



**AGENDA
CITY OF CREVE COEUR
PLANNING AND ZONING
300 NORTH NEW BALLAS RD
DECEMBER 19, 2022
6:00 PM**

CALL TO ORDER

ROLL CALL

Ms. Julie LaBonte (Chair)
Ms. Muriel Hall
Mr. Larry Potashnick
Ms. Marjorie Richter
Mr. AJ Wang
Ms. Rhonda O'Brien
Mr. Thomas Buelter

Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, Director of Community Development
Ms. Bethany L. Moore, City Planner
Ms. Megan Waller, Administrative Supervisor/Recording Secretary

ACCEPTANCE OF THE AGENDA

APPROVAL OF MINUTES

- 1. December 5, 2022 Planning and Zoning Commission Draft Meeting Minutes**

PUBLIC COMMENT

An opportunity for members of the public to address the Planning and Zoning Commission regarding issues or concerns not already on the agenda for this meeting. Those wishing to speak will be asked to limit comments to three minutes and to complete a speaker card.

UNFINISHED BUSINESS

- 1. PUBLIC HEARING Application #22-031: A Conditional Use Permit with Associated Site Development Plan for A New Chick Fil A Restaurant with Drive Through Services Located at 12398 Olive Boulevard**

Joe Vavrina, of HR Green, Inc, on behalf of Gershman Commercial Real Estate, has submitted an application for a Conditional Use Permit with associated site development plan for a new freestanding Chick Fil A restaurant with a drive-through, located at 12398 Olive Boulevard in the "PC" Planned Commercial zoning district. The project would include the construction of a new 4,700 square foot



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building with drive through lanes consisting of 74 indoor seats and 24 outside seats at the corner of Olive Boulevard and Tempo Drive where the existing TGI Friday's building is located in the Westgate Center development. This item was continued from the November 21, 2022 and December 5, 2022 meetings.

NEW BUSINESS

1. PUBLIC HEARING Application #22-034: Text Amendment to Modify Table A: Permitted and Conditional Uses of the Zoning Ordinance to Allow NAICS Use Code 624110, Child and Youth Services, in the "GC" General Commercial District

David Hutkin, of Hutkin Properties Group, on behalf of Metro Creve Coeur LLC, property owner, has submitted a Text Amendment application to revise Table A: Permitted and Conditional Uses of the Zoning Ordinance, Chapter 405, to allow Child and Youth Services, NAICS Use Code 624110, as a permitted use within the "GC"-General Commercial District. This industry comprises of establishments primarily engaged in providing nonresidential social assistance services for children and youth. These establishments provide for the welfare of children in such areas as adoption and foster care, drug prevention, life skills training, and positive social development. If approved, Foster and Adoptive Care Coalition of Greater St. Louis intends to purchase and occupy the building located at 1100 N. Lindbergh Boulevard, Creve Coeur, MO 63132, within the GC-General Commercial District.

2. PUBLIC HEARING Application #22-036: An Amendment to the Master Sign Plan for the CityPlace Campus to Allow Additional Signage on CityPlace 1, 2, and 4

Gina Lee, of Redico, has submitted an application to amend the Master Sign Plan for the CityPlace campus located along Olive Boulevard in the "CB" Core Business Zoning District pursuant to Section 405950(J) Master Sign Plans. The amendment would allow for additional signage on CityPlace 1, 2, and 4 not previously allowed under Ordinance 5562 last approved on January 8, 2017. Master Sign Plans allow the City Council the flexibility to approve additional signs for planned developments and large residentially zoned institutional campus developments of three or more buildings with a minimum of 10 acres, subject to certain requirements and conditions.



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WORK AGENDA

DEPARTMENT REPORTS

ADJOURNMENT

Pursuant to Section 610.022 RSMo., the Planning and Zoning Commission could, at any time during the meeting, vote to close the public meeting and move to closed session to discuss matters relating to litigation, legal actions and/or communications from the City Attorney as provided under Section 610.021(1) RSMo. and/or personnel matters under Section 610.021(13) RSMo. And/or employee matters under Section 610.021(3) RSMo. and/or real estate matters under Section 610.021(2) or other matters as permitted by Chapter 610.

Posted by: _____

Date/Time posted: _____

If you need special accommodations to attend a meeting, services may be arranged by contacting the Office of the City Administrator in advance.



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CALL TO ORDER

The meeting was called to order at 6:02 PM.

ROLL CALL

Ms. Julie LaBonte (Chair)
Ms. Muriel Hall (arrived after vote on item 1 of unfinished business)
Mr. Larry Potashnick
Ms. Marjorie Richter
Mr. AJ Wang (Vice Chair)
Ms. Rhonda O'Brien
Mr. Thomas Buelter

The following staff were also present:

Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, Director of Community Development
Ms. Bethany L. Moore, City Planner
Ms. Megan Waller, Administrative Supervisor/Recording Secretary

ACCEPTANCE OF THE AGENDA

Mr. Potashnick made a motion to approve the agenda. Mr. Buelter seconded. All in favor.

APPROVAL OF THE MINUTES

1. November 21, 2022 Planning and Zoning Commission Draft Meeting Minutes

Mr. Wang made a motion to approve the November 21, 2022 meeting minutes. Mr. Buelter seconded. All in favor.

PUBLIC COMMENT

None



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UNFINISHED BUSINESS

1. PUBLIC HEARING #22-031: A Conditional Use Permit with Associated Site Development Plan for a New Chick Fil A with Drive Through Services Located at 12398 Olive Boulevard

Mr. Wang made a motion to continue the hearing to the December 21st meeting. Mr. Potashnick seconded. All in favor.

RESULT: Passed

MOVER: AJ Wang

SECONDER: Larry Potashnick

AYES: AJ Wang, Julie LaBonte, Thomas Buelter, Rhonda O'Brien, Marjorie Richter, Larry Potashnick

NAYS: None

ABSENT: Muriel Hall

Ms. Hall arrived.

2. PUBLIC HEARING #22-027: Conditional Use Permit for A 9,044 Square Foot Mexican Barrel House Restaurant Located at 1085 North Mason Road

Those speaking to the request were sworn in.

Mr. Stewart MacGregor, 2190 S Mason Rd #202, St. Louis, MO 63131, updated the commission that the applicant is comfortable with reducing seating if the cross-parking agreement does not go through.

Mr. MacGregor presented Smokey Ash siding and Bedrock siding colors as alternative color options for the exterior of the building.

Ms. Bethany Moore, City Planner, stated that staff prefers the Bedrock color siding with the stone proposed for the building. Mr. MacGregor agreed.

Ms. Moore stated that the maximum capacity of indoor seats shall be 198 or a cross parking agreement for seven additional parking spaces must be obtained to allow 220 indoor seats.

Ms. Hall asked about the color of the roof. Mr. MacGregor stated that the roof is in serviceable condition and will remain the existing red color.



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Mr. Potashnick asked staff if these repairs will bring the site and building up to commercial standards. Mr. Jaggi stated that staff believes the proposed changes with outlined conditions will greatly improve the site.

Mr. Wang thanked Mr. MacGregor for his willingness to negotiate the exterior color scheme.

Mr. Carl Lumley, City Attorney, offered the exhibits to the record.

Mr. Potashnick made a motion to recommend approval of the conditional use permit to City Council subject to the conditions outlined in the draft ordinance with the added condition that the applicant shall use the Bedrock color selection for the exterior of the building. Mr. Wang seconded. All in favor.

RESULT: Passed

MOVER: Larry Potashnick

SECONDER: AJ Wang

AYES: AJ Wang, Julie LaBonte, Thomas Buelter, Rhonda O'Brien, Marjorie Richter, Larry Potashnick, Murial Hall

NAYS: None

NEW BUSINESS

1. PUBLIC HEARING #22-035: Conditional Use Permit for A 11,200 Square Foot Foss Swim School With Associated Minor Site Plan Located Within Bellerive Plaza at 12760 Olive Boulevard

Those speaking to the request were sworn in.

Mr. Craig O'Halloran, 6545 Flying Cloud Dr. Suite 201, Eden Prairie, MN, stated that the school is proposed in Bellerive Plaza in an existing 11,200sqft space previously part of the Schnucks store.

Mr. O'Halloran presented a video of the Foss Swim School brand.

Mr. O'Halloran stated that instructors must be 18 years or older and complete 70 hours of training before getting into the water.

Mr. O'Halloran stated that classes are purchased in 9-15 week packages with an assigned instructor.



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Mr. O'Halloran stated that the schools are used for teaching only and cannot be rented or used for events.

Mr. O'Halloran stated that the applicant hopes to update the facade to identify the Foss swim school.

Mr. O'Halloran presented the proposed floor plan of the interior of the building.

Mr. O'Halloran stated that there are two viewing areas for parents to participate in their child's lessons and there are private, individual changing areas and restrooms.

Ms. O'Brien asked how the water is treated. Mr. O'Halloran stated that the pools are chlorinated and use a secondary UV sanitation system.

Mr. Buelter asked who performs the pool maintenance. Mr. O'Halloran stated that there is a facilities manager and other managers in the area who are certified pool operator certified. He also explained that the chemicals are supplied by a 3rd party vendor, and they are stored in a contained environment.

Ms. Bethany Moore, City Planner, stated that the proposed space was previously part of the existing Schnuck's in Bellerive Plaza in the general commercial zoning district.

Ms. Moore stated that the facade of the building will be remodeled to match the existing materials of the strip center.

Ms. LaBonte asked if there will be any work done to the back of the building. Ms. Moore stated there will not.

Ms. Moore stated that the center including the proposed use will have a surplus of parking as 56 spaces are required and there are 90 additional spaces on site.

Ms. Moore stated that the proposed hours of operation are 9 AM - 8 PM Monday, Tuesday, Thursday, 3:30 PM - 8 PM Wednesday and Friday, and 8 AM - 5 PM Saturday and Sunday.

Ms. LaBonte had concerns about the delivery of chemicals. Ms. Moore stated that currently deliveries occur at the back of the building for Schnuck's. Mr. O'Halloran confirmed that deliveries will occur in the back.

Mr. Buelter asked where the trash enclosure will be. Mr. O'Halloran stated that the trash enclosure is currently located at the back of the building and will remain.

Mr. Lumley offered the exhibits into the record.



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Mr. Potashnick made a motion to recommend approval of the conditional use permit with associated minor site plan subject to the conditions outlined in the draft ordinance. Mr. Wang seconded. All in favor.

RESULT: Passed

MOVER: Larry Potashnick

SECONDER: AJ Wang

AYES: AJ Wang, Julie LaBonte, Thomas Buelter, Rhonda O'Brien, Marjorie Richter, Larry Potashnick, Murial Hall

NAYS: None

WORK AGENDA

None

DEPARTMENT REPORTS

Mr. Jason Jaggi, Director of Community Development, stated that the Chick-Fil-A application is on the agenda for the December 19th meeting as well as an application for a text amendment to allow adoption service agencies in the GC zoning district and a master sign plan application for CityPlace.

Mr. Jaggi reminded the commission that the January 3rd meeting has been canceled.

Mr. Jaggi commended Mr. Buelter and Ms. O'Brien for completing their Chancellor's Certificate in Planning and Zoning program. The Commission agreed and commended Ms. Waller as well for completing the program.

Mr. Jaggi stated that there will be a joint meeting with the City Council in the new year to look at the comprehensive plan and potential capital improvement projects.

Ms. LaBonte asked if there has been an update on the Bayer west campus. Mr. Jaggi stated that there has been a buyer that has had a few preliminary conversations with City Staff, but no applications have been turned in at this time.

Ms. LaBonte suggested looking at the development of the east Olive corridor. Mr. Jaggi stated that this is a topic that could be considered during the joint session with City Council.



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ADJOURNMENT

Mr. Wang made a motion to adjourn. Mr. Buelter seconded. All in favor.

The meeting adjourned at 6:57 PM.

Submitted By:

Recording Secretary

Chair



**APPLICATION TO PLANNING AND ZONING COMMISSION
#22-031: A CONDITIONAL USE PERMIT WITH ASSOCIATED SITE
DEVELOPMENT PLAN FOR A NEW CHICK FIL A RESTAURANT WITH DRIVE
THROUGH SERVICES LOCATED AT 12398 OLIVE BOULEVARD**

FOR THE MEETING OF: Monday, December 19, 2022

LOCATION: 12398 Olive Boulevard, zoned PC-Planned Commercial District

REQUEST: Joe Vavrina, of HR Green, Inc, on behalf of Gershman Commercial Real Estate, has submitted an application for a Conditional Use Permit with associated site development plan for a new freestanding Chick Fil A restaurant with a drive-through, located at 12398 Olive Boulevard in the "PC" Planned Commercial zoning district. The project would include the construction of a new 4,700 square foot building with drive through lanes consisting of 74 indoor seats and 24 outside seats at the corner of Olive Boulevard and Tempo Drive where the existing TGI Friday's building is located in the Westgate Center development.

ADDITIONAL INFORMATION:

Under Section 405.210, Table A of the Zoning Code, Limited-Service Restaurants (NAICS 722513) require the issuance of a conditional use permit subject to the recommendation of the Planning and Zoning Commission and approval of the City Council. In addition, all drive through restaurants are subject to the conditional use requirements of Section 405.470.A.14. of the Zoning Code. This application was continued from the November 21 and December 5, 2022 meeting agendas.

Key Issues:

- Does the request further the goals and/or implement the Comprehensive Plan?
- Is the request consistent with the required findings for a conditional use permit?
- Does the request follow the Design Guidelines?

Creve Coeur 2030 Plan References

- Mixed Use District
- Design Guidelines

Zoning Code References

- Section 405.350: PC-Planned Commercial District
- Section 405.470: Conditional Uses
- Section 1080: Site Concept, Site Development and Minor Site Plan Approval

APPLICANT: Joe Vavrina
HR Green, Inc
1391 Corporate Drive, Suite 203
McHenry, IL 60050

**PROPERTY
OWNER:**

Bruce J. Brophy
Gershman Commercial Real Estate
150 N. Meramec, Suite 500
St. Louis, MO 63105



REPORT PREPARED BY: Bethany L. Moore, City Planner

DATE: 12/15/2022

ATTACHMENTS: Applicant's Materials received November 14, 2022 and December 13, 2022
Traffic Impact Study and related correspondence and Acoustic Study

BACKGROUND

The Planning and Zoning Commission continued this item at the November 21st and December 5th meetings to allow the applicant additional time to address staff concerns. Because this is the first review of the proposal by the Commission with many elements to consider and provide further direction, staff has not prepared suggested conditions of approval. After applicant and staff presentations, consideration of public comments and deliberations by the Commission, staff will prepare suggested conditions and a draft ordinance for review at a subsequent meeting.

PROPOSAL

The Applicants are seeking approval for a conditional use permit as required under NAICS 722513 Limited-Service Restaurants and an associated site development plan for a new 4,704 square foot building with drive through lanes for a Chick-fil-a restaurant. The project is located at the southeast corner of Olive Boulevard and Tempo Drive at 12398 Olive Boulevard and the leased area is 1.02 acres within the 7.11 acre Westgate Centre development. There is an existing T.G.I. Friday's restaurant building and associated parking lot that will be demolished in order for Chick-fil-a to redevelop the site. Chick-fil-a is proposing a new single story 4,704 square foot free-standing restaurant with 74 indoor seats and 24 outdoor seats, dual drive-thru facility with free-standing canopies, parking lot, and associated utilities. The new building is positioned similar to the T.G.I. Friday's restaurant in the corner of the shopping center area near the corner of Olive Boulevard and Tempo Boulevard but is a little over half the size of the existing building. The positioning of the Chick-fil-building on the site helps to maintain as much of the existing Westgate Centre parking lot as possible along the south and east sides of the site; provide the maximum number of parking stalls while promoting efficient traffic circulation; provide a sufficiently long drive-thru lane to promote efficient restaurant operations; and to provide adequate visibility to the new store to attract potential new customers that are traveling along Olive Boulevard and within the shopping mall development.

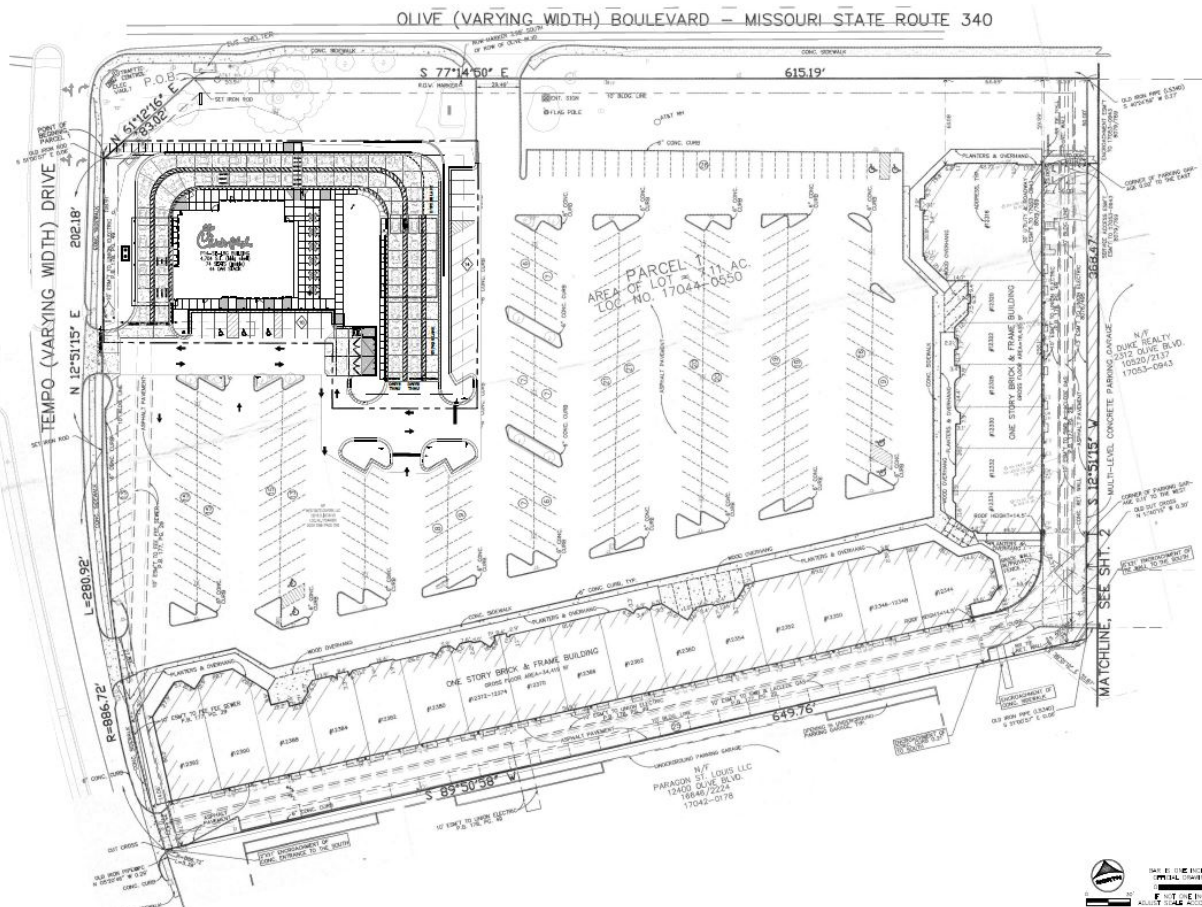


Figure 1: Proposed Site Plan



Figure 2: North and South Elevations



Figure 4: East and West Elevations

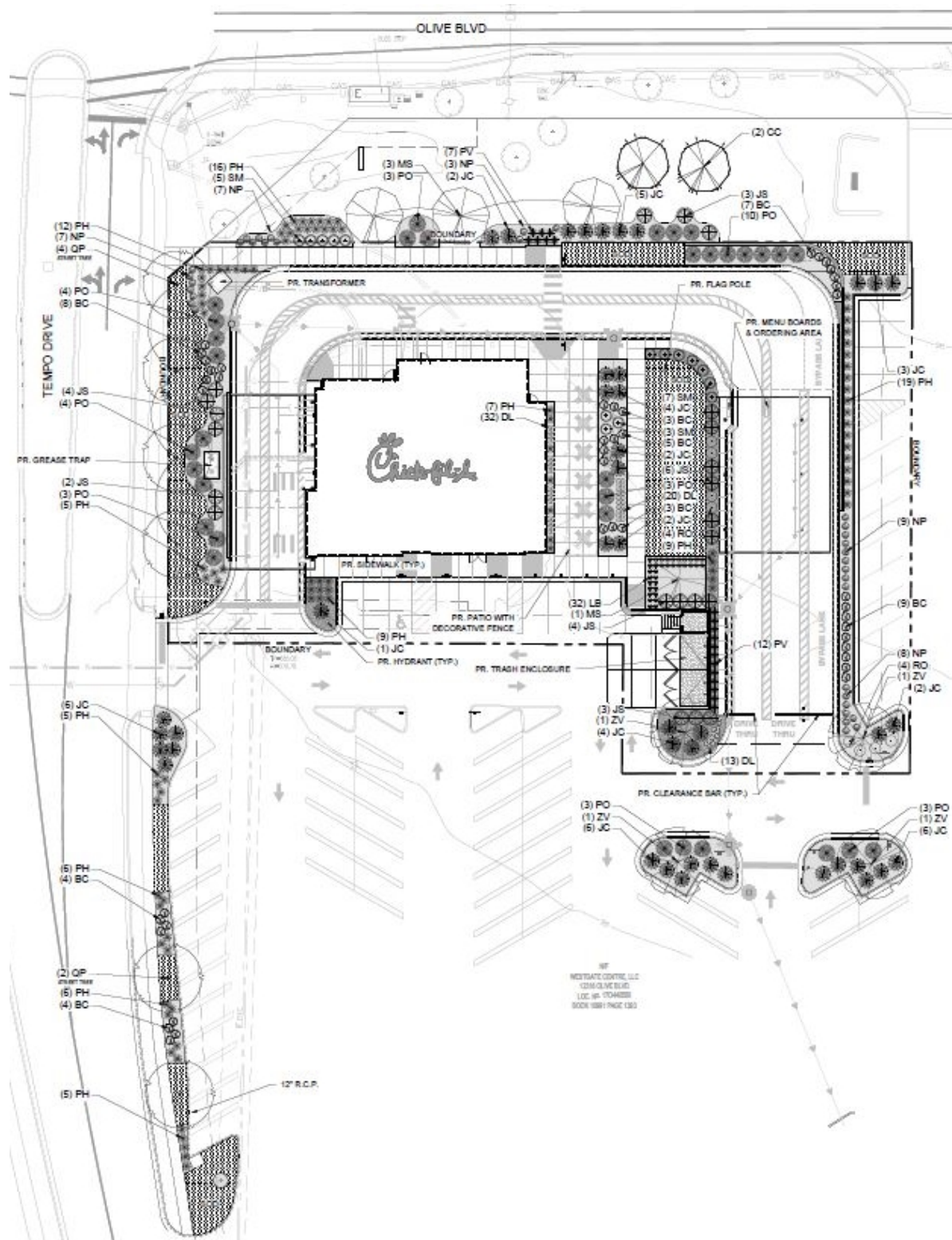


Figure 4: Proposed Landscape Plan

LAND USE AND ZONING OF SURROUNDING PROPERTIES

The adjacent zoning and land uses are as follows:

DIRECTION	USE	ZONED	SEPARATED BY
North	Commercial	GC-General Commercial District	Olive Boulevard
South	Commercial	PC-Planned Commercial District	N/A
East	Commercial	PC-Planned Commercial District	N/A
West	Commercial/Multi-Family Residential	MX-Mixed Use District/AR-Attached Single-Family Residential	Tempo Drive

COMPREHENSIVE PLAN REVIEW

The subject property is included in the Mixed-Use (MU) District Place Type of the *Creve Coeur 2030* Plan. The Mixed-Use District supports the development of a variety of medium-density commercial, retail, office, dining, community services, and multi-family residential on large development sites with centralized parking lots. These land uses are supported through primarily vehicular access with improved walkability; pedestrian connections within developments, to neighboring commercial properties, and to adjacent neighborhoods; and beautifully landscaped streets. The plan recommends that redevelopments along West Olive and in large commercial properties in the Mixed-Use District emphasize shared parking lots, landscape treatments, public site amenities such as outdoor dining, and pedestrian connectivity through the sites and to the primary streets, including Olive Boulevard.

The Chick-fil-a proposal offers many of the items called for in the *Creve Coeur 2030* comprehensive plan. The project is redeveloping an aging outlot building in largely the same footprint but reducing the site coverage by replacing some paving with landscaped areas. A large outdoor dining area with 24 seats is included in the site plan surrounded by a large landscaped area for vibrancy and to serve as a buffer between the stacking lanes and the dining area. Parking requirements no longer apply to outdoor dining amenities in order to promote them in the city. The project includes differentiated pedestrian connections from the parking lot, through the site and connecting to sidewalks along Tempo Drive out to Olive Boulevard. One of the requirements of the CUP for drive throughs that include stacking lanes between the building and the primary street is to include dense landscaping to screen the areas from the street. This requirement also fulfills the recommendations of the comprehensive plan for extensive landscaping along the streetscape in order to promote vibrancy. More landscaping was requested between the building and Olive Boulevard project in order to fully comply with the Zoning Code requirement and comprehensive plan recommendations. The applicant has revised the landscaping plan to accommodate this request and provide additional landscaping to buffer the drive through lane from Olive Boulevard.

DESIGN GUIDELINES REVIEW

Site Design

The Design Guidelines call for the size, design and orientation of new buildings to be sensitive to existing developments and surrounding uses. Phased projects should have design continuity in order to attain visual completeness (p.4). Much attention should be paid to the streetscape and the pedestrian experience in new developments such as walkability, pedestrian connectivity, hidden utility areas, and landscaping (p.4-5). High quality, pedestrian scale and walkable areas are the objective. Site and building design should address pedestrian needs and develop creative approaches to improving pedestrian interest, access and enjoyment. Plazas, courtyards, landscaping, public art and similar amenities or public assembly areas that are accessible and visible from the street are strongly encouraged. In order to emphasize conflict points and improve pedestrian safety and visibility, the use of textured or tinted materials for pedestrian crossings should be utilized where pedestrian circulation paths cross a vehicular route (p.6). The proposed sidewalks connecting the parking lot to the building and the building to Olive Boulevard meet the recommendations of the Design Guidelines and offer an amenity that was not available with the existing development. The pedestrian access through the stacking lanes needs to be differentiated with materials that meet the recommendations of the Design Guidelines. In addition, the design of the building should

[illegible]

The main exterior material for the Chick-fil-a restaurant building is brick. The building will feature two colors of brick, dark brown on the water table and midway up the recessed portions of the building, and light brown on the upper portions and tower elements of the building. The color of the brick does not appear to be similar to the brick on the existing shopping center building and no clear connection with the rest of the shopping center is made. Although the age and architectural design of the existing shopping center

building make it difficult to reflect in a new building, some connection must be made in order to visually connect the two buildings together to reflect the continuity of the development per the Design Guidelines. Staff recommended bring in the color of the brick from the existing shopping center into the new building in order to create a connection but this has not been clearly demonstrated by the applicant. Decorative elements are simple and include bands of brick soldier courses at the water table, just above midpoint, and roofline. The north elevation that faces Olive Boulevard is proposed to have four brick decorative elements in a herring-bone design that do not correspond with the rest of the building or the existing building on the site. Staff suggests removing these elements in favor of a more large-scale architectural feature. The metal elements such as coping, window frames and canopy structure will all be a dark colored metal adding to the overall appearance of the building's simple and modern design. The north elevation, the Olive facing elevation, is plain and does not reflect its importance as the street facing façade along one of Creve Coeur's most important streets. Staff have suggested options to the applicant in order to help enhance the Olive Boulevard façade to create a sense of importance. Functionally, this façade serves as the back of house for the restaurant as it is not the main entrance which faces the parking lot. This façade should be given more attention in terms of decorative elements, varying roof heights and articulation, and significant architectural features. The Planning and Zoning Commission should discuss the design of the Olive Boulevard facing façade due to the significance of Olive Boulevard to Creve Coeur and its connection with the existing building on site in order to provide further direction to the applicant for elevation revisions. These concerns have been discussed with the applicant and staff expects revised elevations to be presented at the meeting. Further comments from staff and the Commission on any revisions to the elevations presented at the meeting should be given and may need to be presented at a subsequent meeting to allow for a full review.



Figure 6: North elevation facing Olive Boulevard.



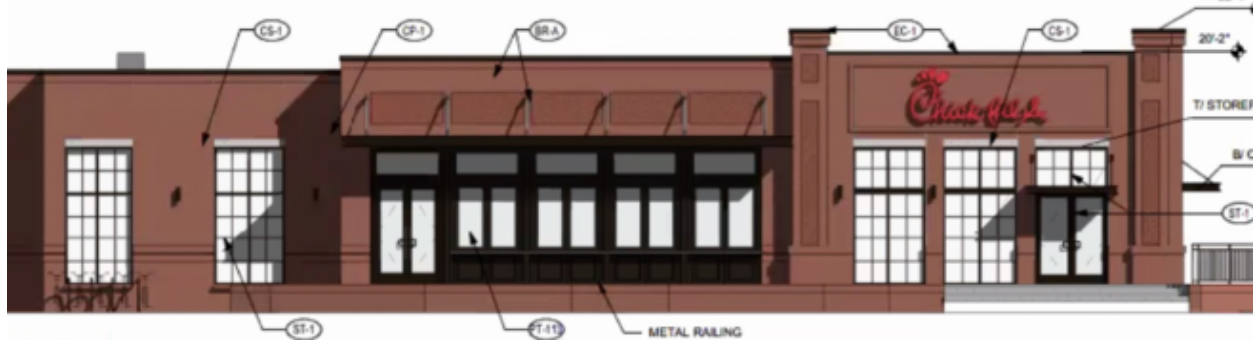


Figure 7: Examples of articulated façades with other Chick Fil A designs.

The building includes two metal canopies, one attached and one free standing, to serve as protection from the elements for customers who are ordering their food and employees who will be taking and passing out orders. The canopies were originally proposed as simple, light, metal structures that are able to easily disappear into the site. Although their lightness makes them likely to disappear, from an architectural connection stand point, it also makes them appear to be drive through elements that are stuck on the building with no connection to the overall design which is something that should be avoided. Staff have asked for renderings showing these elements more integrated into the overall design and the applicant has supplied renderings showing brick columns of the same material, color, height, and design as the water table elements to improve the design.

All rooftop equipment should be screened with appropriate material. The rooftop units appear to be sufficiently screened from view by matching the height of the proposed units. The trash enclosure is located behind the building and will be far enough back from Olive Boulevard to not be noticeable. Landscaping is provided on all three sides in order to screen the structure. The enclosure will be the same dark brown brick as the building and the gate will be a dark metal in the color Midnight Bronze.

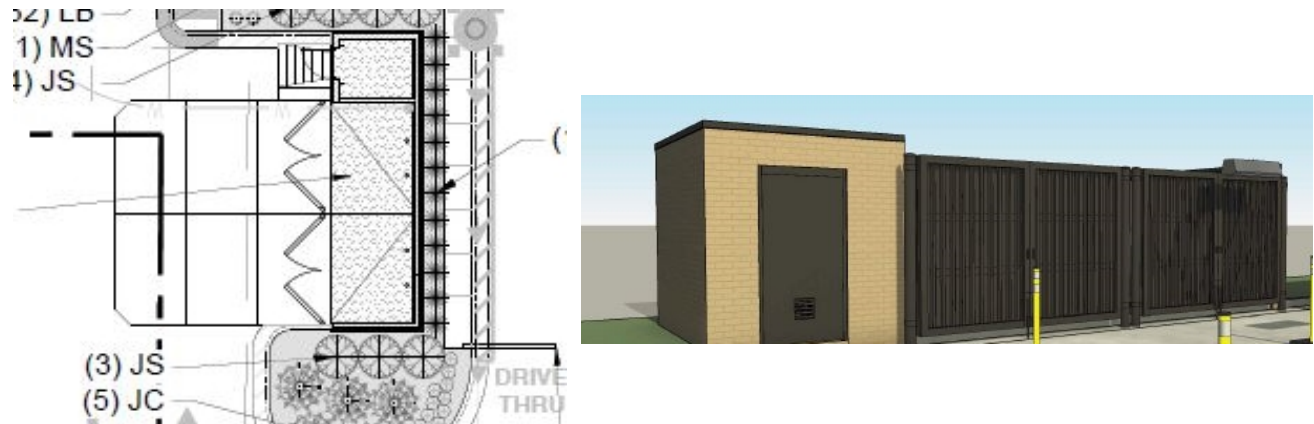


Figure 8: Close-up of the site plan showing the trash enclosure with detail. Material matches building.

Landscaping

The City's Design Guidelines strongly encourage high quality landscaping that accentuates the building and site, and softens the effects of the parking area. All landscaping plans should exhibit a clear design concept. The building should be incorporated into the landscape design; and there should be a consistency of design throughout a development. Parking areas are to be enhanced with landscaped spaces containing trees, tree groupings, and shrubbery or other landscape enhancements, including berms. Landscaped areas are to be maximized and balanced throughout the site. Tree and shrub plantings should be grouped together to create strong accent points with the site plan. Existing landscape elements should be incorporated into landscape plans. Mature trees, tree groupings and rock outcroppings should be considered as part of the design scheme. (p.15)

Overall, the Landscape plan shows significant landscaping throughout the site with a variety of plant materials and adequate screening of the parking lot and drive through services along Tempo Drive. As this project is part of the overall Westgate Centre, staff asked for new landscaping along Tempo Drive to buffer the parking lot and headlight glare from the road in order to fill in the existing bare areas. The proposed landscaping along Tempo is a mix of shrubs, evergreen shrubs, grasses and two Willow Oak trees to create a diverse buffer with more street trees per staff's request. An existing utility line prevented the installation of additional trees along Tempo Drive. The required amount of street trees for the proposed development area is 4 along Tempo Drive and 6 have been provided. A mix of evergreen shrubs and evergreen trees have been provided between Tempo Drive and the Chick-fil-a drive through pick up window in order to screen the service area from the road. The patio features a large landscaped area between the seating and the drive through lanes, a buffer of shrubs and upright evergreens around the columns of the canopy, and landscaping at the base of the building in order to provide a welcoming environment for diners. The trash enclosure is adequately screened with landscaping on all three sides and adequate landscaping is provided between the drive through lanes and the entrance lane to the shopping center from Olive Boulevard in form of fountain grass and shrubs. Two landscaping islands are provided in the existing parking lot to replace the landscaping islands that will be removed for the project and also serve to guide customers into the drive through lanes. Staff asked for one tree to be placed in each proposed drive through island in order to comply with the requirements of Section 405.540 (F)(4) and the applicant complied with Japanese Zelkova. Additional landscaping was provided in front of the building in order to screen the drive through lane in compliance with Section 405.470 which requires designated stacking lanes that pass between the building and the primary street frontage to be screened in the form of dense landscaping. The buffer features a mix of Eastern Redbud and Snowdrift Crabapple trees as well as shrubs, evergreen shrubs and grasses. Upon review of the proposed plant material, staff determined that the Firepower Heavenly Bamboo is listed as an invasive species by the Missouri Department of Conservation and should be removed from the landscape plan and replaced with a non-invasive evergreen shrub 3-4 feet in height. A final landscaping plan can be submitted along with the building permits to address these deficiencies.

Zoning Review

This proposal will be the first project to be reviewed under the new drive through requirements approved under Ordinances 5806 and 5807 in October 2022. As there are several requirements that must be met under these ordinances, staff has decided to list out the criteria and the compliance of the project with each requirement.

Section 405.470(A)(14)(e). Drive-thru services on sites in the "MX," "GC," "CB," "PO," "PC," and "LI" Districts that do not abut single family residential uses or multifamily uses in any zoning district other than the "CB" District and drive-thru services on sites located on one (1) or more lots totaling ten (10) acres or more in the "MX," "GC," "CB," "PO," "PC" and "LI" Districts that abut single family residential uses or multifamily uses in any zoning district other than the "CB" District are subject to the following:

Per the new definition of "abut" provided in the ordinance, having a shared property line and not separated by a street, this project does not abut residential zoning as it is separated from it by Tempo Drive.

1. Drive-thru facilities shall be limited to one (1) restaurant with no more than two (2) service windows and two (2) order facilities in a coordinated development located on one (1) or more lots totaling three (3) or more acres, with shared access and two (2) or more buildings (including the proposed drive-thru), one (1) of which shall have no less than ten thousand (10,000) square feet of gross floor area. All buildings shall be designed with similar use of materials and design elements such that the buildings are aesthetically complementary to each other.

The proposed Chick-fil-a will be placed as an out-lot building within the existing 7-acre Westgate Centre development which includes an existing 34,415 square foot building. The drive through facility will feature two service areas on the west façade for delivery orders to drive through customers and two order board facilities on the east façade for accepting orders. As noted in the

Design Guidelines review, the design of the existing shopping center building and the new building do not appear to be aesthetically complementary to each other and staff encourages the Planning and Zoning Commission to discuss the proposed designs. ***Criterion is partially met, pending further discussion on the design elements.***

2. For drive-thru restaurants on sites located on one (1) or more lots totaling ten (10) acres or more, the drive-thru order facility and service window shall be no less than two hundred (200) feet from any property line of any single-family residential use and no less than fifty (50) feet from any property line of any multifamily uses in any zoning district other than the "CB" District.

Does not apply to this proposal.

3. The drive-thru order facility and service window shall only be on or adjacent to a wall not facing the primary street frontage. If adjacent to a non-primary street, the drive-thru order facility and service window shall provide visual screening in the form of dense landscaping as deemed appropriate by the City Council.

The drive-thru order facility and service window do not face the primary Olive Boulevard street frontage. The service windows are adjacent to a non-primary street along Tempo Drive and dense, evergreen trees and hedges have been provided to serve as screening. ***Criterion met.***

4. The drive-thru restaurant shall have pedestrian-oriented site features. Such features include, but are not limited to, the following: landscaped planting areas adjacent to the building, outdoor seating areas, and pedestrian connections within the site. Unenclosed outdoor seating areas shall not require additional off-street parking.

The project includes all three mentioned pedestrian-oriented site features. ***Criterion met.***

5. If the drive-thru restaurant is freestanding, it shall have no less than two thousand (2,000) square feet of gross floor area (area under roof) and a minimum of fifty-five (55) indoor seats for customers.

The project includes a free-standing 4,704 square foot building with 74 indoor seats. ***Criterion met.***

6. Any service areas, including, but not limited to, trash receptacles, compactors, outdoor cooking or refrigeration equipment must be fully screened.

The trash enclosure is behind the building line and will be fully screened with a brick wall of the same material as the building and a dark metal gate. There will also be landscaping on the three sides not used for trash access. ***Criterion met.***

7. The designated stacking lane shall be no less than one-hundred ninety (190) feet long (approximately ten (10) cars), excluding the space adjoining a service window, which shall be no less than nine (9) feet wide by nineteen (19) feet long.

The two stacking lanes plus overflow lane that are proposed hold 44 cars and are well over 190 feet long including the space adjoining a service window which is also 25 feet wide when measured across both lanes. ***Criterion met.***

8. The entrance to the designated stacking lane shall be no less than fifty (50) feet from the nearest point on the property line across the nearest vehicular entrance.

The entrance to the designated stacking lanes for the driveway is greater than 50 feet from all three points of entry into the complex. ***Criterion met.***

9. If the designated stacking lane crosses between the building and primary street frontage, it shall be screened in the form of dense landscaping as deemed appropriate by the City Council.

Chick-fil-a is proposing that the stacking lanes wrap around the building between the building and the primary street frontage along Olive Boulevard due to the nature of drive through restaurants and the location of the leased space. Screening in the form of a variety of plant material to form a dense landscaping buffer has been provided and staff is mostly supportive of the proposed landscaping buffer with a few exceptions. Staff has requested that the invasive species proposed be removed from the plan and the replacement of additional evergreen shrubs to grow to 3-4 feet in height be provided. ***Criterion partially met subject to further revisions to the landscape plan.***

10. A traffic study shall be submitted by the applicant that demonstrates, to the satisfaction of the City Council, that the required drive-thru facilities shall not interfere with site circulation or be hazardous to motorists or pedestrians entering, exiting or passing by the site and that traffic impacts are otherwise properly mitigated.

A traffic study has been provided by the applicant and reviewed by the City's traffic consultant and the Missouri Department of Transportation. Olive Boulevard is a state route and MoDOT has jurisdiction. Due to the results of the traffic study, the City's consultant and MoDOT requested additional remediation from the applicant in order to address the concerns outlined in the study. The applicant has submitted additional information about the traffic concerns and the City's traffic consultant has reviewed and commented on revisions. The Missouri Department of Transportation has not provided their final concurrence based on the latest revisions at the time of this staff report. Additional discussion of the Traffic Study is provided below in the "Traffic Study" section. ***Criterion partially met; pending final review.***

11. The order facility shall utilize automatic volume control which adjusts outbound volume based on the outdoor ambient noise level.

The technology within the ordering stations compensates for the ambient sound using an Automatic Volume Control (AVC) system. ***Criterion met.***

12. An acoustical study shall be submitted demonstrating that the order facility and service windows will not increase ambient sound levels at the property lines above the average Monday to Friday midday level.

The applicant has submitted an acoustical study completed by McClure Engineering. The study concluded that the sound level from the speaker system will be below the average Monday to Friday midday levels and will have minimal impact on the ambient sound levels in the area. ***Criterion met.***

Lighting

Due to the location of the project on a corner development site setback from Olive Boulevard, the likelihood for light spillage onto adjacent properties is not a concern but the light levels along Tempo Drive are considered. The submitted photometric plan shows that the light spillage onto Tempo Drive will be mostly less than 1 foot candle of illumination except at the Tempo entrance to the site where the illumination reaches 2 foot candles of illumination. The area of spillage is very minimal and does not extend very far onto the right of way. Staff is requesting this area be reevaluated in order to reduce the condition. A condition of approval has been added requiring the applicant to submit a final photometric plan. Lighting will be downcast and shielded in compliance with Section 405.680. The Applicant is proposing the use of LED flush mounted canopy luminaries for the canopy in a low-voltage option. The parking lot lighting is showing a mounting height of 27 feet, where Section 405.680(B)(3) has a maximum mounting height of 24 feet in non-residential districts. A condition of approval has been added to address the light pole heights. Section 405.680, Lighting, of the Zoning Code, and Section 205.810 of the Parking Ordinance requires a minimum of not less than an average of one (1) foot-candle of

illumination for a parking lot where the applicant is showing an average of 2.6 FC. The building lighting proposed is also shielded and will shine directly on the intended surface on site.

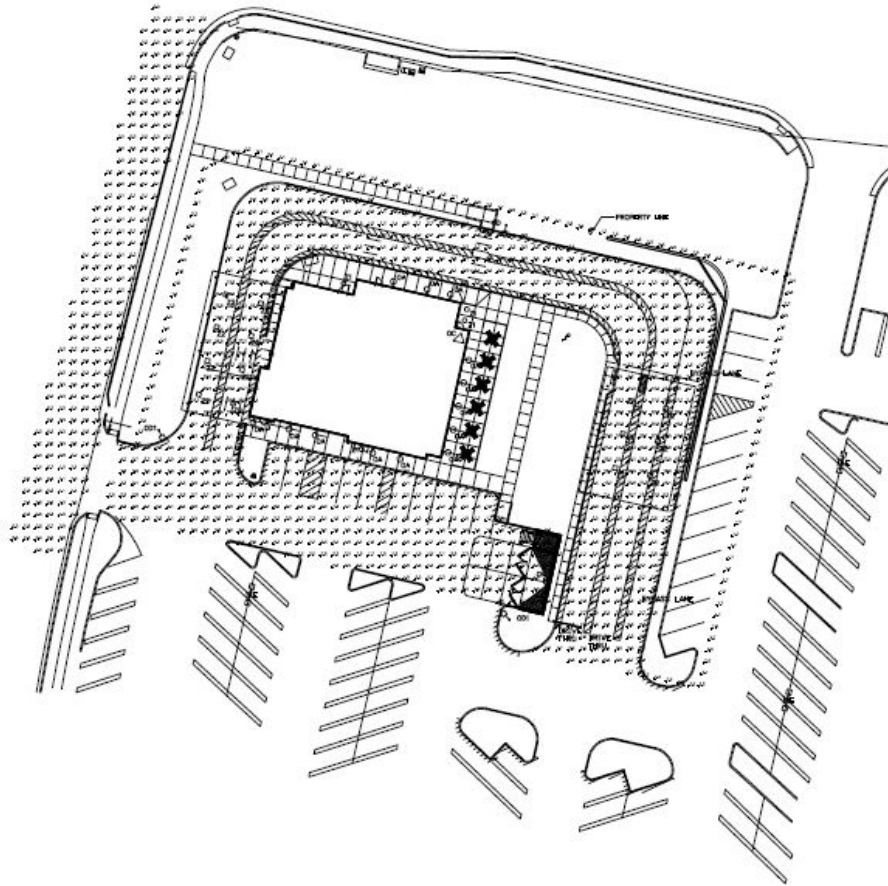


Figure 9: Applicant's Photometric Plan



Figure 10: Applicants Proposed light fixtures (exterior wall mounted lighting on left, flush mounted canopy lighting in center, parking lot lighting on right)

Sidewalks

Section 405.730, requires a clear and safe pedestrian access between the building's main entrance and the public sidewalk, and designed to avoid conflict. In order to emphasize conflict points and improve pedestrian safety and visibility, the use of textured or tinted materials for pedestrian crossings shall be utilized where pedestrian circulation paths cross a vehicular route as determined by the Planning and Zoning Commission. All sidewalks shall be a minimum of 6 feet or 8 feet in width if used as a curb stop. The new sidewalk was designed to comply with these regulations. The side walk is 6 feet wide along the building and connects to pedestrian access on the northern boundary of the project connecting the building to the sidewalk system along Olive Boulevard via Tempo Drive's sidewalk. The proposed pedestrian walkway has to cross the drive through lanes in order to connect the main entrance to the

sidewalks along Tempo and Olive. The pedestrian walk through the drive through lanes is shown on the plans as being differentiated with crosswalk markings. After discussion with the applicant, the applicant informed staff that the pedestrian connections would be cast in a tinted material in order to better stand out; however, these updates are not shown on the plans.

Parking

The proposal provides for sufficient parking on site to meet City code. The existing onsite parking includes 419 parking stalls shared for the entire Westgate Centre commercial complex. Under the new requirements for drive through restaurants, Ordinances 5806 and 5807, outdoor seating no longer requires parking spaces in order to encourage these types of dining amenities in Creve Coeur. The 74 indoor seats proposed along with the 4,704 square foot size of the restaurant means that 44 parking stalls are required for this use. The proposal requires 49 existing parking stalls to be removed in order to accommodate the new Chick-fil-a building and drive through lanes. The remaining parking stalls total 370 when the required parking for the existing and proposed uses requires 337 when the 15% reduction for shopping centers is removed. There is an existing parking stall surplus of 33 spaces.

Tenant	Address	Use	Size (sq. ft.)	Parking Regulations	# of spaces
Santa Fe Bistro	12316	Restaurant	5,190 +400 sq. ft. patio addition (+150 indoor seats, 40 outdoor seats)	1/3 seats in C.U.P., 1/8 outdoor seats, + 1/250 sq. ft.	78
Jon Thomas Salon	12320	Hair Salon	3,450	4/1000 sq. ft.	14
Land Home Financial	12324	Office	1,840	4/1000 sq. ft.	8
Bella Chic	12328	Retail	1,160	4/1000 sq. ft.	5
Boom Pilates	12330	Sports and recreation instruction	1,200	1/150 sq. ft.	8
Vacant	12332	Retail	1,200	4/1000 sq. ft.	5
Dentistry	12334	Office	2,330	4/1000 sq. ft.	10
La Bonne Bouchee	12344-46	Cafe/Bakery	6,615 (+108 indoor seats, 34 outdoor seats)	1/3 seats in C.U.P., 1/8 outdoor seats, + 1/250 sq. ft.	67
Birkenstocks and More	12350	Retail	1,400	4/1000 sq. ft.	6
Belsono Hearing	12352	Retail	1,000	4/1000 sq. ft.	4
Vacant	12354	Retail	3,560	4/1000 sq. ft.	14
Barry Hyatt Custom Jewelers	12360	Retail	1,200	4/1000 sq. ft.	5
Massage	12362	Office	1,200	4/1000 sq. ft.	5
Global Quesadilla	12364	Restaurant	3,000 (+108 indoor seats)	1/3 seats in C.U.P., + 1/250 sq. ft.	48
Proactive Chiropractic	12370	Office	2,100	4/1000 sq. ft.	9
Midwest Dizziness	12372-80	Health Services	2,100	4/1000 sq. ft.	9
SSM Physical Therapy	12382	Office	2,465	4/1000 sq. ft.	10
Alloy Training	12384	Sports and recreation instruction	1,600	1/150 sq. ft.	11
Ichiban Restaurant	12388	Restaurant	1,542 (+ indoor 40 seats)	1/3 seats in C.U.P., + 1/250 sq. ft.	20

Kumon Math & Reading	12390	Other educational services	1,586	1/300 sq. ft.	6
Midwest Eye Health	12392	Office	2,750	4/1000 sq. ft.	11
Proposed Chick-fil-a	12398	Restaurant (out lot building)	4,704 (+74 indoor seats, 24 outdoor)	1/3 seats in C.U.P., + 1/250 sq. ft.	44
				Sub-total:	397
				Minus 15% Reduction:	60
				Total # of Parking Spaces Required:	337
				Total Available On-site:	370

Signs

All signs are reviewed under a separate permit at Staff level in conformance with the Sign Regulations. No approval of the project constitutes approval of any signs shown. An existing monument sign is located on the property for Westgate Centre and no additional monument sign will be permitted per Section 405.950. A maximum of two attached signs are permitted for this project per Section 405.950(B)(2).

Traffic Study

A traffic study has been provided by the applicant and reviewed by the City's traffic consultant and the Missouri Department of Transportation. The traffic study was prepared by the applicant's traffic engineer in consultation with MoDOT, the City's Public Works Department, Planning staff and the City's contracted traffic engineering consultant.

As many know, Chick Fil A is a popular restaurant chain that generates a lot of activity to their locations. Careful review of the traffic impacts are necessary to understand the impacts at this location and to identify the appropriate mitigation measures for any increases that could affect the roadway system. In brief, the traffic study reveals that the proposed Chick Fil A will generate additional traffic over existing (baseline) conditions at certain times of the day. The primary impacts involve the adjacent Olive/Tempo intersection. However, the study reviewed other traffic impacts along Olive and the adjacent intersections to the west and east. The mitigation measures that are proposed to offset the traffic volumes involve signal timing changes on Olive and physical intersection improvements at Olive and Tempo. Specifically, on northbound Tempo at Olive, an additional left turn lane is proposed to reduce queuing which will allow more cars to move through the intersection. To accommodate this additional turn lane, the removal of the landscaped median on Olive is necessary. Restriping on southbound Tempo near the first entrance into Chick Fil A is also proposed to improve existing conditions for motorists accessing the site.

In summary, comparing the Existing Conditions with the Built Conditions (including the proposed mitigation measures) at the Olive/Tempo intersection, the Level of Service (LOS) is the same or better during all peak periods, except for two. The Queuing (expressed in feet) are reduced or are similar to existing conditions with the exception of some peak periods, notably within the 95th percentile. Please refer to the City's traffic consultant memo from the Lochmueller Group dated December 15, 2022 for additional information. Mr. Kyle Evans, the City's consulting traffic engineer, will present his findings at the meeting and will be available to answer any questions.

As noted previously, MoDOT requested additional information from the applicant's traffic engineer and has not yet provided their concurrence on these revisions. Staff expects to receive this information in time for the next P&Z meeting on January 19th.

Acoustical Study

The applicant has submitted an acoustical study completed by McClure Engineering. The report concluded that the sound level for both day and night operation with the Automatic Volume Control (AVC) will be less than 45 dBA at the nearest property line at all times. Based on the manufacturer's data

the sound level contribution from the order station with the AVC activated is calculated to be 40 dBA at the apartments, which are 400 feet from the ordering boards, and 42 dBA at the nearest store front which is 300 feet away from the ordering boards. These sound levels will be far below the current typical ambient sound levels. While the sound levels will typically be somewhere between 60 and 84 dBA at 1' from the order station, the data and calculations show the ordering stations sound levels will be less than ambient sound levels at this site. McClure Engineering reported that the sound from the ordering station and drive-thru is well below the ambient traffic sound in this area and recommended that no further remediation is required. These findings appear to satisfy the conditional use requirements for drive-through restaurants not abutting residential uses.

SUMMARY AND RECOMMENDATION

The materials submitted for the Conditional Use Permit and Site Development Plan are overall consistent with the City's Comprehensive Plan, the Design Guidelines, and the Zoning Code with the following exceptions noted within this report. Staff has provided the following suggestions for specific areas for further discussion with the applicant at the meeting:

- Understanding of The Traffic Impact Study results, proposed mitigation by the applicant, and expected conditions after mitigation measures are implemented. The City's consulting traffic engineer will be present at the meeting to assist the Commission in its review. In addition, final MoDOT review comments have not been received which may require further review.
- If the proposed landscaping between the drive through lanes and Olive Boulevard is satisfactory to serve as a buffer per Section 405.470(14)(e)(9).
- The proposed elevations for the new building along Olive Boulevard and its overall connection to the existing shopping center building on site per the Design Guidelines and conditional user requirements for drive throughs.

Staff recommends that the Commission provide feedback on these issues to the applicant as well as any comments received by the public. Based on the direction given to staff and the applicant, any revisions to the plans can be made and submitted for further consideration at the January 17th meeting.

ACTION

An appropriate motion to continue this agenda item until the next meeting would be as follows:

"I move to continue the public hearing and application #22-031 to the January 17th, 2023 Planning and Zoning Commission meeting."

APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: ZONING CODE

Included and attached by reference. See body of report for specific excerpts.

Parcels

November 9, 2022



Prepared By HORNER SHAFIN

APPENDIX 4: SITE PHOTOGRAPHS



Description: Apron at Tempo Drive access to the site in need of repair.



Description: Existing lanes on Tempo Drive at Olive Boulevard intersection.



Description: Existing building on site. Former T.G.I.Friday's Restaurant.



Description: Existing signage for the shopping center.

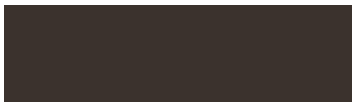


Description: Existing building to be demolished.

EXTERIOR FINISHES



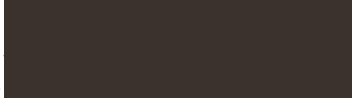
BR-A
BRICK VENEER
COLOR: DARK BROWN
SIZE: MODULAR



EC-1
PREFINISHED METAL COPING
COLOR: MIDNIGHT BRONZE



BR-B
BRICK VENEER
COLOR: LIGHT BROWN
SIZE: MODULAR



PT-113
EXTERIOR PAINT
COLOR: DARK BRONZE
FINISH: SEMI-GLOSS



ST-1
STOREFRONT
COLOR: DARK BRONZE



EXTERIOR BRICK AT PLAZA



1 EXTERIOR ELEVATION
1/8" = 1'-0"

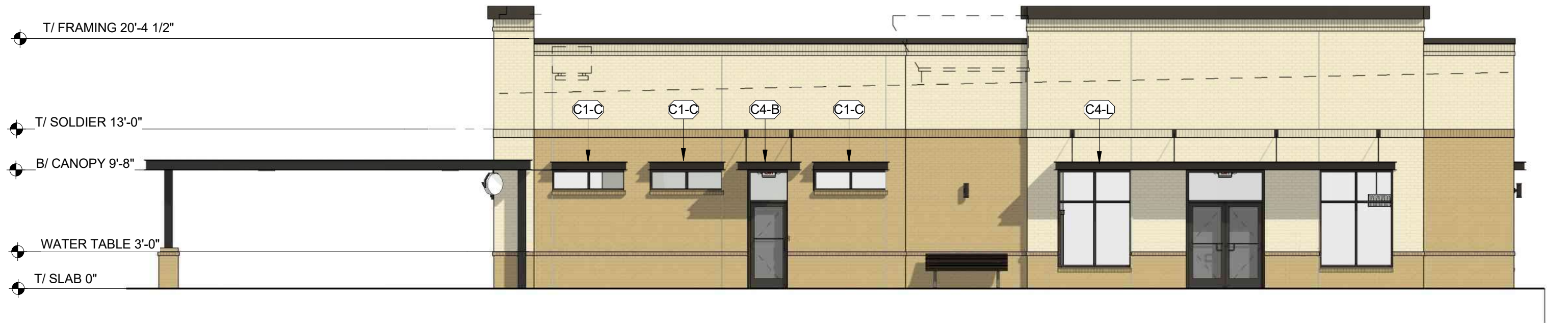


2 EXTERIOR ELEVATION
1/8" = 1'-0"

ELEVATIONS



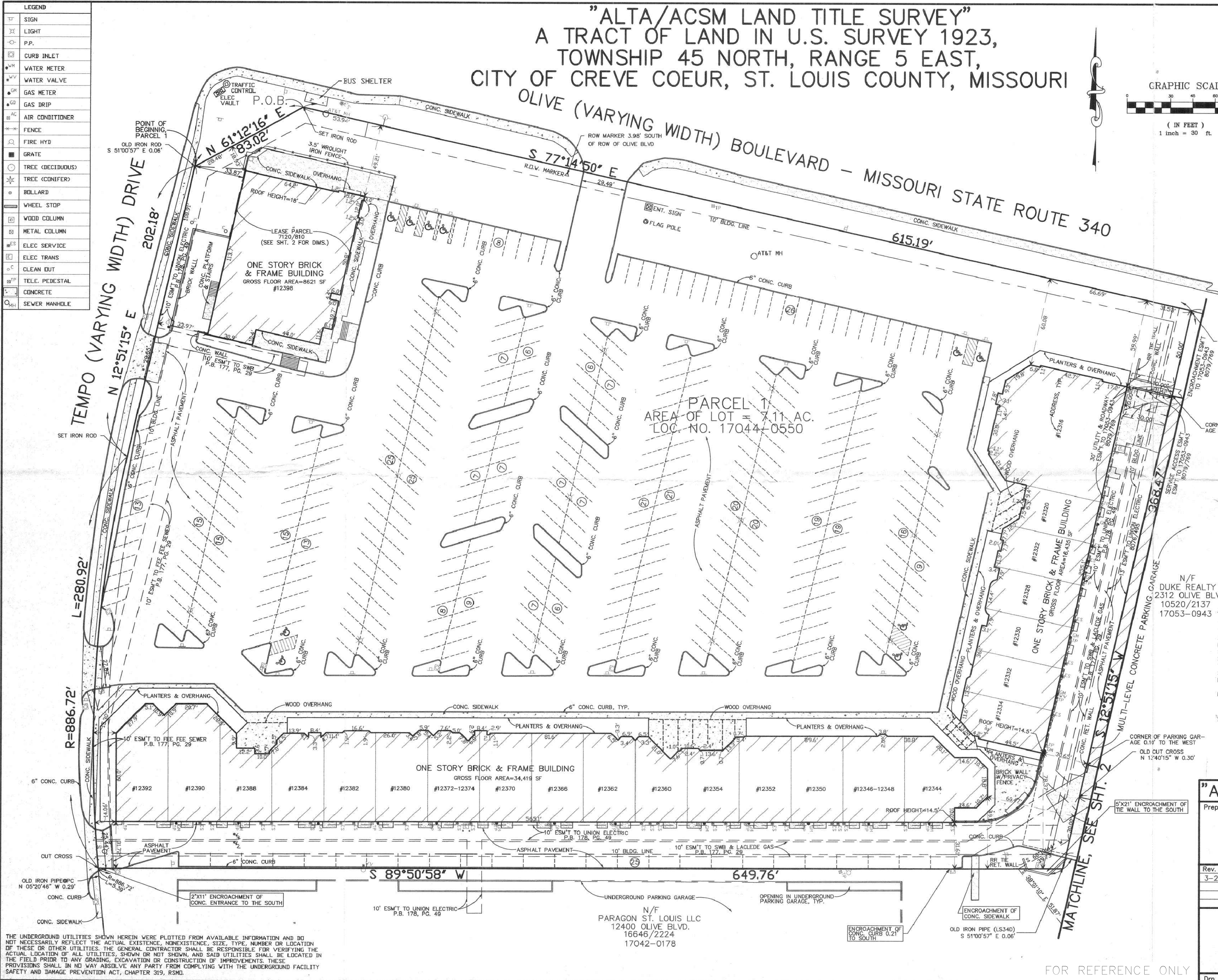
1 EXTERIOR ELEVATION
1/8" = 1'-0"



2 EXTERIOR ELEVATION
1/8" = 1'-0"

ELEVATIONS

LEGEND	
	SIGN
	LIGHT
	P.P.
	CURB INLET
	WATER METER
	WATER VALVE
	GAS METER
	GAS DRIP
	AIR CONDITIONER
	FENCE
	FIRE HYD
	GRATE
	TREE (DECIDUOUS)
	TREE (CONIFER)
	BOLLARD
	WHEEL STOP
	WOOD COLUMN
	METAL COLUMN
	ELEC SERVICE
	ELEC TRANS
	CLEAN OUT
	TELE. PEDESTAL
	CONCRETE
	SEWER MANHOLE



TO SOUTHERN FARM BUREAU LIFE INSURANCE COMPANY, A MISSISSIPPI CORPORATION, ITS SUCCESSORS AND/OR ASSIGNS, AS THEIR RESPECTIVE INTERESTS MAY APPEAR, SOLON GERSHMAN INCORPORATED, AND U.S. TITLE GUARANTY COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS IN 2005, AND INCLUDES ITEMS 1-4 AND 6, 7(a), (b) AND (c), 8-10, 11(b), 12-13, AND 16-18 OF TABLE A THEREOF. PURSUANT TO THE ACCURACY STANDARDS AS ADOPTED BY ALTA AND NSPS AND IN EFFECT ON THE DATE OF THIS CERTIFICATION, THE UNDERSIGNED FURTHER CERTIFIES THAT IN MY PROFESSIONAL OPINION, AS A LAND SURVEYOR REGISTERED IN THE STATE OF MISSOURI, THE RELATIVE POSITIONAL ACCURACY OF THIS SURVEY DOES NOT EXCEED THAT WHICH IS SPECIFIED THEREIN.

McDANIEL ENGINEERING AND SURVEYING CO., INC.,

Theodore F. Laneman, Jr.
THEODORE F. LANEMAN, JR. LS 2239

SURVEYORS CERTIFICATION

THIS IS TO CERTIFY THAT WE HAVE, DURING THE MONTH OF FEBRUARY 2008, BY THE ORDER OF SOLON GERSHMAN INC., PREPARED A BOUNDARY AND IMPROVEMENT SURVEY OF A TRACT OF LAND IN U.S. SURVEY 1923, TOWNSHIP 45 NORTH, RANGE 5 EAST, ST. LOUIS COUNTY, MISSOURI, AND THE RESULTS OF SAID SURVEY MEETS THE CURRENT MINIMUM STANDARDS FOR PROPERTY SURVEYS 20 CSR 2030-16 MISSOURI DEPARTMENT OF NATURAL RESOURCES AND THE RESULTS ARE CORRECTLY SHOWN ON THE ADJACENT PLAT. TYPE OF SURVEY: URBAN. IN WITNESS WHEREOF I HAVE SIGNED AND SEALED THE FOREGOING THIS 28th DAY OF March, 2008.

McDANIEL ENGINEERING AND SURVEYING CO., INC.,

Theodore F. Laneman, Jr.
THEODORE F. LANEMAN, JR. LS 2239

"ALTA/ACSM LAND TITLE SURVEY"

Prepared for:

SOLON GERSHMAN INC.
7 NORTH BEMISTON
CLAYTON, MO 63105
EXISTING CONDITION PLAN

Rev. Date	Description	Rev. Date	Description
3-27-08	REV. PER CLIENT		

McDANIEL
ENGINEERING AND SURVEYING CO., INC.

75 MIDLAND AVENUE
(314) 770-1171

ST. LOUIS, MO. 63043
FAX (314) 770-0887

C-001

Drn. By: GJP Date: 2-8-08 Job # 14726

FOR REFERENCE ONLY

R-# REMOVAL TAGS		
REMOVALS / RELOCATES / ADJUSTMENTS		
NUMBER		REMARKS
A-1	SANITARY MANHOLE	ADJUST RIM TO FG
A-2	WATER VALVE BOX	ADJUST RIM TO FG
R-1	BUILDING W/ FOUNDATION	REMOVE
R-2	BITUMINOUS PAVEMENT	REMOVE
R-3	CONCRETE APRON	REMOVE
R-4	CONCRETE BARRIER CURB	REMOVE
R-5	ALUMINUM HANDRAIL	REMOVE
R-6	ELECTRIC SERVICE & METER	REMOVE (COORD. W/ UTILITY)
R-7	LIGHT POLE & SERVICE LINES	REMOVE (COORD. W/ LANDLORD)
R-8	TELEPHONE LINE	REMOVE (COORD. W/ UTILITY)
R-9	CONCRETE SIDEWALK	REMOVE
R-10	GAS SERVICE AND METER	REMOVE (COORD. W/ UTILITY)
R-11	SIGN	REMOVE
R-12	GREASE TRAP	REMOVE
R-13	CONCRETE/BRICK WALL	REMOVE
R-14	CLEANOUT	REMOVE
R-15	WATER SERVICE	REMOVE (COORD. W/ UTILITY)
R-16	STORM SEWER CLEANOUT	REMOVE
R-17	STORM SEWER	REMOVE
R-18	SANITARY SERVICE	REMOVE (COORD. W/ UTILITY)
R-19	CONCRETE PAVEMENT	REMOVE
R-20	LANDSCAPING LIGHT	REMOVE (LIGHTS, WIRES & CONDUITS)
R-21	TRANSFORMER	REMOVE (TRANSFORMER TO BE REUSED)
R-22	TREE	REMOVE (SEE LANDSCAPE PLANS)
R-23	WATER METER VAULT	REMOVE
R-24	SEGMENTAL BLOCK WALL	REMOVE

PROJECT NOTES:

- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. IN ADDITION TO, NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED. SEE SHEET C-302 FOR EROSION CONTROL MEASURES)
- ALL EXISTING UTILITIES TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL COORDINATE AND COMPLY WITH ALL UTILITY COMPANIES INVOLVED IN PROJECT AND PAY ALL REQUIRED FEES AND COSTS.
- ALL STRUCTURES & DEBRIS SHALL BE REMOVED PRIOR TO CONSTRUCTION & DISPOSED OF OFFSITE.
- ANY EXISTING FIELD DRAIN TILES ENCOUNTERED SHALL BE RECONNECTED OR CONNECTED TO THE NEAREST STORM SEWER.
- CONTRACTOR TO KEEP ACCESS DRIVE OPEN AT ALL TIMES WITH MINOR CLOSINGS ALLOWED FOR PAVING ACTIVITIES.
- THE CONTRACTOR IS CAUTIONED NEITHER TO OBSTRUCT NOR REMOVE ANY EXISTING PAVEMENT, NOR TO DISTURB THE EXISTING TRAFFIC PATTERNS MORE THAN IS NECESSARY FOR THE PROPER EXECUTION OF THE WORK.
- ALL BITUMINOUS PAVEMENT REMOVAL AREAS SHALL BE SAWCUT.
- CONTRACTOR SHALL INSTALL CONSTRUCTION FENCING AND SIGNAGE AROUND CONSTRUCTION BOUNDARIES TO PROTECT PEDESTRIANS.
- THE ELECTRICAL CIRCUITS FOR THE LIGHT POLES SHOWN TO BE REMOVED SHALL BE TERMINATED EITHER IN HANDHOLES OR IN THE LIGHT BASE OF THE LAST REMAINING LIGHT IN THE SERIES.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH LANDLORD.

STAGING NOTES:

(STAGING SUBJECT TO CHANGES PER SITE CONTRACTORS SCHEDULE AND METHODS OF OPERATION)

- EROSION CONTROL MEASURES AND STOCKPILE STAGING
- CONSTRUCTION ENTRANCES
- PLAN REMOVALS
- PROPOSED UNDERGROUND
- GRADING
- PAVING

TRAFFIC CONTROL NOTES:

- ALL APPLICABLE CITY PERMITS, INCLUDING BUT NOT LIMITED TO CLOSURE PERMITS, SHALL BE OBTAINED PRIOR TO ANY CONSTRUCTION WITHIN CITY ROW OR LANE CLOSURES.
- ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- PERMANENT SIGNING THAT CONVEYS A MESSAGE CONTRARY TO THE MESSAGE OF TEMPORARY SIGNING AND NOT APPLICABLE TO THE WORKING CONDITIONS SHALL BE COVERED BY THE CONTRACTOR WHEN DIRECTED BY THE CITY.
- THE CONTRACTOR SHALL COORDINATE HIS TRAFFIC CONTROL WITH OTHER CONSTRUCTION PROJECTS IN THE AREA.
- SIDEWALK CLOSED SIGNS REQUIRED FOR ALL SIDEWALK CLOSURES.
- THE CONTRACTOR IS CAUTIONED NEITHER TO OBSTRUCT NOR REMOVE ANY EXISTING PAVEMENT, NOR TO DISTURB THE EXISTING TRAFFIC PATTERNS MORE THAN IS NECESSARY FOR THE PROPER EXECUTION OF THE WORK.

LEGEND

- TTTTTT INDICATES FULL DEPTH SAWCUT
- +++++ INDICATES BIT / ASPHALT PAVEMENT REMOVAL (FULL DEPTH)
- INDICATES CONCRETE PAVEMENT REMOVAL (FULL DEPTH)
- INDICATES CONCRETE SIDEWALK REMOVAL (FULL DEPTH)
- INDICATES BUILDING/TRASH ENCLOSURE REMOVAL
- R-# INDICATES MISC. REMOVAL ITEMS (SEE THIS SHEET FOR DESCRIPTIONS)
- ≡≡≡≡≡ DENOTES CONCRETE CURB & GUTTER REMOVAL
- XXXXX DENOTES UTILITY/FENCE/WALL REMOVAL
- ✕ INDICATES TREE AND BRUSH REMOVAL (SEE LANDSCAPING PLANS FOR SIZE AND QUANTITY)
- INDICATES TREE AND BRUSH PROTECTION (SEE LANDSCAPING PLANS FOR SIZE AND QUANTITY)



0 20'
1" = 20'

BAR IS ONE INCH ON
OFFICIAL DRAWINGS
0 1"
IF NOT ONE INCH,
ADJUST SCALE ACCORDINGLY

PRELIMINARY
NOT FOR CONSTRUCTION



Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998



HRGreen.com

CHICK-FIL-A
CREVE COEUR (MO) FSU

12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE
NO. DATE DESCRIPTION

PRELIMINARY

ENGINEER'S PROJECT # 211634
PRINTED FOR PRELIMINARY
DATE 05/24/2022
DRAWN BY: MRJ
CHECKED BY: JFV
Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.
SHEET
SITE DEMOLITION
PLAN
SHEET NUMBER
C-100



811 or 1-800-344-7483
WWW.MO1CALL.COM

CALL: 811 or 1-800-344-7483

WITH THE FOLLOWING:
COUNTY - St. Louis
CITY-TOWNSHIP - Creve Coeur - Creve Coeur
PARCEL ID, NO. # 1822122709354202003

48 hours before you dig
(Excluding Sat., Sun. & Holidays)

SITE PLAN DESIGN NOTES & KEY PLAN

- 1A DIRECTIONAL ARROW
1B PAINTED HANDICAP PARKING SYMBOL
2A DRIVE-THRU GRAPHICS
2B STOP LINE GRAPHIC
3 STANDARD PARKING STALL (9.0'x19.0') PER CODE
4 STANDARD 60 DEGREE PARKING STALL
4A 4" SOLID WHITE STRIPING
4B 4" SOLID YELLOW STRIPING
4C 4" SKIP DASH YELLOW STRIPING
5 BOLLARD MOUNTED SIGN
6 ADA ACCESSIBLE PARKING SIGN
7 DIRECTIONAL SIGNAGE

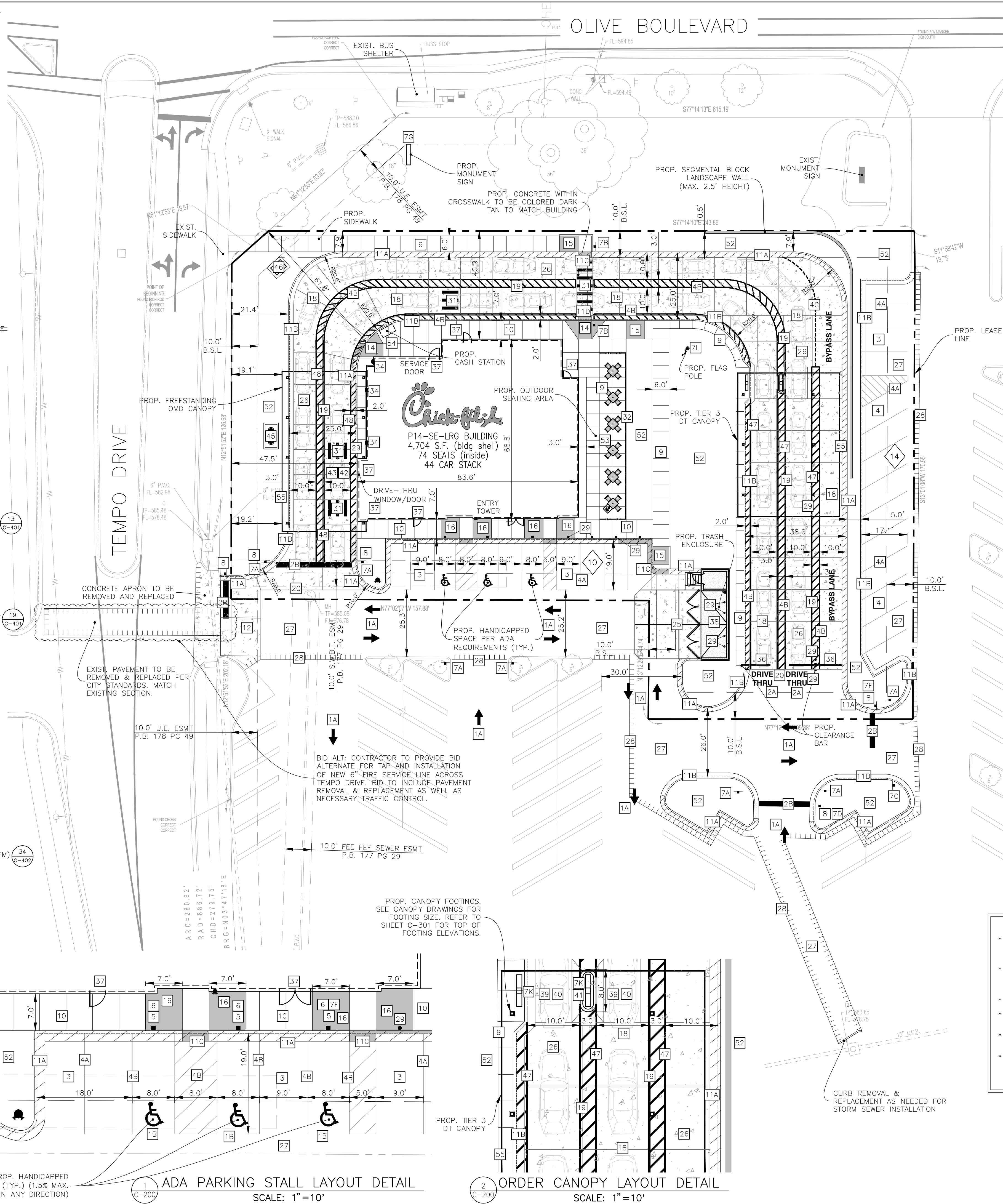
ALL SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE U.S. DEPARTMENT OF TRANSPORTATION. (SEE SIGN LEGEND)

7A THRU 7F (SEE SIGNAGE LEGEND, THIS SHEET)

- 7G CHICK-FIL-A MONUMENT SIGN, SEE SIGNAGE PACKAGE
7H CHICK-FIL-A "ENTER" SIGN, SEE SIGNAGE PACKAGE
7I CHICK-FIL-A "EXIT" SIGN, SEE SIGNAGE PACKAGE
7J CHICK-FIL-A "DRIVE-THRU" SIGN, SEE SIGNAGE PACKAGE
7K DRIVE THRU ORDERING STATION, SEE SIGNAGE PACKAGE
7L FLAGPOLE, 50', SEE SIGNAGE PACKAGE

- 8 STOP SIGN, SEE SIGNAGE PACKAGE
9 TYPICAL CONCRETE SIDEWALK, 5' MIN.
10 7' WIDE SIDEWALK w/ CURB & GUTTER
11 24" CONCRETE CURB & GUTTER
11A SPILLING CURB SECTION
11B CATCHING CURB SECTION
11C DEPRESSED SPILLING CURB
11D DEPRESSED CATCHING CURB

- 12 CONCRETE PAVEMENT SECTIONS
13 HANDICAP RAMP w/ SHORT FLARED SIDES (GRASSED AREAS)
14 HANDICAP RAMP w/ FLARED SIDES (IN SIDEWALK)
15 RETURNED CURB HANDICAP RAMP
16 SIDEWALK (ADA COMPLIANT) RAMP
17 DETECTABLE WARNING DEVICE
18 TRANSVERSE & LONGITUDINAL CONTRACTION JOINT
19 TRANSVERSE & LONGITUDINAL DOWELED CONSTRUCTION JOINT
20 PAVEMENT EDGE DETAIL
21 CONTRACTION JOINT
22 KEYED CONSTRUCTION JOINT
23 LONGITUDINAL BUTT JOINT
24 EXPANSION JOINT
25 CONCRETE APRON @ TRASH ENCLOSURE
26 CONCRETE PAVEMENT DRIVE-THRU LANE
27 TYPICAL HMA PAVEMENT SECTION
28 BUTT JOINT
29 CONCRETE BOLLARD
30 MULTI-LANE DIRECTIONAL GRAPHICS
31 CROSSWALK MARKINGS
32 ALUMINUM HANDRAIL
33 TYPICAL ADA RAMP & HANDRAIL
34 BUILDING DOWNSPOUT CONNECTION (TO SITE DRAINAGE SYSTEM)
35 ROLLOVER/MOUNTABLE CURB
36 DRIVE-THRU CLEARANCE BAR
37 ENTRY DOOR FROST SLAB DETAIL
38 SCREENED REFUSE ENCLOSURE FOUNDATION
39 MENU BOARD LOOP DETECTION SYSTEM
40 MENU BOARD LOOP DETECTION SYSTEM (ISO VIEW)
41 DRIVE-THRU ORDER POINT ISLAND
42 DRIVE-THRU PLAN FLUSH WITH FFE
43 DRIVE-THRU ISOMETRIC PLAN
44 DRIVE-THRU PLAN - 2" BELOW FFE
45 GREASE TRAP
46 PROPOSED TRANSFORMER
47 DRIVE-THRU STRIPING
48 MEAL DELIVERY AREA STRIPING
49 LANDSCAPE & IRRIGATION PROTECTOR
50 SOLID PLASTIC WHEEL STOP
51 BIKE RACK
52 LANDSCAPED AREA
53 TYPICAL LOCATION FOR OUTDOOR TABLES (SEE EQUIPMENT SCHEDULE)
54 CONCRETE PAD FOR OPTIONAL CASH STATION
55 FACE-TO-FACE DRIVE-THRU CANOPY SYSTEMS



SITE DATA:

- PARCEL ID #: 1822122709354202003
- ZONING: PUD (PLANNED UNIT DEVELOPMENT DISTRICT)
- PROP. LEASE PARCEL SIZE: 44,310± SQ. FT. (1.02 ACRES)

BUILDING DATA:

- BUILDING FLOOR AREA: 4,704± SQ. FT.
- NUMBER OF EMPLOYEES DURING LARGEST SHIFT = 15 EMPLOYEES
- TOTAL NUMBER OF SEATS = 98
 - INDOOR SEATS = 74
 - OUTDOOR SEATS = 24

PARKING DATA:

- NUMBER OF REGULAR PARKING SPACES: 21
- NUMBER OF ADA SPACES: 3
- TOTAL NUMBER OF SPACES PROVIDED: 24
- TOTAL NUMBER OF SPACES REQUIRED: 47
- TYPICAL PARKING WIDTH: 9.0'
- TYPICAL 90° PARKING LENGTH: 19.0'
- MINIMUM ISLE WIDTH: 22.0' (90°)

PARKING FORMULA (RESTAURANTS):

- 1 PARKING SPACE PER EVERY 3 SEATS OF MAX. OCCUPANCY PLUS 1 PARKING SPACE PER 250 SQUARE FEET OF BUILDING AREA PLUS 1 PARKING SPACE PER EACH 8 SEATS IN THE OUTDOOR SEATING AREA.
- (74 INDOOR SEATS/3)+(4,704SF/250)+(24/8 OUTDOOR SEATS) = 47
- TOTAL REQUIRED PARKING = 47 SPACES

HATCH LEGEND

- 1 DENOTES STANDARD PAVEMENT SECTION
2 DENOTES CONCRETE SECTION
3 DENOTES PROP. SIDEWALK
4 DENOTES AREA OF DEPRESSED SIDEWALK
5 DENOTES AREA OF DEPRESSED CURB AND GUTTER WITH LENGTH NOTED ON PLANS.
6 DENOTES REVERSE CURB & GUTTER

SIGN LEGEND

- 6 DENOTES "HANDICAPPED PARKING" R7-8, 12" x 18" (TYP.)
7A DENOTES "DO NOT ENTER" R5-1, 30" x 30" (TYP.)
7B DENOTES "PEDESTRIAN CROSSWALK" 12" x 18" (TYP.)
7C DENOTES "RIGHT TURN ONLY" R3-5R, 30" x 36" (TYP.)
7D DENOTES "TRAFFIC FROM LEFT DOES NOT STOP" W4-4AP, 12" x 18" (TYP.)
7E DENOTES "ONCOMING TRAFFIC DOES NOT STOP" W4-4BP, 12" x 18" (TYP.)
7F DENOTES "VAN ACCESSIBLE" D9-6P (BOLLARD MOUNTED WITH 6B)
8 DENOTES "STOP" R1-1, 30" x 30" (TYP.)

PROJECT NOTES:

- ALL CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS AND OR CONNECTION TO PUBLIC SEWERS AND STREETS SHALL COMPLY WITH THE CITY OF CREVE COEUR STANDARD CONSTRUCTION SPECIFICATIONS.
- AT LEAST ONE WEEK PRIOR TO ANY CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, THE CONTRACTOR SHALL CONTACT THE CITY TO OBTAIN APPLICABLE CITY PERMITS.
- INGRESS/EGRESS WILL BE PROVIDED INTERNAL AND EXTERNAL TO THIS SITE.
- ALL CONCRETE CURB & GUTTER SHALL BE 24" (B6.18) UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL PAVEMENT DIMENSIONS ARE MEASURED TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL CONSTRUCTION MATERIALS, DUMPSTER, DETACHED TRAILERS OR SIMILAR ITEMS ARE PROHIBITED ON PUBLIC STREETS OR WITHIN THE PUBLIC RIGHT-OF-WAY.



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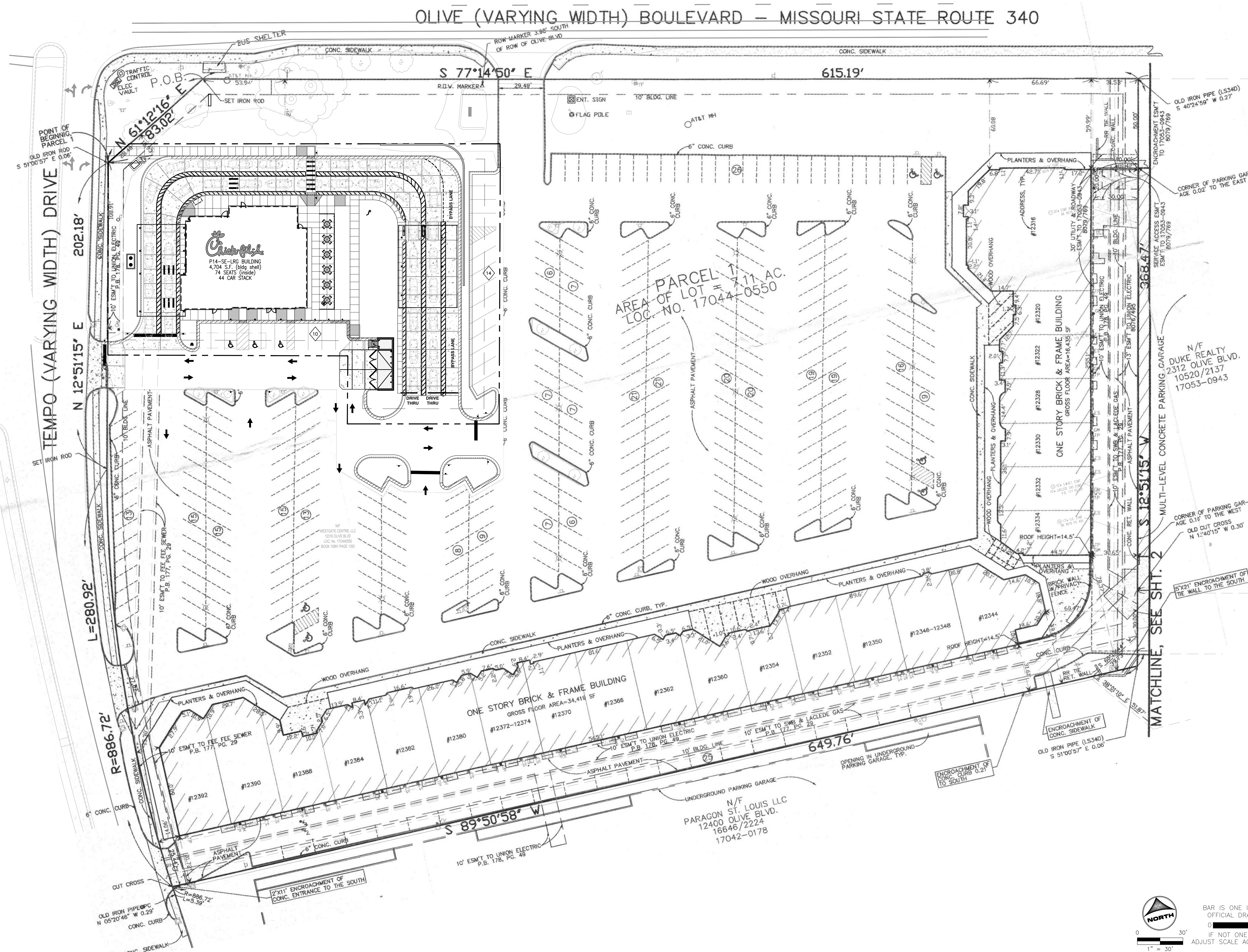
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FSR# 05161

REVISION SCHEDULE
NO. DATE DESCRIPTION

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SITE PLAN
SHEET NUMBER
C-200





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SHEET OVERALL SITE PLAN	
SHEET NUMBER C-201	

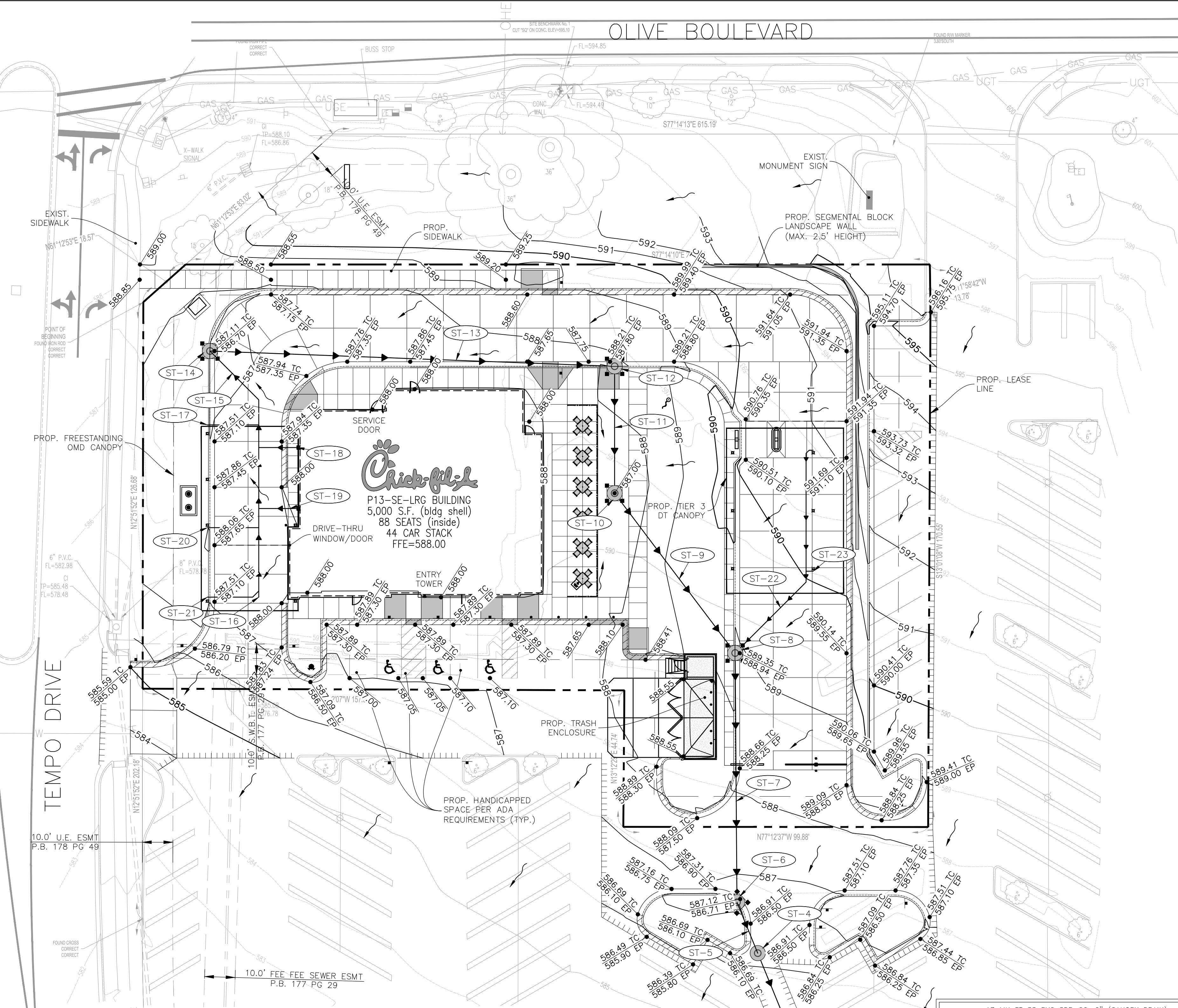


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GRADING & DRAINAGE NOTES

- CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS AND ARCHITECTURAL DESIGN FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, GREASE TRAP REQUIREMENTS/DETAILS, DOOR ACCESS, AND EXTERIOR GRADING. THE UTILITY SERVICE SIZES ARE TO BE DETERMINED BY THE ARCHITECT. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES/SERVICES WITH THE INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND ENSURE PROPER DEPTHS ARE ACHIEVED. THE JURISDICTION UTILITY REQUIREMENTS SHALL ALSO BE MET, AS WELL AS COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONSTRUCTING TO THE EXISTING UTILITY/SERVICE. WHERE CONFLICTS EXIST WITH THESE SITE PLANS, ENGINEER IS TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE SAME.
- SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING WITH SUITABLE MATERIALS AS SPECIFIED IN THE GEOTECHNICAL REPORT. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS OUTLINED IN THE GEOTECHNICAL REPORT. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL BE SUBMITTED IN COMPACTION REPORT PREPARED BY A QUALIFIED GEOTECHNICAL ENGINEER, REGISTERED WITH THE STATE WHERE THE WORK IS PERFORMED, VERIFYING THAT ALL FILLED AREAS AND SUBGRADE AREAS WITHIN THE BUILDING PAD AREA AND AREAS TO BE PAVED HAVE BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL REPORT. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEMAED UNSUITABLE BY OWNER OR OWNER'S REPRESENTATIVE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS DIRECTED BY THE GEOTECHNICAL REPORT.
- ALL FILL, COMPACTION, AND BACKFILL MATERIALS REQUIRED FOR UTILITY INSTALLATION SHALL BE AS PER THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT AND SHALL BE COORDINATED WITH THE APPLICABLE UTILITY COMPANY SPECIFICATIONS.
- THE CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS AND REGULATIONS, OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE "MEANS AND METHODS" REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES.
- PAVEMENT SHALL BE SAW CUT IN STRAIGHT LINES TO THE FULL DEPTH OF THE EXISTING PAVEMENT. ALL DEBRIS FROM REMOVAL OPERATIONS SHALL BE REMOVED FROM THE SITE AT THE TIME OF EXCAVATION. STOCKPILING OF DEBRIS WILL NOT BE PERMITTED.
- THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS SHALL BE ADJUSTED, IF REQUIRED, TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHIC INFORMATION AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MINIMUM SLOPE ALONG ALL ISLANDS, GUTTERS, AND CURBS; 1.0% ON ALL CONCRETE SURFACES; AND 1.5% MINIMUM ON ASPHALT, TO PREVENT PONDING. ANY DISCREPANCIES THAT MAY AFFECT THE PUBLIC SAFETY OR PROJECT COST MUST BE IDENTIFIED TO THE ENGINEER IN WRITING IMMEDIATELY. PROCEEDING WITH CONSTRUCTION WITHOUT NOTIFICATION IS DONE SO AT THE CONTRACTOR'S OWN RISK.
- PROPOSED TOP OF CURB ELEVATIONS ARE GENERALLY 6" ABOVE EXISTING LOCAL ASPHALT GRADE UNLESS OTHERWISE NOTED. FIELD ADJUST TO CREATE A MINIMUM OF 0.75% GUTTER GRADE ALONG CURB FACE. ENGINEER TO APPROVE FINAL CURBING CUT SHEETS PRIOR TO INSTALLATION.
- IN CASE OF DISCREPANCIES BETWEEN PLANS OR RELATIVE TO OTHER PLANS, THE SITE PLANN WILL TAKE PRECEDENCE. IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICTS.
- CONTRACTOR SHALL BE REQUIRED TO SECURE ALL NECESSARY PERMITS AND APPROVALS FOR ALL OFF-SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. CONTRACTOR SHALL SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING WORK.
- SITE GRADING SHALL NOT PROCEED UNTIL EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
- SEE EROSION CONTROL PLAN FOR EROSION CONTROL MEASURES AND NOTES.
- ALL EXISTING STRUCTURES, UNLESS OTHERWISE NOTED TO REMAIN, FENCING, TREES, & ETC., WITHIN CONSTRUCTION AREA SHALL BE REMOVED & DISPOSED OF OFF SITE. NO ON SITE BURNING WILL BE ALLOWED
- ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST.
- ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND BE INSTALLED ACCORDINGLY.
- GENERAL CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES HAVING UNDERGROUND UTILITIES ON SITE OR IN ADJACENT AREAS PRIOR TO EXCAVATION. CONTRACTOR SHALL CONTACT UTILITY LOCATING COMPANY AND LOCATE ALL UTILITIES PRIOR TO GRADING START.
- NO PART OF THE PROPOSED PROJECT IS LOCATED WITHIN A FLOOD HAZARD AREA
- SPOT ELEVATIONS SHOWN ARE @ EDGE OF PAVEMENT UNLESS OTHERWISE NOTED ON PLAN.
- ALL CONCRETE CURB & GUTTER SHALL BE TYPE B-6.18 CURB UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL STORM SEWER JOINTS SHALL HAVE O-RING GASKETS.
- MATCH EXISTING GRADES AT PROPERTY LINES AND/OR CONSTRUCTION LIMITS.
- BACKFILL TO THE TOP OF CURBS.
- SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS
- ALL SIDEWALK CROSS SLOPES SHALL BE A MAXIMUM OF 1.5%.
- DESIGNATED HANDICAP PARKING AREAS SHALL BE GRADED TO A MAXIMUM OF 1.5%
- SLOPES IN PAVEMENT SHALL BE UNIFORM TO AVOID PONDING OF PAVEMENT.
- THE CONTRACTOR SHALL CONFINE HIS GRADING OPERATIONS TO WITHIN CONSTRUCTION LIMITS AND EASEMENTS SHOWN ON THE PLANS. ANY DAMAGE TO PROPERTIES OUTSIDE THE SITE BOUNDARY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL APPLY NECESSARY MOISTURE CONTROL TO THE CONSTRUCTION AREA AND HAUL ROADS TO PREVENT THE SPREAD OF DUST.
- ALL FIELD TILES ENCOUNTERED SHALL BE REPLACED AND/OR CONNECTED TO THE STORM SEWER SYSTEM AND LOCATED AND IDENTIFIED ON THE RECORD PLANS BY THE CONTRACTOR.
- ALL STORM DRAINAGE CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE MOST CURRENT CITY OF CREVE COEUR STANDARDS AND SPECIFICATIONS.



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FLOODPLAIN NOTE:

- PER FEMA FIRM 29189C0187K DATED FEBRUARY 4, 2015 - THE SUBJECT PROPERTY IS:
- ZONE X (UNSHADED) - AREA OF MINIMAL FLOOD HAZARD ZONE

HATCH LEGEND

- | | | | |
|--|--|--|---|
| | DENOTES REVERSE (SPILLING) CURB & GUTTER | | DENOTES AREA OF DEPRESSED SIDEWALK |
| | DENOTES CONCRETE CURB & GUTTER (CATCHING) | | DENOTES EXISTING AND OR PROPOSED SPOT ELEVATIONS. |
| | DENOTES AREA OF DEPRESSED SPILLING CURB & GUTTER | | DENOTES PROPOSED DRAINAGE DIRECTION ARROW. |
| | DENOTES AREA OF DEPRESSED CATCHING CURB & GUTTER | | DENOTES PROPOSED OVERFLOW DIRECTION ARROW. |

NOTE:

- ALL STORM STRUCTURES WITHIN PAVED AREAS REQUIRE WEEP HOLES. SEE DETAILS 40 & 40A ON SHEET C-403 FOR WEEP HOLE DETAILS.

ST-# STORM TAGS

- | | |
|-------|---|
| ST-1 | EXIST. 115 LIN FT SS RCP, 15" @ 2.15 |
| ST-2 | EXIST. STM INTAKE
TP = 583.65
FL = 578.75 W, E 15" RCP
INV = 579.40 NW 12" RCP (TO BE CORED) |
| ST-3 | 85 LIN FT SS RCP, 12" @ 2.00% |
| ST-4 | CONTECH WATER QUALITY UNIT, 6' DIA.
CDS3020-6-C
RIM = 586.25
INV = 581.10 SE 12" RCP
INV = 581.10 NW 12" RCP |
| ST-5 | 13 LIN FT SS RCP, 12" @ 1.54% |
| ST-6 | STM SWR CB 4' DIA., R-3235 TY A GRATE
T/C = 587.12
INV = 581.30 SE 12" RCP
INV = 581.30 NE 12" RCP |
| ST-7 | 78 LIN FT SS RCP, 12" @ 0.96% |
| ST-8 | STM SWR CB 4' DIA., R-3235 TY A GRATE
T/C = 589.35
INV = 582.05 SW 12" RCP
INV = 582.05 NW 12" RCP
INV = 586.00 NE 6" PVC |
| ST-9 | 62 LIN FT SS RCP, 12" @ 0.73% |
| ST-10 | STM SWR CB 4' DIA., R-2504 TY D GRATE
RIM = 587.00
INV = 582.50 SE 12" RCP
INV = 582.50 NE 12" RCP |
| ST-11 | 38 LIN FT SS RCP, 12" @ 0.66% |
| ST-12 | STM SWR CB 4' DIA., R-3235 TY A GRATE
T/C = 588.21
INV = 582.75 SW 12" RCP
INV = 582.75 NW 12" RCP |
| ST-13 | 129 LIN FT SS RCP, 12" @ 0.58% |
| ST-14 | STM SWR CB 4' DIA., R-3235 TY A GRATE
T/C = 587.11
INV = 583.50 SE 12" RCP
INV = 584.00 SE 8" PVC |
| ST-15 | 86 LIN FT SS PVC SDR-26, 8" @ 1.00% |
| ST-16 | CLEANOUT (SEE DETAIL)
RIM = 587.65
INV = 584.86 |
| ST-17 | 17 LIN FT SS PVC SDR-26, 6" (CANOPY DRAIN) @ 1.00%
INV @ ST-15 = 584.37
INV @ DOWNSPOUT = 584.54 |
| ST-18 | 13 LIN FT SS PVC SDR-26, 8" (BLDG DRAIN) @ 1.00%
INV @ ST-15 = 584.36
INV @ BLDG = 584.49 |
| ST-19 | 13 LIN FT SS PVC SDR-26, 8" (BLDG DRAIN) @ 1.00%
INV @ ST-15 = 584.56
INV @ BLDG = 584.69 |



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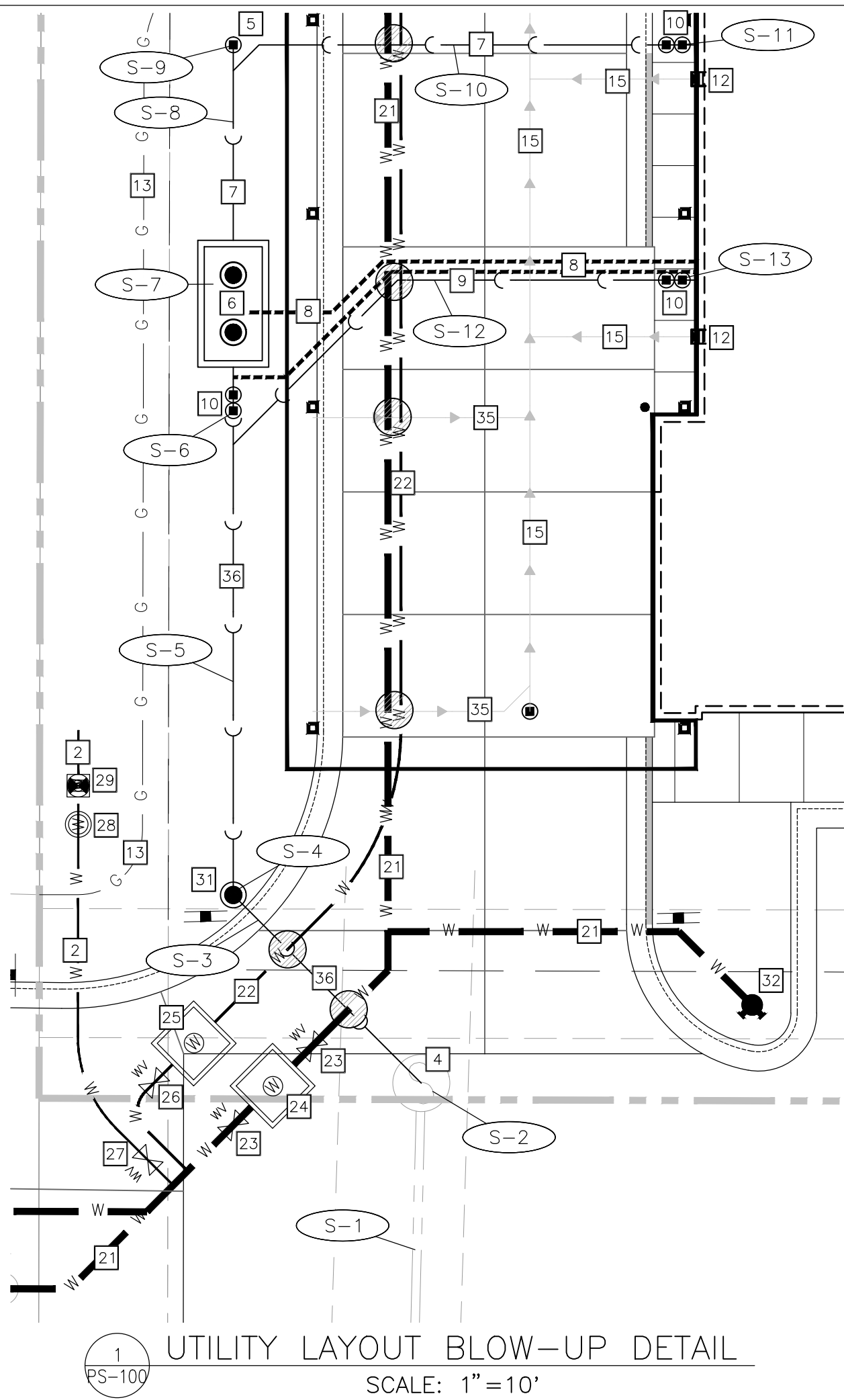
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SHEET GRADING PLAN
SHEET NUMBER C-300

LAYOUT NOTES

- PAY CONNECTION FEES FOR 2" DOMESTIC /6" FIRE WATER SERVICE AND METER. DOMESTIC SERVICE TO SPLIT OFF FIRE SERVICE EXTERNAL TO BUILDING.
- 1.5" SOFT COPPER (TYPE K) IRRIGATION LINE TO HAVE SEPARATE METER LOCATED EXTERNAL TO THE BUILDING.
- 3/4" CW TO DUMPSTER POST HYDRANT (SOFT COPPER TYPE K)
- CONNECTION TO EXIST. SANITARY MANHOLE PER MSD REQUIREMENTS. CONTRACTOR TO VERIFY DOWNSTREAM PIPE INVERT PRIOR TO ORDERING STRUCTURES. (SEE SANITARY TAGS FOR INFO)
- 6" CLEAN OUT (SEE DETAIL). CLEANOUT SHALL BE FLUSH W/ PAVEMENT & INSTALLED UNDER A PROTECTIVE METAL BOX COVER SIMILAR TO A METER PIT COVER WITH A TRAFFIC BEARING LID.
- PRECAST 1,500 GAL. CAPACITY GREASE TRAP. PLUMBING CONTRACTOR TO COORDINATE WITH BUILDING CONTRACTOR. TOP OF MANHOLE TO BE 0.2' ABOVE FINISH GRADE AND MATCH SIDEWALK GRADES WHERE REQUIRED. VERIFY GREASE TRAP MEETS CITY/COUNTY SPECIFICATIONS PRIOR TO INSTALLATION. REFER TO PLUMBING PLAN, SHEET P-101.
- 6" KITCHEN WASTE LINE. (SEE SANITARY TAGS FOR INFO)
- 3" VENT LINE. CONNECT TO GREASE INTERCEPTOR. (SEE SHEET P-101 FOR LOCATION)
- 6" RESTROOM WASTE LINE. (SEE SANITARY TAGS FOR INFO)
- 6" TWO-WAY CLEAN OUT. (REFER TO PLUMBING PLANS)(SEE DETAIL 37/C-403)
- DUMPSTER POST HYDRANT REFER TO THE FIXTURE CONNECTION SCHEDULE (P-303) DEPICTED ON THE PROJECT PLUMBING PLANS.
- DOWNSPOUT FOR ROOF DRAINAGE. (REFER TO ARCHITECTURAL PLANS)
- PROPOSED GAS SERVICE. (SEE NOTE 19)
- COORDINATE GAS METER INSTALLATION WITH GAS COMPANY.
- 8" PVC SDR 26 ROOF DRAIN PIPE SYSTEM. (CONNECT TO SITE STORM DRAIN)
- UNDERGROUND PRIMARY ELECTRIC SERVICE. (SEE NOTE 21)
- UNDERGROUND PRIMARY TELEPHONE SERVICE. (SEE NOTE 20)
- UNDERGROUND SECONDARY ELECTRIC SERVICE TO BUILDING. (SEE NOTE 21)
- PROPOSED PAD MOUNTED TRANSFORMER PER ELECTRIC COMPANY STANDARDS. SEE SERVICE UTILITY NOTES, THIS SHEET.
- CFA SERVICE CONNECTION. CONNECT TO EXISTING SERVICE STUB. SERVICE SIZE TO BE VERIFIED.
- 6" FIRE SERVICE - DI CL52 PIPE - OPEN TRENCH
- 2" SOFT COPPER (TYPE K) WITH APPROVED FLARED OR COMPRESSION FITTING ONLY (DOMESTIC)
- 6" CONTROL VALVE & VALVE BOX - FIRE (SEE DETAILS)
- DETECTOR CHECK VAULT AND METER ASSEMBLY - FIRE (SEE DETAILS)
- 2" METER BOX & METER SET - DOMESTIC SERVICE (SEE DETAILS)
- 2" CORPORATION STOP AND CONTROL VALVE & VALVE BOX - DOMESTIC (SEE DETAILS)
- 1/2" CORPORATION STOP AND CONTROL VALVE & VALVE BOX - IRRIGATION (SEE DETAILS)
- 1/2" ROUND METER BOX & METER SET - IRRIGATION SERVICE (SEE DETAILS)
- ABOVE GROUND HEATED VALVE BOX WITH REDUCE PRESSURE ZONE BACKFLOW PREVENTER FOR IRRIGATION SYSTEM
- UNDERGROUND ISP SERVICE (SEE NOTE 22)
- SANITARY SAMPLING MANHOLE (SEE DETAILS)
- FIRE HYDRANT WITH AUXILIARY VALVE AND VALVE BOX
- EXIST. VALVE & VALVE BOX (SERVICE SIZE TO BE VERIFIED)
- 1.5" GAS LINE TO DT CANOPY (REFER TO CANOPY DRAWINGS FOR CONNECTION)
- 6" PVC SDR 26 CANOPY DRAIN PIPE SYSTEM. (CONNECT TO SITE STORM DRAIN)
- 6" SANITARY SERVICE LINE - PVC SDR 26
- FIRE DEPARTMENT CONNECTION
- EXISTING WATERMAIN (LOCATION, SIZE, & DPETH TO BE VERIFIED)
- BID ALT: CFA SERVICE TAP. CONNECT TO EXIST. WATERMAIN VIA TAPPING SLEEVE AND VALVE & VALVE BOX. CONTRACTOR TO VERIFY LOCATION, DEPTH, AND SIZE OF THE EXISTING WATERMAIN PRIOR TO ORDERING MATERIALS.
- BID ALT: 6" FIRE SERVICE - DI CL52 PIPE - OPEN TRENCH



S-# SANITARY SEWER TAGS	
S-1 EXIST. 253 LF SAN SWR MAIN, 8" @ 2.53%	S-8 16 LIN FT SAN SWR, 6" PVC (SDR 26) @ 2.00%
S-2 EXIST. SAN MH EXIST. RIM = 585.08 PROP. RIM = 585.90 INV = 576.78 SW 8" INV = 576.78 NE 8" (EXIST. PIPE INVERT TO BE MORTARED SHUT PER MSD STANDARDS) INV = 577.25 NW 6" PVC (TO BE CORED)	S-9 CLEANOUT (SEE DETAIL) RIM = 587.80 INV = 582.80
S-3 17 LIN FT SAN SWR, 6" PVC (SDR 26) (3.5 LF RISER @ 1:1 SLOPE) (13.5 LF @ 3.70%) (INV @ TOP OF RISER = 580.75)	S-10 37 LIN FT SAN SWR, 6" PVC (SDR 26) @ 2.00% INV @ S-8 = 582.76 INV @ BLDG = 583.50 (VERIFY WITH ARCHITECT/PLANS)
S-4 SAN SWR SAMPLING MH, 4' DIA. (SEE DETAIL) RIM = 586.65 INV = 581.25 SE 6" PVC INV = 581.50 NE 6" PVC	S-11 TWO-WAY CLEAN OUT (SEE DETAIL) RIM = 587.95 INV = +/- 583.46
S-5 41 LIN FT SAN SWR, 6" PVC (SDR 26) @ 2.00%	S-12 42 LIN FT SAN SWR, 6" PVC (SDR 26) @ 3.12% INV @ S-5 = 582.19 INV @ BLDG = 583.50 (VERIFY WITH ARCHITECT/PLANS)
S-6 TWO-WAY CLEAN OUT (SEE DETAIL) RIM = 587.65 INV = +/- 582.25	S-13 TWO-WAY CLEAN OUT (SEE DETAIL) RIM = 588.00 INV = +/- 583.44
S-7 GREASE TRAP (1,500 GAL.) SEE BUILDING PLUMBING PLAN FOR DETAILS RIM(S) = 587.70 S, 587.70 N INV = 582.48 (INLET) INV = 582.31 (OUTLET)	

CONTRACTOR TO VERIFY LOCATION OF ALL EXISTING DRY UTILITY LINES. NOTIFY ENGINEER OF ANY CONFLICTS.

APPROX. LOCATION OF EXIST. WATER SERVICE LINE. LOCATION, SIZE, & DEPTH TO BE VERIFIED.

BID ALT: CONTRACTOR TO PROVIDE BID ALTERNATE FOR TAP AND INSTALLATION OF NEW 6" FIRE SERVICE LINE ACROSS TEMPO DRIVE. BID TO INCLUDE PAVEMENT REMOVAL & REPLACEMENT AS WELL AS NECESSARY TRAFFIC CONTROL.

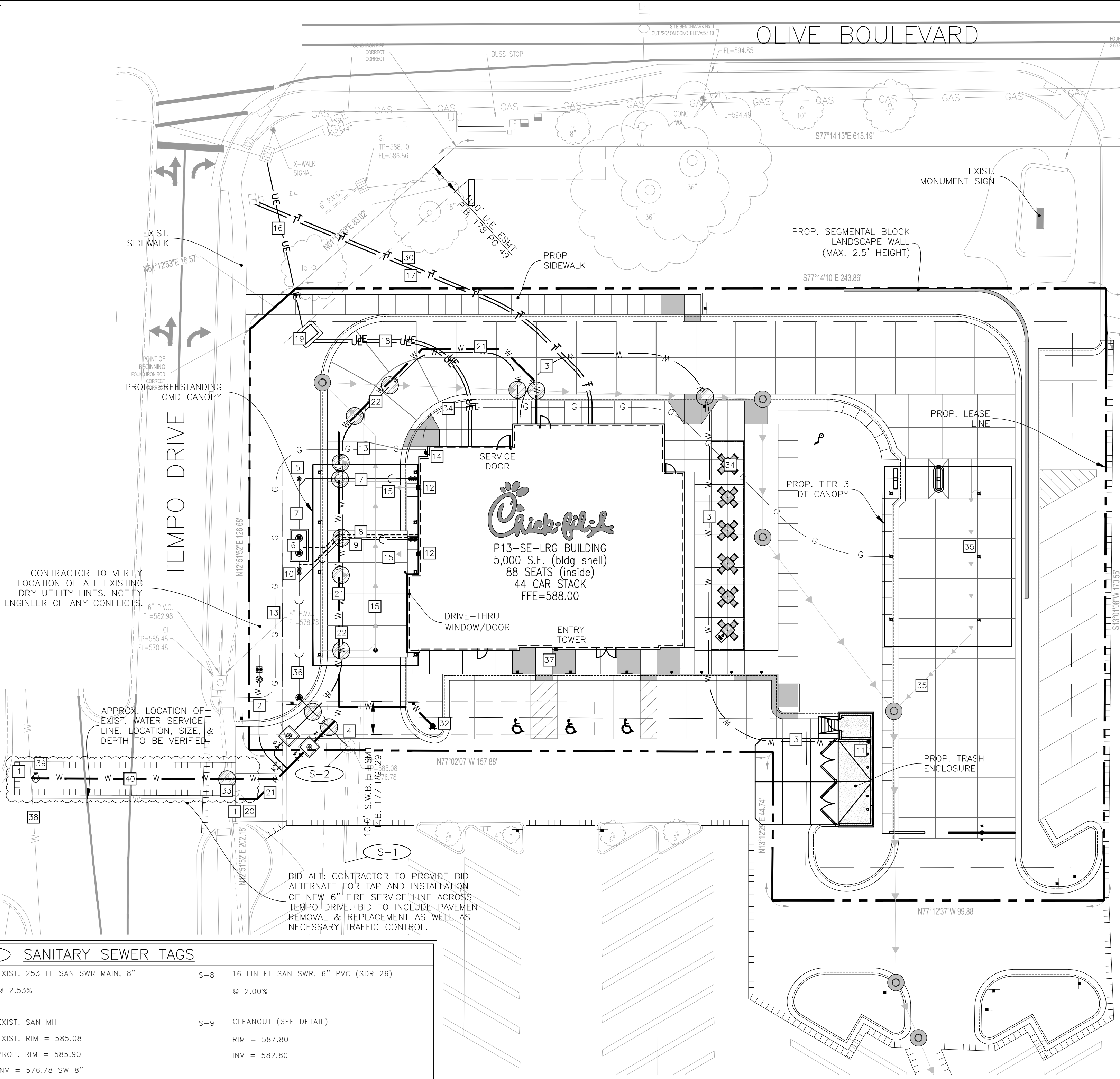
- MISCELLANEOUS NOTES:**
- ALL BUILDING UTILITY SERVICE LOCATIONS TO BE VERIFIED W/ ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
 - FOR EXACT LIGHT POLE LOCATIONS SEE PHOTOMETRICS PLAN.
 - AT LEAST ONE WEEK PRIOR TO ANY CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, THE CONTRACTOR SHALL CONTACT THE CITY, STATE, OR APPLICABLE UTILITY COMPANY/DISTRICT TO OBTAIN APPLICABLE PERMITS.

- A CONFLICT TAGS**
- OMITTED FOR THIS SUBMITTAL

- SEWER FLOW:**
- AVERAGE POTABLE WATER USAGE: 1,500 GPD
- 775 GPD IS NON-GREASE WASTE
 - 725 GPD IS GREASE WASTE
 - PEAK DESIGN FLOW: 6,000 GPD

- ONSITE WATERLINE NOTES:**
- THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES, AND FIRE HYDRANTS.
 - ALL FIRE HYDRANTS SHALL BE PROVIDED WITH AN APPROVED AUXILIARY GATE VALVE.
 - ALL WATER MAINS SHALL BE HYDROSTATICALLY TESTED AND DISINFECTED BEFORE ACCEPTANCE. SEE SITE WORK SPECIFICATIONS.
 - ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
 - GENERAL CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THIS SYSTEM PRIOR TO INSTALLATION.
 - ALL 6" DIAMETER WATER SERVICE PIPE SHALL BE DUCTILE IRON PIPE CLASS 52.
 - ALL DIRECT BURIED DUCTILE IRON PIPE, FITTINGS, VALVES, ETC. SHALL BE ENCASED WITH POLYETHYLENE ENCASEMENT PER MISSOURI AMERICAN WATER SPECIFICATIONS.
 - ALL 2" DIAMETER AND SMALLER WATER SERVICE PIPE SHALL BE TYPE K COPPER.

- ⊙ DENOTES MAINTAIN 18" VERTICAL SEPARATION PER MoDNr'S REQUIREMENTS

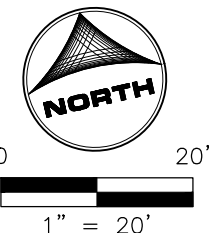


UTILITY NOTES

- REFER TO MECHANICAL, ELECTRICAL, AND PLUMBING PLANS FOR DUTY SERVICE SIZES AND EXACT LOCATIONS. CONTRACTOR TO CONFIRM SIZES OF ALL SERVICES PRIOR TO INSTALLATION. REFER TO ELECTRICAL PLANS FOR ELECTRIC AND TELEPHONE SERVICE CONSTRUCTION DETAILS. REFER TO MECHANICAL PLANS FOR GAS SERVICE CONSTRUCTION DETAILS.
- FIELD VERIFY ELEVATIONS AND LOCATIONS OF ALL CONNECTIONS TO EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
- PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITY LINES THAT ARE ENCOUNTERED DURING CONSTRUCTION UNTIL BACKFILLING IS COMPLETE.
- MAINTAIN A MINIMUM OF 3.5' COVER OVER ALL WATER MAINS.
- MAINTAIN A MINIMUM OF 3.0' COVER OVERALL SANITARY SEWER.
- ADJUST ALL MANHOLES AND FRAMES TO FINISHED GRADES.
- ALL WATER AND SANITARY SEWER SERVICES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF MISSOURI AMERICAN WATER, THE METROPOLITAN ST. LOUIS SEWER DISTRICT, AND THE CITY OF CREVE COEUR.
- 18" MINIMUM VERTICAL CLEARANCE BETWEEN SANITARY/STORM SEWER AND WATER MAIN. (PER MoDNr STANDARDS).
- MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN SANITARY SEWER LINES AND PUBLIC WATER MAINS.
- WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES, AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATIONS AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK. THE CONTRACTOR IS REQUIRED TO UTILIZE THE UTILITY CALL MISSOURI ONE CALL AT 1-800-344-7483 AT LEAST 48 HOURS PRIOR TO EXCAVATING ANYWHERE ON THE PROJECT.
- LOCATION OF SITE UTILITIES SHALL BE VERIFIED WITH PROPER UTILITY COMPANY PROVIDING SERVICE.
- ALL WATER AND SANITARY LEADS TO BUILDING SHALL END 5' OUTSIDE THE BUILDING LIMITS AS SHOWN ON PLAN AND SHALL BE PROVIDED WITH A TEMPORARY PLUG AT END.
- SEE SITE SPECIFICATIONS "UNDERGROUND UTILITIES" FOR BACKFILLING AND COMPACTION REQUIREMENTS.
- GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR ALL TAP AND TIE ON FEES REQUIRED, AS WELL AS COST OF UNDERGROUND SERVICE CONNECTIONS TO THE BUILDING.
- ELECTRICAL SERVICE TO PAD MOUNTED TRANSFORMER SHALL BE RUN UNDERGROUND, FROM ROAD RIGHT-OF-WAY TO TRANSFORMER LOCATION. ASSOCIATED COST BY GENERAL CONTRACTOR.
- ALL EXISTING UTILITIES TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- FOR EXACT LIGHT POLE LOCATIONS SEE PHOTOMETRICS PLAN.
- MATERIAL PERMITTED FOR USE AS SANITARY SEWER PIPES SHALL FOLLOW MSD REQUIREMENTS.
- SPIRE ENERGY WILL FURNISH AND INSTALL THE GAS MAINS AND GAS SERVICE UP TO AND INCLUDING THE METER. IF PAVING IS COMPLETE PRIOR TO GAS SERVICE INSTALLATION, CONTRACTOR TO PROVIDE (1) 4" SCHEDULE 40 PVC CONDUIT UNDER PAVED AREAS.
- CONTRACTOR TO FURNISH AND INSTALL (1) 4" SCHEDULE 40 PVC CONDUIT FOR TELEPHONE SERVICE FROM RIGHT-OF-WAY TO BUILDING. AT&T TO SUPPLY, PROVIDE AND INSTALL PRIMARY TELEPHONE SERVICE. CONDUIT TO BE INSTALLED A MINIMUM 24" BELOW FINISHED GRADE.
- CONTRACTOR TO FURNISH AND INSTALL (2) 4" SCHEDULE 40 PVC CONDUITS WITH PULL WIRE FOR PRIMARY ELECTRIC SERVICE. AMEREN TO PROVIDE AND INSTALL PRIMARY ELECTRIC SERVICE. CONTRACTOR TO FURNISH AND INSTALL (4) 4" SCHEDULE 40 PVC CONDUITS WITH PULL WIRE FOR SECONDARY ELECTRIC SERVICE. CONDUITS SHALL HAVE A MINIMUM OF 48" OF COVER. CONTRACTOR TO PROVIDE AND INSTALL TRANSFORMER PAD IN ACCORDANCE WITH AMEREN SPECIFICATIONS AND REQUIREMENTS. TRANSFORMER PAD SHALL BE INSTALLED TO FINAL GRADE AND LEVELED. CONTRACTOR TO PROVIDE AND INSTALL SECONDARY CONDUCTORS IN ACCORDANCE WITH AMEREN SPECIFICATIONS AND REQUIREMENTS.
- CONTRACTOR TO FURNISH AND INSTALL (1) 3" SCHEDULE 40 PVC CONDUIT WITH PULL STRING FOR ISP SERVICE FROM RIGHT-OF-WAY TO BUILDING. AT&T TO SUPPLY, PROVIDE AND INSTALL ISP SERVICE. CONDUIT TO BE INSTALLED MINIMUM 24" BELOW FINISHED GRADE.
- ALL SANITARY SEWER CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT AND THE CITY OF CREVE COEUR.
- ALL CONNECTIONS TO PUBLIC SANITARY SEWERS SHALL BE CORE DRILLED.
- THE CFA FIRE SERVICE SHALL BE CLASS 52 DUCTILE IRON PIPE.

MSD NOTES:

- EXTERNAL GREASE TRAPS AND SAMPLING MANHOLE:
- AN EXTERNAL GREASE TRAP IS REQUIRED TO BE LOCATED IN AN ACCESSIBLE LOCATION FOR MSD INSPECTION. PROVIDE MEANS FOR VISUAL INSPECTION FROM ABOVE FOR BOTH INFLUENT AND EFFLUENT SIDES. A MSD SAMPLING MANHOLE WILL BE LOCATED ON A PRIVATE LATERAL IN AN ACCESSIBLE LOCATION FOR MSD SAMPLING. THE SAMPLING MANHOLE WILL BE LOCATED DOWNSTREAM OF THE GREASE TRAP AND ALL OTHER COMMERCIAL SANITARY LATERAL CONNECTIONS TO FACILITATE MSD SAMPLING. GREASE TRAPS AND SAMPLING MANHOLES WILL BE SHOWN ON THE PLANS AND NOT BE LOCATED IN DRIVE-THRU LANES OR WITHIN PARKING SPACES.
 - MAINTENANCE OF THE SEWERS DESIGNATED "PUBLIC" SHALL BE THE RESPONSIBILITY OF THE METROPOLITAN ST. LOUIS SEWER DISTRICT UPON DEDICATION OF THE SEWERS TO THE DISTRICT.
 - LOCK DOWN LIDS WILL BE REQUIRED FOR ANY SANITARY MANHOLES IN PAVEMENT SUBJECT TO PONDING, SWALES, OR FLOODPLAINS.



BAR IS ONE INCH ON OFFICIAL DRAWINGS
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY

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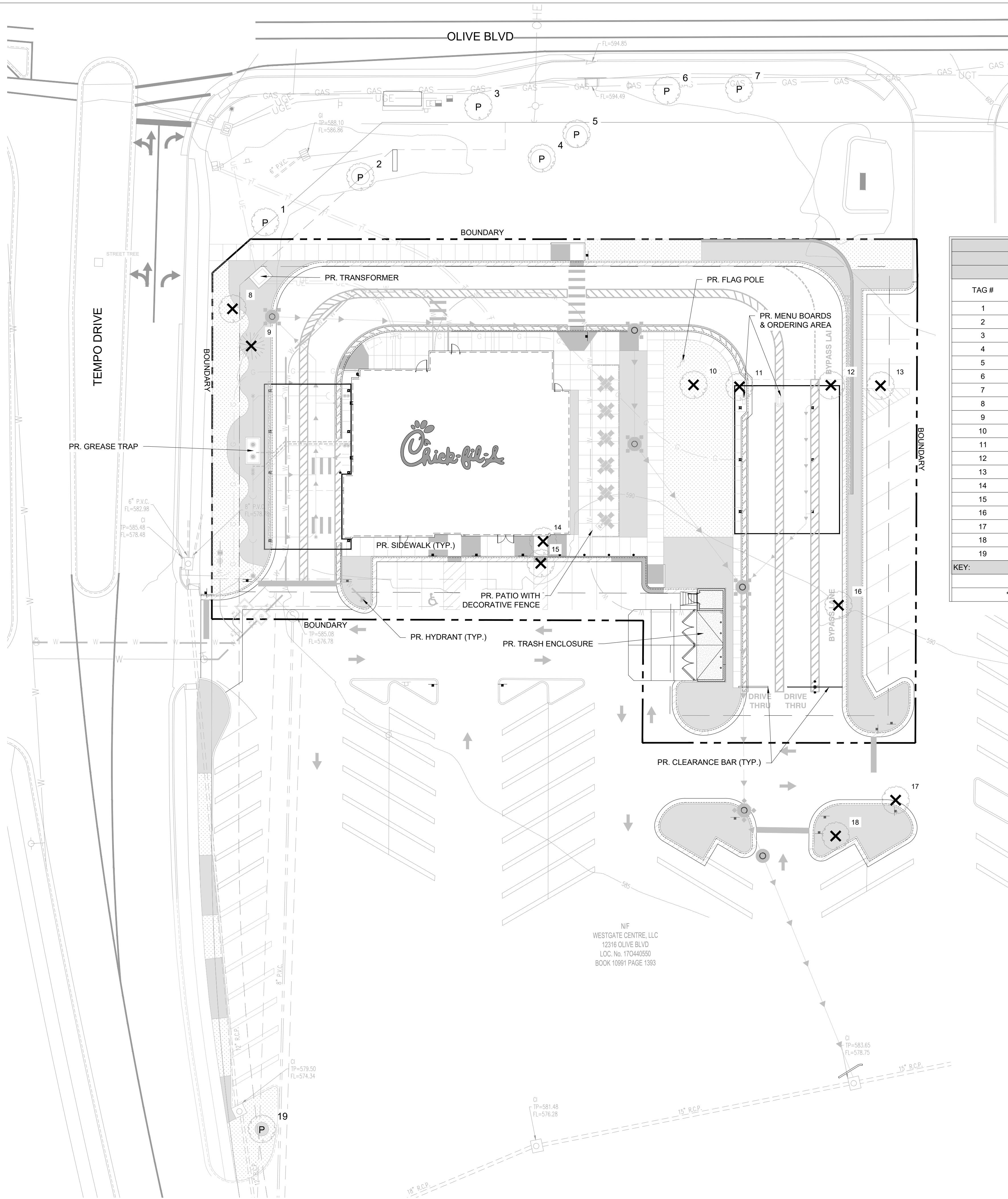
12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE		DESCRIPTION
NO.	DATE	

PRELIMINARY

ENGINEER'S PROJECT #	211634
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DATE	05/24/2022
DRAWN BY: MRJ	
CHECKED BY: JVF	
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SHEET	
PLUMBING SITE PLAN	
SHEET NUMBER	
PS-100	



CHICK FIL A - CREVE COEUR, MO					
11/7/2022					
TREE SURVEY					
TAG #	DBH (INCHES)	SPECIES	CONDITION**	ACTION	REASON
1	15.0	QUERCUS PHELOW / WILLOW OAK	A	PRESERVE	-
2	18.0	QUERCUS PHELOW / WILLOW OAK	A	PRESERVE	-
3	8.0	GLEDITSIA TRIACANTHOS / HONEY LOCUST	A	PRESERVE	-
4	36.0	ROBINIA PSEUDOACACIA / BLACK LOCUST	A	PRESERVE	-
5	36.0	ROBINIA PSEUDOACACIA / BLACK LOCUST	A	PRESERVE	-
6	10.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	PRESERVE	-
7	12.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	PRESERVE	-
8	15.0	QUERCUS PHELOW / WILLOW OAK	A	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
9	24.0	PINUS SYLVESTRIS / SCOTCH PINE	C	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
10	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
11	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	IN FUTURE PAVMENT
12	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	IN FUTURE PAVMENT
13	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	IN FUTURE PAVMENT
14	6.0	PHOTINIA GLABRA / JAPANESE PHOTINIA	A	REMOVE	IN FUTURE PAVMENT
15	6.0	PHOTINIA GLABRA / JAPANESE PHOTINIA	A	REMOVE	IN FUTURE PAVMENT
16	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	REMOVE	IN FUTURE PAVMENT
17	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	REMOVE	IN FUTURE PAVMENT
18	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
19	6.0	QUERCUS PHELOW / WILLOW OAK	A	PRESERVE	-
KEY:					
* AGE: S - Semi-Mature (young trees over 5m high) M - Mature (approximately 40-50 years old) O - Over-Mature (die-back of branches, dead wood, etc.)					
** CONDITION: A - Good B - Fair C - Poor D - Dead					

TREE SURVEY

TREE PROTECTION KEY

P

EXIST. TREE TO BE PRESERVED

X

EXIST. TREE TO BE REMOVED

TRUNK PROTECTIVE FENCING

CRITICAL ROOT ZONE

TOTAL QUANTITIES (IN VICINITY OF DISTURBANCE AND PROPOSED IMPROVEMENTS)

EXIST. TREES TO BE PRESERVED8

EXIST. TREES TO BE REMOVED11

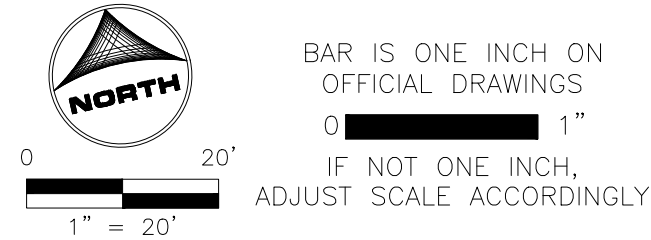
TOTAL EXISTING TREES TAGGED19

GENERAL NOTES

1. THE INTENT IS TO KEEP THE EXISTING TREES TO BE PRESERVED IN TACT THROUGHOUT THE DURATION OF CONSTRUCTION ON-SITE. IF THE TREES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR REPLACING PER THE MUNICIPALITY'S ORDINANCE.

2. CONTRACTOR IS RESPONSIBLE FOR THE HAUL-OFF OF ALL TREES AND OTHER VEGETATION TO BE REMOVED.

3. THE PRESERVATION OF EACH EXISTING, HEALTHY SHADE TREE THAT IS SIX INCHES OR MORE WILL BE CONSIDERED THE EQUIVALENT OF PLANTING TWO SHADE TREES IN MEETING THE REQUIREMENTS OF THE ORDINANCE REQUIREMENTS.



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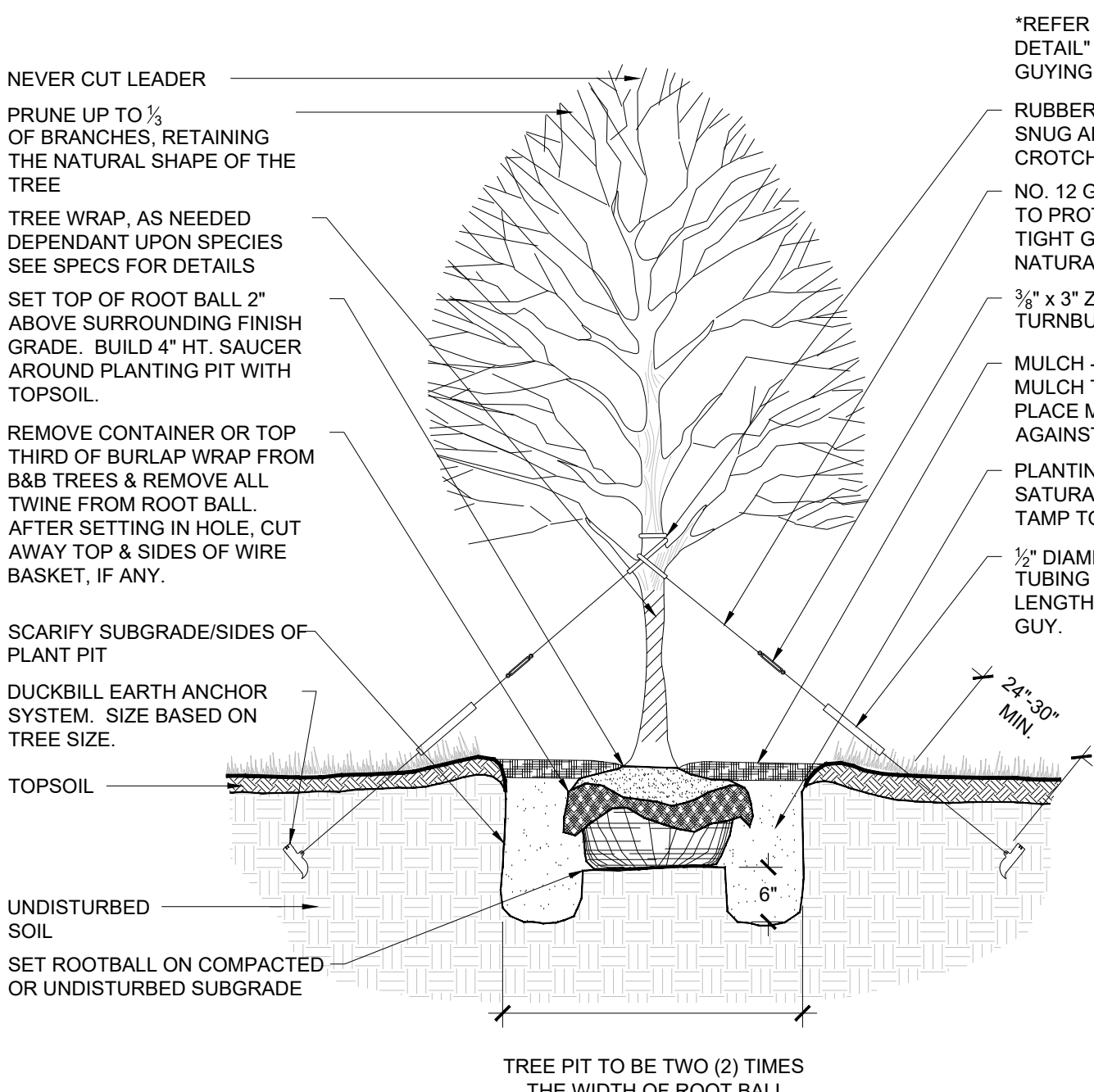
ENGINEER'S PROJECT #	211634
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SHEET	TREE PRESERVATION PLAN
SHEET NUMBER	L-100

GENERAL NOTES

1. BASE MAP INFORMATION IS ACCURATE AS OF THE DATE PRINTED ON THIS PACKAGE.
2. THE LANDSCAPE PLANS CONTAINED HEREIN ILLUSTRATE APPROXIMATE LOCATIONS OF ALL SITE CONDITIONS. REFER TO SURVEY, ARCHITECTURAL, CIVIL ENGINEERING, STRUCTURAL, ELECTRICAL, IRRIGATION AND ALL OTHER DRAWINGS, IF AVAILABLE, FOR ADDITIONAL DETAILED INFORMATION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING AWARE OF AND FIELD VERIFYING ALL RELATED EXISTING AND PROPOSED CONDITIONS, UTILITIES, PIPES AND STRUCTURES, ETC. PRIOR TO BIDDING AND CONSTRUCTION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR CONTACTING ###. THE COUNTY PUBLIC WORKS DEPARTMENT, THE MUNICIPALITY AND ANY OTHER PUBLIC OR PRIVATE AGENCIES NECESSARY FOR UTILITY LOCATION PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF APPARENT CONFLICTS WITH CONSTRUCTION AND UTILITIES SO THAT ADJUSTMENTS CAN BE PLANNED PRIOR TO INSTALLATION. IF FIELD ADJUSTMENTS ARE NECESSARY DUE TO EXISTING UTILITY LOCATIONS THEY MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY AND ALL COSTS OR OTHER LIABILITIES INCURRED DUE TO DAMAGE OF SAID UTILITIES/STRUCTURES/ETC.
4. THE CONTRACTOR SHALL COMPLY WITH ALL CODES APPLICABLE TO THIS WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH SUBCONTRACTORS AND OTHER CONTRACTORS OF RELATED TRADES, AS REQUIRED, TO ACCOMPLISH THE PLANTING AND RELATED OPERATIONS.
6. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL PLANT MATERIAL WITH THE INSTALLATION OF OTHER IMPROVEMENTS SUCH AS HARDSCAPE ELEMENTS AND RELATED STRUCTURES. ANY DAMAGE TO EXISTING IMPROVEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE TO RESTORE ALL AREAS OF THE SITE, OR ADJACENT AREAS, WHERE DISTURBED BY OPERATIONS OF OR RELATED TO THE CONTRACTOR'S WORK.
8. ALL SURFACE DRAINAGE SHALL BE DIVERTED AWAY FROM STRUCTURES AND NOTED SITE FEATURES IN ALL AREAS AT A MINIMUM OF 2% SLOPE OR AS SHOWN ON THE CIVIL ENGINEERING PLANS. ALL AREAS SHALL POSITIVELY DRAIN AND ALL ISLANDS SHALL BE CROWNED 1" IN HEIGHT PER 1' IN ISLAND WIDTH.
9. THE CONTRACTOR SHALL STAKE ALL TREE LOCATIONS AND THE PERIMETER OF SHRUB/PERENNIAL BEDS PRIOR TO INSTALLATION AND CONTACT THE OWNER'S REPRESENTATIVE FOR APPROVAL. FINAL LOCATION AND STAKING OF ALL PLANT MATERIALS SHALL BE ACCEPTED BY THE OWNER'S REPRESENTATIVE IN ADVANCE OF PLANTING.
10. IF CONFLICTS ARISE BETWEEN THE SIZE OF AREAS AND PLANS, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER'S REPRESENTATIVE FOR RESOLUTION PRIOR TO INSTALLATION.
11. WHERE PROVIDED, AREA TAKEOFFS AND PLANT QUANTITY ESTIMATES IN THE PLANT LIST ARE FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE TO DO THEIR OWN QUANTITY TAKE-OFFS FOR ALL PLANT MATERIALS AND SIZES SHOWN ON PLANS. IN CASE OF ANY DISCREPANCIES, PLANS TAKE PRECEDENCE OVER CALL-OUTS AND/OR THE PLANT LIST(S).
12. PLANTS ARE TO BE TYPICAL IN SHAPE AND SIZE FOR SPECIES. PLANTS PLANTED IN ROWS OR GROUPS SHALL BE MATCHED IN FORM. PLANTS SHALL NOT BE ROOT-BOUND OR LOOSE IN THEIR CONTAINERS. HANDLE ALL PLANTS WITH CARE IN TRANSPORTING, PLANTING AND MAINTENANCE UNTIL INSPECTION AND FINAL ACCEPTANCE. FIELD COLLECTED MATERIAL SHALL NOT BE USED UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE.
13. SHREDDED HARDWOOD MULCH, FERTILIZING, AS SPECIFIED, STAKING, WATERING AND ONE (1) YEAR PLANT WARRANTY FOR INSTALLED PLANT MATERIAL, SHALL BE CONSIDERED INCIDENTAL TO THE PLANT ITEMS.
14. MUSHROOM COMPOST SHALL BE FINELY SCREENED, HOMOGENOUS, DECOMPOSED ORGANIC MATERIAL SUITABLE FOR HORTICULTURAL USE AS AVAILABLE FROM MIDWEST TRADING HORTICULTURAL SUPPLIES, INC. ST. CHARLES, IL 60174 (630) 365-1990 OR APPROVED EQUAL. MIX THOROUGHLY IN PLANT BED BEFORE INSTALLING PLANTS.

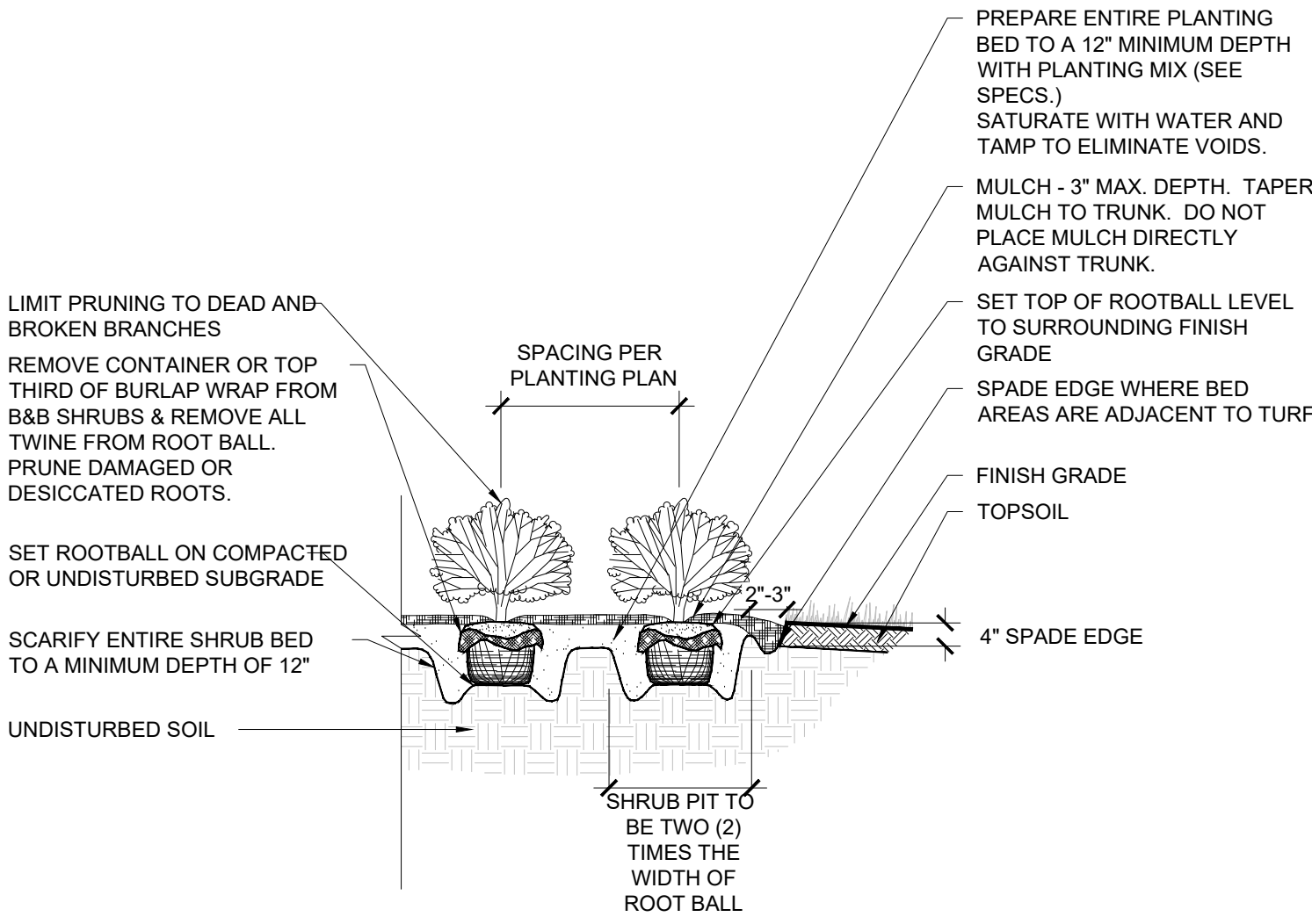
LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR TO READ AND UNDERSTAND THE LANDSCAPE SPECIFICATIONS (SHEET L-300) PRIOR TO FINALIZING BIDS. THE LANDSCAPE SPECIFICATIONS SHALL BE ADHERED TO THROUGHOUT THE CONSTRUCTION PROCESS.
2. CONTRACTOR RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. CONTRACTOR RESPONSIBLE FOR PROTECTING EXISTING TREES FROM DAMAGE DURING CONSTRUCTION.
4. ALL PLANTING AREAS SHALL BE CLEARED OF CONSTRUCTION DEBRIS (IE. CONCRETE, ROCK, RUBBLE, BUILDING MATERIALS, ETC.) PRIOR TO ADDING AND SPREADING OF THE TOPSOIL.
5. ALL SHRUBS BEDS (EXISTING AND NEW) TO BE MULCHED WITH A 3 INCH MINIMUM LAYER OF DOUBLE SHREDDED HARDWOOD MULCH.
6. ALL ANNUAL AND PERENNIAL BEDS TO BE TILLED TO A MINIMUM DEPTH OF 12 INCHES AND AMENDED WITH 4 INCHES OF ORGANIC MATERIAL. MULCH PLANTED ANNUAL AND PERENNIAL BEDS WITH 2 INCH DEPTH OF MINI NUGGETS.
7. PLANTING HOLES TO BE DUG A MINIMUM OF TWICE THE WIDTH OF THE SIZE OF THE ROOT BALL OF BOTH SHRUB AND TREE. BACK TO BE A MIX OF 4 PARTS TOPSOIL AND 1 PART ORGANIC SOIL CONDITIONER (IE. NATURE'S HELPER OR PRO MIX). BACKFILL AND TAMP BOTTOM OF HOLE PRIOR TO PLANTING SO TOP OF ROOT BALL DOES NOT SETTLE BELOW SURROUNDING GRADE.
8. EXISTING GRASS IN PROPOSED PLANTING AREAS TO BE KILLED AND REMOVED AND AREA TO BE HAND RAKED TO REMOVE ALL ROCKS AND DEBRIS LARGER THAN 1 INCH IN DIAMETER PRIOR TO PLANTING SHRUBS.
9. ANY EXISTING GRASS DISTURBED DURING CONSTRUCTION TO BE FULLY REMOVED, REGRADED AND REPLACED. ALL TIRE MARKS AND INDENTIONS TO BE REPAIRED.
10. SOIL TO BE TESTED TO DETERMINE FERTILIZER AND LIME REQUIREMENTS AND DISTRIBUTED PRIOR TO LAYING SOD.
11. SOD TO BE DELIVERED FRESH (CUT LESS THAN 24 HOURS PRIOR TO ARRIVING ON SITE), LAID IMMEDIATELY, ROLLED, AND WATERED THOROUGHLY IMMEDIATELY AFTER PLANTING. EDGE OF SOD IS TO BE "V" TRENCHED.
12. ALL CHANGES TO DESIGN OR PLANT SUBSTITUTIONS ARE TO BE AUTHORIZED BY THE LANDSCAPE ARCHITECT.
13. ALL LANDSCAPING SHALL BE INSTALLED IN CONFORMANCE WITH ANSI Z60.1 THE "AMERICAN STANDARD FOR NURSERY STOCK" AND THE ACCEPTED STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
14. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS INSTALLED FOR ONE FULL YEAR FROM DATE OF ACCEPTANCE BY THE OWNER. ALL PLANTS SHALL BE ALIVE AND AT A VIGOROUS RATE OF GROWTH AT THE END OF THE GUARANTEE PERIOD. THE LANDSCAPE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ACTS OF GOD OR VANDALISM.
15. ANY PLANT THAT IS DETERMINED DEAD, IN AN UNHEALTHY OR UNSIGHTLY CONDITION, LOST ITS SHAPE DUE TO DEAD BRANCHES OR OTHER SYMPTOMS OF POOR, NON-VIGOROUS GROWTH SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR.
16. GENERAL CONTRACTOR IS RESPONSIBLE FOR ADDING A MIN OF 4" OF CLEAN FRIABLE TOPSOIL IN ALL PLANTING BEDS AND ALL GRASSSED AREAS. GRADED AREAS TO BE HELD DOWN THE APPROPRIATE ELEVATION TO ACCOUNT FOR TOPSOIL. SEE SPECIFICATIONS FOR REQUIRED TOPSOIL CHARACTERISTICS.
17. IN ALL PARKING LOT ISLANDS, THE GENERAL CONTRACTOR IS RESPONSIBLE TO REMOVE ALL DEBRIS, FRACTURE/LOOSEN SUBGRADE TO A MIN. 24" DEPTH. ADD TOPSOIL TO A 6"-8" BERM HEIGHT ABOVE ISLAND CURBING; REFER TO LANDSCAPE SPECIFICATIONS AND LANDSCAPE ISLAND DETAIL.
18. PRIOR TO BEGINNING WORK, THE LANDSCAPE CONTRACTOR SHALL INSPECT THE SUBGRADE, GENERAL SITE CONDITIONS, VERIFY ELEVATIONS, UTILITY LOCATIONS, IRRIGATION, APPROVE TOPSOIL PROVIDED BY GENERAL CONTRACTOR AND OBSERVE THE SITE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. NOTIFY GENERAL CONTRACTOR OF ANY UNSATISFACTORY CONDITIONS, AND WORK SHALL NOT PROCEED UNTIL SUCH CONDITIONS HAVE BEEN CORRECTED AND ARE ACCEPTABLE TO THE LANDSCAPE CONTRACTOR.
19. STAKE ALL EVERGREEN AND DECIDUOUS TREES AS SHOWN IN THE DETAILS THIS SHEET.
20. REMOVE ALL STAKES AND GUYING FROM ALL TREES AFTER ONE YEAR FROM PLANTING.
21. WATER THOROUGHLY TWICE IN FIRST 24 HOURS AND APPLY MULCH IMMEDIATELY.
22. SITE TO BE 100% IRRIGATED IN ALL PLANTING BEDS AND GRASS AREA BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. SEE IRRIGATION PLAN L-200 FOR DESIGN.
23. ALL TREE PROTECTION DEVICES TO BE INSTALLED PRIOR TO THE START OF LAND DISTURBANCE, AND MAINTAINED UNTIL FINAL LANDSCAPING.
24. ALL TREE PROTECTION AREAS TO BE PROTECTED FROM SEDIMENTATION.
25. ALL TREE PROTECTION FENCING TO BE INSPECTED DAILY, AND REPAIRED OR REPLACED AS NEEDED.
26. NO PARKING, STORAGE OR OTHER CONSTRUCTION ACTIVITIES ARE TO OCCUR WITHIN TREE PROTECTION AREAS.
27. CONTRACTOR SHALL USE CAUTION WHEN DIGGING TREE PITS IN THE VICINITY OF UNDERGROUND UTILITY LINES AND MAY NEED TO HAND DIG THE PITS IN MANY OF THESE INSTANCES.



1 TYP. DECIDUOUS TREE PLANTING DETAIL

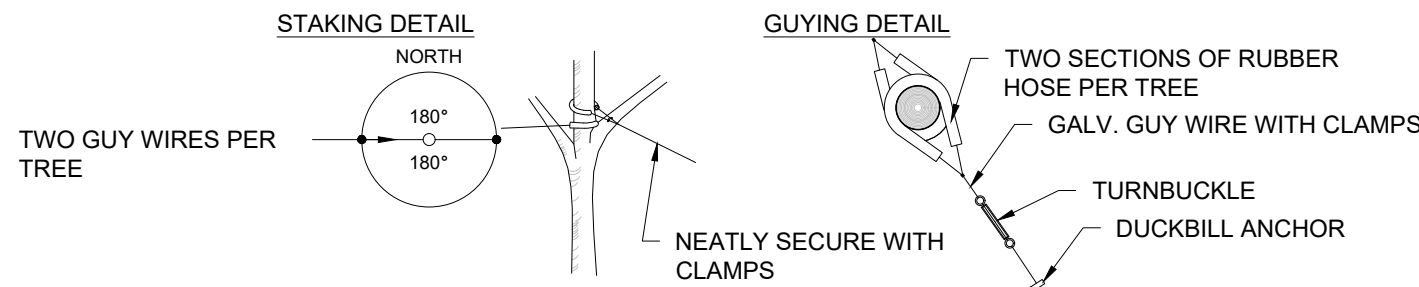
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3 TYP. SHRUB PLANTING DETAIL

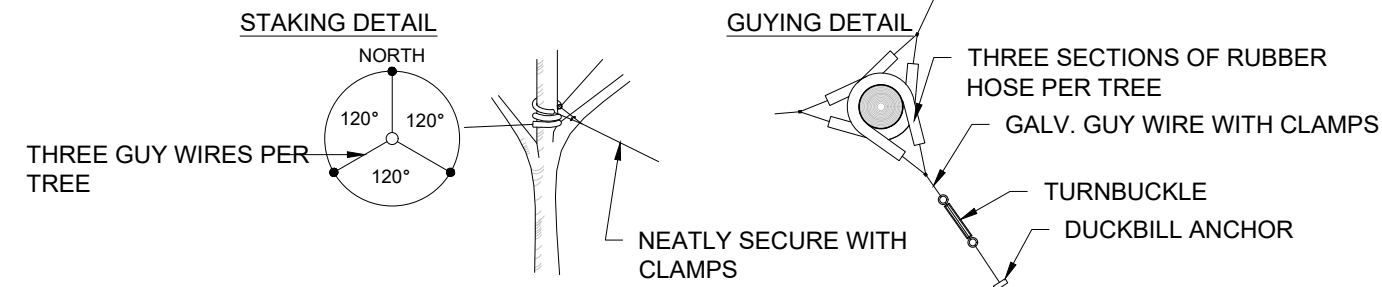
SCALE: NTS

GUYING STANDARDS	
• TWO (2) MODEL 68 DUCKBILL ANCHORS (HOLDING CAPACITY 1100# PER ANCHOR IN NORMAL SOIL.	
• 13' OF 1/8" 7x7 GALVANIZED STEEL CABLE WITH TURNBUCKLE ATTACHED MID-CABLE.	
• 1/2" DIAMETER THIN WALL P.V.C. TUBING (WHITE) 48" MINIMUM LENGTH. ONE (1) REQUIRED/EACH GUY.	
• TWO (2) TURNBUCKLES, EYE AND EYE TYPE, 3/4" THREAD DIAMETER WITH 3" TAKE-UP	
• FOUR (4) 1/8" CABLE CLAMPS, ZINC PLATED (DR-2 STEEL DRIVE ROD 2' LONG WITH 1/4" ROUND DRIVING TIP NEEDED TO INSTALL ANCHORS. ONE ROD, NOT INCLUDED IN KIT, DRIVES HUNDREDS OF ANCHORS)	
• TWO (2) RUBBER HOSE TREE COLLARS, 21" LONG, EA.	



*APPLIES TO SINGLE TRUNK DECIDUOUS TREES 3" CAL. AND LESS & EVERGREEN TREES 8' HT. AND LESS

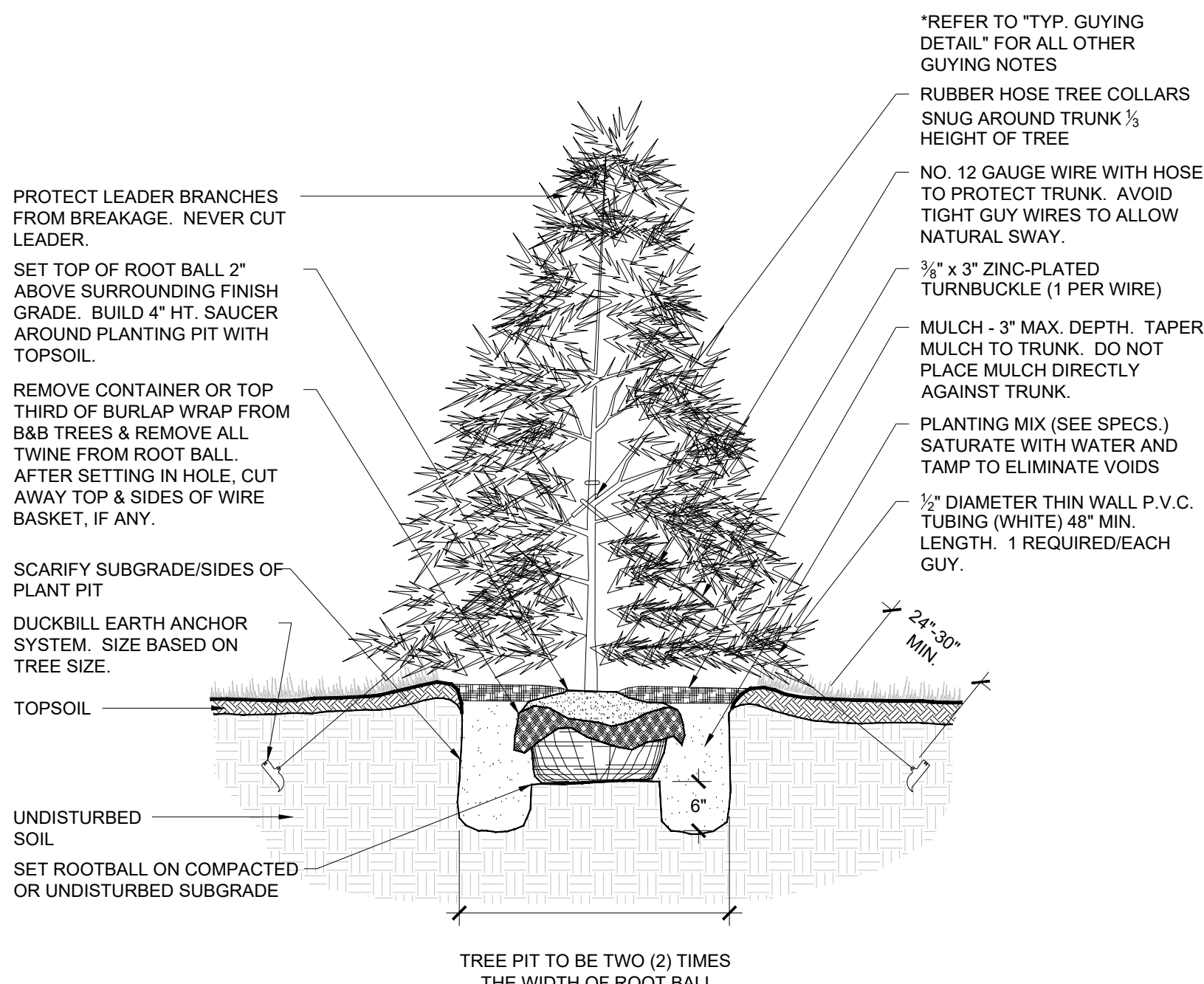
GUYING STANDARDS	
• THREE (3) MODEL 68 DUCKBILL ANCHORS (HOLDING CAPACITY 1100# PER ANCHOR IN NORMAL SOIL.	
• 13' OF 1/8" 7x7 GALVANIZED STEEL CABLE WITH TURNBUCKLE ATTACHED MID-CABLE.	
• 1/2" DIAMETER THIN WALL P.V.C. TUBING (WHITE) 48" MINIMUM LENGTH. ONE (1) REQUIRED/EACH GUY.	
• THREE (3) TURNBUCKLES, EYE AND EYE TYPE, 3/4" THREAD DIAMETER WITH 3" TAKE-UP	
• SIX (6) 1/8" CABLE CLAMPS, ZINC PLATED (DR-2 STEEL DRIVE ROD 2' LONG WITH 1/4" ROUND DRIVING TIP NEEDED TO INSTALL ANCHORS. ONE ROD, NOT INCLUDED IN KIT, DRIVES HUNDREDS OF ANCHORS)	
• THREE (3) RUBBER HOSE TREE COLLARS, 21" LONG, EA.	



*APPLIES TO SINGLE TRUNK DECIDUOUS TREES GREATER THAN 3" CAL. & EVERGREEN TREES GREATER THAN 8' HT.

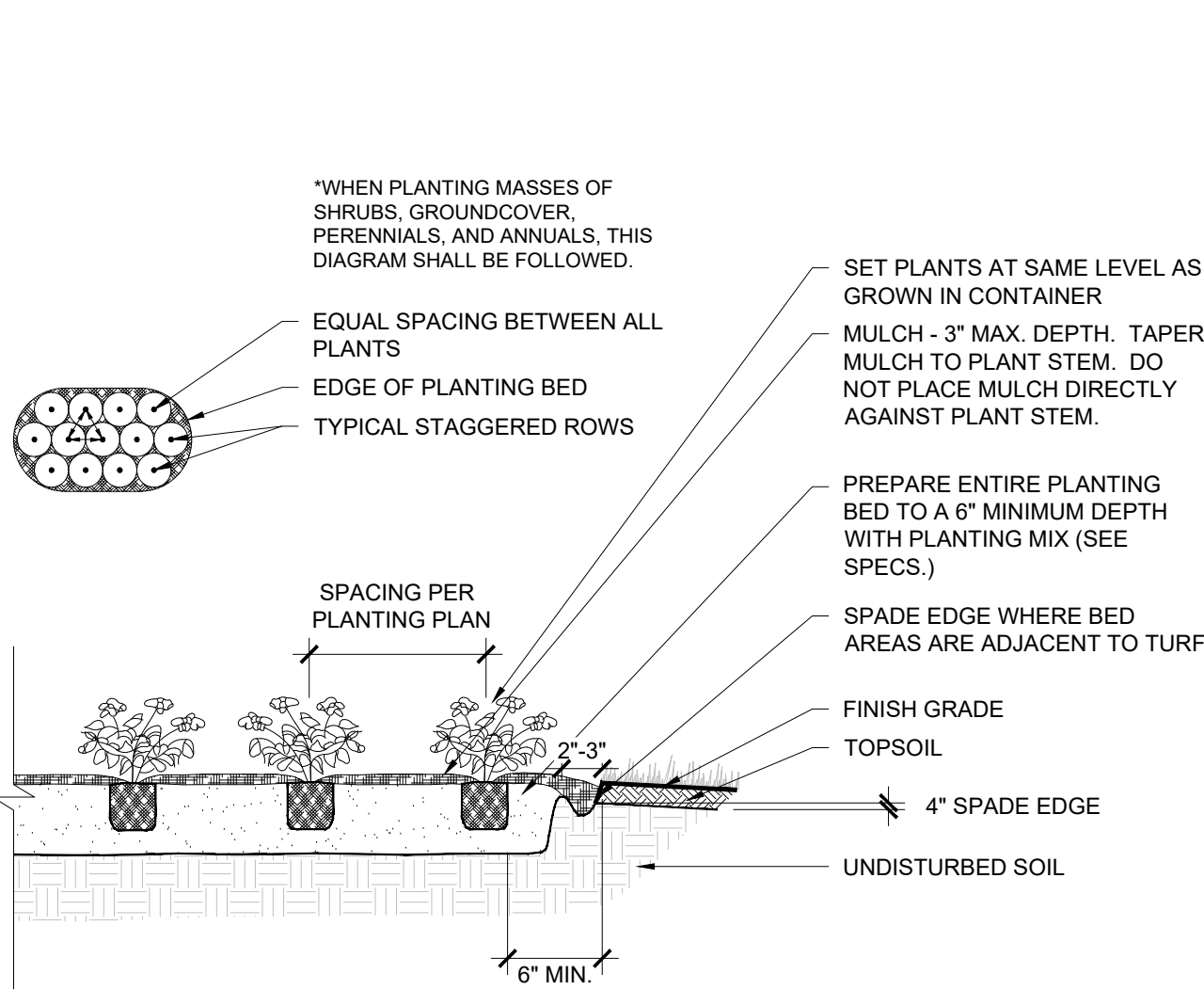
5 TYP. GUYING DETAIL

SCALE: NTS



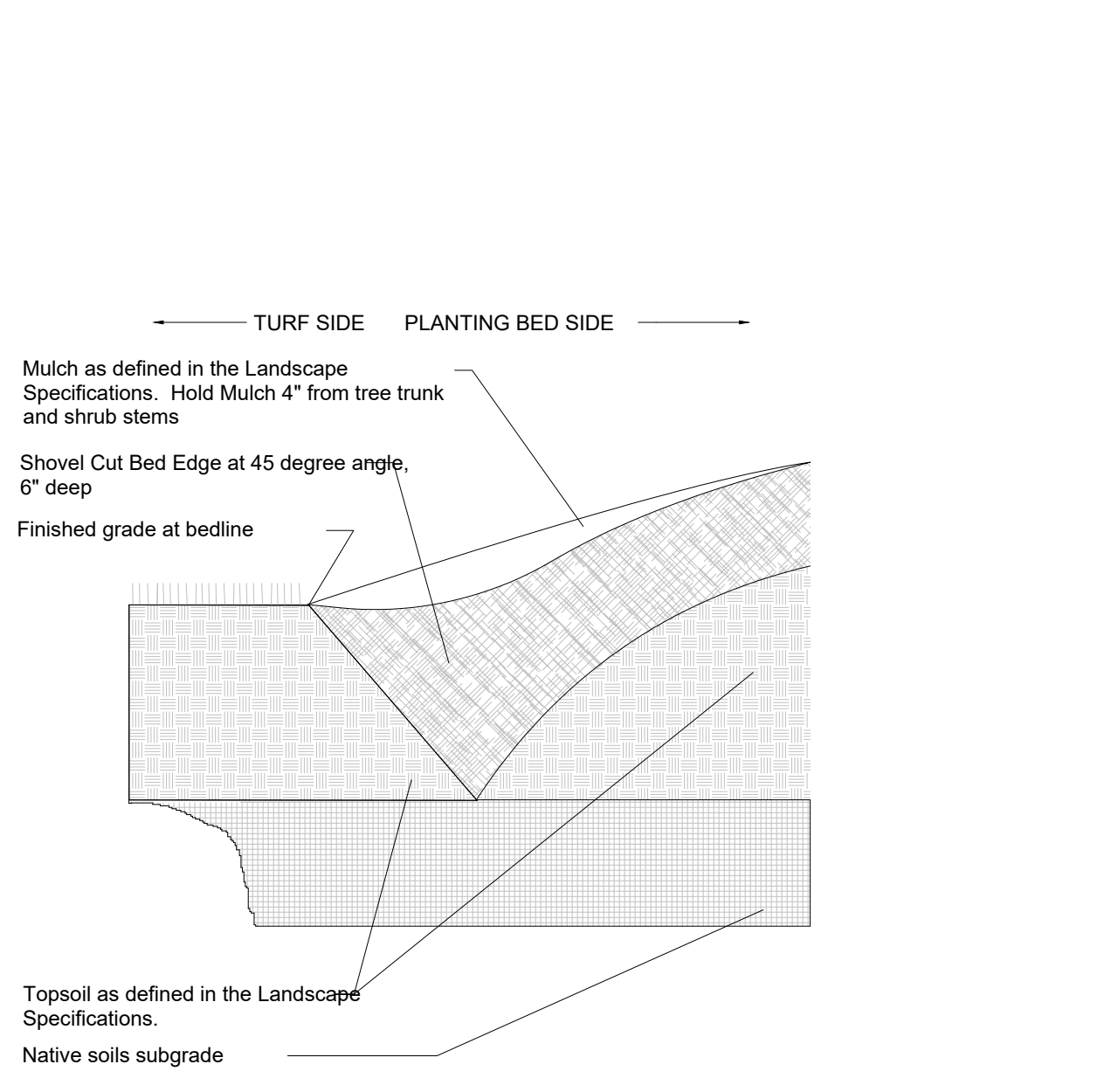
2 TYP. EVERGREEN TREE PLANTING DETAIL

SCALE: NTS



4 TYP. PERENNIAL PLANTING DETAIL

SCALE: NTS



6 "V" TRENCH BED EDGING

SCALE: NTS



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CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE	NO.	DATE	DESCRIPTION
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PRELIMINARY

ENGINEER'S PROJECT #	211634
PRINTED FOR	PRELIMINARY
DATE	05/24/2022
DRAWN BY:	JTK
CHECKED BY:	JFR

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SHEET
LANDSCAPE DETAILS

SHEET NUMBER

L-300

PRELIMINARY
NOT FOR CONSTRUCTION

LANDSCAPE SPECIFICATIONS

PART 1 - GENERAL

DESCRIPTION

Provide trees, shrubs, ground covers, sod, and annuals/perennials as shown and specified on the landscape plan. The work includes:

1. Soil preparation.
2. Trees, shrubs, ground covers, and annuals/perennials.
3. Planting mixes.
4. Top Soil, Mulch and Planting accessories.
5. Maintenance.
6. Decorative stone.

Related Work:

1. Irrigation System; see irrigation specifications (sheet L-2.2)

QUALITY ASSURANCE

Plant names indicated; comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. All plant varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.

Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.

All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of 2 years.

Nursery Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional cost, and providing that the larger plants will not be cut back to the size indicated. Provide plants indicated by two measurements so that only a maximum of 25% are of the minimum size indicated and 75% are of the maximum size indicated.

Before submitting a bid, the Contractor shall have investigated the sources of supply and be satisfied that they can supply the listed plants in the size, variety and quality as specified. Failure to take this precaution will not relieve the Contractor from their responsibility for furnishing and installing all plant materials in strict accordance with the Contract Documents without additional cost to the Owner. The Landscape Architect shall approve any substitutes of plant material, or changes in plant material size, prior to the Landscape Contractor submitting a bid.

DELIVER, STORAGE AND HANDLING

Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected. Spray deciduous plants in foliage with an approved "Anti-Desiccant" immediately after digging to prevent dehydration. Dig, pack, transport, and handle plants with care to ensure protection. Repair irrigation system components damaged during planting operations; at the Contractor's expense. Refer to the irrigation specifications, irrigation plan and irrigation details.

Protect existing utilities, paving, and other facilities from damage caused by landscape operations.

PROJECT CONDITIONS

Protect existing utilities, paving, and other facilities from damage caused by landscape operations.

A complete list of plants, including a schedule of sizes, quantities, and other requirements are shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.

The irrigation system will be installed prior to planting. Locate, protect and maintain the irrigation system during planting operations. Repair irrigation system components damaged during planting operations; at the Contractor's expense. Refer to the irrigation specifications, irrigation plan and irrigation details.

Do not begin landscape accessory work before completion of final grading or surfacing.

WARRANTY

Warrant plant material to remain alive, be healthy and in a vigorous condition for a period of 1 year after completion and final acceptance of entire project.

Replace, in accordance with the drawings and specifications, all plants that are dead or, are in an unhealthy, or unsightly condition, and have lost their natural shape due to dead branches, or other causes due to the Contractor's negligence. The cost of such replacement(s) is at the Contractor's expense. Warrant all replacement plants for 1 year after installation.

Warranty shall not include damage, loss of trees, plants, or ground covers caused by fires, floods, freezing rains, lightning storms, winds over 15 miles per hour, winter kill caused by extreme cold, severe winter conditions not typical of planting area, and/or acts of vandalism or negligence on a part of the Owner.

Remove and immediately replace all plants, found to be unsatisfactory during the initial planting installation.

Maintain and protect plant material, lawns, and irrigation until final acceptance is made.

ACCEPTANCE

Inspection of planted areas will be made by the Owner's representative.

1. Planted areas will be accepted provided all requirements, including maintenance, have been complied with and plant materials are alive and in a healthy, vigorous condition.

Upon acceptance, the Contractor shall commence the specified plant maintenance.

CODES, PERMITS AND FEES

Obtain any necessary permits for this Section of Work and pay any fees required for permits.

The entire installation shall fully comply with all local and state laws and ordinances, and with all established codes applicable thereto; also as depicted on the landscape and irrigation construction set.

PART 2 - PRODUCTS

MATERIALS

Plants: Provide typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sun scald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All plants shall have a fully developed form without voids and open spaces. Plants held on storage will be rejected if they show signs of growth during the storage period.

1. Balled and plants wrapped with burlap, to have firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls, or signs of circling roots are not acceptable.
2. Container- grown stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
 - a. No plants shall be loose in the container.
 - b. Container stock shall not be pot bound.
3. Plants planted in rows shall be matched in form.
4. Plants larger than those specified in the plant list may be used when acceptable to the Landscape Architect.
 - a. If the use of larger plants is acceptable, increase the spread of roots or root ball in proportion to the size of the plant.
5. The height of the trees, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated in the plant list.
6. No pruning wounds shall be present with a diameter of more than 1" and such wounds must show vigorous bark on all edges.
7. Evergreen trees shall be branched to the ground or as specified in plant list.
8. Shrubs and small plants shall meet the requirements for spread and height indicated in the plant list.
 - a. The measurements for height shall be taken from the ground level to the height of the top of the plant and not the longest branch.
 - b. Single stemmed or thin plants will not be accepted.
 - c. Side branches shall be generous, well-twigged, and the plant as a whole well-bushied to the ground.
 - d. Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.

ACCESSORIES

Topsoil: Shall be Fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well-drained arable site, reasonably free from clay lumps, coarse sands, stones, roots, sticks, and other foreign materials, with acidity range of between pH 6.0 and 6.8.

Note: All planting areas shall be cleaned of construction debris (i.e. Concrete, rubble, stones, building material, etc) prior to adding and spreading of the top soil.

1. *Sod Areas:* Spread a minimum 4" layer of top soil and rake smooth.
2. *Planting bed areas:* Spread a minimum 4" layer of top soil and rake smooth.

3. *Landscape Islands/Medians:* Fracture/loosen existing subgrade to a minimum 24" depth. Remove and replace any subgrade unsuitable for planting. Once subgrade is clean of debris and loosened, add topsoil to a minimum berm 6"-8" height above island cutting.
4. *Annual/Perennial bed areas:* Add a minimum of 4" organic matter and till to a minimum 12" depth.

Mulch: Type selected dependent on region and availability; see landscape plans for type of mulch to be used. Hold mulch 4" from tree trunks and shrub stems.

1. Hardwood: 6 month old well rotted double shredded native hardwood bark mulch not larger than 4" in length and ½" in width, free of wood chips and sawdust. Install minimum depth of 3".
2. Pine Straw: Pine straw to be fresh harvest, free of debris, bright in color. Bales to be wired and tightly bound. Needles to be dry. Install minimum depth of 3".
3. River Rock: (color) light gray to buff to dark brown, washed river rock, 1" – 3" in size. Install in shrub beds to an even depth of 3". Weed control barrier to be installed under all rock mulch areas. Use caution during installation not to damage plant material.
4. Mini Nuggets: Install to a minimum depth of 2"-3" at all locations of annual and perennial beds. Lift the stems and leaves of the annuals and carefully spread the mulch to avoid injuring the plants. Gently brush the mulch off the plants.

Guying/Staking:

1. Arborite: Green (or white) staking and guying material to be flat, woven, polypropylene material, ½" wide 900 lb. break strength. Arborite shall be fastened to stakes in a manner which permits tree movement and supports the tree.
2. Remove Guying/Staking after one year from planting.

Tree Wrap: Tree wraps should be used on young, newly planted thin-barked trees (Cherry, Crabapple, Honey Locust, Linden, Maple, Mountain Ash, Plum) that are most susceptible to sun scald/Sunburn. Standard waterproofed tree wrapping paper, 2-1/2" wide, made of 2 layers of crepe Draft paper weighing not less than 30 lbs. per ream, cemented together with asphalt. Wrap the tree in the fall and leave the wrap in place throughout the winter and early spring. Tree wraps are temporary and no longer needed once trees develop corky bark.

PART 3 – EXECUTION

INSPECTION

Prior to beginning work, the Landscape Contractor shall inspect the subgrade, general site conditions, vertical elevations, utility locations, irrigation, approve top soil provided by the General Contractor and observe the site conditions under which the work is to be done. Notify the General Contractor of any unsatisfactory conditions, and work shall not proceed until such conditions have been corrected and are acceptable to the Landscape Contractor.

PREPARATION

Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.

Locate plants as indicated on the plans or as approved in the field after staking by the Landscape Contractor. If obstructions are encountered that are not shown on the drawings, do not proceed with planting operations until alternate plant locations have been selected and approved by the Landscape Architect; spacing of plant material shall be as shown on the landscape plan.

Excavate circular plant pits with vertical sides, except for plants specifically indicated to be planted in beds. Provide shrub pits at least 12" greater than the diameter of the root system and 24" greater for trees. Depth of pit shall accommodate the root system. Provide undisturbed sub grade to hold root ball at nursery grade as shown on the drawings.

INSTALLATION

Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure. Set plant material 2" – 3" above the finish grade. No filling will be permitted around trunks or stems. Backfill the pit with topsoil mix and excavated material. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water.

After balled and wrapped in burlap plants are set, muddle planting soil mixture around bases of balls and fill all voids.

1. Remove all burlap, ropes, and wires from the top 1/3 of the root ball

Space ground cover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 24" of the trunks of trees and shrubs within planting bed and to within 18" of edge of bed.

Mulching:

1. Mulch tree and shrub planting pits and shrub beds with required mulching material (see landscape plan for mulch type); depth of mulch as noted above. **Hold mulch back 4" away from tree trunks and shrub stems.** Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.

Decorative Stone: (where indicated on landscape plan)

1. Install weed control barrier over sub-grade prior to installing stone. Lap 6" on all sides.
2. Place stone without damaging weed barrier.
3. Arrange stones for best appearance and to cover all weed barrier fabric.

Wrapping, guying, staking:

1. Inspect trees for injury to trunks, evidence of insect infestation, and improper pruning before wrapping.
2. Wrapping:
 - a. Wrap trunks of all young newly planted trees known to have thin bark. Wrap spirally from bottom to top with specified tree wrap and secure in place.
 - b. Overlap ½ the width of the tree wrap strip and cover the trunk from the ground to the height of the second branch.
 - c. Secure tree wrap in place with twine wound spirally downward in the opposite direction, tied around the tree in at least 3 places in addition to the top and bottom.
 - d. Wrap the trees in the fall and leave the wrap in place throughout the winter and early spring.
3. Tree wraps are temporary and no longer needed once the trees develop corky bark.
3. Staking/Guying:
 - a. Stake/guy all trees immediately after lawn sodding operations and prior to acceptance.
 - b. Stake deciduous trees 2" caliper and less. Stake evergreen trees under 7"-0" tall.
 1. Stakes are placed in line with prevailing wind direction and driven into undisturbed soil.
 2. Ties are attached to the tree, usually at the lowest branch.
 - c. Guy deciduous trees over 2" caliper. Guy evergreen trees 7"-0" tall and over.
 1. Guy wires to be attached to three stakes driven into undisturbed soil, with one stake placed in the direction of the prevailing wind.
 2. Ties are attached to the tree as high as practical.
 3. The axis of the stake should be at 90 degree angle to the axis on the pull of the guy wire.
4. Remove all guying and staking after one year from planting.

Pruning:

1. Prune deciduous trees and evergreens only to remove broken or damaged branches.

WORKMANSHIP

During landscape/irrigation installation operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures. All work shall be performed in a safe manner to the operators, the occupants and any pedestrians.

Upon completion of installation operations, all excess materials, equipment, debris and waste material shall be cleaned up and removed from the site; unless provisions have been granted by the owner to use on-site trash receptacles. Sweep parking and walks clean of dirt and debris. Remove all plant tags and other debris from lawns and planting areas.

Any damage to the landscape, the structure, or the irrigation system caused by the landscape contractor shall be repaired by the landscape contractor without charge to the owner.

MAINTENANCE

Contractor shall provide maintenance until work has been accepted by the Owner's Representative.

Maintenance shall include mowing, fertilizing, mulching, pruning, cultivation, weeding, watering, and application of appropriate insecticides and fungicides necessary to maintain plants and lawns free of insects and disease.

1. Re-set settled plants to proper grade and position. Restore planting saucer and adjacent material and remove dead material.
2. repair guy wires and stakes as required. Remove all stakes and guy wires after 1 year.
3. Correct defective work as soon as possible after deficiencies become apparent and weather and season permit.
4. Water trees, plants and ground cover beds within the first 24 hours of initial planting, and not less than twice per week until final acceptance.

LANDSCAPE MAINTENANCE SPECIFICATIONS

The Contractor shall provide as a separate bid, maintenance for a period of **1 year** after final acceptance of the project landscaping. The Contractor must be able to provide continued maintenance if requested by the Owner or provide the name of a reputable landscape contractor who can provide maintenance.

STANDARDS

All landscape maintenance services shall be performed by trained personnel using current, acceptable horticultural practices.

All work shall be performed in a manner that maintains the original intent of the landscape design.

All chemical applications shall be performed in accordance with current county, state and federal laws, using EPA registered materials and methods of application. These applications shall be performed under the supervision of a Licensed Certified applicator.

APPROVALS

All work performed in addition to that which is outlined in the contract shall only be done upon written approval by the Owner's Representative (General Manager of the restaurant).

All seasonal color selections shall be approved by the General Manager prior to ordering and installation.

SOIL TESTING

The maintenance contractor shall perform soil tests as needed to identify imbalances or deficiencies causing plant material decline. The owner shall be notified of the recommendation for approval, and the necessary corrections made at an additional cost to the owner.

Acceptable Soil Test Results

	Landscape Trees and Shrubs	Turf
pH Range	5.0-7.0	6.0-7.0
Organic Matter	>1.5%	>2.5%
Magnesium (Mg)	100-lbs./acre	100-lbs./acre
Phosphorus (P2O5)	150-lbs./acre	150-lbs./acre
Potassium (K2O)	120-lbs./acre	120-lbs./acre
Saluble salts/Conductivity	N/lt to exceed 900ppm/1.2 mmhos/cm in soil; not to exceed 1400 ppm/2.5 mmhos/cm in high organic mix	N/lt to exceed 750ppm/0.75 mmhos/cm in soil; not to exceed 2000 ppm/2.0 mmhos/cm in high organic mix

For unusual soil conditions, the following optional tests are recommended with levels not to exceed:

Boron	3 pounds per acre
Manganese	60 pounds per acre
Potassium (K2O)	450 pounds per acre
Sodium	20 pounds per acre

WORKMANSHIP

During landscape maintenance operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures. All work shall be performed in a safe manner to the operators, the occupants and any pedestrians.

Upon completion of maintenance operations, all debris and waste material shall be cleaned up and removed from the site; unless provisions have been granted by the owner to use on-site trash receptacles.

Any damage to the landscape, the structure, or the irrigation system caused by the maintenance contractor, shall be repaired by the maintenance contractor without charge to the owner.

TURF

GENERAL CLEAN UP

Prior to mowing, all trash, sticks, and other unwanted debris shall be removed from lawns, plant beds, and paved areas.

MOWING

Warm season grasses (i.e. Bermuda grass) shall be maintained at a height of 1" to 2" during the growing season.

Cool season grasses, including blue grass, tall fescue, perennial ryegrass, etc., shall be maintained at a height of 2" to 3" in spring and fall. From June through September, mowing height shall be maintained at no less than 3".

The mowing operation includes trimming around all obstacles, raising excessive grass clippings and removing debris from walks, curbs, and parking areas. Caution: Weed eaters should NOT be used around trees because of potential damage to the bark.

EDGING

Edging of all sidewalks, curbs and other paved areas shall be performed once every other mowing. Debris from the edging operations shall be removed and the areas swept clean. Caution shall be used to avoid flying debris.

LIMING & FERTILIZING

A soil test shall be taken to determine whether an application of limestone in late fall is necessary. If limestone is required, the landscape contractor shall specify the rate, obtain approval from the owner and apply it at an additional cost. A unit price for liming of turf shall accompany the bid based on a rate of 50 pounds per 1000 square feet.

Fertilizer shall be applied in areas based on the existing turf species.

LAWN WEED CONTROL: HERBICIDES

Selection and proper use of herbicides shall be the landscape contractor's responsibility. All chemical applications shall be performed under the supervision of a Licensed Certified Applicator. **Read the label prior to applying any chemical.**

INSECT & DISEASE CONTROL FOR TURF

The contractor shall be responsible for monitoring the site conditions on each visit to determine if any insect pest or disease problems exist. The contractor shall identify the insect pest or disease, as well as the host plant, and then consult the most current edition of the Cooperative Extension Service's "Commercial Insecticide Recommendation for Turf" for control. The licensed applicator shall be familiar with the label provided for the selected product prior to application.

Inspection and treatment to control insect pests shall be included in the contract price.

TREES, SHRUBS, & GROUND COVER

PRUNING

All ornamental trees, shrubs and ground cover shall be pruned when appropriate to remove dead or damaged branches, develop the natural shape. **Do not shear trees or shrubs.** If previous maintenance practice has been to shear and ball, then a natural shape will be restored gradually.

Pruning Guidelines:

1. Prune those that flower before the end of June immediately after flowering. Flower buds develop during the previous growing season. Fall, winter or spring pruning would reduce the spring flowering display.
2. Prune those that flower in summer or autumn in winter or spring before new growth begins, since these plants develop flowers on new growth.
3. Delay pruning plants grown for ornamental fruits, such as cotoneasters, pyracanthas and viburnums.
4. Hollies and other evergreens may be pruned during winter in order to use their branches for seasonal decoration. However, severe pruning of evergreens should be done in early spring only.
5. Broadleaf evergreen shrubs shall be hand-pruned to maintain their natural appearance after the new growth hardens off.
6. Hedges or shrubs that require shearing to maintain a formal appearance shall be pruned as required. Dead wood shall be removed from sheared plants before the first shearing of the season.
7. Conifers shall be pruned, if required, according to their genus.
 - A. Yews, junipers, hemlocks, arbovitae, and false-cypress may be pruned after new growth has hardened off in late summer. If severe pruning is necessary, it must be done in early spring.
 - B. Firs and spruces may be lightly pruned in late summer, fall, or winter after completing growth. Leave side buds. Never cut central leader.
 - C. Pines may be lightly pruned in early June by reducing candles.
8. Groundcover shall be edged and pruned as needed to contain it within its borders.

9. Thinning: Remove branches and water sprouts by cutting them back to their point of origin on parent stems. This method results in a more open plant, without stimulating excessive growth. Thinning is used on crepe myrtles, iliacs, viburnums, smoke bush, etc.
10. Renewal pruning: Remove oldest branches of shrub at ground, leaving the younger, more vigorous branches. Also remove weak stems. On overgrown plants, this method may be best done over a three-year period. Renewal pruning may be used on abelia, forsythia, deutzia, spiraea, etc.

Plants overhanging passageways and parking areas and damaged plants shall be pruned as needed.

Shade trees that cannot be adequately pruned from the ground shall not be included in the Maintenance Contract. A certified arborist under a separate contract shall perform this type of work.

SPRING CLEANUP

Plant beds shall receive a general cleanup before fertilizing and mulching. Cleanup includes removing debris and trash from beds and cutting back herbaceous perennials left standing through winter, e.g. ornamental grasses, Sedum Autumn Joy.

FERTILIZING

For trees, the rate of fertilization depends on the tree species, tree vigor, area available for fertilization, and growth stage of the tree. Mature specimens benefit from fertilization every 3 to 4 years; younger trees shall be fertilized more often during rapid growth stages.

The current recommendation is based on the rate of 1000 square feet of area under the tree to be fertilized. For deciduous trees, 2 to 6 pounds of Nitrogen per 1000 square feet; for narrow-leaf evergreens, 1 to 4 pounds of Nitrogen per 1000 square feet; for broadleaf evergreens, 1 to 3 pounds of Nitrogen per 1000 square feet.

Shrubs and groundcover shall be top-dressed with compost 1" deep, or fertilized once in March with 10-6-4 analysis fertilizer at the rate of 3 pounds per 100 square feet of bed area. Ericaceous material shall be fertilized with an ericaceous fertilizer at the manufacturer's recommendation rate. If plants are growing poorly, a soil sample should be taken.

MULCHING

Annually, all tree and shrub beds will be prepared and mulched, to a minimum depth of 3" with quality mulch to match existing. Bed preparation shall include removing all weeds, cleaning up said bed, edging and cultivating decayed mulch into the soil. Debris from edging is to be removed from beds where applicable. If deemed necessary, a pre-emergent herbicide may be applied to the soil to inhibit the growth of future weeds.

Organically maintained gardens shall not receive any pre-emergent herbicides. Mulch in excess of 4" will be removed from the bed areas. SPECIAL CARE shall be taken in the mulching operation not to over mulch or cover the base of trees and shrubs. This can be detrimental to the health of the plants.

WEEDING

All beds shall be weeded on a continuous basis throughout the growing season to maintain a neat appearance at all times.

Pre-emergent (soil-applied) and post-emergent (foliar-applied) herbicides shall be used where and when applicable and in accordance with the product's label.

INSECT & DISEASE CONTROL: TREES, SHRUBS & GROUNDCOVER

The maintenance contractor shall be responsible for monitoring the landscape site on a regular basis. The monitoring frequency shall be monthly except for growing season, which will be every other week. Trained personnel shall monitor for plant damaging insect activity, plant pathogenic diseases and potential cultural problems in the landscape. The pest or cultural problem will be identified under the supervision of the contractor.

For plant damaging insects and mites identified in the landscape, the contractor shall consult and follow the recommendations of the most current edition of the state Cooperative Service publication on insect control on landscape plant material.

Plant pathogenic disease problems identified by the contractor that can be resolved by pruning or physical removal of damaged plant parts will be performed as part of the contract. For an additional charge, plant pathogenic diseases that can be resolved through properly timed applications of fungicides shall be made when the owner authorizes it.

If the contractor notes an especially insect-or disease-prone plant species in the landscape, he/she will suggest replacement with a more pest-resistant cultivar or species that is consistent with the intent of the landscape design.

NOTE: For identification of plant-damaging insects and mites, a reference textbook that can be used is *Insects that feed on Trees and Shrubs* by Johnson and Lyon, Comstock Publishing Associates. For plant pathogenic diseases, two references are suggested: *Scouting and Controlling Woody Ornamental Diseases in Landscapes and Nurseries*, authorized by Gary Moorman, published by Penn State College of Agricultural Sciences, and *Diseases of Trees and Shrubs* by Sinclair and Lyon, published by Comstock Publishing Press.

TRASH REMOVAL

The maintenance contractor shall remove trash from all shrub and groundcover beds with each visit.

LEAF REMOVAL

All fallen leaves shall be removed from the site in November and once in December. If requested by the owner, the maintenance contractor, at an additional cost to the owner shall perform supplemental leaf removals.

WINTER CLEAN-UP

The project shall receive a general clean-up once during each of the winter months, i.e., January, February, and March.

Clean-up includes:

- Cleaning curbs and parking areas
- Removing all trash and unwanted debris
- Turning mulch where necessary
- Inspection of grounds

SEASONAL COLOR: PERENNIALS, ANNUALS, AND BULBS

The installation of perennials, annuals, and bulbs, unless specified herein, shall be reviewed with the owner, and, if accepted, installed and billed to the owner.

SEASONAL COLOR MAINTENANCE

Perennialization of Bulbs:

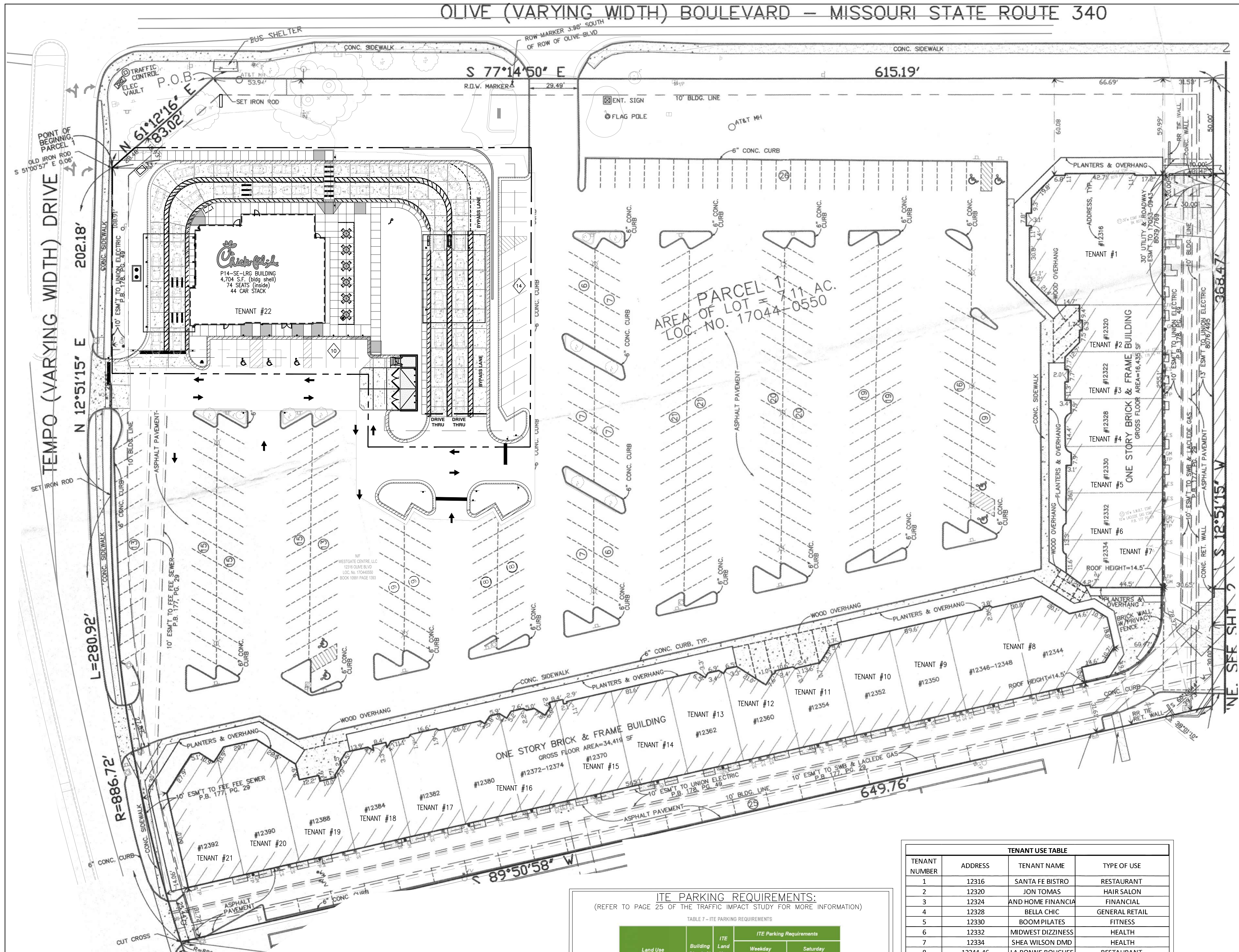
1. After flowering, cut off spent flower heads.
2. Allow leaves of daffodils and hyacinths to remain for six weeks after flowers have faded. Cut off at base.
3. Allow leaves of other bulbs to yellow naturally and then cut off at base.
4. Apply fertilizer after flowering in spring, possibly again in fall. Apply 10-10-10 at the rate of 2 pounds per 1000 square feet, or top-dress with compost 1" deep. Fall fertilization with a bulb fertilizer or mulching with 1" of compost is optional.

Flower Rotation:

1. Bulbs: Remove the entire plant and bulb after flowers have faded or at the direction of the owner, and install new plants if included in contract.
2. Summer Annuals or Fall Plants:
 - a. Dead heading: Pinch and remove dead flowers on annuals as necessary.
 - b. Fertilizing Summer Annuals: Fertilize using one or two methods: Apply a slow-release fertilizer in May following manufacturer's recommendations. A booster such as 10-10-10 may be necessary in late summer. Or, apply liquid fertilizations of 20-20-20 water-soluble fertilizers, not to exceed 2 pounds of 20-20-20 per 100 gallons of water, monthly; or mulch with compost 1" deep.
 - c. Removal: If fall plants are to be installed, summer annuals shall be left in the ground until the first killing frost and then removed, unless otherwise directed by the owner.

Perennials:

1. After initial installation, if a time-released fertilizer has been incorporated during plant installation, no more fertilizer need be applied the first growing season.
2. The following year:
 - a. Fertilize perennials with a slow-release fertilizer or any 50% organic fertilizer, or mulch perennials with compost 1" deep.
 - b. Cut all deciduous perennials flush to the ground by March 1, if this was not done the previous fall, to allow new growth to



EXISTING DEVELOPMENT CONDITION:

- 53,488 SQ-FT SHOPPING CENTER AND 7,800 SQ-FT RESTAURANT
- TOTAL ADA STALLS: 10
- TOTAL REGULAR STALLS: 409
- TOTAL STALL COUNT: 419

PROPOSED DEVELOPMENT CONDITION:

- 53,488 SQ-FT SHOPPING CENTER AND 5,000 SQ-FT FAST FOOD RESTAURANT
- TOTAL ADA STALLS: 9
- TOTAL REGULAR STALLS: 361
- TOTAL STALL COUNT: 370

STALL COUNT CHANGES:

- NET CHANGE - REGULAR STALLS: -48
- NET CHANGE - ADA STALLS: -1
- NET CHANGE - TOTAL STALLS: -49

ITE PARKING REQUIREMENTS:

(REFER TO PAGE 25 OF THE TRAFFIC IMPACT STUDY FOR MORE INFORMATION)

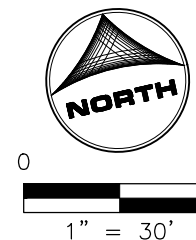
TABLE 7 - ITE PARKING REQUIREMENTS

Land Use	Building Size (s.f.)	ITE Land Use Code	ITE Parking Requirements			
			Weekday		Saturday	
			Mid-Day	Evening	Mid-Day	Evening
Chick-fil-A	5,000	904	43	27	46	32
Shopping Center	48,500	820	172	148	174	150
Lot Total	53,500	-	215	175	220	182

ACCORDING TO ITE PARKING RATES, THE HIGHEST PARKING DEMAND IS PROJECTED TO BE 220 VEHICLES DURING THE SATURDAY MID-DAY PEAK PERIOD. COMPARED TO THE 343 AVAILABLE PARKING SPACES, THE OVERALL PARKING UTILIZATION IS PREDICTED TO BE 64%. THE ANALYSIS INDICATES THAT THE PARKING SUPPLY IS EXPECTED TO BE ADEQUATE FOR THE DEVELOPMENT PLANS BASED ON ITS CODE. THE ADDITIONAL 36% OF UNUTILIZED PARKING SUPPLY WILL LIKELY AID IN TRAFFIC CIRCULATION, AS AVAILABLE PARKING SPACES REDUCE THE AMOUNT OF TIME VEHICLES MUST SPEND DRIVING THROUGH THE LOT, SEARCHING FOR A PARKING SPACE.

TENANT USE TABLE

TENANT NUMBER	ADDRESS	TENANT NAME	TYPE OF USE
1	12316	SANTA FE BISTRO	RESTAURANT
2	12320	JON TOMAS	HAIR SALON
3	12324	AND HOME FINANCIAL	FINANCIAL
4	12328	BELLA CHIC	GENERAL RETAIL
5	12330	BOOM PILATES	FITNESS
6	12332	MIDWEST DIZZINESS	HEALTH
7	12334	SHEA WILSON DMD	HEALTH
8	12344-46	LA BONNE BOUCHEE	RESTAURANT
9	12350	BIRKENSTOCK & MORRIS	GENERAL RETAIL
10	12352	BELSONO HEARING	HEALTH
11	12354	VACANT	GENERAL RETAIL
12	12360	HYATT JEWELERS	GENERAL RETAIL
13	12362	PEACEFUL GARDEN	HEALTH
14	12364	GLOBAL QUESADILLA	RESTAURANT
15	12370	PROACTIVE CHIRO	HEALTH
16	12372-80	MIDWEST DIZZINESS	HEALTH
17	12382	SM PHYSICAL THERAPY	HEALTH
18	12384	ALLOY TRAINING	FITNESS
19	12388	ICHIBAN	RESTAURANT
20	12390	IMON MATH & READING	EDUCATIONAL
21	12392	MIDWEST EYE	HEALTH
22	12398	CHICK-FIL-A	RESTAURANT



BAR IS ONE INCH ON OFFICIAL DRAWINGS
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY

FOR REFERENCE ONLY



Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998



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CHICK-FIL-A

CREVE COEUR (MO) FSU

12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE
NO. DATE DESCRIPTION

PRELIMINARY

ENGINEER'S PROJECT # 211634

PRINTED FOR PRELIMINARY

DATE 05/24/2022

DRAWN BY: MRJ

CHECKED BY: JFV

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SHEET

OVERALL PARKING

COUNT EXHIBIT

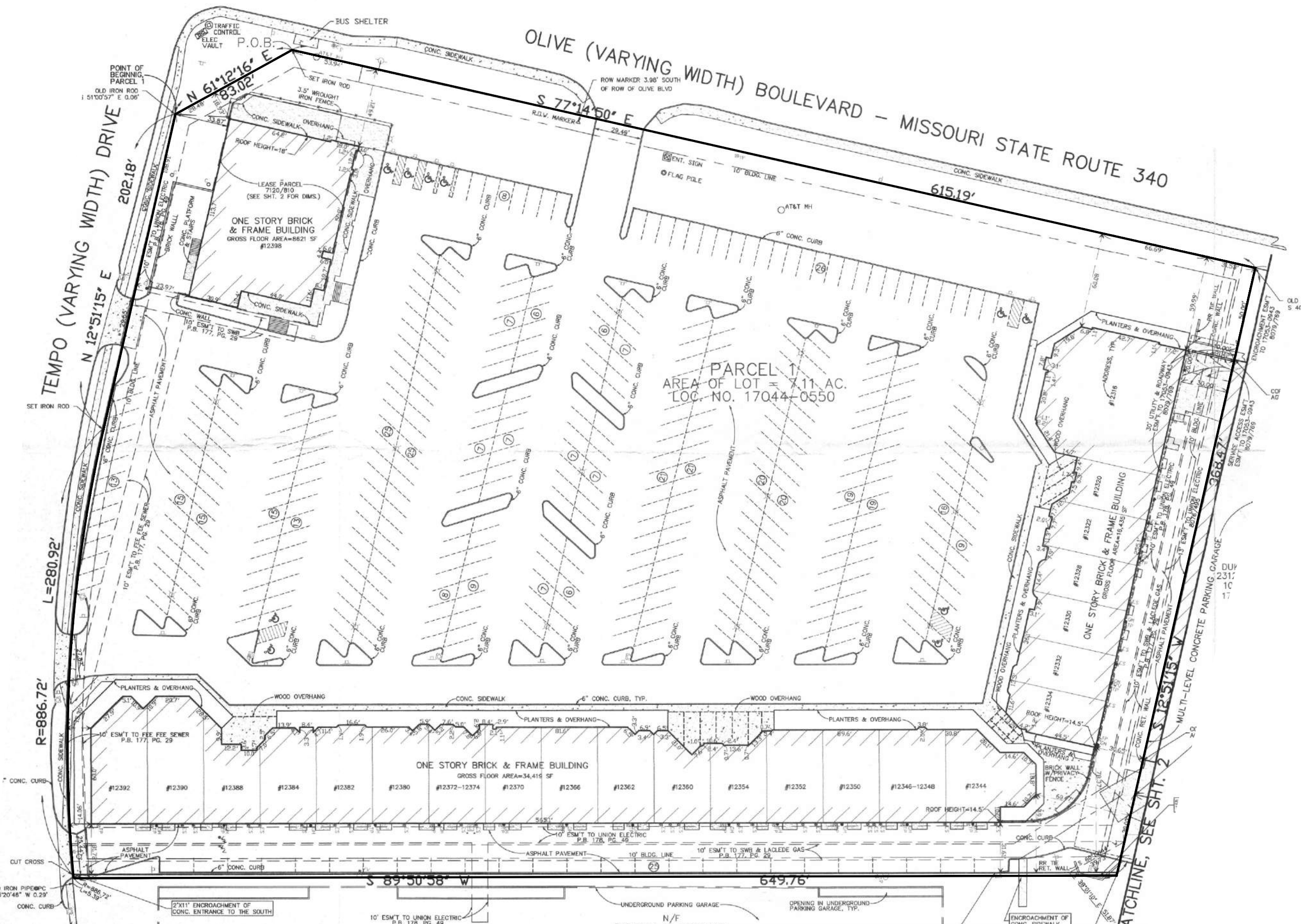
SHEET NUMBER

EX-1

EXISTING CONDITIONS

OVERALL AREA = 309,682± SF = 7.11 AC.
EXISTING IMPERVIOUS = 267,742± SF = 86.46%
EXISTING PERVIOUS = 41,490± SF = 13.54%

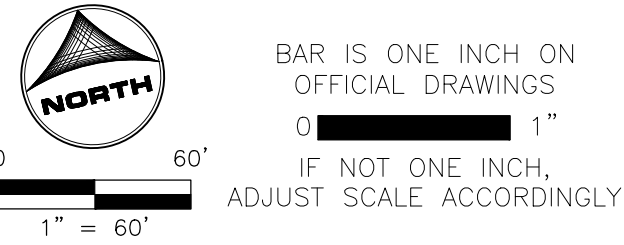
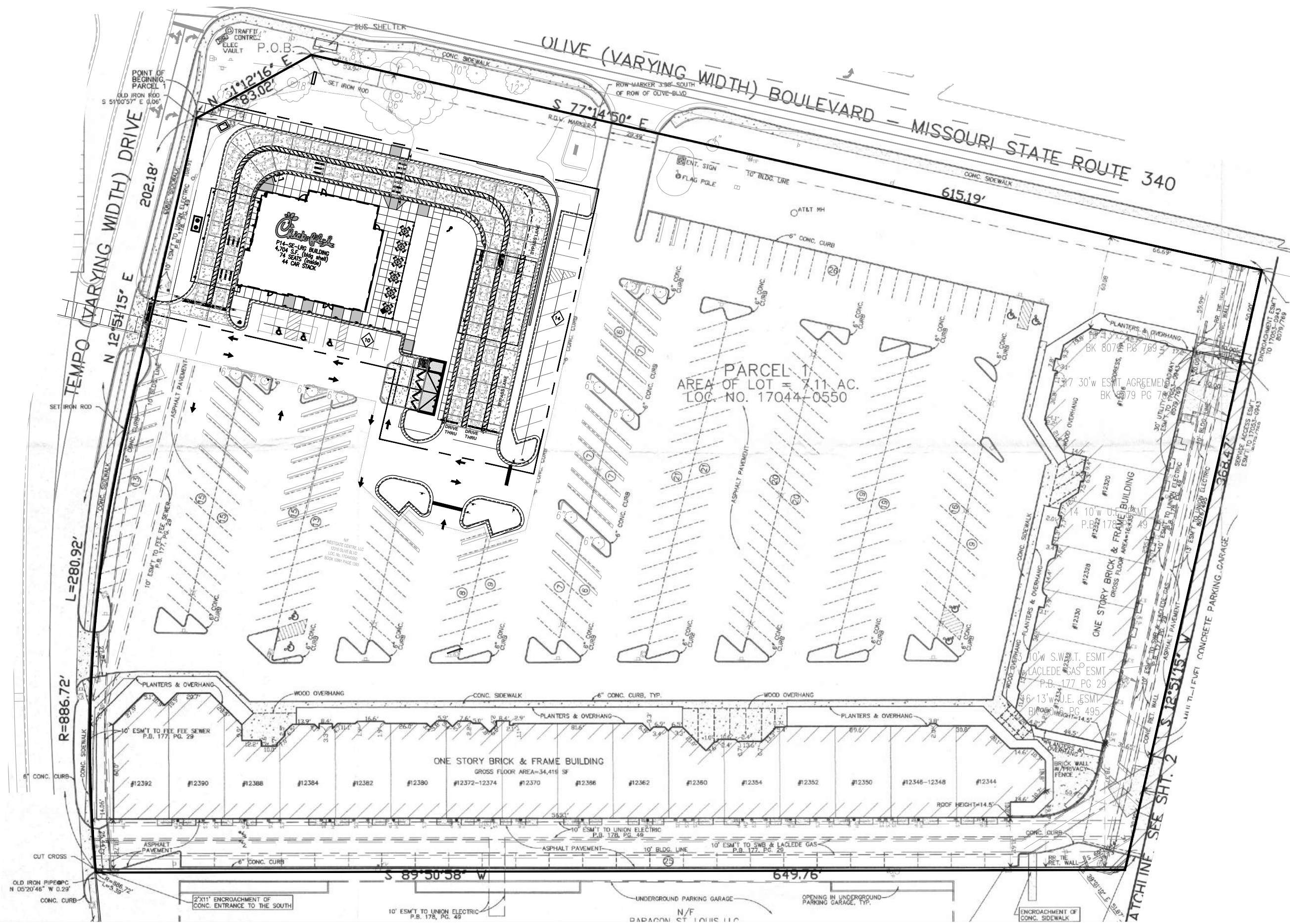
REGULAR PARKING STALLS = 409
ADA PARKING STALLS = 10
TOTAL EXISTING PARKING STALLS = 419



PROPOSED CONDITIONS

OVERALL AREA = 309,682± SF = 7.11 AC.
PROPOSED IMPERVIOUS = 264,017± SF = 85.25%
PROPOSED PERVIOUS = 45,665± SF = 14.75%

REGULAR PARKING STALLS = 361
ADA PARKING STALLS = 9
TOTAL PROPOSED PARKING STALLS = 370



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Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998



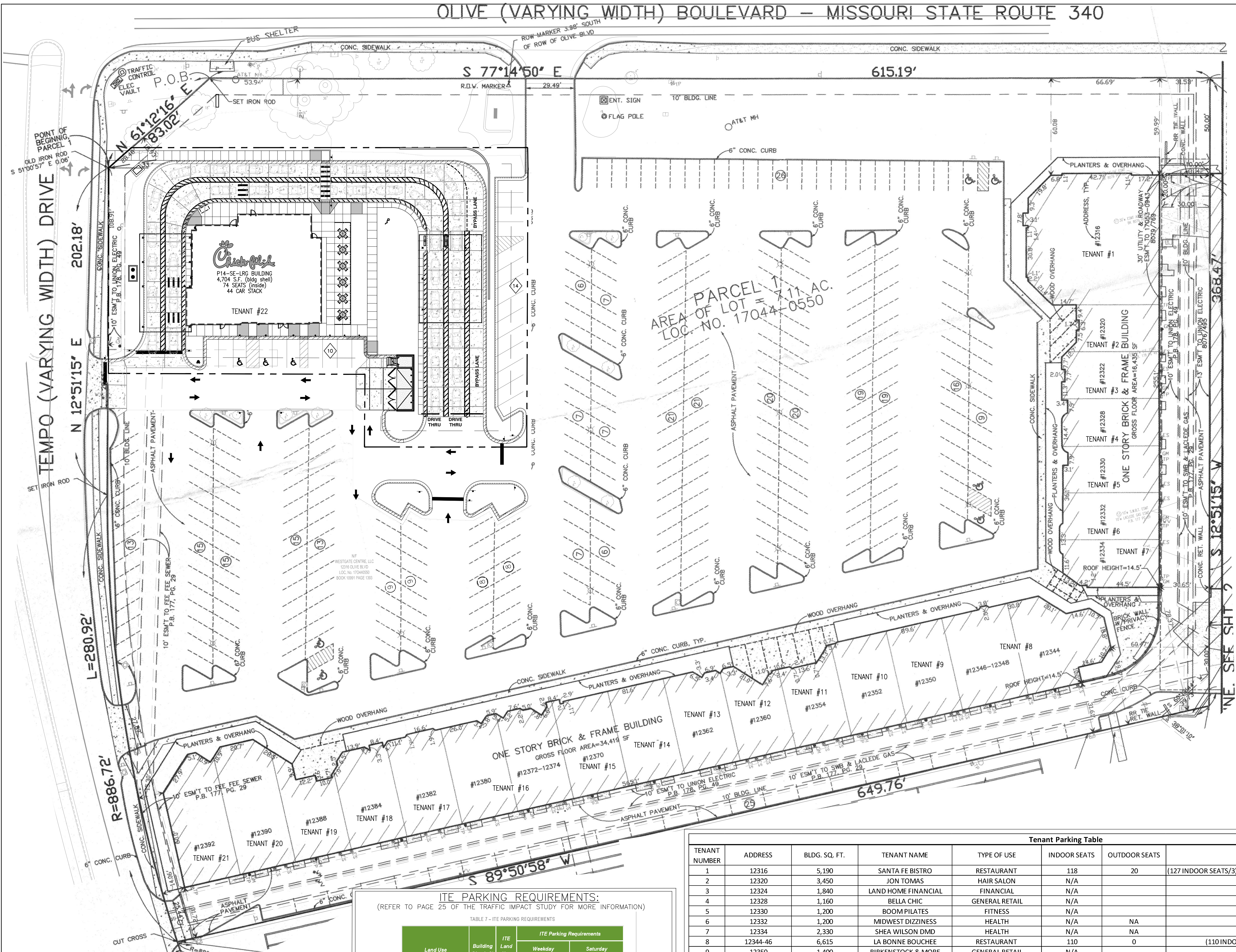
CHICK-FIL-A
CREVE COEUR (MO) FSU
12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE		DESCRIPTION
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SHEET OVERALL EXISTING AND PROPOSED PLAN	
SHEET NUMBER EX-200	



EXISTING DEVELOPMENT CONDITION:

- 53,488 SQ-FT SHOPPING CENTER AND 7,800 SQ-FT RESTAURANT
- TOTAL ADA STALLS: 10
- TOTAL REGULAR STALLS: 409
- TOTAL STALL COUNT: 419

PROPOSED DEVELOPMENT CONDITION:

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STALL COUNT CHANGES:

- NET CHANGE - REGULAR STALLS: -48
- NET CHANGE - ADA STALLS: -1
- NET CHANGE - TOTAL STALLS: -49

ITE PARKING REQUIREMENTS:

(REFER TO PAGE 25 OF THE TRAFFIC IMPACT STUDY FOR MORE INFORMATION)

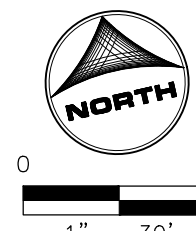
TABLE 7 - ITE PARKING REQUIREMENTS

Land Use	Building Size (s.f.)	ITE Land Use Code	ITE Parking Requirements			
			Weekday		Saturday	
			Mid-Day	Evening	Mid-Day	Evening
Chick-fil-A	5,000	934	43	27	46	32
Shopping Center	48,500	820	172	148	174	150
Lot Total	53,500		215	175	220	182

ACCORDING TO ITE PARKING RATES, THE HIGHEST PARKING DEMAND IS PROJECTED TO BE 220 VEHICLES DURING THE SATURDAY MID-DAY PEAK PERIOD, COMPARED TO THE 370 AVAILABLE PARKING SPACES, THE OVERALL PARKING UTILIZATION IS PREDICTED TO BE 60%. THE ANALYSIS INDICATES THAT THE PARKING SUPPLY IS EXPECTED TO BE ADEQUATE FOR THE DEVELOPMENT PLANS BASED ON ITE CODE. THE ADDITIONAL 40% OF UNUTILIZED PARKING SUPPLY WILL LIKELY AID IN TRAFFIC CIRCULATION, AS AVAILABLE PARKING SPACES REDUCE THE AMOUNT OF TIME VEHICLES MUST SPEND DRIVING THROUGH THE LOT, SEARCHING FOR A PARKING SPACE.

Tenant Parking Table

TENANT NUMBER	ADDRESS	BLDG. SQ. FT.	TENANT NAME	TYPE OF USE	INDOOR SEATS	OUTDOOR SEATS	PARKING FORMULA	PARKING STALLS REQUIRED
1	12316	5,190	SANTA FE BISTRO	RESTAURANT	118	20	(127 INDOOR SEATS/3)+(5,190SF/250)+(20 OUTDOOR SEATS/8) = 65.59	66
2	12320	3,450	JON TOMAS	HAIR SALON	N/A		(3,450SF/1000*4) = 13.8	14
3	12324	1,840	LAND HOME FINANCIAL	FINANCIAL	N/A		(1,840SF/1000*4) = 7.36	7
4	12328	1,160	BELLA CHIC	GENERAL RETAIL	N/A		(1,160SF/1000*4) = 4.64	5
5	12330	1,200	BOOM PILATES	FITNESS	N/A		(1,200SF/150) = 8	8
6	12332	1,200	MIDWEST DIZZINESS	HEALTH	N/A	NA	(1,200SF/1000*4) = 4.8	5
7	12334	2,330	SHEA WILSON DMD	HEALTH	N/A	NA	(2,330SF/1000*4) = 9.32	9
8	12344-46	6,615	LA BONNE BOUCHEE	RESTAURANT	110	0	(110 INDOOR SEATS/3)+(6,615SF/250) = 63.13	63
9	12350	1,400	BIRKENSTOCK & MORE	GENERAL RETAIL	N/A		(1,400SF/1000*4) = 5.6	6
10	12352	1,000	BELSONO HEARING	HEALTH	N/A		(1,000SF/1000*4) = 4	4
11	12354	3,560	VACANT	GENERAL RETAIL	N/A		(3,560SF/1000*4) = 14.24	14
12	12360	1,200	HYATT JEWELERS	GENERAL RETAIL	N/A		(1,200SF/1000*4) = 4.8	5
13	12362	1,200	PEACEFUL GARDEN	HEALTH	N/A		(1,200SF/1000*4) = 4.8	5
14	12364	3,000	GLOBAL QUESADILLA	RESTAURANT	80	0	(80 INDOOR SEATS/3)+(3,000SF/250) = 38.67	39
15	12370	2,100	PROACTIVE CHIRO	HEALTH	N/A		(2,100SF/1000*4) = 8.4	8
16	12372-80	2,100	MIDWEST DIZZINESS	HEALTH	N/A		(2,100SF/1000*4) = 8.4	8
17	12382	2,465	SSM PHYSICAL THERAPY	HEALTH	N/A		(2,465SF/1000*4) = 9.86	10
18	12384	1,600	ALLOY TRAINING	FITNESS	N/A		(1,600SF/150) = 10.67	11
19	12388	1,542	ICHIBAN	RESTAURANT	60	0	(60 INDOOR SEATS/3)+(1,542SF/250) = 26.17	26
20	12390	1,586	KUMON MATH & READING	EDUCATIONAL	N/A		(1,586SF/300) = 5.28	5
21	12392	2,750	MIDWEST EYE	HEALTH	N/A		(2,750SF/1000*4) = 11	11
22	12398	5,000	CHICK-FIL-A	RESTAURANT	74	24	(74 INDOOR SEATS/3)+(4,704SF/250)+(24 OUTDOOR SEATS/8) = 46.48	47
TOTAL REQUIRED STALLS PER USE =								376



BAR IS ONE INCH ON
OFFICIAL DRAWINGS
IF NOT ONE INCH,
ADJUST SCALE ACCORDINGLY

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Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998



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CHICK-FIL-A

CREVE COEUR (MO) FSU

12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

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CHECKED BY: JFV

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SHEET

OVERALL PARKING

COUNT EXHIBIT

SHEET NUMBER

EX-1

November 15, 2022

Via email: jvavrina@hrgreen.com

Mr. Joseph Vavrina
1391 Corporate Drive, Suite 203
McHenry, IL 60050

Re: Chick-fil-A Drive Thru Sound Study
McClure Project: 104275.000

Dear Mr. Vavrina:

McClure has reviewed the site plans, project information and the typical sound pressure levels emitted from the proposed Chick-fil-A drive-thru ordering station and operations. Background sound level data and acoustical models have been assembled using manufacture data to find the estimated acoustical impact a new drive-thru with a speaker system will have on the surrounding area. Based on this information and measured sound levels on the proposed project site, the sound level from the speaker system will be below the Creve Coeur Zoning Ordinance No. 5400 sound control code for both day and night operation and will have minimal impact on the ambient sound levels in this area. The technology within the ordering stations compensates for the ambient sound resulting in sound levels like two people having a conversation in the parking lot.

Background sound levels from traffic noise on Route 340 (Olive Boulevard) are high at this intersection. The average daytime sound level is in the range of 60 to 65 dBA near the ordering stations.

Calculations and Sound Level Measurements

The proposed site plan provided by HR Green® dated 5/24/2022, indicates the approximate distance to the nearest residential property is 400 feet southwest from the ordering stations. The nearest store front in the Westgate Centre is 300 feet. The sound data provided by the order station manufacturer, HME Electronics, includes maximum sound levels as well as sound levels with the Automatic Volume Control (AVC) system activated. There will be two ordering stations, and both will be equipped with the AVC system.

Because of the high ambient sound levels, the worst case is calculated to be 58 dBA at the Cove West Apartment complex. This is based on a two-speaker system with a maximum output of 86.5 dBA near the order stations. The ordering stations will employ AVC and could operate as high as 75 to 80 dBA at the ordering stations when the ambient sound level is between 60 and 65 dBA.

Based on the manufacturer's data the sound level contribution from the order station with the AVC activated is calculated to be 40 dBA at the apartments and 42 dBA at the nearest store front. These sound levels will be far below the current typical ambient sound levels. While the sound levels will typically be somewhere in between 60 and 84 dBA at 1' from the order station, the data and calculations show the ordering stations sound levels will be less than ambient sound levels at this site. Sound maps for this project site with each scenario are provided in **Attachment A**.

The following results are provided:

- 1) Map 1 – Road Noise Only
- 2) Map 2 – Drive-thru Speakers only
- 3) Map 3 – Speaker and Road Noise
- 4) Map 4 – Drive-thru cars and Road Noise
- 5) Map 5 – Drive-thru Speakers plus Cars and Road Noise
- 6) Map 6 – Drive-thru Speaker and Cars – No Background

The Creve Coeur sound code (Ordinance No. 5400) states that the sound level will not exceed 60 dBA at the property line. The sound emitted by the order station is less than 45 dBA at the nearest property line at all times.

Noise Monitoring Data and Results

A SVANTek Model 307 Sound Level Meters (SLM) was used for the sound measurements. The SLMs recorded and stored the following A-weighted quantities for each one-hour increment of the measurement period: (1) energy equivalent sound level [Leq], (2) the maximum sound level [Lmax], (3) the sound level exceeded 10% of the time [L10] and (4) the sound level exceeded 90% of the time [L90]. All measurements were A-weighted per ANSI S1.4 and were designated as decibels (dBA).

Figure 1 is the site map showing the sound level monitor locations.



Figure 1- Ariel view of Site Plan with SLM Locations

The data collected has been plotted into one chart for each location and are shown in **Figure 2** and **3**.

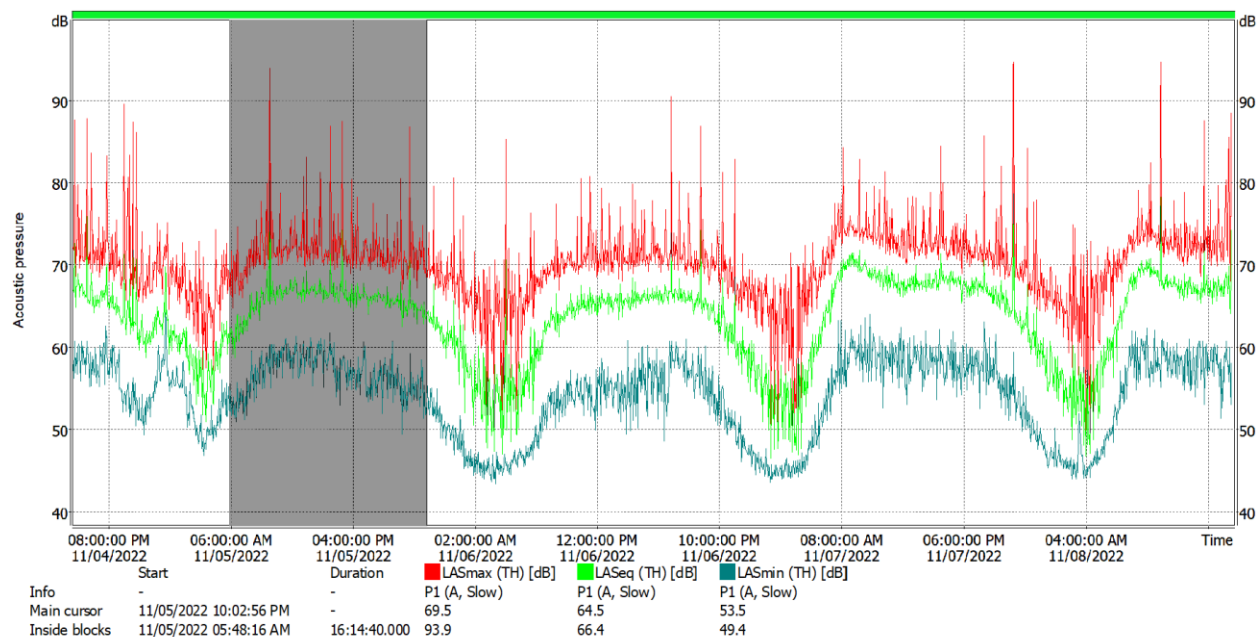


Figure 2 – Loc 1 Sound Data

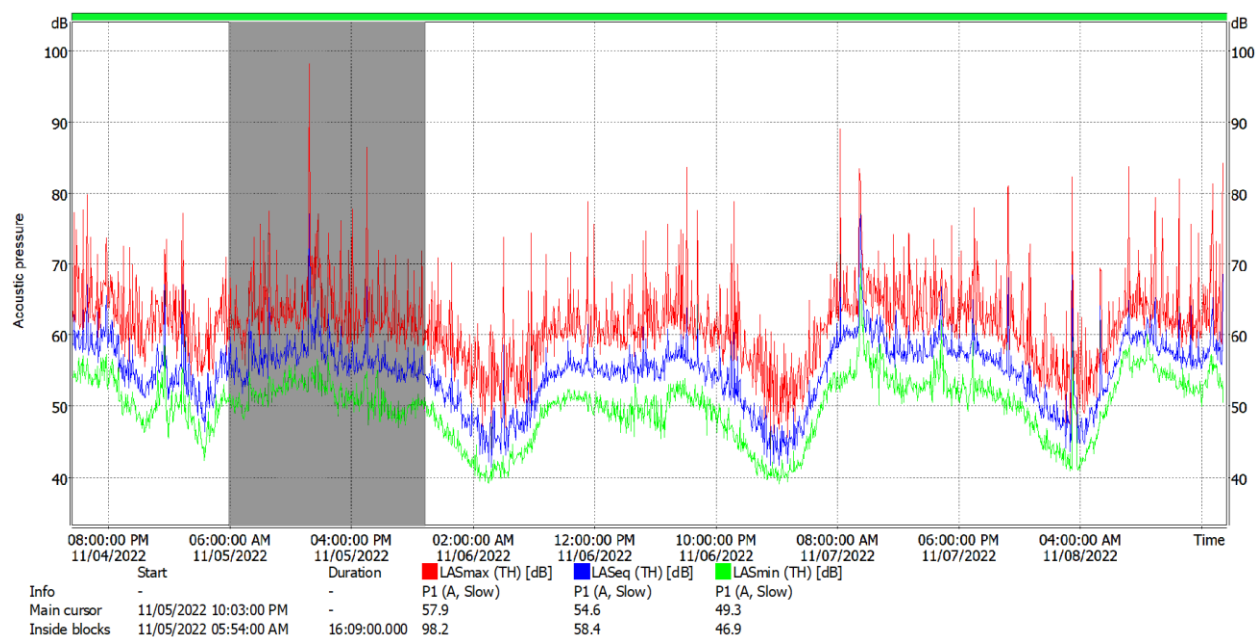


Figure 3 – Loc 2 Sound Data

These charts also summarize the energy equivalent sound levels (Leq) for Saturday November 5th from 6:00 AM to 10:00 PM (gray shaded area). Sound level monitor Location 1 was setup near Olive Boulevard approximately 100 feet northwest of the ordering stations, Location 2 in the center of the proposed site for Chick-fil-A parking lot on the south side of the site away from Olive Boulevard. The monitor was placed approximately 300 feet from the Core West Apartments to the monitor location for three full days (Saturday, Sunday, and Monday).

The monitors measured all sounds, including but not limited to sound from aircraft overflights, the nearby roadways, nature sounds (insects) and rooftop mechanical equipment. However, the majority of the sound is from road noise from Olive Boulevard. This is reflected in part of the noise patterns shown in the data. The sound levels were very consistent over the noise monitoring period.

All the sound in the area of our study is considered background noise. Background noise at the site was determined by monitoring A-weighted sound levels at the site for a period of three days. The average one-hour daytime Leq data was used to establish the current background sound levels for this site. The nominal Leq day-time and night-time background sound level in the area ranged from 65 dBA during the day-time hours and as low as 45 in the late night hours (2am and 5 am).

Conclusions

The background sound level is controlled by traffic sound based on site observations and measured data rather than the ordering stations. From our measurements, the sound data indicated the Automatic Volume Control (AVC) will function as designed since the ordering station level blends in with the traffic and other ambient sounds.

The calculated sound levels at the southwest property line will be at or below 45 dBA without background sound levels. Sound from the ordering stations will be below Creve Coeur sound code and will not have any significant impact on the ambient sound in the area. The technology within the order station compensates for the ambient sound resulting in sound levels similar to two people having a conversation in the parking lot. The property line of the apartments will experience sound levels from the ordering stations to be less than 40 dBA. As a reference, conversational speech levels are typically 55 to 65 dBA.

Recommendations

The sound from the ordering station and drive-thru is less than the Creve Coeur sound code requires and is well below the ambient traffic sound in this area. No further remediation is required.

Please contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary Brown". The signature is fluid and cursive, with the first name "Gary" and last name "Brown" clearly distinguishable.

Gary Brown, ASA, INCE

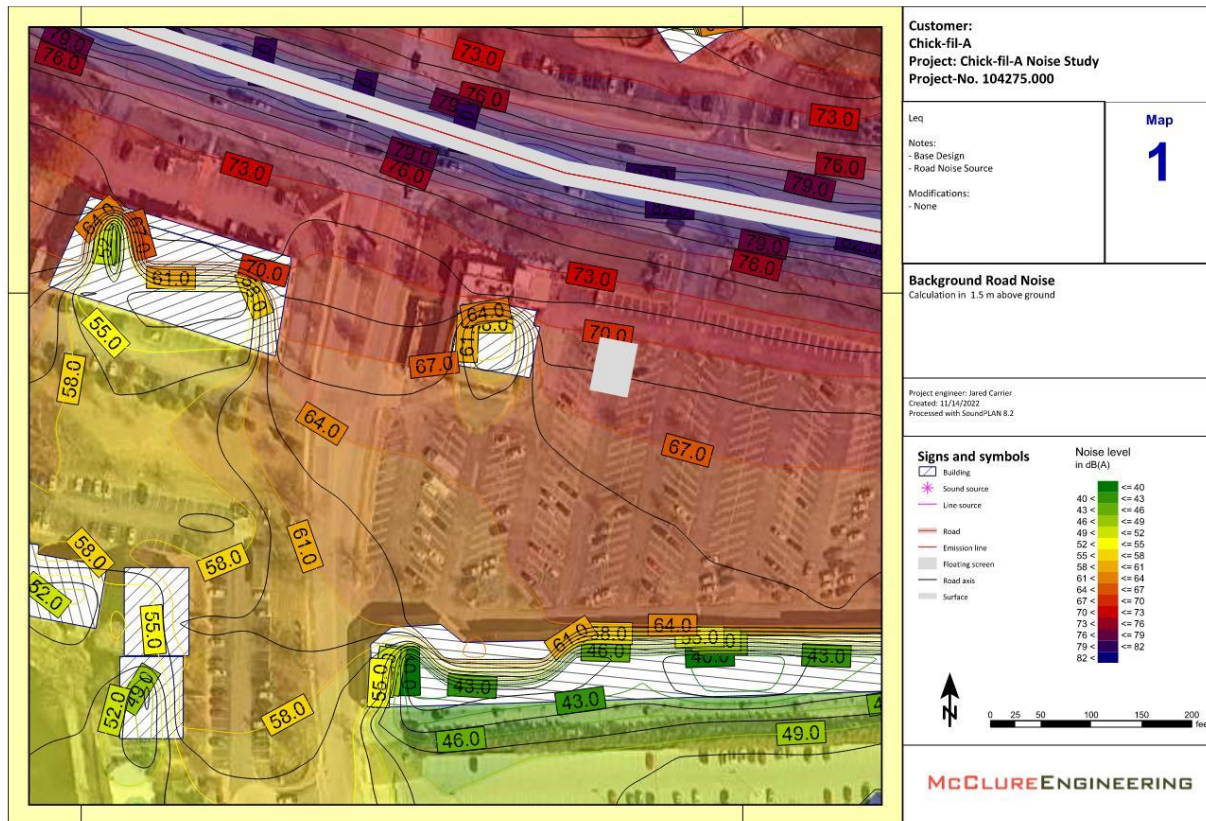
GPB:rmbn

Attachments: Attachment A: Sound Maps 1 thru 6

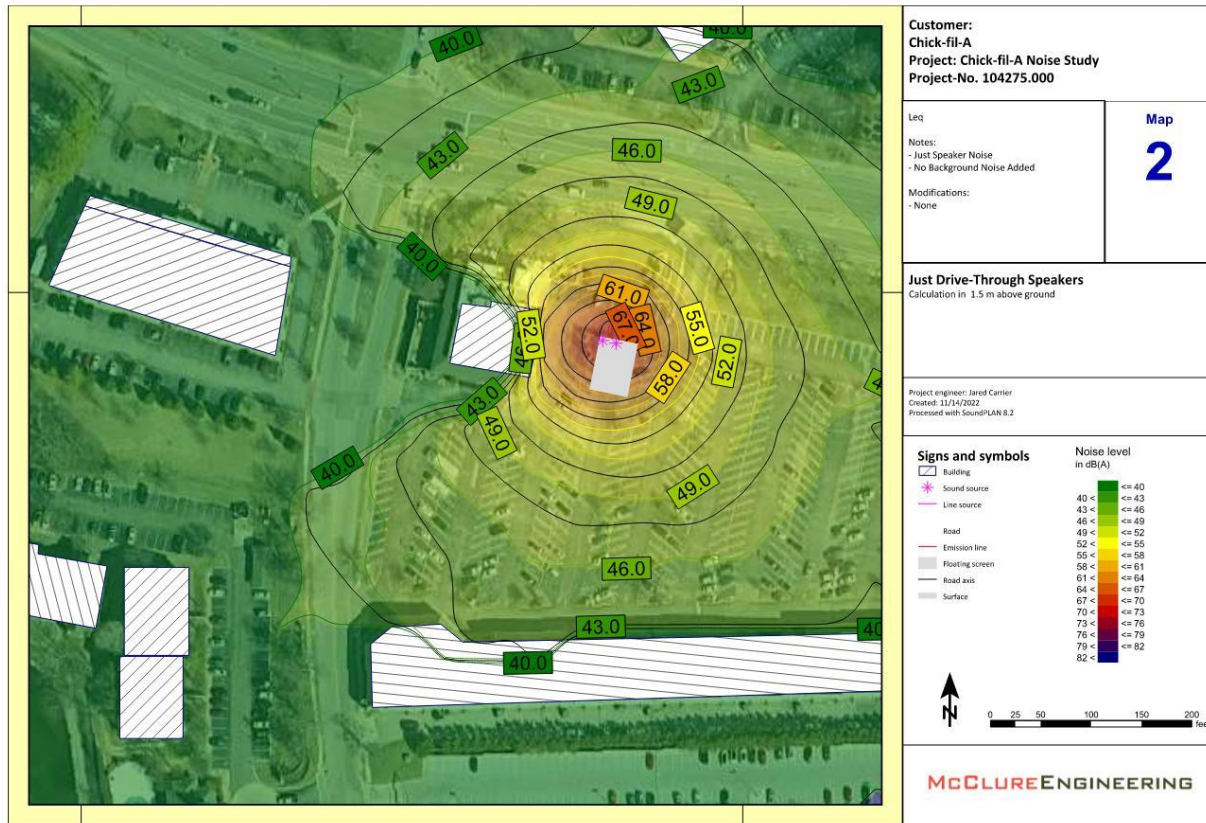
Mr. Joseph Vavrina
November 15, 2022
Page 5 of 11

Attachment A
Sound Maps

Map 1 – Road Noise Only

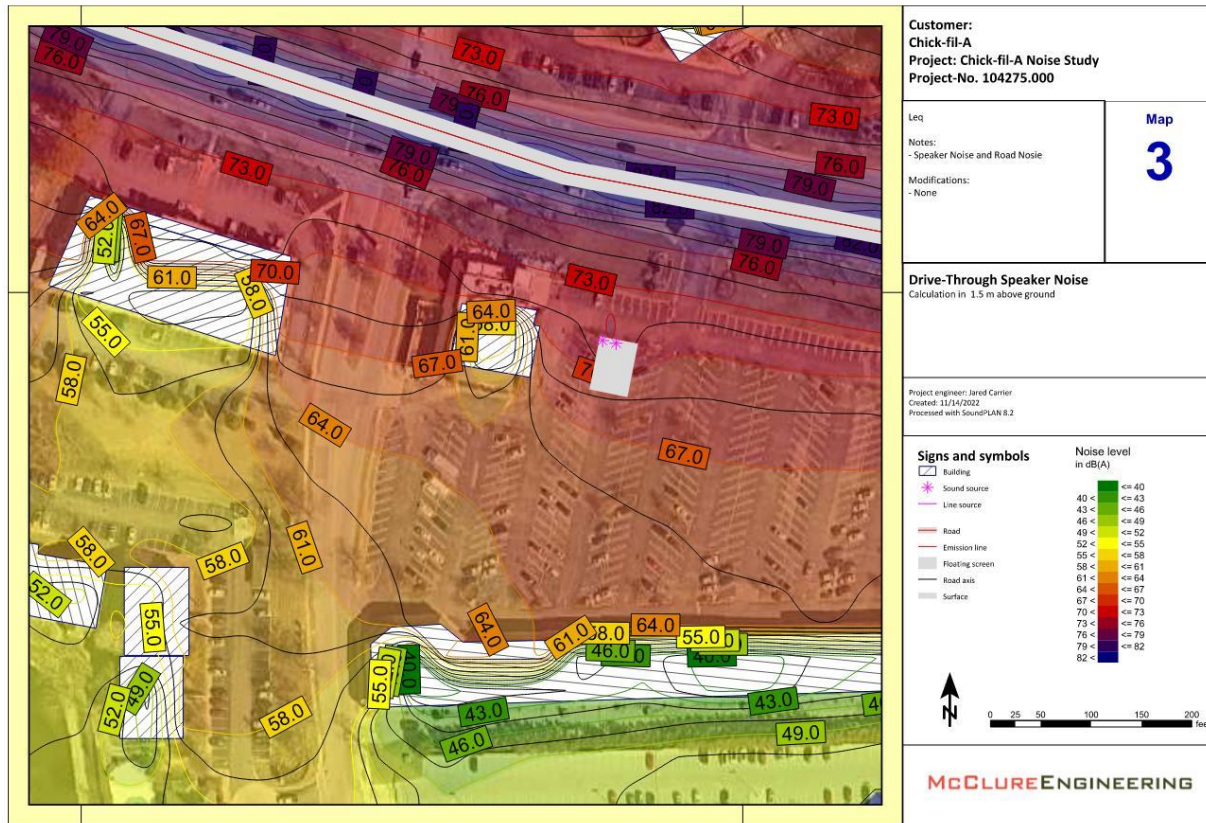


Map 2 – Drive-thru Speakers only

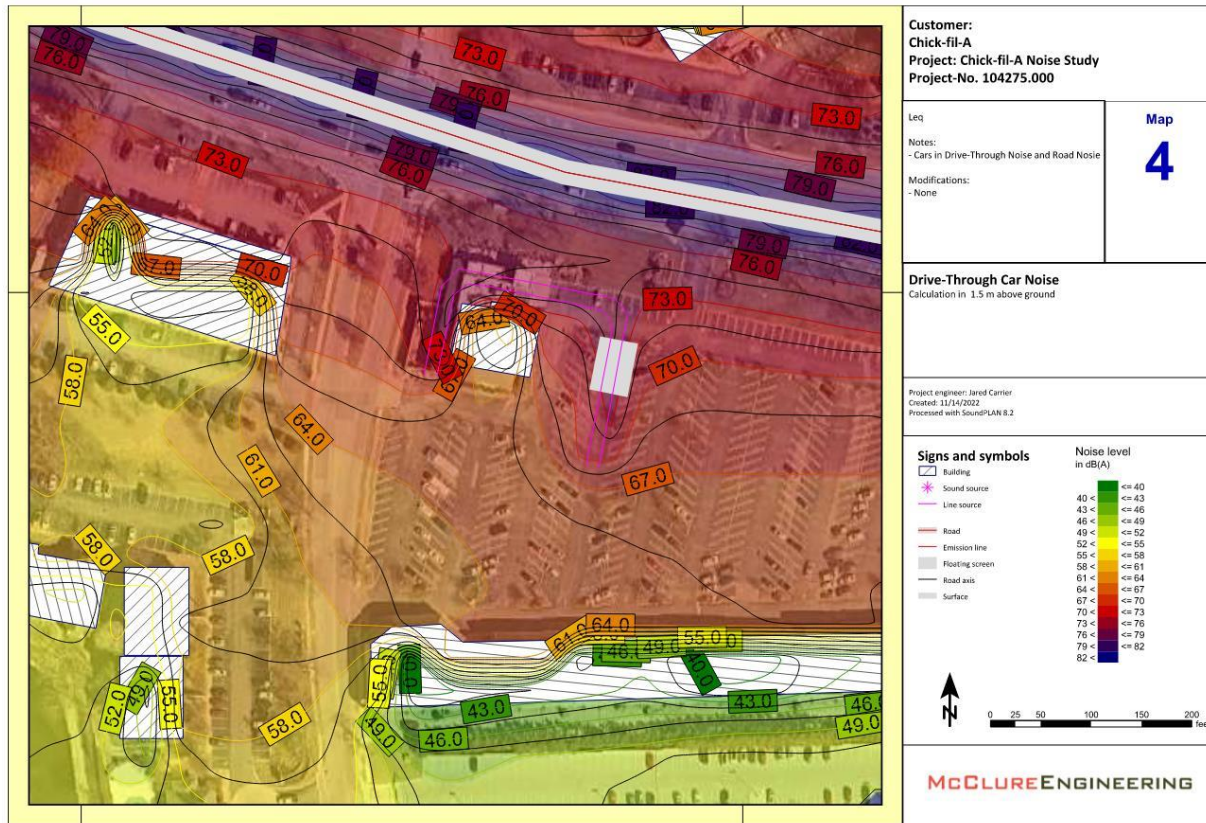


S:\104275.000 Chick-fil-A Noise Study\04 Acoustics\Calculations\Soundplan Model - Chick-fil-A Noise Study\Map 2 - Just Drive-Through Speakers.sps

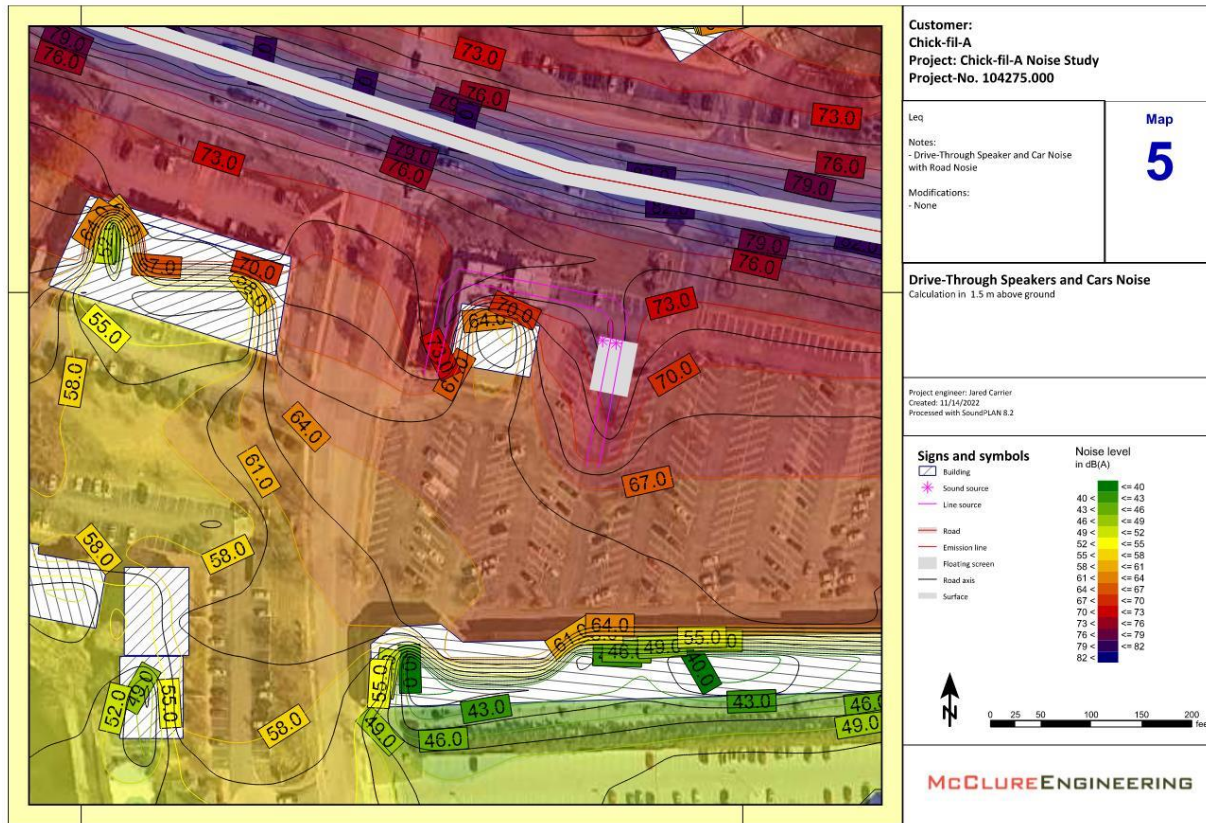
Map 3 – Speaker and Road Noise



Map 4 – Drive-thru cars and Road Noise

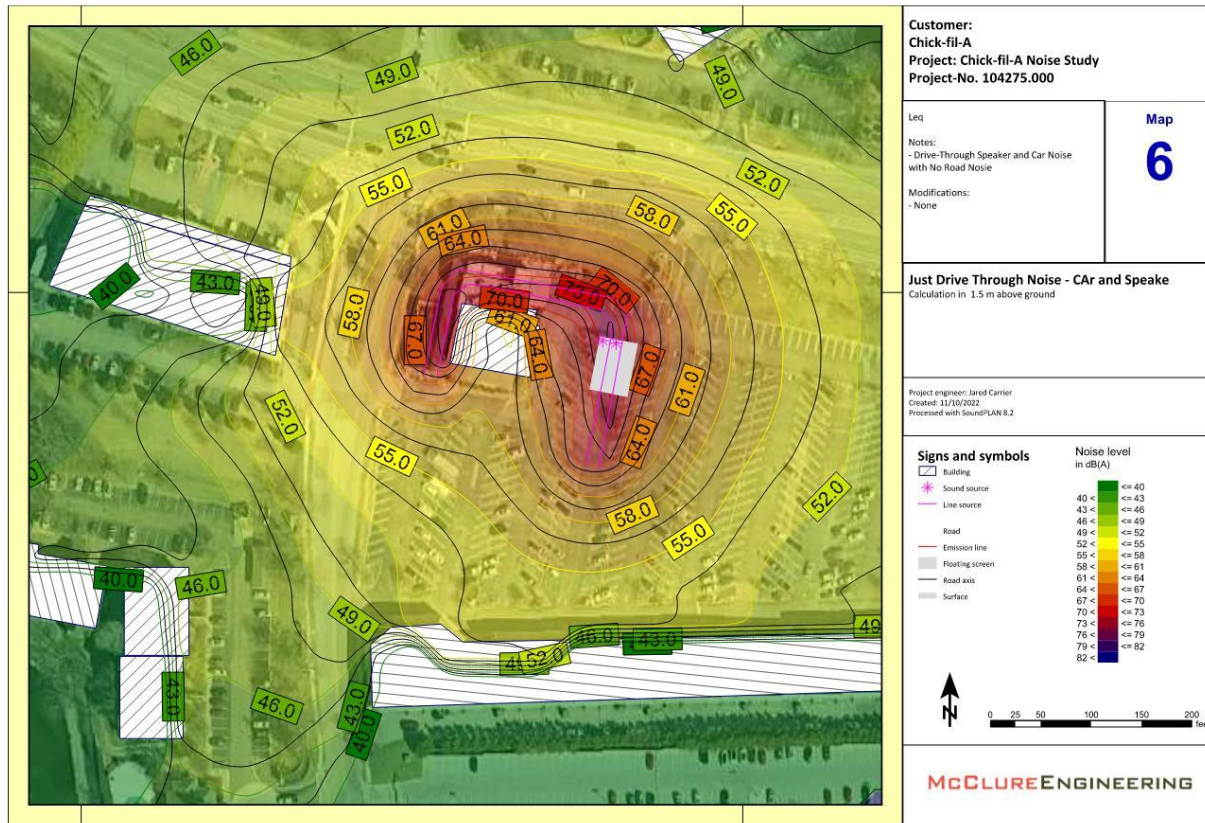


Map 5 – Drive-thru Speakers plus Cars and Road Noise



S:\104275.000 Chick-fil-A Noise Study\04 Acoustics\Calculations\Soundplan Model - Chick-fil-A Noise Study\Map 5 - Drive Through Speaker and Cars and Road Noise.apr

Map 6 – Drive-thru Speaker and Cars – No Background



S:\104275.000 Chick-fil-A Noise Study\04 Acoustics\Calculations\Soundplan Model - Chick-fil-A Noise Study\Map 6 - Just Drive Through Speaker and Cars.sps



▶ 1391 Corporate Drive | Suite 203
McHenry, IL 60050
Main 815.385.1778 + **Fax** 713.965.0044
▶ **HRGREEN.COM**

November 14, 2022

City of Creve Coeur
Bethany L. Moore, City Planner
300 North New Ballas Road
Creve Coeur, MO 63141

RE: Chick-fil-A – 12398 Olive Blvd.
Response to Review Comments – Application #22031 Conditional Use Permit
HR Green Project No.: 211634

Dear Ms. Moore:

Please see below our responses to the comments provided in the letter dated October 20, 2022. Responses to each comment are shown in **bold** following the comment.

Landscape Plan:

1. Please provide the location of all trees, existing and proposed, on the site clearly marked as such including species, size, and condition as is required per Section 405.540(D).
RESPONSE: Existing and proposed plant information further detailed.
2. Please provide additional evergreens as the predominant plant material to screen the service window and drive through lanes.
RESPONSE: Additional Laurel and Juniper placed along service window and drive-through lanes.
3. Please provide landscaped areas with additional plantings adjacent to the building in fulfillment with the requirements of the Conditional Use Permit.
RESPONSE: As discussed foundation plantings have been added on the east side of the building. A mixture of perennials and grasses have been proposed in this area.
4. Please provide any missing street trees to fulfill the requirements of Section 405.540(F)(1), 1 per 30 feet, and clearly mark them on the plan as such.
RESPONSE: Street trees labeled. Note street trees could be added along Tempo south of the access point due to an existing storm sewer pipe that runs under the grass strip.
5. Please provide additional plantings to screen headlights along Tempo frontage.
RESPONSE: Firepower Heavenly Bamboo placed to block headlights coming from drive-through lane.
6. Please provide additional landscaping adjacent to the outdoor dining area to provide a more welcoming environment.
RESPONSE: Additional and diversified plants placed adjacent to the outdoor dining area.

Site Development Plans:

1. Please provide an additional sheet with existing conditions.
RESPONSE: Additional existing conditions sheet added.
2. Please include adjacent roadway details on the site plans.
RESPONSE: Details have been added to the plans depicting the layout of Tempo.

3. Please provide an additional site plan sheet to show the entire shopping center with the proposed improvements.
RESPONSE: Exhibit included showing the inclusion of the proposed development within the overall development.
4. Please provide an existing parking count for the entire center along with a list of tenant spaces and uses. Please also provide a proposed parking count for comparison. Is there a shared parking easement or agreement in place for Chick-fil-A's use? The parking for Chick-fil-A relies on a shared parking arrangement with the rest of the center and parking requirements are considered together.
RESPONSE: Overall parking exhibit included with the submittal that notes the various existing tenant spaces with parking count as well as a proposed parking count for comparison. Per the lease CFA will have shared parking rights with the rest of the center.
5. Per Section 405.730, internal sidewalks need to be a minimum of 6-feet in width.
RESPONSE: Sidewalks widened to 6'.
6. Please provide site coverage calculations, existing and proposed, for the entire site.
RESPONSE: Site coverage exhibit included showing existing coverages as well as proposed coverages post CFA development.
7. Please widen the pedestrian crosswalk to 6 feet minimum through the drive through lanes and provide a change in material for greater visibility.
RESPONSE: Plans revised accordingly.
8. The apron off of Tempo Drive is cracked and needs to be replaced. Please provide a note on the plans.
RESPONSE: Note added to the plans.
9. Please verify the ownership and maintenance of the landscaped median on Tempo Drive.
RESPONSE: We've reached out to ownership and provided the maintenance agreement furnished by the City for review. Ownership responded and noted they believe the agreement is still in force and the medians on Tempo and Cove Creek are to be maintained by the two apartment complexes. Cove West Apartments (Cove Property) is to maintain the Tempo median. Waterfront Crossing (Apartments) is to maintain the Cross Creek median strip. Both apartment complexes are owned by Summerset Partners.

Building Elevations:

1. The elevation facing Olive Boulevard appears from the street as the rear of the building and needs additional articulation and design elements to provide greater interest from the primary street. Please refer to Design Guidelines Chapter 2, C1 and C3.
RESPONSE: CDA Response: The elevation facing Olive Boulevard has been adjusted to accommodate the following design elements:
 - i. Raised parapets creating a tower element
 - ii. Brick detailing at the upper tower band
 - iii. Brick wall to screen the electrical MDP + CT cabinet
 - iv. Addition of spandrel glazing to create more interest from Olive Boulevard

2. The Design Guidelines also recommend that the design of buildings be unique to Creve Coeur and not be designed to have a “corporate” style. Please refer to Design Guidelines Chapter 2, C6.

RESPONSE: The design of the building has been adjusted to be unique to Creve Coeur, while still maintaining overall Chick-fil-A brand identity by implementing the following design elements:

- v. Utilizing brick colors that compliment the existing shopping center design
- vi. Implementing spandrel glazing to provide additional visual interest
- vii. Adding brick canopy wraps to help connect the canopy to the building design
- viii. Raising parapets to create tower elements initiated by the Olive Boulevard elevation
- ix. Unique brick detailing included on the Olive Boulevard elevation to increase visual interest

3. Please provide specific information as to how the design and materials are compatible with the shopping center. Provide information to the specific coordination of the existing shopping center building to the new Chick-fil-A building per Chapter 3, C4 of the Design Guidelines.

RESPONSE: The design of the building has included the following design elements to be consistent with the existing shopping center

- x. The use of complimentary brick colors to enhance the overall design of the shopping center.
- xi. The inclusion of bronze canopies, coping, and storefront which is compatible with what’s currently included within the shopping center.

4. The proposed canopies are not architecturally integrated into the overall design of the building. Please provide elevations as an alternative that do architecturally integrate the canopies for reference per Chapter 3, A2 of the Design Guidelines.

RESPONSE: Chick-fil-A has included column wraps to visually connect the canopy to the main building design.

5. The proposed freestanding screening fence should either be removed or integrated into the overall design of the Olive facing façade.

RESPONSE: Chick-fil-A has revised the screen fence to be a solid CMU wall with brick veneer to match the overall building design.

Additional Information:

1. This item has been tentatively moved to the November 21, 2022 Planning and Zoning Commission meeting agenda or a later date in order to allow time for the applicant to provide additional materials requested and to allow staff time to review said materials.

RESPONSE: So noted.

2. Additional comments will be provided after review of the TIS and comments received from the City’s traffic engineer consultant.



RESPONSE: TIS comments received from the City on November 11th. TIS has been revised accordingly and included with this resubmittal.

3. Please provide a sound study that is specific for this location and based on the proposed layout. Please refer to Section 405.470(14) for requirements.

RESPONSE: Study to be submitted to the City on November 15th for review/approval.

If you have any questions, please contact us.

Sincerely,

HR GREEN, INC.

A handwritten signature in black ink, appearing to read 'Joseph F. Vavrina'.

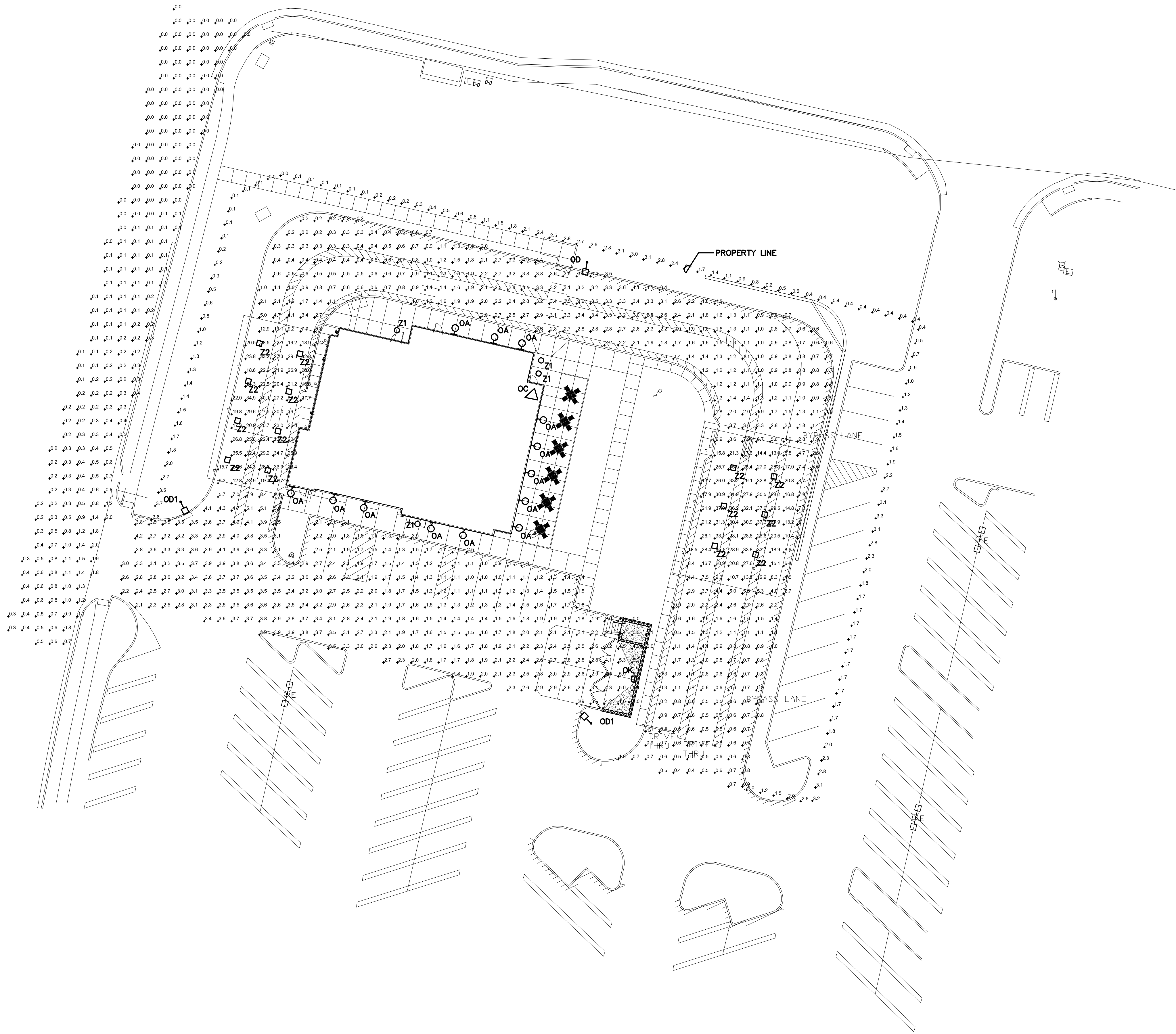
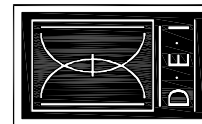
Joseph Vavrina, PE, LEED AP
Senior Project Manager – Land Development

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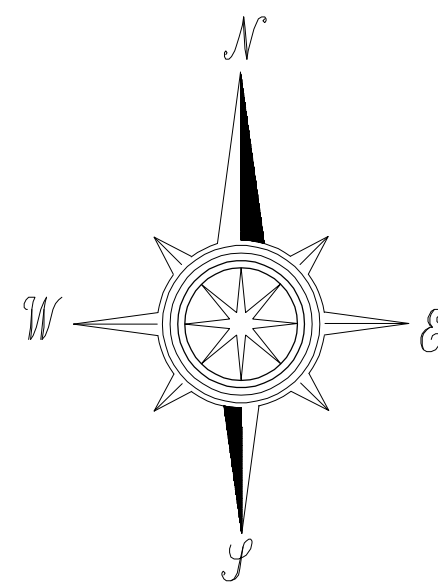
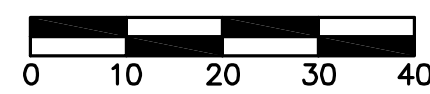


Chick-fil-A
5200 Buffington Road
Atlanta, Georgia 30349-2998

DICKERSON ENGINEERING, INC.
Professional Electrical Engineers
2000 W. 10th Street, Suite 100
Arlington Heights, IL 60004
TEL (847) 966-0280
FAX (847) 966-0284

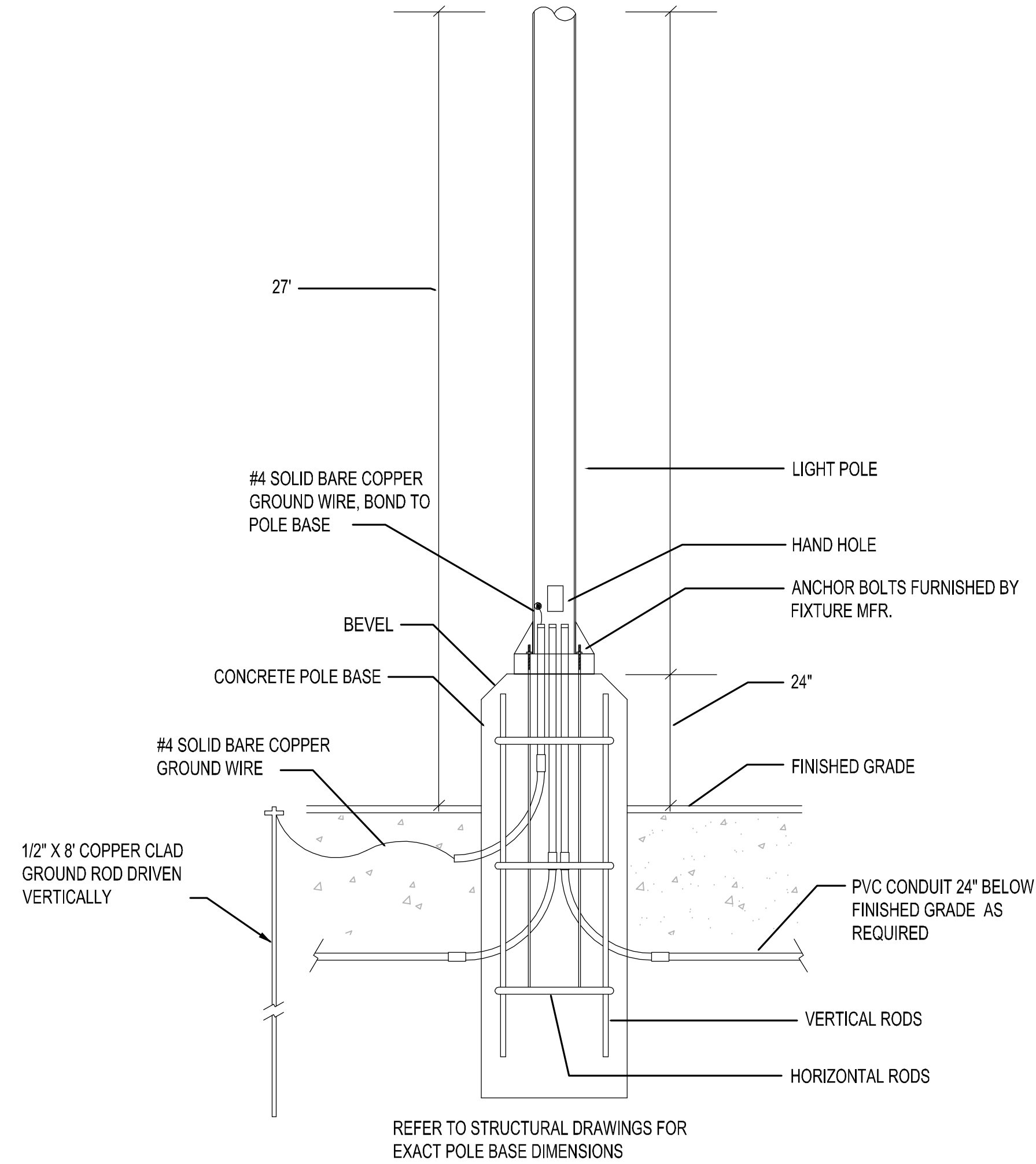


1 PHOTOMETRIC PLAN
SCALE: 1"=20'-0"



PHOTOMETRIC STATISTICS (MAINTAINED) IN PARKING LOT	
(NOT INCLUDING UNDER CANOPY LIGHTING)	
AVERAGE	2.6 FC
MAX	4.8 FC
MIN	1.3 FC

FIXTURE	HEIGHT (UNLESS NOTED OTHERWISE)	LIGHT LOSS FACTOR	COLOR	LIGHT FIXTURE SPECIFICATION	POLE	COMMENTS
OC	ON BUILDING	.9	4000K	HUBBELL - FLI-42L-95-4K7-N-U-K-DB		
OD	24'	.9	4000K	COOPER/LUMARK - PRV-C60-D-UNV-T3-SA-BZ	KW INDUSTRIES - SSP22-4.0-7-BRZ-DM10-BC (SINGLE LUMINAIRE)	
OD1	24'	.9	4000K	COOPER/LUMARK - PRV-C60-D-UNV-T4-SA-BZ	KW INDUSTRIES - SSP22-4.0-7-BRZ-DM10-BC (SINGLE LUMINAIRE)	
OA	8'	.9	3000K	PROGRESS LIGHTING - P5675-31 WITH TOP COVER LENS		
OK	8'	.9	3000K	HUBBELL - LNC-5LU-3K-3-1		
Z1	10'	.9	3000K	PROVIDED WITH CANOPY		
Z2	9.5'	.5	3000K	LSI - CRUS-SC-LED-LW30-UE-WHT		



2 TYPICAL POLE BASE DETAIL
NOT TO SCALE

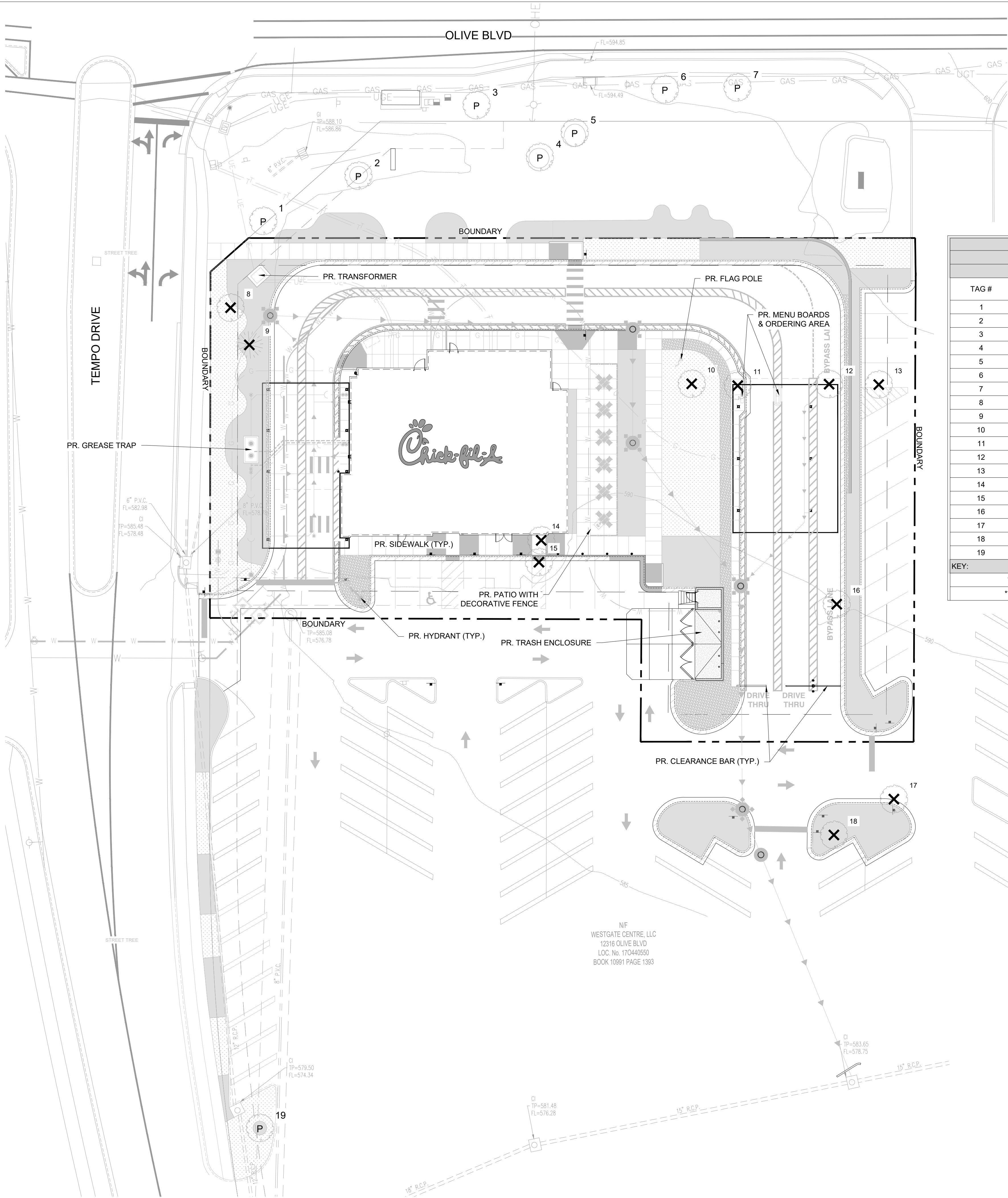
CHICK-FIL-A
CREVE COEUR FSU
12398 Olive Blvd
Creve Coeur, MO 63141

FSR# 05161

REVISION SCHEDULE		
NO.	DATE	DESCRIPTION

ARCHITECT'S PROJECT #	#
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SHEET	

SHEET NUMBER



CHICK FIL A - CREVE COEUR, MO					
11/7/2022					
TREE SURVEY					
TAG #	DBH (INCHES)	SPECIES	CONDITION**	ACTION	REASON
1	15.0	QUERCUS PHELOW / WILLOW OAK	A	PRESERVE	-
2	18.0	QUERCUS PHELOW / WILLOW OAK	A	PRESERVE	-
3	8.0	GLEDITSIA TRIACANTHOS / HONEY LOCUST	A	PRESERVE	-
4	36.0	ROBINIA PSEUDOACACIA / BLACK LOCUST	A	PRESERVE	-
5	36.0	ROBINIA PSEUDOACACIA / BLACK LOCUST	A	PRESERVE	-
6	10.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	PRESERVE	-
7	12.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	PRESERVE	-
8	15.0	QUERCUS PHELOW / WILLOW OAK	A	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
9	24.0	PINUS SYLVESTRIS / SCOTCH PINE	C	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
10	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
11	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	IN FUTURE PAVMENT
12	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	IN FUTURE PAVMENT
13	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	B	REMOVE	IN FUTURE PAVMENT
14	6.0	PHOTINIA GLABRA / JAPANESE PHOTINIA	A	REMOVE	IN FUTURE PAVMENT
15	6.0	PHOTINIA GLABRA / JAPANESE PHOTINIA	A	REMOVE	IN FUTURE PAVMENT
16	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	REMOVE	IN FUTURE PAVMENT
17	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	REMOVE	IN FUTURE PAVMENT
18	6.0	CRATAEGUS CRUS-GALLI / COCKSPUR HAWTHORN	A	REMOVE	DISTURBANCE IN CRITICAL ROOT ZONE
19	6.0	QUERCUS PHELOW / WILLOW OAK	A	PRESERVE	-
KEY:					
* AGE: S - Semi-Mature (young trees over 5m high) M - Mature (approximately 40-50 years old) O - Over-Mature (die-back of branches, dead wood, etc.)					
** CONDITION: A - Good B - Fair C - Poor D - Dead					

TREE SURVEY

TREE PROTECTION KEY

P

EXIST. TREE TO BE PRESERVED

X

EXIST. TREE TO BE REMOVED

TRUNK PROTECTIVE FENCING

CRITICAL ROOT ZONE

TOTAL QUANTITIES (IN VICINITY OF DISTURBANCE AND PROPOSED IMPROVEMENTS)

EXIST. TREES TO BE PRESERVED

8

EXIST. TREES TO BE REMOVED

11

TOTAL EXISTING TREES TAGGED

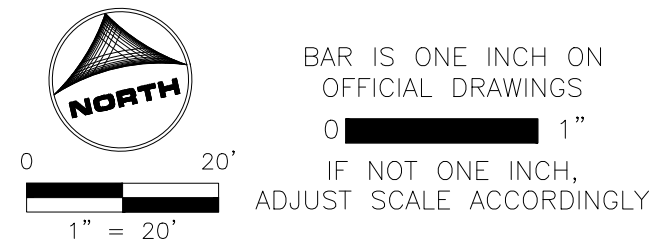
19

GENERAL NOTES

1. THE INTENT IS TO KEEP THE EXISTING TREES TO BE PRESERVED IN TACT THROUGHOUT THE DURATION OF CONSTRUCTION ON-SITE. IF THE TREES ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR REPLACING PER THE MUNICIPALITY'S ORDINANCE.

2. CONTRACTOR IS RESPONSIBLE FOR THE HAUL-OFF OF ALL TREES AND OTHER VEGETATION TO BE REMOVED.

3. THE PRESERVATION OF EACH EXISTING, HEALTHY SHADE TREE THAT IS SIX INCHES OR MORE WILL BE CONSIDERED THE EQUIVALENT OF PLANTING TWO SHADE TREES IN MEETING THE REQUIREMENTS OF THE ORDINANCE REQUIREMENTS.



PRELIMINARY
NOT FOR CONSTRUCTION



Chick-fil-A

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998



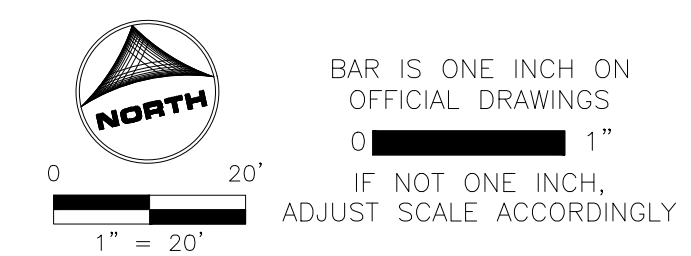
CHICK-FIL-A
CREVE COEUR (MO) FSU
12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE		DESCRIPTION
NO.	DATE	

PRELIMINARY

ENGINEER'S PROJECT #	211634
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CHECKED BY: JFR	
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SHEET TREE PRESERVATION PLAN	
SHEET NUMBER	L-100



1. BASE MAP INFORMATION IS ACCURATE AS OF THE DATE PRINTED ON THIS PACKAGE.
2. THE LANDSCAPE PLANS CONTAINED HEREIN ILLUSTRATE APPROXIMATE LOCATIONS OF ALL SITE CONDITIONS. REFER TO SURVEY, ARCHITECTURAL, CIVIL ENGINEERING, STRUCTURAL, ELECTRICAL, IRRIGATION AND ALL OTHER DRAWINGS, IF AVAILABLE, FOR ADDITIONAL DETAILED INFORMATION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BECOMING AWARE OF AND FIELD VERIFYING ALL RELATED EXISTING AND PROPOSED CONDITIONS, UTILITIES, PIPES AND STRUCTURES, ETC. PRIOR TO BIDDING AND CONSTRUCTION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR CONTACTING #####, THE COUNTY PUBLIC WORKS DEPARTMENT, THE MUNICIPALITY AND ANY OTHER PUBLIC OR PRIVATE AGENCIES NECESSARY FOR UTILITY LOCATION PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF APPARENT CONFLICTS WITH CONSTRUCTION AND UTILITIES SO THAT ADJUSTMENTS CAN BE PLANNED PRIOR TO INSTALLATION. IF FIELD ADJUSTMENTS ARE NECESSARY DUE TO EXISTING UTILITY LOCATIONS THEY MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY AND ALL COSTS OR OTHER LIABILITIES INCURRED DUE TO DAMAGE OF SAID UTILITIES/STRUCTURES/ETC.
4. THE CONTRACTOR SHALL COMPLY WITH ALL CODES APPLICABLE TO THIS WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH SUBCONTRACTORS AND OTHER CONTRACTORS OF RELATED TRADES, AS REQUIRED, TO ACCOMPLISH THE PLANTING AND RELATED OPERATIONS.
6. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL PLANT MATERIAL WITH THE INSTALLATION OF OTHER IMPROVEMENTS SUCH AS HARDCAPE ELEMENTS AND RELATED STRUCTURES. ANY DAMAGE TO EXISTING IMPROVEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE TO RESTORE ALL AREAS OF THE SITE, OR ADJACENT AREAS, WHERE DISTURBED BY OPERATIONS OF OR RELATED TO THE CONTRACTOR'S WORK.
8. ALL SURFACE DRAINAGE SHALL BE DIVERTED AWAY FROM STRUCTURES AND NOTED SITE FEATURES IN ALL AREAS AT A MINIMUM OF 2% SLOPE OR AS SHOWN ON THE CIVIL ENGINEERING PLANS. ALL AREAS SHALL POSITIVELY DRAIN AND ALL ISLANDS SHALL BE CROWNED 1" IN HEIGHT PER 1' IN ISLAND WIDTH.
9. THE CONTRACTOR SHALL STAKE ALL TREE LOCATIONS AND THE PERIMETER OF SHRUB/PERENNIAL BEDS PRIOR TO INSTALLATION AND CONTACT THE OWNER'S REPRESENTATIVE FOR APPROVAL. FINAL LOCATION AND STAKING OF ALL PLANT MATERIALS SHALL BE ACCEPTED BY THE OWNER'S REPRESENTATIVE IN ADVANCE OF PLANTING.
10. IF CONFLICTS ARISE BETWEEN THE SIZE OF AREAS AND PLANS, THE CONTRACTOR IS REQUIRED TO CONTACT THE OWNER'S REPRESENTATIVE FOR RESOLUTION PRIOR TO INSTALLATION.
11. WHERE PROVIDED, AREA TAKEOFFS AND PLANT QUANTITY ESTIMATES IN THE PLANT LIST ARE FOR INFORMATION ONLY. THE CONTRACTOR IS RESPONSIBLE TO DO THEIR OWN QUANTITY TAKE-OFFS FOR ALL PLANT MATERIALS AND SIZES SHOWN ON PLANS. IN CASE OF ANY DISCREPANCIES, PLANS TAKE PRECEDENCE OVER CALL-OUTS AND/OR THE PLANT LIST(S).
12. PLANTS ARE TO BE TYPICAL IN SHAPE AND SIZE FOR SPECIES. PLANTS PLANTED IN ROWS OR GROUPS SHALL BE MATCHED IN FORM. PLANTS SHALL NOT BE ROOT-BOUND OR LOOSE IN THEIR CONTAINERS. HANDLE ALL PLANTS WITH CARE IN TRANSPORTING, PLANTING AND MAINTENANCE UNTIL INSPECTION AND FINAL ACCEPTANCE. FIELD COLLECTED MATERIAL SHALL NOT BE USED UNLESS APPROVED BY THE OWNER'S REPRESENTATIVE.
13. SHREDDED HARDWOOD MULCH, FERTILIZING, AS SPECIFIED, STAKING, WATERING AND ONE (1) YEAR PLANT WARRANTY FOR INSTALLED PLANT MATERIAL, SHALL BE CONSIDERED INCIDENTAL TO THE PLANT ITEMS.
14. MUSHROOM COMPOST SHALL BE FINELY SCREENED, HOMOGENOUS, DECOMPOSED ORGANIC MATERIAL SUITABLE FOR HORTICULTURAL USE AS AVAILABLE FROM MIDWEST TRADING HORTICULTURAL SUPPLIES, INC. ST. CHARLES, IL 60174 (630) 365-1990 OR APPROVED EQUAL. MIX THOROUGHLY IN PLANT BED BEFORE INSTALLING PLANTS.

1. LANDSCAPE CONTRACTOR TO READ AND UNDERSTAND THE LANDSCAPE SPECIFICATIONS (SHEET L-300) PRIOR TO FINALIZING BIDS. THE LANDSCAPE SPECIFICATIONS SHALL BE ADHERED TO THROUGHOUT THE CONSTRUCTION PROCESS.
2. CONTRACTOR RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.
3. CONTRACTOR RESPONSIBLE FOR PROTECTING EXISTING TREES FROM DAMAGE DURING CONSTRUCTION.
4. ALL PLANTING AREAS SHALL BE CLEANED OF CONSTRUCTION DEBRIS (IE. CONCRETE, ROCK, RUBBLE, BUILDING MATERIALS, ETC.) PRIOR TO ADDING AND SPREADING OF THE TOPSOIL.
5. ALL SHRUBS BEDS (EXISTING AND NEW) TO BE MULCHED WITH A 3 INCH MINIMUM LAYER OF DOUBLE SHREDDED HARDWOOD MULCH.
6. ALL ANNUAL AND PERENNIAL BEDS TO BE TILLED TO A MINIMUM DEPTH OF 12 INCHES AND AMENDED WITH 4 INCHES OF ORGANIC MATERIAL. MULCH PLANTED ANNUAL AND PERENNIAL BEDS WITH 2 INCH DEPTH OF MINI NUGGETS.
7. PLANTING HOLES TO BE DUG A MINIMUM OF TWICE THE WIDTH OF THE SIZE OF THE ROOT BALL OF BOTH SHRUB AND TREE. BACK TO BE A MIX OF 4 PARTS TOPSOIL AND 1 PART ORGANIC SOIL CONDITIONER (IE. NATURE'S HELPER OR PRO MIX). BACKFILL AND TAMP BOTTOM OF HOLE PRIOR TO PLANTING SO TOP OF ROOT BALL DOES NOT SETTLE BELOW SURROUNDING GRADE.
8. EXISTING GRASS IN PROPOSED PLANTING AREAS TO BE KILLED AND REMOVED AND AREA TO BE HAND RAKED TO REMOVE ALL ROCKS AND DEBRIS LARGER THAN 1 INCH IN DIAMETER PRIOR TO PLANTING SHRUBS.
9. ANY EXISTING GRASS DISTURBED DURING CONSTRUCTION TO BE FULLY REMOVED, REGRADED AND REPLACED. ALL TIRE MARKS AND INDENTATIONS TO BE REPAIRED.
10. SOIL TO BE TESTED TO DETERMINE FERTILIZER AND LIME REQUIREMENTS AND DISTRIBUTED PRIOR TO LAYING SOD.
11. SOD TO BE DELIVERED FRESH (CUT LESS THAN 24 HOURS PRIOR TO ARRIVING ON SITE), LAID IMMEDIATELY, ROLLED, AND WATERED THOROUGHLY IMMEDIATELY AFTER PLANTING. EDGE OF SOD IS TO BE "V" TRENCHED.
12. ALL CHANGES TO DESIGN OR PLANT SUBSTITUTIONS ARE TO BE AUTHORIZED BY THE LANDSCAPE ARCHITECT.
13. ALL LANDSCAPING SHALL BE INSTALLED IN CONFORMANCE WITH ANSI Z60.1 THE "AMERICAN STANDARD FOR NURSERY STOCK" AND THE ACCEPTED STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
14. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTS INSTALLED FOR ONE FULL YEAR FROM DATE OF ACCEPTANCE BY THE OWNER. ALL PLANTS SHALL BE ALIVE AND AT A VIGOROUS RATE OF GROWTH AT THE END OF THE GUARANTEE PERIOD. THE LANDSCAPE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ACTS OF GOD OR VANDALISM.
15. ANY PLANT THAT IS DETERMINED DEAD, IN AN UNHEALTHY OR UNSIGHTLY CONDITION, LOST ITS SHAPE DUE TO DEAD BRANCHES OR OTHER SYMPTOMS OF POOR, NON-VIGOROUS GROWTH SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR.
16. GENERAL CONTRACTOR IS RESPONSIBLE FOR ADDING A MIN OF 4" OF CLEAN FRIABLE TOPSOIL IN ALL PLANTING BEDS AND ALL GRASSED AREAS. GRADED AREAS TO BE HELD DOWN THE APPROPRIATE ELEVATION TO ACCOUNT FOR TOPSOIL. SEE SPECIFICATIONS FOR REQUIRED TOPSOIL CHARACTERISTICS.
17. IN ALL PARKING LOT ISLANDS, THE GENERAL CONTRACTOR IS RESPONSIBLE TO REMOVE ALL DEBRIS, FRACTURE/LOOSEN SUBGRADE TO A MIN. 24" DEPTH. ADD TOPSOIL TO A 6"-8" BERM HEIGHT ABOVE ISLAND CURBING; REFER TO LANDSCAPE SPECIFICATIONS AND LANDSCAPE ISLAND DETAIL.
18. PRIOR TO BEGINNING WORK, THE LANDSCAPE CONTRACTOR SHALL INSPECT THE SUBGRADE, GENERAL SITE CONDITIONS, VERIFY ELEVATIONS, UTILITY LOCATIONS, IRRIGATION, APPROVE TOPSOIL PROVIDED BY GENERAL CONTRACTOR AND OBSERVE THE SITE CONDITIONS UNDER WHICH THE WORK IS TO BE DONE. NOTIFY GENERAL CONTRACTOR OF ANY UNSATISFACTORY CONDITIONS, AND WORK SHALL NOT PROCEED UNTIL SUCH CONDITIONS HAVE BEEN CORRECTED AND ARE ACCEPTABLE TO THE LANDSCAPE CONTRACTOR.
19. STAKE ALL EVERGREEN AND DECIDUOUS TREES AS SHOWN IN THE DETAILS THIS SHEET.
20. REMOVE ALL STAKES AND GUYING FROM ALL TREES AFTER ONE YEAR FROM PLANTING.
21. WATER THOROUGHLY TWICE IN FIRST 24 HOURS AND APPLY MULCH IMMEDIATELY.
22. SITE TO BE 100% IRRIGATED IN ALL PLANTING BEDS AND GRASS AREA BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. SEE IRRIGATION PLAN L-200 FOR DESIGN.
23. ALL TREE PROTECTION DEVICES TO BE INSTALLED PRIOR TO THE START OF LAND DISTURBANCE, AND MAINTAINED UNTIL FINAL LANDSCAPING.
24. ALL TREE PROTECTION AREAS TO BE PROTECTED FROM SEDIMENTATION.
25. ALL TREE PROTECTION FENCING TO BE INSPECTED DAILY, AND REPAIRED OR REPLACED AS NEEDED.
26. NO PARKING, STORAGE OR OTHER CONSTRUCTION ACTIVITIES ARE TO OCCUR WITHIN TREE PROTECTION AREAS.
27. CONTRACTOR SHALL USE CAUTION WHEN DIGGING TREE PITS IN THE VICINITY OF UNDERGROUND UTILITY LINES AND MAY NEED TO HAND DIG THE PITS IN MANY OF THESE INSTANCES.



STAKING DETAIL

NORTH

180°

180°

TWO GUY WIRES PER TREE

NEATLY SECURE WITH CLAMPS

GYING DETAIL

TWO SECTIONS OF RUBBER HOSE PER TREE

GALV. GUY WIRE WITH CLAMPS

TURNBUCKLE

DUCKBILL ANCHOR

BUYING STANDARDS

- THREE (3) MODEL 68 DUCKBILL ANCHORS (HOLDING CAPACITY 1100# PER ANCHOR IN NORMAL SOIL.
- 13' OF 3/4" GALVANIZED STEEL TUBING WITH TURNBUCKLE ATTACHED MID-CABLE.
- 3/4" DIAMETER THIN WALL P.V.C. TUBING (WHITE) 48" MINIMUM LENGTH. ONE (1) REQUIRED/EACH GUY.
- THREE (3) TURNBUCKLES, EYE AND EYE TYPE, 3/4" THREAD DIAMETER WITH 3" TAKE-UP.
- SIX (6) 1/2" CABLE CLAMPS, ZINC PLATED (OR-2 STEEL DRIVE ROD 2' LONG WITH 1/2" ROUND DRIVING TO INSTALL ANCHORS. ONE ROD, NOT INCLUDED IN KIT, DRIVES HUNDREDS OF ANCHORS)
- THREE (3) RUBBER HOSE TRD COLLARS, 21" LONG, EA.



HRGreen

CHICK-FIL-A

CREVE COEUR (MO) FSU

12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE		
NO.	DATE	DESCRIPTION

ENGINEER'S PROJECT # 211634

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SHEET

LANDSCAPE DETAILS

SHEET NUMBER

L-300

P R E L I M I N A R Y
NOT FOR CONSTRUCTION

PRELIMINARY

LANDSCAPE SPECIFICATIONS

PART 1 - GENERAL

DESCRIPTION

Provide trees, shrubs, ground covers, sod, and annuals/perennials as shown and specified on the landscape plan. The work includes:

1. Soil preparation.
2. Trees, shrubs, ground covers, and annuals/perennials.
3. Planting mixes.
4. Top Soil, Mulch and Planting accessories.
5. Maintenance.
6. Decorative stone.

Related Work:

1. Irrigation System; see irrigation specifications (sheet L-2.2)

QUALITY ASSURANCE

Plant names indicated; comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.

Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.

All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of 2 years.

Nursery Stock furnished shall be at least the minimum size indicated. Larger stock is acceptable, at no additional cost, and providing that the larger plants will not be cut back to size indicated. Provide plants indicated by two measurements so that only a maximum of 25% are of the minimum size indicated and 75% are of the maximum size indicated.

Before submitting a bid, the Contractor shall have investigated the sources of supply and be satisfied that they can supply the listed plants in the size, variety and quality as specified. Failure to take this precaution will not relieve the Contractor from their responsibility for furnishing and installing all plant materials in strict accordance with the Contract Documents without additional cost to the Owner. The Landscape Architect shall approve any substitutes of plant material, or changes in plant material size, prior to the Landscape Contractor submitting a bid.

DELIVER, STORAGE AND HANDLING

Take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected. Spray deciduous plants in foliage with an approved "Anti-Desiccant" immediately after digging to prevent dehydration. Dig, pack, transport, and handle plants with care to ensure protection. Inspection certificates required by law shall accompany each shipment invoice or order to stock. Protect all plants from drying out. If plants cannot be planted immediately upon delivery, properly protect them with soil, wet peat moss, or in a manner acceptable to the Landscape Architect. Water heeled-in plantings daily. No plant shall be bound with rope or wire in a manner that could damage or break the branches. Cover plants transported on open vehicles with a protective covering to prevent wind burn.

PROJECT CONDITIONS

Protect existing utilities, paving, and other facilities from damage caused by landscape operations.

A complete list of plants, including a schedule of sizes, quantities, and other requirements are shown on the drawings. In the event that quantity discrepancies or material omissions occur in the plant materials list, the planting plans shall govern.

The irrigation system will be installed prior to planting. Locate, protect and maintain the irrigation system during planting operations. Repair irrigation system components damaged during planting operations; at the Contractor's expense. Refer to the irrigation specifications, irrigation plan and irrigation details.

Do not begin landscape accessory work before completion of final grading or surfacing.

WARRANTY

Warrant plant material to remain alive, be healthy and in a vigorous condition for a period of 1 year after completion and final acceptance of entire project.

Replace, in accordance with the drawings and specifications, all plants that are dead or, are in an unhealthy, or unsightly condition, and have lost their natural shape due to dead branches, or other causes due to the Contractor's negligence. The cost of such replacement(s) is at the Contractor's expense. Warrant all replacement plants for 1 year after installation.

Warranty shall not include damage, loss of trees, plants, or ground covers caused by fires, floods, freezing rains, lightning storms, winds over 15 miles per hour, winter kill caused by extreme cold, severe winter conditions not typical of planting area, and/or acts of vandalism or negligence on a part of the Owner.

Remove and immediately replace all plants, found to be unsatisfactory during the initial planting installation.

Maintain and protect plant material, lawns, and irrigation until final acceptance is made.

ACCEPTANCE

Inspection of planted areas will be made by the Owner's representative.

1. Planted areas will be accepted provided all requirements, including maintenance, have been complied with and plant materials are alive and in a healthy, vigorous condition.

Upon acceptance, the Contractor shall commence the specified plant maintenance.

CODES, PERMITS AND FEES

Obtain any necessary permits for this Section of Work and pay any fees required for permits.

The entire installation shall fully comply with all local and state laws and ordinances, and with all established codes applicable thereto; also as depicted on the landscape and irrigation construction set.

PART 2 - PRODUCTS

MATERIALS

Plants: Provide typical of their species or variety, with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from defects, disfiguring knots, sun scald injuries, frost cracks, abrasions of the bark, plant diseases, insect eggs, borers, and all forms of infestation. All plants shall have a fully developed form without voids and open spaces. Plants held on storage will be rejected if they show signs of growth during the storage period.

1. Balled and plants wrapped with burlap, to have firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Provide ball sizes complying with the latest edition of the "American Standard for Nursery Stock". Cracked or mushroomed balls, or signs of circling roots are not acceptable.
2. Container- grown stock: Grown in a container for sufficient length of time for the root system to have developed to hold its soil together, firm and whole.
 - a. No plants shall be loose in the container.
 - b. Container stock shall not be pot bound.
3. Plants planted in rows shall be matched in form.
4. Plants larger than those specified in the plant list may be used when acceptable to the Landscape Architect.
 - a. If the use of larger plants is acceptable, increase the spread of roots or root ball in proportion to the size of the plant.
5. The height of the trees, measured from the crown of the roots to the top of the top branch, shall not be less than the minimum size designated in the plant list.
6. No pruning wounds shall be present with a diameter of more than 1" and such wounds must show vigorous bark on all edges.
7. Evergreen trees shall be branched to the ground or as specified in plant list.
8. Shrubs and small plants shall meet the requirements for spread and height indicated in the plant list.
 - a. The measurements for height shall be taken from the ground level to the height of the top of the plant and not the longest branch.
 - b. Single stemmed or thin plants will not be accepted.
 - c. Side branches shall be generous, well-twigged, and the plant as a whole well-bushied to the ground.
 - d. Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.

ACCESSORIES

Topsoil: Shall be Fertile, friable, natural topsoil of loamy character, without admixture of subsoil material, obtained from a well-drained arable site, reasonably free from clay lumps, coarse sands, stones, roots, sticks, and other foreign materials, with acidity range of between pH 6.0 and 6.8.

Note: All planting areas shall be cleaned of construction debris (e. Concrete, rubble, stones, building material, etc) prior to adding and spreading of the top soil.

1. *Sod Areas:* Spread a minimum 4" layer of top soil and rake smooth.
2. *Planting bed areas:* Spread a minimum 4" layer of top soil and rake smooth.

3. *Landscape Islands/Medians:* Fracture/loosen existing subgrade to a minimum 24" depth. Remove and replace any subgrade unsuitable for planting. Once subgrade is clean of debris and loosened, add topsoil to a minimum berm 6"-8" height above island cutting.
4. *Annual/Perennial bed areas:* Add a minimum of 4" organic matter and till to a minimum 12" depth.

Mulch: Type selected dependent on region and availability; see landscape plans for type of mulch to be used. Hold mulch 4" from tree trunks and shrub stems.

1. Hardwood: 6 month old well rotted double shredded native hardwood bark mulch not larger than 4" in length and ½" in width, free of wood chips and sawdust. Install minimum depth of 3".
2. Pine Straw: Pine straw to be fresh harvest, free of debris, bright in color. Bales to be wired and tightly bound. Needles to be dry. Install minimum depth of 3".
3. River Rock: (color) light gray to buff to dark brown, washed river rock, 1" – 3" in size. Install in shrub beds to an even depth of 3". Weed control barrier to be installed under all rock mulch areas. Use caution during installation not to damage plant material.
4. Mini Nuggets: Install to a minimum depth of 2"-3" at all locations of annual and perennial beds. Lift the stems and leaves of the annuals and carefully spread the mulch to avoid injuring the plants. Gently brush the mulch off the plants.

Guying/Staking:

1. Arborite: Green (or white) staking and guying material to be flat, woven, polypropylene material, ¾" wide 900 lb. break strength. Arborite shall be fastened to stakes in a manner which permits tree movement and supports the tree.
2. Remove Guying/Staking after one year from planting.

Tree Wrap: Tree wraps should be used on young, newly planted thin-barked trees (Cherry, Crabapple, Honey Locust, Linden, Maple, Mountain Ash, Plum) that are most susceptible to sun scald/Sunburn. Standard waterproofed tree wrapping paper, 2-1/2" wide, made of 2 layers of crepe Draft paper weighing not less than 30 lbs. per ream, cemented together with asphalt. Wrap the tree in the fall and leave the wrap in place throughout the winter and early spring. Tree wraps are temporary and no longer needed once trees develop corky bark.

PART 3 – EXECUTION

INSPECTION

Prior to beginning work, the Landscape Contractor shall inspect the subgrade, general site conditions, verify elevations, utility locations, irrigation, approve top soil provided by the General Contractor and observe the site conditions under which the work is to be done. Notify the General Contractor of any unsatisfactory conditions, and work shall not proceed until such conditions have been corrected and are acceptable to the Landscape Contractor.

PREPARATION

Planting shall be performed only by experienced workmen familiar with planting procedures under the supervision of a qualified supervisor.

Locate plants as indicated on the plans or as approved in the field after staking by the Landscape Contractor. If obstructions are encountered that are not shown on the drawings, do not proceed with planting operations until alternate plant locations have been selected and approved by the Landscape Architect; spacing of plant material shall be as shown on the landscape plan.

Excavate circular plant pits with vertical sides, except for plants specifically indicated to be planted in beds. Provide shrub pits at least 12" greater than the diameter of the root system and 24" greater for trees. Depth of pit shall accommodate the root system. Provide undisturbed sub grade to hold root ball at nursery grade as shown on the drawings.

INSTALLATION

Set plant material in the planting pit to proper grade and alignment. Set plants upright, plumb, and faced to give the best appearance or relationship to each other or adjacent structure. Set plant material 2" – 3" above the finish grade. No filling will be permitted around trunks or stems. Backfill the pit with topsoil mix and excavated material. Do not use frozen or muddy mixtures for backfilling. Form a ring of soil around the edge of each planting pit to retain water.

After balled and wrapped in burlap plants are set, muddle planting soil mixture around bases of balls and fill all voids.

1. Remove all burlap, ropes, and wires from the top 1/3 of the root ball

Space ground cover plants in accordance with indicated dimensions. Adjust spacing as necessary to evenly fill planting bed with indicated quantity of plants. Plant to within 24" of the trunks of trees and shrubs within planting bed and to within 18" of edge of bed.

Mulching:

1. Mulch tree and shrub planting pits and shrub beds with required mulching material (see landscape plan for mulch type); depth of mulch as noted above. **Hold mulch back 4" away from tree trunks and shrub stems.** Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.

Decorative Stone: (where indicated on landscape plan)

1. Install weed control barrier over sub-grade prior to installing stone. Lap 6" on all sides.
2. Place stone without damaging weed barrier.
3. Arrange stones for best appearance and to cover all weed barrier fabric.

Wrapping, guying, staking:

1. Inspect trees for injury to trunks, evidence of insect infestation, and improper pruning before wrapping.
2. Wrapping:
 - a. Wrap trunks of all young newly planted trees known to have thin bark. Wrap spirally from bottom to top with specified tree wrap and secure in place.
 - b. Overlap ½ the width of the tree wrap strip and cover the trunk from the ground to the height of the second branch.
 - c. Secure tree wrap in place with twine wound spirally downward in the opposite direction, tied around the tree in at least 3 places in addition to the top and bottom.
 - d. Wrap the trees in the fall and leave the wrap in place throughout the winter and early spring.
3. Tree wraps are temporary and no longer needed once the trees develop corky bark.
3. Staking/Guying:
 - a. Stake/guy all trees immediately after lawn sodding operations and prior to acceptance.
 - b. Stake deciduous trees 2" caliper and less. Stake evergreen trees under 7"-0" tall.
 1. Stakes are placed in line with prevailing wind direction and driven into undisturbed soil.
 2. Ties are attached to the tree, usually at the lowest branch.
 - c. Guy deciduous trees over 2" caliper. Guy evergreen trees 7"-0" tall and over.
 1. Guy wires to be attached to three stakes driven into undisturbed soil, with one stake placed in the direction of the prevailing wind.
 2. Ties are attached to the tree as high as practical.
 3. The axis of the stake should be at 90 degree angle to the axis on the pull of the guy wire.
4. Remove all guying and staking after one year from planting.

Pruning:

1. Prune deciduous trees and evergreens only to remove broken or damaged branches.

WORKMANSHIP

During landscape/irrigation installation operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures. All work shall be performed in a safe manner to the operators, the occupants and any pedestrians.

Upon completion of installation operations, all excess materials, equipment, debris and waste material shall be cleaned up and removed from the site; unless provisions have been granted by the owner to use on-site trash receptacles. Sweep parking and walks clean of dirt and debris. Remove all plant tags and other debris from lawns and planting areas.

Any damage to the landscape, the structure, or the irrigation system caused by the landscape contractor shall be repaired by the landscape contractor without charge to the owner.

MAINTENANCE

Contractor shall provide maintenance until work has been accepted by the Owner's Representative.

Maintenance shall include mowing, fertilizing, mulching, pruning, cultivation, weeding, watering, and application of appropriate insecticides and fungicides necessary to maintain plants and lawns free of insects and disease.

1. Re-set settled plants to proper grade and position. Restore planting saucer and adjacent material and remove dead material.
2. repair guy wires and stakes as required. Remove all stakes and guy wires after 1 year.
3. Correct defective work as soon as possible after deficiencies become apparent and weather and season permit.
4. Water trees, plants and ground cover beds within the first 24 hours of initial planting, and not less than twice per week until final acceptance

LANDSCAPE MAINTENANCE SPECIFICATIONS

The Contractor shall provide as a separate bid, maintenance for a period of **1 year** after final acceptance of the project landscaping. The Contractor must be able to provide continued maintenance if requested by the Owner or provide the name of a reputable landscape contractor who can provide maintenance.

STANDARDS

All landscape maintenance services shall be performed by trained personnel using current, acceptable horticultural practices.

All work shall be performed in a manner that maintains the original intent of the landscape design.

All chemical applications shall be performed in accordance with current county, state and federal laws, using EPA registered materials and methods of application. These applications shall be performed under the supervision of a Licensed Certified applicator.

APPROVALS

All work performed in addition to that which is outlined in the contract shall only be done upon written approval by the Owner's Representative (General Manager of the restaurant).

All seasonal color selections shall be approved by the General Manager prior to ordering and installation.

SOIL TESTING

The maintenance contractor shall perform soil tests as needed to identify imbalances or deficiencies causing plant material decline. The owner shall be notified of the recommendation for approval, and the necessary corrections made at an additional cost to the owner.

Acceptable Soil Test Results

	Landscape Trees and Shrubs	Turf
pH Range	5.0-7.0	5.0-7.0
Organic Matter	>1.5%	>2.5%
Magnesium (Mg)	100-lbs./acre	100-lbs./acre
Phosphorus (P2O5)	150-lbs./acre	150-lbs./acre
Potassium (K2O)	120-lbs./acre	120-lbs./acre
Soluble salts/ Conductivity	N/A; to exceed 900ppm/1.3 mmhos/cm in soil; not to exceed 1400 ppm/2.5 mmhos/cm in high organic mix	N/A; to exceed 750ppm/0.75 mmhos/cm in soil; not to exceed 2000 ppm/2.0 mmhos/cm in high organic mix

For unusual soil conditions, the following optional tests are recommended with levels not to exceed:

Boron	3 pounds per acre
Manganese	60 pounds per acre
Potassium (K2O)	450 pounds per acre
Sodium	20 pounds per acre

WORKMANSHIP

During landscape maintenance operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures. All work shall be performed in a safe manner to the operators, the occupants and any pedestrians.

Upon completion of maintenance operations, all debris and waste material shall be cleaned up and removed from the site, unless provisions have been granted by the owner to use on-site trash receptacles.

Any damage to the landscape, the structure, or the irrigation system caused by the maintenance contractor, shall be repaired by the maintenance contractor without charge to the owner.

TURF

GENERAL CLEAN UP

Prior to mowing, all trash, sticks, and other unwanted debris shall be removed from lawns, plant beds, and paved areas.

MOWING

Warm season grasses (i.e. Bermuda grass) shall be maintained at a height of 1" to 2" during the growing season.

Cool season grasses, including blue grass, tall fescue, perennial ryegrass, etc., shall be maintained at a height of 2" to 3" in spring and fall. From June through September, mowing height shall be maintained at no less than 3".

The mowing operation includes trimming around all obstacles, routing excessive grass clippings and removing debris from walks, curbs, and parking areas. Caution: Weed eaters should NOT be used around trees because of potential damage to the bark.

EDGING

Edging of all sidewalks, curbs and other paved areas shall be performed once every other mowing. Debris from the edging operations shall be removed and the areas swept clean. Caution shall be used to avoid flying debris.

LIMING & FERTILIZING

A soil test shall be taken to determine whether an application of limestone in late fall is necessary. If limestone is required, the landscape contractor shall specify the rate, obtain approval from the owner and apply it at an additional cost. A unit price for liming of turf shall accompany the bid based on a rate of 50 pounds per 1000 square feet.

Fertilizer shall be applied in areas based on the existing turf species.

LAWN WEED CONTROL: HERBICIDES

Selection and proper use of herbicides shall be the landscape contractor's responsibility. All chemical applications shall be performed under the supervision of a Licensed Certified Applicator. **Read the label prior to applying any chemical.**

INSECT & DISEASE CONTROL FOR TURF

The contractor shall be responsible for monitoring the site conditions on each visit to determine if any insect pest or disease problems exist. The contractor shall identify the insect pest or disease, as well as the host plant, and then consult the most current edition of the Cooperative Extension Service's "Commercial Insecticide Recommendation for Turf" for control. The licensed applicator shall be familiar with the label provided for the selected product prior to application.

Inspection and treatment to control insect pests shall be included in the contract price.

TREES, SHRUBS, & GROUND COVER

PRUNING

All ornamental trees, shrubs and ground cover shall be pruned when appropriate to remove dead or damaged branches, develop the natural shapes. **Do not shear trees or shrubs.** If previous maintenance practice has been to shear and ball, then a natural shape will be restored gradually.

Pruning Guidelines:

1. Prune those that flower before the end of June immediately after flowering. Flower buds develop during the previous growing season. Fall, winter or spring pruning would reduce the spring flowering display.
2. Prune those that flower in summer or autumn in winter or spring before new growth begins, since these plants develop flowers on new growth.
3. Delay pruning plants grown for ornamental fruits, such as cotoneasters, pyracanthas and viburnums.
4. Hollies and other evergreens may be pruned during winter in order to use their branches for seasonal decoration. However, severe pruning of evergreens should be done in early spring only.
5. Broadleaf evergreen shrubs shall be hand-pruned to maintain their natural appearance after the new growth hardens off.
6. Hedges or shrubs that require shearing to maintain a formal appearance shall be pruned as required. Dead wood shall be removed from sheared plants before the first shearing of the season.
7. Conifers shall be pruned, if required, according to their genus.
 - A. Yews, junipers, hemlocks, arbovitae, and false-cypress may be pruned after new growth has hardened off in late summer. If severe pruning is necessary, it must be done in early spring.
 - B. Firs and spruces may be lightly pruned in late summer, fall, or winter after completing growth. Leave side buds. Never cut central leader.
 - C. Pines may be lightly pruned in early June by reducing candles.
8. Groundcover shall be edged and pruned as needed to contain it within its borders.

9. Thinning: Remove branches and water sprouts by cutting them back to their point of origin on parent stems. This method results in a more open plant, without stimulating excessive growth. Thinning is used on crepe myrtles, ilacs, viburnums, smoke bush, etc.
10. Renewal pruning: Remove oldest branches of shrub at ground, leaving the younger, more vigorous branches. Also remove weak stems. On overgrown plants, this method may be best done over a three-year period. Renewal pruning may be used on abelia, forsythia, deutzia, spiraea, etc.

Plants overhanging passageways and parking areas and damaged plants shall be pruned as needed.

Shade trees that cannot be adequately pruned from the ground shall not be included in the Maintenance Contract. A certified arborist under a separate contract shall perform this type of work.

SPRING CLEANUP

Plant beds shall receive a general cleanup before fertilizing and mulching. Cleanup includes removing debris and trash from beds and cutting back herbaceous perennials left standing through winter, e.g. ornamental grasses, Sedum Autumn Joy.

FERTILIZING

For trees, the rate of fertilization depends on the tree species, tree vigor, area available for fertilization, and growth stage of the tree. Mature specimens benefit from fertilization every 3 to 4 years; younger trees shall be fertilized more often during rapid growth stages.

The current recommendation is based on the rate of 1000 square feet of area under the tree to be fertilized. For deciduous trees, 2 to 6 pounds of Nitrogen per 1000 square feet; for narrow-leaf evergreens, 1 to 4 pounds of Nitrogen per 1000 square feet; for broadleaf evergreens, 1 to 3 pounds of Nitrogen per 1000 square feet.

Shrubs and groundcover shall be top-dressed with compost 1" deep, or fertilized once in March with 10-6-4 analysis fertilizer at the rate of 3 pounds per 100 square feet of bed area. Ericaceous material shall be fertilized with an ericaceous fertilizer at the manufacturer's recommendation rate. If plants are growing poorly, a soil sample should be taken.

MULCHING

Annually, all tree and shrub beds will be prepared and mulched, to a minimum depth of 3" with quality mulch to match existing. Bed preparation shall include removing all weeds, cleaning up said bed, edging and cultivating decayed mulch into the soil. Debris from edging is to be removed from beds where applicable. If deemed necessary, a pre-emergent herbicide may be applied to the soil to inhibit the growth of future weeds.

Organically maintained gardens shall not receive any pre-emergent herbicides. Mulch in excess of 4" will be removed from the bed areas. SPECIAL CARE shall be taken in the mulching operation not to over mulch or cover the base of trees and shrubs. This can be detrimental to the health of the plants.

WEEDING

All beds shall be weeded on a continuous basis throughout the growing season to maintain a neat appearance at all times.

Pre-emergent (soil-applied) and post-emergent (foliar-applied) herbicides shall be used where and when applicable and in accordance with the product's label.

INSECT & DISEASE CONTROL: TREES, SHRUBS & GROUNDCOVER

The maintenance contractor shall be responsible for monitoring the landscape site on a regular basis. The monitoring frequency shall be monthly except for growing season, which will be every other week. Trained personnel shall monitor for plant damaging insect activity, plant pathogenic diseases and potential cultural problems in the landscape. The pest or cultural problem will be identified under the supervision of the contractor.

For plant damaging insects and mites identified in the landscape, the contractor shall consult and follow the recommendations of the most current edition of the state Cooperative Service publication on insect control on landscape plant material.

Plant pathogenic disease problems identified by the contractor that can be resolved by pruning or physical removal of damaged plant parts will be performed as part of the contract. For an additional charge, plant pathogenic diseases that can be resolved through properly timed applications of fungicides shall be made when the owner authorizes it.

If the contractor notes an especially insect-or disease-prone plant species in the landscape, he/she will suggest replacement with a more pest-resistant cultivar or species that is consistent with the intent of the landscape design.

NOTE: For identification of plant-damaging insects and mites, a reference textbook that can be used is *Insects that feed on Trees and Shrubs* by Johnson and Lyon, Comstock Publishing Associates. For plant pathogenic diseases, two references are suggested: *Scouting and Controlling Woody Ornamental Diseases in Landscapes and Nurseries*, authorized by Gary Moorman, published by Penn State College of Agricultural Sciences, and *Diseases of Trees and Shrubs* by Sinclair and Lyon, published by Comstock Publishing Press.

TRASH REMOVAL

The maintenance contractor shall remove trash from all shrub and groundcover beds with each visit.

LEAF REMOVAL

All fallen leaves shall be removed from the site in November and once in December. If requested by the owner, the maintenance contractor, at an additional cost to the owner shall perform supplemental leaf removals.

WINTER CLEAN-UP

The project shall receive a general clean-up once during each of the winter months, i.e., January, February, and March.

Clean-up includes:

- Cleaning curbs and parking areas
- Removing all trash and unwanted debris
- Turning mulch where necessary
- Inspection of grounds

SEASONAL COLOR: PERENNIALS, ANNUALS, AND BULBS

The installation of perennials, annuals, and bulbs, unless specified herein, shall be reviewed with the owner, and, if accepted, installed and billed to the owner.

SEASONAL COLOR MAINTENANCE

Perennialization of Bulbs:

1. After flowering, cut off spent flower heads.
2. Allow leaves of daffodils and hyacinths to remain for six weeks after flowers have faded. Cut off at base.
3. Allow leaves of other bulbs to yellow naturally and then cut off at base.
4. Apply fertilizer after flowering in spring, possibly again in fall. Apply 10-10-10 at the rate of 2 pounds per 1000 square feet, or top-dress with compost 1" deep. Fall fertilization with a bulb fertilizer or mulching with 1" of compost is optional.

Flower Rotation:

1. Bulbs: Remove the entire plant and bulb after flowers have faded or at the direction of the owner, and install new plants if included in contract.
2. Summer Annuals or Fall Plants:
 - a. Dead heading: Pinch and remove dead flowers on annuals as necessary.
 - b. Fertilizing Summer Annuals: Fertilize using one or two methods: Apply a slow-release fertilizer in May following manufacturer's recommendations. A booster such as 10-10-10 may be necessary in late summer. Or, apply liquid fertilizations of 20-20-20 water-soluble fertilizers, not to exceed 2 pounds of 20-20-20 per 100 gallons of water, monthly; or mulch with compost 1" deep.
 - c. Removal: If fall plants are to be installed, summer annuals shall be left in the ground until the first killing frost and then removed, unless otherwise directed by the owner.

Perennials:

1. After initial installation, if a time-released fertilizer has been incorporated during plant installation, no more fertilizer need be applied the first growing season.
2. The following year:
 - a. Fertilize perennials with a slow-release fertilizer or any 50% organic fertilizer, or mulch

MEMORANDUM

To: Jason Jaggi, AICP (City of Creve Coeur)
Bethany Moore (City of Creve Coeur)

From: Kyle Evans, PE, PTOE

Date: October 18, 2022

Subject: Chick-fil-A TIS Review
Lochmueller Project #: 522-0072-01T

As requested, Lochmueller staff have completed a review of the traffic impact study report submitted in association with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive. The study was prepared by HR Green, Inc. and submitted in September 2022.

It is our understanding from the report that the proposed Chick-fil-A will replace the TGI Friday's currently occupying the site. Access to the site will be provided via the existing access drives. The primary access is located at the North Entrance on Tempo Drive and the secondary access is located at the South Entrance on Tempo Drive as well as a right-in, right-out access drive on Olive Boulevard. The proposed site area and site plan are shown in **Figure 1** and **Figure 4** of the report.

The project involves the redevelopment of a 1.02-acre lot, which is currently occupied by a TGI Friday's. The proposed Chick-fil-A will have an expected building footprint of 5,000 square-feet. Two drive-thru lanes are provided. There is one by-pass lane provided, however this lane terminates prematurely.

The project is proposed to be completed in a single phase, with analysis completed for the 2022 Base Condition (2019 and 2022 Count Data), 2022 Build Conditions (2022 Base Volumes plus Additional Site-Generated Trips), 2045 No-Build (2019 and 2022 Count Data plus an annual Background Growth Rate of 0.5% along the through movements of Olive Boulevard), and 2045 Build (2045 Base Volumes plus Additional Site-Generated Trips).

Given that traffic counts at some of the study intersections were counted in 2019 as opposed to 2022, the 2019 counts were grown by 0.5% annually to 2022. It should be noted that the peak hours were never stated in the report. It is our opinion that growing the 2019 counts by an annual growth rate of 0.5% to 2022 is a valid approach.

Per the provided Synchro reports, the following storage bays were incorrect:

- Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - Westbound left-turn lane should be 180 feet rather than 225 feet.
- Olive Boulevard & Tempo Drive:
 - Eastbound left-turn lane should be 180 feet rather than 200 feet.
- Olive Boulevard & Ross Avenue/ Questover Lane:
 - Westbound left-turn lane should be 200 feet rather than 250 feet.

At the intersection of Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive, the westbound left-turn 95th percentile queue length exceeds the storage bay during the weekday AM, midday, and PM peak hours in the 2022 existing conditions. In addition, the southbound left-turn lane 95th percentile queue length exceeds the storage bay during the weekday midday and PM peak hours in the 2022 existing conditions. At the intersection of Olive Boulevard and Ross Avenue/Questover Lane, the southbound left-turn 95th percentile queue length exceeds the storage bay during all peak hours in the 2022 existing conditions. In addition, the eastbound left-turn 95th percentile queue length exceeds the storage bay during the weekday midday peak hour in the 2022 existing conditions.

The peak hour factor for each approach was not calculated, rather a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values.

As part of this study, HR Green utilized trip generation estimates based upon data provided from an average of two existing Chick-fil-A stores in Milwaukee from similar suburban land density and store characteristics to the proposed Chick-fil-A in Creve Coeur. These rates were compared to the Institute of Transportation Engineer's (ITE) Trip Generation Manual, Eleventh Edition for Land Use 934: Fast-Food Restaurant with Drive-Through Window. A comparison of the rates between ITE's manual and the average counts from the two other Chick-fil-A stores showed that the counts provided showed a significant increase in the number of trips that were site generated. They decided to remain conservative for the purposes of the traffic impact evaluation and utilized the higher rates from the field data. Additionally, it should be noted that data from the other two stores was only provided for the PM and Saturday peak hours. The AM and weekday midday site generated trips were estimated using ITE's time of day distribution values. It is our opinion that this approach is a valid method.

A pass-by rate of 40% was used for all time periods. Per the ITE Pass-By Rate Table provided in the TGM Appendices, an average pass-by rate of 50% is recommended for Land Use Code 934 during the AM peak hour and 55% is recommended during the PM peak hour. In addition, a 10% common trip reduction was applied to the site generated trips as it was assumed that some drivers would have more than one destination within the strip mall. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method.

The traffic impact study stated the site-generated traffic was assigned to the adjoining roadway network based on existing traffic patterns within the study area. The traffic impact study assumed that 10% of the trips would originate from Tempo Drive to the north and 10% of trips would originate from Tempo Drive to the south. However, the average over all four peak hours is only about 8%. Therefore, it is our opinion that a total of 20% of site generated trips along Tempo Drive is too high and understates the traffic along Olive Boulevard. It is recommended that the site generated trips be revised to reflect 3% of trips originating from the north along Tempo Drive, 5% of trips originating from the south of Tempo Drive, 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard.

The site generated trips are shown in **Figure 6** of the report. The site generated trips do not add up in **Figure 6**. For example, at the intersection of Olive Boulevard and Tempo Drive there are 22 vehicles making an eastbound right-turn, 30 vehicles making a westbound left-turn, and 7 vehicles making a southbound through. This should equal 59 vehicles heading southbound at Tempo Drive and the North

Entrance; however, 66 vehicles are shown in **Figure 6**. It is recommended that this figure be revisited when applying the new directional distribution.

The 2022 Base and Build conditions Synchro input files and output information were reviewed to determine the impact of the development on the existing roadway network. Based on the increase in trips and associated delays at the study intersections, the following improvements were suggested for the study area:

- Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
- Provide four section flashing yellow arrow signal heads on exiting traffic signal poles for the northbound and southbound directions of Tempo Drive.
- Revise the traffic signal phasing at the Olive Boulevard at Tempo Drive intersection to provide protected and permitted left turn phasing for Tempo Drive.
- Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.

We agree with the above stated proposed improvements.

No southbound left turn lane was recommended along Tempo Drive at the North Entrance due to the expected minimal queue lengths and delays. Review of the MoDOT EPG for auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during the weekday midday, weekday PM, and Saturday midday peak hours. However, the southbound approach at this intersection is approximately 22 feet. Therefore, should any queueing occur, southbound thru vehicles can easily navigate around the southbound left-turning vehicles.

On page 17, 2026 is stated as the future year, when it should read 2045. It is recommended that the text be revised to read 2045 rather than 2026.

The parking lot capacity analysis was performed using the ITE Parking Generation, 5th Edition. Land Use Code 934: Fast-Food Restaurant with Drive-Through Window was used for the analysis. The nearby shopping center was included as Land Use Code 820: Shopping center. We agree with the land uses chosen. Typically, the 85th percentile is used for calculating parking requirements. Rather, it appears that hourly distributions were used to calculate the required parking. It is our opinion that this approach is a valid method.

Summary of TIS Review

As requested, Lochmueller staff have completed a review of the traffic impact study report submitted in association with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive.

Below is a summary of comments from the traffic impact study review:

1. No peak hours were specified in the report.
2. Per the provided Synchro reports, the following storage bays were incorrect:

- a. Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - i. Westbound left-turn lane should be 180 feet rather than 225 feet.
 - b. Olive Boulevard & Tempo Drive:
 - i. Eastbound left-turn lane should be 180 feet rather than 200 feet.
 - c. Olive Boulevard & Ross Avenue/ Questover Lane:
 - i. Westbound left-turn lane should be 200 feet rather than 250 feet.
3. The following 95th percentile queues exceed the provided storage bays in the 2022 existing conditions:
 - a. Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive,
 - i. Westbound left-turn during the weekday AM, midday, and PM peak hours
 - ii. Southbound left-turn during the weekday midday and PM peak hours
 - b. Olive Boulevard and Ross Avenue/Questover Lane,
 - i. Southbound left-turn during all peak hours
 - ii. Eastbound left-turn during the weekday midday peak hour
4. The peak hour factor for each approach was not calculated. Rather, a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values.
5. The study documented the existing trip generation associated with the average of two similar Chick-fil-A restaurants. It was noted that the trip generation was much higher than what was presented from the ITE forecast. The study stated they would utilize the more conservative numbers provided by the field data. It is our opinion that utilizing the more conservative trip generation is the correct assumption for the study.
6. A pass-by rate of 40% was used for all time periods. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method.
7. The directional distribution shown in **Figure 5** has 20% of traffic originating to/from Tempo Drive. However, the average over all four peak hours is only about 8%. It is our opinion that the 20% along Tempo Drive is too high.
8. The site generated trips shown in **Figure 6** do not add up correctly based on the site generated trips provided in **Table 3** and the directional distribution shown in **Figure 5**.
9. The following improvements were suggested for the study area:
 - a. Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
 - b. Provide four section flashing yellow arrow signal heads on exiting traffic signal poles for the northbound and southbound directions of Tempo Drive.
 - c. Revise the traffic signal phasing at the Olive Boulevard at Tempo Drive intersection to provide protected and permitted left turn phasing for Tempo Drive.
 - d. Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.
10. We agree with the above stated proposed improvements.
11. No southbound left turn lane was recommended along Tempo Drive at the North Entrance due to the expected minimal queue lengths and delays. Review of the MoDOT EPG for auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during several peak hours. However, the southbound approach at this intersection is approximately 22 feet. Therefore, should any queueing occur, southbound thru vehicles can easily navigate around the southbound left-turning vehicles.
12. On page 17, 2026 is stated as the future year, when it should read 2045.

13. The parking lot capacity analysis was performed using the ITE Parking Generation, 5th Edition. agree with the land uses chosen. Typically, the 85th percentile is used for calculating parking requirements. Rather, it appears that hourly distributions were used to calculate the required parking. It is our opinion that this approach is a valid method.

Below is a summary of recommendations from the traffic impact study review:

14. It is recommended that the study peak hours be included within the body of the report.
15. It is recommended that the storage bay lengths be adjusted to reflect the correct lengths.
16. It is recommended that the site generated trips be revised to reflect 3% of trips originating from the north along Tempo Drive, 5% of trips originating from the south of Tempo Drive, 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard.
17. It is recommended that **Figure 6** be revisited and corrected when applying the new directional distribution.
18. It is recommended that the text on page 17 be revised to read 2045 rather than 2026.

cc: file

Technical Report

Traffic Impact Study

Chick-fil-A

Creve Coeur, Missouri

Prepared By:



November 2022

HR Green Job No.: 211634

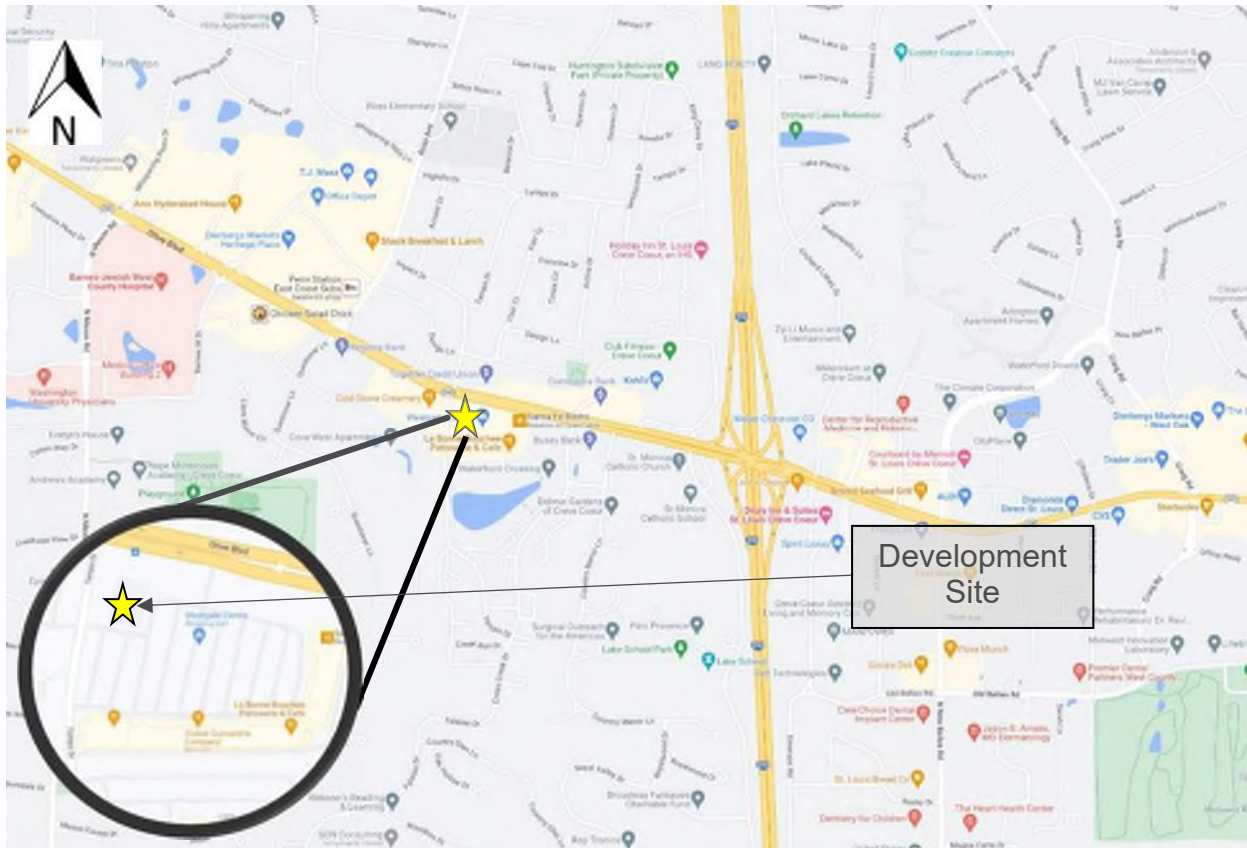


Introduction

A comprehensive review of a proposed Chick-fil-A restaurant was completed in an effort to estimate the traffic impacts of the development on nearby, connecting roadways. The site is located in Creve Coeur, Missouri, currently occupied by TGI Friday's, at the intersection of Olive Boulevard and Tempo Drive in the Westgate Centre.

This technical report will provide brief discussions on the existing conditions of the site and the expected traffic impacts associated with the proposed redevelopment, including: trip generation, parking lot demand, traffic assignment and distribution, and traffic analysis.

FIGURE 1 – PROJECT LOCATION



Existing Conditions

As part of overall site assessment, a description of the street network, existing land use, and traffic characteristics is provided in the following sections.

FIGURE 2 – EXISTING ROADWAY NETWORK



Existing Street Network

The existing development site is the TGI Friday's lot south of Olive Boulevard and east of Tempo Drive. Primary access to the development site is via the North Entrance on Tempo Drive, with secondary access via the South entrance on Tempo Drive and the Right-in, Right-out (RIRO) Entrance on Olive Boulevard.

Olive Boulevard is an east/west principal arterial roadway which serves local and regional traffic in Creve Coeur. The road provides access to commercial and residential areas throughout Creve Coeur. The facility is primarily two lanes in each direction, with left turn lanes added at signalized intersections.

Tempo Drive is a local road, running north/south in the study area. South of the commercial area at the signalized intersection with Olive Boulevard, Tempo Drive serves local residential traffic. There is one through lane in each direction in the study area. The lanes are separated by a raised median within the study area, with curb cuts allowing full access at the Northeast Access Drive.

The signalized intersection approximately 1,100' west of the Tempo Drive is the intersection of Olive Boulevard with Ross Avenue/Questover Lane. Ross Avenue is a major collector, running north of Olive Boulevard in the study area. Ross Avenue serves a mix of residential traffic as well as commercial traffic to the shopping center located in the northwest corner of the Olive Boulevard intersection. Questover Lane, a local road, continues south of Olive Boulevard. Questover Lane serves local residential traffic with one lane in each direction. At the Olive Boulevard intersection there is an added left turn lane in the northbound direction.

Approximately 1,100' east of Tempo Drive is the signalized intersection of Olive Boulevard with Cross Creek Drive/Woodcrest Executive Drive. Cross Creek Drive is a local road, continuing north from Olive Boulevard. Cross Creek Drive serves local residential traffic. There is one through lane in each direction in the study area. The lanes are separated by a raised median within the study area. Woodcrest Executive Drive is a local road, running south

of Olive Boulevard. Woodcrest Executive Drive serves as an access road to businesses and the Creve Coeur Shopping Center.

Existing Traffic Volumes

Peak hour turning movement counts were collected on Saturday August 20, 2022, from 11:00 am - 1:00 pm and on Tuesday August 23, 2022, from 6:45 am – 7:45 am, 11:00 am – 1:00 pm, and 4-6:00 pm for the following intersections:

- Tempo Drive at North Entrance
- Tempo Drive at South Entrance
- Olive Boulevard at RIRO Access

Peak hour turning movement counts were collected on Thursday October 3, 2019, from 6:30 am - 6:30 pm and on Saturday October 5, 2019, from 10:00 am – 4:00 pm following intersections:

- Olive Boulevard at Questover Lane/Ross Avenue
- Olive Boulevard at Tempo Drive
- Olive Boulevard at Cross Creek Drive/Woodcrest Executive Drive

Four peak hours were considered for this study and are analyzed in each scenario: an AM, mid-day, and PM peak hour of a weekday, and a Saturday mid-day peak hour. Based on the observed counts, these peak hours were determined to be 6:45-7:45 am, 11:15 am – 12:15 pm, and 3:45-4:45 pm on a weekday, and from 12:00-1:00 pm on Saturday.

Due to the existing traffic counts from the major intersections occurring in 2019, traffic volumes on through movements along Olive Boulevard were increased at an annual growth rate of 0.5%. After applying that growth rate for 3 years, a total of 1.5% increase in traffic volumes was applied to the through movements. Side roads are assumed to be fully developed and therefore the growth rate was not applied to turning movements on Olive Boulevard or any movements on side roads.

The raw traffic count information is provided in **Appendix A**, and the resulting baseline 2022 peak hour traffic volumes are depicted in **Figure 3**.

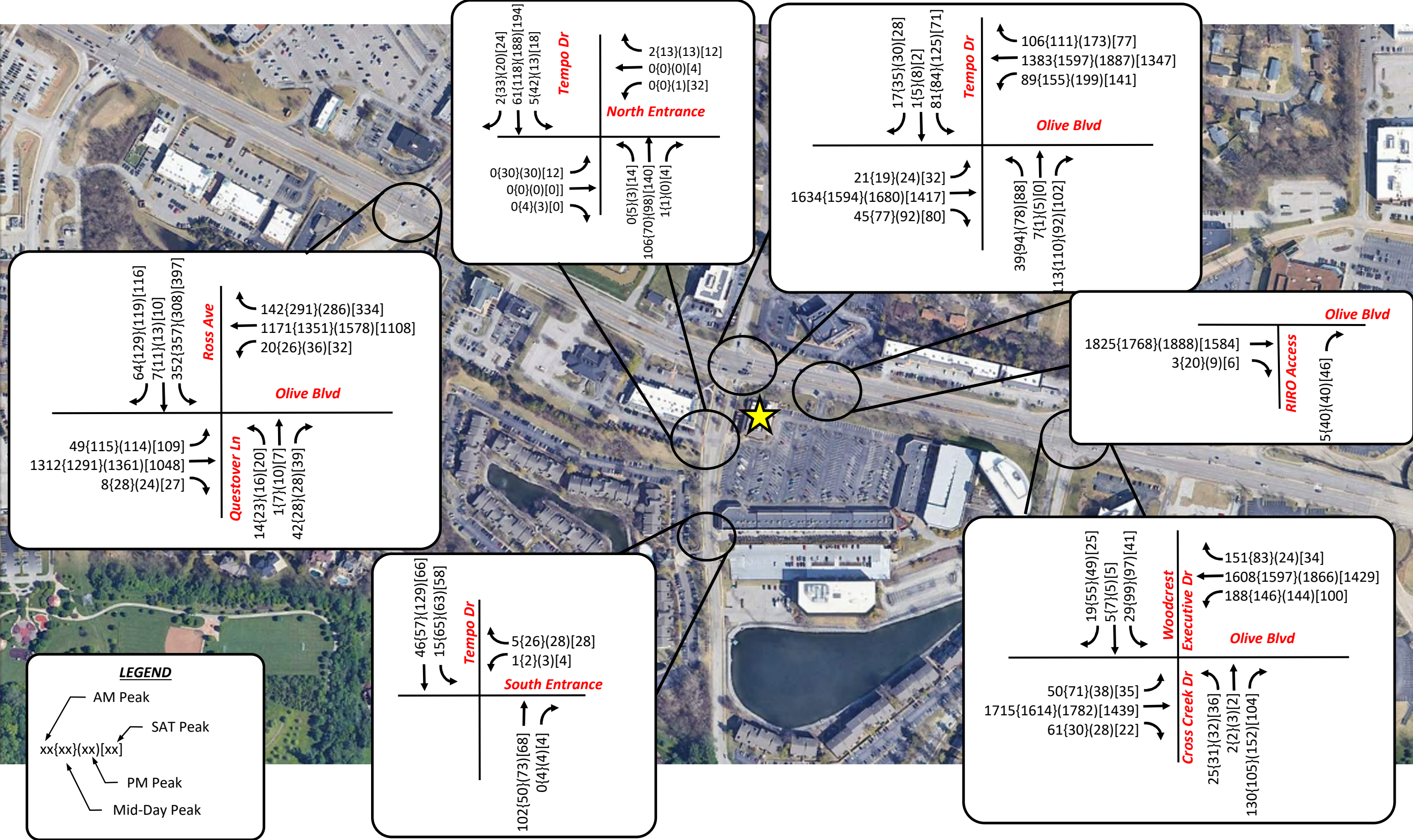


Figure 3
2022 Baseline Traffic Volumes

Existing Traffic Operations

The intersection capacity analysis was completed with Synchro software to measure the effectiveness of the intersections in terms of vehicle delay and expected queuing. Analysis was completed at each of the intersections with existing traffic volumes and lane configurations during morning and evening peak hours of commuter traffic.

Intersection Capacity Analysis...The study intersections were each analyzed to determine how they would operate, known as Level-of-Service (LOS). LOS criteria are outlined in the 6th Edition of the Highway Capacity Manual (HCM) for signalized and unsignalized intersections. The HCM defines LOS as a measure of the quality of traffic flow. There are six different levels of service for each facility type, each representing a range of operating conditions as indicated by amounts of average delay expected per entering vehicle. Each level of service is designated a letter from "A" to "F", with "A" being the least congested (free flow condition) and "F" being the highest congestion (least desirable condition). LOS thresholds for stop controlled intersections differ from those with traffic signal control to reflect different driver expectations with respect to delay.

Table 1 summarizes the criteria for both signalized and unsignalized intersections, as defined in the Highway Capacity Manual. LOS C, which is normally used for highway design, represents a roadway with volumes ranging from 70% to 80% of its capacity. However, Level D is considered acceptable for peak period conditions in urban and suburban areas.

TABLE 1: INTERSECTION LEVEL OF SERVICE

Level of Service (LOS)*	Average Control Delay (Seconds/vehicle)	
	Signalized Intersection	Two-Way Stop Control Intersection
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Source: Transportation Research Board, *Highway Capacity Manual*, 2010.

* LOS = F when volume to capacity ratio is greater than 1

The delay values in this study were analyzed using Synchro methodology. Intersections are signalized where Olive Boulevard intersects with Questover Lane, Tempo Drive, and Cross Creek Drive. The North and South Entrances as well as the RIRO Entrance into the study area are stop-controlled. The estimated 95th percentile queues reported by Synchro were also reviewed to identify any operational deficiencies along the corridor in terms of available turn bay storage, or blockage of upstream intersections. It should be noted that the 95th percentile queue calculation represents the worst case scenario, and queues exceeding this value can be expected only five percent of the time.

Existing signal timings were provided by MoDOT and used at signalized intersections. However, MoDOT also advised that a current construction project (J6S3255) will implement split phasing on Tempo Drive at Olive Boulevard. This phasing was implemented and optimized based on existing traffic counts in the baseline model, and in all other analysis scenarios.

Olive Boulevard and Questover Lane/Ross Avenue...Traffic operations for this intersection indicate high delays for the eastbound left movement in the mid-day and PM peak hours. All other movements on Olive Boulevard operate at an acceptable level. The northbound and southbound approaches experience high delays for left turns and through movements during the four peak hours. Overall, the intersection is analyzed as LOS B or C during all four

peaks. Queues are expected to exceed storage lengths for the southbound left (225' storage) and eastbound left (180' storage) movements during various peak hours.

Olive Boulevard and Tempo Drive... Traffic analysis for this intersection shows high delays for the westbound left movement in the mid-day and PM peak hours. All other approaches on Olive Boulevard operate at an acceptable level. The northbound and southbound approaches experience high delays for the left/through lanes during all peak hours. Overall, the intersection is analyzed as LOS C or better during all four peaks. Queues for the westbound left turn movement are expected to exceed the 300' storage length during the PM peak hour under the proposed split phasing. 95th percentile queues for the northbound direction are also expected to stretch back through the North Entrance intersection (170' distance) during the mid-day and PM weekday peak hours.

Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive... Vehicles at this intersection experience high delays for the eastbound and westbound left approach in all four peak hours. All other movements on Olive Boulevard operate at an acceptable level. The northbound and southbound lefts experience high delays during the four peak hours. Overall, the intersection is analyzed as LOS B or better during all four peaks. 95th percentile queues are projected to exceed storage lengths for the westbound left (180' storage) and southbound left (100' storage) during several peak hours.

Tempo Drive and North Entrance, South Entrance, and RIRO Access... All movements for these intersections were analyzed at LOS B or better for all four peaks.

The Baseline traffic conditions for the aforementioned intersections during the peak hours are summarized in **Table 2A** and **2B**, with detailed Synchro outputs in **Appendix B**. The delay, LOS, and queuing information are shown for the critical movements at each intersection.

TABLE 2A: 2022 BASELINE CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Baseline Conditions 2022 (No Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Olive Boulevard and Ross Avenue/Questover Lane												
EB Left	6.8	A	16'	75.1	E	190'	53.8	D	112'	34.3	C	90'
EB Thru	12.1	B	760'	22.5	C	581'	10.2	B	728'	21.2	C	431'
EB Right	0.0	A	0'	0.1	A	0'	0.0	A	0'	0.1	A	0'
WB Left	5.9	A	4'	3.0	A	2'	2.0	A	1'	3.3	A	3'
WB Thru	8.0	A	95'	17.7	B	713'	11.5	B	941'	18.6	B	311'
WB Right	0.7	A	2'	4.9	A	74'	1.3	A	32'	3.1	A	45'
NB Left	61.9	E	38'	58.3	E	49'	62.1	E	41'	51.8	D	40'
NB Thru	58.0	E	7'	53.7	D	22'	59.8	E	29'	48.7	D	22'
NB Right	1.5	A	0'	0.8	A	0'	0.9	A	0'	0.9	A	0'
SB Left	72.1	E	255'	72.0	E	268'	77.0	E	250'	67.3	E	275'
SB Left/Thru	72.0	E	256'	73.8	E	277'	76.5	E	249'	67.4	E	278'
SB Right	1.0	A	0'	4.0	A	17'	4.6	A	18'	1.7	A	0'
OVERALL	16.6	B		25.2	C		16.8	B		23.6	C	
Olive Boulevard and Tempo Drive												
EB Left	2.2	A	2'	8.5	A	7'	6.5	A	4'	11.2	B	11'
EB Thru	10.0	B	401'	23.9	C	415'	16.3	B	293'	29.7	C	702'
EB Right	0.2	A	0'	1.0	A	5'	0.9	A	4'	4.8	A	24'
WB Left	53.6	D	105'	82.2	F	260'	120.0	F	328'	51.1	D	168'
WB Thru	18.8	B	324'	25.4	C	836'	27.6	C	585'	9.6	A	513'
WB Right	4.4	A	33'	2.9	A	36'	4.5	A	44'	0.2	A	0'
NB Left/Thru	72.7	E	87'	99.8	F	183'	119.2	F	183'	72.2	E	140'
NB Right	8.0	A	17'	4.7	A	4'	4.2	A	0'	3.0	A	0'
SB Left/Thru	82.6	F	145'	105.4	F	180'	109.3	F	257'	74.2	E	125'
SB Right	0.4	A	0'	1.0	A	0'	0.7	A	0'	0.6	A	0'
OVERALL	16.6	B		28.7	C		29.4	C		22.2	C	
Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive												
EB Left	78.3	E	63'	59.2	E	64'	41.9	D	37'	48.8	D	42'
EB Thru	4.3	A	249'	15.8	B	508'	7.5	A	294'	7.5	A	150'
EB Right	0.2	A	0'	0.0	A	0'	0.0	A	0'	0.1	A	0'
WB Left	86.5	F	240'	61.7	E	195'	88.5	F	175'	60.4	E	131'
WB Thru	2.2	A	61'	17.2	B	378'	15.1	B	524'	7.7	A	241'
WB Right	0.2	A	1'	0.6	A	5'	0.0	A	0'	0.1	A	0'
NB Left	65.3	E	55'	41.1	D	52'	44.6	D	56'	55.8	E	61'
NB Thru	55.0	D	10'	54.0	D	11'	56.3	E	13'	45.0	D	9'
NB Right	19.7	B	65'	4.5	A	0'	17.0	B	57'	16.0	B	53'
SB Left	67.1	E	60'	49.5	D	129'	53.5	D	131'	57.8	E	68'
SB Thru/Right	29.6	C	35'	13.3	B	45'	13.8	B	41'	23.0	C	34'
OVERALL	9.6	A		19.2	B		15.6	B		11.1	B	

TABLE 3B: 2022 BASELINE CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Baseline Conditions 2022 (No Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Tempo Drive and North Entrance												
EB Left/Thru/Right	N/A	N/A	N/A	11.3	B	5'	11.4	B	5'	12.5	B	2'
WB Left/Thru/Right	8.9	A	0'	8.7	A	1'	9.0	A	1'	11.9	B	8'
SB Left	0.6	A	0'	1.8	A	2'	0.5	A	1'	0.7	A	1'
Tempo Drive and South Entrance												
WB Left/Right	9.0	A	1'	8.8	A	2'	9.0	A	3'	9.0	A	3'
SB Left	1.9	A	1'	4.1	A	4'	2.7	A	4'	3.7	A	3'
Olive Boulevard and RIRO Access												
NB Right	11.0	B	1'	11.8	B	6'	12.2	B	7'	10.9	B	6'
N/A: No volume projected for this movement												

Future Conditions

Proposed Redevelopment

The proposed redevelopment will be located on a 1.02 acre lot, currently occupied by TGI Friday's. The redevelopment will consist of a new Chick-fil-A restaurant, with a building footprint of about 5,000 square feet. Access to the proposed site will be via the existing North Access Drive on Olive Boulevard, the existing South Access Drive on Tempo Drive, and the existing RIRO Entrance on Olive Boulevard. **Figure 4** depicts the proposed Chick-Fil-A restaurant, and the full site plan is included in **Appendix C**.

[illegible]

Trip Generation...Additional traffic generated by the proposed redevelopment can typically be estimated by utilizing the 11th edition of the *Institute of Transportation Engineers (ITE) Trip Generation Manual*. The tables in the *ITE Trip Generation Manual* estimate the ingress and egress traffic for both morning and evening peak traffic conditions for various types of land uses. However, the MoDOT and the City requested that existing data from Chick-fil-A restaurants be used, as this restaurant may generate trips at a higher rate than ITE predicts. The existing data is an average from two stores in the Milwaukee area, which represent a similar suburban land density and store characteristics as the proposed restaurant. The existing data, included in **Appendix A**, showed higher trip generation numbers than ITE, and therefore those more conservative numbers will be used in this study. It should be noted that the existing counts only included data from the PM and Saturday peak hours. The AM and mid-day peak hours were estimated using the ITE time of day distribution values included in the appendix of the *Trip Generation Manual*. For example, the ITE tables indicate that the PM peak hour represents about 7.4% of the daily trips for a fast food restaurant. That relationship was used to estimate the AM and mid-day trips for the restaurant, which represent 3.5% and 11.9% of daily trips, respectively. The trip generation comparison for the proposed development can be seen in **Table 3**.

TABLE 3: TRIP GENERATION ESTIMATE

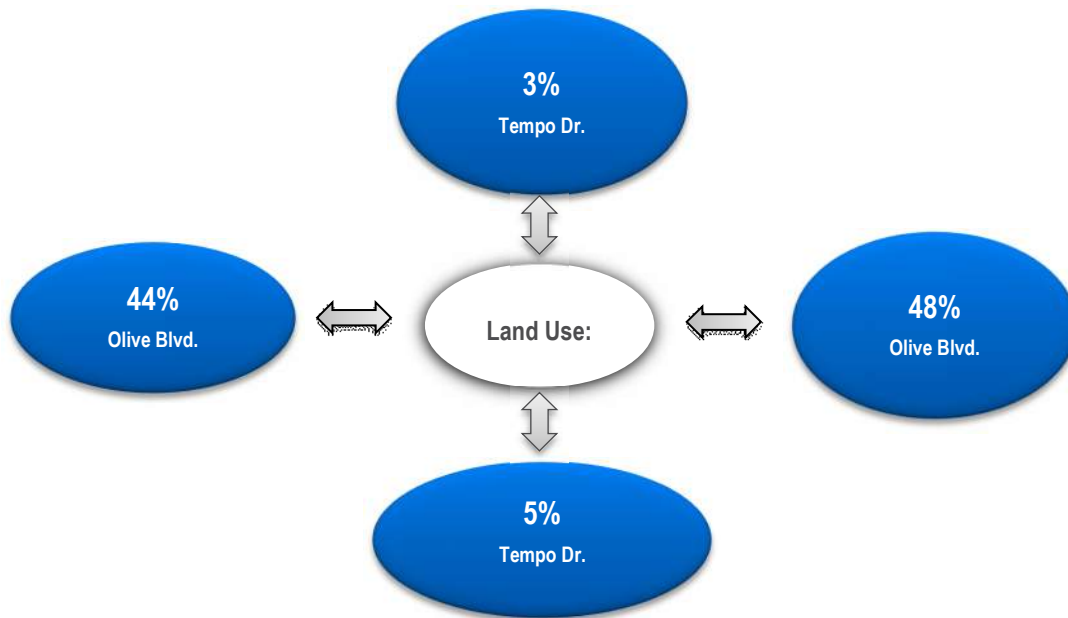
Land Use	ITE Code	Square Footage	AM Peak Hour		Mid-Day Peak Hour		PM Peak Hour		Saturday Peak Hour	
			In	Out	In	Out	In	Out	In	Out
Fast Food Restaurant w/ Drive Thru	934	5,000	115	110	135	120	85	80	140	135
Existing CFA Data			82	73	279	258	162	140	240	225
TOTAL TRIPS			82	73	279	258	162	140	240	225
Pass-By Trip Reduction (40%)			30	27	103	95	60	52	88	83
TOTAL NEW TRIPS			52	46	176	163	102	88	152	142

Many new developments which consist of commercial, or retail land uses may consider the impacts of pass-by trips, or traffic which is already on the roadway network which will now patronize the new business. These site trips would, therefore, not be considered “new” to the area. For this development, it was assumed that pass-by trips would have a significant impact to the adjacent street network, as it is reasonable to expect motorists to stop at the proposed restaurant on their way to work or home. The *ITE Trip Generation Handbook* recommends a reduction up to 40-50% for this type of restaurant. For this site, the pass-by reduction would apply to through vehicles on Olive Boulevard, and 40% of the site generated turning trips from Olive Boulevard was chosen as a conservative estimate.

Developments that are placed in a mixed-use shopping center may also be subject to a reduction of site-generated traffic through common trips. Common trips are patrons of the restaurant that are also visiting other businesses within the shopping center. Those trips may be subtracted from the overall trip generation estimate. In this shopping center, MoDOT advised that a common trip reduction should not be used because several other businesses are also restaurants. Therefore, no common trip reduction was applied to this estimate. However, there are still several non-restaurant businesses within the strip mall that may result in common trips with the Chick-fil-A. Because of this, the proposed trip generation estimate results in a conservative analysis of the traffic impact of the restaurant.

Traffic Distribution and Assignment... Traffic distribution to and from the proposed site will typically depend on the actual land use, population centers, employment centers, and major transportation corridors. The development site is immediately surrounded by commercial and retail centers, with residential neighborhoods north and south of the site. Olive Boulevard is classified as an arterial route and provides good connectivity to the surrounding residential areas and most likely customers. A large portion of vehicles will likely use Olive Boulevard from either the eastbound or westbound directions. Some residential customers from the north and south will likely access the site using Tempo Drive. The distribution of vehicles accessing or leaving the site from the north and south are also informed by the existing traffic patterns obtained in the turning movement counts.

FIGURE 5 – DIRECTIONAL DISTRIBUTION



The site generated traffic was assigned to the adjacent street network, and the total distribution of the new site-generated trips is estimated as shown in **Figure 6**, and the resulting 2022 Build volumes are in **Figure 7**.

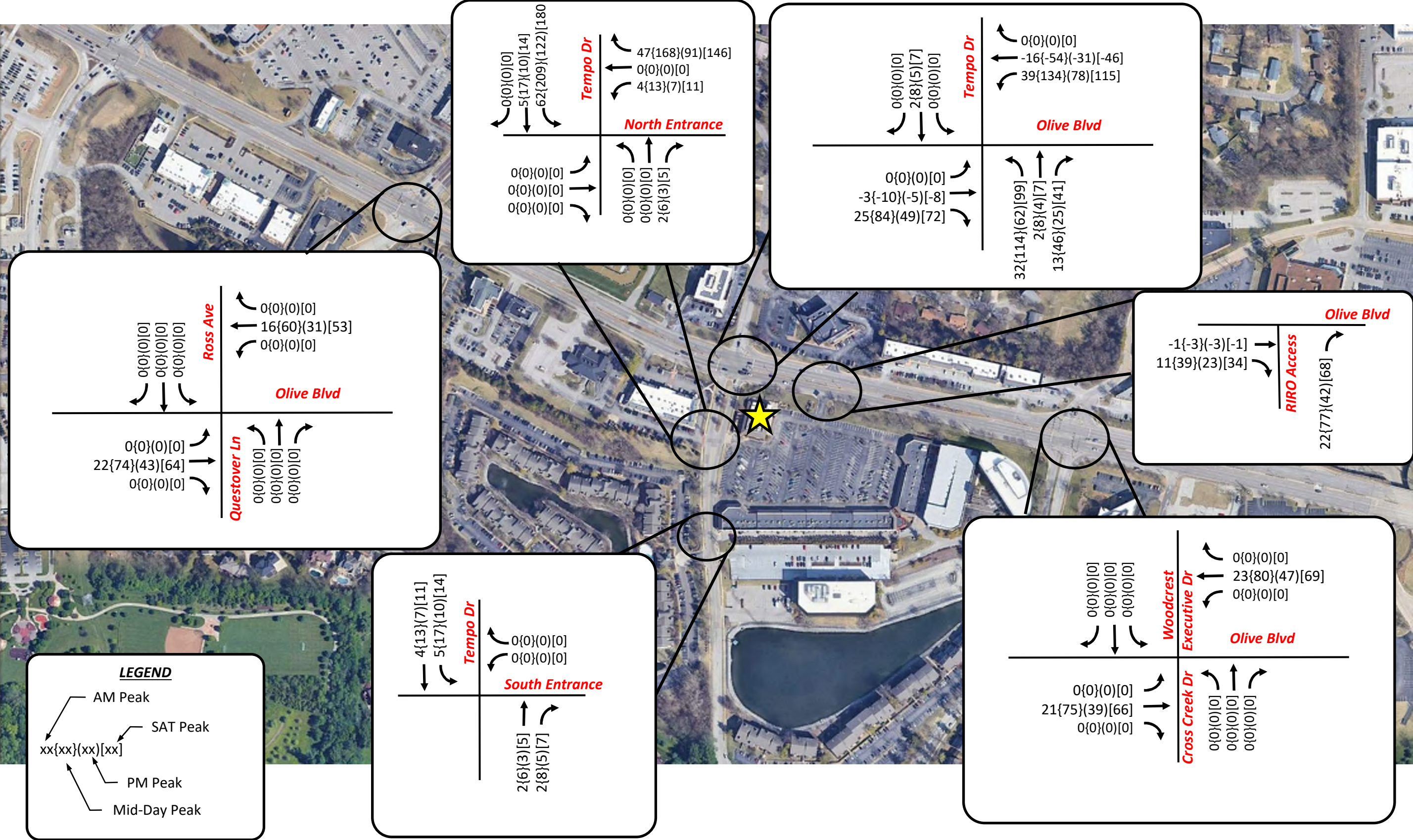


Figure 6
Site Generated Traffic Volumes

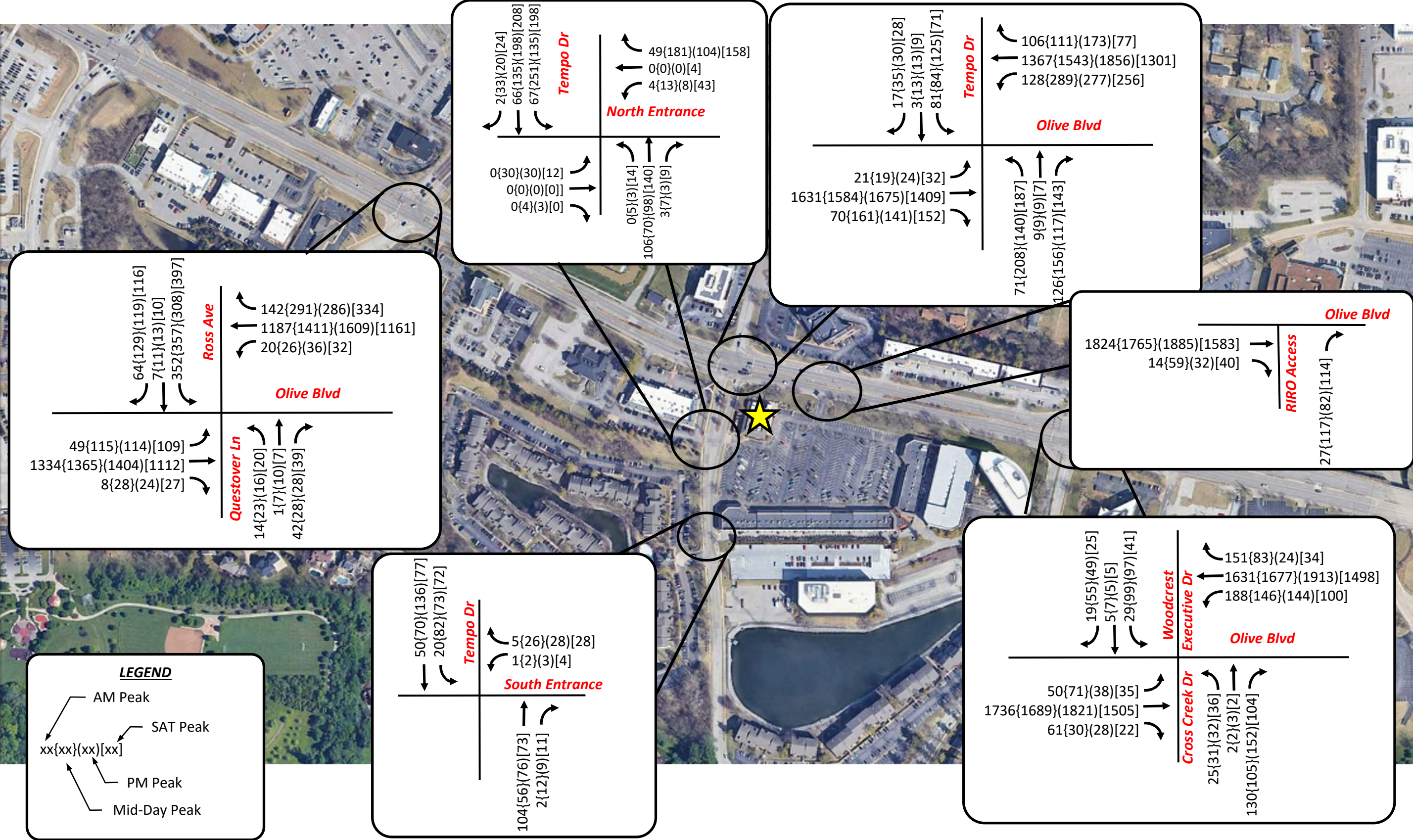


Figure 7
2022 Build Traffic Volumes

Intersection Improvements

Some intersection improvements are recommended to maintain satisfactory operations and progression along Olive Boulevard, and to improve traffic flow on Tempo Drive. The north and south legs of Tempo Drive at Olive Boulevard have a shared left/through lane and a dedicated right lane. Based on the existing traffic counts and the projected site-generated traffic, there is an imbalance in the lane usage with this configuration. It is recommended that Tempo Drive be re-stripped so that the north and south legs have a dedicated left turn lane and a shared right/through lane. The addition of the dedicated left turn lane allows for more efficient traffic distribution on Tempo Drive under the split signal phasing, which will help process the added northbound left-turning traffic leaving the development.

To accompany the lane re-stripping, advanced lane usage signing should be provided on both approaches of Tempo Drive to inform drivers of the new lane configuration. Some realignment of the through lane may be required in the northbound direction to ensure that the new northbound through/right turn lane is in line with the receiving lane on the north side of the intersection.

The City also requested an evaluation of whether a southbound left turn lane entering the development site at the North Entrance drive would be required. Based on the analysis to follow, delays and queues for the southbound direction do not indicate that that delays or queues are expected to be excessively high for this movement. However, the turning volumes surpass MoDOT's threshold for an auxiliary turn lane. Because the southbound pavement is 20' wide at this location, it can be re-stripped to two 10' lanes to provide a southbound through and a southbound left turn lane into the restaurant.

Build Traffic Operations

The Build traffic operations for the study intersections during the peak hours are summarized in **Table 4A** and **4B**, with detailed Synchro outputs in **Appendix B**. The operations results include the recommended lane configuration and phasing improvements. The Tempo Drive signal phasing and splits were re-optimized, and the corridor offsets were also re-optimized based on the new signal splits. The delay, LOS, and queuing information are shown for the critical movements at each intersection.

*Olive Boulevard and Questover Lane/Ross Avenue...*The added development traffic is expected to have minor impacts at this intersection. Overall intersection delays are expected to increase up to 9% in the PM peak hour, and the overall intersection grade is predicted to remain at LOS C or better. The minor street approaches and the eastbound left are still expected to have high delays, though the difference between the no-build and build scenarios is minimal, as no additional traffic is projected for these movements.

*Olive Boulevard and Tempo Drive...*The intersection is projected to operate at LOS D or better after the development and intersection improvements. The westbound left movement is expected to operate at LOS E or F during all peak hours. 95th percentile queues are expected to exceed 300' storage length, as in the existing conditions, with a 35-55% increase in length during the mid-day and PM peak hours. After the lane configuration improvements to improve traffic balance and lane utilization, the added traffic on Tempo Drive is anticipated to result in delays that are only increased between 6-27% for the northbound and southbound left turning movements. Northbound queues are again expected to extend through the North Entrance intersection. If queues are too long, drivers leaving the site may elect to use the South Entrance intersection, which is not expected to be impacted by queueing, and will have excess capacity to serve vehicles.

It should be noted that the northbound approach, southbound approach, and westbound left turns are the movements most impacted by the use of split phasing on Tempo Drive. While the proposed restaurant will likely have an effect on those movements, the current construction project to implement split phasing is expected to increase delays and queues for those movements prior to the construction of the restaurant.

Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive... Similar to the Questover Lane/Ross Avenue intersection, the added traffic is predicted to have minor impacts. The re-optimized offsets are expected to result in some minor improvements in overall delays, while the minor street movements and major street left turns are expected to remain near capacity.

Tempo Drive and North Entrance, South Entrance, and RIRO Access... The eastbound approach of North Entrance at Tempo Drive is predicted to operate at LOS D during the mid-day peak and Saturday peaks, which have the heaviest projected traffic for the development. All other movements at the access intersections during all other peak hours are projected at LOS C or better with queues no longer than 2-3 vehicles long.

TABLE 4A: 2022 BUILD CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Baseline Conditions 2022 (Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Olive Boulevard and Ross Avenue/Questover Lane												
EB Left	6.3	A	16'	75.1	E	190'	56.6	E	120'	34.3	C	90'
EB Thru	9.7	A	772'	23.8	C	639'	9.0	A	504'	22.1	C	469'
EB Right	0.0	A	0'	0.1	A	0'	0.0	A	0'	0.1	A	0'
WB Left	2.1	A	2'	7.8	A	6'	7.0	A	7'	8.2	A	9'
WB Thru	7.4	A	407'	17.2	B	760'	16.1	B	958'	19.0	B	536'
WB Right	1.0	A	20'	3.1	A	24'	2.3	A	8'	3.8	A	45'
NB Left	61.9	E	38'	58.3	E	49'	62.1	E	41'	51.8	D	40'
NB Thru	58.0	E	7'	53.7	E	22'	59.8	E	29'	48.7	D	22'
NB Right	1.5	A	0'	0.8	A	0'	0.9	A	0'	0.9	A	0'
SB Left	72.1	E	255'	72.0	E	268'	77.0	E	250'	67.3	E	275'
SB Left/Thru	72.0	E	256'	73.8	E	277'	76.5	E	249'	67.4	E	278'
SB Right	1.0	A	0'	4.0	A	17'	4.6	A	18'	1.7	A	0'
OVERALL	15.3	B		25.2	C		18.3	B		24.1	C	
Olive Boulevard and Tempo Drive												
EB Left	3.7	A	4'	13.7	B	11'	6.9	A	7'	11.3	B	18'
EB Thru	9.0	A	321'	59.8	E	908'	38.8	D	994'	36.8	D	720'
EB Right	0.3	A	2'	9.4	A	76'	1.5	A	11'	6.6	A	60'
WB Left	63.1	E	183'	114.8	F	407'	130.5	F	445'	67.0	E	314'
WB Thru	19.5	B	438'	17.1	B	295'	24.0	C	1053'	13.8	A	163'
WB Right	3.8	A	37'	0.7	A	8'	3.2	A	23'	0.2	A	0'
NB Left	83.2	F	131'	112.9	F	348'	129.0	F	278'	91.7	F	291'
NB Thru/Right	23.2	C	77'	13.8	B	76'	19.3	B	73'	13.4	B	67'
SB Left	87.6	F	153'	121.9	F	178'	133.6	F	257'	82.7	F	134'
SB Thru/Right	28.1	C	31'	32.3	C	53'	30.3	C	51'	28.4	C	42'
OVERALL	18.4	B		46.0	D		40.4	D		31.1	C	
Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive												
EB Left	77.5	E	63'	77.6	E	69'	40.2	D	37'	55.4	E	35'
EB Thru	4.1	A	227'	15.8	B	191'	6.9	A	217'	2.1	A	60'
EB Right	0.1	A	0'	0.0	A	0'	0.0	A	0'	0.0	A	0'
WB Left	84.8	F	221'	61.7	E	195'	91.2	F	167'	60.4	E	131'
WB Thru	2.0	A	50'	17.8	B	407'	17.3	B	570'	7.8	A	257'
WB Right	0.2	A	0'	0.6	A	5'	0.0	A	0'	0.1	A	0'
NB Left	65.3	E	55'	41.1	D	52'	44.6	D	56'	55.8	E	61'
NB Thru	55.0	D	10'	54.0	D	11'	56.3	E	13'	45.0	D	9'
NB Right	19.7	B	65'	4.5	A	0'	17.0	B	57'	16.0	B	53'
SB Left	67.1	E	60'	49.5	D	129'	53.5	D	131'	57.8	E	68'
SB Thru/Right	29.6	C	35'	13.3	B	45'	13.8	B	41'	23.0	C	34'
OVERALL	9.2	A		19.7	B		16.4	B		8.8	A	

TABLE 4B: 2022 BUILD CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Baseline Conditions 2022 (Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Tempo Drive and North Entrance												
EB Left/Thru/Right	N/A	N/A	N/A	34.1	D	21'	20.1	C	11'	33.3	D	8'
WB Left/Thru/Right	9.3	A	5'	10.9	B	26'	10.0	B	13'	16.2	C	51'
NB Left/Thru/Right	0.0	A	0'	0.5	A	0'	0.2	A	0'	0.8	A	1'
SB Left	7.6	A	4'	4.7	A	17'	7.7	A	8'	8.0	A	14'
Tempo Drive and South Entrance												
WB Left/Right	9.0	A	1'	8.9	A	3'	9.1	A	3'	9.1	A	3'
SB Left	2.2	A	1'	4.3	A	5'	2.9	A	4'	3.8	A	4'
Olive Boulevard and RiRO Access												
NB Right	11.2	B	4'	12.7	B	20'	13.3	B	16'	12.5	B	19'
N/A: No volume projected for this movement												

Future Traffic Volumes

It is reasonable to expect the existing background traffic volumes to increase due to area growth factors such as new development, population growth, and more drivers per average household. For the purposes of this traffic engineering study, a 2045 no-build analysis and a 2045 build-out analysis will be completed. The 2045 no-build traffic volumes will account for the background traffic growth not attributed to the studied development.

Projected traffic volumes were developed using the same method as the 2022 baseline volumes. Traffic volumes on through movements along Olive Boulevard were increased at an annual growth rate of 0.5%. After applying that growth rate for 23 additional years, a total of 12.2% increase in traffic volumes was applied to the through movements. Side roads are again assumed to be fully developed and therefore the growth rate was not applied to turning movements on Olive Boulevard or any movements on side roads.

This study will expand on the baseline traffic analysis by reviewing the following traffic volume scenarios during the identified peak traffic hours:

1. **Future 2045 (No-Build)** – This scenario will consider future traffic volumes without the impact of the proposed site generated trips (**Figure 8**).
2. **Future 2045 (Build)** – This scenario will consider future traffic volumes with the impact of the proposed site generated trips and the proposed intersection improvements at Tempo Drive (**Figure 9**).

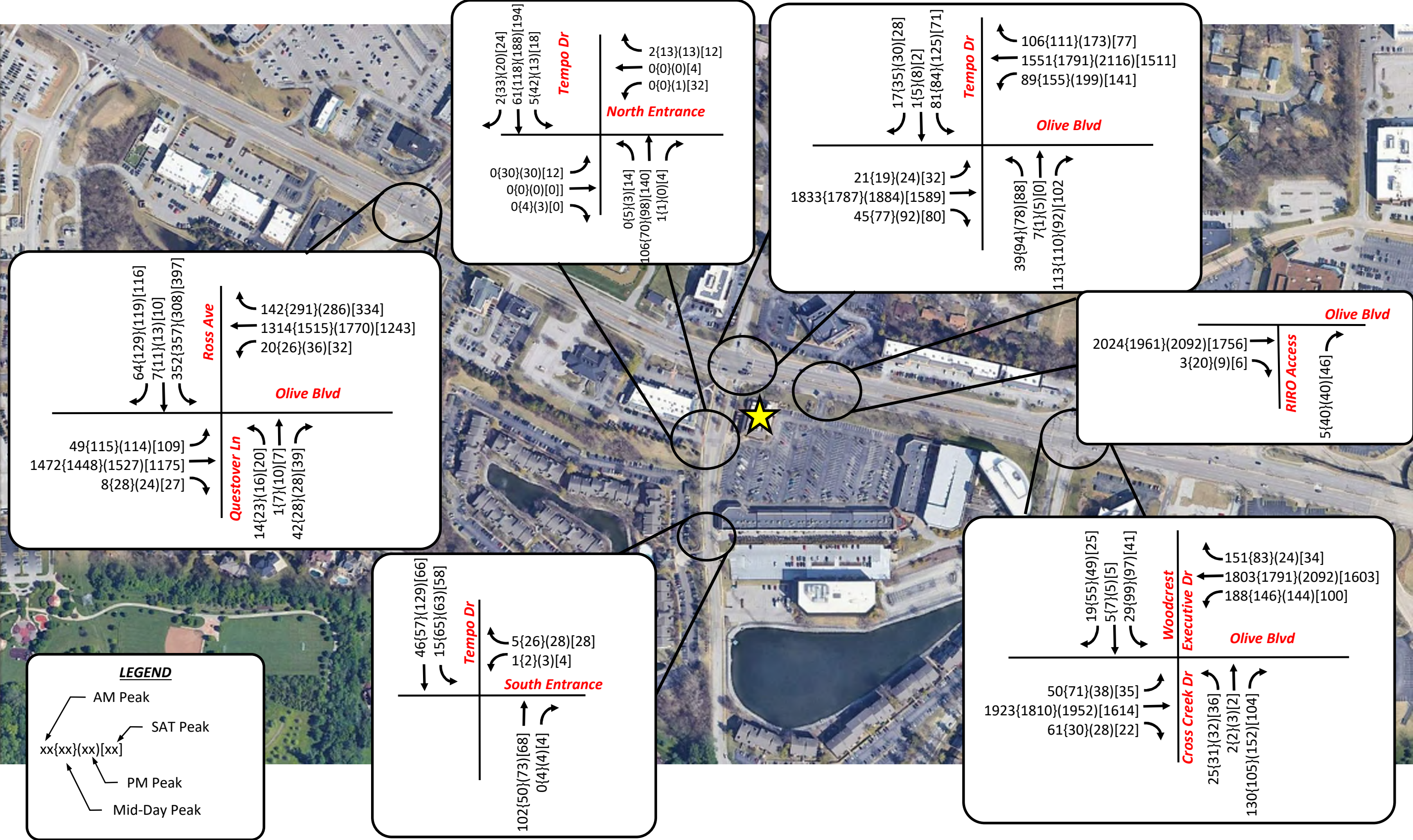


Figure 8
2045 No Build Traffic Volumes

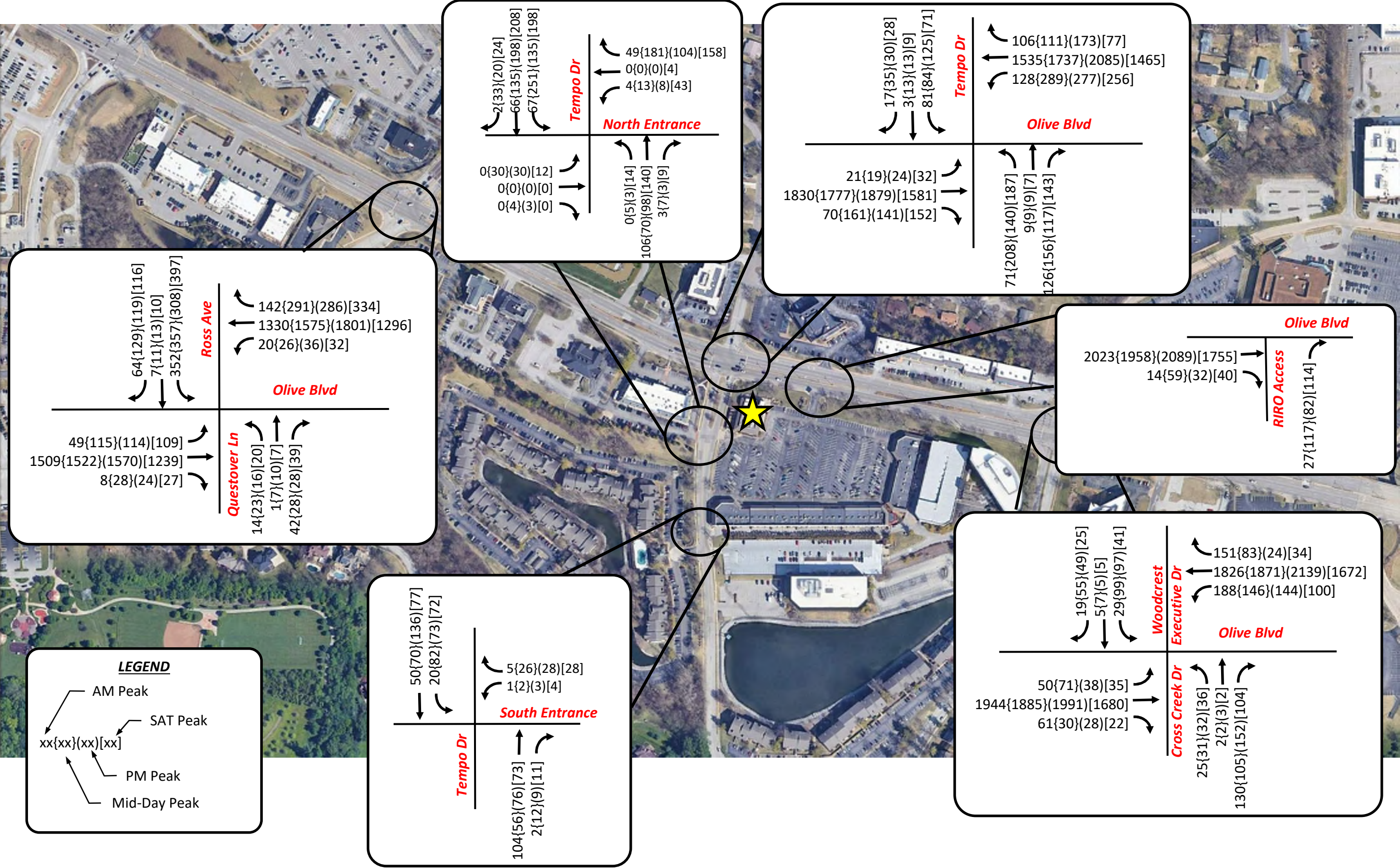


Figure 9
2045 Build Traffic Volumes

Future Traffic Operations

Additional analysis was completed to provide an operational comparison between the future no-build traffic conditions, and the future conditions with the added site development traffic.

Future 2045 (No-Build)... Intersection capacity and queueing analysis of this scenario will consider future traffic volumes and baseline lane configurations, without the impact of the proposed site generated trips. Future traffic signal phasing and splits will be re-optimized as needed based on traffic volumes. The cycle lengths for each peak hour were assumed to remain the same as the existing timings. **Tables 5A and 5B** show the critical movements at each intersection for the Future, No Build traffic volume scenario.

Olive Boulevard and Questover Lane/Ross Avenue...The overall intersection is expected to operate with 2-6 added seconds of delay over the baseline analysis, while remaining at LOS C. The added delay is a result of the background traffic growth on Olive Boulevard. The same minor street and eastbound left movements are predicted to operate with high delays, as in the baseline analysis.

Olive Boulevard and Tempo Drive...The intersection is projected to operate at LOS D or better during all peak hours. The westbound left movement and minor street movements are again expected to operate at LOS E or F during most peak hours. Westbound left queues and northbound queues again are predicted to exceed the existing storage length during the mid-day and PM peak hours.

Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive...This intersection is predicted to operate at LOS C or better during all peak hours under the 2045 No-Build volumes. The eastbound and westbound lefts are expected to continue experiencing high delays, as are the northbound and southbound left-turning movements during some peak hours.

Tempo Drive and North Entrance, South Entrance, and RIRO Access...All access intersection approaches are expected to operate at LOS B or better during all peak hours.

TABLE 5A: 2045 NO BUILD CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Future Conditions 2045 (No Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Olive Boulevard and Ross Avenue/Questover Lane												
EB Left	9.9	A	18'	75.1	E	190'	53.6	D	114'	34.3	C	90'
EB Thru	14.9	B	867'	25.4	C	726'	15.0	B	877'	23.0	C	510'
EB Right	0.0	A	0'	0.1	A	0'	0.0	A	0'	0.1	A	0'
WB Left	14.8	B	10'	8.4	A	10'	7.0	A	2'	3.7	A	3'
WB Thru	17.3	B	298'	24.3	C	911'	21.9	C	987'	21.8	C	635'
WB Right	5.0	A	35'	3.8	A	92'	1.5	A	24'	4.8	A	74'
NB Left	61.9	E	38'	58.3	E	49'	62.1	E	41'	51.8	D	40'
NB Thru	58.0	E	7'	53.7	D	22'	59.8	E	29'	48.7	D	22'
NB Right	1.5	A	0'	0.8	A	0'	0.9	A	0'	0.9	A	0'
SB Left	72.1	E	255'	72.0	E	268'	77.0	E	250'	67.3	E	275'
SB Left/Thru	72.0	E	256'	73.8	E	277'	76.5	E	249'	67.4	E	278'
SB Right	1.0	A	0'	4.0	A	17'	4.6	A	18'	1.7	A	0'
OVERALL	21.0	C		28.4	C		22.4	C		25.2	C	
Olive Boulevard and Tempo Drive												
EB Left	1.9	A	1'	18.3	B	9'	7.0	A	4'	11.2	B	19'
EB Thru	11.8	B	227'	45.1	D	952'	27.0	C	1077'	33.8	C	777'
EB Right	0.1	A	0'	4.1	A	13'	0.7	A	2'	4.0	A	17'
WB Left	42.7	D	104'	127.7	F	286'	141.7	F	311'	63.4	E	178'
WB Thru	11.4	B	233'	12.7	B	212'	41.9	D	1269'	12.9	B	603'
WB Right	1.6	A	19'	0.2	A	1'	5.3	A	57'	0.2	A	0'
NB Left/Thru	80.0	F	94'	123.6	F	194'	141.5	F	192'	80.9	F	151'
NB Right	8.8	A	17'	5.1	A	4'	4.6	A	0'	3.2	A	0'
SB Left/Thru	89.7	F	159'	122.8	F	187'	131.1	F	269'	83.0	F	135'
SB Right	0.5	A	0'	1.0	A	0'	0.7	A	0'	0.7	A	0'
OVERALL	14.2	B		34.4	C		41.1	D		25.9	C	
Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive												
EB Left	73.3	E	0'	43.6	D	67'	41.7	D	35'	45.1	D	36'
EB Thru	3.0	A	186'	44.9	D	591'	8.5	A	349'	9.5	A	191'
EB Right	0.1	A	0'	0.0	A	0'	0.0	A	0'	0.1	A	0'
WB Left	82.2	F	213'	61.7	E	195'	85.6	F	177'	60.4	E	131'
WB Thru	3.2	A	215'	18.6	B	450'	16.3	B	589'	8.2	A	284'
WB Right	0.2	A	0'	0.6	A	5'	0.0	A	0'	0.1	A	0'
NB Left	65.3	E	55'	41.1	D	52'	44.6	D	56'	55.8	E	61'
NB Thru	55.0	D	10'	54.0	D	11'	56.3	E	13'	45.0	D	9'
NB Right	19.7	B	65'	4.5	A	0'	17.0	B	57'	16.0	B	53'
SB Left	67.1	E	60'	49.8	D	129'	53.5	D	131'	57.8	E	68'
SB Thru/Right	29.6	C	35'	13.4	B	45'	13.8	B	41'	23.0	C	34'
OVERALL	8.6	A		31.7	C		16.2	B		11.9	B	

TABLE 5B: 2045 NO BUILD CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Future Conditions 2045 (No Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Tempo Drive and North Entrance												
EB Left/Thru/Right	N/A	N/A	N/A	11.3	B	5'	11.4	B	5'	12.5	B	2'
WB Left/Thru/Right	8.9	A	0'	8.7	A	1'	9.0	A	1'	12.0	B	8'
SB Left	0.6	A	0'	1.8	A	2'	0.5	A	1'	0.7	A	1'
Tempo Drive and South Entrance												
WB Left/Right	9.0	A	1'	8.8	A	2'	9.0	A	3'	9.0	A	3'
SB Left	1.9	A	1'	4.1	A	4'	2.7	A	4'	3.7	A	3'
Olive Boulevard and RIRO Access												
NB Right	13.5	B	1'	13.3	B	8'	13.9	B	8'	11.9	B	7'
N/A: No volume projected for this movement												

Future 2045 (Build)... Intersection capacity and queueing analysis of this scenario will consider future traffic volumes, plus the Tempo Drive intersection lane configuration improvements, with the impact of the proposed site generated trips. The timing plan at Tempo Drive was again re-optimized to accommodate the new lane configuration, and offsets among the three signalized intersection were optimized. **Tables 6A and 6B** show the critical movements at each intersection for the 2045 Build scenario.

Olive Boulevard and Questover Lane/Ross Avenue...The added development traffic is again expected to have minor impacts at this intersection. Overall intersection delays are expected to increase up to 11% in the AM peak hour, and the overall intersection grade is predicted to remain at LOS C or better. The minor street approaches and the eastbound left are still expected to have high delays, though the difference between the no-build and build scenarios is minimal, as no additional traffic is projected for these movements.

Olive Boulevard and Tempo Drive...The intersection is projected to operate at LOS D or E during the mid-day, PM, and Saturday peak hours after the development and intersection improvements. The westbound left movement is expected to operate at LOS E or F during all peak hours, with 95th percentile queues again increasing by up to 55% during the mid-day and PM peak hours, and continuing to exceed the existing storage length. After the lane improvements, the added traffic on Tempo Drive is anticipated to result in delays that are increased by up to 43% over the No-Build analysis for the northbound and southbound left turning movements.

Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive...Similar to the Questover Lane/Ross Avenue intersection, the added traffic is predicted to have minor impacts. The re-optimized offsets are expected to result in some minor improvements in overall delays, while the minor street movements and major street left turns are expected to remain near capacity.

Tempo Drive and North Entrance, South Entrance, and RIRO Access...The eastbound approach of North Entrance at Tempo Drive is again predicted to operate at LOS D during the mid-day and Saturday peaks. All other movements at the access intersections during all other peak hours are projected at LOS C or better with queues no longer than 2-3 vehicles long.

TABLE 6A: 2045 BUILD CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Future Conditions 2045 (Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Olive Boulevard and Ross Avenue/Questover Lane												
EB Left	10.7	B	18'	75.1	E	190'	57.3	E	132'	34.3	C	90'
EB Thru	18.9	B	906'	27.1	C	831'	12.0	B	918'	24.1	C	554'
EB Right	0.0	A	0'	0.1	A	0'	0.0	A	0'	0.1	A	0'
WB Left	16.1	B	10'	8.7	A	6'	13.7	B	8'	5.7	A	4'
WB Thru	19.1	B	319'	29.9	C	928'	27.4	C	983'	23.0	C	665'
WB Right	5.6	A	36'	3.5	A	41'	3.3	A	14'	3.5	A	28'
NB Left	61.9	E	38'	58.3	E	49'	62.1	E	41'	51.8	D	40'
NB Thru	58.0	E	7'	53.7	D	22'	59.8	E	29'	48.7	D	22'
NB Right	1.5	A	0'	0.8	A	0'	0.9	A	0'	0.9	A	0'
SB Left	72.1	E	255'	72.0	E	268'	77.0	E	250'	67.3	E	275'
SB Left/Thru	72.0	E	256'	73.8	E	277'	76.5	E	249'	67.4	E	278'
SB Right	1.0	A	0'	4.0	A	17'	4.6	A	18'	1.7	A	0'
OVERALL	23.3	C		31.0	C		24.3	C		25.9	C	
Olive Boulevard and Tempo Drive												
EB Left	1.9	A	2'	12.0	B	10'	6.2	A	5'	13.7	B	21'
EB Thru	12.4	B	226'	73.9	E	1041'	68.5	E	1168'	50.6	D	871'
EB Right	0.1	A	0'	7.1	A	57'	0.9	A	3'	8.4	A	66'
WB Left	78.8	E	198'	165.0	F	442'	149.6	F	447'	75.8	E	327'
WB Thru	9.5	A	193'	15.7	B	928'	41.9	D	1273'	14.7	B	620'
WB Right	1.0	A	14'	0.3	A	2'	3.7	A	29'	0.2	A	0'
NB Left	90.4	F	143'	158.6	F	372'	153.8	F	290'	115.8	F	305'
NB Thru/Right	39.4	D	126'	15.3	B	77'	22.4	C	79'	14.3	B	69'
SB Left	97.2	F	165'	121.9	F	178'	145.5	F	262'	82.7	F	134'
SB Thru/Right	28.9	C	31'	32.3	C	53'	30.8	C	51'	28.4	C	42'
OVERALL	16.9	B		55.4	E		60.3	E		38.2	D	
Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive												
EB Left	71.5	E	56'	67.1	E	67'	36.8	D	32'	49.6	D	34'
EB Thru	3.4	A	192'	24.7	C	302'	6.5	A	205'	6.0	A	110'
EB Right	0.1	A	0'	0.0	A	0'	0.0	A	0'	0.0	A	0'
WB Left	80.0	F	209'	61.7	E	195'	90.1	F	189'	60.4	E	131'
WB Thru	3.8	A	299'	19.4	B	484'	19.5	B	654'	8.4	A	302'
WB Right	0.3	A	0'	0.6	A	5'	0.0	A	0'	0.1	A	0'
NB Left	65.3	E	55'	41.1	D	52'	44.6	D	56'	55.8	E	61'
NB Thru	55.0	D	10'	54.0	D	11'	56.3	E	13'	45.0	D	9'
NB Right	19.7	B	65'	4.5	A	0'	17.0	B	57'	16.0	B	53'
SB Left	67.1	E	60'	49.5	D	129'	53.5	D	131'	57.8	E	68'
SB Thru/Right	29.6	C	35'	13.3	B	45'	13.8	B	41'	23.0	C	34'
OVERALL	8.8	A		23.8	C		16.8	B		10.3	B	

TABLE 6B: 2045 BUILD CONDITIONS TRAFFIC OPERATIONS

Location / Critical Movements	Future Conditions 2045 (Build)											
	AM Peak Hour			Mid-Day Peak Hour			PM Peak Hour			SAT Peak Hour		
	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue	Delay	LOS	Queue
Tempo Drive and North Entrance												
EB Left/Thru/Right	N/A	N/A	N/A	34.1	D	21'	20.1	C	11'	33.3	D	8'
WB Left/Thru/Right	9.3	A	5'	10.9	B	26'	10.0	B	13'	16.2	C	51'
SB Left	7.6	A	4'	7.9	A	17'	7.7	A	8'	8.0	A	14'
Tempo Drive and South Entrance												
WB Left/Right	9.0	A	1'	8.9	A	3'	9.1	A	3'	9.1	A	3'
SB Left	2.2	A	1'	4.3	A	5'	2.9	A	4'	3.8	A	4'
Olive Boulevard and RIRO Access												
NB Right	13.8	B	5'	13.3	B	22'	14.0	B	17'	12.8	B	20'
N/A: No volume projected for this movement												

Parking Lot Capacity

Because the proposed restaurant footprint will eliminate some of the existing parking spaces, and because the lot is shared among the various land uses, an evaluation of the parking lot capacity for the Westgate Centre was also conducted as part of the study. The combined projected parking demand for the shopping center and the proposed restaurant was compared to the number of available parking spaces after the development. There are approximately 387 existing parking spaces in all the shared lot areas. After the improvements, the total number of parking spaces will be 343.

Each of the land uses in the shopping center was considered for parking requirements, based on the Institute of Transportation Engineers (ITE) *Parking Generation, 5th Edition*. ITE provides either an average parking demand rate or a fitted curve equation based on their study data for peak parking demand by land use. ITE also provides data on the percentage of peak parking demand each hour, as experienced by each land use.

Chick-fil-A falls under ITE Land Use Code 934 – Fast-Food Restaurant with Drive-Through Window. The proposed building is approximately 5,000 square feet (s.f.).

The large building containing various businesses such as retail, office buildings, restaurants, and medical offices is approximately 48,500 s.f. To be conservative, this entire building was considered to be Land Use 820 – Shopping Center, as it has the highest parking rate of the retail and restaurant land uses.

Parking demands for each land use were calculated and summed for the Westgate Centre. A mid-day peak hour and an evening peak hour were considered for both weekday and Saturday demand, as these are the peak demand times for both land uses. A weekday morning peak hour was not analyzed because of the relatively low demand for the shopping center. To be conservative, the highest mid-day rate (11:00am-2:00pm) and highest evening rate (4:00-7:00pm) were used, even if the peak hours did not line up exactly among the land uses. The peak period parking demands for each Lot are summarized in **Table 7**.

TABLE 7 – ITE PARKING REQUIREMENTS

Land Use	Building Size (s.f.)	ITE Land Use Code	ITE Parking Requirements			
			Weekday		Saturday	
			Mid-Day	Evening	Mid-Day	Evening
Chick-fil-A	5,000	934	43	27	46	32
Shopping Center	48,500	820	172	148	174	150
Lot Total	53,500	-	215	175	220	182

According to ITE parking rates, the highest parking demand is projected to be 220 vehicles during the Saturday mid-day peak period. Compared to the 343 available parking spaces, the overall parking utilization is predicted to be 64%. The analysis indicates that the parking supply is expected to be adequate for the development plans based on ITE code. The additional 36% of unutilized parking supply will likely aid in traffic circulation, as available parking spaces reduce the amount of time vehicles must spend driving through the lot, searching for a parking space.

Conclusion and Recommendations

A comprehensive review was completed to estimate the impacts to the adjacent street network associated with the proposed Chick-fil-A development plans. This traffic review consisted of existing traffic data, trip generation and traffic assignment, intersection operation levels-of-service, and parking demand. Analysis was completed for four volume scenarios: existing (or baseline), baseline plus site (build), future (no build), and future plus site (build). Each scenario was reviewed during the morning, mid-day, and evening peak hours of a weekday, and the mid-day Saturday peak hour.

The proposed development will be a 5,000 square foot restaurant located in a vacant lot. Access to the site will be via two existing full access intersections on Tempo Drive and one right-in, right-out entrance on Olive Boulevard.

For the purposes of this traffic engineering study, a design year of 2045 was considered. Baseline 2022 volumes were based on existing traffic volumes. Future 2045 traffic volumes were derived using a 0.5% annual growth rate on Olive Boulevard. The 2022 and 2045 build analyses considered the addition of the development traffic on top of normal background traffic growth.

The following intersection improvements are recommended to ensure the efficient operation of the Olive Boulevard corridor after construction:

- Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left turn lane and a shared through/right lane
- Add intersection lane control signage to both approaches of Tempo Drive at Olive Boulevard to inform drivers of the lane configuration
- Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard
- Re-stripe southbound Tempo Drive between Olive Boulevard and North Entrance to provide a dedicated left turn lane entering the development site

The addition of site traffic will likely add delay to several of the major intersection movements at Tempo Drive and Olive Boulevard. However, the analysis indicates the study intersections are predicted to maintain similar levels of service as the existing condition with these proposed improvements. The construction project currently underway at that intersection will implement split phasing on the minor street approaches, which is expected to increase delays and queues prior to construction of the restaurant.

Additionally, the projected parking lot demand for the proposed development and the existing Westgate Centre was studied. The analysis indicates that the proposed parking supply is expected to be greater than the proposed demand. Up to 64% utilization of the parking lot is projected, leaving ample space for vehicles to park.

Appendix C – Proposed Site Plan

SITE PLAN DESIGN NOTES & KEY PLAN

- 1A DIRECTIONAL ARROW
1B PAINTED HANDICAP PARKING SYMBOL
2A DRIVE-THRU GRAPHICS
2B STOP LINE GRAPHIC
3 STANDARD PARKING STALL (9.0'x19.0') PER CODE
4 STANDARD 60 DEGREE PARKING STALL
4A 4" SOLID WHITE STRIPING
4B 4" SOLID YELLOW STRIPING
4C 4" SKIP DASH YELLOW STRIPING
5 BOLLARD MOUNTED SIGN
6 ADA ACCESSIBLE PARKING SIGN
7 DIRECTIONAL SIGNAGE

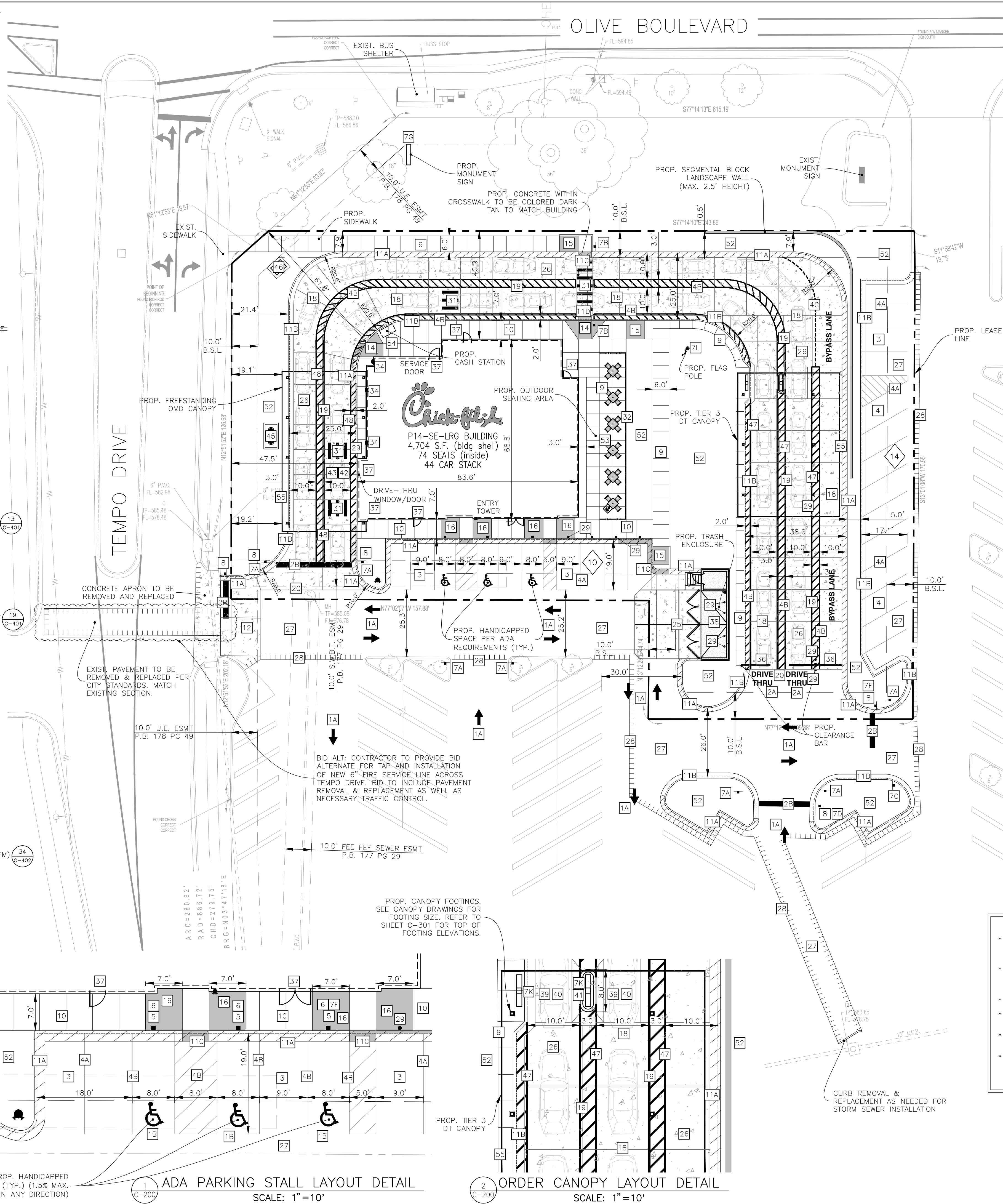
ALL SIGNS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" BY THE U.S. DEPARTMENT OF TRANSPORTATION. (SEE SIGN LEGEND)

7A THRU 7F (SEE SIGNAGE LEGEND, THIS SHEET)

- 7G CHICK-FIL-A MONUMENT SIGN, SEE SIGNAGE PACKAGE
7H CHICK-FIL-A "ENTER" SIGN, SEE SIGNAGE PACKAGE
7I CHICK-FIL-A "EXIT" SIGN, SEE SIGNAGE PACKAGE
7J CHICK-FIL-A "DRIVE THRU" SIGN, SEE SIGNAGE PACKAGE
7K DRIVE THRU ORDERING STATION, SEE SIGNAGE PACKAGE
7L FLAGPOLE, 50', SEE SIGNAGE PACKAGE

- 8 STOP SIGN, SEE SIGNAGE PACKAGE
9 TYPICAL CONCRETE SIDEWALK, 5' MIN.
10 7' WIDE SIDEWALK w/ CURB & GUTTER
11 24" CONCRETE CURB & GUTTER
11A SPILLING CURB SECTION
11B CATCHING CURB SECTION
11C DEPRESSED SPILLING CURB
11D DEPRESSED CATCHING CURB

- 12 CONCRETE PAVEMENT SECTIONS
13 HANDICAP RAMP w/ SHORT FLARED SIDES (GRASSED AREAS)
14 HANDICAP RAMP w/ FLARED SIDES (IN SIDEWALK)
15 RETURNED CURB HANDICAP RAMP
16 SIDEWALK (ADA COMPLIANT) RAMP
17 DETECTABLE WARNING DEVICE
18 TRANSVERSE & LONGITUDINAL CONTRACTION JOINT
19 TRANSVERSE & LONGITUDINAL DOWELED CONSTRUCTION JOINT
20 PAVEMENT EDGE DETAIL
21 CONTRACTION JOINT
22 KEYED CONSTRUCTION JOINT
23 LONGITUDINAL BUTT JOINT
24 EXPANSION JOINT
25 CONCRETE APRON @ TRASH ENCLOSURE
26 CONCRETE PAVEMENT DRIVE-THRU LANE
27 TYPICAL HMA PAVEMENT SECTION
28 BUTT JOINT
29 CONCRETE BOLLARD
30 MULTI-LANE DIRECTIONAL GRAPHICS
31 CROSSWALK MARKINGS
32 ALUMINUM HANDRAIL
33 TYPICAL ADA RAMP & HANDRAIL
34 BUILDING DOWNSPOUT CONNECTION (TO SITE DRAINAGE SYSTEM)
35 ROLL-OVER/MOUNTABLE CURB
36 DRIVE-THRU CLEARANCE BAR
37 ENTRY DOOR FROST SLAB DETAIL
38 SCREENED REFUSE ENCLOSURE FOUNDATION
39 MENU BOARD LOOP DETECTION SYSTEM
40 MENU BOARD LOOP DETECTION SYSTEM (ISO VIEW)
41 DRIVE-THRU ORDER POINT ISLAND
42 DRIVE-THRU PLAN FLUSH WITH FFE
43 DRIVE-THRU ISOMETRIC PLAN
44 DRIVE-THRU PLAN - 2" BELOW FFE
45 GREASE TRAP
46 PROPOSED TRANSFORMER
47 DRIVE-THRU STRIPING
48 MEAL DELIVERY AREA STRIPING
49 LANDSCAPE & IRRIGATION PROTECTOR
50 SOLID PLASTIC WHEEL STOP
51 BIKE RACK
52 LANDSCAPED AREA
53 TYPICAL LOCATION FOR OUTDOOR TABLES (SEE EQUIPMENT SCHEDULE)
54 CONCRETE PAD FOR OPTIONAL CASH STATION
55 FACE-TO-FACE DRIVE-THRU CANOPY SYSTEMS



SITE DATA:

- PARCEL ID #: 1822122709354202003
- ZONING: PUD (PLANNED UNIT DEVELOPMENT DISTRICT)
- PROP. LEASE PARCEL SIZE: 44,310± SQ. FT. (1.02 ACRES)

BUILDING DATA:

- BUILDING FLOOR AREA: 4,704± SQ. FT.
- NUMBER OF EMPLOYEES DURING LARGEST SHIFT = 15 EMPLOYEES
- TOTAL NUMBER OF SEATS = 98
 - INDOOR SEATS = 74
 - OUTDOOR SEATS = 24

PARKING DATA:

- NUMBER OF REGULAR PARKING SPACES: 21
- NUMBER OF ADA SPACES: 3
- TOTAL NUMBER OF SPACES PROVIDED: 24
- TOTAL NUMBER OF SPACES REQUIRED: 47
- TYPICAL PARKING WIDTH: 9.0'
- TYPICAL 90° PARKING LENGTH: 19.0'
- MINIMUM ISLE WIDTH: 22.0' (90°)

PARKING FORMULA (RESTAURANTS):

- 1 PARKING SPACE PER EVERY 3 SEATS OF MAX. OCCUPANCY PLUS 1 PARKING SPACE PER 250 SQUARE FEET OF BUILDING AREA PLUS 1 PARKING SPACE PER EACH 8 SEATS IN THE OUTDOOR SEATING AREA.
- (74 INDOOR SEATS/3)+(4,704SF/250)+(24/8 OUTDOOR SEATS) = 47
- TOTAL REQUIRED PARKING = 47 SPACES

HATCH LEGEND

- 1 DENOTES STANDARD PAVEMENT SECTION
2 DENOTES CONCRETE SECTION
3 DENOTES PROP. SIDEWALK
4 DENOTES AREA OF DEPRESSED SIDEWALK
5 DENOTES AREA OF DEPRESSED CURB AND GUTTER WITH LENGTH NOTED ON PLANS.
6 DENOTES REVERSE CURB & GUTTER

SIGN LEGEND

- 6 DENOTES "HANDICAPPED PARKING" R7-8, 12" x 18" (TYP.)
7A DENOTES "DO NOT ENTER" R5-1, 30" x 30" (TYP.)
7B DENOTES "PEDESTRIAN CROSSWALK" 12" x 18" (TYP.)
7C DENOTES "RIGHT TURN ONLY" R3-5R, 30" x 36" (TYP.)
7D DENOTES "TRAFFIC FROM LEFT DOES NOT STOP" W4-4AP, 12" x 18" (TYP.)
7E DENOTES "ONCOMING TRAFFIC DOES NOT STOP" W4-4BP, 12" x 18" (TYP.)
7F DENOTES "VAN ACCESSIBLE" D9-6P (BOLLARD MOUNTED WITH 6B)
8 DENOTES "STOP" R1-1, 30" x 30" (TYP.)

PROJECT NOTES:

- ALL CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS AND OR CONNECTION TO PUBLIC SEWERS AND STREETS SHALL COMPLY WITH THE CITY OF CREVE COEUR STANDARD CONSTRUCTION SPECIFICATIONS.
- AT LEAST ONE WEEK PRIOR TO ANY CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, THE CONTRACTOR SHALL CONTACT THE CITY TO OBTAIN APPLICABLE CITY PERMITS.
- INGRESS/EGRESS WILL BE PROVIDED INTERNAL AND EXTERNAL TO THIS SITE.
- ALL CONCRETE CURB & GUTTER SHALL BE 24" (B6.18) UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL PAVEMENT DIMENSIONS ARE MEASURED TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- ALL CONSTRUCTION MATERIALS, DUMPSTER, DETACHED TRAILERS OR SIMILAR ITEMS ARE PROHIBITED ON PUBLIC STREETS OR WITHIN THE PUBLIC RIGHT-OF-WAY.



BAR IS ONE INCH ON OFFICIAL DRAWINGS
IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY
1" = 20'

PRELIMINARY
NOT FOR CONSTRUCTION



Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

HRGreen.com
HRGreen

CHICK-FIL-A
CREVE COEUR (MO) FSU
12398 OLIVE BOULEVARD
CREVE COEUR, MO 63141

FSR# 05161

REVISION SCHEDULE
NO. DATE DESCRIPTION

PRELIMINARY

ENGINEER'S PROJECT # 211634
PRINTED FOR PRELIMINARY
DATE 05/24/2022
DRAWN BY: MRJ
CHECKED BY: JFV
Information contained on this drawing and in all digital files produced for above named project may not be reproduced in any manner without express written or verbal consent from authorized project representatives.
SITE PLAN
SHEET NUMBER
C-200

MEMORANDUM

To: Jason Jaggi, AICP (City of Creve Coeur)
Bethany Moore (City of Creve Coeur)

From: Kyle Evans, PE, PTOE

Date: November 4, 2022

Subject: Chick-fil-A TIS Review
Lochmueller Project #: 522-0072-01T

As requested, Lochmueller staff have completed a review of the traffic impact study report submitted in association with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive. The study was prepared by HR Green, Inc. and submitted in September 2022.

Executive Summary

Below is a summary of comments from the traffic impact study review:

1. No peak hours were specified in the report.
2. Per the provided Synchro reports, the following storage bays were incorrect:
 - a. Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - i. Westbound left-turn lane should be 180 feet rather than 225 feet.
 - b. Olive Boulevard & Tempo Drive:
 - i. Eastbound left-turn lane should be 180 feet rather than 200 feet.
 - c. Olive Boulevard & Ross Avenue/ Questover Lane:
 - i. Westbound left-turn lane should be 200 feet rather than 250 feet.
3. The following 95th percentile queues exceed the provided storage bays in the 2022 existing conditions:
 - a. Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive,
 - i. Westbound left-turn during the weekday AM, midday, and PM peak hours
 - ii. Southbound left-turn during the weekday midday and PM peak hours
 - b. Olive Boulevard and Ross Avenue/Questover Lane,
 - i. Southbound left-turn during all peak hours
 - ii. Eastbound left-turn during the weekday midday peak hour
 - c. Olive Boulevard and Tempo Drive,
 - i. **Northbound left-turn during the weekday midday, PM, and Saturday peak hours**
4. On page 15, the report mentions that after the lane and phasing improvements, the added traffic on Tempo Drive is anticipated to results in delays that are increased by up to 50% for the northbound and southbound left turning movements.” The text does not indicate that the anticipated 95th percentile queue lengths for northbound traffic will exceed the available

- storage distance between Olive Boulevard and the north entrance. This could lead to vehicles backing up within the Chick-Fil-A parking lot or utilizing the south access as a means of egress.
5. The peak hour factor for each approach was not calculated. Rather, a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values.
 6. The study documented the existing trip generation associated with the average of two similar Chick-fil-A restaurants in the Milwaukee, WI area. It was noted that the trip generation was much higher than what was presented from the ITE forecast. The study stated they would utilize the more conservative numbers provided by the field data. It is our opinion that utilizing the more conservative trip generation is the correct assumption for the study.
 7. A pass-by rate of 40% was used for all time periods. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method.
 8. The directional distribution shown in **Figure 5** has 20% of traffic originating to/from Tempo Drive. However, the average over all four peak hours is only about 8%. It is our opinion that the 20% along Tempo Drive is too high. Which could lead to a reduction in actual demand along Olive Boulevard which could impact the operations of the westbound left turn lane at Tempo Drive further.
 9. The site generated trips shown in **Figure 6** do not add up correctly based on the site generated trips provided in **Table 3** and the directional distribution shown in **Figure 5**.
 10. The following improvements were suggested for the study area:
 - a. Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
 - b. Provide four section flashing yellow arrow signal heads on exiting traffic signal poles for the northbound and southbound directions of Tempo Drive.
 - c. Revise the traffic signal phasing at the Olive Boulevard at Tempo Drive intersection to provide protected and permitted left turn phasing for Tempo Drive.
 - d. Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.
 11. We agree with the above stated proposed improvements, with the addition that the approaches for Tempo Drive should have additional lane usage signage installed.
 12. No southbound left turn lane was recommended along Tempo Drive at the North Entrance due to the expected minimal queue lengths and delays. However, review of the MoDOT EPG for auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during several peak hours. It is suggested that the segment of Tempo Drive between Olive Boulevard and the north entrance be restriped as two (2) eleven-foot lanes with a through lane and dedicated southbound left turn lane. In addition to the striping, lane usage signs should be provided.
 13. On page 17, 2026 is stated as the future year, when it should read 2045.
 14. The parking lot capacity analysis was performed using the ITE Parking Generation, 5th Edition. agree with the land uses chosen. Typically, the 85th percentile is used for calculating parking requirements. Rather, it appears that hourly distributions were used to calculate the required parking. It is our opinion that this approach is a valid method.

Below is a summary of recommendations from the traffic impact study review:

15. It is recommended that the study peak hours be included within the body of the report.

16. It is recommended that the storage bay lengths be adjusted to reflect the correct lengths.
17. It is recommended that the site generated trips be revised to reflect 3% of trips originating from the north along Tempo Drive, 5% of trips originating from the south of Tempo Drive, 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard.
18. It is recommended that **Figure 6** be revisited and corrected when applying the new directional distribution.
19. It is recommended that the text on page 17 be revised to read 2045 rather than 2026.
20. It is recommended to add lane usage signage for the northbound and southbound approaches along Tempo Drive to inform drivers of the revised lane assignments
21. It is recommended to re-stripe southbound Tempo Drive between Olive Boulevard and the north entrance as a two-lane segment with a dedicated left turn lane. Lane usage signage and appropriate pavement markings should also be included.

TIS Review Documentation

It is our understanding from the report that the proposed Chick-fil-A will replace the TGI Friday's currently occupying the site. Access to the site will be provided via the existing access drives. The primary access is located at the North Entrance on Tempo Drive and the secondary access is located at the South Entrance on Tempo Drive as well as a right-in, right-out access drive on Olive Boulevard. The proposed site area and site plan are shown in **Figure 1** and **Figure 4** of the report.

The project involves the redevelopment of a 1.02-acre lot, which is currently occupied by a TGI Friday's. The proposed Chick-fil-A will have an expected building footprint of 5,000 square-feet. Two drive-thru lanes are provided. There is one by-pass lane provided, however this lane terminates prematurely.

The project is proposed to be completed in a single phase, with analysis completed for the 2022 Base Condition (2019 and 2022 Count Data), 2022 Build Conditions (2022 Base Volumes plus Additional Site-Generated Trips), 2045 No-Build (2019 and 2022 Count Data plus an annual Background Growth Rate of 0.5% along the through movements of Olive Boulevard), and 2045 Build (2045 Base Volumes plus Additional Site-Generated Trips).

Given that traffic counts at some of the study intersections were counted in 2019 as opposed to 2022, the 2019 counts were grown by 0.5% annually to 2022. It should be noted that the peak hours were never stated in the report. It is our opinion that growing the 2019 counts by an annual growth rate of 0.5% to 2022 is a valid approach.

Per the provided Synchro reports, the following storage bays were incorrect:

- Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - Westbound left-turn lane should be 180 feet rather than 225 feet.
- Olive Boulevard & Tempo Drive:
 - Eastbound left-turn lane should be 180 feet rather than 200 feet.
- Olive Boulevard & Ross Avenue/ Questover Lane:
 - Westbound left-turn lane should be 200 feet rather than 250 feet.

At the intersection of Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive, the westbound left-turn 95th percentile queue length exceeds the storage bay during the weekday AM, midday, and PM

peak hours in the 2022 existing conditions. In addition, the southbound left-turn lane 95th percentile queue length exceeds the storage bay during the weekday midday and PM peak hours in the 2022 existing conditions. At the intersection of Olive Boulevard and Ross Avenue/Questover Lane, the southbound left-turn 95th percentile queue length exceeds the storage bay during all peak hours in the 2022 existing conditions. In addition, the eastbound left-turn 95th percentile queue length exceeds the storage bay during the weekday midday peak hour in the 2022 existing conditions.

The peak hour factor for each approach was not calculated, rather a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values.

As part of this study, HR Green utilized trip generation estimates based upon data provided from an average of two existing Chick-fil-A stores in Milwaukee from similar suburban land density and store characteristics to the proposed Chick-fil-A in Creve Coeur. These rates were compared to the Institute of Transportation Engineer's (ITE) Trip Generation Manual, Eleventh Edition for Land Use 934: Fast-Food Restaurant with Drive-Through Window. A comparison of the rates between ITE's manual and the average counts from the two other Chick-fil-A stores showed that the counts provided showed a significant increase in the number of trips that were site generated. They decided to remain conservative for the purposes of the traffic impact evaluation and utilized the higher rates from the field data. Additionally, it should be noted that data from the other two stores was only provided for the PM and Saturday peak hours. The AM and weekday midday site generated trips were estimated using ITE's time of day distribution values. It is our opinion that this approach is a valid method.

A pass-by rate of 40% was used for all time periods. Per the ITE Pass-By Rate Table provided in the TGM Appendices, an average pass-by rate of 50% is recommended for Land Use Code 934 during the AM peak hour and 55% is recommended during the PM peak hour. In addition, a 10% common trip reduction was applied to the site generated trips as it was assumed that some drivers would have more than one destination within the strip mall. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method.

The traffic impact study stated the site-generated traffic was assigned to the adjoining roadway network based on existing traffic patterns within the study area. The traffic impact study assumed that 10% of the trips would originate from Tempo Drive to the north and 10% of trips would originate from Tempo Drive to the south. However, the average over all four peak hours is only about 8%. Therefore, it is our opinion that a total of 20% of site generated trips along Tempo Drive is too high and understates the traffic along Olive Boulevard. It is recommended that the site generated trips be revised to reflect 3% of trips originating from the north along Tempo Drive, 5% of trips originating from the south of Tempo Drive, 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard.

The site generated trips are shown in **Figure 6** of the report. The site generated trips do not add up in **Figure 6**. For example, at the intersection of Olive Boulevard and Tempo Drive there are 22 vehicles making an eastbound right-turn, 30 vehicles making a westbound left-turn, and 7 vehicles making a southbound through. This should equal 59 vehicles heading southbound at Tempo Drive and the North Entrance; however, 66 vehicles are shown in **Figure 6**. It is recommended that this figure be revisited when applying the new directional distribution.

The 2022 Base and Build conditions Synchro input files and output information were reviewed to determine the impact of the development on the existing roadway network. Based on the increase in trips and associated delays at the study intersections, the following improvements were suggested for the study area:

- Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
- Provide four section flashing yellow arrow signal heads on exiting traffic signal poles for the northbound and southbound directions of Tempo Drive.
- Revise the traffic signal phasing at the Olive Boulevard at Tempo Drive intersection to provide protected and permitted left turn phasing for Tempo Drive.
- Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.

In addition to the above statements, we recommend that the approaches for Tempo Drive should have additional lane usage signage installed to inform drivers of the revised lane assignments.

No southbound left turn lane was recommended along Tempo Drive at the North Entrance due to the expected minimal queue lengths and delays. However, review of the MoDOT EPG for auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during several peak hours. It is suggested that the segment of Tempo Drive between Olive Boulevard and the north entrance be restriped as two (2) eleven-foot lanes with a through lane and dedicated southbound left turn lane. In addition to the striping, lane usage signage should be provided.

On page 17, 2026 is stated as the future year, when it should read 2045. It is recommended that the text be revised to read 2045 rather than 2026.

The parking lot capacity analysis was performed using the ITE Parking Generation, 5th Edition. Land Use Code 934: Fast-Food Restaurant with Drive-Through Window was used for the analysis. The nearby shopping center was included as Land Use Code 820: Shopping center. We agree with the land uses chosen. Typically, the 85th percentile is used for calculating parking requirements. Rather, it appears that hourly distributions were used to calculate the required parking. It is our opinion that this approach is a valid method.

Summary of TIS Review

As requested, Lochmueller staff have completed a review of the traffic impact study report submitted in association with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive.

Below is a summary of comments from the traffic impact study review:

1. No peak hours were specified in the report.
2. Per the provided Synchro reports, the following storage bays were incorrect:
 - a. Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - i. Westbound left-turn lane should be 180 feet rather than 225 feet.

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 - i. Eastbound left-turn lane should be 180 feet rather than 200 feet.
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3. The following 95th percentile queues exceed the provided storage bays in the 2022 existing conditions:
 - a. Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive,
 - i. Westbound left-turn during the weekday AM, midday, and PM peak hours
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 - b. Olive Boulevard and Ross Avenue/Questover Lane,
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 - ii. Eastbound left-turn during the weekday midday peak hour
4. On page 15, the report mentions that after the lane and phasing improvements, the added traffic on Tempo Drive is anticipated to result in delays that are increased by up to 50% for the northbound and southbound left turning movements.” The text does not indicate that the anticipated 95th percentile queue lengths for northbound traffic will exceed the available storage distance between Olive Boulevard and the north entrance. This could lead to vehicles backing up within the Chick-Fil-A parking lot or utilizing the south access as a means of egress.
5. The peak hour factor for each approach was not calculated. Rather, a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values.
6. The study documented the existing trip generation associated with the average of two similar Chick-fil-A restaurants. It was noted that the trip generation was much higher than what was presented from the ITE forecast. The study stated they would utilize the more conservative numbers provided by the field data. It is our opinion that utilizing the more conservative trip generation is the correct assumption for the study.
7. A pass-by rate of 40% was used for all time periods. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method.
8. The directional distribution shown in **Figure 5** has 20% of traffic originating to/from Tempo Drive. However, the average over all four peak hours is only about 8%. It is our opinion that the 20% along Tempo Drive is too high.
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11. We agree with the above stated proposed improvements with the addition that the approaches for Tempo Drive should have additional lane usage signage installed.
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auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during several peak hours. It is suggested that the segment of Tempo Drive between Olive Boulevard and the north entrance be restriped as two (2) eleven-foot lanes with a through lane and dedicated southbound left turn lane. In addition to the striping, lane usage signs should be provided.

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Below is a summary of recommendations from the traffic impact study review:

15. It is recommended that the study peak hours be included within the body of the report.
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21. It is recommended to re-stripe southbound Tempo Drive between Olive Boulevard and the north entrance as a two-lane segment with a dedicated left turn lane. Lane usage signage and appropriate pavement markings should also be included.

cc: file

November 7, 2022

Mr. Dan Shane, P.E., PTOE
Senior Project Manager – Transportation
HR Green
16020 Swingley Ridge Road
Suite 205
Chesterfield, MO 63017
<<Transmitted via e-mail>>

Dear Mr. Shane:

MoDOT Traffic has reviewed HR Green's traffic impact study for the redevelopment proposal for a Chick-fil-A restaurant near the intersection of MO-340 & Tempo Drive in Creve Coeur, Missouri and offers the following comments.

- MoDOT does not support the installation of flashing yellow arrows on the northbound and southbound approaches at MO-340 & Tempo due to sight distance concerns. MoDOT is going to implement split phasing with J6S3255, which is currently in the construction phase. Please update the TIS accordingly.
- MoDOT does not believe a common trip reduction is appropriate since most other services within the strip mall are restaurants as well. If a common trip reduction is to be used, NCHRP 684 must be consulted as per MoDOT EPG 905.3.4.8
- MoDOT concurs that traffic signal timing will have to be updated.

Thank you for the opportunity to review the traffic impact study. If you have any questions regarding our comments, please contact me at joseph.mulnik@modot.mo.gov or by phone at 314-343-8475.

Sincerely,



Joe Mulnik
Senior Traffic Studies Specialist

CC: Mr. Ryan Pearcy – AE SL
Mr. Rob Meyer – TR SL
Mr. Jay-Jay Braden – TR SL



Our mission is to provide a world-class transportation system that is safe, innovative, reliable and dedicated to a prosperous Missouri.

www.modot.org

November 7, 2022

Mr. Dan Shane, P.E., PTOE
Senior Project Manager – Transportation
HR Green
16020 Swingley Ridge Road
Suite 205
Chesterfield, MO 63017
<<Transmitted via e-mail>>

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Sincerely,



Joe Mulnik
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CC: Mr. Ryan Pearcy – AE SL
Mr. Rob Meyer – TR SL
Mr. Jay-Jay Braden – TR SL



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www.modot.org



▶ 1391 Corporate Drive | Suite 203
McHenry, IL 60050
Main 815.385.1778 + **Fax** 713.965.0044
▶ **HRGREEN.COM**

November 14, 2022

City of Creve Coeur
Bethany L. Moore, City Planner
300 North New Ballas Road
Creve Coeur, MO 63141

RE: Chick-fil-A – 12398 Olive Blvd.
Response to TIS Review Comments – Application #22031 Conditional Use Permit
HR Green Project No.: 211634

Dear Ms. Moore:

Please see below our responses to the recommendations provided in the letter dated November 4, 2022. Responses to each comment are shown in **bold** following the comment.

TIS Review:

1. It is recommended that the study peak hours be included within the body of the report.
RESPONSE: Observed peak hour time periods have been added to the Existing Traffic Volumes section of the report.
2. It is recommended that the storage bay lengths be adjusted to reflect the correct lengths.
RESPONSE: The Synchro file was provided by MoDOT, and existing signal timing and geometric data was not adjusted within the file. However, the storage lengths are now noted in the existing traffic operations section of the report, where analyzed queues exceeded the storage lengths outlined in the comment letter.
3. It is recommended that the site generated trips be revised to reflect 3% of trips originating from the north along Tempo Drive, 5% of trips originating from the south of Tempo Drive, 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard.
RESPONSE: Site-generated trips have been revised using this provided directional distribution. Note that there is still significant residential population north and south of Olive Boulevard that may drive more traffic than recommended. This distribution will result in a more conservative analysis.
4. It is recommended that **Figure 6** be revisited and corrected when applying the new directional distribution.
RESPONSE: Figure 6 has been updated.
5. It is recommended that the text on page 17 be revised to read 2045 rather than 2026.
RESPONSE: Text has been revised.
6. It is recommended to add lane usage signage for the northbound and southbound approaches along Tempo Drive to inform drivers of the revised lane assignments
RESPONSE: Recommendation for intersection lane use signage has been added to the text of the report and the conclusion.

7. It is recommended to re-stripe southbound Tempo Drive between Olive Boulevard and the north entrance as a two-lane segment with a dedicated left turn lane. Lane usage signage and appropriate pavement markings should also be included.

RESPONSE: Recommendation for re-striping to include a dedicated southbound left turn lane at North Entrance has been added to the text of the report and the conclusion.

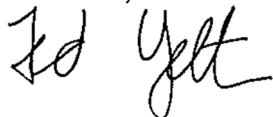
Additionally, MoDOT provided comments on the TIS in a letter dated November 7, 2022. Responses to each comment are shown in **bold** following the comment.

1. MoDOT does not support the installation of flashing yellow arrows on the northbound and southbound approaches at MO-340 & Tempo due to sight distance concerns. MoDOT is going to implement split phasing with J6S3255, which is currently in the construction phase. Please update the TIS accordingly.
RESPONSE: Revised split phasing plan has been incorporated into the TIS, and is being used for all analysis scenarios. Recommendation to use protected/permitted phasing with flashing yellow arrows on Tempo Drive has been removed.
2. MoDOT does not believe a common trip reduction is appropriate since most other services within the strip mall are restaurants as well. If a common trip reduction is to be used, NCHRP 684 must be consulted as per MoDOT EPG 905.3.4.8
RESPONSE: Common trip reduction has been eliminated from the trip generation estimates to provide a more conservative analysis. There is still potential for some common trips, given that the current shopping center has several medical offices, retail stores, and service businesses. However, eliminating all potential common trips provides the most conservative analysis.
3. MoDOT concurs that traffic signal timing will have to be updated.
RESPONSE: Noted. Signal timing re-optimization was again included for the build analyses

If you have any questions, please contact us.

Sincerely,

HR GREEN, INC.



Ted Yelton, PE, PTOE
Project Engineer

MEMORANDUM

To: Jason Jaggi, AICP (City of Creve Coeur)
Bethany Moore (City of Creve Coeur)

From: Kyle Evans, PE, PTOE

Date: November 16, 2022

Subject: Chick-fil-A TIS Review
Lochmueller Project #: 522-0072-01T

As requested, Lochmueller staff have completed a review of the revised traffic impact study report submitted in association with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive. The study was prepared by HR Green, Inc. and submitted in November 2022.

Executive Summary

Below is a summary of the original comments from the traffic impact study review and a follow-up with regards to the revised documentation:

1. No peak hours were specified in the original report. **The revised documentation does document the specific peak hours for each of the scenarios that were analyzed.**
2. Per the originally provided Synchro reports, the following storage bays were incorrect. **The revised documentation and Synchro analysis print outs show that these items have been addressed:**
 - a. Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - i. Westbound left-turn lane should be 180 feet rather than 225 feet.
 - b. Olive Boulevard & Tempo Drive:
 - i. Eastbound left-turn lane should be 180 feet rather than 200 feet.
 - c. Olive Boulevard & Ross Avenue/ Questover Lane:
 - i. Westbound left-turn lane should be 200 feet rather than 250 feet.
3. **Per the revisions made as part of the comments from the City of Creve Coeur and the Missouri Department of Transportation the results show that these conditions still existing in the revised analysis. In many instances, the queue lengths became greater as part of the revisions.** The following 95th percentile queues exceed the provided storage bays in the 2022 existing conditions:
 - a. Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive,
 - i. Westbound left-turn during the weekday AM, midday, and PM peak hours
 - ii. Southbound left-turn during the weekday midday and PM peak hours
 - b. Olive Boulevard and Ross Avenue/Questover Lane,
 - i. Southbound left-turn during all peak hours
 - ii. Eastbound left-turn during the weekday midday peak hour
 - c. Olive Boulevard and Tempo Drive,

i. Northbound left-turn during the weekday midday, PM, and Saturday peak hours

4. In the original submittal, it stated on page 15, that after the lane and phasing improvements, the added traffic on Tempo Drive is anticipated to results in delays that are increased by up to 50% for the northbound and southbound left turning movements.” The text does not indicate that the anticipated 95th percentile queue lengths for northbound traffic will exceed the available storage distance between Olive Boulevard and the north entrance. This could lead to vehicles backing up within the Chick-Fil-A parking lot or utilizing the south access as a means of egress. The revised documentation states that delays are only increased between 6-27%. This change is based on the fact that MoDOT is implementing split phase operations as part of an upcoming project and required that the split phasing for north/south operations remain in place. These changes led to increased delays for the existing baseline conditions. The revisions that were requested based on trip distribution have increased queue lengths. During the Baseline Conditions 2022 (Build), the queue lengths for westbound left turning vehicles along Olive Boulevard are 407’ and 445’ respectively during the weekday mid-day and weekday PM peak scenarios. These queue lengths will extend beyond the existing median opening allowing eastbound left turns into the existing commercial development on the north side of Olive Boulevard.



With respect to the anticipated queues related to the northbound traffic along Tempo Drive. The conditions reported for the Baseline Conditions 2022 (No Build) show queue lengths during the mid-day and PM peak hours that have 95th – percentile queue lengths of 183’, which just extend to the north access. For the Baseline Conditions 2022 (Build) scenario, these queue lengths increase to 348’ during the mid-day peak, 278’ during the PM peak and 291’ during the Saturday mid-day peak. Additionally, during the weekday mid-day peak, the 50th – percentile queue length is 182’. Which suggests that during the mid-day peak, the back of the queue will consistently be right at the north access to the study location. The 95th percentile queue lengths will extend past the north entrance, and if drivers do not choose to leave an opening at the north access, southbound left turning drivers will not have the ability to turn into the property.

5. The peak hour factor for each approach was not calculated. Rather, a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values. For the revised documentation, this factor was not revised.

6. The study documented the existing trip generation associated with the average of two similar Chick-fil-A restaurants in the Milwaukee, WI area. It was noted that the trip generation was much higher than what was presented from the ITE forecast. The study stated they would utilize the more conservative numbers provided by the field data. It is our opinion that utilizing the more conservative trip generation is the correct assumption for the study. **This item remains the same for the revised documentation.**
7. A pass-by rate of 40% was used for all time periods. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method. **This item remains the same for the revised documentation.**
8. The directional distribution shown in **Figure 5** has 20% of traffic originating to/from Tempo Drive. However, the average over all four peak hours is only about 8%. It is our opinion that the 20% along Tempo Drive is too high. Which could lead to a reduction in actual demand along Olive Boulevard which could impact the operations of the westbound left turn lane at Tempo Drive further. **The analysis was revised based on this suggestion and the Synchro analysis re-done based on the new trip assignment and distribution.**
9. The site generated trips shown in **Figure 6** do not add up correctly based on the site generated trips provided in **Table 3** and the directional distribution shown in **Figure 5**. **This item has been corrected in the revised documentation.**
10. The following improvements were suggested for the study area:
 - a. Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
 - b. Provide four section flashing yellow arrow signal heads on exiting traffic signal poles for the northbound and southbound directions of Tempo Drive. **This item was removed per MoDOT response.**
 - c. Revise the traffic signal phasing at the Olive Boulevard at Tempo Drive intersection to provide protected and permitted left turn phasing for Tempo Drive. **This item was removed per MoDOT response.**
 - d. Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.
11. We agree with the above stated proposed improvements, with the addition that the approaches for Tempo Drive should have additional lane usage signage installed. **The item related to additional signage was documented in the revised document.**
12. No southbound left turn lane was recommended along Tempo Drive at the North Entrance due to the expected minimal queue lengths and delays. However, review of the MoDOT EPG for auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during several peak hours. It is suggested that the segment of Tempo Drive between Olive Boulevard and the north entrance be restriped as two (2) eleven-foot lanes with a through lane and dedicated southbound left turn lane. In addition to the striping, lane usage signs should be provided. **This item has been added to the proposed improvements in the revised documentation.**
13. On page 17, 2026 is stated as the future year, when it should read 2045. **Item has been revised.**
14. The parking lot capacity analysis was performed using the ITE Parking Generation, 5th Edition. agree with the land uses chosen. Typically, the 85th percentile is used for calculating parking requirements. Rather, it appears that hourly distributions were used to calculate the required parking. It is our opinion that this approach is a valid method. **This item remains the same for the revised documentation.**

Below is a summary of recommendations from the traffic impact study review:

15. It is recommended that the study peak hours be included within the body of the report.
Completed
16. It is recommended that the storage bay lengths be adjusted to reflect the correct lengths.
Corrected
17. It is recommended that the site generated trips be revised to reflect 3% of trips originating from the north along Tempo Drive, 5% of trips originating from the south of Tempo Drive, 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard.
Revisions made as requested
18. It is recommended that **Figure 6** be revisited and corrected when applying the new directional distribution.
Figure 6 has been revised accordingly.
19. It is recommended that the text on page 17 be revised to read 2045 rather than 2026.
Revised
20. It is recommended to add lane usage signage for the northbound and southbound approaches along Tempo Drive to inform drivers of the revised lane assignments.
This recommendation has been addressed
21. It is recommended to re-stripe southbound Tempo Drive between Olive Boulevard and the north entrance as a two-lane segment with a dedicated left turn lane. Lane usage signage and appropriate pavement markings should also be included.
This recommendation has been addressed
22. Additional review of the proposed Future conditions show additional queuing issues related to the westbound and northbound left movements at the intersection of Olive Boulevard and Tempo Drive. During the mid-day, PM peak and Saturday mid-day peak the westbound left experiences queue lengths greater than 300' which extend beyond the available storage and back into the through lane. In the No-Build scenario, that occurs during the PM peak hour only. In the mid-day and PM peaks, the anticipated maximum queue lengths are 442' and 447' respectively and will block off the existing eastbound left turn access. For the northbound left turns, the anticipated queue lengths are 372', 290', and 305' during the mid-day, PM peak and Saturday mid-day peak. During all three of these analysis periods this queue length will block entrance into the property unless drivers stop prior to the entrance and allow southbound left vehicles to enter. The corresponding existing queue lengths during those time periods are 194', 192' and 151' respectively.

TIS Review Documentation

It is our understanding from the report that the proposed Chick-fil-A will replace the TGI Friday's currently occupying the site. Access to the site will be provided via the existing access drives. The primary access is located at the North Entrance on Tempo Drive and the secondary access is located at the South Entrance on Tempo Drive as well as a right-in, right-out access drive on Olive Boulevard. The proposed site area and site plan are shown in **Figure 1**, **Figure 2** and **Figure 4** of the report.

The project involves the redevelopment of a 1.02-acre lot, which is currently occupied by a TGI Friday's. The proposed Chick-fil-A will have an expected building footprint of 5,000 square-feet. Two drive-thru lanes are provided. There is one by-pass lane provided, however this lane terminates prematurely.

The project is proposed to be completed in a single phase, with analysis completed for the 2022 Base Condition (2019 and 2022 Count Data), 2022 Build Conditions (2022 Base Volumes plus Additional Site-Generated Trips), 2045 No-Build (2019 and 2022 Count Data plus an annual Background Growth Rate of 0.5% along the through movements of Olive Boulevard), and 2045 Build (2045 Base Volumes plus Additional Site-Generated Trips).

Given that traffic counts at some of the study intersections were counted in 2019 as opposed to 2022, the 2019 counts were grown by 0.5% annually to 2022. The documented peak hours, as per the report, are 6:45-7:45 am, 11:15 am - 12:15 pm, and 3:45 – 4:45 pm on a weekday, and from 12:00 – 1:00 pm on Saturday. It is our opinion that growing the 2019 counts by an annual growth rate of 0.5% to 2022 is a valid approach.

At the intersection of Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive, the westbound left-turn 95th percentile queue length exceeds the storage bay during the weekday AM, midday, and PM peak hours in the 2022 existing conditions. In addition, the southbound left-turn lane 95th percentile queue length exceeds the storage bay during the weekday midday and PM peak hours in the 2022 existing conditions. At the intersection of Olive Boulevard and Ross Avenue/Questover Lane, the southbound left-turn 95th percentile queue length exceeds the storage bay during all peak hours in the 2022 existing conditions. In addition, the eastbound left-turn 95th percentile queue length exceeds the storage bay during the weekday midday peak hour in the 2022 existing conditions.

The peak hour factor for each approach was not calculated, rather a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values.

As part of this study, HR Green utilized trip generation estimates based upon data provided from an average of two existing Chick-fil-A stores in Milwaukee from similar suburban land density and store characteristics to the proposed Chick-fil-A in Creve Coeur. These rates were compared to the Institute of Transportation Engineer's (ITE) Trip Generation Manual, Eleventh Edition for Land Use 934: Fast-Food Restaurant with Drive-Through Window. A comparison of the rates between ITE's manual and the average counts from the two other Chick-fil-A stores showed that the counts provided showed a significant increase in the number of trips that were site generated. They decided to remain conservative for the purposes of the traffic impact evaluation and utilized the higher rates from the field data. Additionally, it should be noted that data from the other two stores was only provided for the PM and Saturday peak hours. The AM and weekday midday site generated trips were estimated using ITE's time of day distribution values. It is our opinion that this approach is a valid method.

A pass-by rate of 40% was used for all time periods. Per the ITE Pass-By Rate Table provided in the TGM Appendices, an average pass-by rate of 50% is recommended for Land Use Code 934 during the AM peak hour and 55% is recommended during the PM peak hour. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method.

The traffic impact study stated the site-generated traffic was assigned to the adjoining roadway network based on existing traffic patterns within the study area. The traffic impact study assumed that 3% of the trips would originate from Tempo Drive to the north and 5% of trips would originate from Tempo Drive to the south. The directional distribution also applies 44% of trips originating from the west of Olive Boulevard, and 48% of trips originating from the east of Olive Boulevard. This distribution matches the calculated averages as per the background data collected for the study.

The site generated trips are shown in **Figure 6** of the report along with the 2022 Build Traffic Volumes in **Figure 7**.

The 2022 Base and Build conditions Synchro input files and output information were reviewed to determine the impact of the development on the existing roadway network. Based on the increase in trips and associated delays at the study intersections, the following improvements were suggested for the study area:

- Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
- Advanced lane usage signing should be provided on both approaches of Tempo Drive to inform drivers of the new lane configuration.
- Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.
- Re-stripe the section of Tempo Drive south of Olive Boulevard between Olive and the North site entrance to provide a through lane and a dedicated southbound left turn lane.

The parking lot capacity analysis was performed using the ITE Parking Generation, 5th Edition. Land Use Code 934: Fast-Food Restaurant with Drive-Through Window was used for the analysis. The nearby shopping center was included as Land Use Code 820: Shopping center. We agree with the land uses chosen. Typically, the 85th percentile is used for calculating parking requirements. Rather, it appears that hourly distributions were used to calculate the required parking. It is our opinion that this approach is a valid method.

Summary of TIS Review

As requested, Lochmueller staff have completed a review of the traffic impact study report submitted in association with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive.

Below is a summary of comments from the traffic impact study review:

1. No peak hours were specified in the original report. **The revised documentation does document the specific peak hours for each of the scenarios that were analyzed.**
2. Per the originally provided Synchro reports, the following storage bays were incorrect. **The revised documentation and Synchro analysis print outs show that these items have been addressed:**
 - a. Olive Boulevard & Cross Creek Drive/Woodcrest Executive Drive:
 - i. Westbound left-turn lane should be 180 feet rather than 225 feet.

- b. Olive Boulevard & Tempo Drive:
 - i. Eastbound left-turn lane should be 180 feet rather than 200 feet.
 - c. Olive Boulevard & Ross Avenue/ Questover Lane:
 - i. Westbound left-turn lane should be 200 feet rather than 250 feet.
3. **Per the revisions made as part of the comments from the City of Creve Coeur and the Missouri Department of Transportation the results show that these conditions still existing in the revised analysis. In many instances, the queue lengths became greater as part of the revisions.** The following 95th percentile queues exceed the provided storage bays in the 2022 existing conditions:
- d. Olive Boulevard and Cross Creek Drive/Woodcrest Executive Drive,
 - i. Westbound left-turn during the weekday AM, midday, and PM peak hours
 - ii. Southbound left-turn during the weekday midday and PM peak hours
 - e. Olive Boulevard and Ross Avenue/Questover Lane,
 - i. Southbound left-turn during all peak hours
 - ii. Eastbound left-turn during the weekday midday peak hour
 - f. Olive Boulevard and Tempo Drive,
 - i. **Northbound left-turn during the weekday midday, PM, and Saturday peak hours**
4. In the original submittal, it stated on page 15, that after the lane and phasing improvements, the added traffic on Tempo Drive is anticipated to results in delays that are increased by up to 50% for the northbound and southbound left turning movements.” The text does not indicate that the anticipated 95th percentile queue lengths for northbound traffic will exceed the available storage distance between Olive Boulevard and the north entrance. This could lead to vehicles backing up within the Chick-Fil-A parking lot or utilizing the south access as a means of egress. **The revised documentation states that delays are only increased between 6-27%. This change is based on the fact that MoDOT is implementing split phase operations as part of an upcoming project and required that the split phasing for north/south operations remain in place. These changes led to increased delays for the existing baseline conditions. The revisions that were requested based on trip distribution have increased queue lengths. During the Baseline Conditions 2022 (Build), the queue lengths for westbound left turning vehicles along Olive Boulevard are 407’ and 445’ respectively during the weekday mid-day and weekday PM peak scenarios. These queue lengths will extend beyond the existing median opening allowing eastbound left turns into the existing commercial development on the north side of Olive Boulevard.**



With respect to the anticipated queues related to the northbound traffic along Tempo Drive. The conditions reported for the Baseline Conditions 2022 (No Build) show queue lengths during the mid-day and PM peak hours that have 95th – percentile queue lengths of 183', which just extend to the north access. For the Baseline Conditions 2022 (Build) scenario, these queue lengths increase to 348' during the mid-day peak, 278' during the PM peak and 291' during the Saturday mid-day peak. Additionally, during the weekday mid-day peak, the 50th – percentile queue length is 182'. Which suggests that during the mid-day peak, the back of the queue will consistently be right at the north access to the study location. The 95th percentile queue lengths will extend past the north entrance, and if drivers do not choose to leave an opening at the north access, southbound left turning drivers will not have the ability to turn into the property.

5. The peak hour factor for each approach was not calculated. Rather, a peak hour factor of 0.90 was assumed for each approach at each study intersection. However, we do not feel that the peak hour factors would significantly differ from the assumed values. **For the revised documentation, this factor was not revised.**
6. The study documented the existing trip generation associated with the average of two similar Chick-fil-A restaurants in the Milwaukee, WI area. It was noted that the trip generation was much higher than what was presented from the ITE forecast. The study stated they would utilize the more conservative numbers provided by the field data. It is our opinion that utilizing the more conservative trip generation is the correct assumption for the study. **This item remains the same for the revised documentation.**
7. A pass-by rate of 40% was used for all time periods. Given that the pass-by percentage applied is conservative, it is our opinion that this approach is a valid method. **This item remains the same for the revised documentation.**
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9. The site generated trips shown in **Figure 6** do not add up correctly based on the site generated trips provided in **Table 3** and the directional distribution shown in **Figure 5**. **This item has been corrected in the revised documentation.**
10. The following improvements were suggested for the study area:
 - g. Re-stripe the north and south approaches of Tempo Drive at Olive Boulevard to provide a dedicated left-turn lane and shared through/right-turn lane.
 - h. Provide four section flashing yellow arrow signal heads on exiting traffic signal poles for the northbound and southbound directions of Tempo Drive. **This item was removed per MoDOT response.**
 - i. Revise the traffic signal phasing at the Olive Boulevard at Tempo Drive intersection to provide protected and permitted left turn phasing for Tempo Drive. **This item was removed per MoDOT response.**
 - j. Re-optimize the traffic signal splits for the Olive Boulevard at Tempo Drive intersection, as well as re-optimize the intersection offsets for the same intersection and the neighboring signals on Olive Boulevard.

11. We agree with the above stated proposed improvements, with the addition that the approaches for Tempo Drive should have additional lane usage signage installed. **The item related to additional signage was documented in the revised document.**
12. No southbound left turn lane was recommended along Tempo Drive at the North Entrance due to the expected minimal queue lengths and delays. However, review of the MoDOT EPG for auxiliary lanes does show that the left turn volumes would warrant an auxiliary left turn lane during several peak hours. It is suggested that the segment of Tempo Drive between Olive Boulevard and the north entrance be restriped as two (2) eleven-foot lanes with a through lane and dedicated southbound left turn lane. In addition to the striping, lane usage signs should be provided. **This item has been added to the proposed improvements in the revised documentation.**
13. On page 17, 2026 is stated as the future year, when it should read 2045. **Item has been revised.**
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Revisions made as requested
18. It is recommended that **Figure 6** be revisited and corrected when applying the new directional distribution.
Figure 6 has been revised accordingly.
19. It is recommended that the text on page 17 be revised to read 2045 rather than 2026.
Revised
20. It is recommended to add lane usage signage for the northbound and southbound approaches along Tempo Drive to inform drivers of the revised lane assignments.
This recommendation has been addressed
21. It is recommended to re-stripe southbound Tempo Drive between Olive Boulevard and the north entrance as a two-lane segment with a dedicated left turn lane. Lane usage signage and appropriate pavement markings should also be included.
This recommendation has been addressed
22. **Additional review of the proposed Future conditions show additional queuing issues related to the westbound and northbound left movements at the intersection of Olive Boulevard and Tempo Drive. During the mid-day, PM peak and Saturday mid-day peak the westbound left experiences queue lengths greater than 300' which extend beyond the available storage and back into the through lane. In the No-Build scenario, that occurs during the PM peak hour only. In the mid-day and PM peaks, the anticipated maximum queue lengths are 442' and 447'**



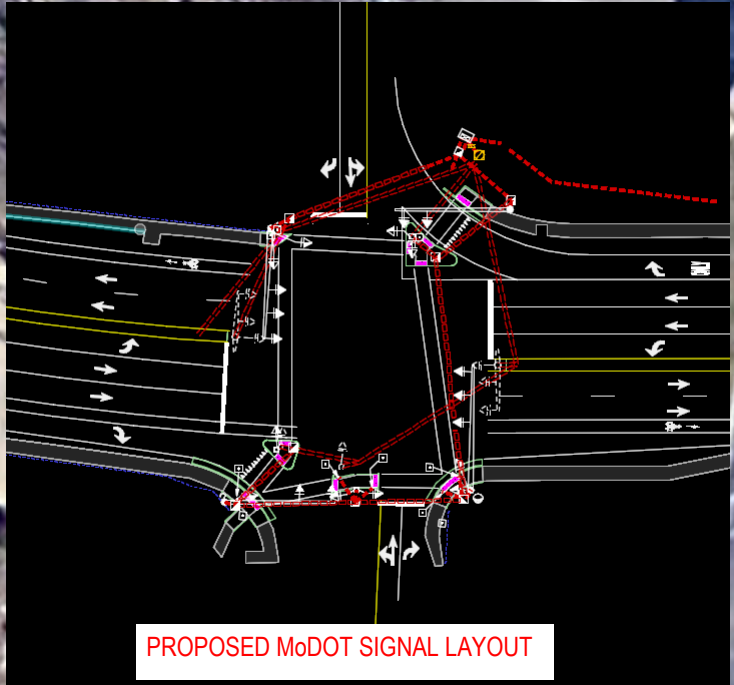
respectively and will block off the existing eastbound left turn access. For the northbound left turns, the anticipated queue lengths are 372', 290', and 305' during the mid-day, PM peak and Saturday mid-day peak. During all three of these analysis periods this queue length will block entrance into the property unless drivers stop prior to the entrance and allow southbound left vehicles to enter. The corresponding existing queue lengths during those time periods are 194', 192' and 151' respectively.

cc: file

Rt 340 and Tempo Dr.
Modification to NB Approach

Legend

- Feature 1
- Feature 2



PROPOSED MoDOT SIGNAL LAYOUT



MEMORANDUM

To: Jason Jaggi, AICP (City of Creve Coeur)
Bethany Moore (City of Creve Coeur)

From: Kyle Evans, PE, PTOE

Date: December 15, 2022

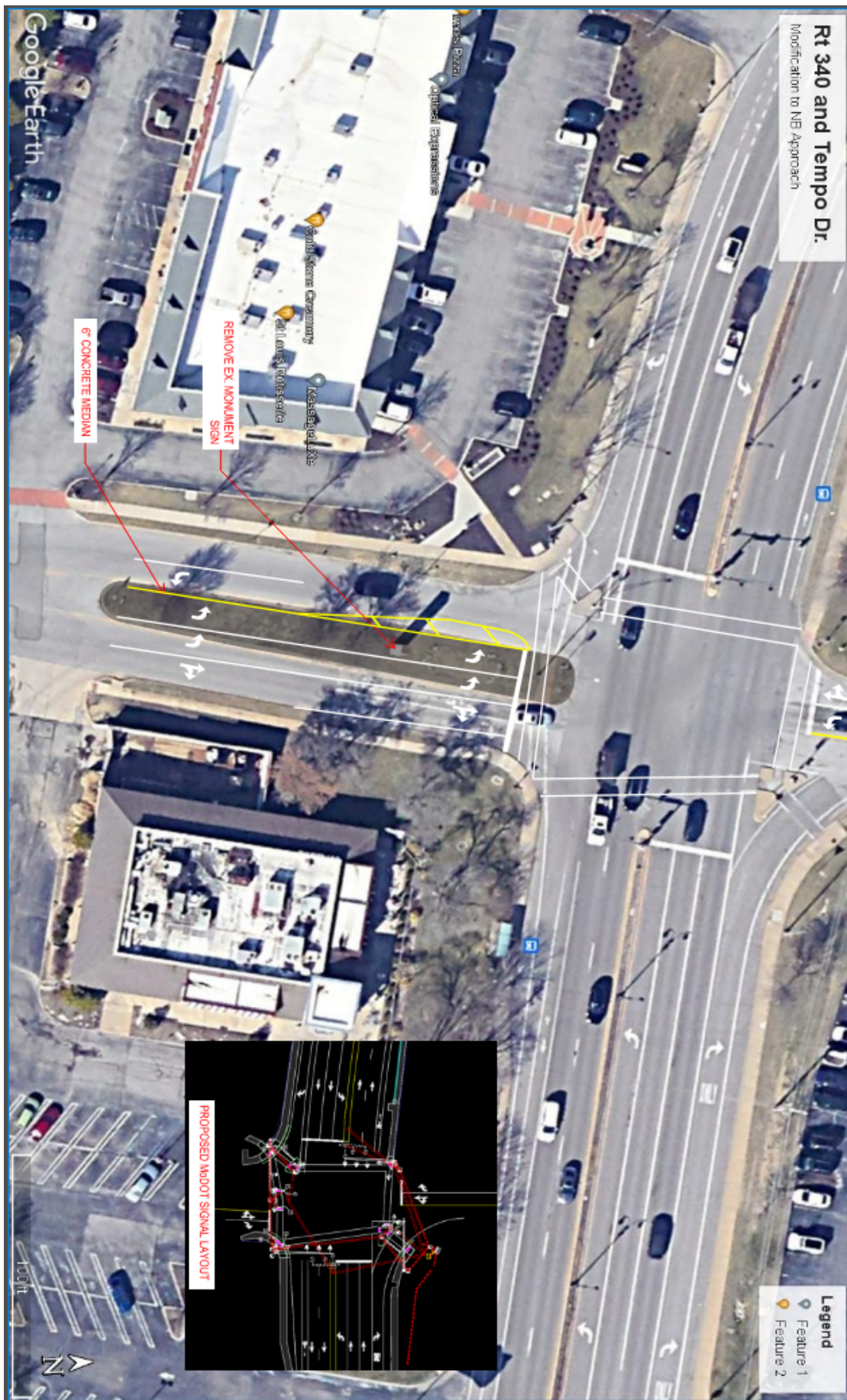
Subject: Chick-fil-A TIS Review
Lochmueller Project #: 522-0072-01T

As requested, Lochmueller Group staff have completed a review of the revised Synchro files associated with the proposed Chick-fil-A, located in Creve Coeur, Missouri in the southeast quadrant of Olive Boulevard and Tempo Drive. The original study was prepared by HR Green, Inc. and submitted in September 2022 and a subsequent revision to the report was submitted in November of 2022 to address City and MoDOT comments.

It is our understanding that these subsequent revisions are based in part on City concerns regarding queuing and operations of traffic along the northbound Tempo Drive approach for vehicles exiting the study location and westbound operations for vehicles turning left onto Tempo Drive for entering the study location. A drawing of the proposed revisions to the Tempo Drive northbound approach are provided on the following page. It is also our understanding, that as of the date of this memo, there have been no review comments received from MoDOT regarding these latest revisions.

Since Lochmueller Group was only provided with the Synchro analysis files and not a revised document, we created intersection operations reports for the AM, Mid-day, PM and Saturday Mid-Day peak hours looking at LOS, delay and queuing outputs.

The tables on Page 3 highlight the results between the existing conditions and the 2025 Build conditions with regards to the proposed mitigation strategies. It documents the results for operations (based on LOS and delay in seconds) and reports queuing for the 50th-percentile (average queue) and 95th-percentile (maximum queue). The results reported in the Build Conditions table, are highlighted green for the movements which are improved over existing and red in the instances where delays/LOS have gotten worse. As shown, there are additional delays associated with the westbound left turning movements during the AM Peak and the Saturday Mid-day peak, but neither one of those reaches a LOS F. Under the queuing column, items highlighted in red represent the scenarios in which the analyzed queue length has exceeded the available storage length for the westbound left turn lane.



EXISTING CONDITIONS					
		Operations		Queuing (ft)	
		LOS	Delay	50th %-ile	95th %-ile
AM PEAK	WBT	B	18.8	284	324
	WBL	D	53.6	33	105
	NB	E	72.7	42	87
Mid-Day PEAK	WBT	C	25.4	736	836
	WBL	F	82.2	127	260
	NB	F	99.8	82	183
PM PEAK	WBT	C	27.6	402	585
	WBL	F	120.0	158	328
	NB	F	119.2	79	183
SAT PEAK	WBT	A	9.6	67	513
	WBL	D	51.1	57	168
	NB	E	72.2	68	140

BUILD CONDITIONS					
		Operations		Queuing (ft)	
		LOS	Delay	50th %-ile	95th %-ile
AM PEAK	WBT	B	16.9	299	344
	WBL	E	65.0	48	169
	NBL	E	60.6	31	58
Mid-Day PEAK	WBT	B	14.1	212	310
	WBL	D	42.4	141	309
	NBL	E	70.0	89	170
PM PEAK	WBT	B	16.3	905	1105
	WBL	D	54.7	184	330
	NBL	E	61.7	61	99
SAT PEAK	WBT	A	8.8	405	499
	WBL	E	71.8	138	306
	NBL	E	60.2	72	141

The results from the tables show that during the PM and Saturday peaks, the queues associated with the westbound through movements will be the largest factor of the operations of the westbound left turns. This is due to mainline through capacity and peak hour volumes approaching the theoretical capacity for a two-lane roadway. These results also show that the queuing associated with the mainline will impact drivers' abilities to utilize the left turn lane as through movement queues will extend beyond the entrance to the left turn lane. Without additional mainline capacity, adding a second turn lane would not have a significant impact on the left turn operations.

SUMMARY OF FINDINGS

The modification of the northbound Tempo Drive approach and construction of a second left turn lane will have a significant impact on traffic operations with regards to vehicles exiting the study location. This will reduce delays and greatly reduce the queue lengths associated with this movement. The highest peak demand (Mid-Day scenario) results related to the previous submittal showed an average queue length that was approximately 180-feet and a maximum queue length greater than 300-feet. The addition of a second left turn lane reduces these queue lengths to 89-feet and 170-feet respectively. These documented queue lengths will not impact operations at the north entrance to the site.

Based on the results of the Synchro operations during the PM peak and Saturday peaks when through volumes along Olive Boulevard are higher, left turn lane accessibility will be impacted due to the queues. In the existing condition the average PM peak queue length already impacts drivers' ability to access the left turn lane. The construction of a second left turn lane for westbound traffic would not produce the desired effect of reduced delays and shorter queues at this location as through operations would still be the governing factor.

Based on the information provided, Lochmueller Group recommends the following:

1. The design engineer should review the layout of the channelization island in the southwest quadrant and verify it does not lead to any driver path issues with regards to the new striping for Southbound Tempo Drive.
2. Install appropriate signing and pavement marking for the modifications to the south leg of Tempo Drive.



3. The revised pedestrian crossing on the south side of Olive Boulevard should be reviewed. Is there a reason the crossing isn't tied to the channelization island on the southwest quadrant versus crossing all the way to the corner? Previous layout had a refuge island in the center for pedestrians to stop, if needed.
4. The removal of the median on the south leg will lead to the removal of the second ped pole signal for southbound traffic. These improvements could be an opportunity to update the signal to include mast arm poles for northbound and southbound traffic. Especially with the revised geometrics for the northbound approach.
5. Review of the autoturn documentation that was submitted shows issues related to a WB-67 vehicle making the outermost northbound left turning movement and the eastbound to southbound right turn. With the existing channelization island in the southwest quadrant, it is suggested that an autoturn layout be completed for the westbound to southbound left turn.



Jason Jaggi <jjaggi@crevecoeurmo.gov>

FW: Chick-fil-A at Tempo and Olive

1 message

Mark Perkins <mperkins@crevecoeurmo.gov>
To: Jason Jaggi <jjaggi@crevecoeurmo.gov>

Mon, Dec 5, 2022 at 12:34 PM

Fyi,

From: Sari Neudorf <sneudorf@crevecoeurmo.gov>
Sent: Friday, December 2, 2022 4:48 PM
To: Mark Perkins <mperkins@crevecoeurmo.gov>
Subject: Fwd: Chick-fil-A at Tempo and Olive

Hi Mark,

Received this and wanted to forward to you.

Have a spectacular weekend.

Sari

----- Forwarded message -----

From: Clare Quatmann <larryquatmann@gmail.com>
Date: Fri, Dec 2, 2022 at 3:38 PM
Subject: Chick-fil-A at Tempo and Olive
To: <dhoffman@crevecoeurmo.gov>, <sneudorf@crevecoeurmo.gov>

Dear David and Sari,

I just received the latest newsletter from Creve Coeur and was surprised to read of the pending consideration for a Chick-Fil-A Drive through restaurant at Olive and Tempo. Hopefully you have experienced the traffic backup that occurs near these restraints at lunch and dinner time. My personal experience relates more to the restaurant in the Chesterfield Valley. The traffic back ups all all too common. While there are ways to get around the traffic in Chesterfield, I can not envision any simple solution for the corner of Olive and Tempo. i believe this will create a traffic problem of significant proportion and will disrupt Olive street traffic significantly at meal times. Additionally, i thought there was a Creve Coeur moratorium on drive-thru restaurants.

As a longtime citizen of Creve Coeur who lives at [12664 Villa Hill Lane](#) just off of Mason Road I want to express my concerns for the location of this facility. I am not opposed to the restaurant itself but am opposed to the traffic problems it will create on Olive which is a street on which i commute several times per day.

Please accept my opinion when considering this location for a busy Drive thru restaurant. if you need further proof of my concerns, i would recommend that you look at the traffic situation around the Chick-Fil-A Chesterfield location during busy lunch and dinner hours.

Sincerely: Edmund (Larry) Quatmann
[12664 Villa Hill Ln, Creve Coeur, MO.](#)

--

Sari Neudorf



Bethany Moore <blmoore@crevecoeurmo.gov>

Conditional Use Permit #22-031 - public comment

2 messages

Steve Raskin <sraskin@cordoganclark.com>

Sat, Nov 19, 2022 at 3:42 PM

To: "blmoore@crevecoeurmo.gov" <blmoore@crevecoeurmo.gov>, "dhoffman@crevecoeurmo.gov" <dhoffman@crevecoeurmo.gov>, "sneudorf@crevecoeurmo.gov" <sneudorf@crevecoeurmo.gov>
 Cc: "mroark1138@gmail.com" <mroark1138@gmail.com>, "mdavecampbell9009@gmail.com" <mdavecampbell9009@gmail.com>, "jjaggi@crevecoeurmo.gov" <jjaggi@crevecoeurmo.gov>, "rhoffman@crevecoeurmo.gov" <rhoffman@crevecoeurmo.gov>

November 18, 2022

Attn: Ms. Bethany Moore, City Planner, blmoore@crevecoeurmo.gov
 David Hoffman, Ward 3, dhoffman@crevecoeurmo.gov
 Sari Neudorf, Ward 3, sneudorf@crevecoeurmo.gov
 City of Creve Coeur
 300 N New Ballas Road
 Creve Coeur, MO 63141

Re: Application to Planning and Zoning Commission

[Conditional Use Permit #22-031](#)

DEVELOPMENT PLAN FOR A NEW CHICK FIL A RESTAURANT WITH DRIVE
 THROUGH SERVICES LOCATED AT [12398 OLIVE BOULEVARD](#)

Ms. Moore,

My name is Steve Raskin and my family and I have lived at 1017 Fashion Square for nearly 30 years. Our home is less than one-third of a mile from the existing TGI Fridays. I am writing to voice my opposition to the proposed developed of a new Chick Fil A restaurant at [12398 Olive Blvd.](#)

There are several factors to be considered as part of this development which will adversely affect our community.

1. Building Elevation – We recognize the value of branding to an enterprise such as CFA, however, the palette of building materials and colors is incompatible with the existing facilities at this location. A quick review of the building elevations at the Olive Blvd/Tempo intersection shows a consistent blend of red brick masonry, sloped shingle roofs and neutral color palettes. The proposed CFA elevations show flat roofs and tan bricks with no regard to the existing adjacent developments aesthetics.
2. Noise Concerns –Neither the HME Whitepaper dated 5/24/2010 nor the McClure Engineering report dated 11/15/22 take into account the elevation of the TGI Fridays site relative to the lower surrounding residential communities. The combination of concrete parking at the project location and concrete roadways creates a complex refraction of sound waves that increases substantially in the residential areas to the north. The increased hours of operation starting at 6am through 10:30pm will increase noise level both day and night and be a nuisance to our community.
3. Traffic – The additional traffic which will be generated as part of this development will create a safety issue at an already congested intersection at Olive and Tempo Dr. The current drive and turn lanes at this intersection cannot accommodate this added traffic resulting for a new fast-food restaurant with three drive-thru lanes and both inside and outside dining. In addition, there is already a serious concern of vehicles

traveling north on Tempo Dr. to Impact Dr. to Ross Avenue and back to Olive Blvd in an effort to avoid traffic delays through the Huntington Subdivision where we live. This proposed development will significantly increase the number of vehicles traveling through these residential streets with no sidewalks and limited lighting creating a significant safety concern.

The MoDOT letter dated 11/7/22 provided by Mr. Shane expressed further concerns regarding signalization. This letter references a traffic impact study prepared by the developer HR Green which is not included as part of this permit submittal which should be made public for review and comment.

My family and I have been life-long residents in this community and have raised our children who attended local schools. This proposed CFA development of another national chain fast food restaurant does not add to the quality of life in our community while at the same time creating significant sound, traffic and safety concerns. We respectfully ask that the Planning and Zoning Commission reject this CFA Conditional Use Permit.

Sincerely, Lori and Steve Raskin, AIA

Cc: Wayne Lewis, Huntington Subdivision Director, mroark1138@gmail.com
Dave Campbell, Huntington Subdivision Director, mdavecampbell9009@gmail.com
Piper Cason, Huntington Subdivision Director
Jason Jaggi, City of Creve Coeur Director of Community Development, jjaggi@crevecoeurmo.gov
Robert Hoffman, City of Creve Coeur Mayor, rhoffman@crevecoeurmo.gov

Bethany Moore <blmoore@crevecoeurmo.gov>

Mon, Nov 21, 2022 at 9:04 AM

To: Steve Raskin <sraskin@cordoganclark.com>

Cc: "dhoffman@crevecoeurmo.gov" <dhoffman@crevecoeurmo.gov>, "sneudorf@crevecoeurmo.gov" <sneudorf@crevecoeurmo.gov>, "mroark1138@gmail.com" <mroark1138@gmail.com>, "mdavecampbell9009@gmail.com" <mdavecampbell9009@gmail.com>, "jjaggi@crevecoeurmo.gov" <jjaggi@crevecoeurmo.gov>, "rhoffman@crevecoeurmo.gov" <rhoffman@crevecoeurmo.gov>

Mr. Raskin,

Thank you for your comment. I will add it to our file and make sure it is included in our packet for the commissioners. The Chick-Fil-A project has been tentatively moved to the Dec. 5th meeting in order to give staff more time to review additional requested materials. Please continue to check the "Current Planning Projects" page on our website for updates. If you would like to make a comment at the meeting please attend in person at the Creve Coeur Government Center at 6pm in the Council Chambers. Thank you!

[Quoted text hidden]

--

Bethany L. Moore

City Planner

City of Creve Coeur

300 North New Ballas Rd

Creve Coeur, MO 63141

314-442-2087

www.crevecoeurmo.gov



Bethany Moore <blmoore@crevecoeurmo.gov>

Application No 22-031 RE Chik-Fil-A at Tempo/Olive

2 messages

Manors at Questover HOA <manorsatquestoverhoa@gmail.com>

Mon, Nov 21, 2022 at 10:05 AM

To: "blmoore@crevecoeurmo.gov" <blmoore@crevecoeurmo.gov>

Cc: David Hoffman <dhoffman@crevecoeurmo.gov>

Dear Planning and Zoning Commission,

With respect to the matter referenced above, our primary concern is increased "turn-around" traffic on Questover Manor Court. This would essentially involve west-bound traffic on Olive, which misses the left turn into Tempo, and which then turns left on Questover Lane. Questover Manor Court is a private street with 16 townhome units. Currently, we see approximately 4-8 "turn-around" vehicles each day on our street. Any steps you might take to assist with what we believe may be an increase in traffic, would be appreciated. Thank you for your attention to this.

Sincerely,

Bill Spieler

Trustee

Manors at Questover HOA

manorsatquestoverhoa@gmail.com

Bethany Moore <blmoore@crevecoeurmo.gov>

Mon, Nov 21, 2022 at 10:19 AM

To: Manors at Questover HOA <manorsatquestoverhoa@gmail.com>

Cc: David Hoffman <dhoffman@crevecoeurmo.gov>

Bill,

Thank you for the comment! I will add it to our file and make sure the commission receives it in their packet. Chick-fil-a has been tentatively moved to the December 5th meeting in order to give staff more time to review additional requested information. Please check our "Current Planning Projects" page on our city website for updates. You can also give a comment in person at the meeting. They are held at 6pm in the Council Chambers of the Creve Coeur Government Center. Thanks!

[Quoted text hidden]

--

Bethany L. Moore

City Planner

City of Creve Coeur

300 North New Ballas Rd

Creve Coeur, MO 63141

314-442-2087

www.crevecoeurmo.gov



city of CREVE COEUR

300 North New Ballas Road • Creve Coeur, Missouri 63141
(314) 432-6000 • Fax (314) 872-2539 • Relay MO 1-800-735-2966
www.creve-coeur.org

**APPLICATION TO PLANNING AND ZONING COMMISSION
#22-034: TEXT AMENDMENT TO MODIFY TABLE A: PERMITTED AND
CONDITIONAL USES OF THE ZONING ORDINANCE TO ALLOW NAICS
USE CODE 624110, CHILD AND YOUTH SERVICES, IN THE “GC”
GENERAL COMMERCIAL DISTRICT**

FOR THE MEETING OF: Monday, December 19, 2022, 6:00 P.M.

LOCATION: GC-General Commercial District, city-wide

REQUEST: David Hutkin, of Hutkin Properties Group, on behalf of Metro Creve Coeur LLC, property owner, has submitted a Text Amendment application to revise Table A: Permitted and Conditional Uses of the Zoning Ordinance, Chapter 405, to allow Child and Youth Services, NAICS Use Code 624110, as a permitted use within the “GC”-General Commercial District. This industry comprises of establishments primarily engaged in providing nonresidential social assistance services for children and youth. These establishments provide for the welfare of children in such areas as adoption and foster care, drug prevention, life skills training, and positive social development. If approved, Foster and Adoptive Care Coalition of Greater St. Louis intends to purchase and occupy the building located at 1100 N. Lindbergh Boulevard, Creve Coeur, MO 63132, within the GC-General Commercial District.

ADDITIONAL INFORMATION: Text Amendments to the Zoning Ordinance require a public hearing and review by the Planning and Zoning Commission with final approval by the City Council.

APPLICANT: David Hutkin
Hutkin Properties Group
10829 Olive Boulevard
St. Louis, MO 63141

REPORT PREPARED BY: Bethany L. Moore, City Planner
DATE: December 12, 2022
ATTACHMENTS: Draft Ordinance

Key Issues:

- Are the changes consistent with the purposes of the Zoning Code?
- Are the changes consistent with the objectives and strategies of the Comprehensive Plan?

Zoning Code References

- Section 405.360 “GC” General Commercial District
- Section 405.450 Permitted Uses

BACKGROUND AND REQUEST

NAICS 624110, Child and Youth Services, comprises establishments primarily engaged in providing nonresidential social assistance services for children and youth. These establishments provide for the welfare of children in such areas as adoption and foster care, drug prevention, life skills training, and positive social development. Examples of this type of use include adoption agencies, non-recreational youth centers, child guidance and youth self-help organizations and foster care placement services.

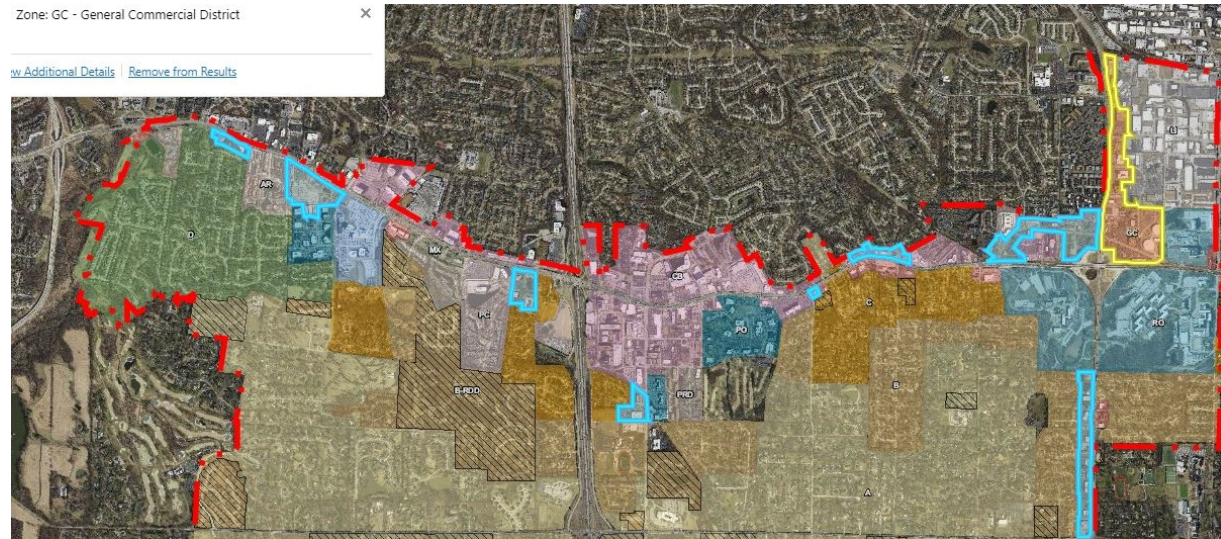


Figure 1: Zoning Map section showing GC-General Commercial District properties, highlighted in light blue and yellow.

The Applicant, Hutkin Properties Group, has signed a letter of intent with Foster Care Coalition of Greater St. Louis, Inc for Foster and Adoptive Care Coalition (FACC) to purchase and occupy the property at 1100 N. Lindbergh Boulevard within the “GC” district. FACC is a not-for profit that provides non-residential services directed towards finding families for children in foster care and supporting families that care for the foster children. FACC has outgrown their current location in Brentwood and is looking to occupy the property at 1100 N. Lindbergh. FACC would primarily use the property for office space, training and meeting rooms. This use is similar to other uses permitted in “GC” such as NAICS 624190 Other Individual and Family Services and NAICS 813319 Other Social Advocacy Organizations which are both permitted uses in GC.

Table A of the City’s permitted and conditional uses list Child and Youth Services, as a permitted use in the PH-Planned Hospital, CB-Core Business and LI-Light Industrial Districts. As the applicants have indicated, similar uses, like those mentioned above, are Permitted in GC. Applicants are seeking to include the use as a Permitted use in the GC District. If approved, they would then occupy the space at 1100 N. Lindbergh Boulevard.

COMPREHENSIVE PLAN REVIEW

Properties zoned “GC”General Commercial District fall within several Community Place Type Districts as identified in the *Creve Coeur 2030 Comprehensive Plan*. GC-zoned properties are located within the Mixed-Use District (MU), Neighborhood Commercial District (NC), and Mixed-Use Innovation Campus District (MUIC) Community Place Types (p. 58-59). Community Place Types represent the geographic framework for the plan to guide the appropriate physical development within specific areas of the City (p.54).

The MU District and the MUIC District hold the majority of the “GC” districts with only a very small area being included in the NC district. The Mixed-Use District supports the development of a variety of medium-density commercial, retail, office, dining, community services, and multi-family residential on large development sites with centralized parking lots and the Mixed-Use

	I - Countryside Estate (CR)
	II - Estate Neighborhood 2 (ER-2)
	III - Estate Neighborhood 1 (ER-1)
	IV - Suburban Neighborhood 2 (SR-2)
	V - Suburban Multi-Family Neighborhood 1 (SR-1)
	VI - Civic (CV)
	VII - Campus (CP)
	VIII - Neighborhood Commercial District (NC)
	IX - Mixed-Use District (MU)
	IX.A - Central Business District (CBD)
	X - Community Center District (CC)
	XI - Mixed-Use Innovation Campus District (MUIC)

Page 130 of 189

ZONING REVIEW

The “GC” General Commercial district is intended to accommodate by site development plan approval convenience retail shopping and services and offices which are freestanding or part of small scale planned commercial developments and which are compatible in scale and intensity of use with adjacent residential uses. Staff reviewed the existing list of permitted uses for “GC,” in Table A, and compared the Permitted and Conditional uses in the district to the proposed use. There are several uses that are permitted uses in “GC” that are a similar use to the proposed Child and Youth Services.

The similar uses of “Services for the Elderly and Persons with Disabilities” and “Other Individual and Family Services” are both Permitted uses in CB and GC while “Child and Youth Services” is only Permitted in “CB.” Given the similarities to the uses and the districts, it does not appear that a zoning conflict would arise from allowing Child and Youth Services as a permitted use in “GC” and that it would be a compatible use for the district as a permitted use and it will not be dissimilar or disruptive to the existing uses.

If approved, Table A (permitted and conditional uses) would be revised as follows:

		ZONING DISTRICTS													
Use Code	2012 NAICS Title	A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
6241100	Child and Youth Services							P					<u>P</u>	P	P

CONCLUSION AND ACTION

The proposed use, Child and Youth Services, would be an appropriate addition to the list of Permitted and Conditional uses allowed in the “GC” District based on the currently allowed uses in the district and review of the districts where NAICS 624110 is currently allowed as a permitted use.

MOTION

If the Planning and Zoning Commission believes the proposed change to Table A for the “GC”-General Commercial District is appropriate, the following would be a suitable motion for this application:

“I move to recommend approval of the text amendment to modify the list of Permitted and Conditional Uses in Table A for the “GC”-General Commercial District to allow NAICS 624110, Child and Youth Services as shown on the attached draft ordinance as part of Application 22-034 at the meeting of December 19, 2022.”

APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: ZONING CODE

Included and attached by reference. See body of report for specific excerpts.

BILL NO. _____

ORDINANCE NO. _____

AN ORDINANCE AMENDING TABLE A: PERMITTED AND CONDITIONAL USES OF THE ZONING CODE OF THE CITY OF CREVE COEUR, MISSOURI TO ALLOW FOR CHILD AND YOUTH SERVICES (NAICS 624110) AS A PERMITTED USE IN THE GC-GENERAL COMMERCIAL DISTRICT

WHEREAS, an application by David Hutkin, of Hutkin Properties, owner of 1100 N. Lindbergh Boulevard, was submitted for a text amendment to the zoning code to allow Child and Youth Services (NAICS 624110) as a permitted use in the GC-General Commercial District; and

WHEREAS, such uses are not currently allowed within the GC General Commercial District; and,

WHEREAS, a public hearing was held by the Creve Coeur Planning and Zoning Commission on Monday, December 19, 2022, beginning at 6:00 p.m. or immediately following the close of the previous public hearing, and,

WHEREAS, notice of publication for said public hearing had been previously published at least 15 days prior to the hearing, in the St. Louis Countian, a newspaper of general circulation in the City of Creve Coeur; and,

WHEREAS, the Planning and Zoning Commission reviewed and, by a ____ vote, recommended approval of the conditional use permit, subject to the conditions contained herein, at its meeting on December 19, 2022; and,

WHEREAS, all parties desiring to be heard, either for or against said application, were given an opportunity to be heard, and a copy of the proposed ordinance has been made available for public inspection prior to its consideration by the Council; and this Bill having been read by title in open meeting two times before final passage by the City Council, and

WHEREAS, the City Council being fully informed finds that amending the City Code of Ordinances would be in harmony with and bear a substantial relation to the public welfare, health, safety, comfort and convenience of the citizens of the City of Creve Coeur and in the public interest;

NOW, THEREFORE, be it ordained by the City Council of the City of Creve Coeur, Missouri as follows:

Section 1: The following individual line item in Section 405.210 Table A Permitted and Conditional Uses shall be amended to read as follows, while all other parts of Table A shall remain unchanged:

Chapter 405, Table A, Permitted and Conditional Uses

P=Permitted Use; C=Conditional Use Permit Required

		ZONING DISTRICTS													
Use Code	2012 NAICS Title	A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
624110	Child and Youth Services							P					P	P	P

Section 2: This ordinance shall become effective in accordance with Section 3.11 (g) of the City Charter.

BILL NO. _____

ORDINANCE NO. _____

ADOPTED THIS ____ DAY OF _____, 2023.

JOSEPH MARTINICH
PRESIDENT OF CITY COUNCIL

APPROVED THIS ____ DAY OF _____, 2023.

DR. ROBERT
HOFFMAN
MAYOR

ATTEST:

KELLIE HENKE
CITY CLERK

HUTKIN PROPERTIES GROUP, L.L.C.

November 2, 2022

By E-Mail: jjagi@crevecoeurmo.gov

Jason W. Jaggi, AICP
Director of Community Development
City of Creve Coeur, Missouri
300 North New Ballas Road
Creve Coeur, MO 63141

Re: Text Amendment Application of Metro Creve Coeur, LLC regarding property located at 1100 N. Lindbergh Blvd., Creve Coeur, MO, seeking to designate Child and Youth Services (Use Code 624110) as a Permitted Use in the General Commercial Zoning District to enable Foster and Adoptive Care Coalition to acquire and occupy the property

Dear Mr. Jaggi:

This letter accompanies the Text Amendment Application of Metro Creve Coeur, LLC (Metro Creve Coeur) regarding the property that Metro Creve Coeur owns at 1100 N. Lindbergh Blvd (Property). The Property consists of an approximately 3.3 acre parcel improved by an approximately 54,180 square foot office building.

Metro Creve Coeur signed a letter of intent with Foster Care Coalition of Greater St. Louis, Inc., d/b/a Foster and Adoptive Care Coalition (FACC), providing for FACC to purchase and occupy the Property. FACC is a not-for-profit corporation that provides non-residential services directed toward finding families for children in foster care and supporting the foster/adoptive/guardianship families who care for the foster children.¹ FACC's current facility is located at 1750 South Brentwood Blvd. in Brentwood, MO, which it has happily occupied since May of 2010. FACC has outgrown its current facility, which is why it seeks to acquire and occupy 1100 N. Lindbergh Blvd.

The Property is located in Creve Coeur's General Commercial Zoning District. FACC's primary activities fall under Use Code 624110-Child and Youth Services of the Creve Coeur Zoning Code, which is defined by NAICS as "establishments primarily engaged in providing nonresidential social assistance services for children and youth. These establishments provide for the welfare of children in such areas as adoption and foster care, drug prevention, life skills training, and positive social development."² Use Code 624110-Child and Youth Services is neither a permitted nor conditional use within the General Commercial Zoning District.

10829 Olive Blvd., Suite 200
St. Louis, Missouri 63141
Telephone: (314) 872-9140 Facsimile: (314) 872-9001

RECEIVED
NOV 02 2022
PLANNING DEPT.

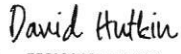
Jason W. Jaggi, AICP
November 2, 2022
Page 2

Currently, FACC employs a staff of 94 people and expects to grow to approximately 160 people within 5 years. FACC would primarily use the Property for office space for its staff, training and meeting rooms for families who take on the responsibility of foster children, and operating its resale store. As mentioned above, no one would be housed at FACC's facility. FACC's uses are the same types of activities (i.e., office, training and meetings) as other not-for profit organizations, whose uses are permitted uses in the General Commercial Zoning District, albeit for different segments of the population. For example, organizations that fall under Use Code 624190-Other Individual and Family Services³, and under Use Code 813319 Other Social Advocacy Organizations⁴, are Permitted Uses within the General Commercial Zoning District, when their activities for zoning purposes are essentially the same (i.e., office, training, and meetings) as FACC.

There are other non-residential, social service organizations that operate in close proximity to FACC; namely, (i) National Council of Jewish Women located at 295 N. Lindbergh, (ii) The American Red Cross located adjacent to the Property at 10195 Corporate Square, and (iii) Presbyterian Children's Home & Services and Every Child's Hope, both located at 1220 N. Lindbergh Blvd. (and which provide social, psychological, and educational services to children and families). Accordingly, FACC's occupancy of 1100 N. Lindbergh would be consistent with the current character of the area of the General Commercial Zoning District in which the Property is located.

For the above reasons, Metro Creve Coeur respectfully submits that the text of Creve Coeur's Zoning Ordinance should be amended to allow not-for-profit organizations like FACC, whose activities fall under Use Code 624110-Child and Youth Services, to operate in the General Commercial Zoning District as a permitted use.

Very truly yours,

DocuSigned by:

E758B68B11434E2
David S. Hutkin

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PLANNING DEPT.

Footnotes

¹ As a source of funding for its mission, FACC also operates a resale store at its facility.

² FACC's secondary use activities, its resale store, would be a permitted use in the General Commercial Zoning District under 453310-Used Merchandise Stores.

³ Use Code 624190-Other Individual and Family Services is defined by NAICS as "establishments primarily engaged in providing nonresidential individual and family social assistance (except those specifically directed toward children, the elderly, persons diagnosed with intellectual or development disabilities, or persons with disabilities)".

⁴ Use Code 813319-Other Social Advocacy Organizations is defined by NAICS as "establishments primarily engaged in social advocacy (except human rights and environmental protection, conservations, and wildlife preservations)."

ZONING ORDINANCE

405 Attachment 1

City of Creve Coeur

**TABLE A
PERMITTED AND CONDITIONAL USES**

[Ord. No. 5300, 4-22-2013; Ord. No. 5325 §1, 8-26-2013; Ord. No. 5431 §§17 — 18, 7-27-2015; Ord. No. 5631, 3-25-2019; Ord. No. 5637, 4-22-2019; Ord. No. 5648, 8-26-2019; Ord. No. 5708, 8-10-2020; Ord. No. 5717, 9-29-2020]

P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
CC111419	Medical Marijuana Cultivation Facility, inside a building or greenhouse as defined under Section 405.120									C					C
221121	Electric Bulk Power Transmission and Control														C
221122	Electric Power Distribution	C	C	C	C	C	C	C	C	C	C	C	C	C	C
221310	Water Supply and Irrigation Systems												C		C
221320	Sewage Treatment Facilities														C
236115	New Single-Family Housing Construction (except For-Sale Builders)														C
236116	New Multi-Family Housing Construction (except For-Sale Builders)														C
236117	New Housing For-Sale Builders														C
236118	Residential Remodelers														C
236210	Industrial Building Construction														C
236220	Commercial and Institutional Building Construction														C
237110	Water and Sewer Line and Related Structures Construction														C
237120	Oil and Gas Pipeline and Related Structures Construction														C
237130	Power and Communication Line and Related Structures Construction														C
237210	Land Subdivision														C
237310	Highway, Street, and Bridge Construction (Management Office Only)													P	P

CREVE COEUR CITY CODE

P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
238150	Glass and Glazing Contractors														C
238210	Electrical Contractors and Other Wiring Installation Contractors														C
238220	Plumbing, Heating, and Air-Conditioning Contractors														C
238310	Drywall and Insulation Contractors														C
238320	Painting and Wall Covering Contractors														C
238330	Flooring Contractors														C
238340	Tile and Terrazzo Contractors														C
238350	Finish Carpentry Contractors														C
238390	Other Building Finishing Contractors														C
238990	All Other Specialty Trade Contractors														C
311351	Chocolate and Confectionery Manufacturing from Cacao Beans														P
311352	Confectionary Manufacturing from Purchased Chocolate										P	P	P	P	P
311340	Non-Chocolate Confectionary Manufacturing										P	P	P		P
311811	Retail Bakeries										P	P	P	P	P
311812	Commercial Bakeries														P
311813	Frozen Cakes, Pies, and Other Pastries Manufacturing														P
311821	Cookie and Cracker Manufacturing														P
311824	Dry Pasta, Dough, and Flour Mixes Manufacturing from Purchased Flour														C
311830	Tortilla Manufacturing														C
311911	Roasted Nuts and Peanut Butter Manufacturing														P
311919	Other Snack Food Manufacturing														P
311920	Coffee and Tea Manufacturing														P
311942	Spice and Extract Manufacturing														C
312111	Soft Drink Manufacturing														P
312112	Bottled Water Manufacturing														P
312113	Ice Manufacturing														C
312120	Breweries														C
312130	Wineries														C
312140	Distilleries														C
313220	Narrow Fabric Mills and Schiffii Machine Embroidery														P
313310	Textile and Fabric Finishing Mills														P

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P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
313320	Fabric Coating Mills														P
314120	Curtain and Linen Mills														P
314910	Textile Bag and Canvas Mills														P
314999	All Other Miscellaneous Textile Product Mills														C
315210	Cut and Sew Apparel Contractors														P
315220	Men's and Boys' Cut and Sew Apparel Manufacturing														P
315240	Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing														P
315280	Other Cut and Sew Apparel Manufacturing														P
315990	Apparel Accessories and Other Apparel Manufacturing														P
316210	Footwear Manufacturing														P
316992	Woman's Handbag and Purse Manufacturing														P
316998	All Other Leather Good and Allied Product Manufacturing														P
321211	Hardwood Veneer and Plywood Manufacturing														C
321212	Softwood Veneer and Plywood Manufacturing														C
321213	Engineered Wood Member (except Truss) Manufacturing														C
321214	Truss Manufacturing														C
321219	Reconstituted Wood Product Manufacturing														C
321911	Wood Window and Door Manufacturing														C
321912	Cut Stock, Re-sawing Lumber, and Planning														C
321918	Other Millwork (including Flooring)														C
321920	Wood Container and Pallet Manufacturing														C
321991	Manufactured Home (Mobile Home) Manufacturing														C
321992	Prefabricated Wood Building Manufacturing														C
321999	All Other Miscellaneous Wood Product Manufacturing														C
322211	Corrugated and Solid Fiber Box Manufacturing														C
322212	Folding Paperboard Box Manufacturing														P
322219	Other Paperboard Container Manufacturing														P
322220	Paper Bag and Coated and Treated Paper Manufacturing														C
322230	Stationery Product Manufacturing														C
322291	Sanitary Paper Product Manufacturing														C

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
322299	All Other Converted Paper Product Manufacturing														C
323111	Commercial Printing (except Screen and Books)														P
323113	Commercial Screen Printing														P
323117	Books Printing														P
323120	Support Activities for Printing														P
325220	Artificial and Synthetic Fibers and Filaments									C					C
325411	Medicinal and Botanical Manufacturing									C					C
325412	Pharmaceutical Preparation Manufacturing									C					C
325413	In-Vitro Diagnostic Substance Manufacturing									C					C
325414	Biological Product (except Diagnostic) Manufacturing									C					C
CC325415	Medical Marijuana Manufacturing Facility, entirely within an enclosed building as defined under Section 405.120									C					C
325991	Custom Compounding of Purchased Resins														P
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing														P
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing														P
326111	Plastics Bag and Pouch Manufacturing														C
326112	Plastics Packaging Film and Sheet (including Laminated) Manufacturing														C
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing														P
326121	Unlaminated Plastics Profile Shape Manufacturing														P
326122	Plastics Pipe and Pipe Fitting Manufacturing														P
326130	Laminated Plastics Plate, Sheet (except Packaging), and Shape Manufacturing														P
326140	Polystyrene Foam Product Manufacturing														P
326150	Urethane and Other Foam Product (except Polystyrene) Manufacturing														P
326160	Plastics Bottle Manufacturing														P
326191	Plastics Plumbing Fixture Manufacturing														P
326199	All Other Plastics Product Manufacturing														P
326212	Tire Retreading														C
326291	Rubber Product Manufacturing for Mechanical Use														P
326299	All Other Rubber Product Manufacturing														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing														P
327211	Flat Glass Manufacturing														P
327212	Other Pressed and Blown Glass and Glassware Manufacturing														P
327213	Glass Container Manufacturing														P
327215	Glass Product Manufacturing Made of Purchased Glass														P
332114	Custom Roll Forming														P
332117	Powder Metallurgy Part Manufacturing														P
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing														P
332216	Saw Blade and Handtool Manufacturing														P
332311	Prefabricated Metal Building and Component Manufacturing														P
332312	Fabricated Structural Metal Manufacturing														P
332313	Plate Work Manufacturing														P
332321	Metal Window and Door Manufacturing														P
332322	Sheet Metal Work Manufacturing														P
332323	Ornamental and Architectural Metal Work Manufacturing														P
332410	Power Boiler and Heat Exchanger Manufacturing														P
332420	Metal Tank (Heavy Gauge) Manufacturing														P
332431	Metal Can Manufacturing														P
332439	Other Metal Container Manufacturing														P
332510	Hardware Manufacturing														P
332613	Spring Manufacturing														P
332618	Other Fabricated Wire Product Manufacturing														P
332710	Machine Shops														P
332721	Precision Turned Product Manufacturing														P
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing														P
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers														P
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring														P
332911	Industrial Valve Manufacturing														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
332912	Fluid Power Valve and Hose Fitting Manufacturing														C
332913	Plumbing Fixture Fitting and Trim Manufacturing														P
332919	Other Metal Valve and Pipe Fitting Manufacturing														P
332991	Ball and Roller Bearing Manufacturing														P
332992	Small Arms Ammunition Manufacturing														C
332993	Ammunition (except Small Arms) Manufacturing														C
332994	Small Arms, Ordnance, and Ordnance Accessories Manufacturing														C
332996	Fabricated Pipe and Pipe Fitting Manufacturing														P
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing														C
333111	Farm Machinery and Equipment Manufacturing														C
333112	Lawn and Garden Tractor and Home Lawn and Garden Equipment Manufacturing														C
333120	Construction Machinery Manufacturing														P
333131	Mining Machinery and Equipment Manufacturing														P
333132	Oil and Gas Field Machinery and Equipment Manufacturing														P
333241	Food Product Machinery Manufacturing														P
333242	Semi-Conductor Machinery Manufacturing														P
333243	Sawmill, Woodworking, and Paper Machinery Manufacturing														P
333244	Printing Machinery and Equipment Manufacturing														P
333249	Other Industrial Machinery Manufacturing														P
333314	Optical Instrument and Lens Manufacturing														P
333316	Photographic and Photocopying Equipment Manufacturing														P
333318	Other Commercial and Service Industry Machinery Manufacturing														P
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing														P
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing														P
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
333511	Industrial Mold Manufacturing														C
333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing														P
333515	Cutting Tool and Machine Tool Accessory Manufacturing														P
333517	Machine Tool Manufacturing														P
333519	Rolling Mill and Other Metalworking Machinery Manufacturing														P
333611	Turbine and Turbine Generator Set Units Manufacturing														P
333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing														P
333613	Mechanical Power Transmission Equipment Manufacturing														P
333618	Other Engine Equipment Manufacturing														P
333911	Pump and Pumping Equipment Manufacturing														P
333912	Air and Gas Compressor Manufacturing														P
333913	Measuring and Dispensing Pump Manufacturing														P
333921	Elevator and Moving Stairway Manufacturing														P
333922	Conveyor and Conveying Equipment Manufacturing														P
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing														P
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing														P
333991	Power-Driven Handtool Manufacturing														C
333992	Welding and Soldering Equipment Manufacturing														P
333993	Packaging Machinery Manufacturing														P
333994	Industrial Process Furnace and Oven Manufacturing														P
333995	Fluid Power Cylinder and Actuator Manufacturing														P
333996	Fluid Power Pump and Motor Manufacturing														P
333997	Scale and Balance Manufacturing														P
333999	All Other Miscellaneous General Purpose Machinery Manufacturing														C
334111	Electronic Computer Manufacturing														P
334112	Computer Storage Device Manufacturing														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing														P
334210	Telephone Apparatus Manufacturing														P
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing														P
334290	Other Communications Equipment Manufacturing														P
334310	Audio and Video Equipment Manufacturing														P
334412	Bare Printed Circuit Board Manufacturing														P
334413	Semi-Conductor and Related Device Manufacturing														P
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing														P
334417	Electronic Connector Manufacturing														P
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing														P
334419	Other Electronic Component Manufacturing														P
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing							C							P
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing														P
334512	Automatic Environmental Control Manufacturing for Residential, Commercial, and Appliance Use														P
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables														P
334514	Totalizing Fluid Meter and Counting Device Manufacturing														P
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals														P
334516	Analytical Laboratory Instrument Manufacturing							C							P
334517	Irradiation Apparatus Manufacturing														P
334519	Other Measuring and Controlling Device Manufacturing														P
334613	Blank Magnetic and Optical Recoding Media Manufacturing														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
334614	Software and Other Pre-Recorded Compact Disc, Tape, and Record Reproducing											P	P	P	P
335110	Electric Lamp Bulb and Part Manufacturing														P
335121	Residential Electric Lighting Fixture Manufacturing														P
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing														P
335129	Other Lighting Equipment Manufacturing														P
335210	Small Electrical Appliance Manufacturing														P
335221	Household Cooking Appliance Manufacturing														P
335222	Household Refrigerator and Home Freezer Manufacturing														P
335224	Household Laundry Equipment Manufacturing														P
335228	Other Major Household Appliance Manufacturing														P
335311	Power, Distribution, and Specialty Transformer Manufacturing														P
335312	Motor and Generator Manufacturing														P
335313	Switchgear and Switchboard Apparatus Manufacturing														P
335314	Relay and Industrial Control Manufacturing														P
335911	Storage Battery Manufacturing														P
335912	Primary Battery Manufacturing														P
335932	Non-Current-Carrying Wiring Device Manufacturing														P
335991	Carbon and Graphite Product Manufacturing														P
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing														P
336111	Automobile Manufacturing														C
336112	Light Truck and Utility Vehicle Manufacturing														C
336120	Heavy Duty Truck Manufacturing														C
336211	Motor Vehicle Body Manufacturing														C
336212	Truck Trailer Manufacturing														C
336213	Motor Home Manufacturing														C
336214	Travel Trailer and Camper Manufacturing														C
336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing														C
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
336330	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing														C
336340	Motor Vehicle Brake System Manufacturing														C
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing														C
336360	Motor Vehicle Seating and Interior Trim Manufacturing														P
336390	Other Motor Vehicle Parts Manufacturing														C
336411	Aircraft Manufacturing														C
336412	Aircraft Engine and Engine Parts Manufacturing														C
336413	Other Aircraft Parts and Auxillary Equipment Manufacturing														P
336414	Guided Missile and Space Vehicle Manufacturing														C
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing														C
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing														C
336510	Railroad Rolling Stock Manufacturing														C
336611	Ship Building and Repairing														C
336612	Boat Building														C
336991	Motorcycle, Bicycle, and Parts Manufacturing														C
336992	Military Armored Vehicle, Tank and Tank Component Manufacturing														C
336999	All Other Transportation Equipment Manufacturing														C
337110	Wood Kitchen Cabinet and Countertop Manufacturing														C
337121	Upholstered Household Furniture Manufacturing														C
337122	Non-Upholstered Wood Household Furniture Manufacturing														C
337124	Metal Household Furniture Manufacturing														C
337125	Household Furniture (except Wood and Metal) Manufacturing														C
337127	Institutional Furniture Manufacturing														C
337211	Wood Office Furniture Manufacturing														C
337212	Custom Architectural Woodwork and Millwork Manufacturing														C
337214	Office Furniture (except Wood) Manufacturing														C

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		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
337215	Showcase, Partition, Shelving, and Locker Manufacturing														C
337910	Mattress Manufacturing														C
337920	Blind and Shade Manufacturing														P
339112	Surgical and Medical Instrument Manufacturing														P
339113	Surgical Appliance and Supplies Manufacturing							C				C	C		P
339114	Dental Equipment and Supplies Manufacturing							C							P
339115	Ophthalmic Goods Manufacturing							C							P
339116	Dental Laboratories							P					C	C	P
339910	Jewelry and Silverware Manufacturing														P
339920	Sporting and Athletic Goods Manufacturing														P
339930	Doll, Toy, and Game Manufacturing														P
339940	Office Supplies (except Paper) Manufacturing														P
339950	Sign Manufacturing										C	C	C	C	C
339991	Gasket, Packing, and Sealing Device Manufacturing														P
339992	Musical Instrument Manufacturing														P
339993	Fastener, Button, Needle, and Pin Manufacturing														P
339994	Broom, Brush, and Mop Manufacturing														P
339995	Burial Casket Manufacturing														P
339999	All Other Miscellaneous Manufacturing														C
423110	Automobile and Other Motor Vehicle Merchant Wholesalers														C
423120	Motor Vehicle Supplies and New Parts Merchant Wholesalers														P
423130	Tire and Tube Merchant Wholesalers														C
423140	Motor Vehicle Parts (Used) Merchant Wholesalers														C
423210	Furniture Merchant Wholesalers														P
423220	Home Furnishing Merchant Wholesalers														P
423310	Lumber, Plywood, Millwork, and Wood Panel Merchant Wholesalers														P
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers														P
423330	Roofing, Siding, and Insulation Material Merchant Wholesalers														P
423390	Other Construction Material Merchant Wholesalers														P

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423410	Photographic Equipment and Supplies Merchant Wholesalers														P
423420	Office Equipment Merchant Wholesalers														P
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers														P
423440	Other Commercial Equipment Merchant Wholesalers														P
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers														P
423460	Ophthalmic Goods Merchant Wholesalers														P
423490	Other Professional Equipment and Supplies Merchant Wholesalers														P
423510	Metal Service Centers and Other Metal Merchant Wholesalers														P
423520	Coal and Other Mineral and Ore Merchant Wholesalers														P
423610	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers														P
423620	Household Appliances, Electric Housewares, and Consumer Electronics Merchant Wholesalers														P
423690	Other Electronic Parts and Equipment Merchant Wholesalers														P
423710	Hardware Merchant Wholesalers														P
423720	Plumbing and Heating Equipment and Supplies (Hydronics) Merchant Wholesalers														P
423730	Warm Air Heating and Air-Conditioning Equipment and Supplies Merchant Wholesalers														P
423740	Refrigeration Equipment and Supplies Merchant Wholesalers														P
423810	Construction and Mining (except Oil Well) Machinery and Equipment Merchant Wholesalers														P
423820	Farm and Garden Machinery and Equipment Merchant Wholesalers														P
423830	Industrial Machinery and Equipment Merchant Wholesalers														P
423840	Industrial Supplies Merchant Wholesalers														P

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		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
423850	Service Establishment Equipment and Supplies Merchant Wholesalers														P
423860	Transportation Equipment and Supplies (except Motor Vehicle) Merchant Wholesalers														P
423910	Sporting and Recreational Goods and Supplies Merchant Wholesalers														P
423920	Toy and Hobby Goods and Supplies Merchant Wholesalers														P
423930	Recyclable Material Merchant Wholesalers														P
423940	Jewelry, Watch, Precious Stone, and Precious Metal Merchant Wholesalers														P
423990	Other Miscellaneous Durable Goods Merchant Wholesalers														P
424110	Printing and Writing Paper Merchant Wholesalers														P
424120	Stationary and Office Supplies Merchant Wholesalers														P
424130	Industrial and Personal Service Paper Merchant Wholesalers														P
424210	Drugs and Druggists' Sundries Merchant Wholesalers												C		P
424310	Place Goods, Notions, and Other Dry Goods Merchant Wholesalers														P
424320	Men's and Boys' Clothing and Furnishings Merchant Wholesalers														P
424330	Women's, Children's, and Infants' Clothing and Accessories Merchant Wholesalers														P
424340	Footwear Merchant Wholesalers														P
424410	General Line Grocery Merchant Wholesalers														P
424420	Packaged Frozen Food Merchant Wholesalers														P
424430	Dairy Product (except Dried or Canned) Merchant Wholesalers														P
424440	Poultry and Poultry Product Merchant Wholesalers														P
424450	Confectionery Merchant Wholesalers														P
424460	Fish and Seafood Merchant Wholesalers														P
424470	Meat and Meat Product Merchant Wholesalers														P
424480	Fresh Fruit and Vegetable Merchant Wholesalers														P
424490	Other Grocery and Related Products Merchant Wholesalers														P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
424510	Grain and Field Bean Merchant Wholesalers														P
424520	Livestock Merchant Wholesalers														P
424610	Plastics Materials and Basic Forms and Shapes Merchant Wholesalers														P
424690	Other Chemical and Allied Products Merchant Wholesalers														C
424810	Beer and Ale Merchant Wholesalers														P
424820	Wine and Distilled Alcoholic Beverage Merchant Wholesalers														P
424910	Farm Supplies Merchant Wholesalers														P
424920	Book, Periodical, and Newspaper Merchant Wholesalers														P
424930	Flower, Nursery Stock, and Florists' Supplies Merchant Wholesalers														P
424940	Tobacco and Tobacco Product Merchant Wholesalers														P
424950	Paint, Varnish, and Supplies Merchant Wholesalers														P
424990	Other Miscellaneous Non-Durable Goods Merchant Wholesalers														P
425110	Business to Business Electronic Markets								P		P	P	P	P	P
425120	Wholesale Trade Agents and Brokers								P				P	P	P
441110	New Car Dealers												C	C	C
441120	Used Car Dealers														C
441210	Recreational Vehicle Dealers														C
441222	Boat Dealers											C	C	C	C
441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers														C
441310	Automotive Parts and Accessories Stores										C	C	C	C	C
441320	Tire Dealers												C		C
CC442100	All Drive-in and Drive-Through Services (excluding Food Services)							C				C	C	C	C
442110	Furniture Stores										P	P	P	P	C
442210	Floor Covering Stores										P	P	P	P	C
442291	Window Treatment Stores										P	P	P	P	P
442299	All Other Home Furnishings Stores										C	C	P	P	P
443141	Household Appliance Stores										C	C	P	P	P
443142	Electronics Stores										P	P	P	P	P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
444110	Home Centers											C	C	C	P
444120	Paint and Wallpaper Stores										C	P	P	P	P
444130	Hardware Stores										P	P	P	P	P
444190	Other Building Material Dealers											C	C	C	P
444210	Outdoor Power Equipment Stores										C	C	C	P	P
444220	Nursery, Garden Center, and Farm Supply Stores										C			C	P
445110	Supermarkets and Other Grocery (except Convenience) Stores										C	P	P	P	P
445120	Convenience Stores								C		C	C	C	C	C
445210	Meat Markets										P	P	P	P	P
445220	Fish and Seafood Markets														P
445230	Fruit and Vegetable Markets										P	P	P	P	P
445291	Baked Goods Stores										P	P	P	P	P
445292	Confectionery and Nut Stores										P	P	P	P	P
445299	All Other Specialty Food Stores										P	P	P	P	P
445310	Beer, Wine, and Liquor Stores										P	P	P	P	P
446110	Pharmacies and Drug Stores							P	P		P	P	P	P	P
446120	Cosmetics, Beauty Supplies, and Perfume Stores										P	P	P	P	P
446130	Optical Goods Stores										P	P	P	P	P
446191	Food (Health) Supplement Stores							P			P	P	P	P	P
446199	All Other Health and Personal Care Stores										P	P	P	P	P
447110	Gasoline Stations with Convenience Stores										C	C	C	C	C
447190	Other Gasoline Stations											C	C	C	C
448110	Men's Clothing Stores										P	P	P	P	C
448120	Women's Clothing Stores										P	P	P	P	C
448130	Children's and Infants' Clothing Stores										P	P	P	P	C
448140	Family Clothing Stores										P	P	P	P	C
448150	Clothing Accessories Stores										P	P	P	P	C
448190	Other Clothing Stores										P	P	P	P	P
448210	Shoe Stores										P	P	P	P	P
448310	Jewelry Stores										P	P	P	P	C
448320	Luggage and Leather Goods Stores										P	P	P	P	C
451110	Sporting Goods Stores (except those exclusively engaged in the sale of firearms and ammunition)										C	C	P	P	P
451120	Hobby, Toy, and Game Stores										P	P	P	P	P
451130	Sewing, Needlework, and Piece Goods Stores										P	P	P	P	P

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Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
451140	Musical Instrument and Supplies Stores										P	P	P	P	P
451211	Book Stores										P	P	P	P	P
451212	News Dealers and Newsstands								P		P	P	P	P	P
452111	Department Stores (except Discount Department Stores)										C	C	C	C	P
452112	Discount Department Stores										C	C	C	C	P
452910	Warehouse Clubs and Supercenters											C	C	C	P
452990	All Other General Merchandise Stores								C		C	C	C	C	P
453110	Florists							P			P	P	P	P	P
453210	Office Supplies and Stationery Stores							P	P		P	P	P	P	P
453220	Gift, Novelty, and Souvenir Stores							P			P	P	P	P	P
453310	Used Merchandise Stores (No building materials, outside sales, exchange or drop-off of used goods)										P	P	P	P	P
453910	Pet and Pet Supplies Stores										P	P	P	P	P
453920	Art Dealers										P	P	P	P	P
453930	Manufactured (Mobile) Home Dealers														C
453991	Tobacco Stores										P	P	P	P	P
453998	All Other Miscellaneous Store Retailers (except auction houses, pool and hot tub sales/supplies and cemetery memorial dealers)										P	P	P	P	P
CC453999	Medical Marijuana Dispensary Facility, as defined under Section 405.120							P		P	P	P	P	P	P
454111	Electronic Shopping										P	P	P	P	P
454112	Electronic Auctions													P	P
454113	Mail-Order Houses														P
454210	Vending Machine Operators														P
454310	Fuel Dealers														C
454390	Other Direct Selling Establishments										P	P	P		
481112	Scheduled Freight Air Transportation														P
481219	Other Non-Scheduled Air Transportation											P		P	
484110	General Freight Trucking, Local														C
484121	General Freight Trucking, Long-Distance, Truckload														C
484122	General Freight Trucking, Long-Distance, Less Than Truckload														C
484210	Used Household and Office Goods Moving														C

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Use Code	2012 NAICS Title	Zoning Districts													
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484220	Specialized Freight (except Used Goods) Trucking, Local														C
484230	Specialized Freight (except Used Goods) Trucking, Long-Distance														C
485111	Mixed Mode Transit Systems														C
485112	Commuter Rail Systems														C
485113	Bus and Other Motor Vehicle Transit Systems														C
486119	Other Urban Transit Systems														P
485210	Interurban and Rural Bus Transportation												C	C	C
485310	Taxi Service														C
485320	Limousine Service														P
485410	School and Employee Bus Transportation														C
485510	Charter Bus Industry											C			C
485991	Special Needs Transportation											C			C
485999	All Other Transit and Ground Passenger Transportation											C			C
486110	Pipeline Transportation of Crude Oil														C
486210	Pipeline Transportation of Natural Gas														C
486910	Pipeline Transportation of Refined Petroleum Products														C
486990	All Other Pipeline Transportation														C
488190	Other Support Activities for Air Transportation														P
488410	Motor Vehicle Towing														C
488490	Other Support Activities for Road Transportation														C
488510	Freight Transportation Arrangement														P
488991	Packing and Crating														P
488999	All Other Support Activities for Transportation														P
491110	Postal Service								P			P	P	P	P
492110	Couriers and Express Delivery Services														P
492210	Local Messengers and Local Delivery														P
493110	General Warehousing and Storage														C
493120	Refrigerated Warehousing and Storage														C
511110	Newspaper Publishers								P		P	P		P	P
511120	Periodical Publishers								P	P	P	P		P	P

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511130	Book Publishers								P		P	P		P	P
511140	Directory and Mailing List Publishers								P		P	P		P	P
511191	Greeting Card Publishers								P		P	P		P	P
511199	All Other Publishers								P		P	P		P	P
511210	Software Publishers								P	P	P	P	P	P	P
512110	Motion Picture and Video Production											C	C	C	P
512120	Motion Picture and Video Distribution											P	P	P	P
512131	Motion Picture Theaters (except Drive-Ins)											C	C	C	
512191	Teleproduction and Other Postproduction Services												P	P	
512199	Other Motion Picture and Video Industries												P	P	
512210	Record Production								P	P			P	P	P
512220	Integrated Record Production/Distribution														P
512230	Music Publishers								P	P			P	P	P
512240	Sound Recording Studios								C			C	C	C	P
512290	Other Sound Recording Industries								C			C	C	C	P
515111	Radio Networks								C			C	C	C	C
515112	Radio Stations								C			C	C	C	C
515120	Television Broadcasting								C			C	C	C	C
515210	Cable and Other Subscription Programming								C			C	C	C	C
517110	Wired Telecommunications Carriers								C	C		C		C	C
517210	Wireless Telecommunications Carriers Incl. Freestanding Antenna Facilities (except Satellite)	C	C	C	C	C	C	C	C	C	C	C	C	C	C
517410	Satellite Telecommunication								C	C			C		C
517911	Telecommunications Resellers								C			P		P	P
517919	All Other Telecommunications								C				C		C
517929	Roof-Mounted Communication Equipment	C					C	C	C	C	C	C	C	C	C
518210	Data Processing, Hosting, and Related Services								P	P		P		P	P
519110	News Syndicates								P			P	P	P	
519120	Libraries and Archives						P		P	P	P	P	P	P	P
519130	Internet Publishing and Broadcasting and Web Search Portals								P	P	P	P	P	P	P
519190	All Other Information Services								P	P		P		P	P
521110	Monetary Authorities-Central Bank								P			P		P	P
522110	Commercial Banking						C		C		C	C	C	C	C

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		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
522120	Savings Institutions						C		C		C	C	C	C	C
522130	Credit Unions						C		C		C	C	C	C	C
522190	Other Depository Credit Intermediation								C			C		C	C
522210	Credit Card Issuing								P		P	P	P	P	
522220	Sales Financing								P		P	P	P	P	P
522291	Consumer Lending								P		P	P	P	P	P
522292	Real Estate Credit								P		P	P	P	P	P
522293	International Trade Financing								P		P	P	P	P	P
522294	Secondary Market Financing								P		P	P	P	P	P
522298	All Other Non-Depository Credit Intermediation (Incl. Pawnshops)														
522310	Mortgage and Non-Mortgage Loan Brokers								P			P		P	
522320	Financial Transactions Processing, Reserve, and Clearinghouse Activities								P			P	P	P	
523110	Investment Banking and Securities Dealing								P			P	P	P	
523120	Securities Brokerage								P		P	P	P	P	
523130	Commodity Contracts Dealing								P		P		P	P	
523140	Commodity Contracts Brokerage								P		P		P	P	
523210	Securities and Commodity Exchanges								P		P	P	P	P	
523910	Miscellaneous Intermediation								P			P		P	
523920	Portfolio Management								P		P	P	P	P	
523930	Investment Advice								P		P	P	P	P	
523991	Trust, Fiduciary, and Custody Activities								P			P	P	P	
523999	Miscellaneous Financial Investment Activities								P			P	P	P	
524113	Direct Life Insurance Carriers								P			P	P	P	
524114	Direct Health and Medical Insurance Carriers								P			P	P	P	
524126	Direct Property and Casualty Insurance Carriers								P			P	P	P	
524127	Direct Title Insurance Carriers								P			P	P	P	
524128	Other Direct Insurance (except Life, Health, and Medical) Carriers								P			P	P	P	
524130	Reinsurance Carriers								P			P	P	P	
524210	Insurance Agencies and Brokerages								P		P	P	P	P	
524291	Claims Adjusting								C		C	C	C	C	C
524292	Third Party Administration of Insurance and Pension Funds								P			P	P	P	

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524298	All Other Insurance Related Activities								P			P	P	P	
525110	Pension Funds								P			P	P	P	
525120	Health and Welfare Funds								P			P	P	P	
525190	Other Insurance Funds								P			P	P	P	
525910	Open-End Investment Funds								P			P	P	P	
525920	Trusts, Estates, and Agency Accounts								P			P	P	P	
525990	Other Financial Vehicles								P			P	P	P	
531110	Lessors of Residential Buildings and Dwellings								P			P	P	P	
531120	Lessors of Non-Residential Buildings (except Miniwarehouses)								P		P	P	P	P	
531190	Lessors of Other Real Estate Property								P			P	P	P	
531210	Offices of Real Estate Agents and Brokers								P		P	P	P	P	
531311	Residential Property Managers								P			P	P	P	
531312	Non-Residential Property Managers								P			P	P	P	
531320	Offices of Real Estate Appraisers								P			P	P	P	
531390	Other Activities Related to Real Estate								P			P	P	P	
532111	Passenger Car Rental											C	C	C	
532112	Passenger Car Leasing											C	C	C	
532120	Truck, Utility Trailer, and RV (Recreational Vehicle) Rental and Leasing												C	C	C
532210	Consumer Electronics and Appliances Rental										C	C	C	C	C
532220	Formal Wear and Costume Rental										P	P	P	P	C
532230	Video Tape and Disc Rental										P	P	P	P	C
532291	Home Health Equipment Rental										P	P	P	P	C
532292	Recreational Goods Rental										P	P	P	P	P
532299	All Other Consumer Goods Rental										C	C	C		C
532310	General Rental Centers										C	C	C	C	C
532411	Commercial Air, Rail, and Water Transportation Equipment Rental and Leasing														P
532412	Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing														C
532420	Office Machinery and Equipment Rental and Leasing										P		P	P	P
532490	Other Commercial and Industrial Machinery and Equipment Rental and Leasing														P
533110	Lessors of Non-Financial Intangible Assets (except Copyrighted Works)								P			P		P	

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		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
541110	Offices of Lawyers								P			P	P	P	P
541120	Offices of Notaries								P			P	P	P	P
541191	Title Abstract and Settlement Offices								P		P	P	P	P	P
541199	All Other Legal Services								P			P		P	P
541211	Offices of Certified Public Accountants								P			P	P	P	P
541213	Tax Preparation Services								P			P	P	P	P
541214	Payroll Services								P			P	P	P	P
541219	Other Accounting Services								P			P	P	P	P
541310	Architectural Services								P			P	P	P	P
541320	Landscape Architectural Services											P	P	P	P
541330	Engineering Services								P			P	P	P	P
541340	Drafting Services								P			P	P	P	P
541350	Building Inspection Services								P			P	P	P	P
541360	Geophysical Surveying and Mapping Services								P			P	P	P	P
541370	Surveying and Mapping (except Geophysical) Services								P			P	P	P	P
541380	Testing Laboratories								P	P		P	P	P	P
CC541381	Medical Marijuana Testing Facility, as defined under Section 405.120									P					P
541410	Interior Design Services								P				P	P	P
541420	Industrial Design Services								P			P	P	P	P
541430	Graphic Design Services								P			P	P	P	P
541490	Other Specialized Design Services								P			P	P	P	P
541511	Custom Computer Programming Services								P			P	P	P	P
541512	Computer Systems Design Services								P			P	P	P	P
541513	Computer Facilities Management Services								P	P		P	P	P	P
541519	Other Computer Related Services								P			P	P	P	P
541611	Administrative Management and General Management Consulting Services								P			P		P	P
541612	Human Resources Consulting Services								P			P		P	P
541613	Marketing Consulting Services							P	P			P	P	P	P
541614	Process, Physical Distribution, and Logistics Consulting Services								P			P		P	P
541618	Other Management Consulting Services								P			P	P	P	P
541620	Environmental Consulting Services								P	P		P	P	P	P
541690	Other Scientific and Technical Consulting Services								P	P		P	P	P	P

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541711	Research and Development in Biotechnology								P	P					P
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)								P	P					P
541720	Research and Development in the Social Sciences and Humanities								P	P				P	
541810	Advertising Agencies								P			P	P	P	P
541820	Public Relations Agencies								P			P	P	P	P
541830	Media Buying Agencies								P			P	P	P	P
541840	Media Representatives								P			P	P	P	P
541850	Outdoor Advertising								P			P	P	P	P
541860	Direct Mail Advertising								P				P	P	P
541870	Advertising Material Distribution Services								P			P	P	P	P
541890	Other Services Related to Advertising								P			P	P	P	P
541910	Marketing Research and Public Opinion Polling								P			P	P	P	P
541921	Photography Studios, Portrait										P	P	P	P	P
541922	Commercial Photography											P	P	P	P
541930	Translation and Interpretation Services								P			P		P	P
541940	Veterinary Services										P	P	P	P	P
541990	All Other Professional, Scientific, and Technical Services								P			P	P	P	P
551111	Offices of Bank Holding Companies								P		P	P	P	P	P
551112	Offices of Other Holding Companies								P		P	P	P	P	P
551114	Corporate, Subsidiary, and Regional Managing Offices								P	P		P	P	P	P
CC561100	Business Enterprise Center (as defined in Chapter 405.120, Definition of Terms)													P	
561110	Office Administrative Services								P			P	P	P	P
561210	Facilities Support Services														P
561311	Employment Placement Agencies								P			C	C	C	P
561312	Executive Search Services								P			P	P	P	P
561320	Temporary Help Services								P			P	P	P	P
561330	Professional Employer Organizations								P			P	P	P	C
561410	Document Preparation Services								P	P		P	P	P	P
561421	Telephone Answering Service								C			C		C	P
561422	Telemarketing Bureaus and Other Contact Centers								C			C		C	C

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		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
561431	Private Mail Centers										P	P	P	P	C
561439	Other Business Service Centers (including Copy Shops)								P		P	P	P	P	P
561440	Collection Agencies								P			P	P	P	P
561450	Credit Bureaus								P			P	P	P	P
561491	Repossession Services														C
561492	Court Reporting and Stenotype Services								P			P	P	P	P
561499	All Other Business Support Services								P		P	P	P	P	P
561510	Travel Agencies								P		P	P	P	P	P
561520	Tour Operators								P			P		P	P
561591	Convention and Visitors Bureaus								P			P		P	P
561599	All Other Travel Arrangement and Reservation Services								P			P	P	P	P
561611	Investigation Services										P	P	P	P	P
561612	Security Guards and Patrol Services														C
561613	Armored Car Services														C
561621	Security Systems Services (except Locksmiths)								C			C	C	C	P
561622	Locksmiths										P	P	P	P	P
561710	Exterminating and Pest Control Services														P
561730	Landscaping Services														C
561740	Carpet and Upholstery Cleaning Services														P
561790	Other Services to Buildings and Dwellings														P
561910	Packaging and Labeling Services										C	C	C		P
561920	Convention and Trade Show Organizers								P			P		P	P
561990	All Other Support Services								C			C	C	C	P
562998	All Other Miscellaneous Waste Management Services														C
611110	Elementary and Secondary Schools	C	C	C	C	C	P								
611210	Junior Colleges						P		C		C	C	C	C	C
611310	Colleges, Universities, and Professional Schools						P	P	C	C	C	C	C	C	C
611410	Business and Secretarial Schools								C			C	C	C	C
611420	Computer Training								C			C	C	C	C
611430	Professional and Management Development								C			C	C	C	C
611511	Cosmetology and Barber Schools											C	C	C	C
611513	Apprenticeship Training								P			P	P	P	P
611519	Other Technical and Trade Schools								C					C	C
611610	Fine Arts Schools											C	C	C	P

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611620	Sports and Recreation Instruction											C	C	C	P
611630	Language Schools								P					P	P
611691	Exam Preparation and Tutoring								P		P	P	P	P	P
611692	Automobile Driving Schools											C	C	C	C
611699	All Other Miscellaneous Schools and Instruction								P			P	P	P	P
611710	Educational Support Services								P			P	P	P	P
621111	Offices of Physicians (except Mental Health Specialists)							P	P		P	P	P	P	P
621112	Offices of Physicians, Mental Health Specialists							P	P		P	P	P	P	P
621210	Offices of Dentists							P	P		P	P	P	P	P
621310	Offices of Chiropractors							P	P		P	P	P	P	P
621320	Offices of Optometrists							P	P		P	P	P	P	P
621330	Offices of Mental Health Practitioners (except Physicians)							P	P		P	P	P	P	P
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists							P	P		P	P	P	P	P
621391	Offices of Podiatrists							P	P		P	P	P	P	P
621399	Offices of All Other Miscellaneous Health Practitioners							P	P		P	P	P	P	P
621410	Family Planning Centers							P	C			C	C	C	C
621420	Outpatient Mental Health and Substance Abuse Centers							P					C		
621491	HMO Medical Centers							P	P			P	P	P	P
621492	Kidney Dialysis Centers							P	P			P	P	P	P
621493	Freestanding Ambulatory Surgical and Emergency Centers							P	P			P	P	P	P
621498	All Other Outpatient Care Centers							P					C		P
621511	Medical Laboratories							P					C	P	P
621512	Diagnostic Imaging Centers							P					C	P	P
621610	Home Health Care Services							P				P	P	P	P
621910	Ambulance Services												C		P
621991	Blood and Organ Banks							P							P
621999	All Other Miscellaneous Ambulatory Health Care Services							P					C	C	
622110	General Medical and Surgical Hospitals							P							
622210	Psychiatric and Substance Abuse Hospitals							P							P

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622310	Specialty (except Psychiatric and Substance Abuse) Hospitals							P							
623110	Nursing Care Facilities (Skilled Nursing Facilities)						C	C				C	C	C	
623210	Residential Intellectual and Developmental Disability Facilities (Subject to 405.450.B)	P	P	P	P	P	C	C				P			
623220	Residential Mental Health and Substance Abuse Facilities							P				C			
623311	Continuing Care Retirement Communities						C	C				C	C	C	
623312	Assisted Living Facilities for the Elderly						C	C				C	C	C	
623990	Other Residential Care Facilities (Subject to 405.450.B), excluding boot/disciplinary camps and halfway group homes	P	P	P	P	P	C	C				C	C	C	
624110	Child and Youth Services							P						P	P
624120	Services for the Elderly and Persons with Disabilities						C	P	C			P	P	P	
624190	Other Individual and Family Services							P	P			P	P	P	P
624210	Community Food Services											C	C		P
624221	Temporary Shelters							C				C	C		C
624229	Other Community Housing Services											C	C		P
624230	Emergency and Other Relief Services											C	C		C
624310	Vocational Rehabilitation Services												P		C
624410	Child Day Care Services	C	C	C	C	C	C	C	C	C	C	C	C	C	C
711110	Theater Companies and Dinner Theaters								C	C	C	C	C	C	C
711120	Dance Companies											C	C	C	C
711130	Musical Groups and Artists											C	C	C	C
711190	Other Performing Arts Companies											C	C	C	C
711211	Sports Teams and Clubs											C	C	C	C
711212	Racetracks														C
711219	Other Spectator Sports											C	C	C	C
711310	Promoters of Performing Arts, Sports, and Similar Events with Facilities							C				C	C	C	C
711320	Promoters of Performing Arts, Sports, and Similar Events without Facilities							P				P	P	P	
711410	Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures							P				P	P	P	P
711510	Independent Artists, Writers, and Performers							C				C	C	C	
712110	Museums											C	C	C	

CREVE COEUR CITY CODE

P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
712120	Historical Sites	C	C	C	C	C	C	C	C	C	C	C	C	C	
712130	Zoos and Botanical Gardens											C	C	C	
712190	Nature Parks and Other Similar Institutions	C	C	C	C	C						C	C	C	
713110	Amusement and Theme Parks											C	C	C	
713120	Amusement Arcades										C	C	C	C	
713290	Other Gambling Industries											C	C	C	C
713910	Golf Courses and Country Clubs	C	C	C	C	C									
713940	Fitness and Recreational Sports Centers	C	C	C	C	C			C	C		P	P	P	P
713950	Bowling Centers											C	C	C	
713990	All Other Amusement and Recreation Industries (except gun and shooting clubs)	C	C	C	C	C						C	C	C	P
721110	Hotels (except Casino Hotels) and Motels						C		C			C	C	C	
CC721130	Sexually-Oriented Businesses (subject to Article VIII-A of Chapter 405)														P
721310	Rooming and Boarding Houses						C	C							
722310	Food Service Contractors											C	C	C	C
722320	Caterers											C	C	C	C
722330	Mobile Food Services										C	C	C	C	C
722410	Drinking Places (Alcoholic Beverages)										C	C	C	C	C
722511	Full-Service Restaurants								C		C	C	C	C	C
722513	Limited-Service Restaurants								C		C	C	C	C	C
722514	Cafeterias, Grill Buffets, and Buffets						C		C		C	C	C	C	C
722515	Snack and Non-Alcoholic Beverage Bars								C	C	C	C	C	C	C
811111	General Automotive Repair												C		C
811112	Automotive Exhaust System Repair												C		C
811113	Automotive Transmission Repair												C		C
811118	Other Automotive Mechanical and Electrical Repair and Maintenance												C		C
811121	Automotive Body, Paint, and Interior Repair and Maintenance														C
811122	Automotive Glass Replacement Shops												C		C
811191	Automotive Oil Change and Lubrication Shops												C	C	C
811192	Car Washes												C		C
811198	All Other Automotive Repair and Maintenance												C		C
811211	Consumer Electronics Repair and Maintenance										C	C	C		C

ZONING ORDINANCE

P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
811212	Computer and Office Machine Repair and Maintenance								P		P	P	P	P	P
811213	Communication Equipment Repair and Maintenance														P
811219	Other Electronic and Precision Equipment Repair and Maintenance												P		P
811310	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance														P
811411	Home and Garden Equipment Repair and Maintenance														P
811412	Appliance Repair and Maintenance												P		P
811420	Re-upholstery and Furniture Repair												C		P
811430	Footwear and Leather Goods Repair											P	P	P	P
811490	Other Personal and Household Goods Repair and Maintenance														C
812111	Barber Shops										P	P	P	P	P
812112	Beauty Salons										P	P	P	P	C
812113	Nail Salons										P	P	P	P	C
812191	Diet and Weight Reducing Centers										C	C	P	P	C
812199	Other Personal Care Services (except escort services, massage parlors, steam baths, tattoo parlors, permanent makeup salons and Turkish baths)										P	P	P	P	P
812210	Funeral Homes and Funeral Services	C					C				C	C	C	C	
812220	Cemeteries not associated with a place of worship and all Crematories	C					C					C			
812320	Dry Cleaning and Laundry Services (except Coin-Operated) provided that facility (1) Meets all fire code regulations, and (2) Has a valid permit from the St. Louis County Air Pollution Control Program										P	P	P	P	
812331	Linen Supply														P
812332	Industrial Launderers										P				
812910	Pet Care (except Veterinary) including only Pet Spas (as defined in Section 405, 120) Services										P	P	P	P	
812921	Photofinishing Laboratories (except One-Hour)														P
812922	One-Hour Photofinishing										P	P	P	P	
812930	Parking Lots and Garages												C	C	P

CREVE COEUR CITY CODE

P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
812990	All Other Personal Services										C	C	C	C	C
813110	Religious Organizations, Incl. Retreat Houses	C	C	C	C	C	C	C	C	C	C	C	C	C	C
813211	Grantmaking Foundations								P		P	P	P	P	P
813212	Voluntary Health Organizations								P			P		P	P
813219	Other Grantmaking and Giving Services								P			P		P	P
813311	Human Rights Organizations								P			P		P	P
813312	Environment, Conservation and Wildlife Organizations	C	C	C	C	C			P			P		P	P
813319	Other Social Advocacy Organizations	C	C	C	C	C			P			P	P	P	P
813410	Civic and Social Organizations	C	C	C	C	C			P			P		P	C
813910	Business Associations	C	C	C	C	C			P			P		P	P
813920	Professional Organizations								P			P	P	P	C
813930	Labor Unions and Similar Labor Organizations								P			P	P	P	C
813940	Political Organizations								P			P	P	P	P
813990	Other Similar Organizations (except Business, Professional, Labor, and Political Organizations)	C	C	C	C	C			P			P	P	P	P
814110	Private Households, Single-Family Residential	P	P	P	P		P								
CC814111	Attached Single-Family Residential (townhouses or duplexes)					P									
CC814120	Low-Density Multifamily Residential (up to 6 single family units per acre)					C									
CC814130	Medium-Density Multifamily Residential (up to 20 single family units per acre)													P	
CC814140	High-Density Multifamily Residential (more than 20 single family units per acre)													C	
921110	Executive Offices								P	P		P	P	P	C
921120	Legislative Bodies								P	P		P	P	P	
921130	Public Finance Activities								P			P	P	P	P
921140	Executive and Legislative Offices, Combined								P	P		P	P	P	P
921190	Other General Government Support								P	P		P	P	P	P
922110	Courts								P				P	P	P
922120	Police Protection						P	P	P	P		P	P	P	P
922130	Legal Counsel and Prosecution								P	P		P	P	P	
922160	Fire Protection						P		P	P		P	P	P	
922190	Other Justice, Public Order, and Safety Activities							C	C	C		C	C	C	P
923110	Administration of Education Programs							P	P			P	P	P	P

ZONING ORDINANCE

P = Permitted Use; C = Conditional Use Permit Required															
Use Code	2012 NAICS Title	Zoning Districts													
		A	B	C	D	AR	HE	PH	PO	RO	MX	PC	GC	CB	LI
923120	Administration of Public Health Programs							P	P			P	P	P	
923130	Administration of Human Resources Programs (except Education, Public Health, and Veterans' Affairs Programs)							P	P			P	P	P	
923140	Administration of Veterans' Affairs							P	P			P	P	P	
924110	Administration of Air and Water Resource and Solid Waste Management Programs								P			P	P	P	
924120	Administration of Conservation Programs								P			P	P	P	
925110	Administration of Housing Programs								P			P	P	P	
925120	Administration of Urban Planning and Community and Rural Development								P			P	P	P	
926110	Administration of General Economic Programs								P			P	P	P	
926120	Regulation and Administration of Transportation Programs								P			P	P	P	
926130	Regulation and Administration of Communications, Electric, Gas, and Other Utilities								P			P	P	P	
926140	Regulation of Agricultural Marketing and Commodities								P			P	P	P	P
926150	Regulation, Licensing, and Inspection of Miscellaneous Commercial Sectors								P			P	P	P	P
927110	Space Research and Technology								P			P	P	P	P
928110	National Security								P			P	P	P	P
928120	International Affairs								P			P	P	P	P



city of CREVE COEUR

300 North New Ballas Road • Creve Coeur, Missouri 63141

(314) 432-6000 • Fax (314) 872-2539

APPLICATION TO PLANNING AND ZONING COMMISSION #22-036: AN AMENDMENT TO THE MASTER SIGN PLAN FOR THE CITYPLACE CAMPUS TO ALLOW ADDITIONAL SIGNAGE ON CITYPLACE 1, 2, AND 4

FOR THE MEETING OF: Monday, December 19, 2022, 6:00 P.M.

LOCATION: CityPlace Campus, Zoned "CB" Core Business District

REQUEST: Gina Lee, of Redico, has submitted an application to amend the Master Sign Plan for the CityPlace campus located along Olive Boulevard in the "CB" Core Business Zoning District pursuant to Section 405.950(J) Master Sign Plans. The amendment would allow for additional signage on CityPlace 1, 2, and 4 not previously allowed under Ordinance 5562 last approved on January 8, 2017. Master Sign Plans allow the City Council the flexibility to approve additional signs for planned developments and large residentially zoned institutional campus developments of three or more buildings with a minimum of 10 acres, subject to certain requirements and conditions.

ADDITIONAL INFORMATION: Section 405.950(J) Master Sign Plans provides for the flexibility to approve additional signs for planned developments and large residentially zoned institutional campus developments of three or more buildings with a minimum of ten acres, subject to certain requirements and conditions. The primary expectations for any master sign plan are that it will increase public convenience by providing better direction information and that the signs will do so with a well-designed, coordinated appearance throughout the campus.

APPLICANT: Gina Lee
Redico
2 CityPlace Drive, Ste 460
Creve Coeur, MO 63141

APPLICANT'S REPRESENTATIVE: Deanna Kuhlmann-Leavitt
Kuhlmann Leavitt, Inc.
7400 Pershing Avenue
St. Louis, MO 63130

Key Issues:

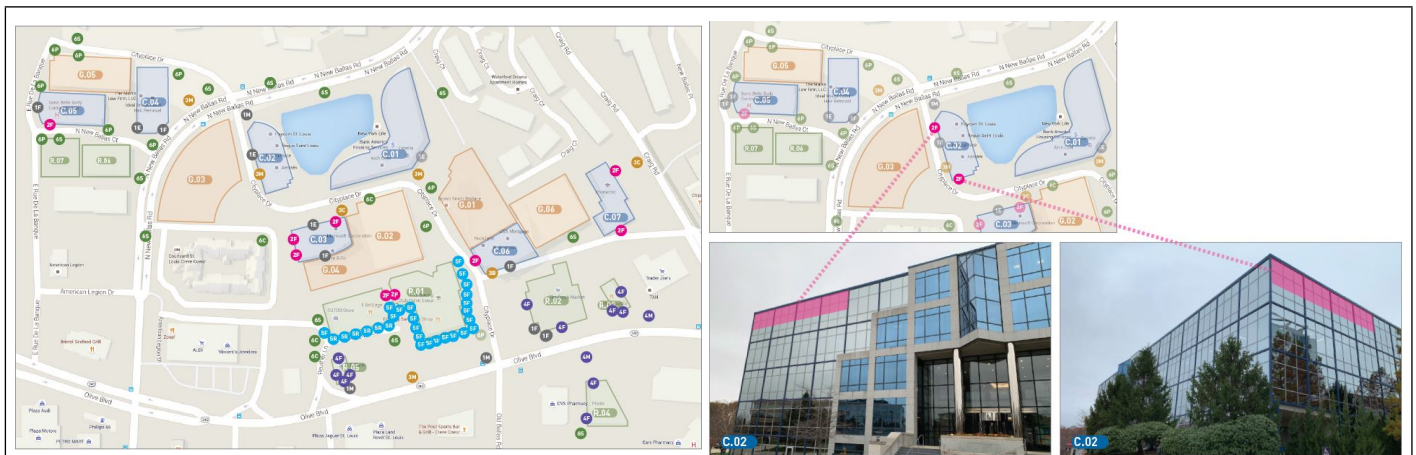
- Does the request further the goals and/or implement the Comprehensive Plan?
- Does the request follow the Design Guidelines?
- Does the request meet with the intent of the City's Sign Regulations?

Creve Coeur 2030 Plan References

- MU-Mixed Use District
- Design Guidelines

Zoning Code References

- Section 405.370: "CB"-Core Business District
- Section 405.950: Signs in Non-Residential Districts
- Section 405.955: Master Signage Plans



REPORT PREPARED BY: Bethany L. Moore, City Planner
DATE: 12/13/2022
ATTACHMENTS: Applicant's Materials received 12/2/22, Draft Ordinance

BACKGROUND AND MASTER SIGN PLAN PROPOSAL

The CityPlace Campus originally received approval for a Master Sign Plan in 1999, and the plan was amended with Ordinance 2193, approved in 2002; Ordinance 4059 in 2006; Ordinance 5169 in 2011; Ordinance 5346, in 2013, with the development of the former Fresh Market site; Ordinance 5386, in 2014 which provided for additional wall signs; Ordinance 5454, in 2016 which revised the plan for the entire campus, and Ordinance 5562, approved on January 8, 2018, that provided for real estate sign.

The applicant is seeking to add additional signage to CityPlace 1, 2, and 4 in order to attract larger tenants for the office space provided. The proposal includes the addition of two primary tenant attached signs on each building, one per street facing façade. The size of each sign is limited to what is allowed per Zoning Code for attached signs for multi-floor office buildings. Under the current master sign plan each building addressed as part of this project is allowed an entrance sign and a multi-tenant monument sign in order to create an overall cohesive campus signage design. The proposal would allow for tenants to display their names in a more visible and prominent location on the building and not just on monument signs. The applicant has stated that this type of signage allowance has been requested from several existing tenants and will also help to attract prospective tenants to the buildings. CityPlace 3 and CityPlace 7 have both previously been granted approval for more than one attached primary tenant sign.



Figure 1: Site Plan for CityPlace campus signage. Proposed signage highlighted in bright pink.

Building Signs

The sign plan amendment proposes six new wall signs, two each for CityPlace 1, 2, and 4. Each sign will be on a street facing façade, one per façade, and will be limited in size to the square footage allowed for multi-tenant office buildings per Section 405.950 (D)(2). The proposed signage is to allow primary tenants of the buildings to display their names on the building in a more visible way than the monument signs currently allow. CityPlace 1 would be allowed two signs not to exceed 70 square feet each, CityPlace2 would be allowed two signs not to exceed 70 square feet each and CityPlace 4 would be allowed two signs not to exceed 60 square feet each. The signs would be individual, dimensional channel letters in silver or white and may be internally illuminated.

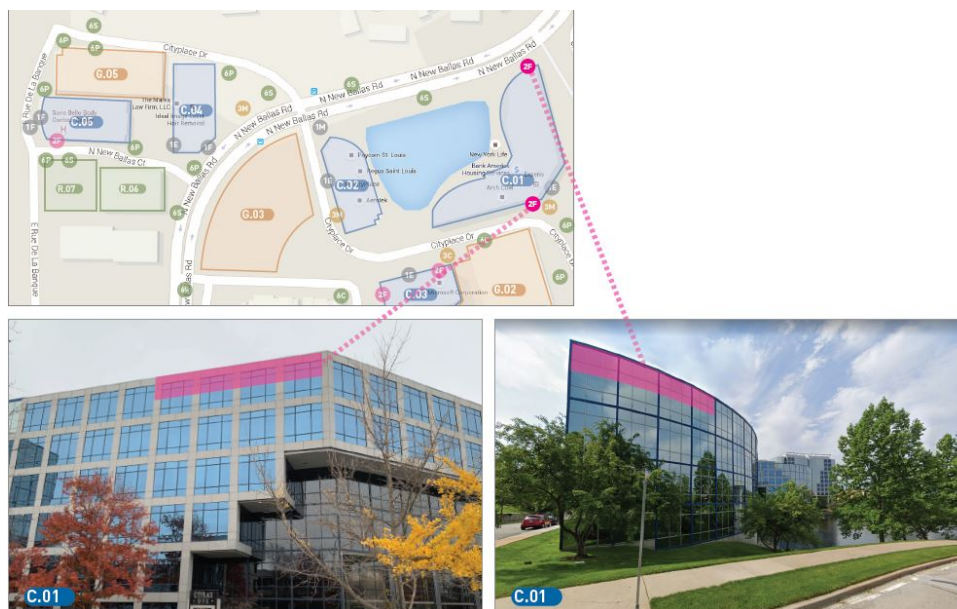


Figure 2: CityPlace 1 with proposed attached sign locations.

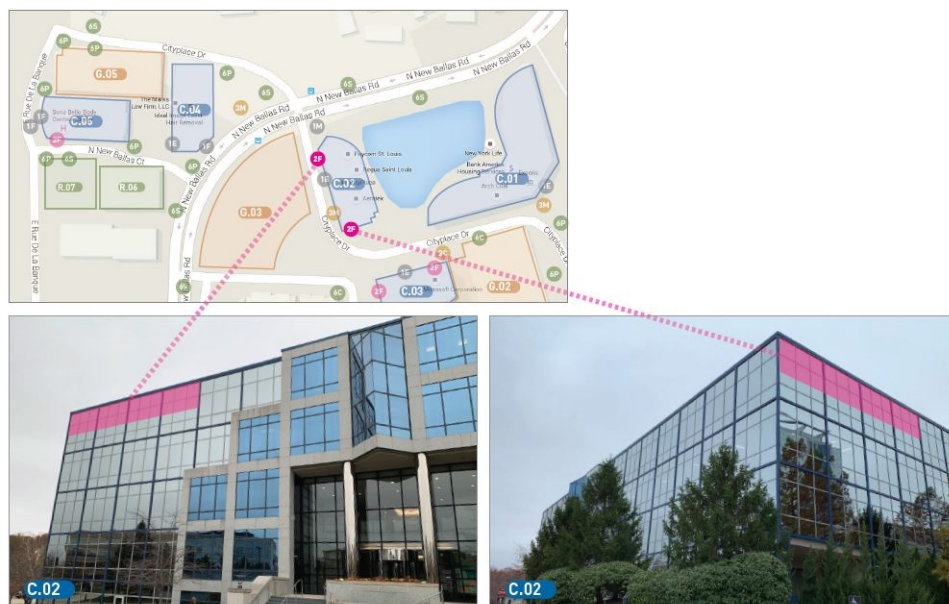


Figure 3: CityPlace 2 with proposed attached sign locations.

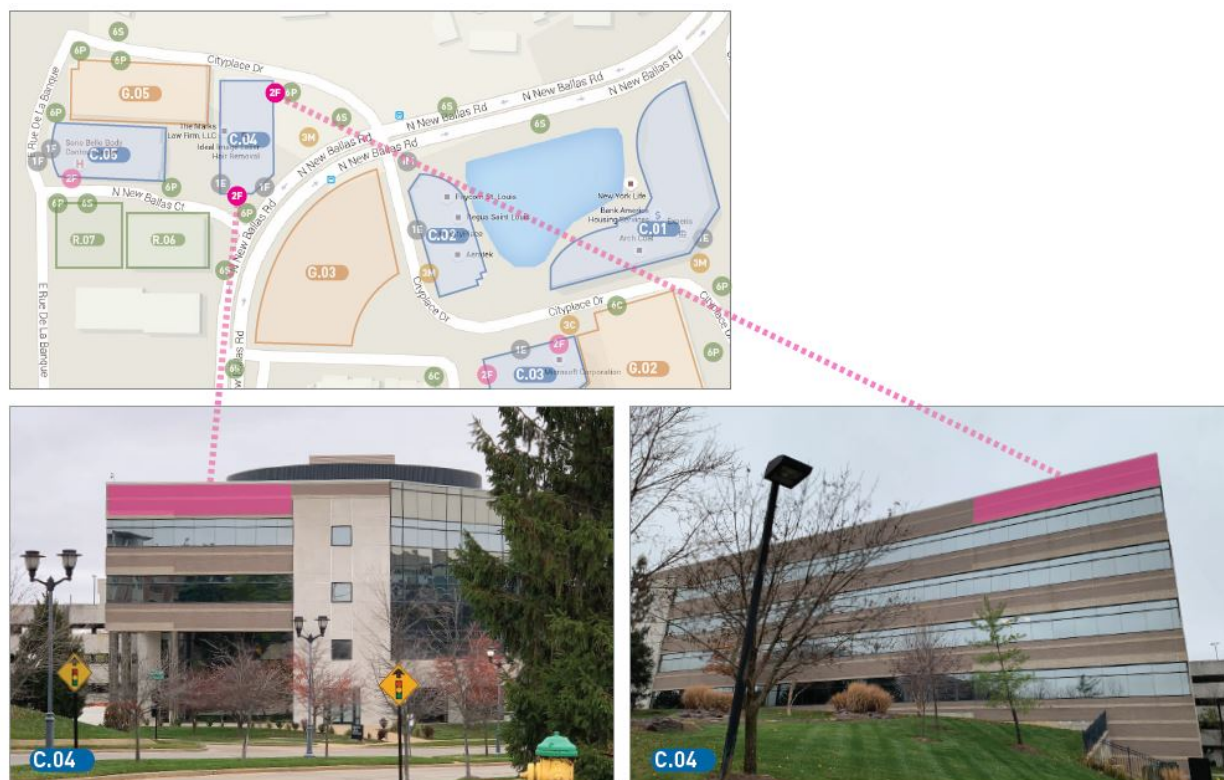


Figure 4: CityPlace 4 with proposed attached sign locations.

LAND USE AND ZONING OF SURROUNDING PROPERTIES

The adjacent zoning and land uses are as follows:

DIRECTION	USE	ZONED	SEPARATED BY
North	Multi-Family Residential	Unincorporated St. Louis County	N. New Ballas Road
South	Commercial	“CB” Core Business	Olive Boulevard
East	Commercial	“CB” Core Business	Craig Road
West	Commercial	“CB” Core Business	Rude De La Banque East

COMPREHENSIVE PLAN REVIEW

The CityPlace Campus is within the Central Business District (CBD) Place Type of the *Creve Coeur 2030 Plan*, that is designed to create an intense, urban thoroughfare setting along Olive Boulevard on large development parcels, where signage recommendations for primary and secondary streets states that wall signage is preferred; however consideration should be given to allow monument sign for multi-tenant, multi-use developments on larger properties at the primary entrance to the shared parking facility. (p.77)

The Design Guidelines offer further recommendations in reviewing signs, by recommending that sign plans include a consistency of materials, siting, and design. Specifically, all signs are to be architecturally integrated and complement their surroundings in terms of size, shape, color, texture and lighting. Signs are to complement the overall design of the building and are not to be designed to be in visual competition with other signs in the area. New signs proposed for existing buildings should provide a compatible appearance with other building signage. Where no sign program exists, there should be an attempt to bring in a unifying element (such as size). (p 17).

The proposed signs will be in the same style and materials as the existing signage on the CityPlace Campus. CityPlace 3 and CityPlace 7 already have attached signage similar to what is proposed for CityPlace 1, 2, and 4, which is limited in size by what is allowed per the Zoning Code for multi-tenant office buildings. Therefore, Staff finds that the proposed signage is in keeping with the Design Guidelines and the Comprehensive Plan and should not have a negative impact to the adjacent properties.

ZONING CODE REVIEW

All signs within the City are regulated under Article VIII of the Zoning Ordinance. The purpose of the Sign Regulations is to encourage the effective use of signs as a means of communication, to maintain and enhance the aesthetic appearance of the City and to facilitate and improve pedestrian and vehicular traffic safety, and to lessen confusion and visual clutter caused by a proliferation of signs competing for attention.

Under general standards of Signs in Non-Residential Districts, wall signs are allowed for multi-floor buildings under Section 405.950(D) which provides for each freestanding, single or multi-tenant office building of three (3) or more floors of leasable space to have one (1) attached sign affixed parallel to the building, with a sign area of up to fifty (50) square feet for a three-story building, with an additional ten (10) square feet of sign area allowed for each additional floor over three (3), up to a maximum of one hundred fifty (150) square feet. One (1) additional attached sign may be permitted, subject to the same size limitations, where the building faces two (2) or more public streets and is not separated from the streets by any other building. Therefore, CityPlace 1 and 2 would be allowed signage not to exceed 70 square feet, and CityPlace 4 would be allowed signage not to exceed 60 square feet. CityPlace is proposed to have two façade signs, each on a separate façade, but both facing Cityplace Drive. Staff is not concerned that the two signs are facing the same street as the building is on a corner and on separate facades essentially appearing as if they were facing two separate street when Cityplace Drive actually curves around the building.

Section 405.955 *Master Sign Plans* provides that with the intent to allow flexibility in the design of planned developments and large campus developments allows for deviation from the sign regulations on large campuses in order to provide for a more consistent program as to ensure convenience to the visitor, user or occupant of the development while not adding to street clutter or otherwise detracting from the planned nature of the development. All signs are to be in scale and harmonious with the development and provide an overall design theme throughout the campus in a comprehensive manner.

The proposed Master Sign Plan amendment is largely consistent with the intent of the Sign Regulations provision for master sign plans. All of the proposed signs will follow the same style and design approved for previous primary tenant attached signs and are mostly limited to the interior of the campus with a few exceptions. Staff encourages the Planning and Zoning Commission to discuss the need for additional signage when existing campus signage is already provided.

FORM OF THE DRAFT ORDINANCE

Should the Commission find CityPlace's Master Sign Plan amendment reasonable, attached is a draft ordinance that contains the following conditions:

- Ordinance 5454 as amended by Ordinance 5562 shall be amended to allow for the additional signage for CityPlace 1, 2, and 4 on the CityPlace campus as proposed in the Applicant's Materials submitted November 17, 2022 and December 2nd, 2022.
- The Applicant shall submit sign permit applications for the proposed signage.
- The Applicant shall follow the Master Signage Plan received December 2, 2022 and as amended, for all new or altered signage on the campus, as approved by the City of Creve Coeur. The location, size, shape, color, type, and design of each sign shall not substantively depart from the Master Sign Plan, unless approved by the City of Creve Coeur.

CONCLUSION AND ACTION

If the Planning and Zoning Commission finds that the Master Sign Plan amendment proposal for the CityPlace Campus is consistent with the purpose and requirements of Article VIII, a recommendation to the City Council for approval is necessary. Action on the proposal will come in the form of a recommendation of approval, approval with conditions, or denial. The following is an example of an appropriate motion for this application:

"I move to recommend approval of the Master Signage Plan amendment for the CityPlace Campus, submitted with Application #22-036, subject to the conditions contained in the draft ordinance attached to the staff report for the meeting of December 19, 2022" (conditions may be added, eliminated, or modified by separate motion).

APPENDIX 1: COMPREHENSIVE PLAN AND DESIGN GUIDELINES

Included and attached by reference.

APPENDIX 2: ZONING CODE

Included and attached by reference.

Parcels



HORNER SHAFER

CITY PLACE

City Place Campus
Signage Master Plan Updates

19 December 2022

Corporate

- C.01** CityPlace One
- C.02** CityPlace Two
- C.03** CityPlace Three
- C.04** CityPlace Four
- C.05** CityPlace Five
- C.06** CityPlace Six
- C.07** The Oak's

Retail, Mixed Use, Condo & Lot

- R.01** CityPlace Retail & Mixed Use
- R.02** Fresh Market
- R.03** McDonald's
- R.04** St. Luke's
- R.05** US Bank
- R.06** CityPlace Condominiums
- R.07** Lot 12

Parking

- G.01** CityPlace One Parking East
- G.02** CityPlace One Parking West
- G.03** CityPlace Two Parking
- G.04** CityPlace Three Parking
- G.05** CityPlace Four Parking
- G.06** CityPlace Six Parking



CityPlace Campus Buildings

Campus ID

1



Monuments

Existing Campus Monument sign with stainless steel or white logotypes, both sides; externally illuminated; stud mount logotype flush to monument face; filler/adhesive as required by conditions; no fasteners visible on face of letters; sign fabricator responsible for engineering of all elements including stud diameter, length and quantity to sufficiently attach letters to monument surface and to be as vandal proof as possible.



Facades

Sign type to consist of brushed aluminum with backlit letters, halo lit or unlit depending on location and use; letters to be no thinner than 2" deep and no thicker than 8" deep; internally lit letters to be faced with iridescent, translucent material for daylight conditions but should appear as "soft white" illumination at night; exact specifications for the aforementioned material will be determined when construction documents are prepared; sign fabricator to be responsible for engineering of all structural support and anchoring/filler/adhesive of mounted elements as needed to meet windload and weight requirements; all fasteners to be invisible to viewer.



Entries

Sign type to consist of polished stainless numerals mounted to top of entry doors with CityPlace logo mounted below on door face; sign fabricator to be responsible for engineering of all structural support and anchoring/filler/adhesive of mounted elements as needed to meet windload and weight requirements; all fasteners to be invisible to viewer.



Primary Tenant

2



Facades

Signs consist of internally illuminated dimensional letters or halo lit letters mounted to building faces; letters to be no thinner than 3" deep and no thicker than 8" deep; internally lit letters to be faced with iridescent, translucent material for daylight conditions but should appear as "soft white" illumination at night; halo lit letters should appear as "soft white" illumination at night; exact specifications for the aforementioned material will be determined when construction documents are prepared; sign fabricator to be responsible for engineering of all structural support and anchoring/filler/adhesive of mounted elements as needed to meet windload and weight requirements; all fasteners to be invisible to viewer.

Campus, Tenant & Directional Signage

Multi-Tenant

3



Monuments

Existing Campus Monument sign with stainless steel logotype, both sides; stud mount logotype flush to monument face; filler/adhesive as required by conditions; no fasteners visible on face of letters; sign fabricator responsible for engineering of all elements including stud diameter, length and quantity to sufficiently attach letters to monument surface and to be as vandal proof as possible; tenant logos to be computer cut adhesive backed white vinyl.



Cubes

Sign consists of 8’ – 0” x 8’ – 0” x 8’ – 0” backpainted tempered glass cube, paint color black; top of cube to be other material to be determined; cube mounts onto a recessed 5” ht visible concrete base/footing; sign fabricator to be responsible for all internal structural support, substrate and footing as needed to meet windload and weight requirements; internal support must be concealed from view, all fasteners to be invisible to viewer; logos to be computer cut adhesive backed white vinyl.



Buildings

1/8” thick painted aluminum metal panel flush mounted to building face; changeable metal sign panels with cut vinyl graphics applied to face; filler/adhesive as required by conditions; no fasteners visible on face of panels; sign fabricator responsible for engineering of all elements including stud diameter, length and quantity to sufficiently attach letters to building surface and to be as vandal proof as possible

Single Tenant Retail

4



Facades

Signs consist of internally illuminated dimensional letters or halo lit letters mounted to building faces; letters to be no thinner than 3” deep and no thicker than 8” deep; internally lit letters to be faced with iridescent, translucent material for daylight conditions; halo lit letters should appear as “soft white” illumination at night; exact specifications for the aforementioned material will be determined when construction documents are prepared; sign fabricator to be responsible for engineering of all structural support and anchoring/filler/adhesive of mounted elements as needed to meet windload and weight requirements; all fasteners to be invisible to viewer.



Monuments

Monument signs (structure and graphics) should be designed to compliment the architecture of the building they are identifying; graphics should be flush mounted or pin mounted to monument face; graphics may be internally illuminated, halo lit or externally illuminated; filler/adhesive as required by conditions; no fasteners visible on face of letters; sign fabricator responsible for engineering of all elements including stud diameter, length and quantity to sufficiently attach letters to monument surface and to be as vandal proof as possible.

Campus, Tenant & Directional Signage

Multi-Tenant Retail

5



Type on Rail

Signs consist of internally illuminated dimensional letters or unlit letters mounted to a raceway on the canopy; letters to be no thinner than 2” deep and no thicker than 8” deep; internally lit letters to be faced with iridescent, translucent material for daylight conditions but should appear as “soft white” illumination at night; exact specifications for the aforementioned material will be determined when construction documents are prepared; sign fabricator to be responsible for engineering of all structural support and anchoring/filler/adhesive of mounted elements as needed to meet windload and weight requirements; all fasteners to be invisible to viewer.

Facades

Signs consist of internally illuminated dimensional letters or halo lit letters mounted to building faces; letters to be no thinner than 2” deep and no thicker than 8” deep; internally lit letters to be faced with iridescent, translucent material for daylight conditions but should appear as “soft white” illumination at night; halo lit letters should appear as “soft white” illumination at night; exact specifications for the aforementioned material will be determined when construction documents are prepared; sign fabricator to be responsible for engineering of all structural support and anchoring/filler/adhesive of mounted elements as needed to meet windload and weight requirements; all fasteners to be invisible to viewer.

Directional

6



Plinths

Sign to be fabricated from 1/8” thick aluminum; plinth to be painted, color black; messages (arrows and letters) to be computer cut adhesive backed reflective vinyl, color white; plinth to be mounted to concrete base; sign fabricator to be responsible for engineering of all internal structural support, substrate and footing as needed to meet windload and weight requirements; internal support must be concealed from view, all fasteners to be invisible to viewer.



Cubes

Sign consisting of 3’ -0” x 3’ - 0” x 3’ -0” cube fabricated from 1/8” thick aluminum; cube to be painted, color black; messages (arrows and letters) to be computer cut adhesive backed reflective vinyl, color white; logo to be non-reflective vinyl; cube to be mounted to concrete base; sign fabricator to be responsible for engineering of all internal structural support, substrate and footing as needed to meet windload and weight requirements; internal support must be concealed from view, all fasteners to be invisible to viewer.



Secondary Posts & Panels

Panels to be 1/8’ painted aluminum; CityPlace campus signs to be painted, color black; stand alone retail tenant signs may be painted a color that compliments the tenants primary signage; panel may be two-sided as needed; graphics to be computer cut adhesive backed vinyl; post to be 2” square aluminum tube, painted to match panel; sign to be direct buried in concrete footing as needed to meet windload and weight requirements; sign fabricator to be responsible for engineering all structural support, footing and fasteners as needed to meet windload requirements.

Campus, Tenant & Directional Signage

1. Campus ID

- 1M Monuments
- 1F Facades
- 1E Entries

2. Primary Tenant

- 2F Facades

3. Multi-Tenant

- 3M Monuments
- 3C Cubes
- 3B Buildings

4. Single Tenant Retail

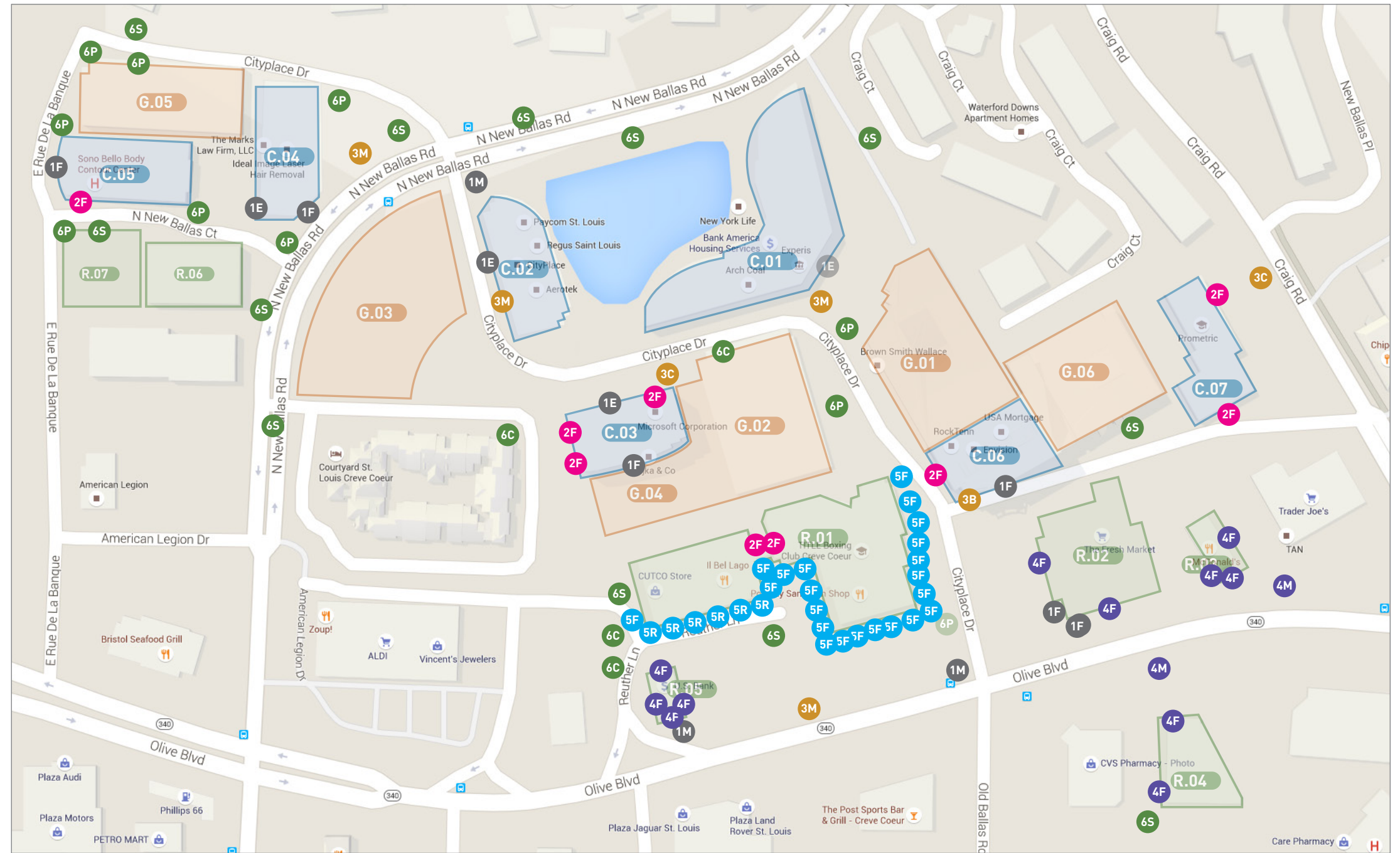
- 4F Facades
- 4M Monuments

5. Multi-Tenant Retail

- 5R Type on Rail
- 5F Facades

6. Directional

- 6P Plinths
- 6C Cubes
- 6S Secondary Post & Panel

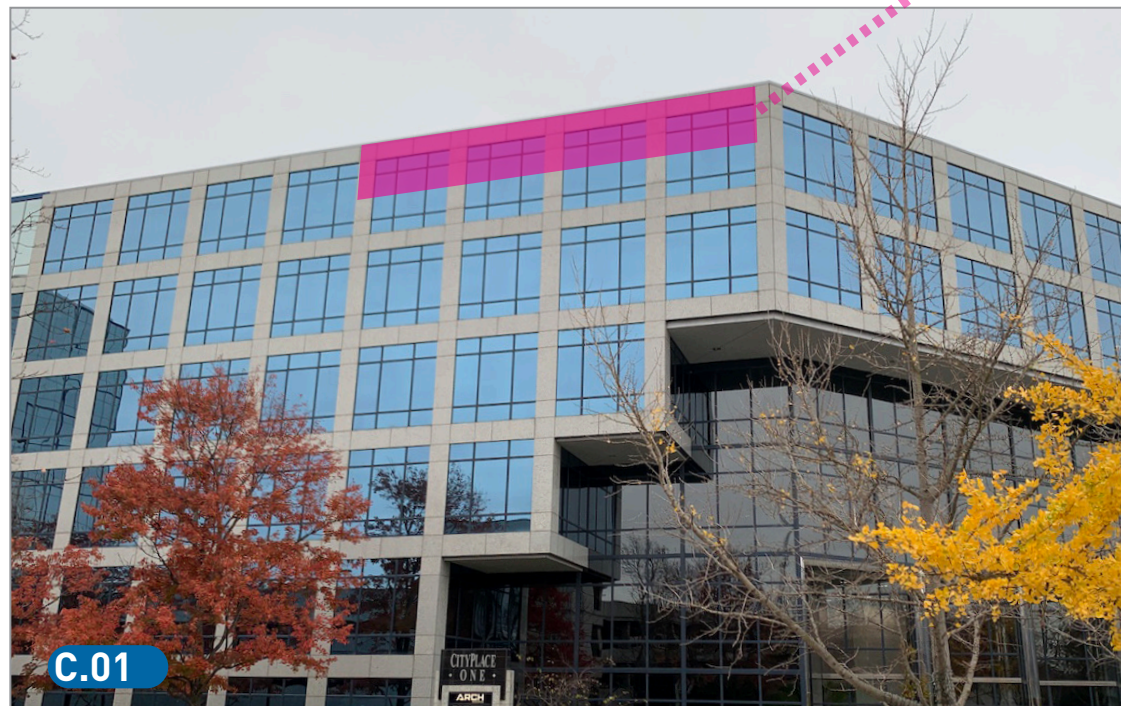


Campus, Tenant & Directional Signage



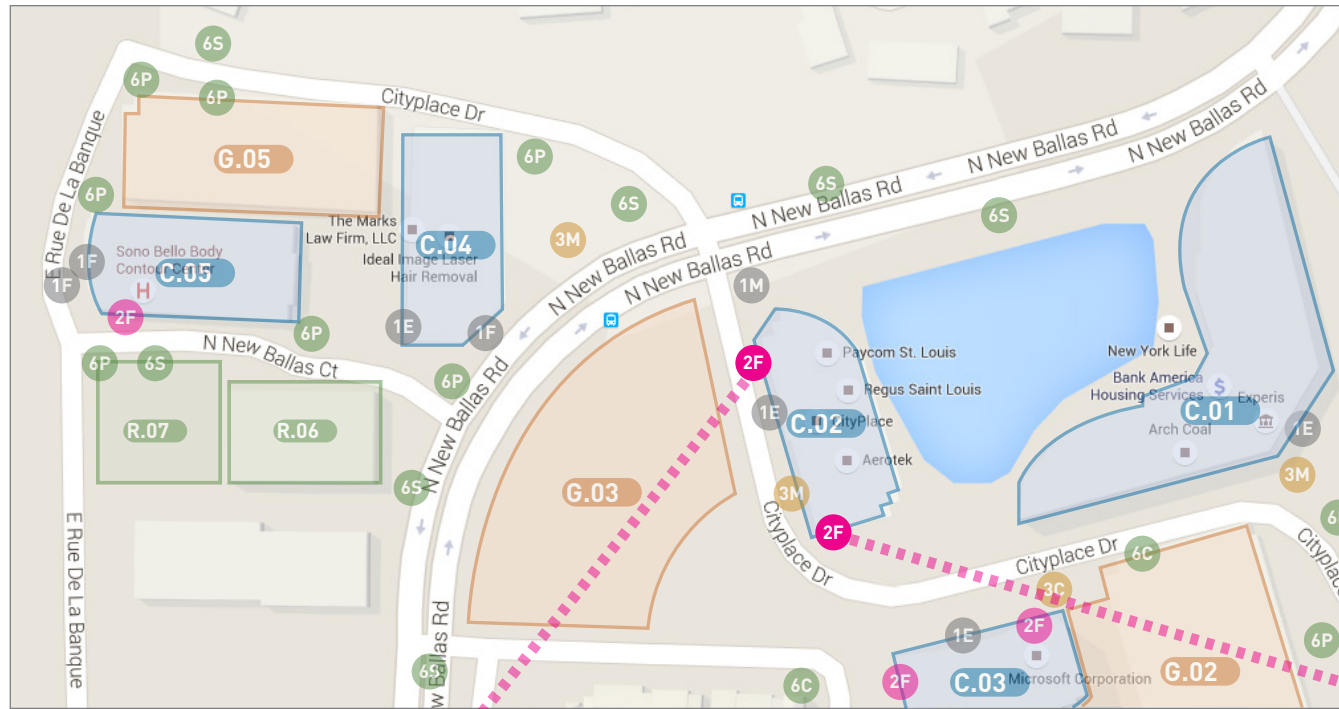
2. Primary Tenant
2F Facades

Proposed and Current Campus, Tenant & Directional Signage



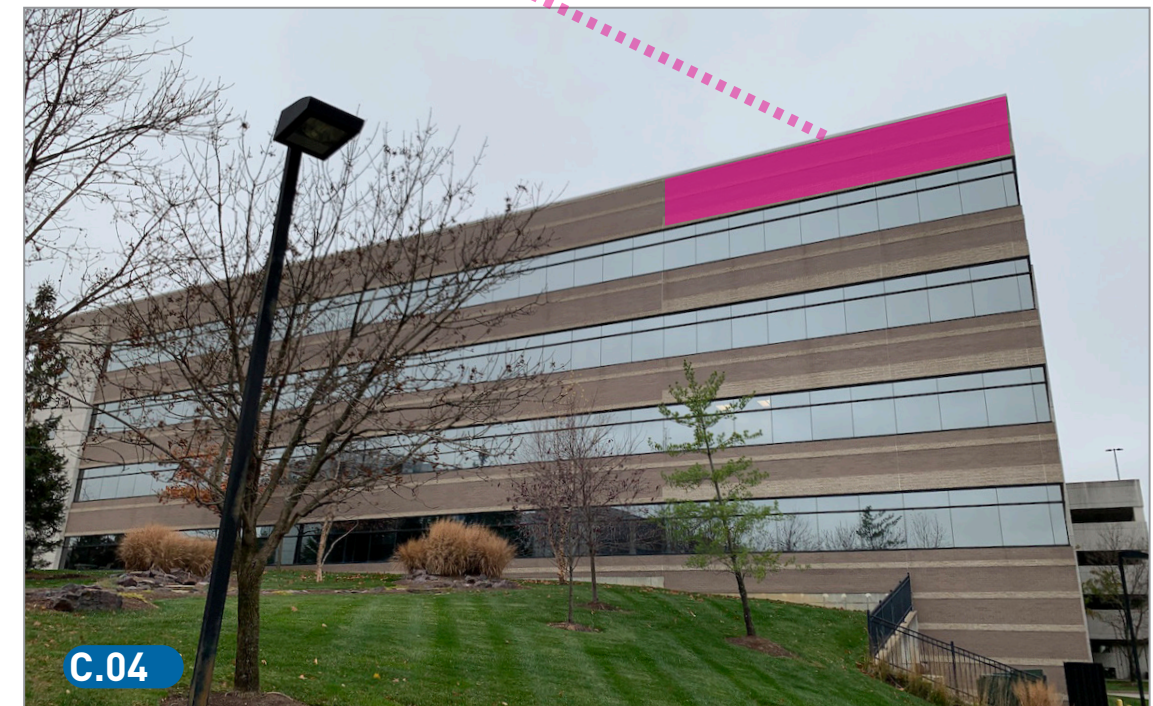
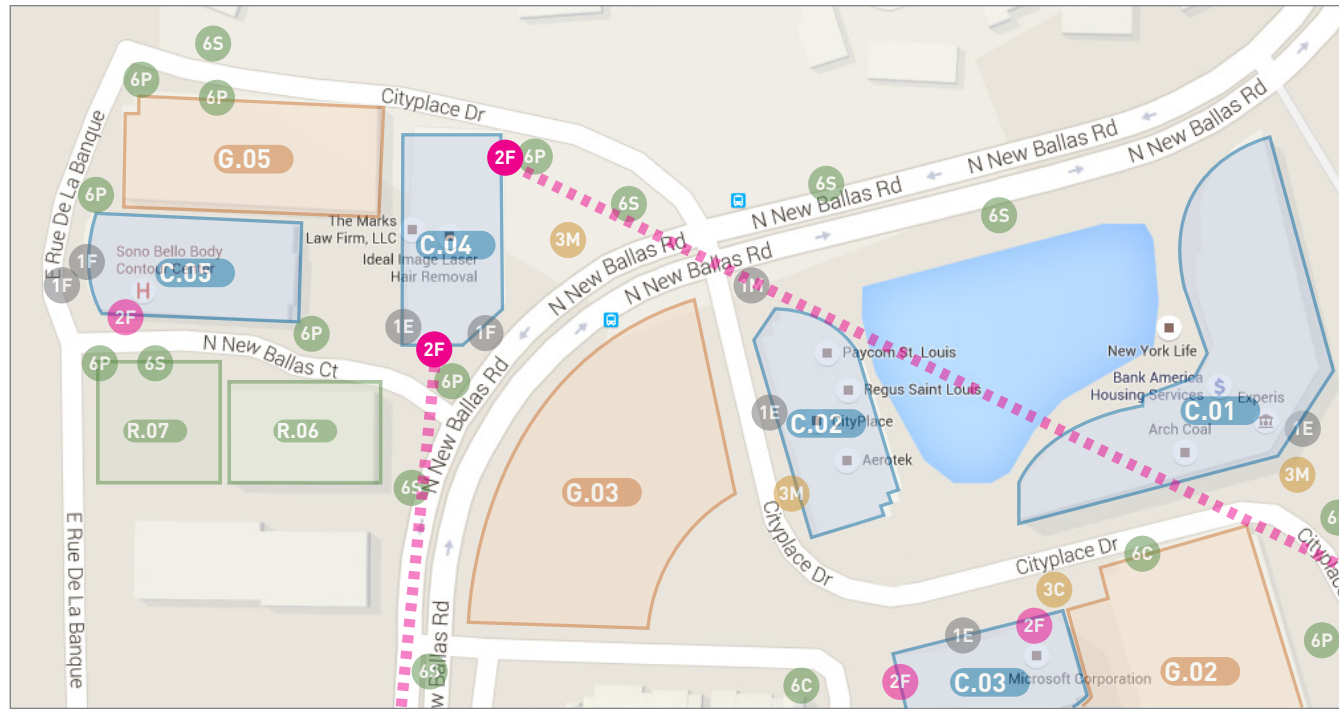
2F = Proposed location for future primary tenant signage. Sign size not to exceed 70 square feet and must consist of individual, dimensional channel letters, silver or white in color. Signs may be internally illuminated.

Proposed Future Primary Tenant Building Signage_CityPlace 1



2F = Proposed location for future primary tenant signage. Sign size not to exceed 70 square feet and must consist of individual, dimensional channel letters, silver or white in color. Signs may be internally illuminated.

Proposed Future Primary Tenant Building Signage_CityPlace 2



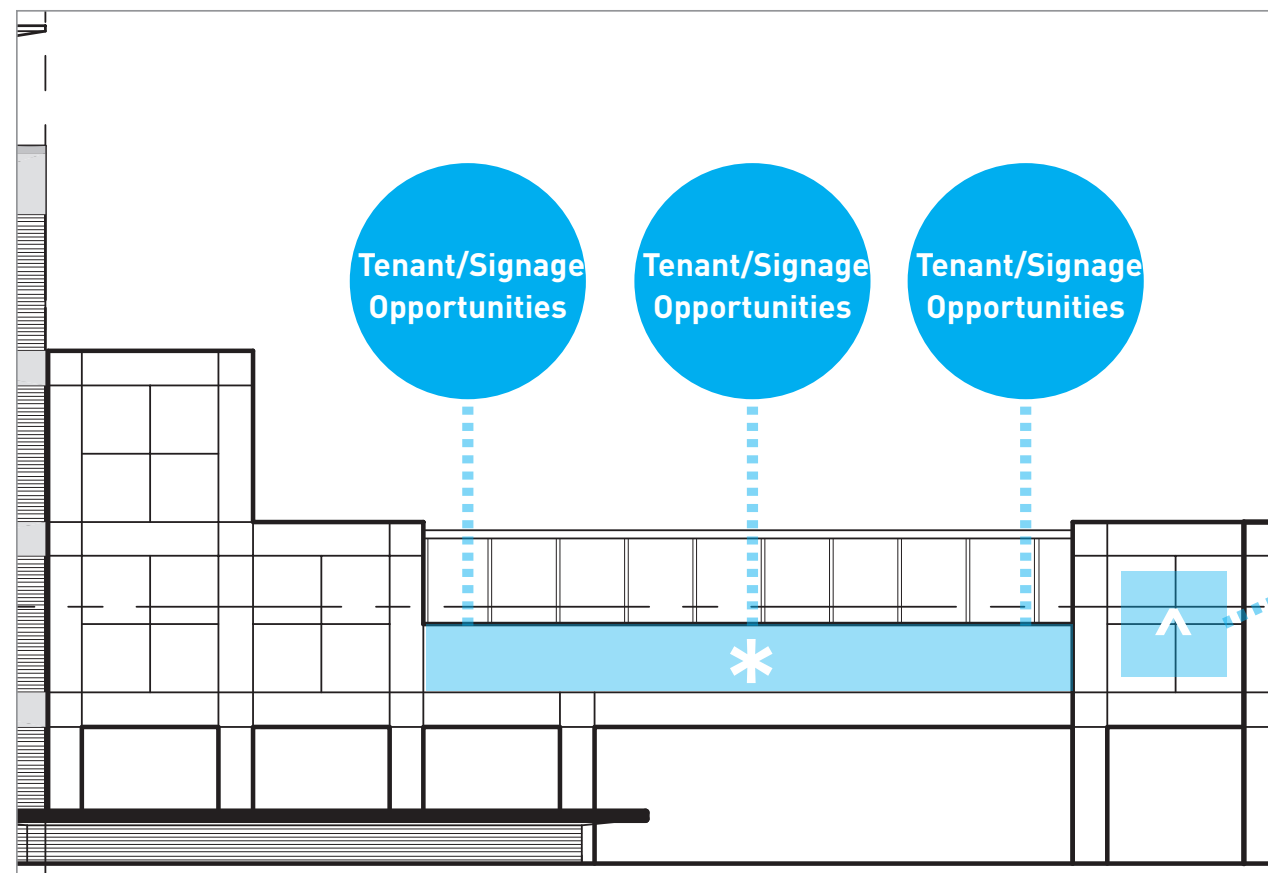
2F = Proposed location for future primary tenant signage. Sign size not to exceed 60 square feet and must consist of individual, dimensional channel letters, silver or white in color. Signs may be internally illuminated.

Proposed Future Primary Tenant Building Signage_CityPlace 4

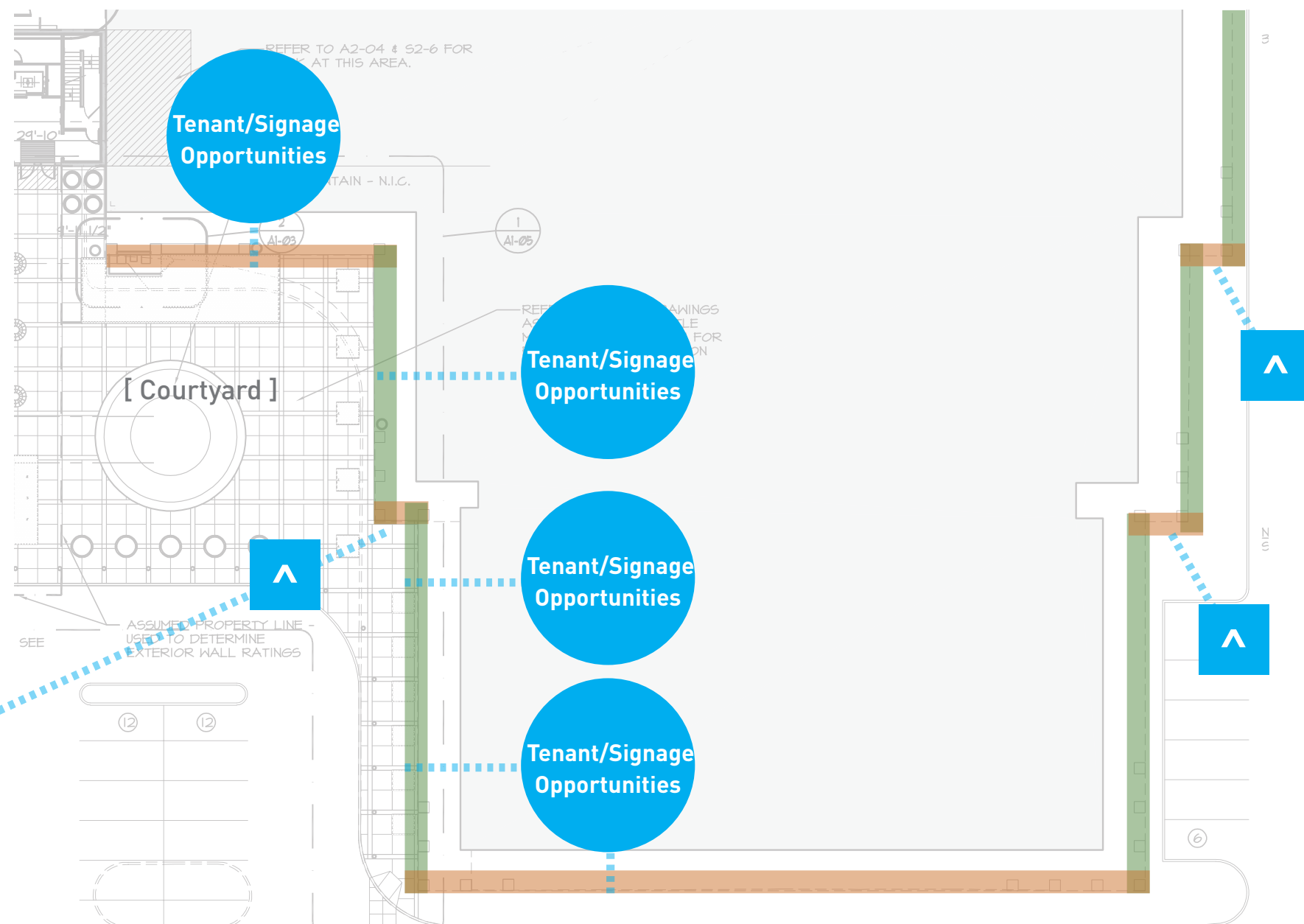


2F = Approved proposed location for future primary tenant signage. Sign size not to exceed 50 square feet and must consist of individual, dimensional channel letters, silver or white in color. Signs may be internally illuminated.

Approved Future Primary Tenant Building Signage_CityPlace 5



[South facing - Courtyard Elevation]



[East Retail Plan View]

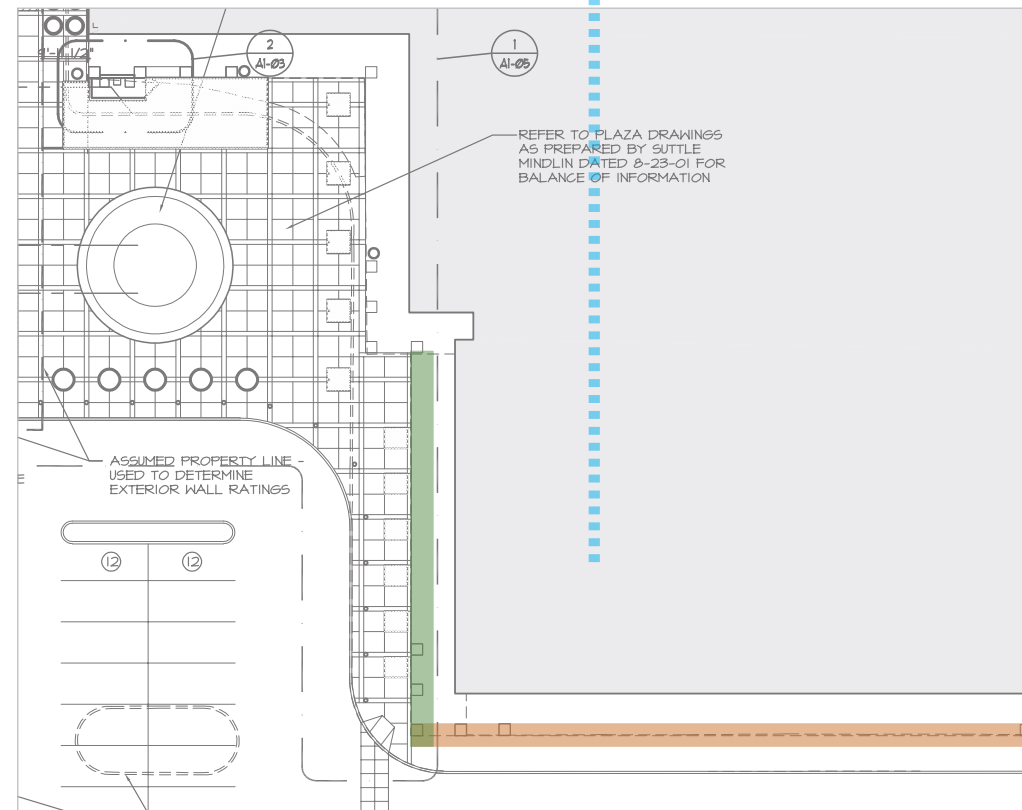
 = Indicates allowable sign locations. Signs must not interfere with the vertical columns.

* = Ground floor retail signage allowance must be in compliance with prevailing Creve Ceour ordinances (1 square foot per lineal foot of front facade or as may be amended).

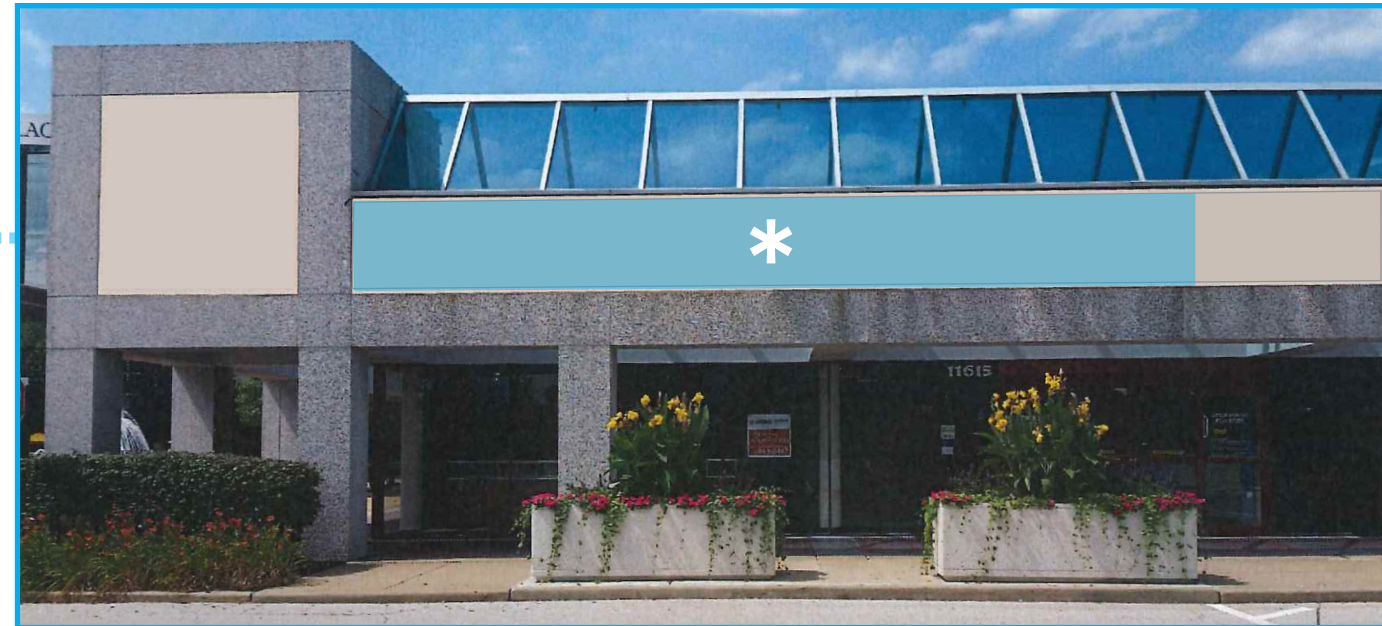
^ = Where available, tenants may elect to split their total allowable signage as explained above (*). They may use no more than 10 square feet. The square footage used for this sign will be deducted from their total signage allowance.

Retail Facade Signage

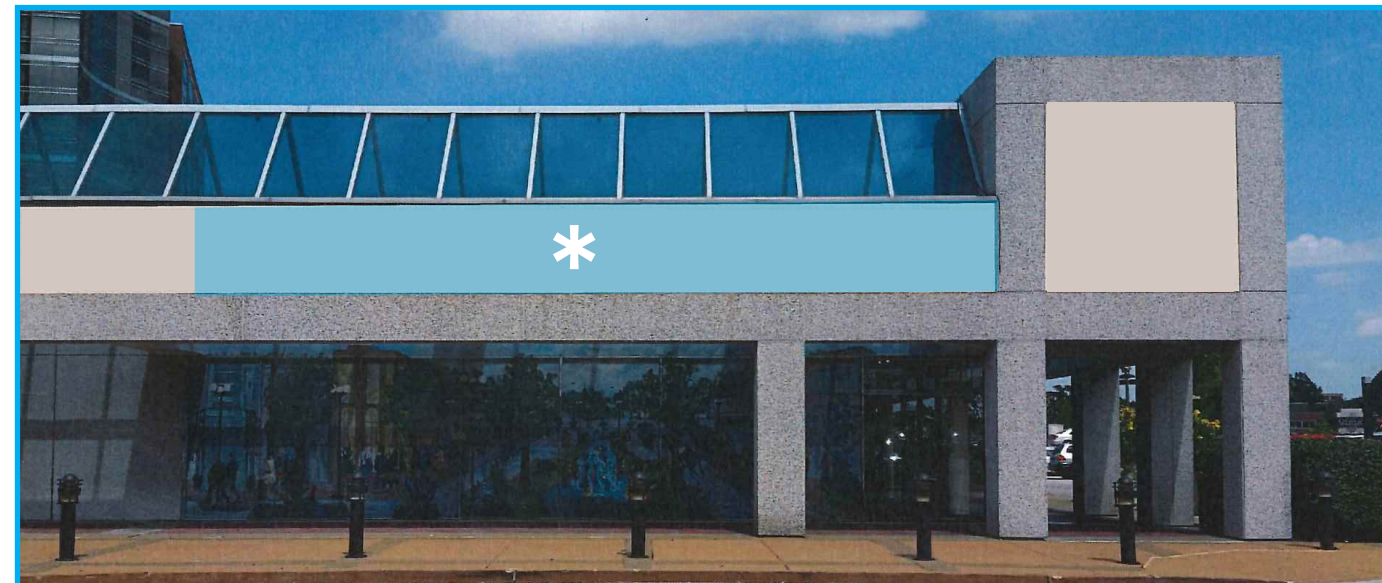
Future
Tenant/Signage
Opportunities



[East Retail Southwest Corner]



[South facing]

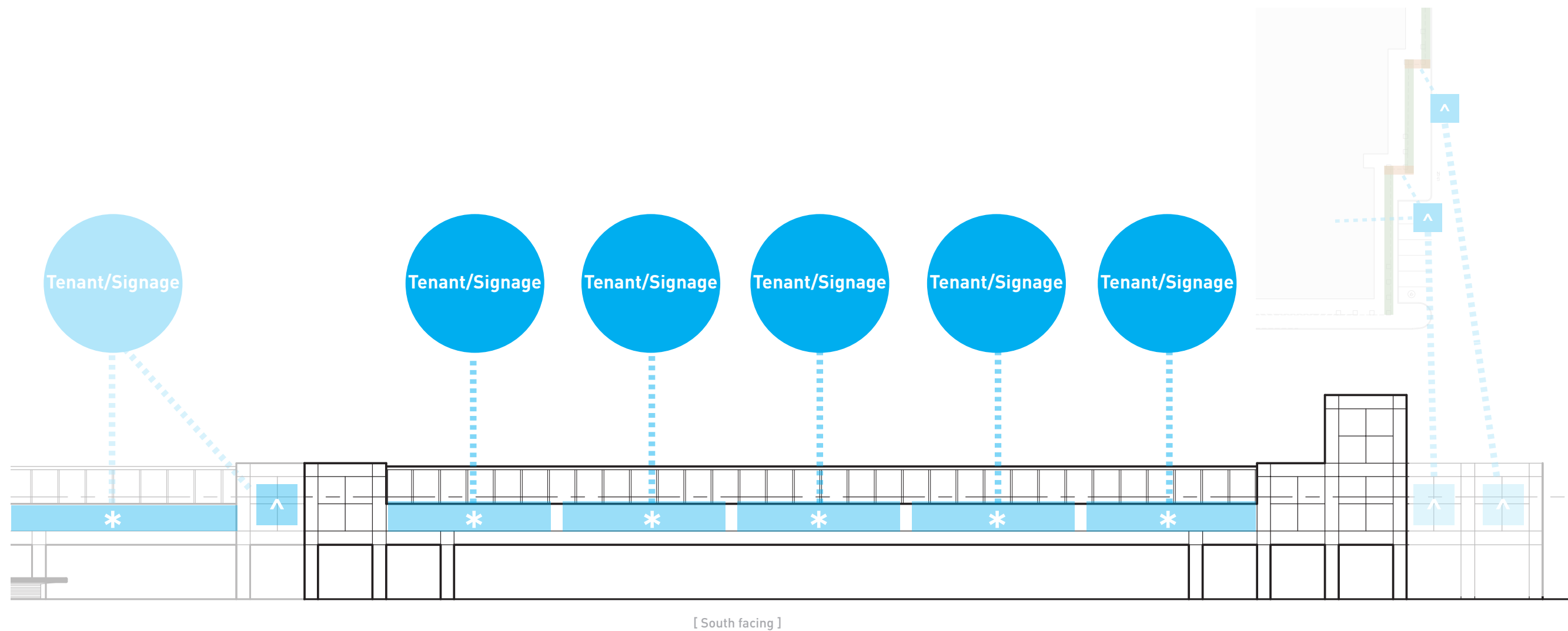


[West facing]

■ = Indicates allowable sign locations. Signs must not interfere with the vertical columns.

* = Ground floor retail signage allowance must be in compliance with prevailing Creve Ceour ordinances (1 square foot per lineal foot of front facade or as may be amended).

Retail Facade Signage

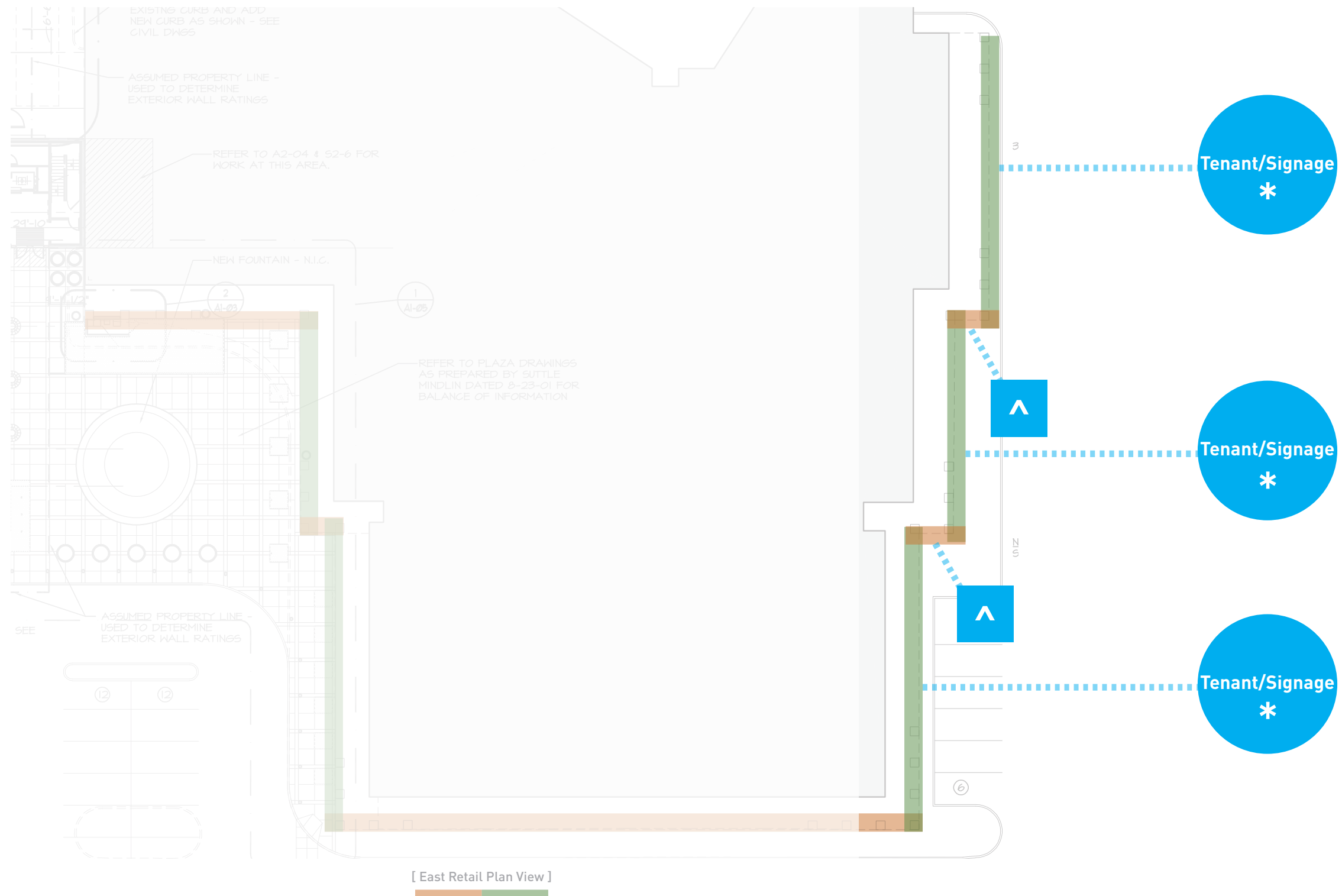


= Indicates allowable sign locations. Signs must not interfere with the vertical columns.

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^ = Where available, tenants may elect to split their total allowable signage as explained above (*). They may use no more than 10 square feet. The square footage used for this sign will be deducted from their total signage allowance.

Retail Facade Signage_East Retail



* = Ground floor retail signage allowance must be in compliance with prevailing Creve Ceour ordinances (1 square foot per lineal foot of front facade or as may be amended).

^ = Where available, tenants may elect to split their total allowable signage as explained above (*). They may use no more than 10 square feet. The square footage used for this sign will be deducted from their total signage allowance.

Retail Facade Signage_East Retail

BILL NO. _____

ORDINANCE NO. _____

**AN ORDINANCE AUTHORIZING A SECOND AMENDMENT TO ORDINANCE NUMBER 5454
CITYPLACE MASTER SIGN PLAN AND AUTHORIZING ADDITIONAL SIGNAGE FOR
CITYPLACE 1, 2, AND 4 ON THE CITYPLACE CAMPUS**

WHEREAS, an application was submitted by Gina Lee, of Redico, on behalf of CityPlace, for a second amendment to the Master Sign Plan for the CityPlace campus as authorized in Ordinance Number 5454 and amended by Ordinance Number 5562, in the CB-Core Business Zoning District to allow for additional signage for CityPlace 1, 2, and 4; and

WHEREAS, City Council approved Ordinance Number 5454 on January 25, 2016 authorizing as an alternative to what would otherwise be allowed, a comprehensive plan of signage for the CityPlace Campus pursuant to Section 405.950.J of the City of Creve Coeur's Code of Ordinances; and

WHEREAS, City Council approved Ordinance Number 5562 on January 8, 2018 authorizing an amendment to Ordinance Number 5524 to allow a real estate sign; and

WHEREAS, all new or altered signage on the campus shall not substantively depart from the Master Sign Plan, unless approved by the City of Creve Coeur based upon the recommendation of the Planning and Zoning Commission; and

WHEREAS, the Planning and Zoning Commission of the City of Creve Coeur, Missouri, held a public hearing thereon at the Creve Coeur Government Center on December 19, 2022, beginning at 6:00 p.m., or immediately following the close of the previous public hearing; and,

WHEREAS, the Planning and Zoning Commission reviewed and, by a vote of _____ recommended approval of the subject amendment at its meeting on December 19, 2022; and

WHEREAS, notice of said public hearing had previously been published at least 15 days prior to the hearing in the St. Louis Countian, a newspaper of general circulation in the City of Creve Coeur and otherwise posted and published in accordance with the Zoning Ordinance; and

WHEREAS, all persons who presented themselves at said meeting and desiring to be heard were given an opportunity to be heard and a copy of the proposed ordinance has been made available for public inspection prior to its consideration by the City Council; and this Bill having been read by title in open meeting two times before final passage by the City Council; and

WHEREAS, the City Council being fully informed finds that approving the application would be in harmony with and bear a substantial relation to the public welfare, health, safety, comfort, and convenience of the citizens of the City of Creve Coeur and in the public interest.

NOW, THEREFORE, be it ordained by the City Council of the City of Creve Coeur, Missouri as follows:

Section 1: Ordinance No. 5454 is hereby amended to authorize additional signage for CityPlace 1, 2, and 4 on the CityPlace campus as proposed in the Applicant's Materials submitted November 17, 2022 and December 2, 2022. The Applicant shall submit sign permit applications with structural engineering information showing that it meets with the Building Code for wind and show loads for the proposed signage. The Applicant shall follow the Master Signage Plan approved January 25, 2016, as amended by Ordinance Number 5562 and as amended herein, for all new or altered signage on the campus, as approved by the City of

BILL NO. _____

ORDINANCE NO. _____

Creve Coeur. The location, size, shape, color, type, and design of each sign shall not substantively depart from the Master Sign Plan, unless approved by the City of Creve Coeur. All other conditions of Ordinance No. 5424 shall remain in effect.

Section 2: A Master Sign Plan amendment attached hereto as Exhibit 1 is authorized for the CityPlace Campus Pursuant to Section 405.950.6 in the "CB" Core Business Commercial zoning district whose legal description is as follows:

"Lots 1, 3, 4, 5, 6, 8, 9 and 10 of CityPlace Subdivision as shown on the plat thereof recorded at Plat Book 355, Pages 43-46 of the Real Property Records for St. Louis County, Missouri; and also Adjusted Lot 2 of CityPlace Plat Two as shown on the plat thereof recorded at Plat Book 358, Page 313-314 of the Real Property Records for St. Louis County, Missouri; and also, Lot 11A of CityPlace Subdivision Plat Two as shown on the plat thereof recorded at Plat Book 358, Page 33 of the Real Property Records for St. Louis County, Missouri; and also, Units 1 & 2 of CityPlace Condominium created pursuant to that certain Declaration of Condominium dated April 14, 1988 and recorded at Book 8297, Page 734 of the Real Property Records for St. Louis County, Missouri."

Section 3: This ordinance shall become effective in accordance with Section 3.11 (g) of the City Charter.

ADOPTED THIS ____ DAY OF _____, 2023.

JOSEPH MARTINICH
PRESIDENT OF CITY COUNCIL

APPROVED THIS ____ DAY OF _____, 2023.

DR. ROBERT HOFFMAN
MAYOR

ATTEST:

KELLIE HENKE
CITY CLERK