGN STUDIO



gandy® lighting design



Tomball, Texas



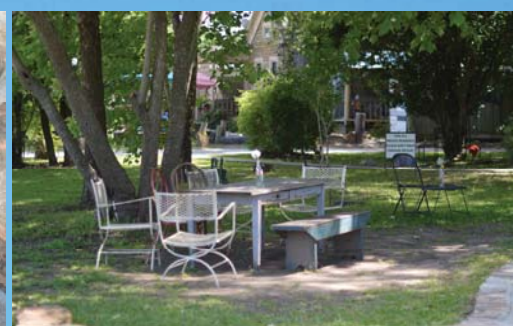
Lauren Griffith Associates



CORE DESIGN STUDIO



gandy[®] lighting design



Tomball, Texas



Lauren Griffith Associates



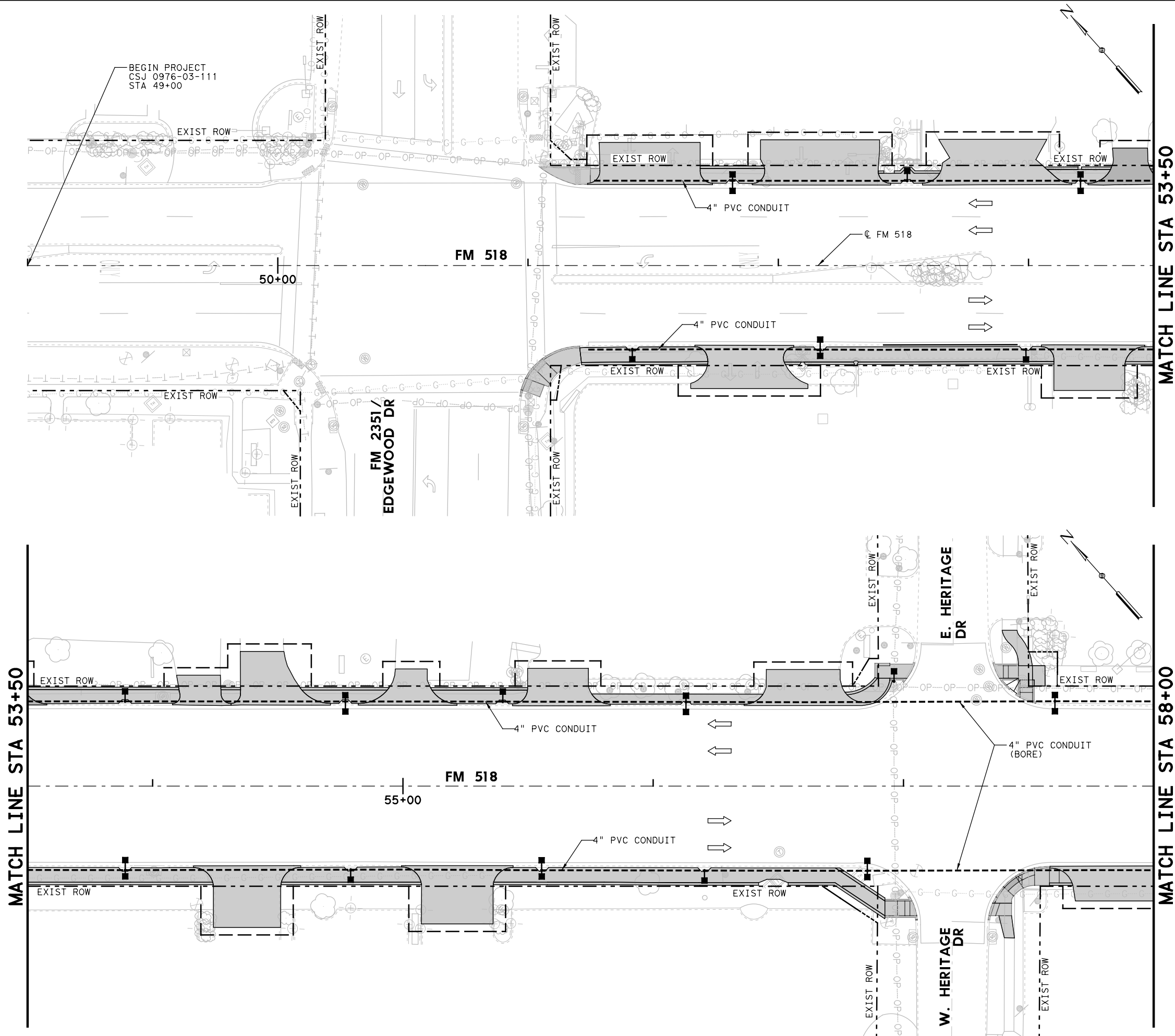
CORE DESIGN STUDIO



gandy® lighting design

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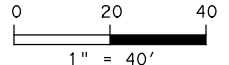
LEGEND

← TRAFFIC FLOW DIRECTION

|| OR || LIGHT POLES (BY OTHERS)

--- PVC CONDUIT

- NOTES:**
- CONDUIT ONLY PLACED IN THIS CONTRACT. WIRING, POLES, AND FOUNDATIONS WILL BE COMPLETED BY OTHERS AFTER COMPLETION OF THIS PROJECT.
 - ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
 - BORE PIT SHALL BE NO CLOSER THAN 5.0 FEET FROM THE EDGE OF PAVING OR ROAD BASE. BORE PIT HOLES SHALL NOT BE LEFT OPEN OVERNIGHT.
 - VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES OR OTHER INSTALLATIONS AND PROVIDE ADEQUATE PROTECTION FOR THEM. ANY DAMAGE BY CONTRACTOR SHALL BE PAID FOR BY CONTRACTOR.
 - CONDUIT SHALL BE PLACED 2' BEHIND BACK OF CURB AND SHALL BE AT A DEPTH OF 2'.



STATE OF TEXAS
EDWIN R. RYDELL
81553
REGISTERED PROFESSIONAL ENGINEER
8/31/2020

NO.	DATE	REVISION	APPROVED
-----	------	----------	----------

HDR
HDR
Firm Registration No. F-754
4828 Loop Central Drive, Suite 800
Houston, Texas 77081-2220
713.622.9264

T Texas Department of Transportation
© 2020

**FM 518
LIGHTING
PLAN
(BEGIN TO STA 58+00)**

SCALE: 1"=40'				SHEET 1 OF 9
DESIGN MHS	FED. RD. DIV. NO. 6	PROJECT NO.		HIGHWAY NO. FM 518
GRAPHICS BKT	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK ERR	TEXAS	HOU	GALVESTON	169
CHECK MHS	CONTROL	SECTION	JOB	
	0976	03	111	

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MATCH LINE STA 58+00

MATCH LINE STA 62+50

MATCH LINE STA 62+50

MATCH LINE STA 67+00

LEGEND



TRAFFIC FLOW DIRECTION



OR



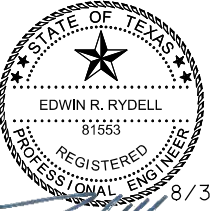
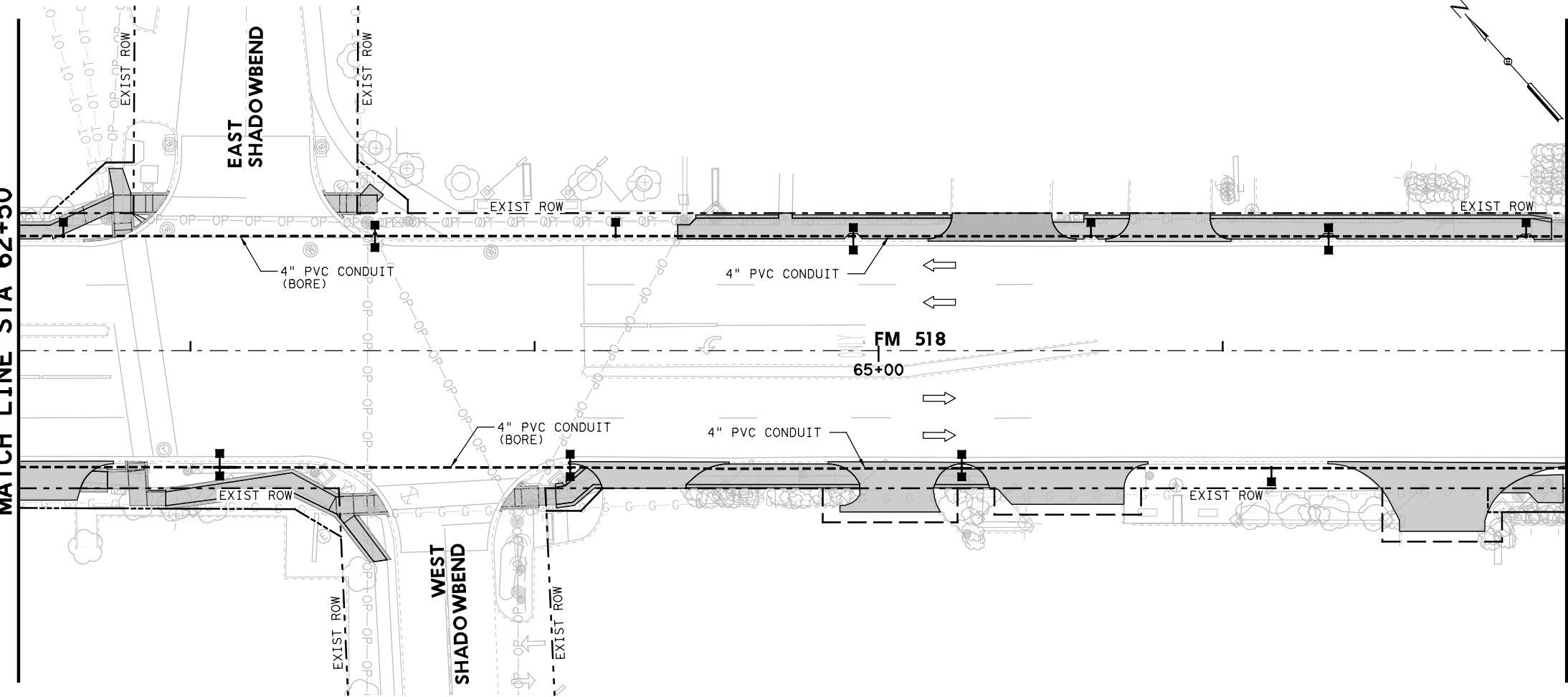
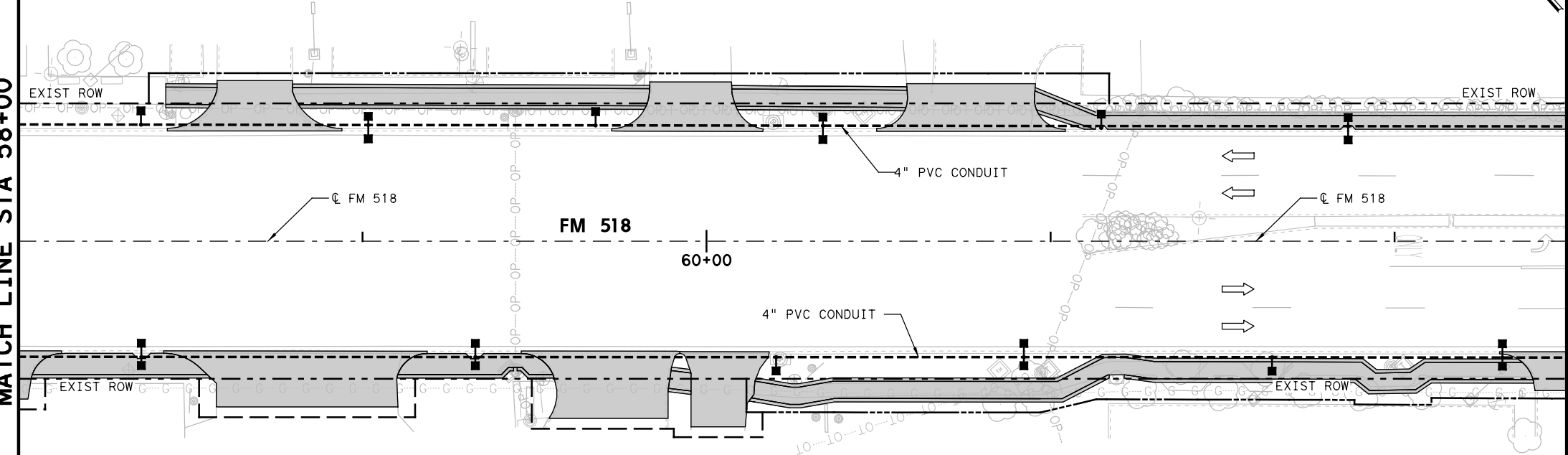
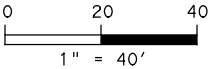
LIGHT POLES (BY OTHERS)



PVC CONDUIT

NOTES:

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- CONDUIT SHALL BE PLACED 2' BEHIND BACK OF CURB AND SHALL BE AT A DEPTH OF 2'.



NO.

DATE

REVISION

APPROVED



HDR
Firm Registration No. F-754
4828 Loop Central Drive, Suite 800
Houston, Texas 77081-2220
713.622.9264



Texas Department of Transportation

FM 518
LIGHTING
PLAN

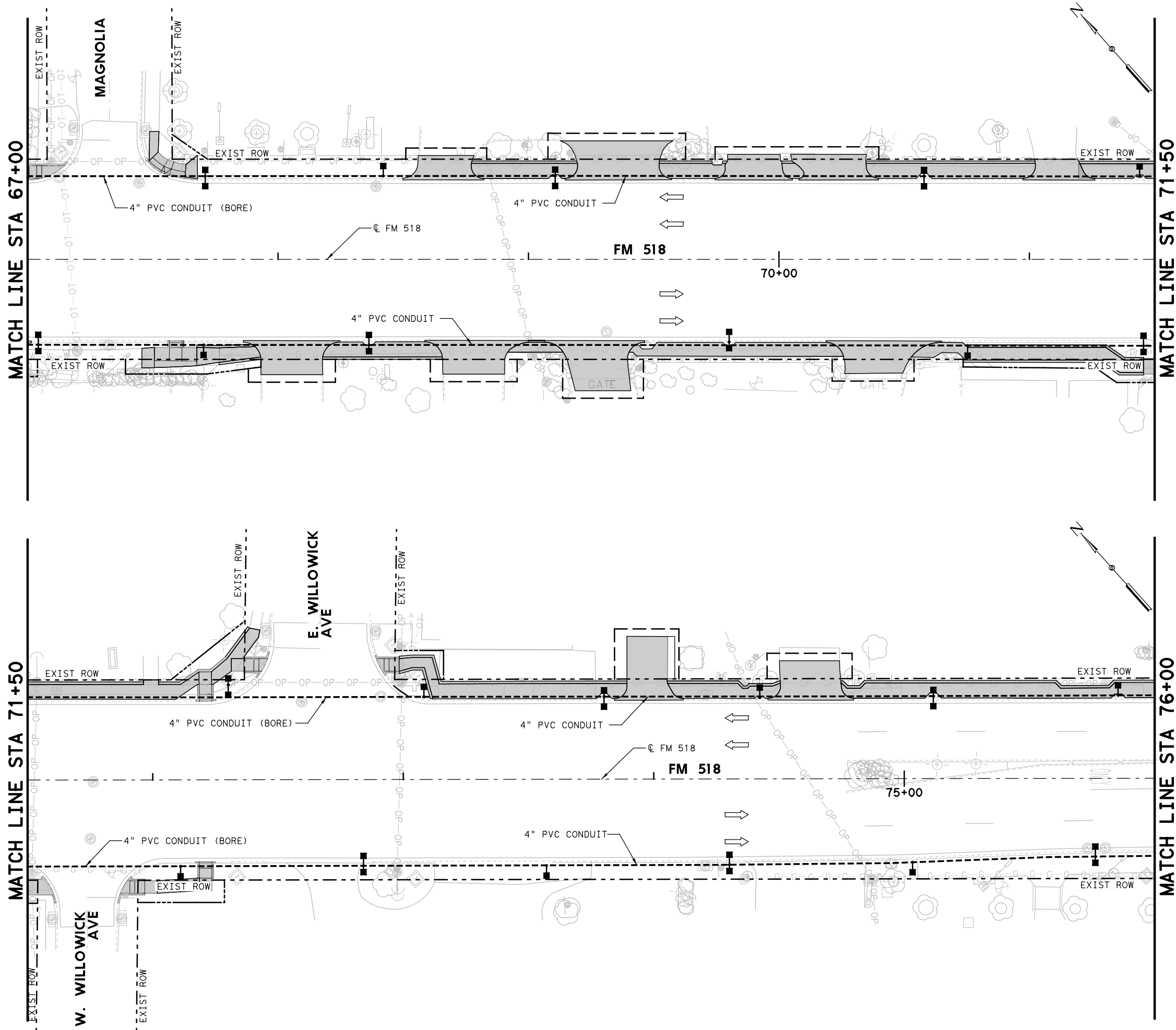
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SCALE: 1"=40'

SHEET 2 OF 9

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CHECK MHS	CONTROL	SECTION	JOB	
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LEGEND

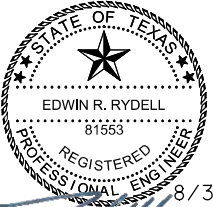
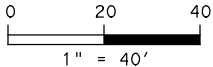
← TRAFFIC FLOW DIRECTION

OR

LIGHT POLES (BY OTHERS)

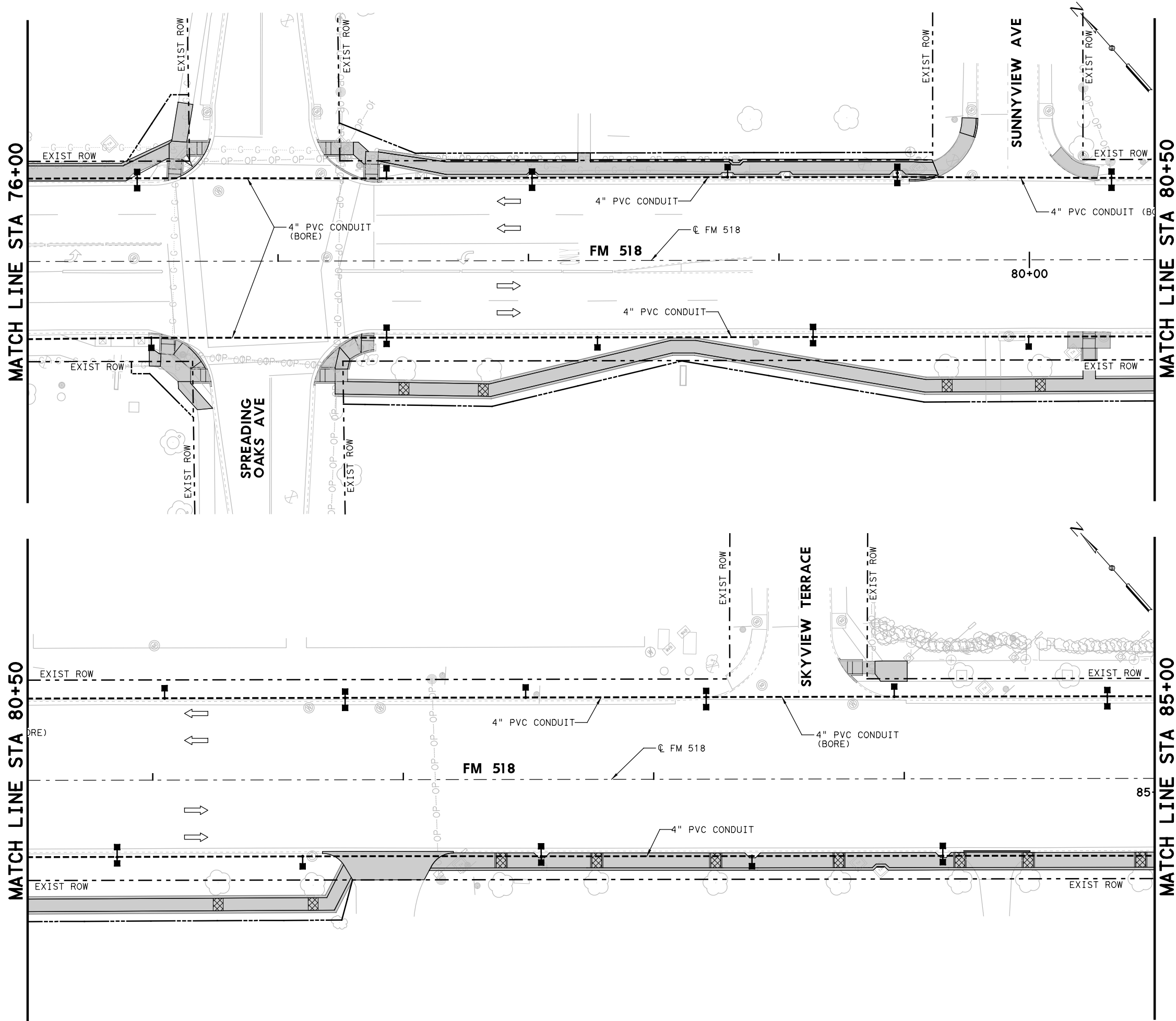
--- PVC CONDUIT

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 - CONDUIT SHALL BE PLACED 2' BEHIND BACK OF CURB AND SHALL BE AT A DEPTH OF 2'.



NO.		DATE	REVISION	APPROVED
HDR		HDR Firm Registration No. F-754 4828 Loop Central Drive, Suite 800 Houston, Texas 77081-2220 713.622.9264		
Texas Department of Transportation		Texas Department of Transportation		
FM 518		FM 518		
LIGHTING		LIGHTING		
PLAN		PLAN		
(STA 67+00 TO STA 76+00)		(STA 67+00 TO STA 76+00)		
SCALE: 1"=40'		SHEET 3 OF 9		
DESIGN	FED. RD. DIV. NO.	PROJECT NO.		HIGHWAY NO.
MHS	6			FM 518
GRAPHICS	STATE	DISTRICT	COUNTY	SHEET NO.
BKT	TEXAS	HOU	GALVESTON	171
CHECK	CONTROL	SECTION	JOB	
ERR	0976	03	111	
CHECK				
MHS				

PLOT DRIVER: TXD0T_PDF_BW.plt
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USER: BTOLBERT
DATE: 9/1/2020
TIME: 11:07:38 AM
SCALE: 1/40
FILE: 20-009-L-LP104



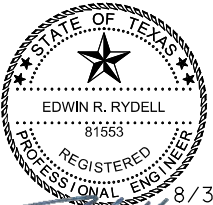
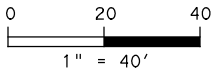
LEGEND

← TRAFFIC FLOW DIRECTION

⌋ OR ⌋ LIGHT POLES (BY OTHERS)

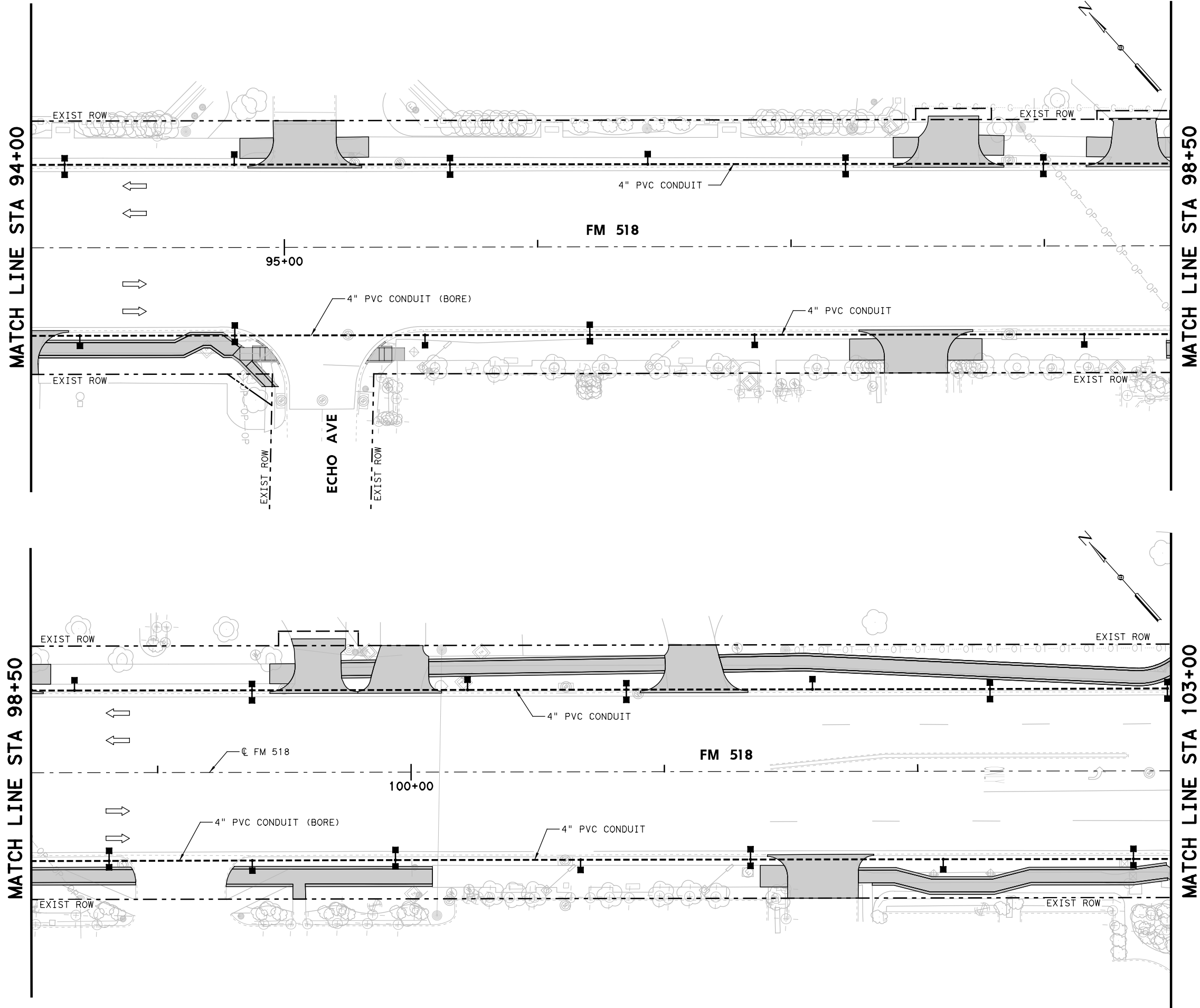
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 HDR Firm Registration No. F-754 4828 Loop Central Drive, Suite 800 Houston, Texas 77081-2220 713.622.9264			
 Texas Department of Transportation			
FM 518 LIGHTING PLAN (STA 76+00 TO STA 85+00) SCALE: 1"=40' SHEET 4 OF 9			
DESIGN MHS	FED. RD. DIV. NO. 6	PROJECT NO.	
GRAPHICS BKT	STATE	DISTRICT	COUNTY
CHECK ERR	TEXAS	HOU	GALVESTON
CHECK MHS	CONTROL	SECTION	JOB
172			

PLOT DRIVER: TXD01_PDF_BW.plt
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USER: BTOLBERT DATE: 9/1/2020
TIME: 11:08:13 AM SCALE: 1/40
FILE: 20-009-L-LP106



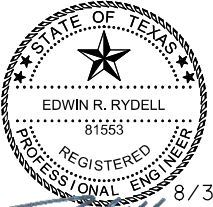
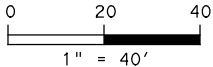
LEGEND

← TRAFFIC FLOW DIRECTION

□ OR □ LIGHT POLES (BY OTHERS)

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 HDR Firm Registration No. F-754 4828 Loop Central Drive, Suite 800 Houston, Texas 77081-2220 713.622.9264				
 Texas Department of Transportation © 2020				
FM 518 LIGHTING PLAN (STA 94+00 TO STA 103+00) SCALE: 1"=40' SHEET 6 OF 9				
DESIGN MHS	FED. RD. DIV. NO. 6	PROJECT NO.		HIGHWAY NO. FM 518
GRAPHICS BKT	STATE	DISTRICT	COUNTY	SHEET NO.
CHECK ERR	TEXAS	HOU	GALVESTON	174
CHECK MHS	CONTROL	SECTION	JOB	
	0976	03	111	

PLOT DRIVER: TXD0T_PDF_BW.pltcf
USER: BTOLBERT DATE: 9/1/2020
FILE: 20-009-L-1P107

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TIME: 11:08:30 AM
SCALE: 1/40

MATCH LINE STA 103+00

MATCH LINE STA 107+50

MATCH LINE STA 107+50

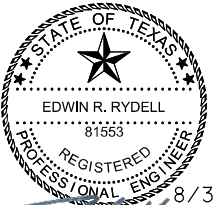
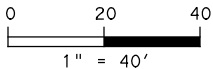
MATCH LINE STA 112+00

LEGEND

- ← TRAFFIC FLOW DIRECTION
- OR LIGHT POLES (BY OTHERS)
- PVC CONDUIT

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HDR
HDR
Firm Registration No. F-754
4828 Loop Central Drive, Suite 800
Houston, Texas 77081-2220
713.622.9264



FM 518
LIGHTING
PLAN

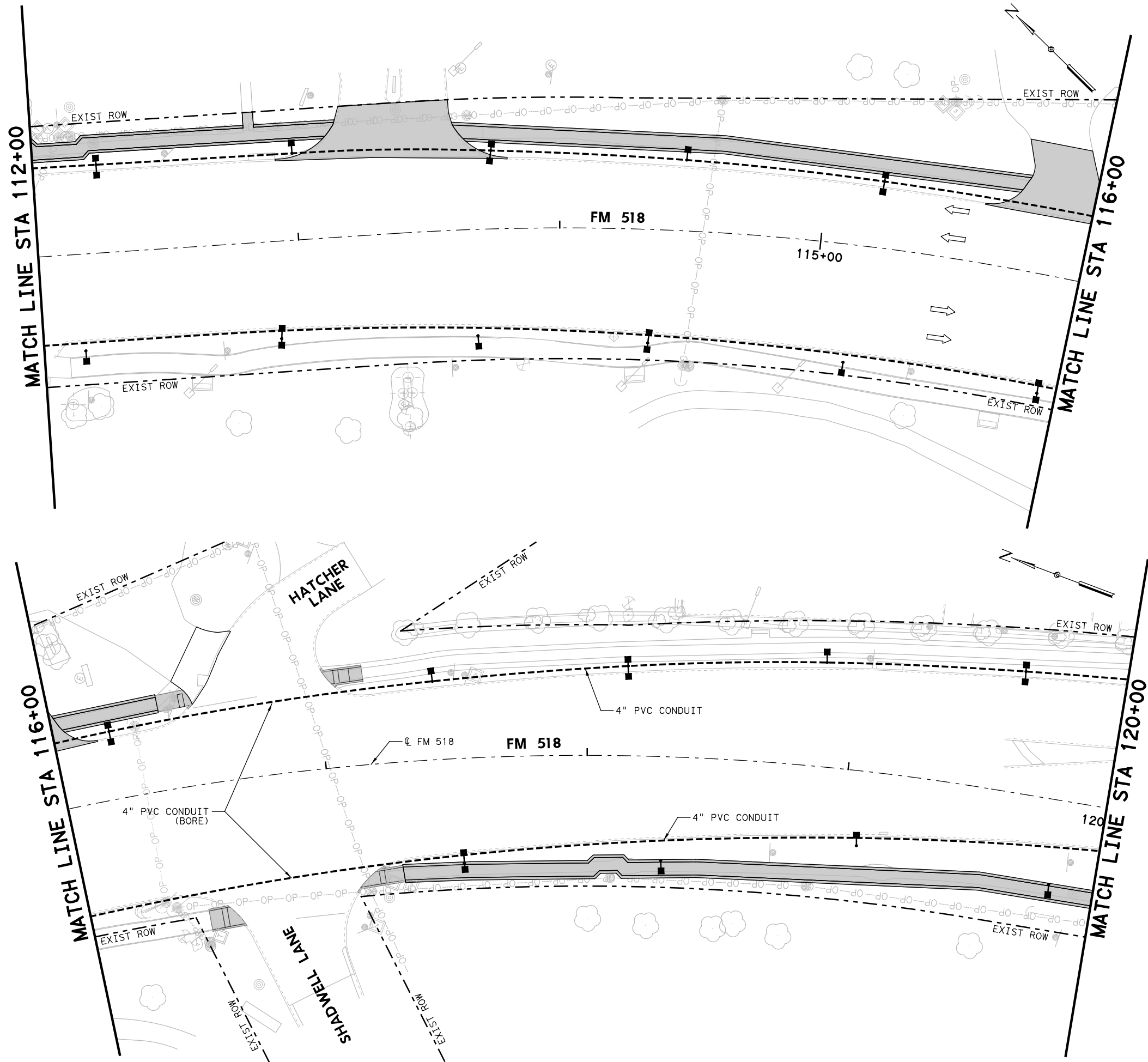
(STA 103+00 TO STA 112+00)

SCALE: 1"=40' SHEET 7 OF 9

DESIGN	FED. RD. DIV. NO.	PROJECT NO.			HIGHWAY NO.
MHS	6				FM 518
GRAPHICS	STATE	DISTRICT	COUNTY		SHEET NO.
BKT	TEXAS	HOU	GALVESTON		175
CHECK	ERR	CONTROL	SECTION	JOB	
CHECK	MHS	0976	03	111	

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DATE: 9/1/2020
FILE: 20-009-L-LP1008

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SCALE: 1/40



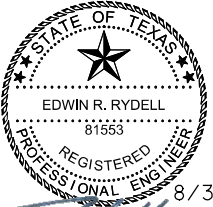
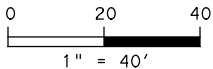
LEGEND

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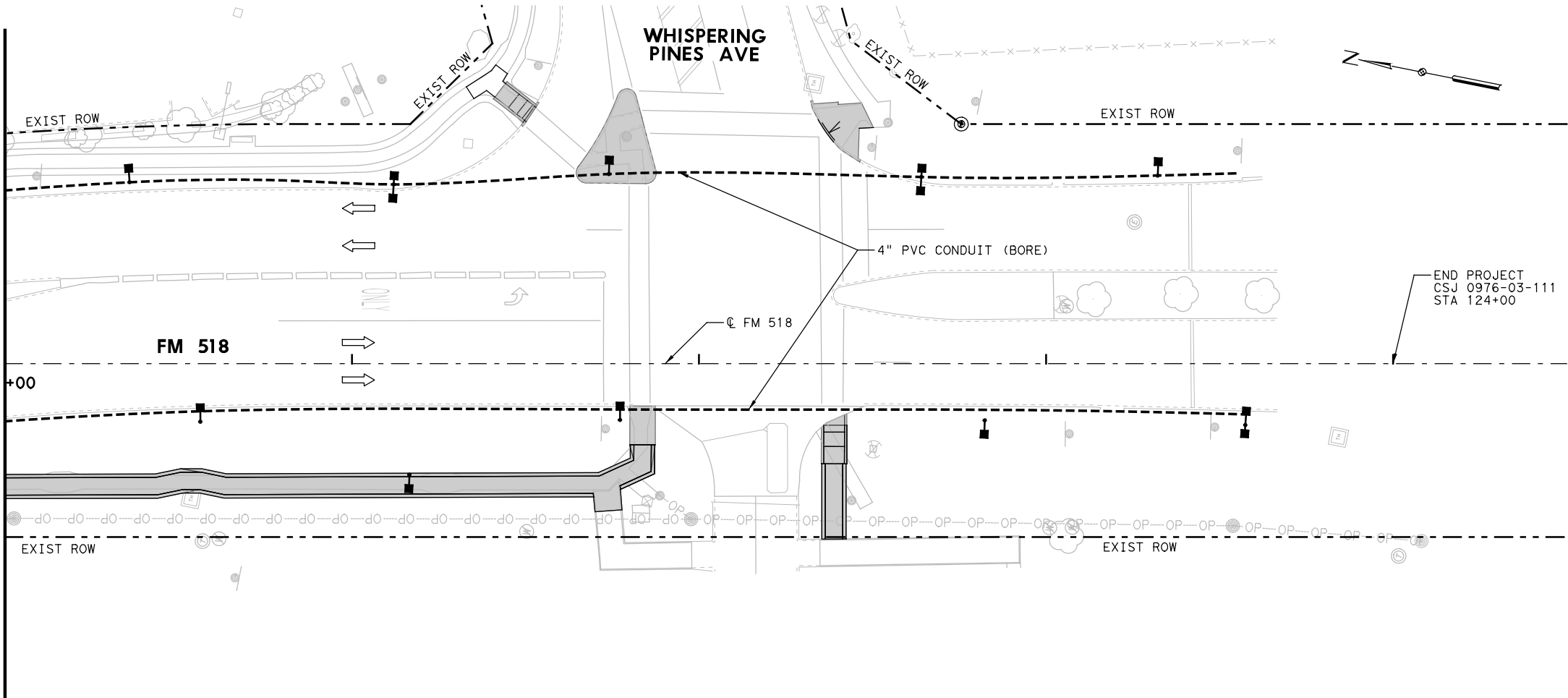


NO.	DATE	REVISION	APPROVED
HDR HDR Firm Registration No. F-754 4828 Loop Central Drive, Suite 800 Houston, Texas 77081-2220 713.622.9264 Texas Department of Transportation © 2020			
FM 518 LIGHTING PLAN (STA 112+00 TO STA 120+00) SCALE: 1"=40' SHEET 8 OF 9			
DESIGN MHS	FED. RD. DIV. NO. 6	PROJECT NO.	
GRAPHICS BKT	STATE	DISTRICT	COUNTY
CHECK ERR	TEXAS	HOU	GALVESTON
CHECK MHS	CONTROL	SECTION	JOB
			176

PLOT DRIVER: TXD0T_PDF_BW.plt
USER: BTOLBERT
DATE: 9/1/2020
FILE: 20-009-L-LP109

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SCALE: 1/40

MATCH LINE STA 120+00



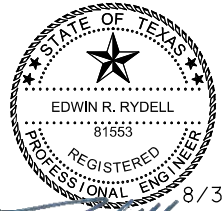
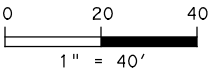
LEGEND

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 Texas Department of Transportation © 2020			
FM 518 LIGHTING PLAN (STA 120+00 TO END)			
SCALE: 1"=40' SHEET 9 OF 9			
DESIGN MHS	FED. RD. DIV. NO. 6	PROJECT NO.	
GRAPHICS BKT	STATE	DISTRICT	HIGHWAY NO. FM 518
CHECK ERR	TEXAS	HOU	COUNTY SHEET NO. 177
CHECK MHS	CONTROL	SECTION	JOB 111

Type	Description	Poles	Heads	Notes
Faux	P3 - 32' Roadway Pole	Structura / FAUX-ALU-RT-32-F2?-D1-BNR-MOD + BWF arm	Cyclone / CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX?	5 year warranty on finish. Includes banner arms on poles. Voltage, control options and finishes TBD.
	P2 - 32' Roadway/Pedestrian Pole	Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms	Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?	
	P1 - 18' Pedestrian Pole	Structura / FAUX-ALU-RT-18-F2?-D1-BNR-MOD + BWF arm	Cyclone / SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?	

Friendswood Downtown District

Type: P1

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-18-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / SN21P1-FGF-3M-60W-3K-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Faux Metal Pole with a Faux Wood Finish

FIXTURE TYPE: _____

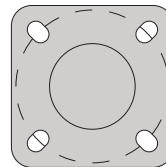
PROJECT NAME: _____

FEATURES:

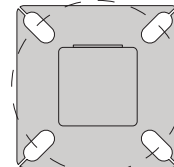
- Heights available from 10 to 22'
- Available as aluminum or steel in round or square profile
- Polyester powder coat painted (AAMA 2604 standard)
- Supplied with a two piece casted aluminum base cover
- Multiple mounting options



Shape	Aluminum		Steel	
	Height	Bolt Circle	Height	Bolt Circle
Round	10-14'	Ø8.63"	10-18'	Ø8.00"
	16-22'	Ø9.50"	20-22'	Ø8.00"
Square	10-18'	Ø9.00"	10-22'	Ø8.50"
	20-22'	Ø12.50"	-	-



Round



Square

ORDERING GUIDE: EXAMPLE: FAUX-ALU-RS-20-F3-T2384-STD

FAUX							
1	2	3	4	5	6	7	8

1
FAUX

2
ALU
STL

3
RS
RT
SS
ST

Series
Faux

Material
Aluminum
Steel

Shape
Round Straight
Round Tapered
Square Straight
Square Tapered ⁽¹⁾

4
10
22

5
F*

6
LIN

Tenon
T2384
T2784
T3124
T4004
TXXX

Pole Height
10'
22'
Specify

Pole Finish
See finish options on
2nd page

Fixture Mounting
Structura Lineal

2 3/8" x 4" Tenon
2 7/8" x 4" Tenon
3 1/2" x 4" Tenon
4" x 4" Tenon
Specify other Tenon

Drill
D1
D2
D3
D4
D5

1 @ 90deg
2 @ 180deg
2 @ 90deg
3 @ 90deg
4 @ 90deg

7
BNR
GFCI

Options
Banner⁽²⁾
GFCI Box

8
STD
MOD

Special
Standard
Modified

1. Square tapered poles only available in steel.
2. Consult factory for allowable EPA for banners.

Friendswood Downtown District

Type: P1

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-18-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Faux Metal Pole Finishes



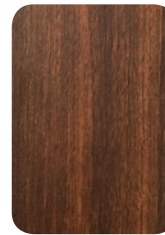
F1



F2



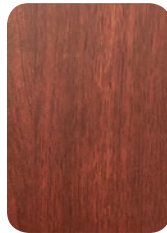
F3



F4



F5



F6



F7



gandy² lighting design

Friendswood Downtown District

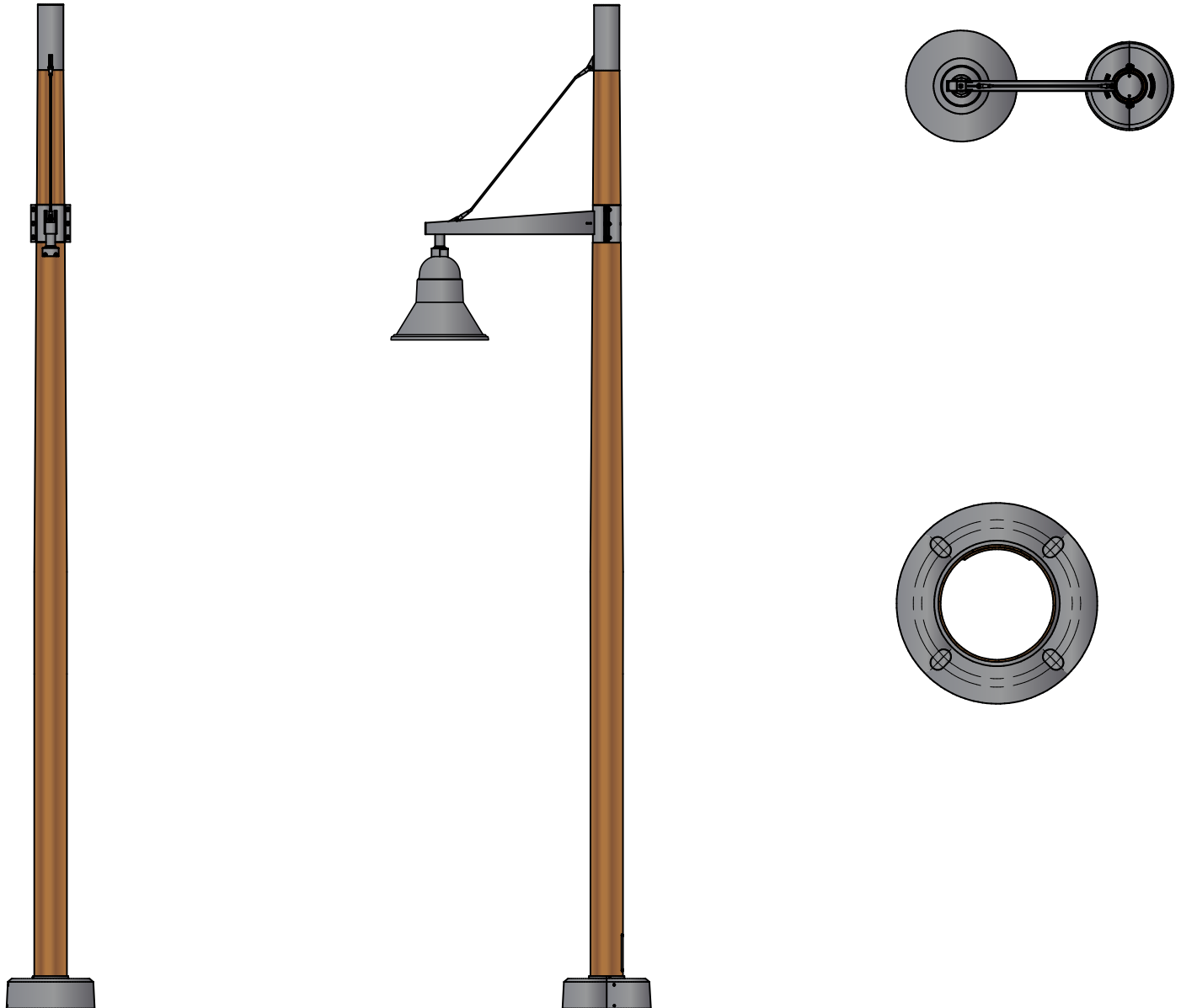
Type: P1

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-18-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.





gandy² lighting design

Friendswood Downtown District

Type: P1

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-18-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / SN21P1-FGF-3M-60W-3K-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Campana DETAILS

Luminaires in the CAMPANA series coexist perfectly with environments such as parks, pedestrian areas, waterfront projects, shopping centres, streets or avenues. This series of luminaires feature a full cutoff optical system that blend aesthetics and performance with panache.



CONSTRUCTION

- Sturdy aluminum casting housing
- Certified IP67 optical system
- Silicone gaskets and stainless steel hardware
- Mounts onto Ø2" I.D. pendant tenon or onto side-mount 2 3/8" Ø O.D. tenon with optional self-leveling (ADV)

FINISH

- Super durable, extremely resistant exterior polyester powder coating meets AAMA 2604 requirements (5 years South Florida exposure)
- Available in 10 standard colors / textured (TX) or smooth (SM) finish
- Optional RAL colors are also available
- For added protection a Marine Grade (MG) pre-finish is available to meet ASTM G7, B117, D1654 and D2247 requirements (salt spray, corrosion and humidity resistance)

LED, LENS & OPTICS

- High power LED available in 3000K & 4000K
- Type 2, 3, 3m (wide), 4 & 5 Roadway optics available
- Optional House-side shield available to cut back light
- Flat Clear Glass (FGC) - highest efficiency and performance
- Flat Clear Frost (FGF) - reduces glare with better uniformity
- All lens & optics are fully UV stable
- Dark Sky compliant

CN55P1A
EPA: 1.8 FT³
Weight: 59 lbs - 94 kg



ELECTRICAL

- Dimmable 0-10 volt, high power factor (90%) driver
- 120, 208, 240, 277, 347 or 480 volts available
- 10 kA Surge protector supplied standard

OPTIONAL

- Programmable driver (PROG)
- Button-type photocell (PC)
- Adaptor (ADV)
- Field adjustable 10% increment step-dimming switch (SD)

Contact factory for **WIRELESS CONTROLS** and further details



CN55P1B



REV. 4: 05/18

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-18-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / SN21P1-FGF-3M-60W-3K-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Pendant MINI SN21P1

Ordering Template

MODEL	LENS	DIST.	WATT	CCT	VOLT	ADAPTOR	OPTIONS	COLOR	TEXTURE	OP.FIN.
SN21P1	FGC FGF	2	20W	3K	120	NONE	NONE	BK	TX	MG
		3	40W	4K	208	ADV	PC ¹	DG	SM	
		3M	60W		240		PROG	MA		
		4	80W		277		SD	SI		
		5	100W		347			BZ		
		2HS			480			BG		
		3HS						GM		
		3MHS						PG		
		4HS						WH		

¹OPTION NOT AVAILABLE WITH 480V

ORDERING CODE

References

LENS

FGC	FLAT GLASS CLEAR
FGF	FLAT GLASS FROST

DISTRIBUTION

HS	INTERNAL HOUSE SHIELD
----	-----------------------

SEE PHOTOMETRIC PAGE FOR DETAILS

CCT

3K	3000K
4K	4000K

WATT

SEE PHOTOMETRIC PAGE FOR LUMEN OUTPUT

OPTIONS

NONE	NONE
PC	BUTTON-TYPE PHOTOCELL
PROG*	PROGRAMMABLE DRIVER
SD*	FIELD ADJUSTABLE 10% INCREMENT STEP-DIMMING SWITCH

*CONTACT FACTORY FOR WIRELESS CONTROLS AND MORE INFORMATION REGARDING PROG AND SD OPTIONS

COLOR

BK	BLACK RAL9005
DG	DARK GREEN RAL6012
MA	MARINE BLUE RAL5013
SI	METALLIC SILVER RAL9006 (SMOOTH ONLY)
BZ	DARK BRONZE RAL8019
BG	BURGUNDY RAL3005
GM	MOSS GREEN RAL6005
PG	PALE GREY RAL7040
WH	WHITE RAL9003

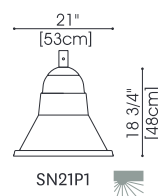
TEXTURE

TX	TEXTURED
SM	SMOOTH

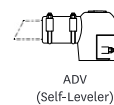
OP.FIN. (OPTIONAL FINISH)

MG	MARINE GRADE PRE-FINISH
----	-------------------------

Luminaire



Adaptors



 Dark Sky Compliant

 **cyclone**
REV. 4: 05/18

Description: 32' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms

Heads: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Faux Metal Pole with a Faux Wood Finish

FIXTURE TYPE: _____

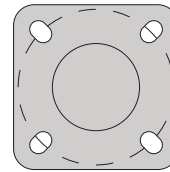
PROJECT NAME: _____

FEATURES:

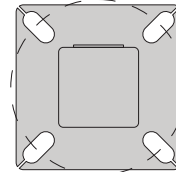
- Heights available from 10 to 22'
- Available as aluminum or steel in round or square profile
- Polyester powder coat painted (AAMA 2604 standard)
- Supplied with a two piece casted aluminum base cover
- Multiple mounting options



Shape	Aluminum		Steel	
	Height	Bolt Circle	Height	Bolt Circle
Round	10-14'	Ø8.63"	10-18'	Ø8.00"
	16-22'	Ø9.50"	20-22'	Ø8.00"
Square	10-18'	Ø9.00"	10-22'	Ø8.50"
	20-22'	Ø12.50"	-	-



Round



Square

ORDERING GUIDE: EXAMPLE: FAUX-ALU-R5-20-F3-T2384-STD

FAUX							
1	2	3	4	5	6	7	8

1	Series	4	Pole Height	Drill	
FAUX	Faux	10	10'	D1	1 @ 90deg
2	Material	22	22'	D2	2 @ 180deg
ALU	Aluminum	**	Specify	D3	2 @ 90deg
STL	Steel	5	Pole Finish	D4	3 @ 90deg
3	Shape	F*	See finish options on 2nd page	D5	4 @ 90deg
RS	Round Straight	6	Fixture Mounting	7	Options
RT	Round Tapered	LIN	Structura Lineal	BNR	Banner ⁽²⁾
SS	Square Straight	Tenon		GFCI	GFCI Box
ST	Square Tapered ⁽¹⁾	T2384	2 3/8" x 4" Tenon	8	Special
		T2784	2 7/8" x 4" Tenon	STD	Standard
		T3124	3 1/2" x 4" Tenon	MOD	Modified
		T4004	4" x 4" Tenon		
		TXXX	Specify other Tenon		

1. Square tapered poles only available in steel.
2. Consult factory for allowable EPA for banners.

Description: 32' Faux Wood Pedestrian Pole
Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms
Heads: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?
Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

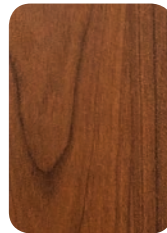
Faux Metal Pole Finishes



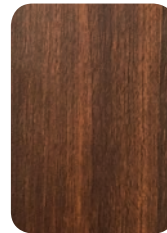
F1



F2



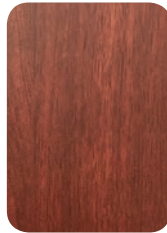
F3



F4



F5



F6



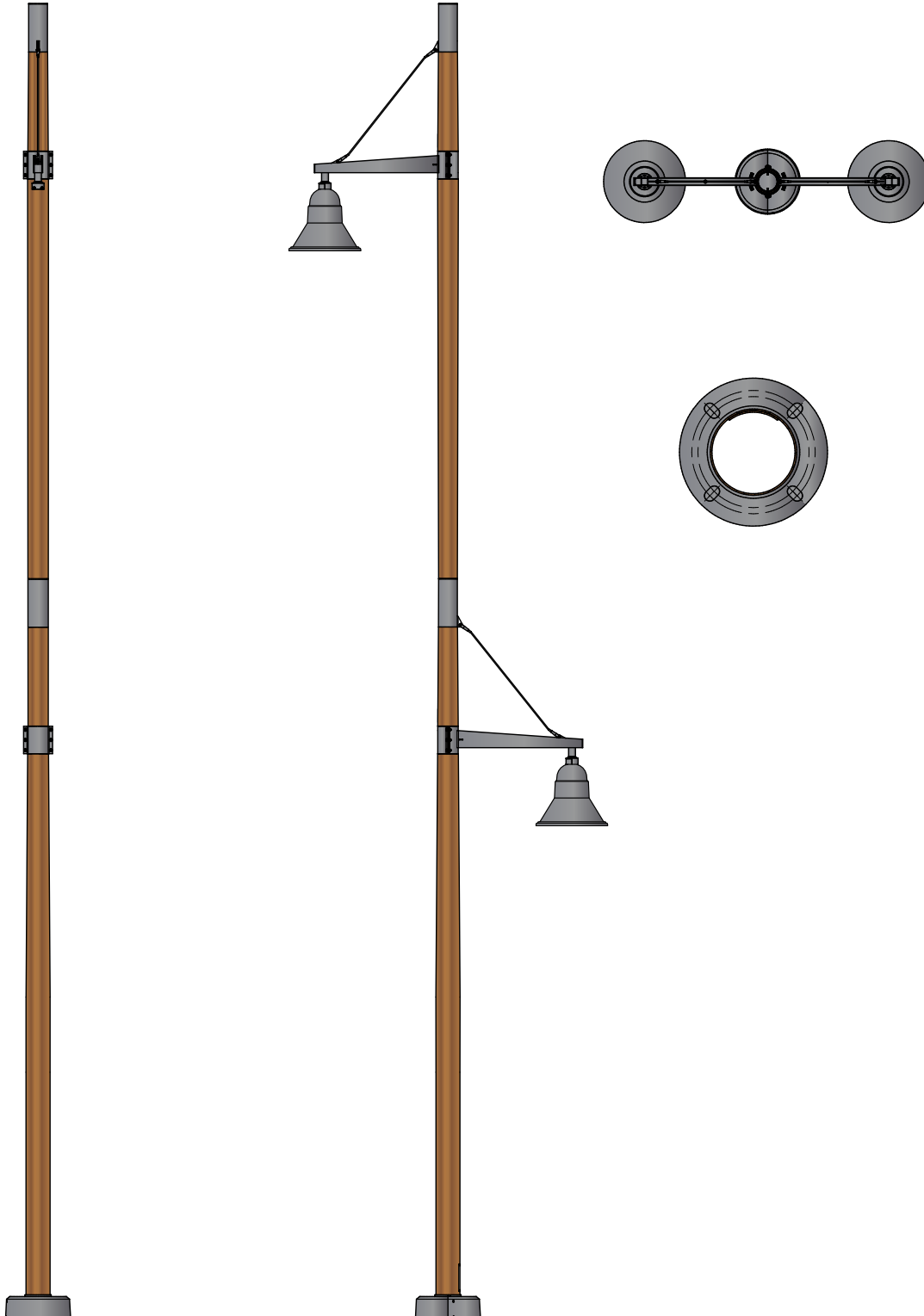
F7

Description: 32' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms

Heads: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.



Description: 32' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms

Heads: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Campana DETAILS

Luminaires in the CAMPANA series coexist perfectly with environments such as parks, pedestrian areas, waterfront projects, shopping centres, streets or avenues. This series of luminaires feature a full cutoff optical system that blend aesthetics and performance with panache.



CONSTRUCTION

- Sturdy aluminum casting housing
- Certified IP67 optical system
- Silicone gaskets and stainless steel hardware
- Mounts onto Ø2" I.D. pendant tenon or onto side-mount 2 3/8" Ø O.D. tenon with optional self-leveling (ADV)

FINISH

- Super durable, extremely resistant exterior polyester powder coating meets AAMA 2604 requirements (5 years South Florida exposure)
- Available in 10 standard colors / textured (TX) or smooth (SM) finish
- Optional RAL colors are also available
- For added protection a Marine Grade (MG) pre-finish is available to meet ASTM G7, B117, D1654 and D2247 requirements (salt spray, corrosion and humidity resistance)

LED, LENS & OPTICS

- High power LED available in 3000K & 4000K
- Type 2, 3, 3m (wide), 4 & 5 Roadway optics available
- Optional House-side shield available to cut back light
- Flat Clear Glass (FGC) - highest efficiency and performance
- Flat Clear Frost (FGF) - reduces glare with better uniformity
- All lens & optics are fully UV stable
- Dark Sky compliant

CN55P1A
EPA: 1.8 FT³
Weight: 59 lbs - 94 kg



ELECTRICAL

- Dimmable 0-10 volt, high power factor (90%) driver
- 120, 208, 240, 277, 347 or 480 volts available
- 10 kA Surge protector supplied standard

OPTIONAL

- Programmable driver (PROG)
- Button-type photocell (PC)
- Adaptor (ADV)
- Field adjustable 10% increment step-dimming switch (SD)

Contact factory for **WIRELESS CONTROLS** and further details



CN55P1B



REV. 4: 05/18

Description: 32' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms

Heads: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Pendant CN55P1A/CN55P1B

Ordering Template

MODEL	LENS	DIST.	WATT	CCT	VOLT	ADAPTOR	OPTIONS	COLOR	TEXTURE	OP.FIN.
CN55P1A	FGC	2	20W	3K	120	NONE	NONE	BK	TX	MG
CN55P1B	FGF	3	40W	4K	208	ADV	PC ^{1,2}	DG	SM	
		3M	60W		240		PROG	MA		
		4	80W		277		SD	SI		
		5	100W		347			BZ		
		2HS	120W		480			BG		
		3HS						GM		
		3MHS						PG		
		4HS						WH		

¹NOT AVAILABLE WITH CN55P1B

²OPTION NOT AVAILABLE WITH 480V

ORDERING CODE

References

LENS

FGC	FLAT GLASS CLEAR
FGF	FLAT GLASS FROST

DISTRIBUTION

HS	INTERNAL HOUSE SHIELD
----	-----------------------

SEE PHOTOMETRIC PAGE FOR DETAILS

CCT

3K	3000K
4K	4000K

WATT

SEE PHOTOMETRIC PAGE FOR LUMEN OUTPUT

ADAPTOR

NONE	FITS INTO Ø2" I.D. X MIN 4" LONG TENON
ADV	SELF-LEVELING, SIDE MOUNT ADAPTOR FITS ONTO Ø2 3/8" O.D. x MIN 6" LONG TENON

OPTIONS

NONE	NONE
PC	BUTTON-TYPE PHOTOCELL
PROG*	PROGRAMMABLE DRIVER
SD*	FIELD ADJUSTABLE 10% INCREMENT STEP-DIMMING SWITCH

*CONTACT FACTORY FOR WIRELESS CONTROLS AND MORE INFORMATION REGARDING PROG AND SD OPTIONS

COLOR

BK	BLACK RAL9005
DG	DARK GREEN RAL6012
MA	MARINE BLUE RAL5013
SI	METALLIC SILVER RAL9006 (SMOOTH ONLY)
BZ	DARK BRONZE RAL8019
BG	BURGUNDY RAL3005
GM	MOSS GREEN RAL6005
PG	PALE GREY RAL7040
WH	WHITE RAL9003

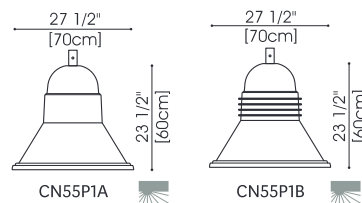
TEXTURE

TX	TEXTURED
SM	SMOOTH

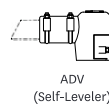
OP.FIN. (OPTIONAL FINISH)

MG	MARINE GRADE PRE-FINISH
----	-------------------------

Luminaire



Adaptors



 Dark Sky Compliant

 **cyclone**
REV. 4: 05/18

Description: 32' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D2-MOD + BWF arms

Heads: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX? + (1)SN21P1-FGF-3M-60W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P1 poles. Voltage, control options and finishes TBD.

Pendant MINI SN21P1

Ordering Template

MODEL	LENS	DIST.	WATT	CCT	VOLT	ADAPTOR	OPTIONS	COLOR	TEXTURE	OP.FIN.
SN21P1	FGC FGF	2	20W	3K	120	NONE	NONE	BK	TX	MG
		3	40W	4K	208	ADV	PC¹	DG	SM	
		3M	60W		240		PROG	MA		
		4	80W		277		SD	SI		
		5	100W		347			BZ		
		2HS			480			BG		
		3HS						GM		
		3MHS						PG		
		4HS						WH		

¹OPTION NOT AVAILABLE WITH 480V

ORDERING CODE

References

LENS

FGC	FLAT GLASS CLEAR
FGF	FLAT GLASS FROST

DISTRIBUTION

HS	INTERNAL HOUSE SHIELD
SEE PHOTOMETRIC PAGE FOR DETAILS	

CCT

3K	3000K
4K	4000K

WATT

SEE PHOTOMETRIC PAGE FOR LUMEN OUTPUT

OPTIONS

NONE	NONE
PC	BUTTON-TYPE PHOTOCCELL
PROG*	PROGRAMMABLE DRIVER
SD*	FIELD ADJUSTABLE 10% INCREMENT STEP-DIMMING SWITCH

*CONTACT FACTORY FOR WIRELESS CONTROLS AND MORE INFORMATION REGARDING PROG AND SD OPTIONS

COLOR

BK	BLACK RAL9005
DG	DARK GREEN RAL6012
MA	MARINE BLUE RAL5013
SI	METALLIC SILVER RAL9006 (SMOOTH ONLY)
BZ	DARK BRONZE RAL8019
BG	BURGUNDY RAL3005
GM	MOSS GREEN RAL6005
PG	PALE GREY RAL7040
WH	WHITE RAL9003

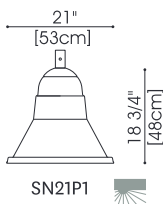
TEXTURE

TX	TEXTURED
SM	SMOOTH

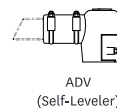
OP.FIN. (OPTIONAL FINISH)

MG	MARINE GRADE PRE-FINISH
----	-------------------------

Luminaire



Adaptors



 Dark Sky Compliant



Friendswood Downtown District

Type: P3

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P3 poles. Voltage, control options and finishes TBD.

Faux Metal Pole with a Faux Wood Finish

FIXTURE TYPE: _____

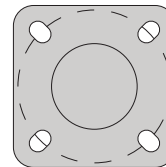
PROJECT NAME: _____

FEATURES:

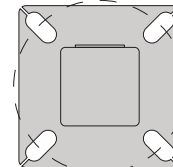
- Heights available from 10 to 22'
- Available as aluminum or steel in round or square profile
- Polyester powder coat painted (AAMA 2604 standard)
- Supplied with a two piece casted aluminum base cover
- Multiple mounting options



Shape	Aluminum		Steel	
	Height	Bolt Circle	Height	Bolt Circle
Round	10-14'	Ø8.63"	10-18'	Ø8.00"
	16-22'	Ø9.50"	20-22'	Ø8.00"
Square	10-18'	Ø9.00"	10-22'	Ø8.50"
	20-22'	Ø12.50"	-	-



Round



Square

ORDERING GUIDE: EXAMPLE: FAUX-ALU-RS-20-F3-T2384-STD

FAUX							
1	2	3	4	5	6	7	8

1
FAUX
2
ALU
STL
3
RS
RT
SS
ST

Series
Faux
Material
Aluminum
Steel
Shape
Round Straight
Round Tapered
Square Straight
Square Tapered ⁽¹⁾

4
10
22
**
5
F*
6
LIN
Tenon
T2384
T2784
T3124
T4004
TXXX

Pole Height
10'
22'
Specify
Pole Finish
See finish options on
2nd page
Fixture Mounting
Structura Lineal
2 3/8" x 4" Tenon
2 7/8" x 4" Tenon
3 1/2" x 4" Tenon
4" x 4" Tenon
Specify other Tenon

Drill
D1
D2
D3
D4
D5
1 @ 90deg
2 @ 180deg
2 @ 90deg
3 @ 90deg
4 @ 90deg

7
BNR
GFCI
Options
Banner⁽²⁾
GFCI Box

8
STD
MOD
Special
Standard
Modified

1. Square tapered poles only available in steel.
2. Consult factory for allowable EPA for banners.

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P3 poles. Voltage, control options and finishes TBD.

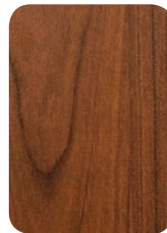
Faux Metal Pole Finishes



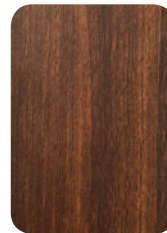
F1



F2



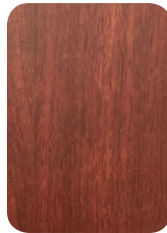
F3



F4



F5



F6



F7



gandy² lighting design

Friendswood Downtown District

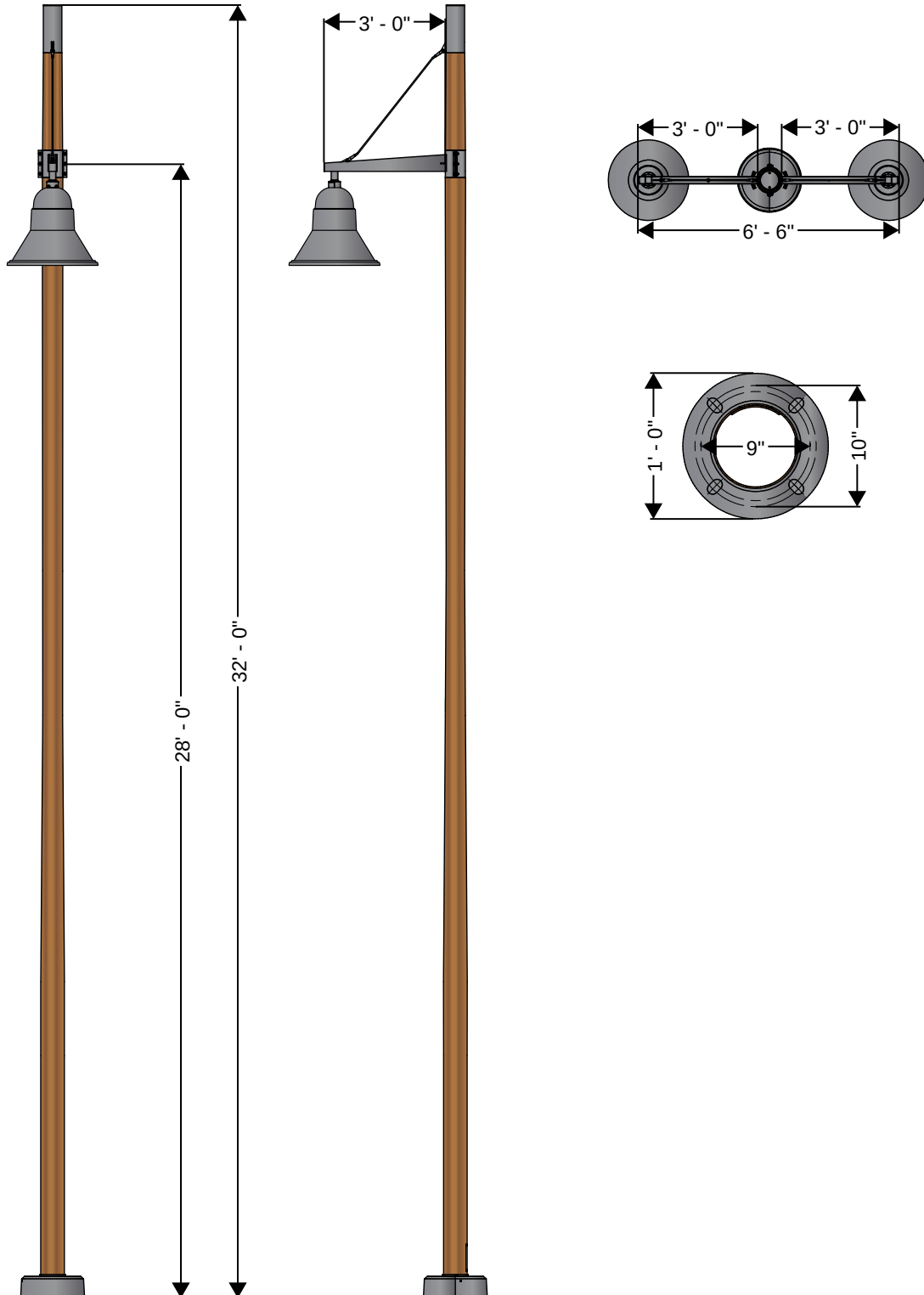
Type: P3

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P3 poles. Voltage, control options and finishes TBD.





gandy² lighting design

Friendswood Downtown District

Type: P3

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P3 poles. Voltage, control options and finishes TBD.

Campana DETAILS

Luminaires in the CAMPANA series coexist perfectly with environments such as parks, pedestrian areas, waterfront projects, shopping centres, streets or avenues. This series of luminaires feature a full cutoff optical system that blend aesthetics and performance with panache.



CONSTRUCTION

- Sturdy aluminum casting housing
- Certified IP67 optical system
- Silicone gaskets and stainless steel hardware
- Mounts onto Ø2" I.D. pendant tenon or onto side-mount 2 3/8" Ø O.D. tenon with optional self-leveling (ADV)

FINISH

- Super durable, extremely resistant exterior polyester powder coating meets AAMA 2604 requirements (5 years South Florida exposure)
- Available in 10 standard colors / textured (TX) or smooth (SM) finish
- Optional RAL colors are also available
- For added protection a Marine Grade (MG) pre-finish is available to meet ASTM G7, B117, D1654 and D2247 requirements (salt spray, corrosion and humidity resistance)

LED, LENS & OPTICS

- High power LED available in 3000K & 4000K
- Type 2, 3, 3m (wide), 4 & 5 Roadway optics available
- Optional House-side shield available to cut back light
- Flat Clear Glass (FGC) - highest efficiency and performance
- Flat Clear Frost (FGF) - reduces glare with better uniformity
- All lens & optics are fully UV stable
- Dark Sky compliant

CN55P1A
EPA: 1.8 FT³
Weight: 59 lbs - 94 kg



ELECTRICAL

- Dimmable 0-10 volt, high power factor (90%) driver
- 120, 208, 240, 277, 347 or 480 volts available
- 10 kA Surge protector supplied standard

OPTIONAL

- Programmable driver (PROG)
- Button-type photocell (PC)
- Adaptor (ADV)
- Field adjustable 10% increment step-dimming switch (SD)

Contact factory for **WIRELESS CONTROLS** and further details



CN55P1B



REV. 4: 05/18

Description: 18' Faux Wood Pedestrian Pole

Manufacturer / Number: Structura / FAUX-ALU-RT-32-F2?-D1-BNR-MOD + BWF arm

Head: Cyclone / (1)CN55P1A-FGF-3M-100W-3K-X-X-BZ?-TX?

Comments: 5 year warranty on finish. Includes banner arms on P3 poles. Voltage, control options and finishes TBD.

Pendant MINI SN21P1

Ordering Template

MODEL	LENS	DIST.	WATT	CCT	VOLT	ADAPTOR	OPTIONS	COLOR	TEXTURE	OP.FIN.
SN21P1	FGC FGF	2	20W	3K	120	NONE	NONE	BK	TX	MG
		3	40W	4K	208	ADV	PC ¹	DG	SM	
		3M	60W		240		PROG	MA		
		4	80W		277		SD	SI		
		5	100W		347			BZ		
		2HS			480			BG		
		3HS						GM		
		3MHS						PG		
		4HS						WH		

¹OPTION NOT AVAILABLE WITH 480V

ORDERING CODE

References

LENS

FGC	FLAT GLASS CLEAR
FGF	FLAT GLASS FROST

DISTRIBUTION

HS	INTERNAL HOUSE SHIELD
----	-----------------------

SEE PHOTOMETRIC PAGE FOR DETAILS

CCT

3K	3000K
4K	4000K

WATT

SEE PHOTOMETRIC PAGE FOR LUMEN OUTPUT

OPTIONS

NONE	NONE
PC	BUTTON-TYPE PHOTOCELL
PROG*	PROGRAMMABLE DRIVER
SD*	FIELD ADJUSTABLE 10% INCREMENT STEP-DIMMING SWITCH

*CONTACT FACTORY FOR WIRELESS CONTROLS AND MORE INFORMATION REGARDING PROG AND SD OPTIONS

COLOR

BK	BLACK RAL9005
DG	DARK GREEN RAL6012
MA	MARINE BLUE RAL5013
SI	METALLIC SILVER RAL9006 (SMOOTH ONLY)
BZ	DARK BRONZE RAL8019
BG	BURGUNDY RAL3005
GM	MOSS GREEN RAL6005
PG	PALE GREY RAL7040
WH	WHITE RAL9003

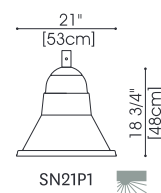
TEXTURE

TX	TEXTURED
SM	SMOOTH

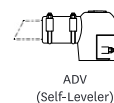
OP.FIN. (OPTIONAL FINISH)

MG	MARINE GRADE PRE-FINISH
----	-------------------------

Luminaire



Adaptors



 Dark Sky Compliant

 **cyclone**
REV. 4: 05/18

gandy² lighting design

6101 north main street
houston, texas 77009
713.489.5111

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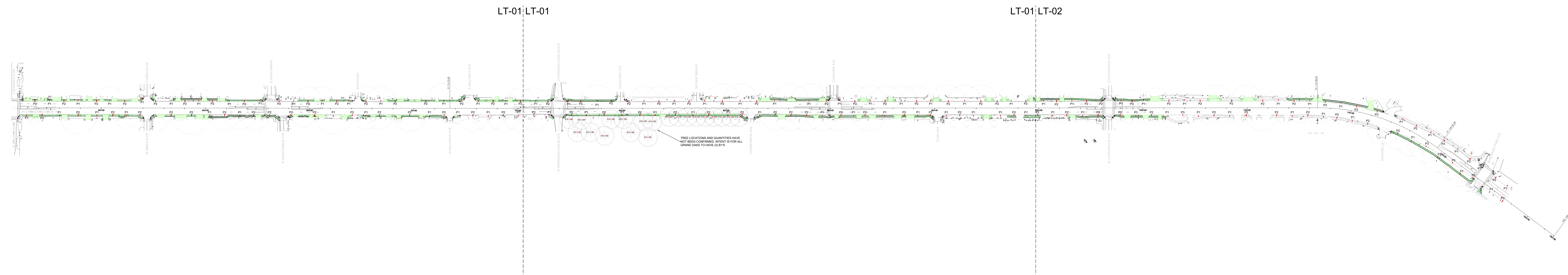
Friendswood Downtown District Lighting Plan

Revisions

Drawn JDG
Checked LTG
Scale 1/128"=1'-0"
Date 7/20/2020

Sheet Number
LT-0

Sheet 01 of 03





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houston, texas 77009
713.489.5111

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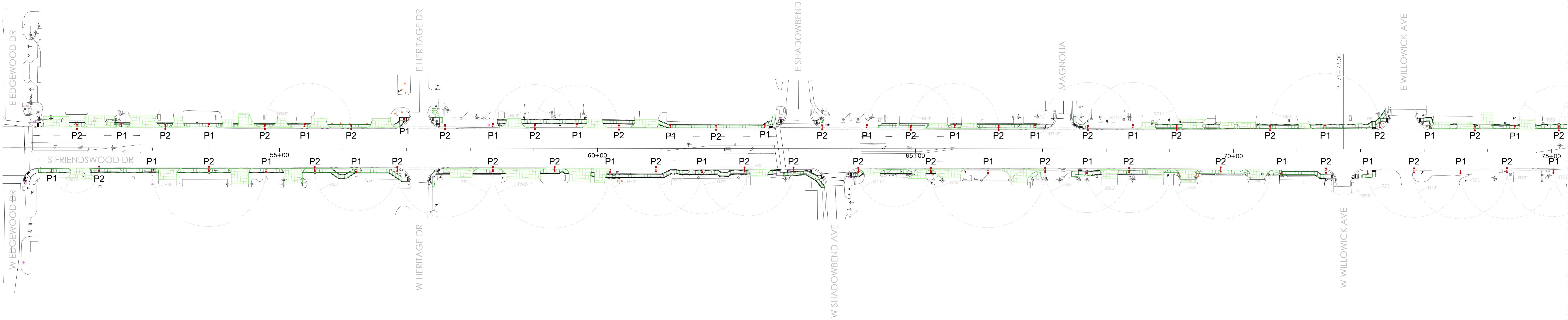
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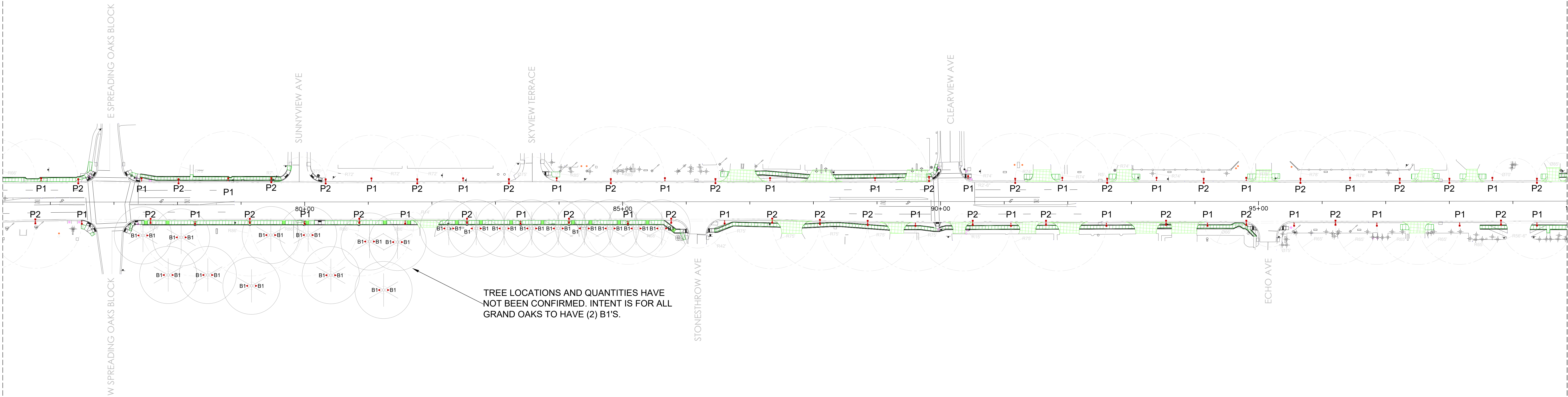
Friendswood Downtown District
Lighting Plan

Revisions

Drawn JDG	Sheet Number LT-01
Checked LTG	
Scale 1/64"=1'-0"	Sheet 02 of 03
Date 7/20/2020	



1
2





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713.489.5111

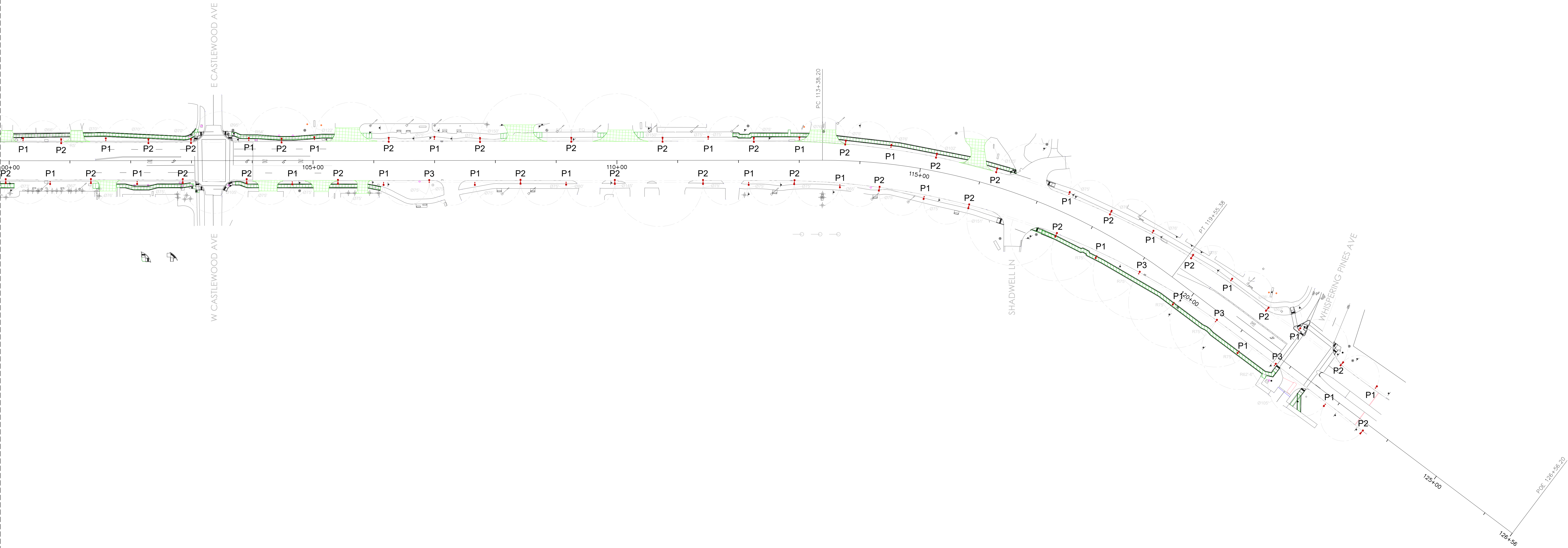
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Written dimensions on these drawings shall have precedence over scale dimensions. Contractor shall verify and be responsible for all dimensions and conditions on the job and this office must be notified of any variation from the dimensions and conditions shown by these drawings.

Friendswood Downtown District
Lighting Plan



Revisions

Drawn JDG	Sheet Number LT-02
Checked LTG	
Scale 1/64"=1'-0"	
Date 7/20/2020	Sheet 03 of 03