



AGENDA
PLANNING AND ZONING COMMISSION MEETING
CITY OF CREVE COEUR, MISSOURI
MONDAY, DECEMBER 5, 2016

6:30 PM

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.

Reports, documents, plans, and related materials are available for examination at the Creve Coeur Government Center, 300 North New Ballas Road, prior to the meeting.

Special disabled service may be arranged by contacting the Office of the City Administrator in advance.

CALL TO ORDER

ROLL CALL

Ms. Beth Kistner (Chair)
Mr. Tim Carney
Ms. Muriel Hall
Mr. Don Magruder
Mr. Gene Rovak
Ms. Heather Silverman
Mr. Matthew Schuh
Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, Director of Community Development
Ms. Whitney Kelly, City Planner
Ms. Jessica Stutte, Planning Assistant/Recording Secretary

ACCEPTANCE OF THE AGENDA

APPROVAL OF MINUTES

- 1. November 21, 2016 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. **Application: #16-030 FOR a CONDITIONAL USE PERMIT AND SITE DEVELOPMENT PLAN FOR a PANDA EXPRESS RESTAURANT, WITH DRIVE-THRU SERVICE AT 10453 OLIVE BOULEVARD WITHIN CREVE COEUR PAVILION SHOPPING CENTER**

The Applicant has requested to postpone the matter to the December 19, 2016 Planning and Zoning Commission Meeting. A motion to continue the item until that time is necessary.

NEW BUSINESS

1. **Public Hearing. Application #16-031: Rezoning, Conditional Use Permit, and Site Development Plan and Boundary Adjustment Approval of a Mobil on the Run Convenience Store with Gas Pumps and Briteworx Car Wash Facility Located at 11109-11141 Olive Boulevard & 11100-11114 Oak Lake Court, Currently Zoned GC General Commercial and C Single Family Residential**

Kevin Kamp, of Civil & Environmental Consultants, Inc. has submitted an application on behalf of Wallis Companies (Arch Energy, LLC), for the rezoning of 11127, 11135 & 11141 Olive Boulevard, from C-Single Family Residential District to GC-General Commercial District for a Conditional Use Permit and Site Development Plan application for a new Mobil on the Run convenience store with gas pumps and BriteWorx Car Wash facility encompassing 11109-11141 Olive Boulevard and 11100-11114 Oak Lake Court.

WORK AGENDA

DEPARTMENT REPORTS

1. Director of Community Development
 - a. Planning Review Comments Received
2. City Attorney

ADJOURNMENT

Posted: _____

Jason W. Jaggi
Director of Community Development



CITY OF CREVE COEUR
PLANNING & ZONING COMMISSION
MEETING MINUTES
MONDAY, NOVEMBER 21, 2016
6:30 PM

A regular meeting of the Planning and Zoning Commission of the City of Creve Coeur, Missouri was held on Monday, November 21, 2016, at the Creve Coeur Government Center, 300 North New Ballas Road. Chair Beth Kistner called the meeting to order at 6:30 P.M.

MEMBERS PRESENT:

Ms. Beth Kistner (Chair)
Mr. Don Magruder
Mr. Gene Rovak
Ms. Heather Silverman
Mr. Matthew Schuh
Ms. Murial Hall
Mr. Tim Carney

OTHERS PRESENT: *Mr. Carl Lumley, City Attorney*
Mr. Jason Jaggi, Director of Community Development
Ms. Whitney Kelly, City Planner
Ms. Jessica Stutte, Recording Secretary

ACCEPTANCE OF THE AGENDA

Mr. Magruder moved to accept the agenda, as submitted. Motion seconded and unanimously approved.

APPROVAL OF MINUTES

Mr. Schuh moved approval of the minutes of November 7, 2016, as submitted. Ms. Silverman seconded the motion, which carried unanimously.

PUBLIC COMMENT

None

UNFINISHED BUSINESS

1. Public Hearing

Application #16-028: Comprehensive Plan Update Adoption

Members of the audience who planned to speak were sworn in.

Mr. Breihan of H3 studio began by presenting different scenarios for the golf course. He asked for direction regarding 2 scenarios.

Mr. Magruder suggested removing 3A & 3B.

Mr. Rovak asked how far along they were in the design process. He suggested they leave 3B open until they are more certain of the costs associated with the new police department.

Ms. Kistner asked what difference he saw.

Mr. Rovak said the golf course may be more economically viable.

Ms. Kistner asked Mr. Jaggi asked how far along they were in the process.

Mr. Jaggi explained that the bond issue allows for some minor changes to this building and for a new police station to be built on this site. He said if the commission wanted to go in a different direction with their long term plan, there would be disconnect with what the city council wants to do.

Mr. Carney said it seemed moot and he was inclined to remove 3A and 3B.

Ms. Kistner said keeping 1 and 2 doesn't prevent 3 B from coming up.

Mr. Jaggi said the alternative town center concept would be in that area and with that a City Hall could be supported. They could keep that option open.

The committee agreed to remove 3A and 3B from the plan.

Mr. Breihan pointed out that corrections had been made for the West Olive Corridor regarding changes to monument signs in that community place type. He said that no recommended restrictions were planned for that place-type. He continued with the Lindbergh Blvd corridor and the vision statement for that area. He said it would be a mixed use area and covered the frontages that would be permitted.

Mr. Rovak asked about the term incentivize. He asked if maybe encourage would be a better term.

Ms. Kistner said it could be like in site coverage.

Mr. Breihan said it shows up as a regulatory incentive in other areas of the plan. He said if it wasn't sufficiently clear, it could be made clearer.

Mr. Rovak said he wasn't sure he wanted to see them meshed together.

Mr. Breihan said it was based on internal discussion and ongoing maintenance.

Ms. Kistner asked if it was limiting the incentive to impervious pavement.

Mr. Rovak said the economy of LED was moving so fast.

Mr. Breihan said the recommendation could be changed to encourage and elsewhere consider regulatory incentives for green building best practices.

Mr. Jaggi said the whole package of sustainable development is what they are trying to encourage. He said it was another way to build in site coverage.

Ms. Kistner asked if wish list items from the CIP should be included in this part of the plan.

Mr. Jaggi said it was in the street frontage section to a degree.

Ms. Kistner said global wording might cover more of the goals.

Mr. Breihan said the public realm was really covered in the streets section. This was really prevalent in the city-wide sections. He suggested a more explicit reference in lot development standards so it would be more in sight.

Ms. Kistner asked if there were any people who wanted to speak to this part of the plan.

Mr. Breitweiser said they appreciated that in his subdivision the draft restricts commercial, but only single family are allowed by indenture. He said the allowance of suburban multi-family housing on Deaver Lane would be detrimental to the value of the neighborhood.

Mr. Breihan continued with the next section which covered Campus and Institutional District Recommendations. He went over the vision statement and said one change had been made in the plan in that the suburban and urban campuses were combined. He said the recommendations had been designed for flexibility. He wanted to be sure they didn't have a negative impact.

Mr. Rovak asked if the word "residential" was supposed to be there.

Mr. Breihan said it was a typo and it should read "civic institution".

Mr. Breihan continued with city wide systems and said the objective was to connect all the parks and schools with off street paths.

Ms. Campbell said Creve Coeur is deficient in green space. She said if the golf course is lost to development the green space could be lost. Most people would prefer to have a town center with green space to be enjoyed by residents of all ages and abilities. She said a town center park could be an action driven site with casual and formal dining, water features, art work, gardens and festivals. She said it could be a destination place for all people to enjoy.

Mr. McCoy was sworn in and introduced himself. He said historic preservation didn't seem to be prevalent in the plan.

Ms. Kistner said she thought there were places that were specifically identified.

Mr. Jaggi said it was covered a few meetings ago.

Mr. McCoy said he thought the Committees should work together as suggested in one section.

Mr. Jaggi added that Mr. McCoy's email was included in the packet.

Mr. Breihan continued with bikeability and walkability. He said the objective is to have a bike path within 1/4 a mile at all times.
He said many of the suggestions would need to be coordinated with residents in order to implement.

Mr. Magruder asked about Ladue Road.

Mr. Breihan said it would be a pedestrian pathway from Ladue to 270, with a continued sidewalk. He said the maximum width currently is 5 feet

Mr. Harris was sworn in, and said he is a bicycle commuter. He said cycling on sidewalks is dangerous. He said he would much rather cycle in the streets with appropriate signage.

Mr. Breihan said that Ladue was classified as a pedestrian walk because it was not wide enough.

Mr. Breihan continued with street recommendations. He said they identified key streets for improvements. He said that each street typology is keyed to its use to provide recommendations for facility enhancements to achieve the street principals and services.

Ms. Kistner had a question about Olive Boulevard.

Mr. Breihan said it was an Avenue type II and apologized if it was difficult to discern the colors. He went through the street types and the color associated.

Mr. Rovak said a general narrative of requirements would be a good idea.

Mr. Jaggi said it is becoming budgetary issue because of other requirements.

Mr. Harris asked about traffic strategies. He asked what strategies might be good here as a whole.

Mr. Breihan responded by saying some general principles could be added in.

Mr. Jaggi said it had come up with traffic calming. He continued by saying Public Works already was working on some.

Mr. Breihan continued with Public Art recommendations.

Mr. Schuh said he wanted to return to the street designation. He wanted to know what considerations were taken when the streets were designated and did they consider how that would affect the families that live there.

Mr. Breihan said they would need to have close cooperation with property owners, in general, to enhance the walkability and bike-ability.

Mr. Schuh said he wondered how the type of demographic affected the type and street connectivity.

Mr. Breihan said if a neighborhood offered connectivity to a park and an elementary school it would increase its attractiveness to young families. There are a variety of areas that are more geared toward improvement than others. The plan is a guide to enhance some of those existing characteristics. They wanted to look at developing an overall network throughout the whole city.

Mr. Breihan moved on to annexation potential. He explained the annexation procedure and why they felt it was important to include.

Mr. Carney asked how they came up with the boundary line they chose.

Mr. Breihan said they looked at a physical boundary as well as the Ameren right-of-way. He said the amount of area and the amount of households seemed feasible.

Mr. Carney said from a policing standpoint it seemed doable.

Mr. Breihan agreed.

Mr. Schuh asked about subdivisions

Ms. Silverman said she didn't believe any subdivisions were there. Also pointed a suggestion regarding correcting the name of the Jewish Center.

Mr. Jaggi said there is one chapter left. One more meeting is needed. Mr. Jaggi suggested December 15th.

A motion to continue the public hearing to December 15 was made by Mr. Rovak, Mr. Magruder seconded.

Mr. Magruder-aye Ms. Silverman-aye Mr. Rovak- aye Mr. Carney-aye
Ms. Hall-aye Mr. Schuh - aye Chair, Ms. Kistner- aye
All in favor, motion passed.

2. Application 16-023: Minor Site Development Plan Approval Davita Parking Expansion at 400 N Lindbergh Blvd.

Applicant: George Stock
257 Chesterfield Parkway
Chesterfield Mo 63005

Mr. George Stock of Stock and Associates showed the updated plan. He said the proposal is 37 parking spaces. He showed the landscape plan which included native species.

Ms. Kistner said her concern was the landscaping buffer. She would like it to be an opaque area.

Mr. Stock said there is ample vegetation and the closest it gets it 14 ft. The drive itself is 40 feet away from the property line. Mr. Stock said he is comfortable with staff observation of the landscaping.

Mr. Jaggi suggested staking in the field to ensure that area be preserved is not touched. Additional conditions could be added regarding the site.

Ms. Hall said she thinks it is important the homeowner behind be notified.

Mr. Jaggi said the homeowner was notified and if they had issue, they could be here. He said staff can take extra measures to ensure the land remains undisturbed.

Mr. Carney asked about an elevation for the trash enclosure.

Mr. Schuh asked what the concern was regarding how close the landscaping was to the rear owner.

Mr. Rovak said it was to ensure the screening was there.

Ms. Silverman asked if they wanted more landscaping or a fence.

Mr. Jaggi said if additional clearing were to happen, the additional condition would ensure screening

Mr. Magruder said a fence wouldn't be effective as the home owner could see over it.

Mr. Jaggi said everyone seemed to agree that more screenage is desirable.

Mr. Rovak moved to approve subject to the conditions stated in the staff report with the additional condition that inadvertent landscaping removal be replaced subject to staff approval. Ms. Silverman seconded.

Mr. Magruder-aye	Ms. Silverman-aye	Mr. Rovak-aye	Mr. Carney-aye
Ms. Hall-aye	Mr. Schuh-aye	Chair, Ms. Kistner-aye	

All in favor, motion passed.

NEW BUSINESS

3. PUBLIC HEARING. Application #16-029: Barnes Jewish West County Hospital Site Concept Plan For Replacement Hospital, Medical Office Buildings, And Parking Structure.

Applicant: George Stock
257 Chesterfield Parkway
Chesterfield Mo 63005

All audience members wishing to speak to the matter were sworn in.

Ms. Kistner offered to recuse herself as she works for another hospital in the area. Mr. Stock said that would not be necessary.

Mr. George Stock of Stock and Associates on behalf of Barnes West County Hospital showed the new site concept plan. He gave a brief history of the site and the project. He said the part of the property that abuts the residential area has never been intended for development.

Immediate surface parking, a medical office building and replacement hospital are the current project before the Commission.

They had a neighborhood meeting with nearby residents to go over plans. He showed photos of homes that back up to BJC. He showed buffer is still dense in some areas and they don't perceive the buffer to be a problem. He said if there were gaps they would place evergreens. The parking lots would be illuminated.

He said they are seeking approval of the third amended site concept plan.

Mr. Jaggi said the applicant has been receptive to suggestions and explained why they keep continuing to come before the Planning and Zoning Commission.

Mr. Carney asked if they had any input as to the size of the parking lot.

Mr. Jaggi said that was a general idea and the approval would allow them to move to the next phase. Development plans that come in the future have to meet with this plan.

Mr. Schuh asked how this layout works with the Comprehensive Plan.

Mr. Jaggi said they are currently in between plans and it is appropriate to look forward.

Mr. Magruder asked how the additional 2-3x the amount of people will affect traffic.

Mr. Jaggi said they asked the same of the applicant. He said staff reserves the right to ask for a traffic study.

Ms. Kistner asked the height and depth of the berm.

Mr. Jaggi said along Olive it is about 30 ft from the property line that could be bermed, landscaped, or masked.

Mr. Schuh asked if there was an elevation difference between Olive and the parking lot.

Mr. Stock said less than 10 ft, maybe 4-6 feet.

Ms. Kistner said there was no way to obscure the lot.

Mr. Jaggi said he would like to see how the berm is proposed. But they need to see the details.

Mr. Rovak asked if they could get a temporary slope to get a slightly wider berm that would make the landscaping more affective.

Mr. Jaggi said if the spots along Olive went away the frontage would be in line with the medical building line.

Mr. Rovak wanted to know in order to make the berm and landscaping more effective, is the city in a position to allow the berm and landscaping to go beyond the right of way or landscaping line because it would be a benefit.

Mr. Jaggi said it wasn't their call because it is MoDOT controlled right of way.

Mr. Schuh suggested renderings to help with the discussion.

Mr. Stock talked about “green line” park which is used to shield the cars, not the hospital. He said at this phase they aren't authorized to show the site development plan. He said this is a unique project. The first consideration is where to put the hospital. He said they are very conscientious of the landscaping.

Mr. Schuh asked if they could get those renderings in the future for the next phase.

Mr. Stock said yes, when it comes back before the Commission.

Mr. Rovak asked what they are looking at in terms of future conditions.

Mr. Stock said they need the infrastructure in place before proceeding.

Ms. Kistner asked about the Olive lot.

Mr. Stock said they are comfortable they will meet the “green line” park. And they are aware it is a concern.

Mr. Rovak said he has two concerns, one is storm water and one is aesthetics.

Ms. Kistner asked about moving the MOB to the roadway.

Mr. Stock said they want to make access easy for the patients. They are trying to avoid disconnection. They all share common drop offs. Walkability needs to remain easy for patients. He said the lakes will be removed.

Mr. Magruder said he and many of the commission members weren't here when Mr. Stock presented 2 years ago. It looks quite different from what it is now.

Mr. Schuh asked to see what the long term vegetation would look like along Mason Rd.

Mr. Stock said there would be linear landscaping and berming.

Ms. Kistner asked for speakers

Ms. Alderage said the back of their home faces the parking lots, the lights and noise. They'd like tall evergreens facing their homes.

Ms. Westfall added that with added traffic it is going to add a lot of noise and trees would help.

Ms. Kistner asked if they had heard that Mr. Stock plans to add evergreens to fill in

Ms. Alderage said they did and it addressed some of their concerns.

Mr. Martin said his concern is Mason Rd and that it has no shoulder. He wants to make sure there is a plan for the incoming traffic.

Mr. Kline Jr. explained the history of the site and suggested reexamining the landscaping plan.

There being no further no further comments, City Attorney, Mr. Carl Lumley presented the exhibits and the public hearing was closed.

Mr. Schuh asked what the next step would be. He asked if they are bound to the layout if this is approved.

Mr. Lumley said they would be approving the general layout, but not the detail. The site development has to be consistent with the concept plan. If there is a concern with the overall layout, it should be addressed. They should be able to say their Site Development is consistent in layout and the Commission should also be satisfied.

Mr. Schuh said he was concerned they would not be able to get past some issues.

Mr. Lumley said it depends on the point of concern, for example, they need to be able to show the roads can bear traffic.

Mr. Rovak said he thought this footprint was acceptable and as long as it is met generally, the Commission can be comfortable with it.

Mr. Magruder asked for clarification if they make major changes they have to come back.

Mr. Lumley said that was correct, they have to be consistent.

Mr. Rovak said that is why they were here is because previous concept plans didn't work.

Ms. Hall asked about having a traffic study.

Ms. Kistner said the traffic study comes later.

Mr. Jaggi agreed as it is a big commitment to do a traffic plan at this point. There are 2 separate studies done on traffic to ensure they are agreement. The studies could be done as far as 8 years out. He said it is appropriate to look at this in phases and add things in later.

Mr. Carney said it seems like a major change in building locations. He suggested a 10 feet berm.

Ms. Silverman asked if he was specifically mentioning a berm or just a buffer.

Mr. Carney said either. The reduction of green space in the lot would allow a larger buffer.

Ms. Kistner said the planning direction has been arranged to minimize large swaths of parking and have a little more depth with the landscaping.

Mr. Carney suggested some shape to the landscaping.

Mr. Stock said they were open to study it, but they believe the berm will be sufficient. He asked for flexibility in the conditions to satisfy the Commission.

Mr. Lumley suggested the Commission make it clear they don't have a lock in the line and the buffer line could be increased.

Mr. Magruder asked if they can add a condition.

Mr. Jaggi said the condition of landscaping along Olive could be altered to review the depth of buffer landscaping along Olive. Mr. Jaggi also suggested they add a condition to add additional landscape screening to further shield residential areas.

Mr. Carney moved to recommend approval subject to the conditions stated in the staff report and the additional conditions stated by Mr. Jaggi, Mr. Magruder seconded

Mr. Magruder-aye Ms. Silverman-aye Mr. Rovak-aye Mr. Carney-aye

Ms. Hall-aye Mr. Schuh-aye Chair, Ms. Kistner-aye

All in favor, motion passed.

To City Council November 28, 2016

4. PUBLIC HEARING. Application #16-030: Conditional Use Permit and Site Development Plan for a Panda Express Restaurant, with Drive-Thru Service at 10453 Olive Boulevard within Creve Coeur Pavilion Shopping Center

Mr. Schuh recused himself.

Applicant: Eric J. Abeln
1111 North Loop West, Suite 800
Houston, Texas 77008

Those wishing to speak were sworn.

Mr. Abeln said the site has interesting conditions. He talked about the existing retaining wall and underground water storage and the limitations it creates on building placement.

He talked about it being a pedestrian experience. He said the pavement will be a different color to distinguish it as a pedestrian path. There is a raised hump for pedestrians to cross.

He talked about the patio and the aesthetics of the restaurant. He spoke to the direction of car traffic into the lot.

Ms. Kistner asked about the drive thru not having an escape.

Mr. Abeln said some cars will be able to leave the queue lane. He said the stacking space is ample. They are offering a minimum of 190 feet. The one-way drive doesn't impact the rest of the traffic in the lot. He said it creates a safe environment by separating the vehicles and the vehicles from the pedestrians.

He spoke to the landscaping plan. He spoke to the existing structure. He introduced Nichiha, a fiber cement wood product that is durable. He showed where the Nichiha would go.

Ms. Kelly said all drive thrus require a CUP. She said it is a preexisting non-conforming site. She said most of the proposed elevations meet requirements with the exception of the use of efface where the windows should be and inconsistent design treatment along the North elevation.

Ms. Kistner asked if she could explain the inconsistency.

Ms. Kelly said the design guidelines should create a sense of entry and be consistent.

Ms. Kelly said the main entrance needs greater articulation and shadow lines. She said there are designated stacking lane issues and that the Code states the stacking lane should be no less than 190 ft. It can be more. Actually 305 ft is provided. She said the interpretation may be ok for this use, but if another tenant should take over the property there would be a problem because it would cross between the building and street frontage. She said the Commission needs to consider it as an issue, as it may carryover to future drive thru sites.

Ms. Kistner said that was a good point and there may need to be a text amendment or variance for clarification in the future.

Ms. Kelly said she thought it would be very difficult to get a variance when they could redesign the site. She said the intent of the code was to separate pedestrian space from the flow around the building to meet with the design guidelines.

Ms. Kistner said she thought it also had to do with aesthetics.

Mr. Rovak said at the very least a record of their approval would show the rationalization and different interpretation that it is atypical.

Mr. Lumley said they don't have the authority to stray from the ordinance. He said the variance is unlikely because while the site is unusual they would have difficulty proving hardship. A text amendment is an alternative. Mr. Lumley said this is only the second application they have had come before them since the ordinance.

Ms. Kelly said this application is the first free standing project they have had to address.

Ms. Kistner asked if they could permit the stacking lane along the front.

Mr. Lumley said that would allow the property owner to designate where the stacking lane is, versus the reality of the layout.

Ms. Kelly identified their concern with the pedestrian crossing.

Mr. Magruder said his concern is the pickup window in the drive thru. He said the vehicles picking up their food often don't pay the best of attention and it would be hazardous to pedestrians.

Mr. Harp of civil engineering said they do understand the stacking lane and gave his points as to how they came to that conclusion. Cars will be stacking on the side of the building. He said there is no internal conflict.

Ms. Kistner asked for the definition of a designated stacking lane.

Ms. Kelly said it isn't defined. It establishes a minimum with no maximum, which staff interprets as where you enter specifically to get to the drive thru. In this case it is at the southwest corner.

Mr. Harp said this was better than having a stacking lane by parking which creates additional problems with circulation.

Mr. Jaggi said they have challenges with the drive thru ordinances. And their concern is that while this may be ok on this particular site, the concern remains with the transferability. He said the applicant and staff would like some direction as they have already gone through many versions.

Ms. Silverman asked if Panda were to move out would the new tenant be held to the same standards and would the stacking issue remain the same.

Ms. Kistner asked if they should continue this at the next meeting.

Ms. Kelly said staff would like direction in moving forward with this project.

Ms. Kistner said for her it is a stacking lane and she is uncomfortable with it, it eviscerates the ordinance.

Ms. Silverman said she would also be uncomfortable changing it with the current ordinance.

Mr. Magruder said he was uncomfortable changing it the second time it comes before the commission.

Ms. Kistner said she thinks sometimes they think they have thought of everything, but this situation is somewhat unusual.

Ms. Silverman said she didn't know what the text amendment would say.

Ms. Kistner said visibility of the street would be an element as would pedestrian crossing and safety.

Mr. Rovak said he didn't really follow the escape lane.

Mr. Carney suggested moving the building to the west and creating an escape lane.

Mr. Jaggi said they do have direction and wanted to point out that Panda has made a considerable effort to meet code requirements

Mr. Rovak made a motion to continue to the December 5th meeting, Ms. Silverman seconded.

Ms. Hall-aye Mr. Carney-aye Mr. Rovak-aye Ms. Silverman-aye
Mr. Magruder-aye Chair, Ms. Kistner-aye

5. Application 16-032: Accepting Dedication of the Northern Portion of Ladue Court as a Public Street

Mr. Jaggi said when the northern part of Ladue Ct was constructed and completed, there was some dispute. Part of the effort to resolve the dispute was a settlement agreement. Part of that settlement agreement would be to finish sidewalks using remaining escrow funds. He asked for the Commission to recommend accepting the remaining portion of Ladue Court as a public street. The city will in turn will in turn complete the critical repairs with the funds available from the settlement.

Mr. Carney made a motion to approve, Mr. Schuh seconded.

Mr. Schuh Ms. Hall-aye Mr. Carney-aye Mr. Rovak-aye
Ms. Silverman-aye Mr. Magruder-aye Chairman, Ms. Kistner-aye

WORK AGENDA

None

DEPARTMENT REPORTS

Mr. Jaggi said there would be a Special Meeting on Thursday, December 15th. As a result the Special Meeting for December 8th is canceled. The regular meeting of Monday,

December 19th is still scheduled. He suggested canceling the January 3rd meeting. The first meeting in January would be Tuesday, January 17th.

ADJOURNMENT

There being no further business to come before the Planning and Zoning Commission, upon motion being made and duly seconded, the meeting was adjourned at 10:45 P.M.

Beth Kistner, Chairman

Jessica Stutte, Recording Secretary



300 North New Ballas Road • Creve Coeur, Missouri 63141
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www.creve-coeur.org

**APPLICATION TO PLANNING AND ZONING COMMISSION
#16-031 FOR THE REZONING, CONDITIONAL USE PERMIT, AND SITE
DEVELOPMENT PLAN AND BOUNDARY ADJUSTMENT APPROVAL OF A
MOBIL ON THE RUN CONVENIENCE STORE WITH GAS PUMPS AND
BRITWORX CAR WASH FACILITY LOCATED AT 11109-11141 OLIVE
BOULEVARD & 11100-11114 OAK LAKE COURT, CURRENTLY ZONED GC
GENERAL COMMERCIAL AND C SINGLE FAMILY RESIDENTIAL**

FOR THE MEETING OF: Monday, December 5, 2016

LOCATION: 11109 – 11141 Olive Boulevard, and 11100, 11108, and 11114 Oak Lake Court, including portions of unincorporated St. Louis County, at the northwest corner of Schulte Road, and Olive Boulevard.

REQUEST: Kevin Kamp, of Civil & Environmental Consultants, Inc. has submitted an application on behalf of Wallis Companies (Arch Energy, LLC), for the rezoning of 11127, 11135 & 11141 Olive Boulevard, from C-Single Family Residential District to GC-General Commercial District, and for a Conditional Use Permit, Site Development Plan and Boundary Adjustment for a new Mobil on the Run convenience store with gas pumps and BriteWorx Car Wash facility encompassing 11109-11141 Olive Boulevard and 11100-11114 Oak Lake Court.

ADDITIONAL INFORMATION: The Applicant will also be submitting to St. Louis County for review and approval of the proposed uses for the portions of these properties located within Unincorporated St. Louis County. Section 405.360 GC-General Commercial District generally requires a minimum area of five acres, but not if expanding an existing GC District, and the existing Mobil Station at 11109 Olive Boulevard is already zoned GC-General Commercial. The proposal is 3.92 acres and is adjacent to an existing property zoned GC District. Gasoline Stations with Convenience Stores (NAICS #447110) and Car Wash Facilities (NAICS #811192) are conditional uses in the GC District. The existing Mobil was originally developed in 1984.

Key Issues:

- Does the request integrate with the existing surrounding uses?
- Does the request further the goals and/or implement the Comprehensive Plan?
- Does the request meet with the minimum standards of the proposed GC-General Commercial?
- Is the request consistent with the required findings for a conditional use permit?

Comp. Plan References

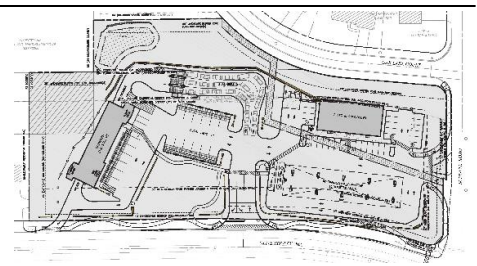
- East Olive Corridor Action Area

Zoning Code References

- Section 405.210: Regulation of Uses, Table A
- Section 405.360 GC-General Core Business District
- Section 405.470 Conditional Uses
- Section 405.1060 Zoning Changes and Text Amendments

APPLICANT: Kevin Kamp
Civil & Environmental Consultants, Inc.
4848 Park 370 Boulevard, Suite F
Hazelwood, MO 63042

PROPERTY Wallis Companies (Arch Energy, LLC)
OWNER: 106 East Washington
Cuba, MO 65453



REPORT PREPARED BY: Jason Jaggi, AICP, Director of Community Development; Whitney Kelly, AICP, City Planner
DATE: 12/1/2016
ATTACHMENTS: Applicant's Materials received November 4, 2016
Traffic Impact Study from CBB
City's Consulting Traffic Engineer Memo
Sound Study submitted November 4, 2016
Public Comment

SCOPE OF REVIEW AND STAFF ANALYSIS

The focus of this staff report is to provide an analysis and findings on the most significant aspects of these applications for the proposed development as they relate to the request for rezoning, compatibility with the Comprehensive Plan, Design Guidelines and Zoning Ordinance. Staff is of the opinion that it would be most useful for the Commission and the public to review the broader aspects of this proposal with the Applicant so that further direction can be provided.

SUMMARY OF PROPOSAL

Kevin Kemp, of Civil & Environmental Consultants, Inc., on behalf of Wallis Companies, has submitted a request for the following:

- Rezone the 11127, 11135 & 11141 Olive Boulevard properties in the City of Creve Coeur from C-Single Family Residential District to GC-General Commercial District.
- Conditional Use and Site Development Plan approval for a 4,800 square foot new 24-hour Mobil on the Run Convenience Store located on the former Oak Lake Court parcels, with 20 pump Gas Station on the existing 11109 Olive Boulevard gas station site and a 5,128 square foot BriteWorx Car Wash with 17 outdoor vacuum stations on the 11127, 11135 & 11141 Olive Boulevard properties that has proposed hours of operation of 7 AM to 9 PM.
- Boundary adjustment approval to consolidate 11109 – 11141 Olive Boulevard, and 11100, 11108, and 11114 Oak Lake Court into one 3.92 acre parcel.

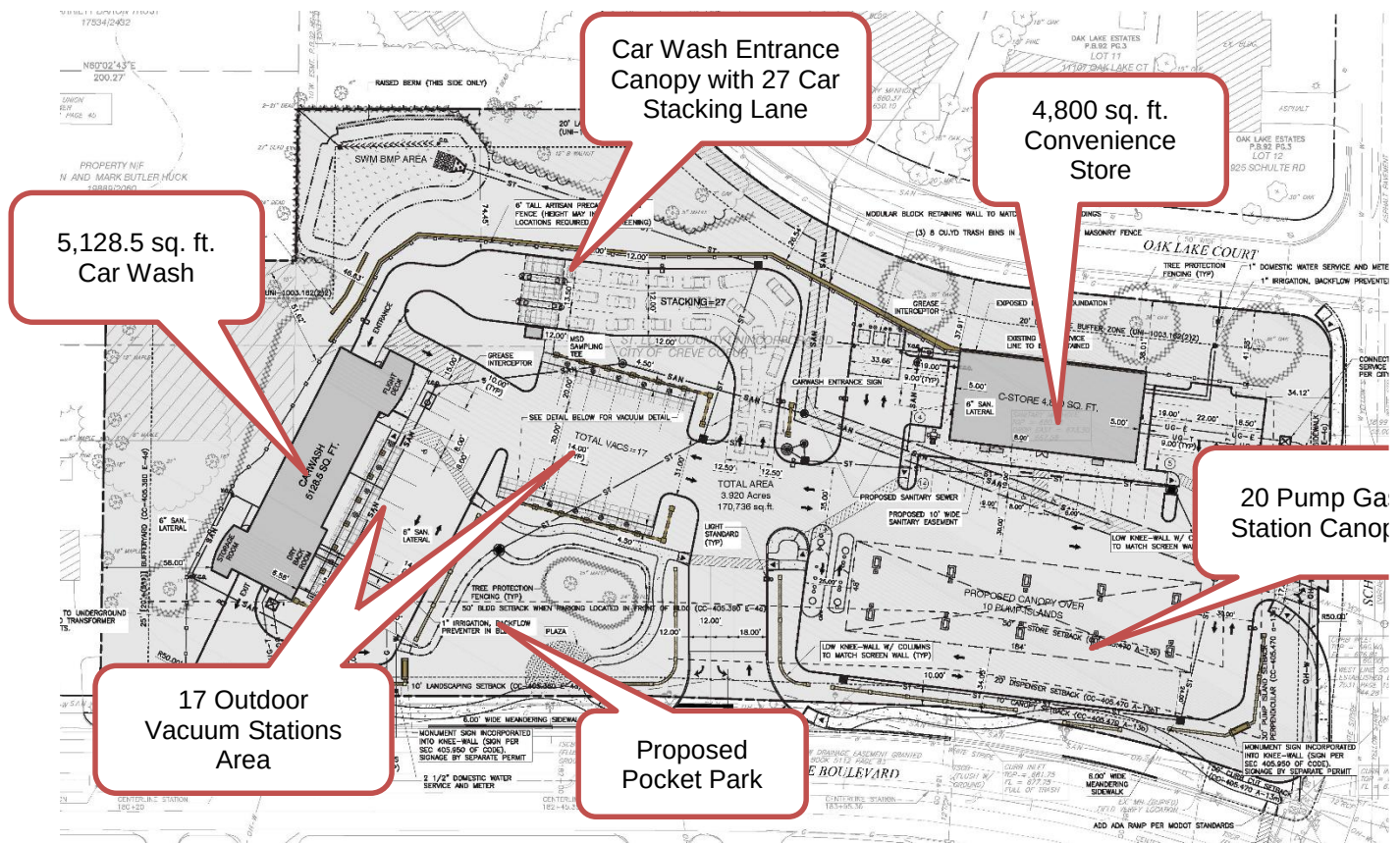


Figure 1: Close-up of the Applicant's Site Development Plan



Figure 2: South Elevation of the Convenience Store

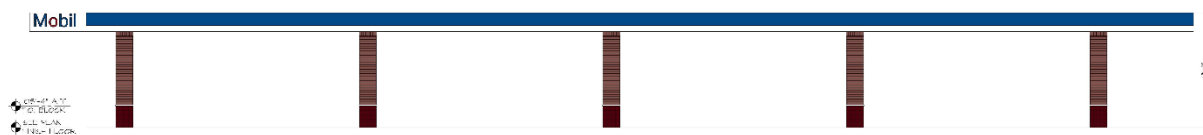


Figure 3: South Elevation of the Gas Pumps Canopy

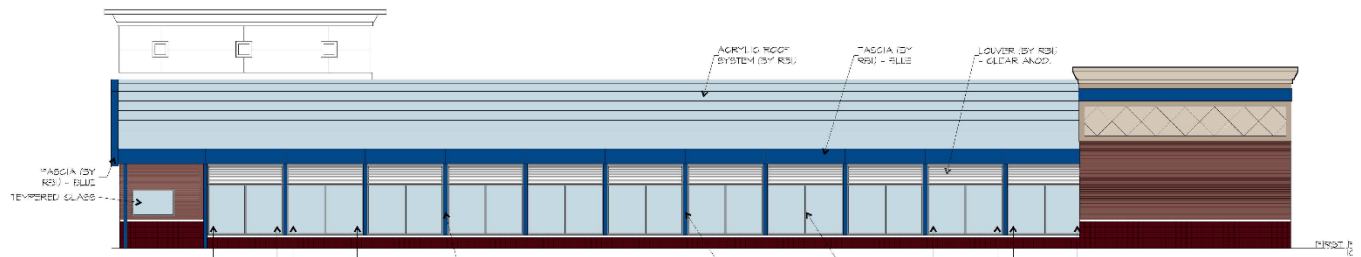


Figure 4: West Elevation of the Car Wash Facility

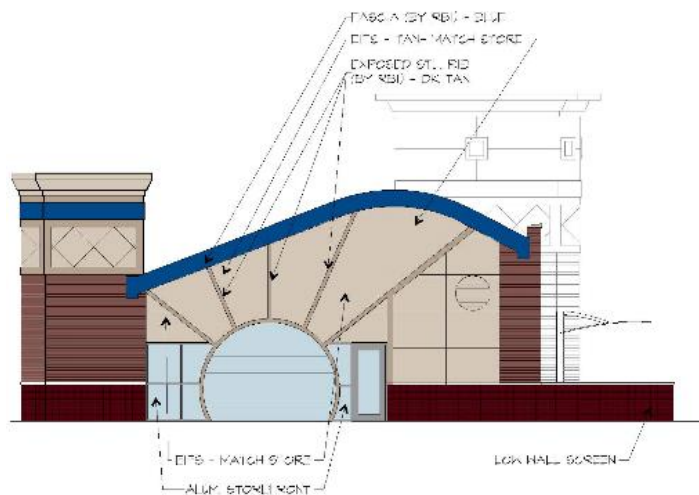


Figure 5: South Elevation of the Car Wash Facility

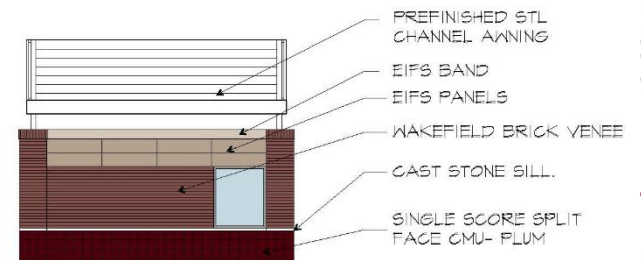


Figure 6: South Elevation of the Vacuum Stations

LAND USE AND ZONING OF SURROUNDING PROPERTIES

The adjacent zoning and land uses are as follows:

DIRECTION	USE	ZONED	SEPARATED BY
North	Residential	Unincorporated St. Louis County C8 Planned Commercial; R3 Residential	Partial Oak Lake Court
South	Complete Music, Masonic Lodge; Residential Structures used for offices	Partial GC General Commercial; C Single Family Residential	Olive Boulevard
East	Gas Station with Car Wash	GC General Commercial	Schulte Road
West	Residential	Partial C Single Family Residential; A Single Family Residential	NA

COMPREHENSIVE PLAN REVIEW

The subject property is located in the East Olive Corridor of the Comprehensive Plan that envisions an area of small businesses with a residential neighborhood character, with substantial green spaces and with landscaping for a “green line” park that gives the impression of driving or walking through a park along Olive Boulevard (page 51). The Residential Preservation and Economic Development Section discusses that the land uses envisioned for this corridor include small-scale retail, office, single-family, multi-family, and parks and recreation uses with the following policies, which are most applicable to the nature of this request (Pages 52-53):

- 1. Preserve and protect single-family residential areas from intrusions of non-residential uses. Limit commercial and non-single family uses to Olive Boulevard. Limit retail uses to a size and scale designed to provide goods and services to the Creve Coeur market rather than to a regional market.*
- 3. Maintain this area with a residential character, even when homes are converted or replaced by business uses. New development or redevelopment should be compatible with the low-density residential character of the corridor, as discussed below.*
- 4. Protect existing healthy, larger trees during the development or redevelopment process.*
- 5. All elevations of new construction or redevelopment should maintain the overall character of the existing residential structure or area. Emphasis should be given to compatible door, window and other opening location, size and scale.*
- 7. All new development or redevelopment of non-residential uses should comply with the Creve Coeur Design Guidelines. The City's Design Guidelines should be strengthened for this area to ensure that building scale, height, shape, and volume will be compatible with residential structures. Illustrations should be added to depict acceptable building design features.*
- 8. Mechanical equipment should be located so as not to be visible from any public ways or adjacent residential areas. Where such limitation is not possible, the facilities should be screened from public view with materials compatible with the building. The backs or sides of buildings adjacent to residential areas should be designed so as to cover utility boxes and meters, have architectural treatment of facades similar to the front façade, incorporate landscaping, strips or other buffers (low walls, ornamental fencing and incorporate opaque screening of dumpsters and mechanical equipment.*
- 9. Mitigate the impact of non-residential uses on residential area through heavy landscaping and other buffers.*
- 10. New buildings should have setbacks consistent with surrounding established residential patterns and provide a sidewalk and landscape treatment in the front of buildings. New development should be designed to provide connections to the “green line” park linear greenway.*

15. Operational compatibility standards should be adopted and enforced to control noise, lighting, the placement of outdoor vending machines, and hours of operation, particularly for commercial uses near residential areas.

Further, the Comprehensive Plan provides recommendations of key properties along the East Olive Corridor. The subject properties lie largely in East Olive Corridor Key Property Area 2, with a small portion in Key Area 1 as shown below:

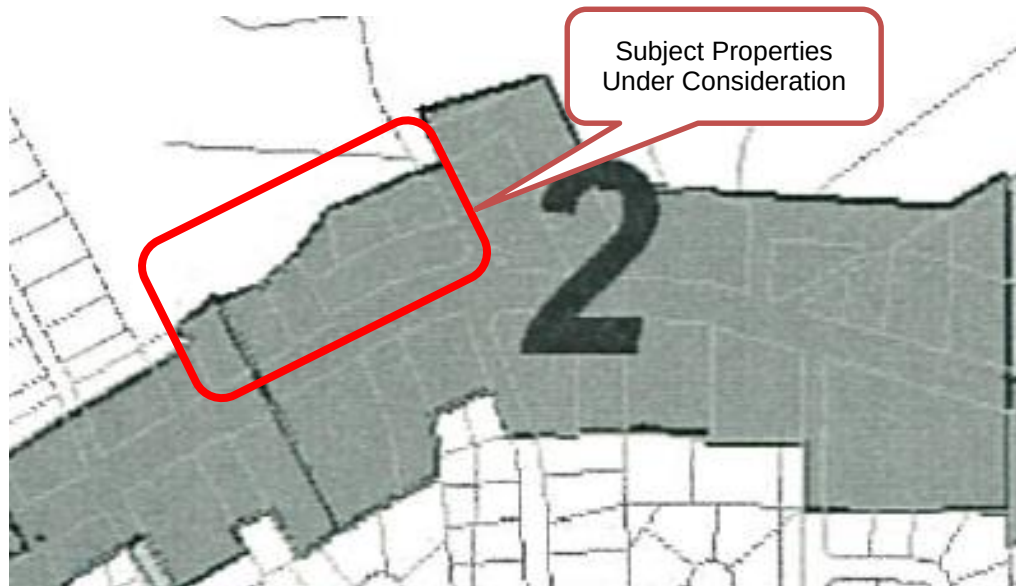


Figure 7: Close-up of the East Olive Corridor Key Properties Map of the Comprehensive Plan found on Page 55, with the subject properties boxed in red.

East Olive Corridor Key Property Area 2 recommends that as redevelopment and new investment occurs, the area will be encouraged to remain commercial, with uses limited to neighborhood-oriented commercial. Redevelopment should be designed to protect and be compatible with adjacent residential areas, as provided for in the *Residential Preservation and Economic Development* recommendations for the East Olive Corridor. (Page 57).

The current draft of the Comprehensive Plan Update, *Creve Coeur 2030*, currently under review would further the existing Comprehensive Plan recommendations with the East Olive Corridor vision to create a walkable corridor of destination retail boutiques, neighborhood service business, small-scale restaurants, and attached townhomes and low-density multi-family homes that encourage pedestrian access from adjacent neighborhoods and prioritize walkability between neighboring lots while accommodating car access and easy parking (p. 88). Frontage recommendations encourage uniform setbacks on neighboring lots to establish a consistent location and orientation of building façade frontages to Olive Boulevard.

Compatibility with the Comprehensive Plan

The proposed development of a gas station with a convenience store and a separate, detached car wash facility with exterior vacuum stations appears to be consistent with a few of the policies of the Comprehensive Plan; however, Staff finds the proposal to be in conflict with several significant policies of the Plan.

The development includes pedestrian amenities and landscaping treatments given the proposed auto-oriented uses. For example, the Applicant has included a pocket park with pedestrian amenities and sufficient landscaped buffer along the rear and west side of the development and low-height landscape wall feature which furthers the project toward the goals of the Comprehensive Plan. In addition, the Applicant is proposing to save several large, mature trees on the site and has incorporated them into the site planning for the project.

The proposal's primary challenges with the policies of the Comprehensive Plan involve the scale of the proposed development, the intensity of the uses at the scale which is proposed, and the compatibility of the development with the residential character of this section of Olive Boulevard. The Comprehensive Plan clearly speaks to this area of Olive Boulevard as having a vision for smaller scale retail and service businesses that cater to the surrounding residential neighborhoods. To further the goal of compatibility, the Comprehensive Plan suggests that the commercial uses themselves incorporate design elements that maintain this strong residential character. As currently proposed, Staff finds that this project is inconsistent with these elements of the Comprehensive Plan. Redevelopment of the existing facility within the existing GC District would be more in keeping with the character of the area, and the Comprehensive Plan, and standards for the GC District discussed further below.

A rezoning contrary to the Comprehensive Plan should be founded on two concepts: one, that the current goals, and those proposed with the *Creve Coeur 2030* plan, are sufficiently debatable that their intended outcomes can be questioned; and two, that the proposal more adequately fulfills the goals of the Comprehensive Plan and, by extension, represents a greater benefit to the public interest. Staff is not convinced that the proposal offers a greater benefit to the public interest, or more adequately fulfills the goals of the Comprehensive Plan. While current plan recommendations for the area may be questionable with regard to the conversion of existing homes to commercial uses, and that the GC District may be an appropriate zoning discussed further below, the overall scale of the proposed development would represent a significant departure for the area that has maintained a residential feel connecting the larger commercial centers of the Central Business District and the Commerce Center. Regardless of the specific merits of the proposal, it remains unclear how it represents a tangibly greater benefit to the public. Staff finds that the scale and intensity of the proposed development would be more appropriate in a larger heavy commercial or industrial area.

DESIGN GUIDELINES REVIEW

As noted earlier in this report, Staff will only provide discussions on the larger design issues. Once direction has been provided on the overall appropriateness of the project, as proposed, a more detailed review will be provided at the appropriate time.

The Design Guidelines recommend that the size, design, and orientation of buildings should be sensitive to existing terrain, existing buildings, and the surrounding area, the use of natural materials and architectural consistency between all building elevations, and an overall sense of architectural continuity on all elevations. The use of false or decorative façade treatments is discouraged. Further, multiple buildings on the same site are to create a cohesive visual relationship between the buildings. Material and/or color changes at the outside corners of structures that give the impression of thinness and artificiality of the material are discouraged.

The following is a list of Staff's key items that should be discussed and/or revised based on further discussion at the meeting:

- The large gaps and interruptions along the "streetscape" caused by the non-pedestrian elements, such as the vacuum area, and service entrance into the car wash facility.
- The degree of usability of the 'pocket park' pedestrian amenities in the proposed location and the extensive use of low walls to provide visual interest which appears to heighten the large scale of the development.
- Strong use of corporate architecture and overuse of EIFS that is strongly discouraged, and the overall design which is inconsistent with the Comprehensive Plan which calls for incorporating residential design elements to maintain the residential character of commercial buildings in this section of Olive Boulevard.
- Building elements, such as parapet wall, penthouses or screen walls should be treated as an integral part of the architecture, where the Convenience Store relies on EIFS to create an artificial height to the building that is not in keeping with the residential character surrounding the area.

- The lack of a separated pedestrian connection from the gas pump to the main entrance of the convenience store that does not interfere with the Accessible parking area, where the Design Guidelines recommend breaking up the row of parking.
- The Design Guidelines provide specific direction regarding Auto Service Stations where separate structures, such as a canopy, carwash or cashier's booth should be avoided; however, if approved, should have a consistent design theme and a car wash that is incorporated into the project shall be well integrated into the design.

ZONING REVIEW

Section 405.1060(B) of Zoning Changes and Text Amendments requires that the action of the Planning and Zoning Commission approving, disapproving, or conditionally approving the site concept or site development plan shall accompany its recommendation to the City Council regarding the rezoning. Therefore, while a recommendation on the proposed conditional use permit and site development plan with any rezoning is required, the rezoning of properties is not contingent on the implementation of the development and, if approved, would remain.

The stated purpose and intent of the GC District is to accommodate by site development plan approval convenience retail shopping and services and offices which are free standing or part of small scale planned commercial developments and which are compatible in scale and intensity of use with adjacent residential uses. While a Gas Station with Convenience Store, and a Car Wash are conditional uses in the GC District, it is the overall scale and intensity of use of the proposal that are inconsistent with the stated purpose of the GC District.

As Staff is seeking direction regarding the key discussions of the appropriateness of the development with the Comprehensive Plan and the purposes and intent of the GC-General Commercial District, a full analysis with the remaining sections of the Zoning Code, including signage and landscaping will be completed at a later time.

TRAFFIC IMPACT STUDY

The Applicant has included a Traffic Impact Study (TIS) conducted by CBB that has been reviewed by the City's Consulting Traffic Engineer, GBA. Comments from St. Louis County Department of Transportation have been provided; however, MoDOT has not provided formal comments at this time. The City's Consulting Traffic Engineer did raise a few items, namely, requesting additional queue length information for other turning movements within the study area, the difficulty of enforcing the no left turn access from northbound Schulte into the site, the spacing of the full access point from the Olive/Schulte intersection, and the proximity and orientation of the adjacent driveway to the residence to the west with the exit from the car wash facility that is within 50 feet from one another.

Since both adjacent public roadways are controlled by entities other than the City (MoDOT and St. Louis County), the Applicant will be required to obtain final approval from each agency. The TIS prepared by CBB on behalf of the Applicant, the GBA TIS review memo, and the review letter by St. Louis County are attached to this report for review by the Commission.

SOUND STUDY

A sound study was completed by Designed Acoustics based upon the nature of the proposed use. To gain an understanding of the possible noise impacts associated with the car wash facility in particular, Staff would recommend that Commission members visit the Mobil on the Run location at 9371 Olive Boulevard in Olivette. Depending upon the direction of the other elements of this proposal staff would look to review the noise study in greater detail at the appropriate time.

BOUNDARY ADJUSTMENT PLAT

As part of this request, the Applicant has submitted a plat that would consolidate all of the individual lots into one new lot consisting of 3.920 acres. The consolidated lot would straddle both jurisdictions of the City of Creve Coeur and Unincorporated St. Louis County. As a boundary adjustment plat is largely a ministerial act by the Commission, it would be appropriate to defer action.

REVIEW BY ST. LOUIS COUNTY

The total development site includes 2.807 acres located within the City of Creve Coeur and 1.113 acres located within Unincorporated St. Louis County. Based upon conversations with the St. Louis County Planning Department, the Applicant will be required to submit the plans for the County's approval in conjunction with the review by the City. Any approval by the City of this proposal should incorporate a condition that the Applicant receive approval of the plan by St. Louis County.

RECOMMENDATION AND ACTION

At this time, Staff is seeking direction regarding the compatibility of the proposal with the Comprehensive Plan, the rezoning of portions of the site to the GC District, and the larger aspects of the Design Guidelines before completing a full review of the Conditional Use and Site Development Plans.

As discussed throughout this report, the GC District may be an appropriate zoning designation; however it is Staff's opinion that the proposal does not meet with significant elements of the Comprehensive Plan and does not create a compelling argument for action inconsistent with the Comprehensive Plan, nor are there public benefits unique to this project that substantially justify the approval of the proposal as presented. Further, the scale of the proposal is inconsistent with the stated purposes of the GC District that calls for small scale neighborhood commercial developments that is compatible in scale with the adjacent residences and would leave a remnant parcel which would effectively prohibit any future redevelopment potential of the property that fronts directly onto Olive Boulevard located just west of the development at 11147 Olive Boulevard.

The Commission should hear from the Applicant and provide direction regarding the Comprehensive Plan and the appropriateness of the proposal within the General Commercial District. If they find that additional design consideration or other modifications are necessary which may include reducing the scale of the project, they should make a motion to continue the proposal to the December 19th or later meeting and provide such direction to the Applicant. If they find that the proposal is inconsistent with the Comprehensive Plan and with the purpose and intent of the General Commercial District, they should make motions to approve the applications and then individually vote to recommend denial of the Applications.

MOTION

The following are examples of appropriate motions for these applications, **but without any stated conditions at this point:**

"I move to approve Application #16-031 for the rezoning of properties at 11127, 11135 & 11141 Olive Boulevard, currently zoned C Single Family Residential, to GC General Commercial."

"I move to approve Application #16-031 for a boundary adjustment and conditional use permit for a Mobil on the Run convenience store with 20 gas pumps and Briteworx car wash facility with 17 outdoor vacuum stations located at 11109-11141 Olive Boulevard & 11100-11114 Oak Lake Court."

"I move to approve Application #16-031 for site development plan for a Mobil on the Run convenience store with 20 gas pumps and Briteworx car wash facility with 17 outdoor vacuum stations located at 11109-11141 Olive Boulevard & 11100-11114 Oak Lake Court."

Or,

“I move to continue Application #16-031 for the rezoning, conditional use permit, and site development plan and boundary adjustment approval of a Mobil on the Run convenience store with 20 gas pumps and Briteworx car wash facility located at 11109-11141 Olive Boulevard & 11100-11114 Oak Lake Court, currently zoned GC General Commercial and C Single Family Residential to allow for the Applicant to revise the drawings based upon the discussion and direction from the Commission” (conditions may be added, eliminated, or modified by preceding motion).

APPENDIX 1: COMPREHENSIVE PLAN, INCLUDING DESIGN GUIDELINES

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.

APPENDIX 3: AERIAL PHOTO



APPENDIX 4: SITE PHOTOGRAPHS

Photo Date: 12/01/2016



Description: View looking northwest at the Existing Mobil Station at 11109 Olive Boulevard from the Olive Boulevard and Schulte Road intersection.



Description: View looking north at the home used as a commercial office at 11127 Olive Boulevard that that will be removed for the proposed development.



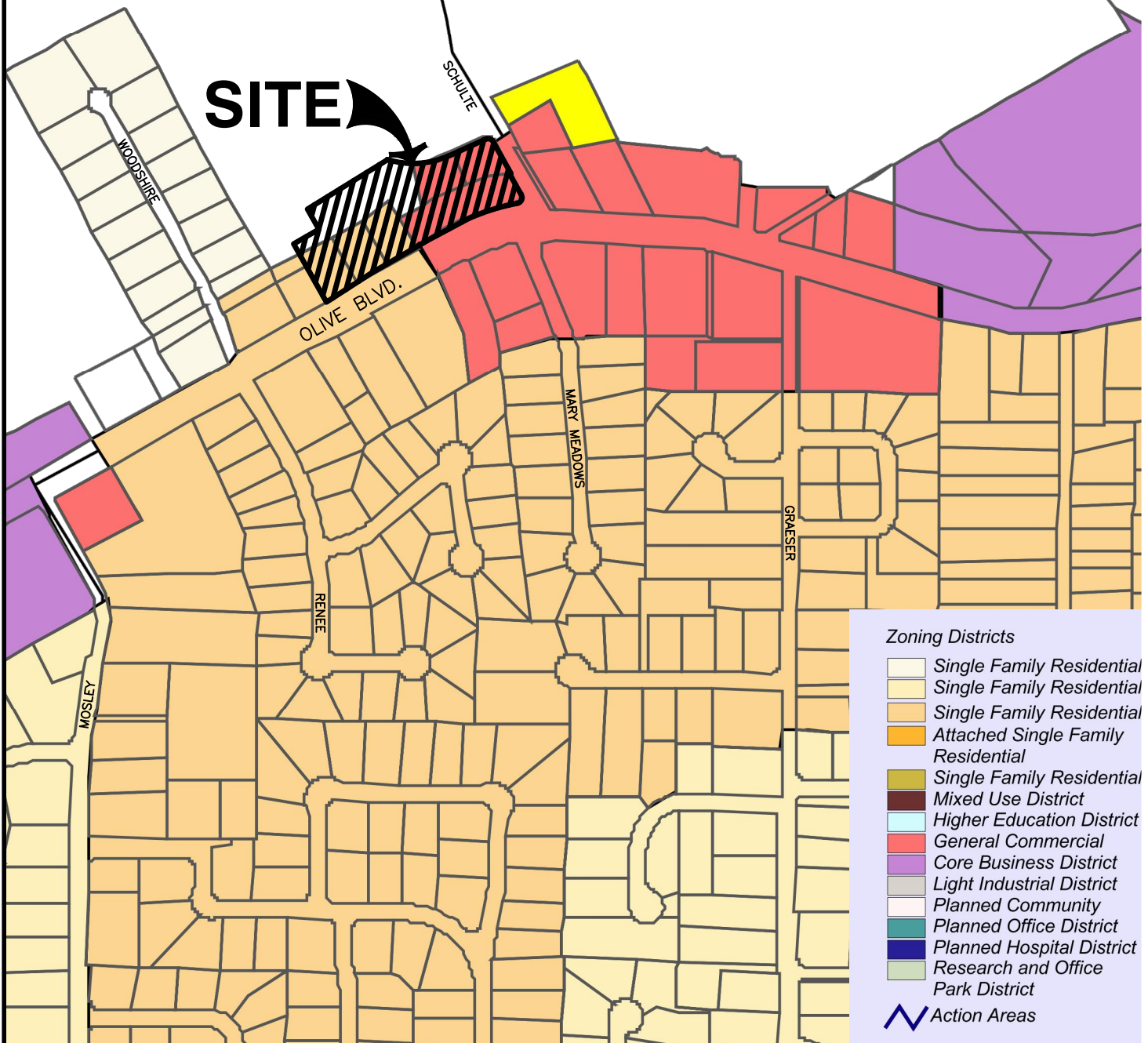
Description: View looking north at the home used as a commercial office at 11135 Olive Boulevard that will be removed for the proposed development.

	Description: View looking northwest at the home used as a commercial office at 11141 Olive Boulevard that will be removed for the proposed development. The home at 1147 Olive Boulevard in the background will be remaining.
	Description: View looking south from the subject property at the homes south of Olive Boulevard.
	Description: View looking southeast at the commercial buildings at the corner of Olive Boulevard and Mary Meadows Drive on the southside of Olive Boulevard.

	Description: View looking east from western property line of the subject properties.
	Description: View looking southwest of the home at 11100 Oak Lake Court that will be removed for the proposed development.
	Description: View looking east from the cul-de-sac of Oak Lake Court at 11108 and 11114 Oak Lake Court that will be removed for the proposed development.



SITE



REFERENCE

1. IMAGE DEPICTED COURTESY OF CREVE COEUR DEPARTMENT OF COMMUNITY DEVELOPMENT, GOVERNMENT CENTER, 300 N. NEW BALLAS ROAD, CREVE COEUR, MO 63141.

*HAND SIGNATURE ON FILE



Civil & Environmental Consultants, Inc.

4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042

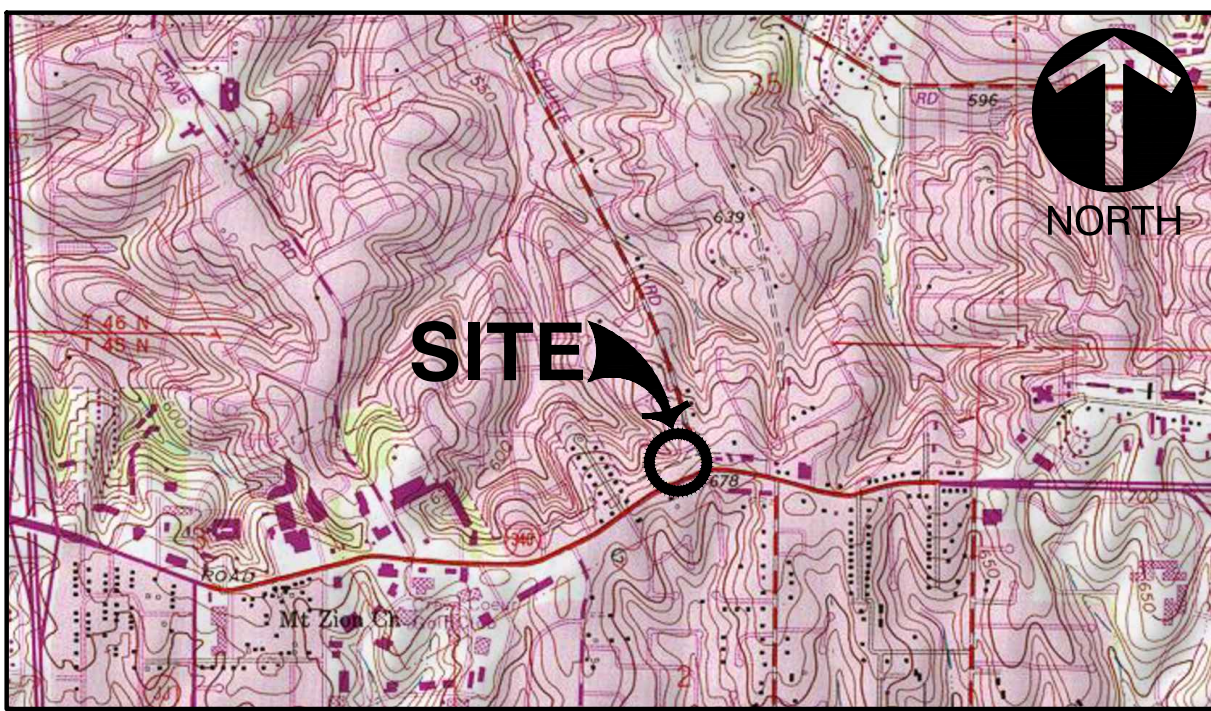
314-656-4566 · 866-250-3679

www.cecinc.com

WALLIS COMPANIES
106 EAST WASHINGTON
CUBA, MO 65453
(636) 549-1600

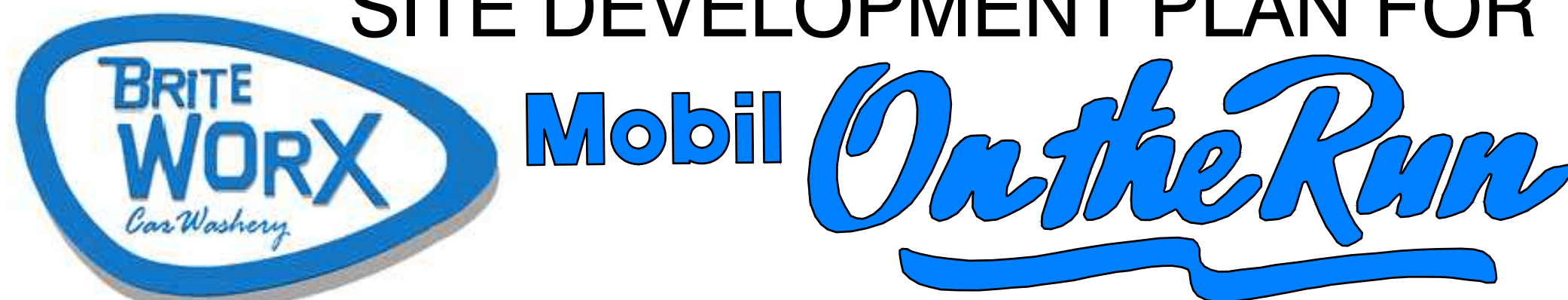
BRITE WORX/MOBIL ON THE RUN ZONING MAP

DRAWN BY:	MAK	CHECKED BY:	KTK	APPROVED BY:	KTK*	FIGURE NO.:
DATE:	NOV. 2016	DWG SCALE:	(NONE)	PROJECT NO:	110-241	

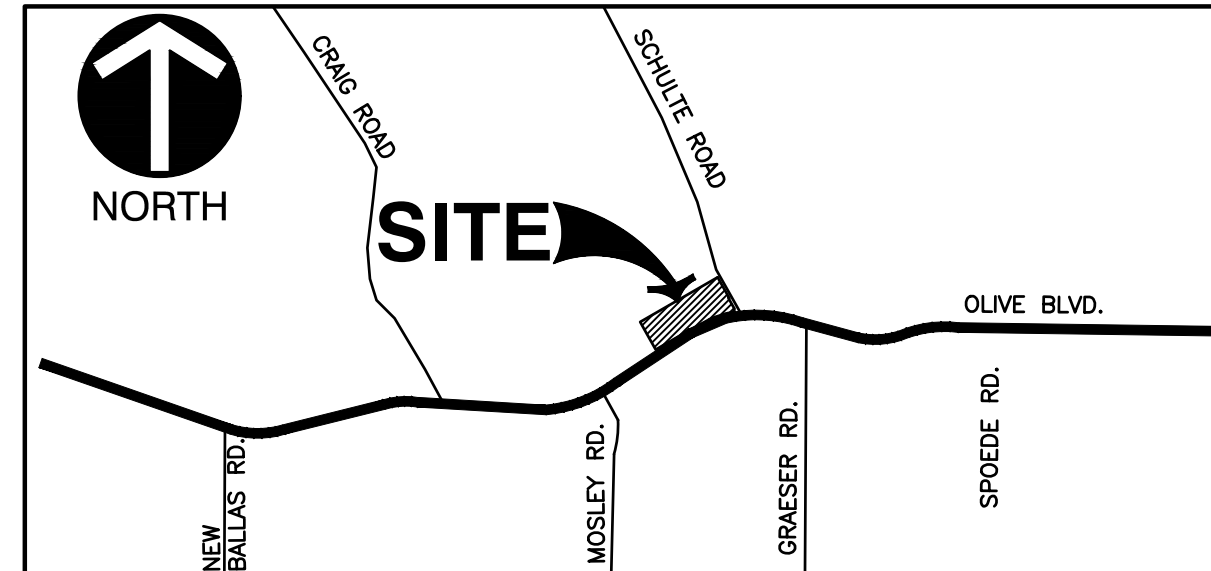


USGS MAP

U.S.G.S. 7.5' TOPOGRAPHIC MAP CREVE COEUR QUADRANGLE MISSOURI
DATED 1990, PHOTOREVISED 1993
SCALE 1" = 2,000'



A TRACT OF LAND BEING ALL OF LOTS 1, 2, 3 AND 4 OF "OAK LAKE ESTATES", P.B.92 PG.3
AND PART OF LOTS 3, 4, AND 5 OF THE SUBDIVISION OF THE FARM OF S.S. MATSON IN U.S. SURVEY 1962,
TOWNSHIP 45 NORTH, RANGE 5 EAST OF THE FIFTH PRINCIPAL MERIDIAN ST. LOUIS COUNTY, MISSOURI



SITE CALCULATIONS:	*GREENSPACE DEFINED AS AREAS OF LANDSCAPE AND WALKWAYS/PLAZAS		
	CITY OF CREVE COEUR	ST. LOUIS COUNTY (UNINCORPORATED)	TOTAL
TOTAL SITE AREA	122,276.9	48,459.0	170,735.9
BUILDING	9,928.5	0.0	9,928.5
PAVEMENT	59,543.1	8,353.8	67,896.9
SIDEWALK/PLAZA	6,499.6	59.4	6,559.0
LANDSCAPE	46,305.7	40,045.8	86,351.5
PERCENTAGE GREENSPACE*	43.2%	82.8%	54.4%
PERCENTAGE SITE COVERAGE	56.8%	17.2%	45.6%

PRE/POST IMPERVIOUS AREAS [AREAS IN SQ. FT.]

[BASED ON ABOVE]
TOTAL AREA OF SITE = 170,736
PRE-DEVELOPMENT IMPERVIOUS AREAS = 65,586 ~ 38.4%
POST-DEVELOPMENT IMPERVIOUS AREAS = 77,833 ~ 45.6%

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT

LACLEDE GAS COMPANY
COMMERCIAL & INDUSTRIAL MARKETING
720 OLIVE STREET
ST. LOUIS, MO 63101
CONTACT: JIM TRAVIS
PHONE: 314-342-0687
EMAIL: jtravis@lacledegas.com

AT&T TELEPHONE
402 N 3RD
ST. CHARLES, MO 63301
CONTACT: JIM LILLY
PHONE: (636) 949-4228

MCI FIBER
2400 NORTH GLENVILLE
RICHARDSON, TX 75082
CONTACT:
PHONE: (972) 729-6016 EXT. 1

MISSOURI AMERICAN WATER
727 CRAIG RD.
CREVE COEUR, MO 63141
CONTACT: DAWN SPINK
PHONE: (314) 996-2379
EMAIL: dawn.spink@amwater.com

CREVE COEUR FIRE PROTECTION DISTRICT
11221 OLIVE BLVD.
CREVE COEUR, MO 63141
CONTACT: MR. KENNETH BLACK
PHONE:

ST. LOUIS METROPOLITAN SEWER DISTRICT
2350 MARKET ST.
ST. LOUIS, MO 63103
PHONE: (314) 766-6200

AMEREN
DORSETT DISTRICT
1212 DORSETT ROAD
MARYLAND HEIGHTS, MO 63043
CONTACT: RYAN ALEXANDER
PHONE: (314) 344-9560
EMAIL: RAlexander2@ameren.com

CHARTER COMMUNICATIONS
815 CHARTER COMMONS
TOWN & COUNTRY, MO 63017
CONTACT: RICHARD STURK
PHONE: (636) 387-6650
EMAIL: mopping-design@chartercom.com

MODOT
WEST AREA PERMITS
1590 WOODLAKE DRIVE
CHESTERFIELD, MO 63017-5712
CONTACT: JIM BODART
PHONE: (314) 340-4318
EMAIL: James.Bodart@modot.mo.gov

ARCHITECT

OSM, INC.
15510 OLIVE BLVD., SUITE 207
ST. LOUIS, MISSOURI 63017
PH: (636) 536-7004
FX: (636) 536-7014
CONTACT: STEWART MACGREGOR
EMAIL: SM@ATT.NET

LANDSCAPE

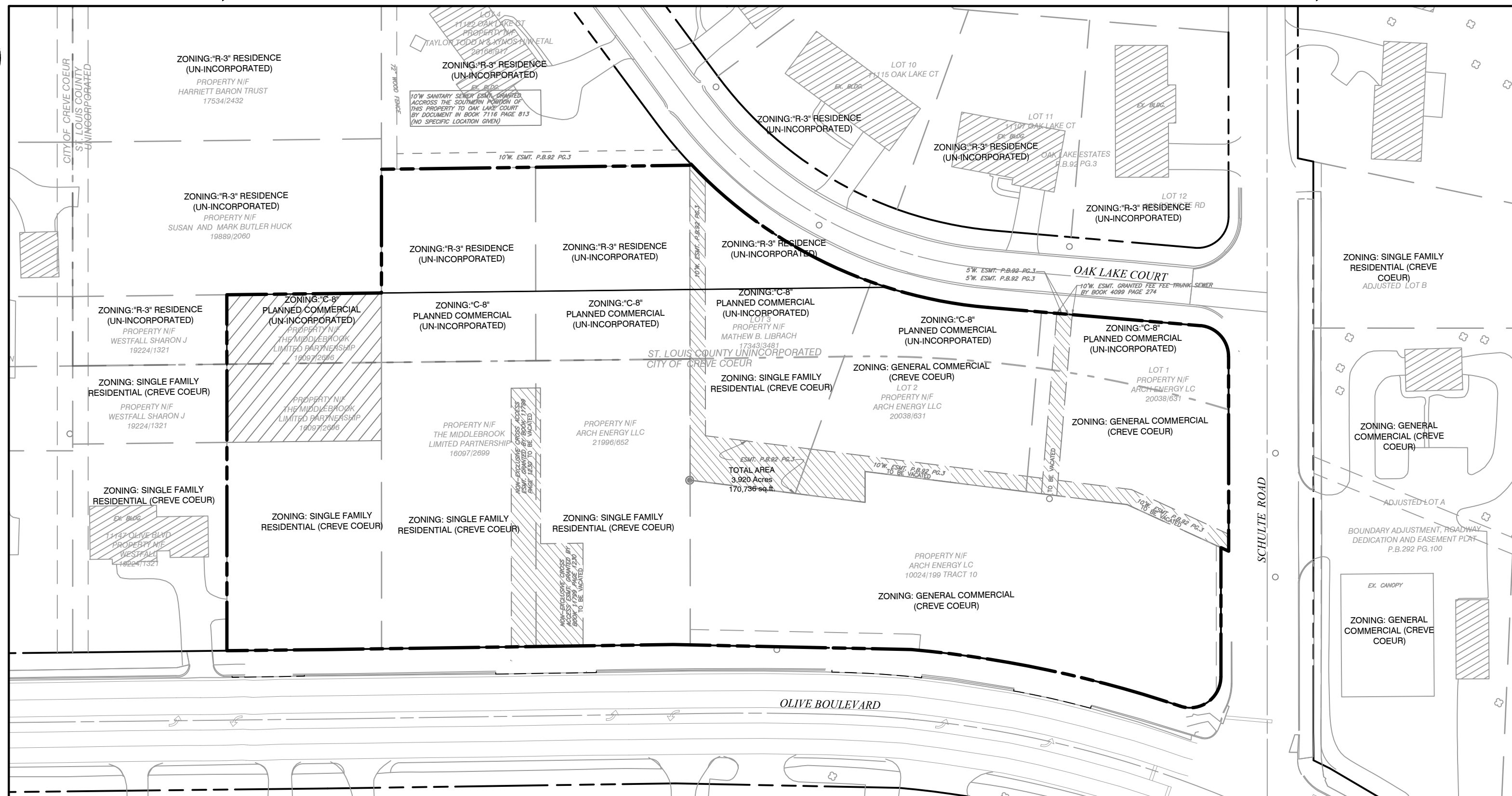
ACORN LANDSCAPES
HTTP://WWW.ACORNLANDSCAPES.COM
PH: (636) 394-0255
CONTACT: MARY FRANCOIS DEWEESE
EMAIL: DEWEESE@ACORNLANDSCAPES.COM

CIVIL ENGINEER

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
4848 PARK 370 BLVD., SUITE F
HAZELWOOD, MISSOURI 63042
PH: (314) 656-4566
FX: (314) 656-4595
CONTACT: KEVIN KAMP, PE

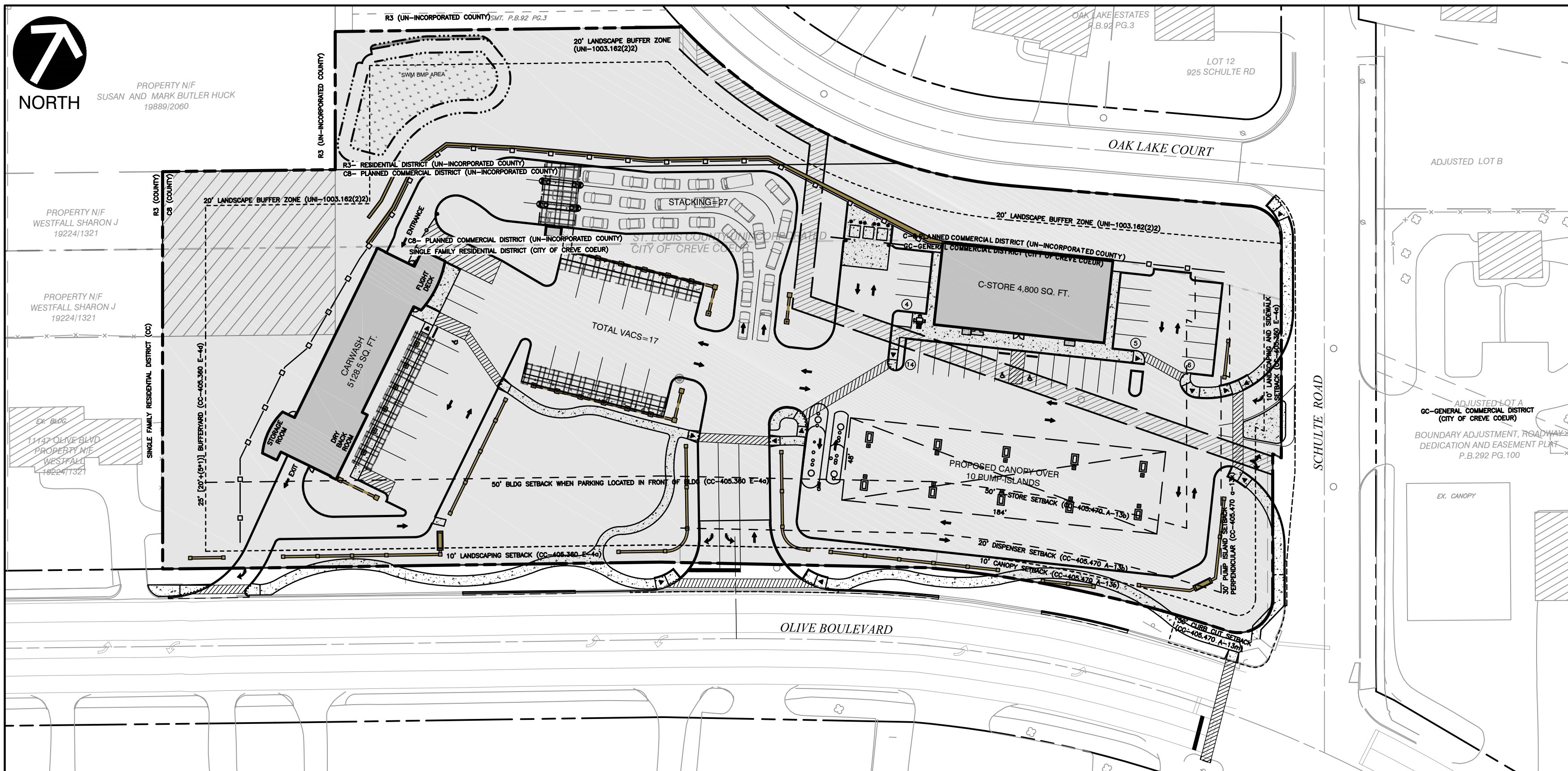
LIGHTING

PEIKER PIATCHEK ASSOCIATES
ST. LOUIS, MISSOURI 63129
PH: (314) 892-4646
FX: (314) 397-1160
CONTACT: RICHARD HAYDEN
EMAIL: RHAYDEBP@AOL.COM



ZONING MAP

SCALE: 1" = 60'



OVERALL SITE MAP

SCALE: 1" = 50'

DEVELOPMENT NOTES

- TOTAL PARCEL AREA: 170,736 SQ. FT. (3.920 ACRES)
AREA WITHIN CITY LIMITS: 122,277 SQ. FT. (2.807 ACRES)
AREA WITHIN UNINCORPORATED: 48,459 SQ. FT. (1.113 ACRES)
- CURRENT ZONING (CC)-
PROPOSED ZONING (CC)-
CURRENT ZONING (UNI)-
PROPOSED ZONING (UNI)-
SINGLE FAMILY RESIDENTIAL & GENERAL COMMERCIAL
GENERAL COMMERCIAL
R3 (RESIDENCE) & C8 (PLANNED COMMERCIAL DISTRICT)
C8 (PLANNED COMMERCIAL DISTRICT)
- SETBACKS-
FRONT YARD/ROW (CC) 10 FEET OLIVE BLVD. (CC)
0 FEET SCHULTE ROAD (IN LIEU OF ROW GIVEN TO COUNTY)
SIDE YARD (CC) 12 FEET
SIDE YARD (UNI) 10 FEET
REAR YARD (UNI) 15 FEET (NORTH PROPERTY LINE)
BUFFER YARD 25 FEET [SEC 405.360 E-4J] WITH FENCE FOR DRIVE THRU SCREENING
*BUFFER YARD @ 20FT + (5 X 1) = 25 FEET
BUILDING HEIGHT NOTE: ALL PROPOSED BUILDINGS TO BE 1 STORY IN HEIGHT
- SPECIAL CONSIDERATIONS-
4.1. TRASH ENCLOSURES SHALL BE INTERIOR TO THE SITE AND NOT ALONG THE NORTH PROPERTY LINE
4.2. SIDEWALKS ALONG OLIVE BLVD. SHALL BE FIVE-FOOT IN WIDTH UNLESS ABUTTING CURB, IN WHICH CASE SHALL BE INCREASED TO SIX-FOOT WIDE.
4.3. PLAN SHALL BE SO DEVELOPED TO INCLUDE AN INTEGRATED PEDESTRIAN CIRCULATION SYSTEM.
- FIRE DISTRICT: CREVE COEUR
- FLOOD NOTE:
ACCORDING TO THE FLOOD INSURANCE RATE MAP OF THE CITY OF CREVE COEUR, MISSOURI (COMMUNITY PANEL NUMBER 290344 0166 H, EFFECTIVE DATE AUGUST 2, 1995), AND THE FLOOD INSURANCE RATE MAP OF ST. LOUIS COUNTY, MISSOURI (UNINCORPORATED AREAS) (COMMUNITY PANEL NUMBER 290327 0166 H, EFFECTIVE DATE AUGUST 2, 1995) THIS PROPERTY LIES WITHIN ZONE X. ZONE X IS DEFINED AS AN AREA OF MINIMAL FLOOD HAZARD.
- ALL PROPOSED UTILITIES SHALL BE LOCATED UNDERGROUND.
- TRASH ENCLOSURES SHALL BE SIX FOOT (6') IN HEIGHT AND SHALL BE CONSTRUCTED W/ A SIGHT-PROOF GATE. MATERIALS SHALL BE COMPATIBLE WITH THE ARCHITECTURE OF MAIN BUILDINGS AND OF SIMILAR MATERIALS.
- STACKING: GENERAL STANDARDS
9.1. DRIVE-THROUGH STACKING LANES SHALL HAVE A MINIMUM WIDTH OF TWELVE FEET.
9.2. STACKING LANES SHALL BE SET BACK 20 FEET FROM RESIDENTIALLY ZONED PROPERTY LINES.
9.3. AUDIBLE ELECTRONIC DEVICES SUCH AS LOUDSPEAKERS, AUTOMOBILE SERVICE ORDER DEVICES, AND SIMILAR INSTRUMENTS SHALL NOT BE LOCATED WITHIN 50 FEET OF ANY RESIDENTIAL PROPERTY LINE.
9.4. ALL DRIVE-THROUGH AREAS, INCLUDING BUT NOT LIMITED TO MENU BOARDS, STACKING LANES, TRASH RECEPTACLES, LOUDSPEAKERS, DRIVE UP WINDOWS, AND OTHER OBJECTS ASSOCIATED WITH THE DRIVE-THROUGH AREA SHALL BE LOCATED IN THE SIDE OR REAR YARD OF A PROPERTY, AND SHALL NOT CROSS, INTERFERE WITH, OR IMPEDE ANY PUBLIC RIGHT-OF-WAY.

SITE CALCULATIONS 170,736 SQ. FT.:

AREA CREVE COEUR	=	122,277 SQ. FT. (2.807 ACRES)
GREENSPACE (CC)	=	52,808
IMPERVIOUS (CC)	=	69,472 (56.8%)
AREA UNINCORPORATED	=	48,459 SQ. FT. (1.113 ACRES)
GREENSPACE (UNI)	=	40,098
IMPERVIOUS (CC)	=	8,361 (17.3%)
TOTAL GREENSPACE	=	91,548 (54.4%)
TOTAL IMPERVIOUS	=	77,833 (45.6%)

RATIO OF FLOOR TO SITE IN SQ. FT. (FAR)
1:17.2 (1 SQ. FT. OF FLOOR SPACE TO 17.2 SQ. FT. OF PARCEL AREA)

PARKING CALCULATIONS:

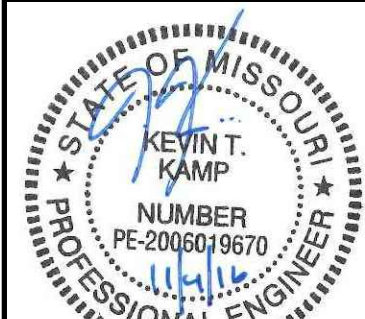
REQUIRED = GENERAL RETAIL @ 4 PER 1,000 SQ. FT. = 19.2
UNINCORPORATED
REQUIRED = CARWASH @ 1/BAY + 5 STACKING PER BAY = 20
FOOD MARKET @ 3-1/3 PER 1,000 SQ. FT. = 15.9
PROVIDED = 27 STACKING
= 30 SPACES INCLUSIVE OF 2 ACCESSIBLE SPACES

PRELIMINARY DRAINAGE NOTES

- PROJECT AREA: 170,736 (3.92 ACRES)
- WATERSHED: FEE FEE
- 15YR/20MIN DIFFERENTIAL RUNOFF (Q=A*PI, PER MSD):
PRE: Q=(3.92AC)*(0.38)*(3.54)+(3.92AC)*(0.62)*(1.70)=9.43 CFS
POST: Q=(3.92AC)*(0.10)*(4.20)+(3.92AC)*(0.41)*(3.54)+
(3.92AC)*(0.49)*(4.60)=9.84 CFS
DIFFERENTIAL RUNOFF: Q=(+)-1.17 CFS
- PER MSD SECTION 4.080.01(2B), THIS PROJECT DOES NOT REQUIRE DETENTION, HOWEVER THE SITE MUST PROVIDE WATER QUALITY.
- PER THE NATIONAL RESOURCE CONSERVATION SERVICE (NRCS) THIS PROJECT IS WITHIN HYDROLOGIC SOIL GROUP "D" HAVING A LOW INFILTRATION RATE AND HIGH RUNOFF POTENTIAL.
- WATER QUALITY VOLUME FOR THE ENTIRE SITE (3.92 ACRES AT 51% IMPERVIOUS) PER MARYLAND STORMWATER DESIGN MANUAL APPENDIX D-10:
Wqv=3.02 CFS OR Wqv=5,300 CF
WATER QUALITY BMPs:
• HYDRODYNAMIC SEPARATOR AND SNOOT FOR HOTSPOT AREA AT GAS PUMPS
• BIORETENTION (WILL ALSO PROVIDE VOLUME REDUCTION)

DRAWING LIST

SHEET NO.	DRAWING NO.	TITLE
01	C000	COVER
02	C100	EXISTING CONDITIONS PLAN
03	C200	SITE & UTILITY PLAN
04	C300	GRADING PLAN
05	C301	SITE SECTIONS



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REFERENCE

- TOPOGRAPHIC SURVEY PROVIDED BY CLIENT DATED SEPTEMBER 9, 2006. TREE SURVEY PROVIDED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED JANUARY 15, 2009.

REVISION RECORD

NO.	DATE	DESCRIPTION
1	1/15/2010	SUBMITTAL TO CITY OF CREVE COEUR, REGIONAL CONDITIONAL USE & SITE DEVELOPMENT PLAN, P&T
2		
3		
4		
5		
6		
7		
8		

Civil & Environmental Consultants, Inc.
CERTIFICATION/LICENSE NO. 2002013942
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
314-656-4566 - 866-250-3679
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WALLIS COMPANIES
106 EAST WASHINGTON
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(636) 549-1600

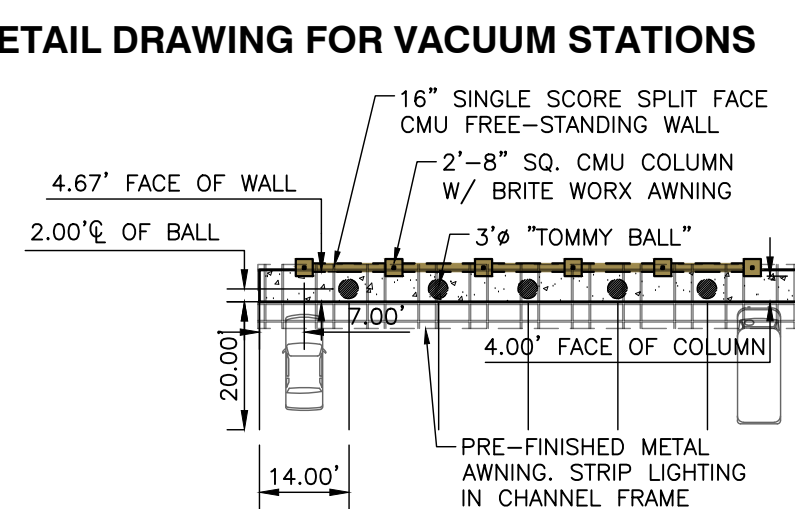
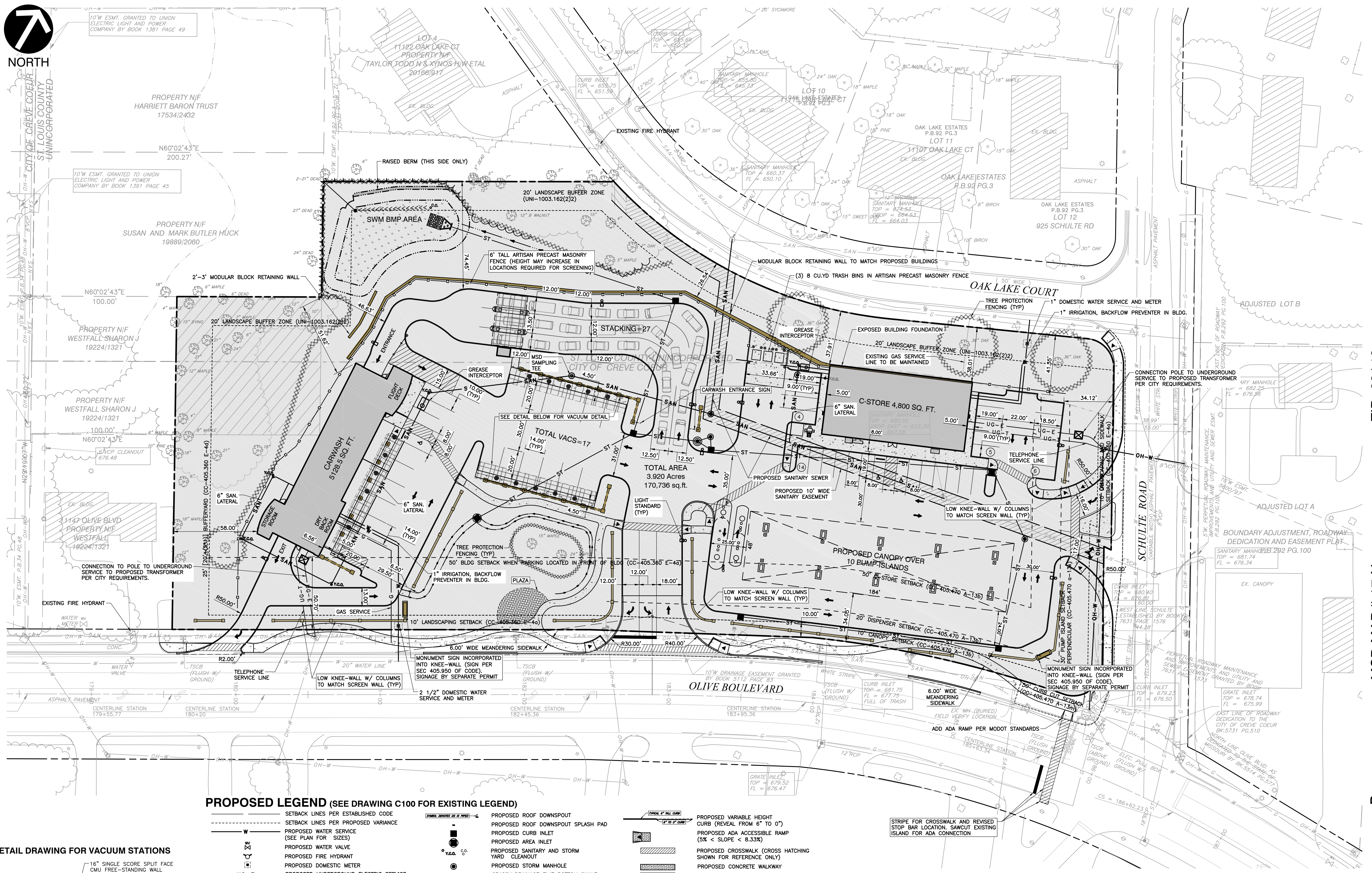
SITE DEVELOPMENT PLAN
MOBIL ON THE RUN & BRITE WORX

DRAWING NO.:

C000

SHEET 01 OF 05

Packet Pg. 33



PROPOSED LEGEND (SEE DRAWING C100 FOR EXISTING LEGEND)

- | | | |
|--|---|--|
| <p>W — SETBACK LINES PER ESTABLISHED CODE</p> <p>W — SETBACK LINES PER PROPOSED VARIANCE</p> <p>W — PROPOSED WATER SERVICE (SEE PLAN FOR SIZES)</p> <p>UG-E — PROPOSED WATER VALVE</p> <p>OH-W — PROPOSED FIRE HYDRANT</p> <p>OH-W — PROPOSED DOMESTIC METER</p> <p>UG-E — PROPOSED UNDERGROUND ELECTRIC SERVICE</p> <p>OH-W — PROPOSED OVERHEAD ELECTRIC LINE</p> <p>OH-W — PROPOSED UTILITY POLE</p> <p>OH-W — PROPOSED ELECTRIC TRANSFORMER</p> <p>OH-W — PROPOSED LIGHTING FIXTURES (SEE LIGHTING PLAN)</p> <p>UG-T — PROPOSED UNDERGROUND TELECOMMUNICATIONS SERVICE LINE</p> <p>G — PROPOSED UNDERGROUND GAS SERVICE LINE</p> <p>SAN — PROPOSED SANITARY LATERAL</p> <p>ST — PROPOSED STORM WATER SEWER PIPE</p> | <p>PROPOSED ROOF DOWNSPOUT</p> <p>PROPOSED ROOF DOWNSPOUT SPLASH PAD</p> <p>PROPOSED CURB INLET</p> <p>PROPOSED AREA INLET</p> <p>PROPOSED SANITARY AND STORM YARD CLEANOUT</p> <p>PROPOSED STORM MANHOLE</p> <p>GRASSY DRAINAGE FLAT BOTTOM SWALE</p> <p>PROPOSED WHEELSTOP</p> <p>PROPOSED BOLLARD</p> <p>PROPOSED DIRECTIONAL SIGNAGE</p> <p>PROPOSED VACUUM CANOPY</p> <p>PROPOSED 6' TALL ARTISAN PRECAST MASONRY FENCE (OR APPROVED EQUAL)</p> <p>PROPOSED 4' TALL SCREEN WALL WITH COLUMNS</p> <p>PROPOSED 2'-3" KNEE-WALL WITH 4" PILASTER</p> <p>PROPOSED FLUSH PAVEMENT WITH WALK</p> | <p>PROPOSED VARIABLE HEIGHT CURB (REVEAL FROM 6" TO 0")</p> <p>PROPOSED ADA ACCESSIBLE RAMP (5% < SLOPE < 8.33%)</p> <p>PROPOSED CROSSWALK (CROSS HATCHING SHOWN FOR REFERENCE ONLY)</p> <p>PROPOSED CONCRETE WALKWAY</p> <p>PROPOSED HEAVY DUTY CONCRETE</p> <p>PROPOSED MONUMENT SIGN & POLE SIGN</p> <p>PROPOSED EASEMENT</p> <p>TREE PROTECTION AREAS (NO GRADING)</p> |
|--|---|--|



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REFERENCE
1. TOPOGRAPHIC SURVEY PROVIDED BY CLIENT DATED SEPTEMBER 9, 2006. TREE SURVEY PROVIDED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED JANUARY 15, 2009.



ZIP- 63146

MSD MAP# 17-N

P-

REVISION RECORD	
NO.	DATE
1	11/14/2016
2	
3	
4	
5	
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7	
8	

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(636) 549-1600

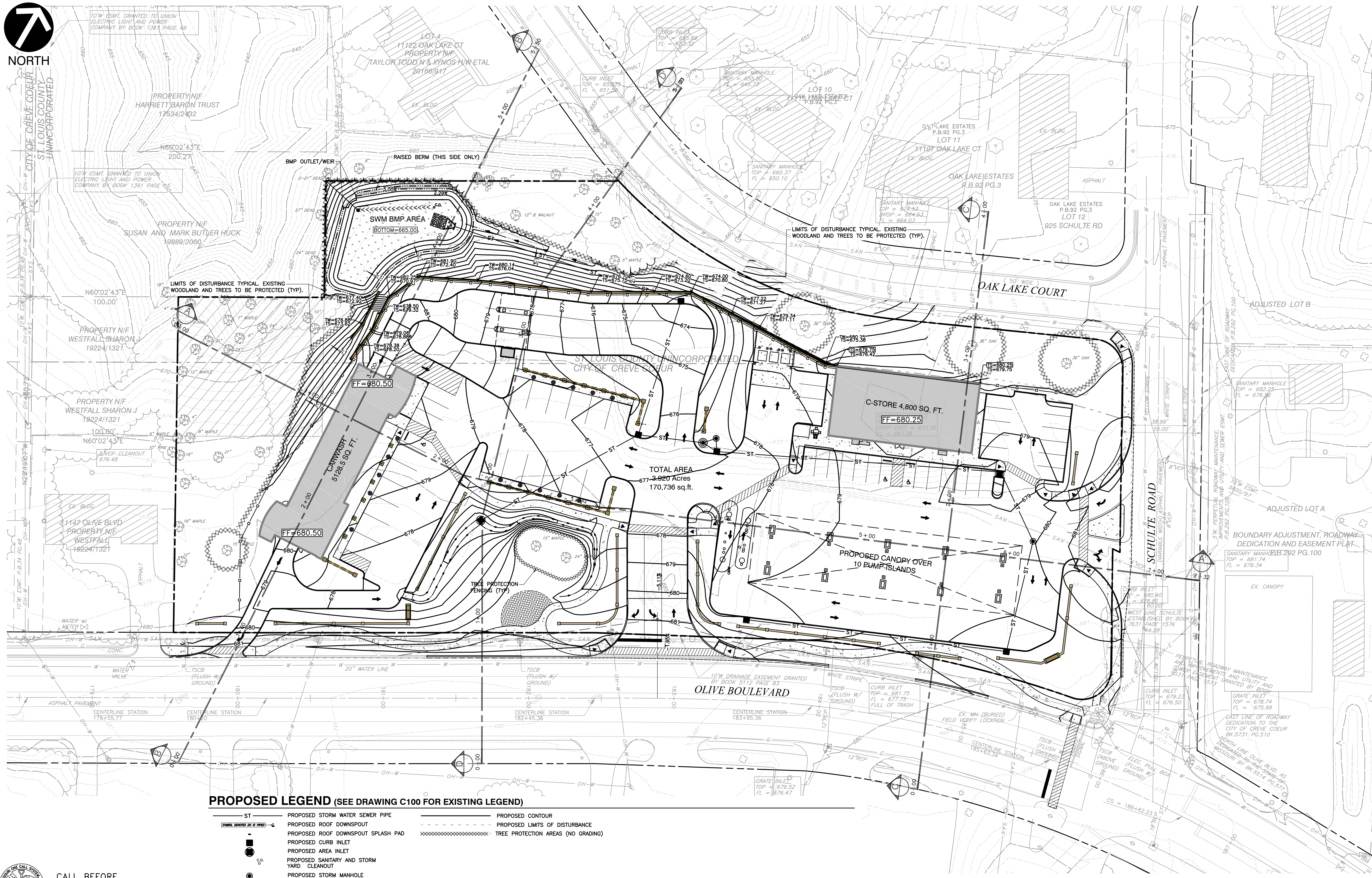
SITE DEVELOPMENT PLAN	
MOBIL ON THE RUN & BRITE WASH	
SITE & UTILITY PLAN	
DATE:	AUG. 2016
DRAWN BY:	CAC
CHECKED BY:	KTK
PROJECT NO.:	110-241
APPROVED BY:	KTK

DRAWING NO. **C200**

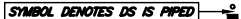
SHEET 03 OF 05



CITY OF CREVE COEUR
 ST. LOUIS COUNTY
 MINING CORPORATION



PROPOSED LEGEND (SEE DRAWING C100 FOR EXISTING LEGEND)

- | | | |
|---|--|---|
| ST | PROPOSED STORM WATER SEWER PIPE | PROPOSED CONTOUR |
|  | PROPOSED ROOF DOWNSPOUT | ----- PROPOSED LIMITS OF DISTURBANCE |
|  | PROPOSED ROOF DOWNSPOUT SPLASH PAD | XXXXXXXXXXXXXXXXXXXX TREE PROTECTION AREAS (NO GRADING) |
|  | PROPOSED AREA INLET | |
|  | PROPOSED SANITARY AND STORM YARD CLEANOUT | |
|  | PROPOSED STORM MANHOLE | |
|  | GRASSY DRAINAGE FLAT BOTTOM SWALE | |
|  | PROPOSED 6' TALL ARTISAN PRECAST MASONRY FENCE (OR APPROVED EQUAL) | |
|  | PROPOSED 4' TALL SCREEN WALL WITH COLUMNS | |
|  | PROPOSED 2'-3' KNEE-WALL WITH 4' PILASTER | |
|  | PROPOSED FLUSH PAVEMENT WITH WALK | |
|  | PROPOSED VARIABLE HEIGHT CURB (REVEAL FROM 6" TO 0") | |
|  | PROPOSED ADA ACCESSIBLE RAMP (5% < SLOPE < 8.33%) | |
|  | | |

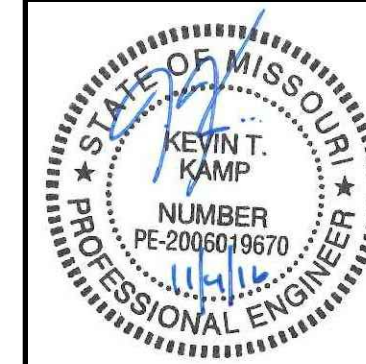
REFERENCE

1. TOPOGRAPHIC SURVEY PROVIDED BY CLIENT DATED SEPTEMBER 9, 2006. TREE SURVEY PROVIDED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED JANUARY 15, 2009.



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*HAND SIGNATURE ON FILE



SCALE IN FEET



0 30 60

ZIP- 63146

MSD MAP# 17-N

o

SITE DEVELOPMENT PLAN
MOBIL ON THE RUN & BRITE WORX

GRADING PLAN

DRAWING NO. **C**

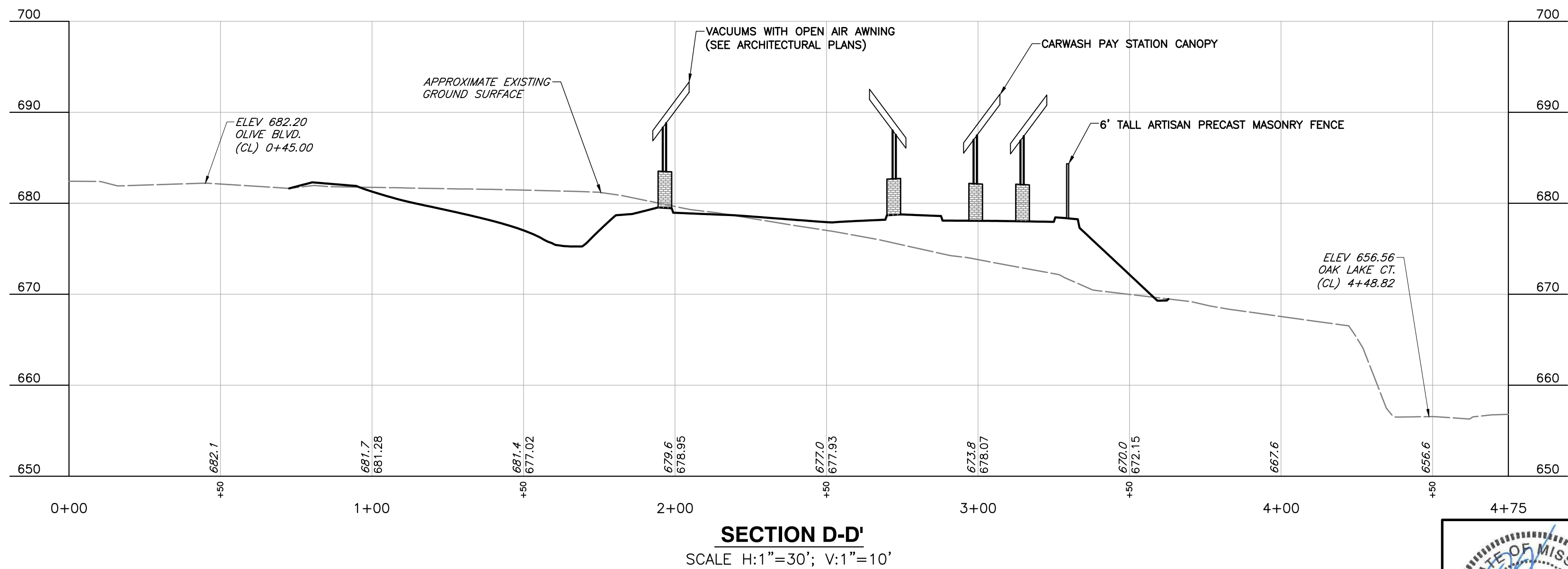
SHEET 0

NO.:
C300
04 OF 0

WALLIS COMPANIES
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CUBA, MO 65453
(636) 549-1600

Civil & Environmental Consultants, Inc.

REVISION RECORD		
DESCRIPTION		
NO	DATE	
1	11/04/01	SUBMITTAL TO CITY OF GREVE COLLIER REZONINGS, CONDITIONAL USE & SITE DEVELOPMENT PLAN, PLAT
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----
7	----	----
8	----	----



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YOU DIG!
1-800-DIG-RITE

SITE DEVELOPMENT PLAN MOBIL ON THE RUN & BRITE WORX	
SITE SECTIONS	
DATE:	AUG. 2016
DWG SCALE:	AS NOTED
PROJECT NO:	110-241
APPROVED BY:	KTK*
DRAWN BY:	KTK
CHECKED BY:	CAC

MSD MAP# 17-N

SITE DEVELOPMENT PLAN

MOBIL ON THE RUN & BRITE WORX

SITE SECTIONS	
---------------	--

SCALE:	AUG. 2016	DRAWN BY:	CAC
	AS NOTED	CHECKED BY:	KTK

SCALE:	AS NOTED	CHECKED BY:	KTK
TEST NO:	110-241		
TESTED BY:	KTK**		

DRAWING NO.:

C301

SHEET 05 OF 05

--

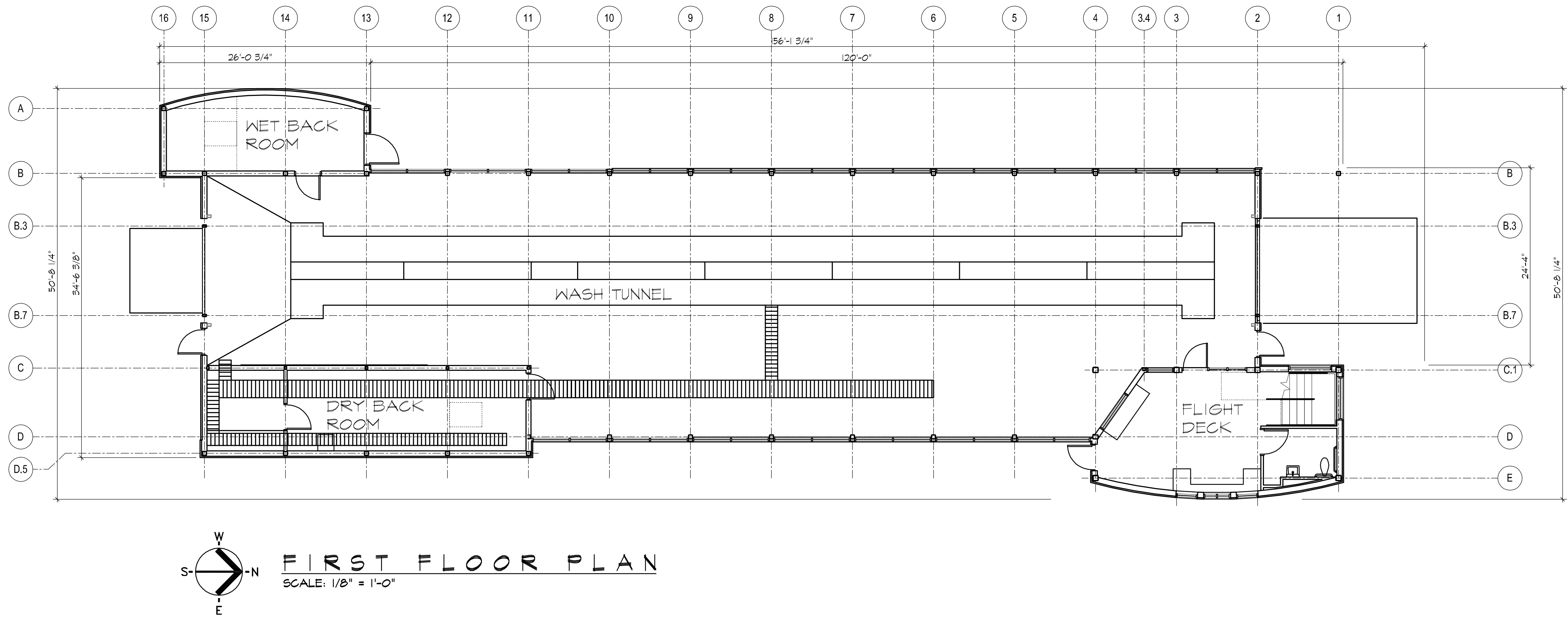
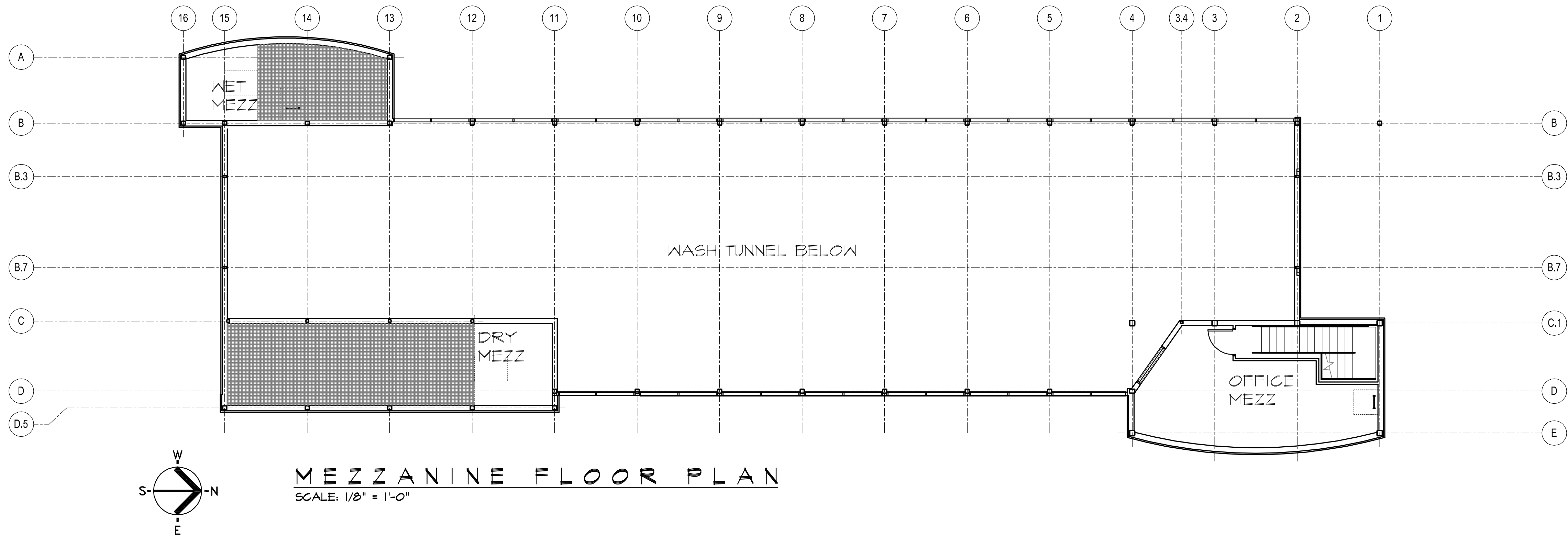


PROJECT NUMBER	1623
DATE	11-4-16
DRAWN BY	TSW
CHECKED BY	SNM
REVISION	

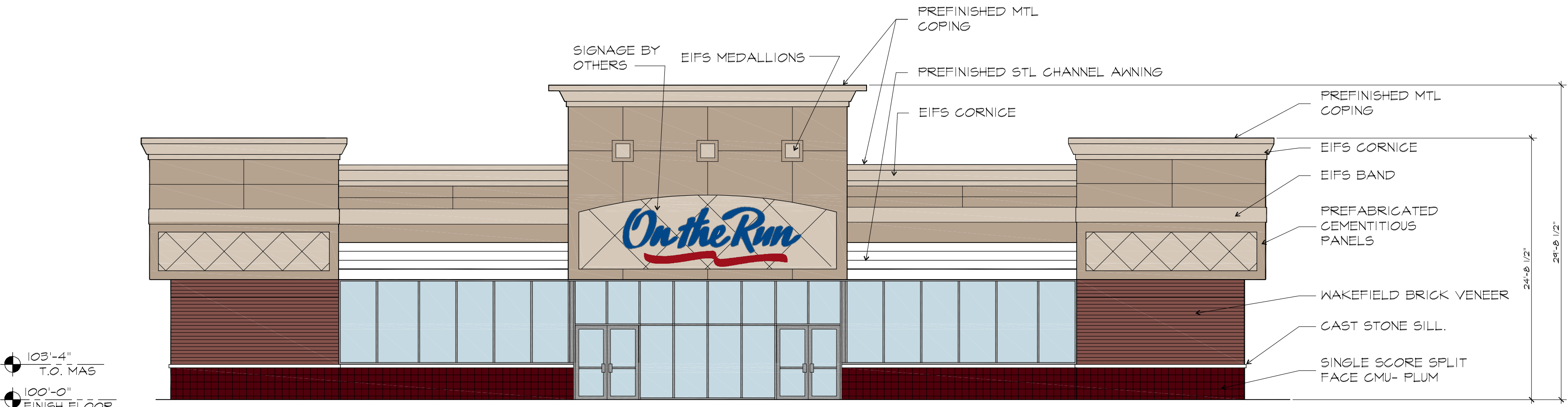
FLOOR PLAN

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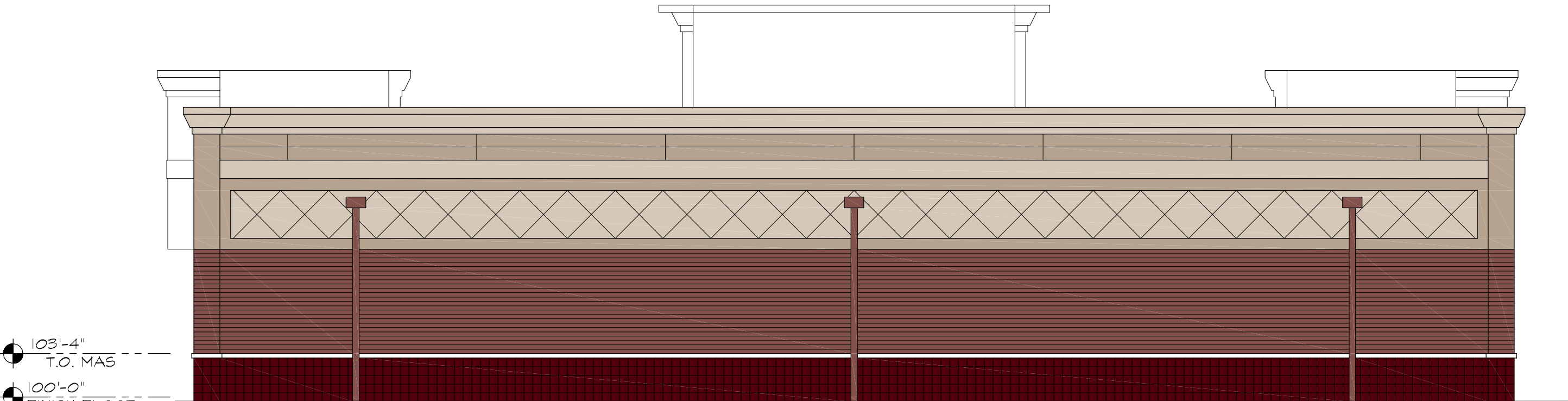




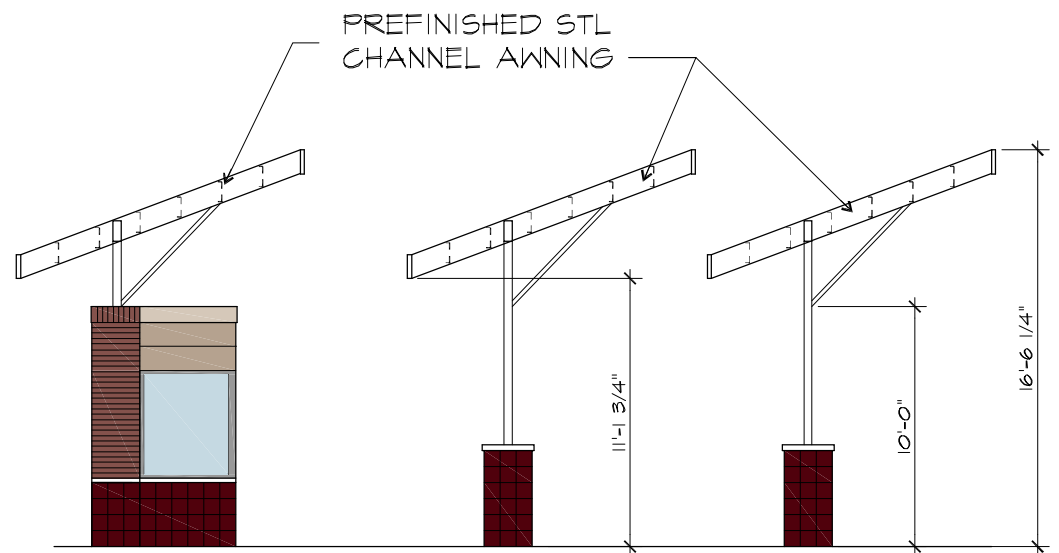
PROJECT NUMBER	1623
DATE	11-4-16
DRAWN BY	JVF
CHECKED BY	SAM
REVISION	



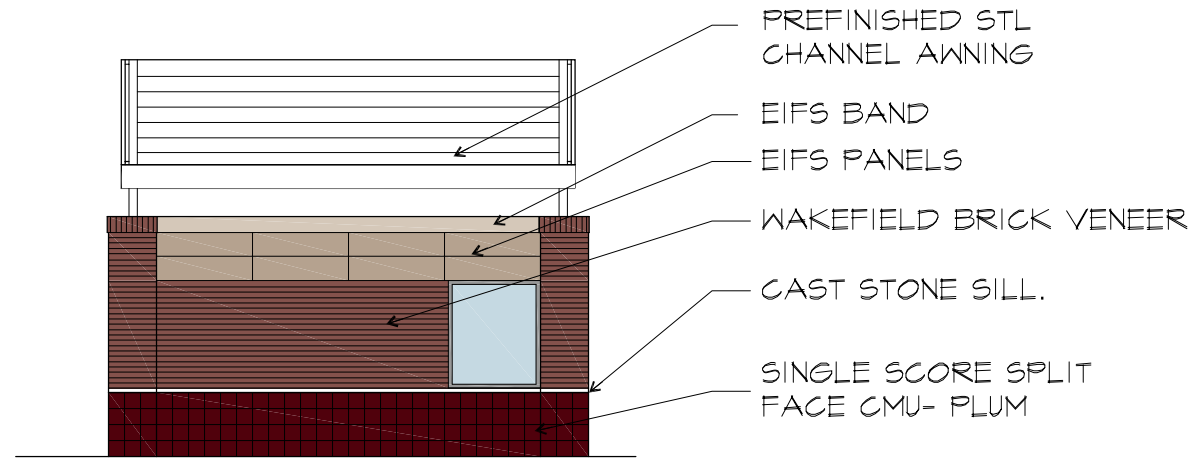
SOUTH ELEVATION- C-STORE
SCALE: 1/8" = 1'-0"



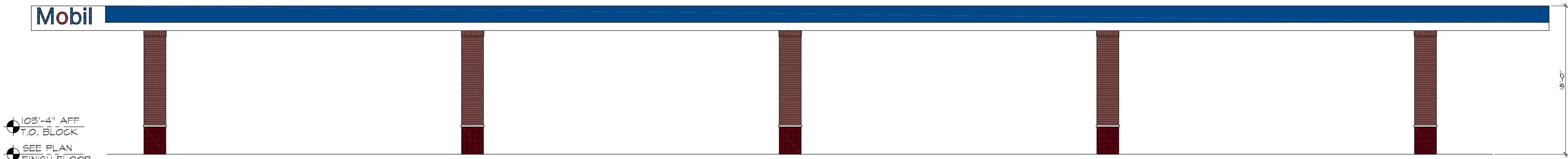
NORTH ELEVATION- C-STORE
SCALE: 1/8" = 1'-0"



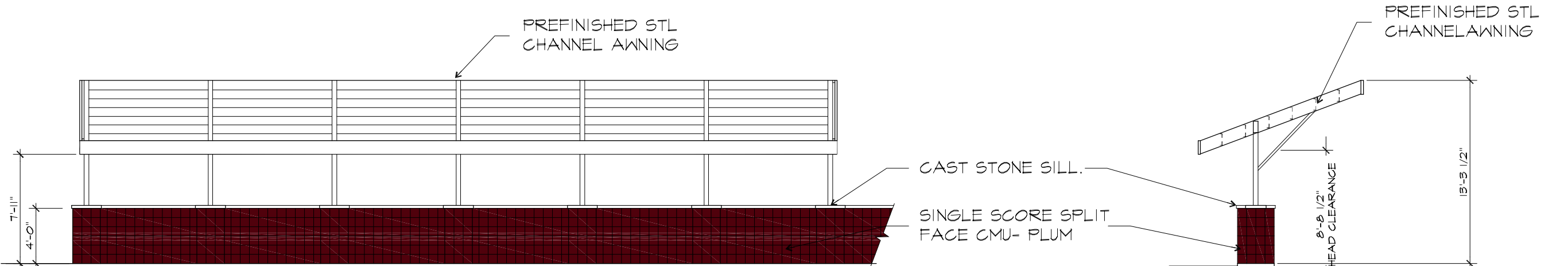
EAST ELEVATION- CW CANOPY
SCALE: 1/8" = 1'-0"



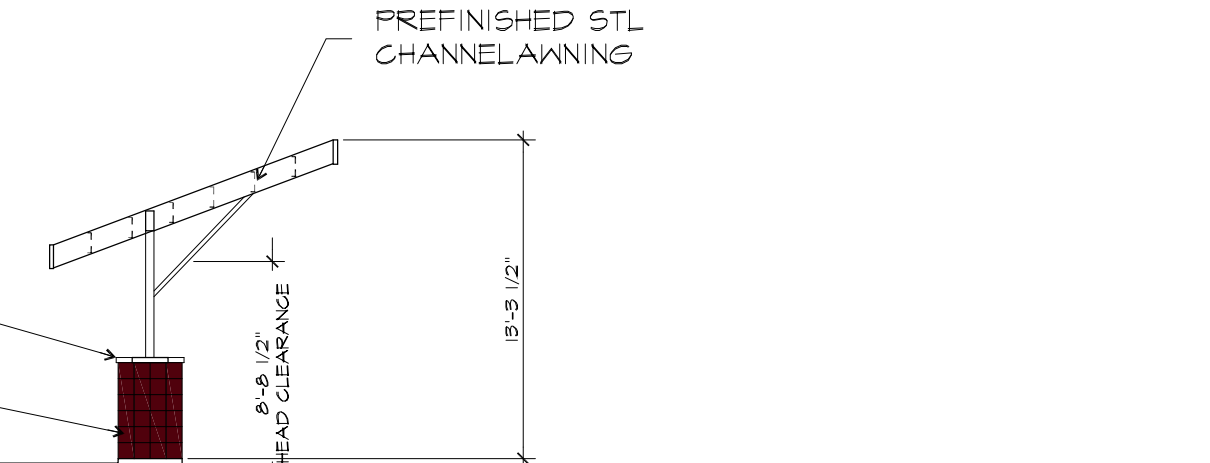
SOUTH ELEVATION- CW CANOPY
SCALE: 1/8" = 1'-0"



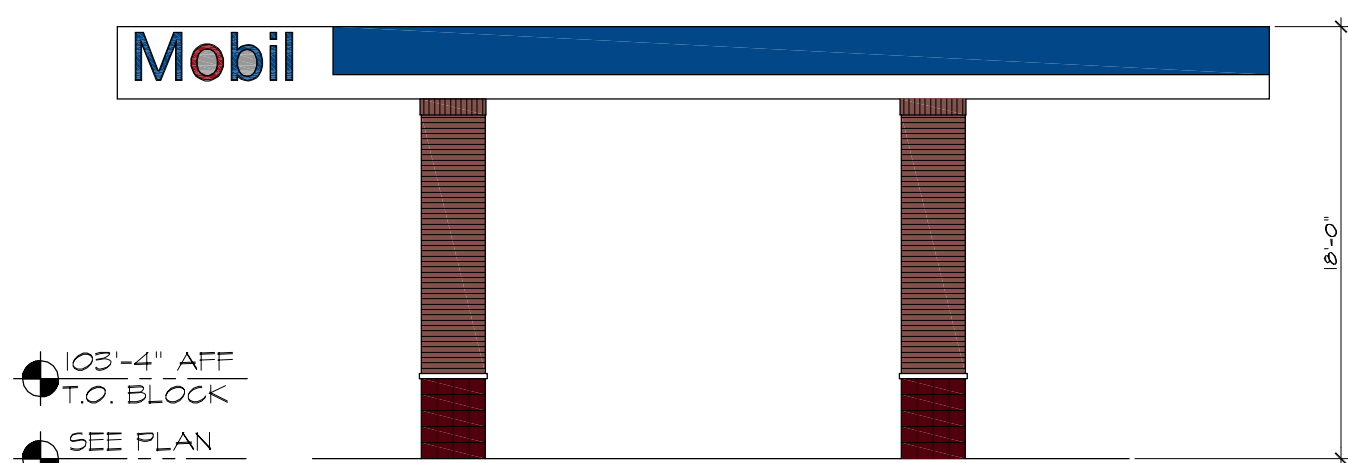
SOUTH ELEVATION FUEL CANOPY
SCALE: 1/8" = 1'-0"



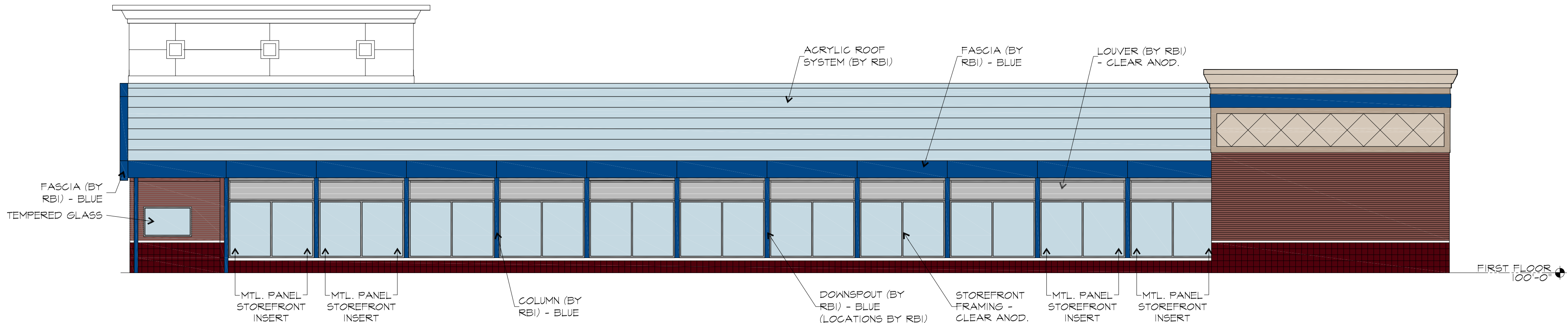
SOUTH ELEVATION- VACUUM SCREEN- CONNECTOR
SCALE: 1/8" = 1'-0"



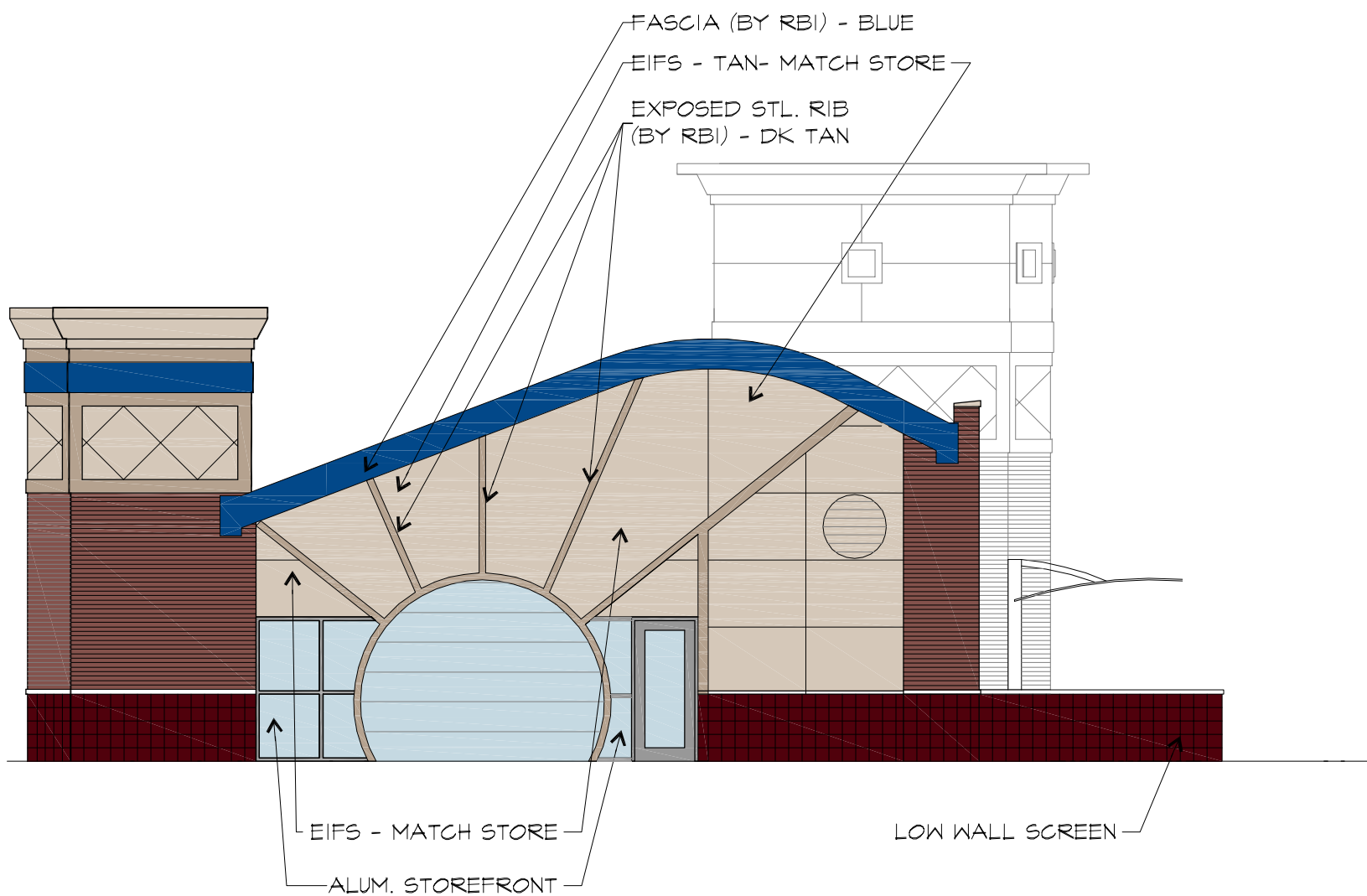
EAST ELEVATION VACUUM SCREEN
SCALE: 1/8" = 1'-0"



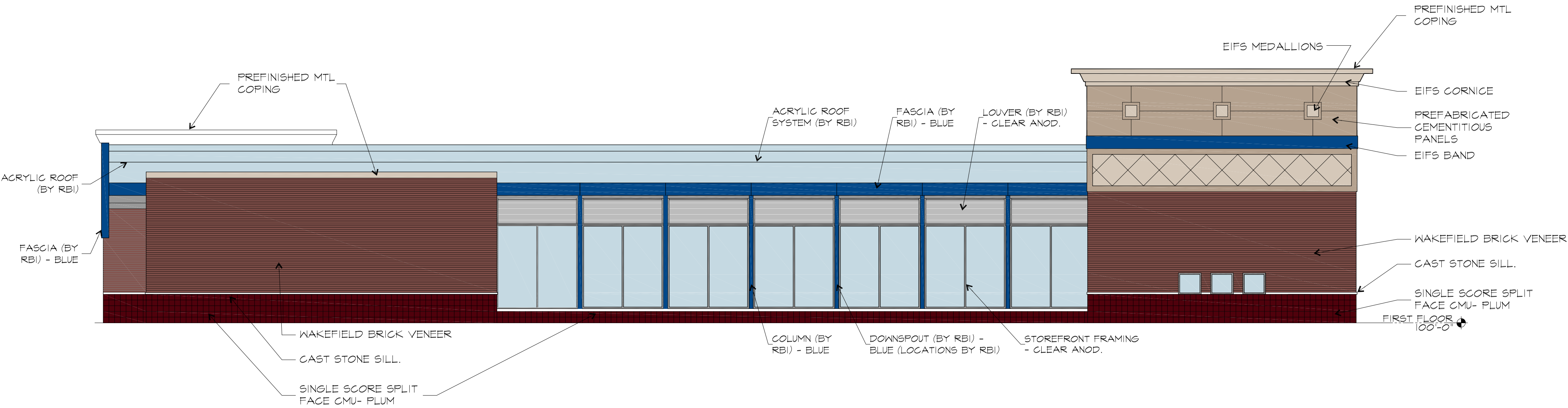
EAST ELEVATION FUEL CANOPY
SCALE: 1/8" = 1'-0"



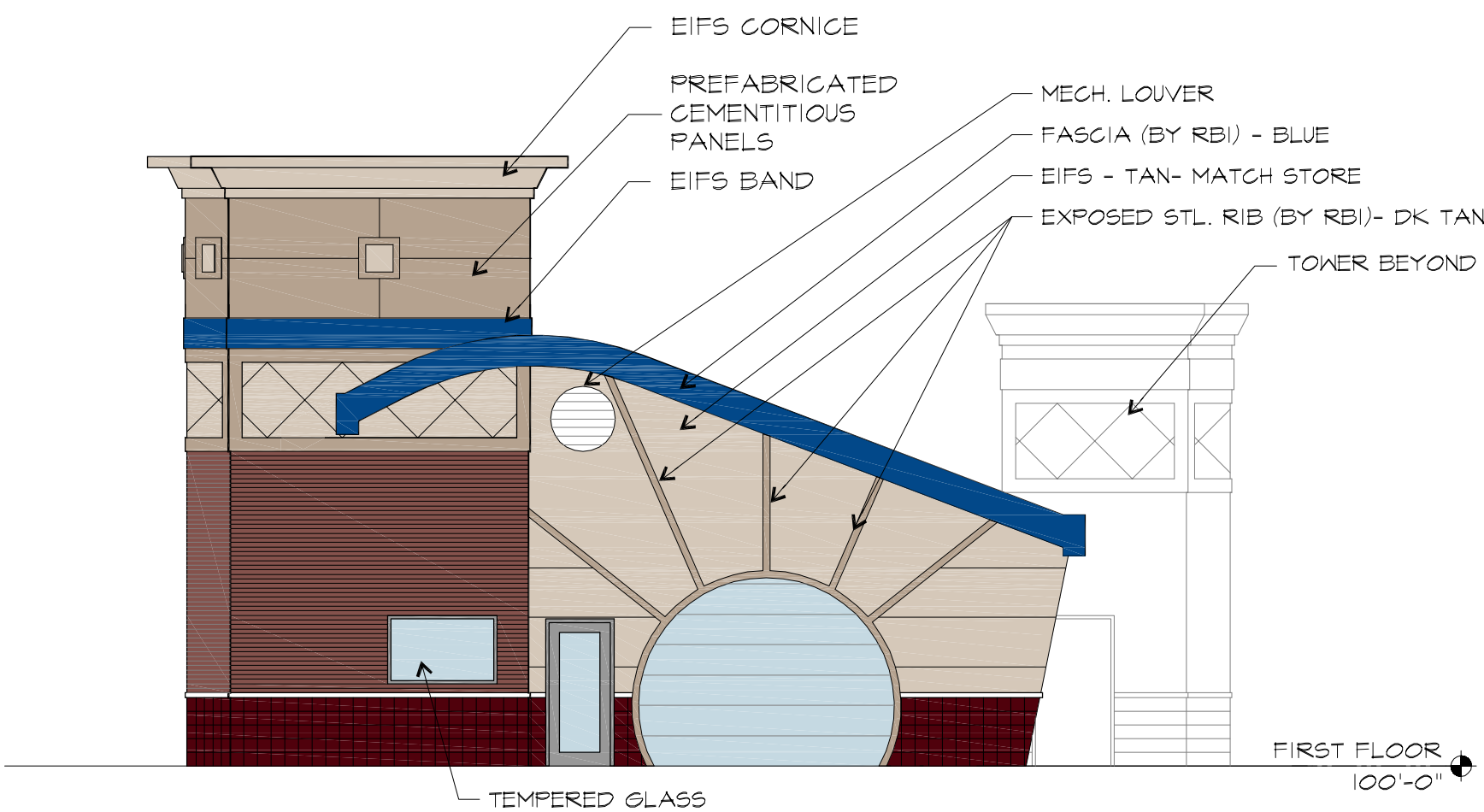
WEST ELEVATION
SCALE: 1/8" = 1'-0"



SOUTH ELEVATION
SCALE: 1/8" = 1'-0"



EAST ELEVATION
SCALE: 1/8" = 1'-0"



NORTH ELEVATION
SCALE: 1/8" = 1'-0"

EXISTING TREES

74 TREES EXIST ON THE SITE
24 TREES 8" CAL AND LARGER WILL BE PRESERVED (32% OF EXISTING TREES) TO MEET THE 25% REQUIREMENTS OF THE TREE CONSERVATION ORDINANCE.
2 ADDITIONAL LARGE TREES (A 15" AND 24" MAPLE IN THE FRONT OF THE PROJECT) WILL HAVE PROTECTION ATTEMPTED (DEMO AROUND THESE TREES WILL BE PARTICULARLY DIFFICULT...IF THEY ARE REMOVED, THEY WILL BE REPLACED WITH 3" CAL SHADE TREES)
8 ADDITIONAL TREES (< 8" CAL SO NOT COUNTED IN THE TREE CONSERVATION ORDINANCE, BUT DO COUNT TOWARDS LANDSCAPING CREDITS) OF QUALITY NATIVE SPECIES (DOGWOOD, OAK, MAPLE, ETC) WILL ALSO BE PRESERVED
.34 ACRES OF UNDISTURBED WOODLAND UNDERSTORY WILL BE PRESERVED IN THE ROOT PROTECTION ZONES TO PRESERVE THE EXISTING DENSE VEGETATIVE SCREENING FOR THE ADJACENT RESIDENTIAL LOTS.

TOTAL TREES PROTECTED ON SITE = 34

EXISTING TREES TO BE PRESERVED WILL HAVE AN APPROXIMATE TREE ROOT PROTECTION AREA AS SHOWN.

FIELD ADJUSTMENT MAY BE NECESSARY FOR DEMO OF EXISTING STRUCTURES.

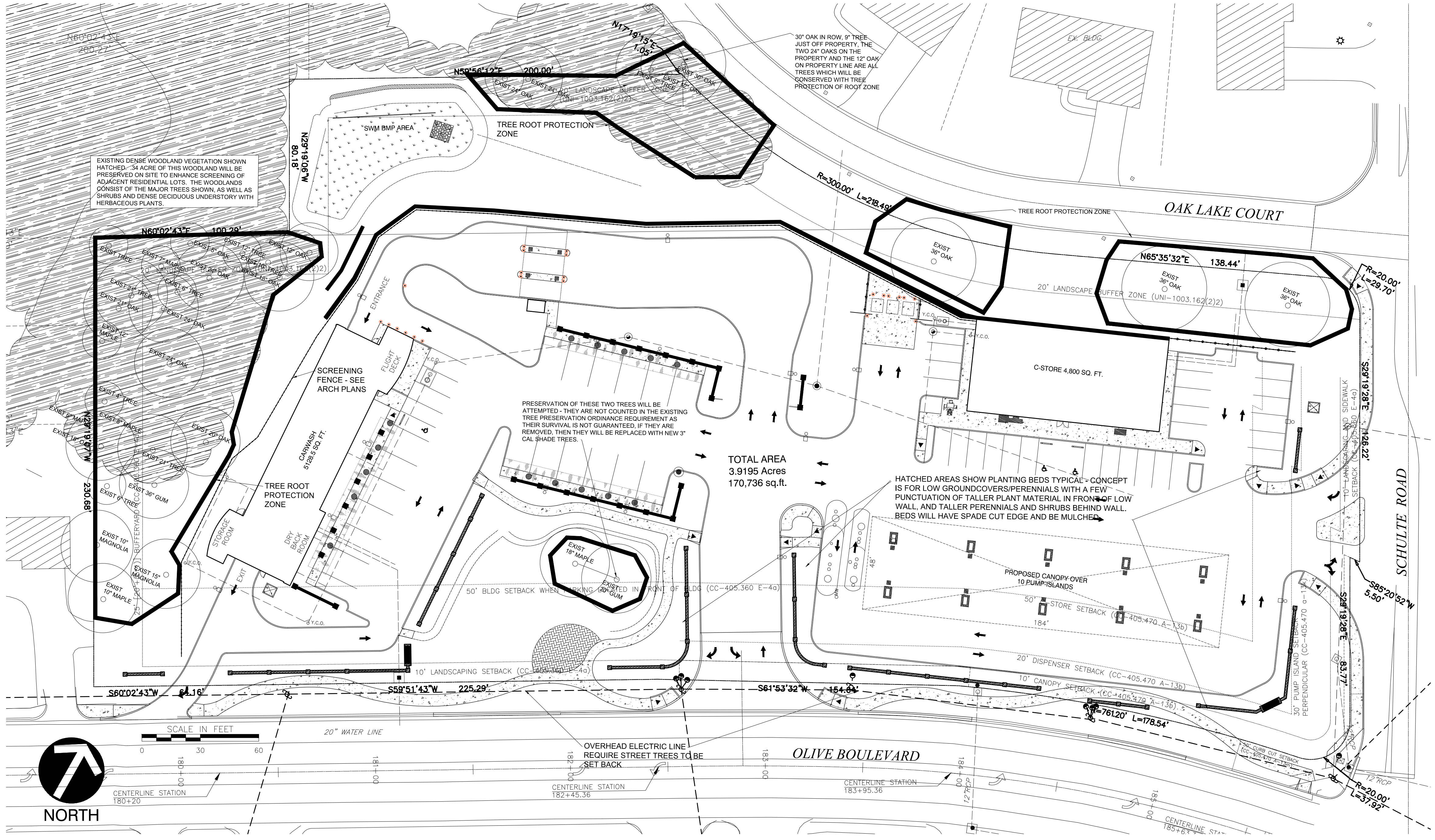
DEVELOPMENT NOTES

- TOTAL PARCEL AREA: 170,736 SQ.FT. (3.920 ACRES)
AREA WITHIN CITY LIMITS: 122,277 SQ.FT. (2.807 ACRES)
AREA WITHIN UNINCORPORATED: 48,459 SQ. FT. (1.113 ACRES)
- CURRENT ZONING (CC)– SINGLE FAMILY RESIDENTIAL & GENERAL COMMERCIAL
PROPOSED ZONING (CC)– GENERAL COMMERCIAL
CURRENT ZONING (UNI)– R3 (RESIDENCE) & C8 (PLANNED COMMERCIAL DISTRICT)
PROPOSED ZONING (UNI)– C8 (PLANNED COMMERCIAL DISTRICT)
- SETBACKS–
FRONT YARD/ROW (CC) 10 FEET OLIVE BLVD. (CC)
SIDE YARD (CC) 0 FEET SCHULTE ROAD (IN LIEU OF ROW GIVEN TO COUNTY)
SIDE YARD (UNI) 12 FEET
REAR YARD (UNI) 10 FEET
BUFFER YARD 15 FEET (NORTH PROPERTY LINE)
"BUFFER YARD @ 20FT + (5 X 1) = 25 FEET
BUILDING HEIGHT 25 FEET [SEC 405.360 E-40]* WITH FENCE FOR DRIVE THRU SCREENING
NOTE: ALL PROPOSED BUILDINGS TO BE 1 STORY IN HEIGHT
- SPECIAL CONSIDERATIONS–
4.1. TRASH ENCLOSURES SHALL BE INTERIOR TO THE SITE AND NOT ALONG THE NORTH PROPERTY LINE
4.2. SIDEWALKS ALONG OLIVE BLVD. SHALL BE FIVE-FOOT IN WIDTH UNLESS ABUTTING CURB, IN WHICH CASE SHALL BE INCREASED TO SIX-FOOT WIDE.
4.3. PLAN SHALL BE SO DEVELOPED TO INCLUDE AN INTEGRATED PEDESTRIAN CIRCULATION SYSTEM.
- FIRE DISTRICT: CREVE COEUR
- FLOOD NOTE:
ACCORDING TO THE FLOOD INSURANCE RATE MAP OF THE CITY OF CREVE COEUR, MISSOURI (COMMUNITY PANEL NUMBER 290344 0166 H, EFFECTIVE DATE AUGUST 2, 1995), AND THE FLOOD INSURANCE RATE MAP OF ST. LOUIS COUNTY, MISSOURI (UNINCORPORATED AREAS) (COMMUNITY PANEL NUMBER 290327 0166 H, EFFECTIVE DATE AUGUST 2, 1995) THIS PROPERTY LIES WITHIN ZONE X. ZONE X IS DEFINED AS AN AREA OF MINIMAL FLOOD HAZARD.
- ALL PROPOSED UTILITIES SHALL BE LOCATED UNDERGROUND.
- TRASH ENCLOSURES SHALL BE SIX FOOT (6') IN HEIGHT AND SHALL BE CONSTRUCTED W/ A SIGHT-PROOF GATE; MATERIALS SHALL BE COMPATIBLE WITH THE ARCHITECTURE OF MAIN BUILDINGS AND OF SIMILAR MATERIALS.
- STACKING: GENERAL STANDARDS
9.1. DRIVE-THROUGH STACKING LANES SHALL HAVE A MINIMUM WIDTH OF TWELVE FEET.
9.2. STACKING LANES SHALL BE SET BACK 20 FEET FROM RESIDENTIALLY ZONED PROPERTY LINES.
9.3. AUDIBLE ELECTRONIC DEVICES SUCH AS LOUDSPEAKERS, AUTOMOBILE SERVICE ORDER DEVICES, AND SIMILAR INSTRUMENTS SHALL NOT BE LOCATED WITHIN 50 FEET OF ANY RESIDENTIAL PROPERTY LINE.
9.4. ALL DRIVE-THROUGH AREAS, INCLUDING BUT NOT LIMITED TO MENU BOARDS, STACKING LANES, TRASH RECEPTACLES, LOUDSPEAKERS, DRIVE UP WINDOWS, AND OTHER OBJECTS ASSOCIATED WITH THE DRIVE-THROUGH AREA SHALL BE LOCATED IN THE SIDE OR REAR YARD OF A PROPERTY, AND SHALL NOT CROSS, INTERFERE WITH, OR IMPEDE ANY PUBLIC RIGHT-OF-WAY.
- CROSS-ACCESS TO BE ESTABLISHED BY PLAT.

PARKING CALCULATIONS:
CREVE COEUR:
REQUIRED = GENERAL RETAIL @ 4 PER 1,000 SQ.FT. = 19.2
UNINCORPORATED-:
REQUIRED = CARWASH @ 1/BAY + 5 STACKING PER BAY = 20
= FOOD MARKET @ 3-1/3 PER 1,000 SQ.FT. = 15.9
PROVIDED = 27 STACKING
= 30 SPACES INCLUSIVE OF 2 ACCESSIBLE SPACES

SITE CALCULATIONS 170,736 SQ.FT.:	
AREA CREVE COEUR	= 122,277 SQ.FT.
GREENSPACE (CC)	= 45,466.5
IMPERVIOUS (CC)	= 76,810.5 (62.8%)
AREA UNINCORPORATED = 48,459 SQ. FT. (1.109 ACRES)	
GREENSPACE (UNI)	= 38,826
IMPERVIOUS (CC)	= 9,633 (19.9%)
TOTAL GREENSPACE = 84,292.5 (49.4%)	
TOTAL IMPERVIOUS = 86,433.5 (50.6%)	
RATIO OF FLOOR TO SITE IN SQ.FT. (FAR)	
1:17.2 (1 SQ.FT. OF FLOOR SPACE TO 17.2 SQ.FT. OF PARCEL AREA)	

TREE SURVEY AND PRESERVATION PLAN preliminary



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PLANNED COMMERCIAL DEVELOPMENT		MFD	
BRITE WORX CARWASHERY		DRAFT	
MOBIL ON THE RUN		110-241	
WALLIS COMPANIES		DRAFT	
DATE:	NOV 2016	DRAWN BY:	
DWG SCALE:	1"=30'	CHECKED BY:	
PROJECT NO:		APPROVED BY:	
DRAWING NO.:	LA 01		
SHEET	1	OF	2

TREES

EXISTING TREES - 72 TREES EXIST ON THE SITE -18 WILL BE PRESERVED

STREET TREES ALONG OLIVE - OVERHEAD UTILITIES OBSTRUCT THE PLACEMENT OF STREET TREES ALONG THIS ENTIRE FRONTAGE
2 OF THE EXISTING LARGE SHADE TREES, 1 NEW LARGE SHADE TREES, 2 NEW FLOWERING TREES AND 13 COLUMNAR DECIDUOUS TREES WILL BE PROVIDED ALONG THIS STREET IN LOCATIONS THAT CAN BE SET BACK FROM THE UTILITY INTERFERENCE.

STREET TREES ALONG SCHULTE - OVERHEAD UTILITIES OBSTRUCT THE PLACEMENT OF STREET TREES ALONG THIS FRONTAGE
EXCEPT AT THE VERY NORTH END WHICH CAN ACCOMMODATE 2 STREET TREES. AN ADDITIONAL 2 LARGE SHADE TREES WILL BE PROVIDED ALONG THIS STREET IN LOCATIONS THAT CAN BE SET BACK FROM THE UTILITY INTERFERENCE AND NOT OBSTRUCT THE SIGHT TRIANGLE OF THE INTERSECTION.

PARKING LOT TREES - 12 PARKING LOT TREES ARE REQUIRED FOR THE PROPOSED LINEAL FEET OF PARKING AND VACUUM SPACES
10 LARGE DECIDUOUS TREES 2 FLOWERING TREES ARE PROVIDED TO MEET THIS REQUIREMENT

14 ADDITIONAL TREES (A MIX OF SHADE TREES, FLOWERING TREES AND EVERGREEN TREES) WILL BE PROVIDED IN THE GREEN SPACE TO THE NORTH AND WEST OF THE PROPERTY FOR RESIDENTIAL BUFFER.

TOTAL PROPOSED TREES = 46 NEW TREES AND 34 EXISTING TREES = 80

- NOTES:
1. ALL LANDSCAPE AREAS WITHIN GRADING LIMITS TO BE IRRIGATED.
 2. ALL GREENSPACE AREAS OUTSIDE OF MULCHED LANDSCAPE BEDS TO BE SODDED TURF.

PLANTING CONCEPT

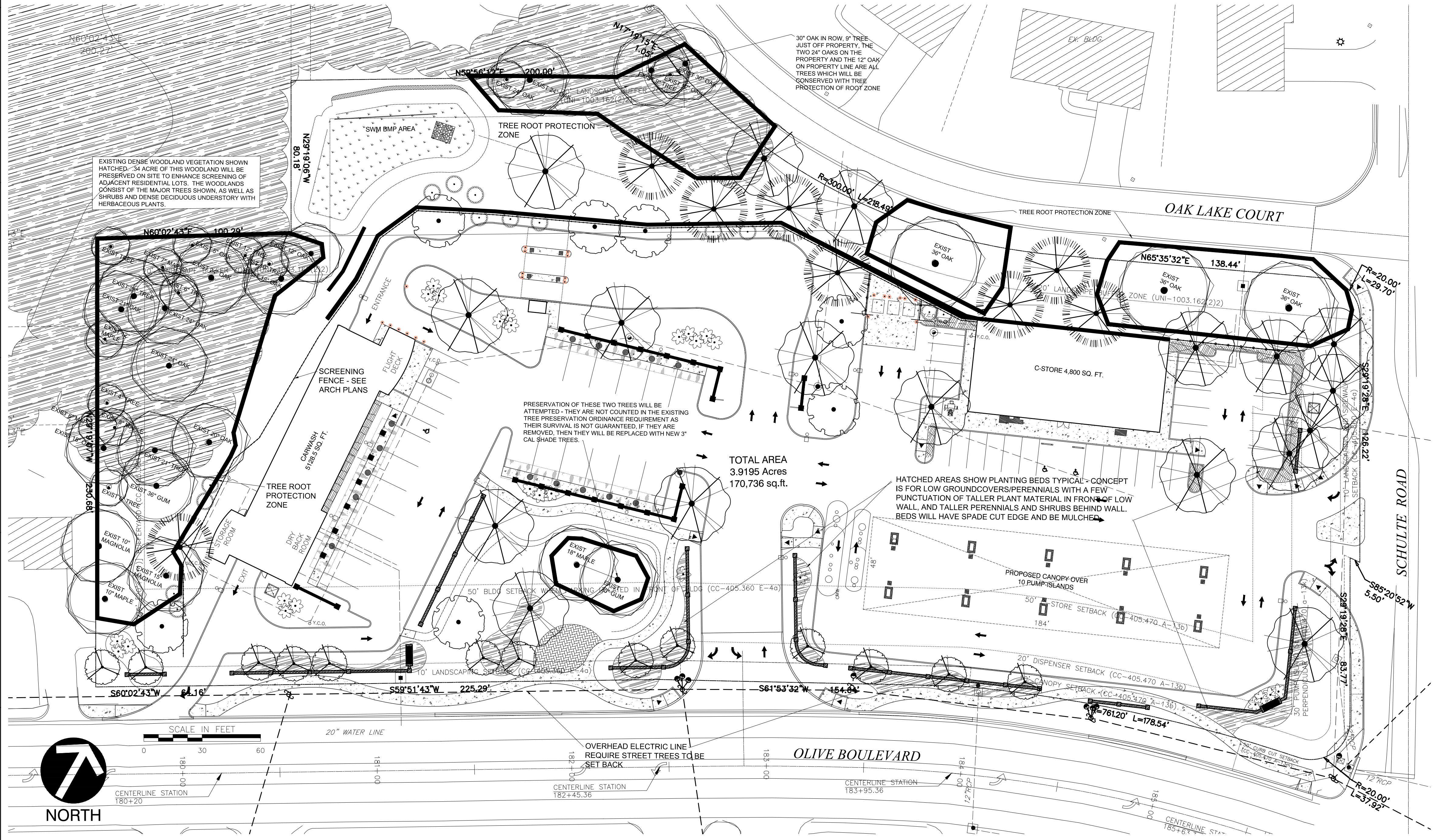
OLIVE AND SCHULTE SIDES: THE MAIN LANDSCAPE TREATMENT IS THE ORNAMENTAL KNEE WALL. THIS WALL IS ACCENTED WITH VERY LOW GROUNDCOVER BEDS IN FRONT AND PUNCTUATED WITH TALLER FLOWERING SHRUBS ON THE BACKSIDE WHICH WILL BE TALLER THAN THE WALL CREATING A MODULATING LAYERED LOOK WHICH ENHANCES THE WALL WITHOUT OBSCURING IT. IN THE FRONT PLAZA AREA, THE EXISTING TREES GIVE INSTANT VEGETATIVE MASS AND ARE SUPPLEMENTED WITH A GARDEN STYLE LANDSCAPE OF FLOWERING TREES, SHRUBS AND PERENNIAL FLOWERS. ON THE NORTH AND WEST MANY LARGE EXISTING TREES ARE PRESERVED AS AN IMMEDIATE BUFFER TO THE RESIDENTIAL AREA, AND MANY ADDITIONAL EVERGREENS AND SOME DECIDUOUS TREES ARE PROPOSED FOR FURTHER SCREENING.

ALL OTHER INFORMATION BESIDES THE PROPOSED PLANTINGS ARE SHOWN FOR REFERENCE ONLY. CONSULT THE SITE DEVELOPMENT PLAN, CIVIL, AND ARCHITECTURAL PLANS FOR CONFIRMATION OF ALL HARDSCAPE ELEMENTS.

DEVELOPMENT NOTES

1. TOTAL PARCEL AREA: 170,736 SQ.FT. (3.920 ACRES)
AREA WITHIN CITY LIMITS: 122,277 SQ.FT. (2.807 ACRES)
AREA WITHIN UNINCORPORATED: 48,459 SQ. FT. (1.113 ACRES)
 2. CURRENT ZONING (CC)-
PROPOSED ZONING (CC)-
CURRENT ZONING (UNI)-
PROPOSED ZONING (UNI)-
SINGLE FAMILY RESIDENTIAL & GENERAL COMMERCIAL
GENERAL COMMERCIAL
R3 (RESIDENCE) & C8 (PLANNED COMMERCIAL DISTRICT)
C8 (PLANNED COMMERCIAL DISTRICT)
 3. SETBACKS-
FRONT YARD/ROW (CC) 10 FEET OLIVE BLVD. (CC)
0 FEET SCHULTE ROAD (IN LIEU OF ROW GIVEN TO COUNTY)
SIDE YARD (CC) 12 FEET
SIDE YARD (UNI) 10 FEET
REAR YARD (UNI) 15 FEET (NORTH PROPERTY LINE)
BUFFER YARD 25 FEET [SEC 405.360 E-48]* WITH FENCE FOR DRIVE THRU SCREENING
*BUFFER YARD @ 20FT + (5 X 1) = 25 FEET
BUILDING HEIGHT NOTE: ALL PROPOSED BUILDINGS TO BE 1 STORY IN HEIGHT
 4. SPECIAL CONSIDERATIONS-
4.1. TRASH ENCLOSURES SHALL BE INTERIOR TO THE SITE AND NOT ALONG THE NORTH PROPERTY LINE
4.2. SIDEWALKS ALONG OLIVE BLVD. SHALL BE FIVE-FOOT IN WIDTH UNLESS ABUTTING CURB, IN WHICH CASE SHALL BE INCREASED TO SIX-FOOT WIDE.
4.3. PLAN SHALL BE SO DEVELOPED TO INCLUDE AN INTEGRATED PEDESTRIAN CIRCULATION SYSTEM.
 5. FIRE DISTRICT: CREVE COEUR
 6. FLOOD NOTE:
ACCORDING TO THE FLOOD INSURANCE RATE MAP OF THE CITY OF CREVE COEUR, MISSOURI (COMMUNITY PANEL NUMBER 290344 0166 H, EFFECTIVE DATE AUGUST 2, 1995), AND THE FLOOD INSURANCE RATE MAP OF ST. LOUIS COUNTY, MISSOURI (UNINCORPORATED AREAS) (COMMUNITY PANEL NUMBER 290327 0166 H, EFFECTIVE DATE AUGUST 2, 1995) THIS PROPERTY LIES WITHIN ZONE X. ZONE X IS DEFINED AS AN AREA OF MINIMAL FLOOD HAZARD.
 7. ALL PROPOSED UTILITIES SHALL BE LOCATED UNDERGROUND,
 8. TRASH ENCLOSURES SHALL BE SIX FOOT (6') IN HEIGHT AND SHALL BE CONSTRUCTED W/ A SIGHT-PROOF GATE; MATERIALS SHALL BE COMPATIBLE WITH THE ARCHITECTURE OF MAIN BUILDINGS AND OF SIMILAR MATERIALS.
 9. STACKING: GENERAL STANDARDS
9.1. DRIVE-THROUGH STACKING LANES SHALL HAVE A MINIMUM WIDTH OF TWELVE FEET.
9.2. STACKING LANES SHALL BE SET BACK 20 FEET FROM RESIDENTIALLY ZONED PROPERTY LINES.
9.3. AUDIBLE ELECTRONIC DEVICES SUCH AS LOUDSPEAKERS, AUTOMOBILE SERVICE ORDER DEVICES, AND SIMILAR INSTRUMENTS SHALL NOT BE LOCATED WITHIN 50 FEET OF ANY RESIDENTIAL PROPERTY LINE.
9.4. ALL DRIVE-THROUGH AREAS, INCLUDING BUT NOT LIMITED TO MENU BOARDS, STACKING LANES, TRASH RECEPTACLES, LOUDSPEAKERS, DRIVE UP WINDOWS, AND OTHER OBJECTS ASSOCIATED WITH THE DRIVE-THROUGH AREA SHALL BE LOCATED IN THE SIDE OR REAR YARD OF A PROPERTY, AND SHALL NOT CROSS, INTERFERE WITH, OR IMPEDE ANY PUBLIC RIGHT-OF-WAY.
 10. CROSS-ACCESS TO BE ESTABLISHED BY PLAT.
- PARKING CALCULATIONS:
CREVE COEUR
REQUIRED = GENERAL RETAIL @ 4 PER 1,000 SQ.FT. = 19.2
UNINCORPORATED-
REQUIRED = CARWASH @ 1/BAY + 5 STACKING PER BAY = 20
= FOOD MARKET @ 3-1/3 PER 1,000 SQ.FT. = 15.9
PROVIDED = 27 STACKING
= 30 SPACES INCLUSIVE OF 2 ACCESSIBLE SPACES
- SITE CALCULATIONS 170,736 SQ.FT.:
AREA CREVE COEUR = 122,277 SQ.FT.
GREENSPACE (CC) = 45,466.5
IMPERVIOUS (CC) = 76,810.5 (62.8%)
AREA UNINCORPORATED = 48,459 SQ. FT. (1.109 ACRES)
GREENSPACE (UNI) = 38,826
IMPERVIOUS (CC) = 9,633 (19.9%)
TOTAL GREENSPACE = 84,292.5 (49.4%)
TOTAL IMPERVIOUS = 86,433.5 (50.6%)
RATIO OF FLOOR TO SITE IN SQ.FT. (FAR) 1:17.2 (1 SQ.FT. OF FLOOR SPACE TO 17.2 SQ.FT. OF PARCEL AREA)

CONCEPT LANDSCAPE PLAN preliminary



CONCEPT_PLANT_SCHEDULE

- 16 LARGE DECIDUOUS TREE
TYPICAL LARGE SHADE TREE SUCH AS MAPLE, HONEYLOCUST, GINKGO, YELLOWWOOD, ETC. INSTALLED AT 2.5-3" CAL INITIAL SIZE.
- 7 SMALL FLOWERING DECIDUOUS TREE
ORNAMENTAL SMALL TREE SUCH AS MULTISTEM REDBUD, FRINGE TREE OR DOGWOOD INSTALLED AT 6' TALL INITIAL SIZE.
- 8 EVERGREEN TREE
LARGE EVERGREEN TREES SUCH AS WHITE PINE, NORWAY SPRUCE AND SERBIAN SPRUCE, INSTALLED AT 6-7' TALL INITIAL SIZE
- 13 COLUMNAR DECIDUOUS TREE
COLUMNAR FORM OF DECIDUOUS SHADE TREES SUCH AS MAPLE, GINKGO OR OAK, THESE STAY NARROW LIKE A COLUMN. INSTALLED AT A 2.5-3" CALIPER INITIAL SIZE
- 34 EXISTING TREE TO REMAIN
THE EXISTING TREES TO BE PRESERVED INCLUDE VARIOUS DECIDUOUS SPECIES AND SOME EVERGREEN SPECIES AS SHOWN ON THE PLAN. THEY RANGE IN SIZE FROM 8" CAL. TO 36" CAL. IN SIZE.
- 15 LARGE EVERGREEN SHRUBS
MATURE AT 20-25' TALL, SLOWER GROWING AND DENSER THAN LARGER EVERGREEN TREES AT MATURITY. 4-5' TALL INITIAL PLANTING SIZE (LARGER INITIAL PLANTING SIZE NOT AVAIL. DUE TO SLOW GROWING NATURE OF THIS TYPE OF EVERGREEN) EXAMPLES INCLUDE KETELEER UPRIGHT JUNIPER AND OAKLEAF HOLLY.
- 27 LARGE FLOWERING SHRUBS
LARGE ORNAMENTAL FLOWERING SHRUBS SUCH AS VIBURNUM, CREPE MYRTLE AND THE LARGE HYDRANGEA (LIMELIGHT)
- 3,175 sf ORNAMENTAL LANDSCAPE
PERENNIAL FLOWERS, LOW SHRUBS, ORNAMENTAL GRASSES AND GROUNDCOVER MIX FOR ORNAMENTATION.

Civil & Environmental Consultants, Inc.
CERTIFICATION/LICENSE NO. 2002013942
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www.ccecinc.com



PLANNED COMMERCIAL DEVELOPMENT
BRITE WORX CARWASHERY
MOBIL ON THE RUN
WALLIS COMPANIES

DRAWING NO.: **LA 02**
SHEET 1 OF 2

DATE: NOV 2016
DWG SCALE: 1"=30'
PROJECT NO.:
APPROVED BY:

DRAFT
110-241
DRAFT

Design Narrative

Mobil On the Run Convenience Store and BriteWorx Car Wash

Northwest Corner of Olive and Schulte, Creve Coeur, MO 63141

This design narrative was prepared to provide a description of how the individual components presented in the “City of Creve Coeur Design Guidelines” were addressed and considered in preparation of the proposed development. These are numbered to follow along with those guidelines.

Chapter 1- Site Layout

A. Physical Features and Site Relationships

1. The existing topography and foliage is being maintained as much as possible to minimize the site topography changes. Grade changes will be as natural as possible, however, the use of retaining walls and masonry fencing will be used to provide additional screening and enhancements to the buffer yards.
2. Existing site features are being maintained to as much as possible with new natural site features added to enhance the site. These new site features add interest to the site and provide nodes along the way for the pedestrians to enjoy, such as a small “pocket park.”
3. Building orientation has been designed to create spaces of interest and focal points within the site which adds visual interest. These features soften the scale of the project by providing intermittent screening from all approaches to the site.
4. Site design addresses these issues by utilizing existing natural barriers and augmenting them with new manufactured barriers to compliment those natural barriers, lessening the impact to the adjacent properties. By combining existing natural barriers with new landscaped areas on the entirety of the site, the impact of this development is minimized. This development proposes approximately 50% green space to lessen the impact on surrounding property owners.
5. Utility project elements are designed to be as far back on the site as possible and screened. Materials for screening and physical locations were evaluated to lessen the visual impact to the public
6. Though this project is not phased, care has been taken to maintain continuity and completeness.

B. Streetscape/Pedestrian Orientation

1. Streetscaping design mixes hard elements and soft elements in order to visually and textually create interest in the pathway around the site. The hard element is a low, pedestrian scale, wall with pilasters and street lights that helps guide the pedestrian along the site and then into the site. Once on the site, more wandering paths allow pedestrian circulation within the site. This directly correlates to the City's Pedestrian Plan.
2. Where gaps occur in the streetscaping, pedestrian circulation is encouraged to enter into the site to discover greenspace and other outdoor elements.
3. The open space in the streetscape provides a path to help direct pedestrians from the street through the site to either building, as well as, between both buildings. The "pocket park" area of interest also helps mitigate stormwater runoff.
4. The design incorporates public spaces within the site for pedestrians and community members to view landscaping and to gather. These features directly correlate to the City's Pedestrian Plan.
5. Site design and building design are integrated to provide various scales, materials and 3 dimensional elements to enhance the visual interest of pedestrians and the community. This correlates directly to the City's Pedestrian Plan.
6. Public entrance to the buildings from the street is through a series of paths, landscaped with street trees, low masonry walls and street lights. Signage will be visible and identifiable from the street and the windows will be lightly tinted to encourage facility users to enter. These paths correlate directly to the City's Pedestrian Plan.
7. Street trees are designed in to enhance the site appearance and compliment the overall experience. By using a multiple species approach, the landscaping provides visual and textural variation and guards against diseases affecting single species.
8. Sidewalk and lighting are consistent and coordinated with the overall site design. These elements are integral to the further development of the East Olive Corridor Plan to enhance the pedestrian experience and provide visual interest along the street and through the site.
9. Sidewalk and vehicle intersections are designed to emphasize the pedestrian path through color and texture changes. These elements clearly define the pedestrian experience, clearly separates pedestrian and vehicular movements and correlates to the City's Pedestrian Plan.
10. The rear of the buildings are designed to be consistent in color and material to the front of the buildings and vegetation, both new and preserved, was considered to also add to the buffer and transition.
11. Vehicle access to the site has been designed to provide one main access point per street frontage and the access along Olive is shared between the two site uses.

12. The walk in front of the entry to the business is 10' wide with more than 4' of pedestrian clearance. The ease of pedestrian movement correlates to the City's Pedestrian Plan.
13. The sidewalks comply with the City Pedestrian Plan.

C. Streetscape/Pedestrian Orientation

1. Circulation patterns on the perimeter and interior to the site are clearly defined and safe.
2. Pedestrian routes within the site are buffered and landscaped and also provide points of interest and other amenities.
3. Access by vehicle and by pedestrian are separated and safe while adding to the arrival experience to the site and buildings.
4. Pedestrian, bicycle and vehicle circulation have been separated to the extent possible. When these paths cross, color and texture designations occur.
5. Pedestrian linkage between structures and within the site are provided and emphasized.
6. Bicycle parking is highly visible and lockable.

Note: All of these site and pedestrian points of interest and circulation routes have been created by the building placement and designed elements to reduce the commercial feel of the proposed development to a more residential/neighborhood feel.

Chapter 2- Buildings

A. General Architectural Guidelines

1. The building designs are articulated to create interest and be distinct while using high quality materials.
2. Outdoor spaces of interest have been incorporated into the overall design with structures of similar building elements linking the site together. The small scale of these connector elements and outdoor spaces reduce the scale of the overall development, while still linking the development together as a whole.
3. The building facades have been articulated to increase visual interest and create shadow lines using various elements. These elements help breakdown the building scale to create a more human scale and clearly define the building entry points and termination points.
4. The nature of this particular type of building use is single story. The building height has been increased to add mass and create more visual interest and to screen various necessary functional equipment. The building has been situated on the site further back from the street due to site function and also to reduce the scale of the building to a more

human scale. This setback also affords more opportunity to screen the building and reduce elements to a more human scale at the street view.

B. Scale

1. The site layout and building height have been carefully considered. Lower use adjacent areas receive the lower height of the building elevations and the more public and visible views receive the higher building elevations while still maintaining a human scale through the use of material and massing. Additionally, staff has indicated a potential use for the property immediately adjacent (West) of the site and the scale of this potential development has been taken into consideration. This development provides additional space between the potential development to the West through building orientation. This orientation affords additional opportunities for maximum screening.
2. The buildings achieve human scale through multiple massing changes, material accents various insets and building element features.
3. Both buildings employ similar massing and detail elements to maintain consistency within the site. The linking element between the buildings employs similar material and massing elements, further connecting the buildings and maintaining design consistency.

C. Design

1. The building design incorporates several high quality materials and design elements throughout the site. The scale of these elements are residential scale to add to the human scale of the building. The colors selected are warm and inviting, adding to the residential scale and feel of the building.
2. Façade design for all structures incorporates several massing changes to decrease repetitiveness and provide visual interest.
3. The entry pieces are articulated vertically and horizontally to clearly define the entrance.
4. Overall site and building design use elements consistent with high quality and visual interest. As the pedestrian approaches and then enters the site, these elements will increase slightly in scale and change texture and color providing an interesting journey. The low wall elements and overhead canopies use materials consistent with the proposed building while also screening functional elements of the vacuum areas from vehicular and pedestrian view.
5. Separation distance between the buildings is the minimum for required vehicle circulation. In order to visually link the buildings, a connector element is designed with similar design materials and elements to maintain visual consistency.
6. Each building is a unique design, consistent with the City Comprehensive Plan while maintaining enough similarity to other previous projects by this Developer. While the

buildings are similar in style to other previously designed buildings for this client, they are not “prototype” buildings. Different locations and sites have different design parameters which provides the opportunity to create a unique building while maintaining familiarity with a brand.

7. Mixed use of this site is provided through separate building experiences.
8. All elevations receive the same design and material treatment.
9. Both buildings utilize parapets to screen roof top items. Those parapet elements are integral to the design concept.
10. Both buildings utilize energy efficient design elements and systems.

D. Relationship to Neighboring Development

1. The site and building development is consistent with surrounding existing and newer developments along the East Olive Corridor in the use of material, streetscape and color. This design utilizing a complete package of site and building design, in a unique location, will help set a standard for future development along this corridor. The use of the site is not changing. The proposed development will enhance the design of the corner and provide a fresh, new, updated design showing the City’s progress.
2. Both main buildings are linked visually with a connecting element using consistent materials and massing.
3. The majority of the building materials and colors are earth tone and neutral. An accent color is used to tie both buildings together and create visual interest. This same accent color is seen all along the East Olive Corridor from Graeser Road to Interstate 270.
4. Pedestrian paths and pedestrian elements are incorporated into the site plan design and the building layout to create outdoor public spaces of interest.

E. Materials/Colors

1. The building materials selected are of high quality and high durability and most are natural, traditional materials.
2. Color for the materials is integral, adding to their durability. The most durable materials are placed near the ground to achieve maximum durability.
3. The EIFS element is used in a location that is not accessible to the user in order to maintain the building material durability. The “plasticity” of the EIFS allows for the various insets and offsets and detail accents to visually enhance the building design while allowing the predominate material to be masonry used at the lower level.
4. Both buildings utilize the same Architectural elements and color to provide design consistency throughout the site. All elevations use similar elements and colors to maintain design consistency within the building façades.

5. Any material color changes will occur at inside corners to emphasize mass and alleviate the appearance of “thinness.” Material continuity is maintained within each elevation.
6. Soffits will receive similar finish treatment as the main fascia material.
7. The sidewalks and drive areas are differentiated through color and texture.

F. Building Services

1. Services and trash receptacles are located deep within the site and shielded by solid fences and partially by the buildings so as not to be as visible to the vehicle traffic or pedestrian traffic.
2. Loading areas are also located deep within the site to shield them from vehicle or pedestrian traffic.
3. The utility meters will be located such that they are screened from public view.

Chapter 3- “Use” Specific Guidelines

A. Not Applicable

B. Auto Service Stations

1. The site layout provides one entrance per street on this corner lot. Customer safety is provided by a low masonry wall incorporated into the streetscape design.
2. The paved area is as minimal as possible to provide safe vehicular and pedestrian movement throughout the site. Material, texture and color changes are used to distinguish and separate pathways. This safer pedestrian movement directly correlates to the City’s Pedestrian Plan.
3. The buildings have been designed specifically for this site to provide an increased, upgraded, level of detail beyond the previous buildings of this type within the region. This increased level of detail enhances the users experience of the facility and the City. The Developer has incorporated several adjacent lots in order to reduce the commercial impact and density of the development.
4. Through material and color consistency, the freestanding elements associated with this site are compatible and consistent to the major building elements.
5. Tank vent are incorporated into the fuel canopy design to reduce visibility.
6. The Car Wash Architectural elements, materials and colors are consistent with the Convenience Store Architectural elements, materials and colors. The orientation of the Car Wash building is to specifically reduce the intrusion of the exit opening to vehicular and pedestrian traffic. The exit end also incorporates a storefront element, similar to a

retail establishment, to further deemphasize the door opening element. The orientation also reduces the impact on the surrounding residential areas and the potential development area to the West.

7. All lighting fixtures will be flush with the underside of the canopy.

C. Not Applicable

D. Not Applicable

E. Accessory Buildings and Facilities

1. The accessory facilities such as trash enclosures are designed to directly relate in material, character and detail to the other site components.

Chapter 4 – Landscape Design

1. The landscape design for this proposed redevelopment is of high quality and seeks to maintain and use existing mature vegetation, accommodate and accent pedestrian facilities, provide ample green space and areas of visual interest, and soften larger rigid elements.
2. There is a consistent yet still diverse species and theme throughout the development.
3. The design of the landscape helps identify pedestrian circulation paths from street frontage to the commercial business.
4. Significant design effort and attention has been placed into maintaining existing vegetation in buffer areas and new landscape has been proposed to enhance those buffers.
5. Clear pedestrian pathways and landscape materials have been provided to lessen potential damage by pedestrian or motor traffic.
6. The parking areas are landscaped with trees, shrubbery, and other landscaping materials as well as a pedestrian scale wall.
7. The landscape plan has incorporated a patio area and other such features to create points of visual interest.
8. The green space provided exceeds the requirements and these areas are landscaped with grouped plantings and other elements throughout the site.
9. The pedestrian scale landscape wall, signage, trash receptacles, fencing and other site elements are incorporated into the design of the landscaping.
10. The scale of the landscape materials is diverse by making use of mature existing vegetation and providing low-level shrubbery and landscaping materials. Together

these elements compliment and soften larger scale architectural elements.

11. As mentioned above, the existing mature vegetation has been incorporated into the overall design scheme.
12. Irrigation systems are proposed for the site.
13. The landscape design is intended to accent and enhance architectural and site design features.
14. Any groundcover is proposed to be live plant material.
15. While no berms are proposed, the existing topography helps add to visual screening from adjacent residents.
16. Changes in existing vegetation and topography have been minimized to the extent feasible.

Chapter 5- Miscellaneous

A. Signage

1. The signage will comply with municipal requirements and are integrated into the building design to blend while being an accent.
2. Not applicable
3. Sign areas are minimal and strategically place in logical locations.
4. Individual letter signs will be used where practical.
5. Signage will be internally lighted with little or no glare.

Note: The signage be more consistent with the “Green Line Park” approach mentioned in the Comprehensive Plan.

B. Lighting

1. Illumination levels across the site will vary depending on use and safety. The lighting has been designed to reduce any light directed off site. Full cut off fixtures will be used as required to reduce light directed off site and glare.
2. Exterior lighting will be shielded as required and parallel to the ground.
3. The building lighting is integrated into the building and will be complimentary to the building color and style.
4. Fixture mounting height will vary across the site depending on clearance requirements.
5. Bollard lights may be used at strategic locations to enhance the pedestrian experience.
6. Raised lights poles along the streetscape will be pedestrian scale Architectural style.
7. No neon lighting is proposed.
8. A photometric plan will be provided.

Note: Every effort has been made to discuss the impact with the adjacent residents. Those concerns have been addressed. To minimize the impact, central vacuum systems and lowered, shielded lighting is proposed.

C. Utilities

1. Utilities will be underground and the transformer will be screened.

D. Stormwater Drainage

1. Rooftop drainage has been considered and is conveyed and contained so that it does not impact landscaped areas or sidewalks.
2. The stormwater management facility has been designed to be natural in configuration and appearance and contributes to the enhancement of the buffer.
3. The site exceeds minimum standards for open space requirements and the stormwater management facility is situated such that it does not detract from visual interest.

E. Energy Conservation

1. The building orientation, materials and systems are designed with good energy conservation principles.

F. Screening

1. The proposed masonry fencing is designed with a natural stone façade and visual monotony is minimized by site landscaping and architectural elements.
2. The proposed masonry wall (sound wall) is designed to minimize the visual and audible impacts and it's textures and color coordinate with the balance of the site architecture.
3. The fencing is an integral part of the site.
4. Chain link fencing is not proposed.
5. The proposed fencing is a highly decorative masonry fence.
6. The trash enclosure will be constructed of the same material.

G. Parking

1. The parking lot has limited vast open areas and is broken-up by landscaped areas and pedestrian pathways.

2. On street parking is not feasible at this location, and parking has been located furthest away from residential areas and provided in a manner consistent with the needs of the proposed operation.
3. Underground parking is not proposed.
4. There are no vast open areas of parking proposed that would cause significant glare reflection or visual impact.
5. The parking layout and design is enhanced with pedestrian circulation and does not obstruct direct access from street pedestrian facilities to the public commercial business.
6. Extensive landscaped areas are proposed on the site.
7. Landscaped islands and open spaces have been incorporated into the facilities.
8. No parking or vehicular circulation is proposed in required buffer yard or side yard setback area.
9. No parking structure is proposed.
10. No parking structure is proposed.

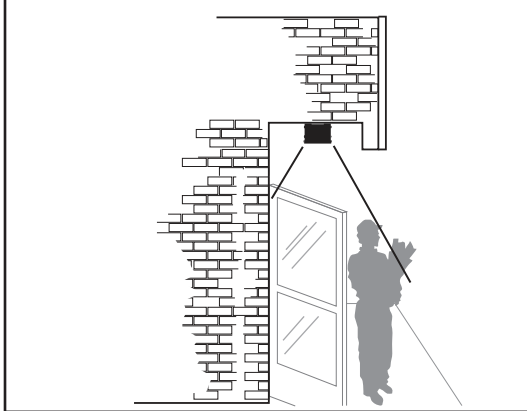
H. Retaining Wall

1. The topography of the site has been designed where feasible to minimize the height and length of the retaining walls. The vegetation, both preserved existing trees and proposed landscaping, has been incorporated to enhance visual appearance.
2. The proposed retaining wall has not been terraced in an effort to preserve and maintain existing mature vegetation.
3. The materials utilized for the retaining wall coordinate with the building materials and architecture.

LED SOFFIT STRIP - LSS



TYPICAL APPLICATION



U.S. and international patents pending

APPLICATION - A complete continuous row building series of high performance, energy efficient LED illumination in an easy to install format. Designed for applications for storefront walkways and sidewalks.

LEDS - Select High-brightness LEDs. Available in 4100K (NW) and 5000K (CW). 70 CRI (nominal).

OPTICS - High efficiency, die formed, one piece reflectors provide a smooth and brilliant Symmetrical distribution.

LIGHT OUTPUT - Input power is 2.64 watts per foot. Cool White (CW) lumens per foot are 215. Neutral White (NW) lumens per foot are 180.

HOUSING - Die formed, non-corrosive aluminum, painted with several powder coat finish options.

POWER SUPPLY - 60w, 120-277V 50/60Hz. IP67 rated for use in wet, damp and dry locations.

OPERATING TEMPERATURE - -35°C to + 60°C (-31°F to +140°F)

INSTALLATION - Installs in continuous row or staggered applications designed to span entire soffit lengths.

EXPECTED LIFE - Projected life of 50,000 hours minimum.

WARRANTY - Limited 5-year warranty.

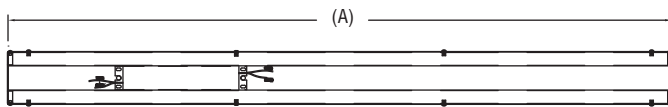
LISTING - ETL compliant to U.S. and Canadian safety standards. Suitable for wet locations.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com



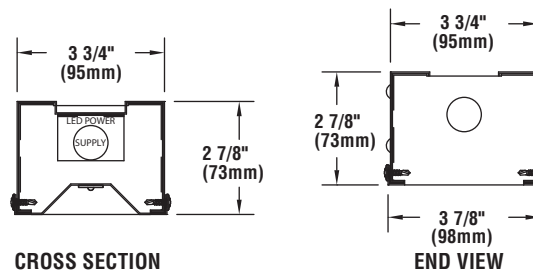
wet location

DIMENSIONS



Description	Dim "A"
4 ft. Soffit Housing	48" / 1220 mm
6 ft. Soffit Housing	72" / 1829 mm
8 Ft. Soffit Housing	96" / 2439 mm

Dimensions above are for determining overall length of individual sections. Specify total linear run length per individual straight run to insure proper power supply requirements. Standard maximum length of a single unit is 8 feet. All other specified lengths are combinations of 8 feet and below.



LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **LSS 4 LED CW UE**

Prefix	Total Linear Length Required (ft.) ¹	Light Source	LED Color	Input Voltage
LSS	4 - 4ft 6 - 6ft 8 - 8ft	LED - Light Emitting Diode	CW - Cool White NW - Neutral White	UE - Universal Input Voltage (120-277V)

NOTE:

1- Standard maximum length of a single unit is 8 feet. All other specified lengths are combinations of 8 feet and below.



Project Name _____ Fixture Type _____

Catalog # _____

03/30/15

Packet Pg. 53

LED CANOPY LIGHT - LEGACY™ (CRUS)



US & Int'l. patents pending.

HOUSING - Low profile, durable die-cast, aluminum construction, providing a reliable weather-tight seal.

LEDS - Features an array of select, mid-power, high brightness, high efficiency LED chips; 5300°K color temperature, 70 CRI (nominal).

DRIVE CURRENT - Choice of Low Wattage (LW) or Super Saver (SS).

OPTICS / DISTRIBUTION - Symmetrical, which directs light through a clear tempered glass lens, to provide a uniform distribution of light to vertical and horizontal surfaces.

OPTICAL UNIT - Features an ultra-slim 7/8" profile die cast housing, with a flat glass lens. Unit is water-resistant, sealed to an IP67 rating. Integral designed heat sink does not trap dirt and grime, ensuring cool running performance over the life of the fixture.

PRESSURE STABILIZING VENT - Luminaire assembly incorporates a pressure stabilizing vent breather to prevent seal fatigue and failure.

HAZARDOUS LOCATION - Designed for lighter than air fuel applications. Product is suitable for Class 1 Division 2 only when properly installed per LSI installation instructions (consult factory).

DRIVER - State-of-the-art driver technology superior energy-efficiency and optimum light output. Driver components are fully encased in potting for moisture resistance. Complies with IEC and FCC standards.

DRIVER HOUSING - Die cast aluminum, wet location rated driver/electrical enclosure is elevated above canopy deck to prevent water entry, provide easy "knock-out" connection of primary wiring and contributes to attaining the lowest operating temperatures available. Seals to optical housing via one-piece molded silicone gasket.

OPERATING TEMPERATURE - -40°C to 50°C (-40°F to +122°F)

ELECTRICAL - Universal voltage power supply, 120-277 VAC, 50/60 HZ input. Drivers feature two-stage surge protection (including separate surge protection built into electronic driver) meets IEEE C62.41.2-2002, Scenario 1, Location Category C.

FINISH - Standard color is white and is finished with LSI's DuraGrip polyester powder coat process. DuraGrip withstands extreme weather changes without cracking or peeling.

INSTALLATION - One person installation. No additional sealant required. Installs in a 12" or 16" deck pan. Deck penetration consists of a 4" hole, simplifying installation and water sealing. Unit is designed to quickly retrofit into existing Scottsdale (4") hole as well as openings for Encore and Encore Top Access and to reconnect wiring for the SC/ECTA without having to relocate the conduit. Retro panels are available for existing Encores (see back page) as well as kits for recessed and 2x2 installations (see separate spec sheets). Support brackets are provided standard, to prevent sagging of deck.

SHIPPING WEIGHT - 27 pounds (single pack), 48 pounds (double pack).

EXPECTED LIFE - Minimum 60,000 to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

WARRANTY - Limited 5-year warranty.

LISTING - UL and ETL listed to UL 1598, UL 8750 and other U.S. and International safety standards. Suitable for wet locations.

PHOTOMETRICS - Applications layouts are available upon request. Contact LSI Petroleum Lighting or petroleum.apps@lsi-industries.com

Consult Factory

Class 1, Division 2 – Standard on SS & LW.

T5 Temperature Classification – The surface temperature of this product will not rise above 100°C., within a 40°C ambient.

Gas Groups A,B,C, and D – Group A: Acetylene / Group B: Hydrogen / Group C: Propane and Ethylene / Group D: Benzene, Butane, Methane & Propane.

This product, or selected versions of this product, meet the standards listed below.
Please consult factory for your specific requirements.



LED CANOPY LIGHT - LEGACY™ (CRUS)

LUMINAIRE ORDERING INFORMATION

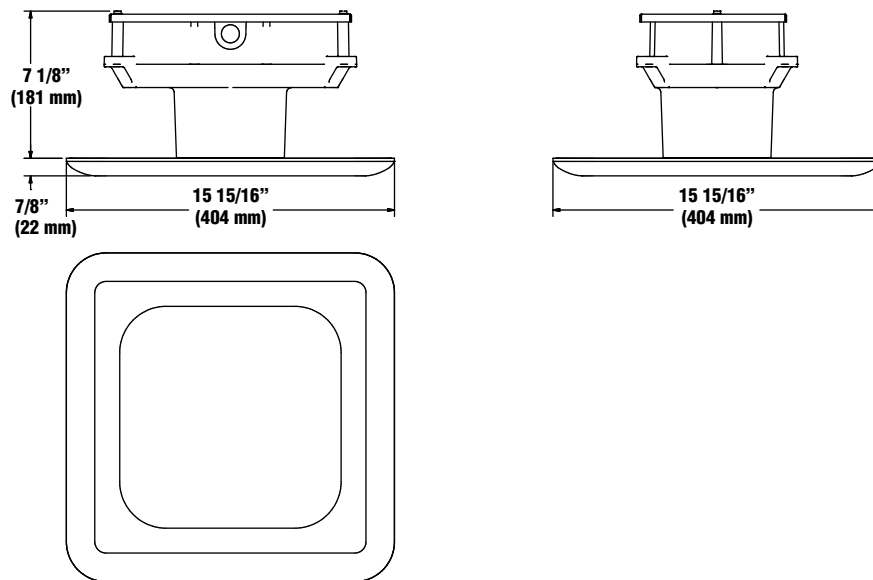
TYPICAL ORDER EXAMPLE: **CRUS SC LED SS CW UE WHT**

Prefix	Distribution	Light Source	Drive Current	Color Temperature	Input Voltage	Finish	Options
CRUS	SC - Standard Symmetric	LED	LW - Low Watt SS - Super Saver	CW - Cool White	UE - Universal Voltage (120-277V) 347 - 347V	WHT - White BRZ - Bronze BLK - Black	None

ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number	Description	Order Number
Retrofit Panels - EC / ECTA / SCF to CRU, for 16" Deck Panel	525946	Kit - Hole Plugs and Silicone (enough for 25 retrofits) ¹	1320540
Retrofit Panels - ECTA / SCF to CRU, for 12" Deck Panel	530281	1- Consists of (25) 7/8" hole plugs and (1) 10.3 oz tube of RTV	
Retrofit 2x2 Cover Panel Blank (no holes)	357282	2- Flange Kit used to mount CRU in double deck applications	
Retrofit RIC Cover Panel Blank (no holes)	354702		

DIMENSIONS



LIGHT OUTPUT - CRUS

		Lumens	Watts	LPW
Cool White	LW - Low Watt	10,871	88	124
	SS - Super Saver	13,554	114	119

LED LENSED STRIP - SDL

PRODUCT HIGHLIGHTS

- Accepts optional plug-in wiring feature for continuous row installation
- Alignment couplers furnished for continuous row installation
- Suitable for surface, pendant, or stem mounting

EXPECTED LIFE - Projected life of at least 60,000 hours. Contact factory for TM-21 detail.

LEDS - Use of closely-spaced medium-power, high-brightness chips minimizes pixelation and provides uniform lens luminance. Available in Cool White (5000K), Neutral White (4000K) and Warm White (3500K) color temperatures. CRI $\geq$ 80 (CW > 70). LM-80 reports available.

CONSTRUCTION - Fixture housing, end sections, and channel cover constructed of code-gauge, die-formed steel.

LENS - Specially designed frosted extruded lens with micro prisms for maximum source diffusion and soft, even illumination.

FINISH - All metal parts are painted after fabrication following treatment with phosphate rust inhibitor. Finish coating of housing reflecting surfaces is with high-reflectance (minimum 92%) polyester powder.

ELECTRICAL - Universal voltage (120-277 Vac) input, 50/60Hz, 347 VAC. Power factor > 0.9, THD < 20%, in-rush current < 15 Amps.

DRIVER - High-performance isolated driver features over-voltage, over-current and short-circuit (with auto-recovery) protection. Driver module is sealed to IP66 protection levels, with a Class A sound rating. 0-10 volt dimming standard.

WARRANTY - Limited 5-year warranty.

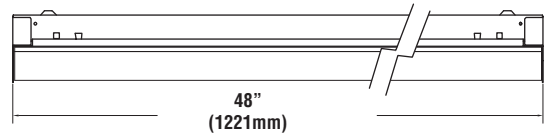
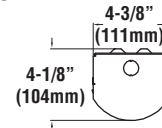
PHOTOMETRICS - Please visit our website at www.lsi-industries.com for detailed photometric data.

LISTING - Listed to UL 1598 and UL 8750. Suitable for damp locations. For a list of the specific products in this series that are DLC listed, please consult the LED Lighting section of our website or the Design Lights website at www.designlights.org.

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



DIMENSIONS



LIGHT OUTPUT - SDL LENSED STRIP				
	Lumens (Nominal)			Watts
	WW	NW	CW	
SDL 2 LW - 2FT	1490	1475	1705	14
SDL 2 SS - 2FT	2430	3115	2960	28
SDL 4 LW - 4FT	3000	3105	3700	29
SDL 4 SS - 4FT	3475	3635	4380	34
SDL 4 HO - 4FT	4770	4990	5875	44
SDL 4 VHO - 4FT	5685	5965	7225	57
SDL 8 LW - 8FT	5995	6210	7400	58
SDL 8 SS - 8FT	6945	7268	8760	68
SDL 8 HO - 8FT	9555	9795	11752	88
SDL 8 VHO - 8FT	11370	11930	14450	114

LED Chips are frequently updated therefore values may increase.

ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **SDL 4 LED HO CW UE**

Prefix	Length	Light Source	Lumen Output	Color Temperature	Line Voltage	Options
SDL - Strip With Diffused Lens	2 - 2 foot 4 - 4 foot 8 - 8 foot	LED	LW - Low Watt SS - Super saver HO - High Output ³ VHO - Very High Output ³	CW - Soft White (5000K) NW - Neutral White (4000K) WW - Warm White (3500K)	UE - Universal Electronic (120-277V) 347-347V	EM - Emergency Battery Pack ¹ SD50 - Step Dimming to 50% PM - Pre-wired Plug-in Assembly (specify circuitry See Options/Accessories Section)

ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number
Grid Hanger	GH
Chain Hanger Set (36" length)	CHS3
Chain Hanger Set (60" length)	CHS5
Wire Guard - 4 foot	WG240 ²
T-bar Kits (includes junction box, wire collar, & grid hangers)	TBKT

1- Emergency Battery Pack not available on 2ft fixture.

2- 8ft fixture requires (2) wire guards.

3- HO and VHO for 4 ft. & 8ft. fixtures only.



Project Name _____ Fixture Type _____

Catalog # _____

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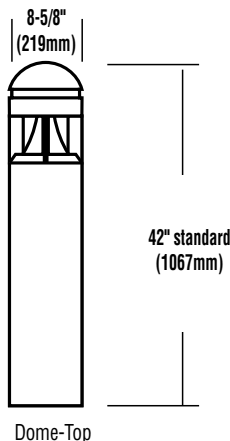
LED BOLLARD LIGHT (XBVRD)



DOE LIGHTING FACTS

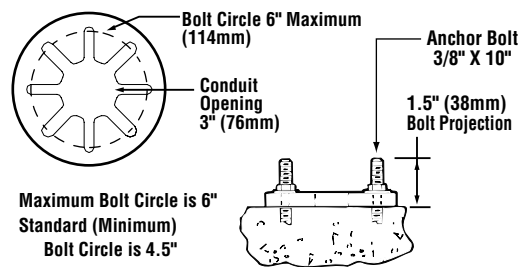
Department of Energy has verified representative product test data and results in accordance with its Lighting Facts Program. Visit www.lightingfacts.com for specific catalog strings.

DIMENSIONS



BASE DETAIL

Note: Base plate dimensions may change without notice. Do not use for setting anchor bolts. Consult factory for base plate templates.



Also available in traditional light sources

U.S. and international patents pending

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - An array of 24 select high-brightness LEDs in Cool White (5000K), Warm White (3500K) or Neutral White (4000K) color temperature, 69 CRI

REFLECTOR/DISTRIBUTION - Indirect. Photometric data is tested in accordance to IESNA Procedures.

HOUSING - Crown: Virtually tamper-proof concealed stainless steel fasteners in the cast aluminum crown assembly.

Lower Housing: One-piece, .322 inch seamless, extruded aluminum. Various heights are available in 6" increments starting at a minimum of 30" (maximum height is 60"). Lower housing attaches to cast aluminum base plate with four stainless steel roll pins.

OPTIONAL ROUGHNECK REINFORCEMENT - .375" thick zinc plated, steel base plate with welded U shaped reinforcement. 3/8" diameter 302 stainless steel roll pins with 10,000 lb. shear load.

LENS/GASKET - One-piece, clear acrylic lens enclosure fully gasketed at top and bottom edge.

ANCHOR BOLTS - Requires four heavy-duty 3/8" x 10" galvanized steel anchor bolts.

ELECTRICAL - Universal voltage power supply (120-277 VAC, 50/60 Hz). 347-480V also available - 400mA is standard. Surge protector meets IEEE C62.41.2-2002, Scenario 1 Location Category C.

DRIVER - State-of-the-art driver technology designed specifically LSI LED light sources provides unsurpassed system efficiency. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling.

DECAL STRIPING - Color-coordinated decal is available in 9 standard decal colors or by custom order from a selection of hundreds. Decal is guaranteed for five years against peeling, cracking, or fading.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Please visit our web site at www.lsi-industries.com for detailed photometric data.

LISTING - Listed to U.S. and Canadian safety standards. Suitable for wet locations. DLC - not all possible distributions are DLC approved. Please refer to LSI or DLC web site for specific listings. For a list of the specific products in this series that are DLC listed, please consult the LED Lighting section of our website or the Design Lights website at www.designlights.org.

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.

ARRA
Funding Compliant

ETL
Intertek
wet location

CE

LIGHT OUTPUT - XBVR

Description	# of LEDs	Output	
		Lumens	Watts
Cool White XBVR ID	24	1338	38
Neutral White XBVR ID	24	1224	38
Warm White XBVR ID	24	856	38

LED Chips are frequently updated therefore values may increase.



Project Name _____ Fixture Type _____

Catalog # _____

07/28/16

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LED BOLLARD LIGHT (XBVRD)

PRODUCT ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XBVRF ID LED 24 400 CW UE BRZ 45**

Prefix	Distribution	Light Source	# of LEDS	Drive Current	Color Temp	Line Voltage	Finish	Options
XBVRF Flat-Top XBVRD Round-Top	ID - Indirect	LED - Light Emitting Diode	24	400	CW - Cool White (5000K) NW - Neutral White (4000K) WW - Warm White (3000K)	UE - Universal Electronic (120-277V 50/60Hz) 347 - 347 volt 480 - 480 volt	BRZ - Bronze BLK - Black PLP - Platinum Plus BUF - Buff WHT - White GPT - Graphite SVG - Satin Verde Green MSV - Metallic Silver	H - XX (Specify Height) ¹ PCI120 - Button-type Photocell PCI208, 240,277 - Button-type Photocell PCI347 - Button-type Photocell GFR - GFI Duplex Receptacle LAB - Less Anchor Bolts RN - Roughneck Heavy Duty Mounting Plate

¹ - Taller or shorter heights available in 6" increments. Minimum height is 30". Maximum height is 60".

ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number
ABKIT - Anchor Bolt Kit (BVR) 3/8" x 10" - Galvanized	285560
HSS - Round House Side Shield	122510

Color Decals

45 - Light Gold
20 - Charcoal Metallic
55 - Black
94 - Blue Black
59 - Dark Green
51 - Dark Red
21 - Tomato Red
50 - White
700 - Aztec Silver Metallic

BUG CHARTS

XBVR- TYPE ID

Drive Current	Color Temp. *	Lumens	Watts	LER	BUG Rating
400	CW	1338	38	35	B1-U2-G1
	NW	1224	38	32	B1-U2-G1
	WW	856	38	23	B1-U1-G1

* Color Temperature: WW-3000K, NW-4000K, CW-5000K



Project Name _____ Fixture Type _____

Catalog # _____

07/28/16

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LED AREA LIGHTS - LSI SLICE SMALL (XLCS)



US & Int'l. patents pending

SMARTTEC™ - LSI drivers feature integral sensor which reduces drive current, when ambient temperatures exceed rated temperature.

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Select high-brightness LEDs in Cool White (5000°K nominal), or Neutral White (4000°K nominal) color temperature, 70 CRI (nominal).

DISTRIBUTION/PERFORMANCE - Types FT and 5. Exceptional uniformity creates bright environment at lower light levels.

HOUSING - One-piece, die-formed aluminum housing contains factory prewired driver. Wiring access door (with safety lanyard) located underneath.

OPTICAL UNIT - Clear tempered flat glass lens permanently sealed to weather-tight aluminum optic frame (includes pressure-stabilizing breather). Optic frame recessed into housing cavity and sealed to the housing with one-piece EPDM gasket.

MOUNTING - Tapered rear design allows fixtures to be mounted in 90° and 120° configurations without the need for extension arms. Use with 3" reduced drilling pattern. A round pole plate is required for mounting to round poles. Wall mount available by ordering wall mounting bracket (BKS-XBO-WM-* -CLR). See Accessory Ordering Information chart for all brackets.

ELECTRICAL - Two-stage surge protection (including separate surge protection built into electronic driver) meets Location Category C Low. Available with universal voltage power supply 120-277 VAC (50/60Hz input), and 347-480 VAC. Optional button-type photocells (PCI) are available in 120, 208, 240, 277 or 347 volt (supply voltage must be specified).

DRIVER - Available in SS (Super Saver) and HO (High Output) drive currents. Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F)

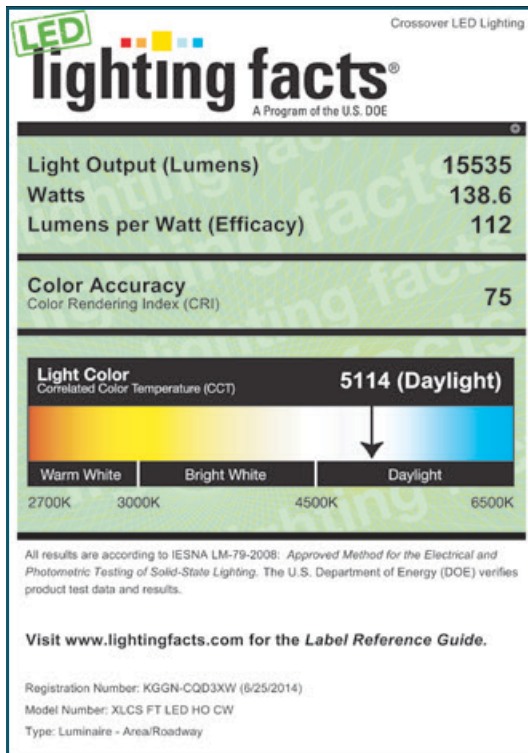
FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Available in black, bronze and white. Other standard LSI finishes available. Consult factory.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Please visit our web site at www.lsi-industries.com for detailed photometric data.

SHIPPING WEIGHT (in carton) - One fixture: 17.5 lbs. (7.9 kg). Packed two per carton: 30 lbs. (13.6 kg).

LISTING - UL listed to U.S. and international safety standards. Suitable for wet locations.



This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



Fixtures comply with ANSI C136.31-2010 American National Standard for Roadway Lighting Equipment - Luminaire Vibration 1.5G requirements.

LIGHT OUTPUT - XLCS				
		Lumens (Nominal)		Watts (Nominal)
		Type FT	Type 5	
Cool White	SS	11400	11400	97
	HO	15500	15700	140
Neutral White	SS	9200	9300	97
	HO	12100	12200	140

LED AREA LIGHTS - LSI SLICE SMALL (XLCS)

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XLCS 5 LED SS CW UE BLK PCI120**

Prefix	Distribution	Light Source	Drive Current	Color Temperature	Input Voltage	Finish	Options
XLCS	5 - Type V FT - Forward Throw	LED	SS - Super Saver HO -High Output	CW - Cool White NW - Neutral White	UE - Universal Voltage (120-277V) 347-480 Universal Voltage (347-480V)	BLK - Black BRZ - Bronze WHT - White	Button Type Photocells PCI120 - 120V PCI208-277V - 208-277V PCI347 - 347V

LUMINAIRE EPA CHART - XLCS

	Single	0.4
	D180°	0.8
	D90°	0.6
	T90°	1.4
	TN120°	1.4
	Q90°	1.6

Note: House Side Shield adds to fixture EPA. Consult Factory.

ACCESSORY ORDERING INFORMATION

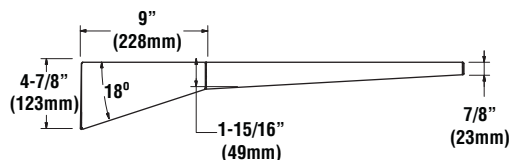
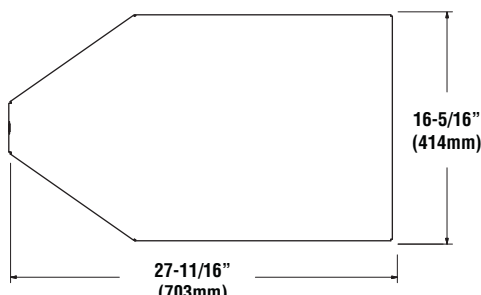
(Accessories are field installed)

Description	Order Number	Description	Order Number
BKS-XBO-WM-* -CLR Wall Mount Bracket	382132CLR	DFK208, 240 Double Fusing (208V, 240V)	DFK208, 240 ²
XLCS-FT-HSS House Side Shield (Black only)	C/F ¹	DFK480 Double Fusing (480V)	DFK480 ²
X4RPP Round Pole Plate for 4" Poles	379967CLR	FK347 Single Fusing (347V)	FK347 ²
X5RPP Round Pole Plate for 5" Poles	379968CLR		
FK120 Single Fusing (120V)	FK120 ²		
FK277 Single Fusing (277V)	FK277 ²		

FOOTNOTES:

- 1 - House Side Shields add to fixture EPA. Consult factory.
- 2 - Fusing must be located in the hand hole of pole.

DIMENSIONS



LED PATRIOT® WALL SCNCE (XPWS3)



DOE LIGHTING FACTS

Department of Energy has verified representative product test data and results in accordance with its Lighting Facts Program. Visit www.lightingfacts.com for specific catalog strings.

LIGHT OUTPUT - XPWS3						
		Distribution/Lumens (Nominal)				
Milliamps	# of LEDs	Type FT	Type WT	Type WW	Watts	
Cool White	350 mA	28	3100	3000	3200	34
		48	5100	5100	5200	55
	450 mA	28	3700	3600	3800	44
		48	6200	6100	6300	72
Neutral White	350 mA	28	2900	2900	3100	34
		48	4900	4800	4900	55
	450 mA	28	3500	3500	3700	44
		48	5800	5700	5800	72

LED Chips are frequently updated therefore values may increase.

Also available in traditional light sources

US patent 7828456, 8002428 and CAN 2736757 & 2736757 and MX patent 29631 and ISRL 49679 and AUS 2008312668 and US & Int'l. patents pending

SMARTTEC™ -LSI drivers feature integral sensor which reduces drive current, when ambient temperatures exceed rated temperature

ENERGY SAVING CONTROL OPTIONS - DIM- 0-10 volt dimming enabled with controls by others.

OPTIONAL INTEGRAL MOTION SENSOR - Passive infrared motion sensor activates switching of luminaire light levels. High level light is activated when passersby enter target zone and increased to full bright in 1-2 seconds. Low light level (30% of maximum drive current) is activated when target zone is absent of motion activity for 5 minutes and is gradually ramped down (10 seconds) to low level. Sensor detection range 110° horizontal x 93° vertical x 10 meters maximum distance.

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Available with 28 or 48 select high-brightness LEDs in Cool White (5000K nominal) or Neutral White (4000K nominal) color temperature, 70 CRI (nominal).

OPTICS/DISTRIBUTIONS - Ultra-high efficiency reflectors provide three distributions. Choose from Wide Throw (WT), Forward Throw (FT) or Wall Wash (WW).

HOUSING - One-piece die-cast aluminum housing is smoothly contoured rectangular shape. Mounting hardware is stainless steel or electro-zinc plated steel. Housing and optical unit are sealed with extruded silicone gasket; supply conductors with molded EPDM bushing.

OPTICAL UNIT - Clear tempered optical-grade flat glass lens sealed to the aluminum optic housing creates an IP65 rated unit. Pressure stabilizing breather allows super-tight protection while preventing cycling from building up internal pressures and vacuums that can stress optical unit seals.

WALL MOUNTING - Galvanized-steel universal wall mounting plate easily mounts directly to 4" octagonal or square junction box. EPDM gasket is supplied to be installed between mounting plate and junction box, sealing junction box from entrance of water. Universal plate permits fixture to be mounted in uplighting (indoor only) or downlighting position.

POLE MOUNTING - XPMA (for square) or XPMAR (for round) allows mounting to poles in single and D180 configurations. Use with 3" reduced drilling pattern.

ELECTRICAL - Two-stage surge protection (including separate surge protection built into electronic driver) meets IEEE C62.41.2-2002, Location Category C. Available with universal voltage power supply 120-277VAC (50/60Hz input) or 347-480VAC.

DRIVER - Available in 350mA and 450mA drive currents (Drive currents are factory programmed). Components are fully encased in potting material for IP65 moisture resistance. Driver complies with IEC and FCC standards. Driver can be easily accessed.

EMERGENCY OPTIONS - Optional integral emergency battery-back-up options are available. BB option operates in 0°C to 60°C ambient temperature and CWBB operates in -20°C to 60°C ambient temperature. When primary AC power failure occurs, both options operate 10 LEDs for minimum of 90 minutes.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F)

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Please visit our web site at www.lsi-industries.com for detailed photometric data.

SHIPPING WEIGHT (in carton) - 30 lbs./13.6Kg

LISTING - ETL listed to ANSI/UL1598, UL8750 and other U.S. and international safety standards. Suitable for wet locations in downlight position. Optional Class 1 Division 2 (groups A, B, C & D) hazardous location rating is available (Select HL option). For a list of the specific products in this series that are DLC listed, please consult the LED Lighting section of our website or the Design Lights website at www.designlights.org.

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



IP65



LED PATRIOT® WALL SCNCE (XPWS3)

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XPWS3 FT LED 48 450 CW UE WHT BB**

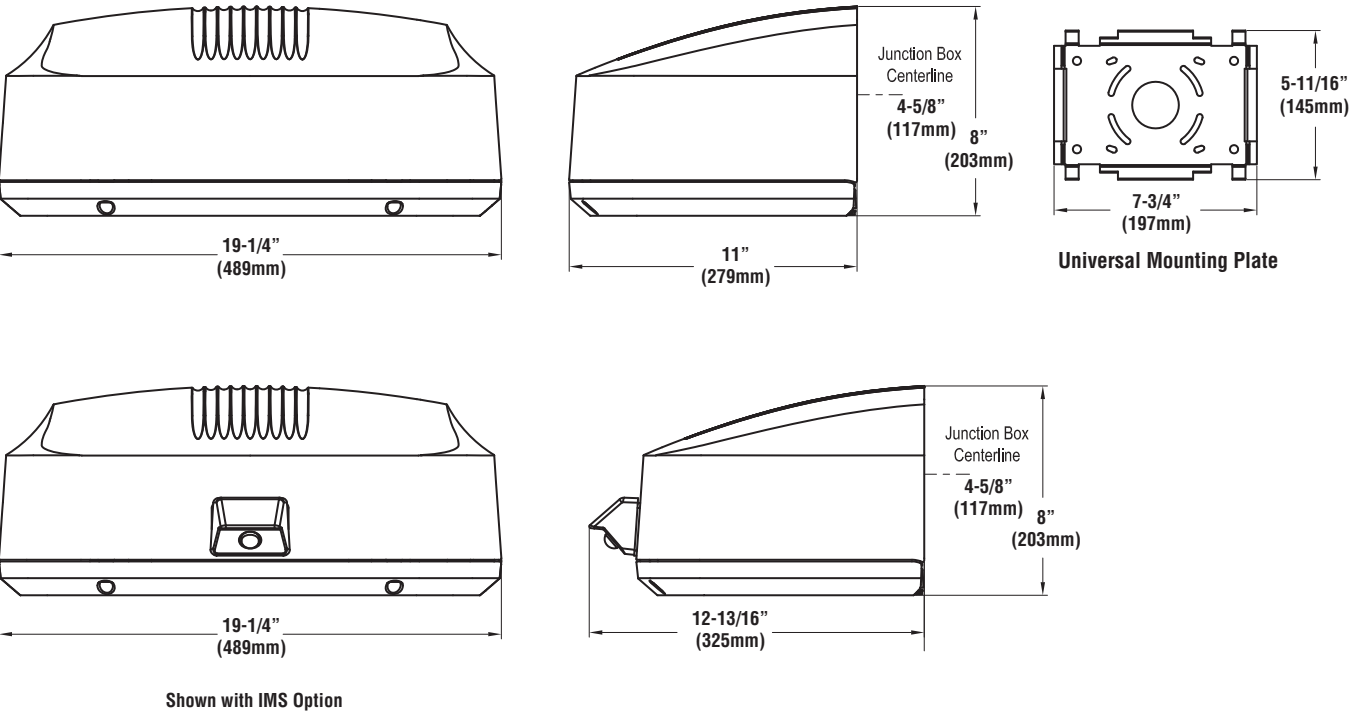
Prefix	Distribution	Light Source	# of LEDs	Drive Current	Color Temperature	Input Voltage	Finish	Options
XPWS3 - LED Patriot Wall Sconce	WT - Wide Throw FT - Forward Throw WW - Wall Wash	LED	28 48	350 - 350mA 450 - 450mA	CW - Cool White NW - Neutral White	UE - Universal Voltage (120-277) 347-480	BLK - Black BRZ - Bronze GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	BB - Battery Back-up ¹ CWBB - Cold Weather Battery Back-up ¹ DIM - 0 - 10V dimming (from external signal) ² IMS - Integral Motion Sensor ² EMR2 - Two Emergency 12V Circuit Provisions with (2) 35 Watt Halogen Lamps ³ PCI 120 - Button Type Photocell PCI 208 - Button Type Photocell PCI 240 - Button Type Photocell PCI 277 - Button Type Photocell PCI 347 - Button Type Photocell HL - Class1, Division2, Hazardous Location Rating. ETL listed to UL844 ⁴ XPMA - Pole Mounting Adaptor w/fixture backplate for use with square poles ⁵ XPMAR4 - Pole Mounting Adaptor w/fixture backplate for use with 4" O.D. round poles ⁵ XPMAR5 - Pole Mounting Adaptor w/fixture backplate for use with 5" O.D. round poles ⁵

ACCESSORY ORDERING INFORMATION (Accessories are field installed)			
Description	Order Number	Description	Order Number
XPWS3 Polycarbonate Shield	244657	DFK208, 240 - Double Fusing	DFK208,240 ⁶
XPWS3 SW BLK - Surface Wiring Box (Available in black only)	356915BLK	DFK480 - Double Fusing	DFK480 ⁶
FK120 - Single Fusing	FK120 ⁶	FK347 - Single Fusing	FK347 ⁶
FK277 - Single Fusing	FK277 ⁶		

FOOTNOTES:

- 1 - Available with UE voltage only. Not available with EMR2 or HL options.
- 2 - DIM and IMS cannot be ordered together.
- 3 - Utilizes GZ4 sockets. 12 volt separate circuits required. Not available with battery back-up, photocell option, HL, XPMA or XPMAR options.
- 4 - Not available with battery backup, photocell or EMR2 option.
- 5 - Not available with EMR2 option. Designed with 3" reduced drilling pattern. For S or D180 mounting configuration only.
- 6 - Fusing to be installed in a compatible junction box supplied by contractor.

DIMENSIONS



LED SOFFIT LIGHT (XSL2)



US patents D574994 & D595896 & 7828456 and US & Int'l. patents pending

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Select high-brightness LEDs. Cool White 5000K color temperature, 69 CRI (nominal).

DRIVER CURRENT - Super saver (SS) - most economical and highest lumens per watt or High Output (HO) - highest output per initial dollar.

DISTRIBUTION/PERFORMANCE - Type S (Symmetric) or 5A (Type 5). Excellent uniformity with Bug rating of BU-UO-G1. Optional diffused lens available to reduce visibility of diodes

HOUSING/OPTICAL UNIT - Housing is die-formed aluminum with a gasketed clear tempered glass lens providing a water-resistant seal. Weather-tight aluminum enclosure contains factory prewired driver to ensure no water entry. Sealed optical unit containing LEDs rated IP67.

MOUNTING - Direct mounts with screws through the trim frame (standard). Optional channel bar kit available to suspend assembly from ceiling joists. 12" clearance required for ease of installation.

ELECTRICAL - Universal frequency power supply (50/60 Hz). Supply voltage must be specified for pre-wired thermal protectors.

DRIVER - State-of-the-art driver technology designed specifically for LSI LED light sources provides unsurpassed system efficiency. Driver will operate with input of 120/208/240/277V (50/60 Hz). Components are fully encased in potting material for moisture resistance. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Each fixture is finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard color is white.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com

LISTING - Listed to U.S. and Canadian safety standards. Suitable for damp locations.

Crossover® LED Lighting

lighting facts^{CM}

A Program of the U.S. DOE

Light Output (Lumens)	4957
Watts	62.2
Lumens per Watt (Efficacy)	79

Color Accuracy	69
Color Rendering Index (CRI)	

Light Color
Correlated Color Temperature (CCT)

5100 (Daylight)

2700K 3000K 4500K 6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results. Products qualified under the DOE ENERGY STAR® program have the ENERGY STAR mark on this label.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: KGGN-EDE2GE
Model Number: XSL2-S-LED-50-CW-UE
Type: Surface and pendant-mounted downlights

This "Lighting Facts Label" represents LSI's commitment, through participation in the Department of Energy's SSL Quality Advocates program, to accurately report performance criteria of our LED fixtures. **This label represents a single test of a single fixture. Input power below represents rated values for the family.** Color temperature and lumen output for each variation of this Crossover® fixture can be found in the ordering information below as well as at www.lightingfacts.com.

LIGHT OUTPUT - XSL2				
	Clear Lens		Lumens	Watts
	Type S	Type 5A		
SS - Super Saver			6,193	60
HO - High Output			8,348	86
SS - Super Saver			5,158	60
HO - High Output			6,959	86
	Diffused Lens		Lumens	Watts
	Type S	Type 5A		
SS - Super Saver			5,752	60
HO - High Output			6,751	87
SS - Super Saver			4,393	60
HO - High Output			5,842	87

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



IP67



Suitable for damp locations



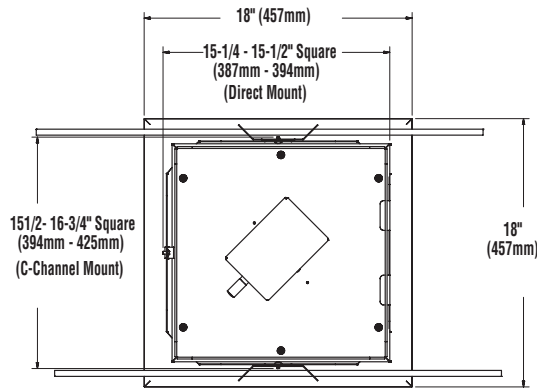
LED SOFFIT LIGHT (XSL2)

PRODUCT ORDERING INFORMATION

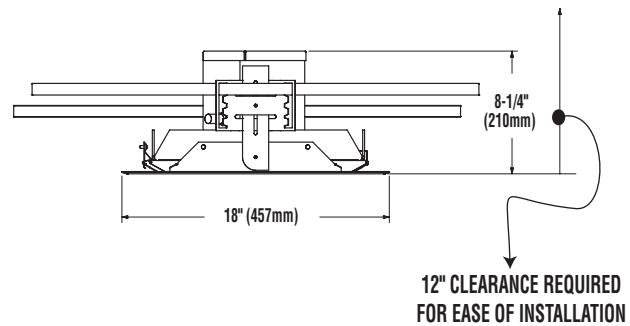
TYPICAL ORDER EXAMPLE: **XSL2 S LED 50 SS CW 120 WHT CMT**

Prefix	Distribution	Light Source	# of LEDs	Drive Current	Color Temperature	Input Voltage	Finish	Options
XSL2 - Soffit Light	S - Symmetric 5A - Type 5	LED	50	HO - High Output SS - Super Saver	CW - Cool White (5000° K nom.)	120 208 240 277 347	WHT - White	CMT - Channel Bar Mounting Kit DM - Direct Mount DFL - Diffused Lens

DIMENSIONS

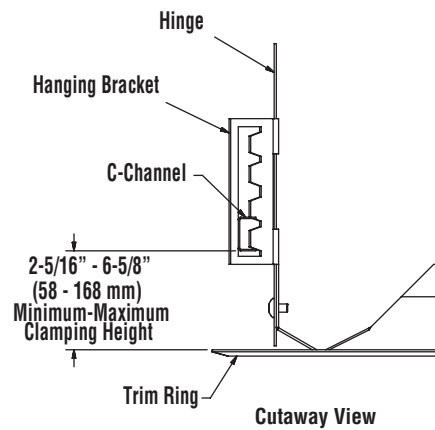


TOP VIEW



SIDE VIEW
(Channel Mount Shown)

SHIPPING WEIGHT - 14 lbs. (6.4kg)



Cutaway View

DEVELOPMENT NOTES

- TOTAL PARCEL AREA: 170,736 SQ.FT. (3.920 ACRES)
AREA WITHIN CITY LIMITS: 122,277 SQ.FT. (2.807 ACRES)
AREA WITHIN UNINCORPORATED: 48,459 SQ. FT. (1.113 ACRES)
- CURRENT ZONING (CC)- SINGLE FAMILY RESIDENTIAL & GENERAL COMMERCIAL
PROPOSED ZONING (CC)- GENERAL COMMERCIAL
CURRENT ZONING (UNI)- R3 (RESIDENCE) & C8 (PLANNED COMMERCIAL DISTRICT)
PROPOSED ZONING (UNI)- C8 (PLANNED COMMERCIAL DISTRICT)
- SETBACKS-
FRONT YARD/ROW (CC) 10 FEET OLIVE BLVD. (CC)
SIDE YARD (CC) 0 FEET SCHULTE ROAD (IN LIEU OF ROW GIVEN TO COUNTY)
SIDE YARD (UNI) 12 FEET
REAR YARD (UNI) 10 FEET
BUFFER YARD (UNI) 15 FEET (NORTH PROPERTY LINE)
SCREENING 25 FEET [SEC 405.360 E-44] WITH FENCE FOR DRIVE THRU
*BUFFER YARD @ 20FT + (5 X 1) = 25 FEET
BUILDING HEIGHT NOTE: ALL PROPOSED BUILDINGS TO BE 1 STORY IN HEIGHT
- SPECIAL CONSIDERATIONS-
4.1. TRASH ENCLOSURES SHALL BE INTERIOR TO THE SITE AND NOT ALONG THE NORTH PROPERTY LINE
4.2. SIDEWALKS ALONG OLIVE BLVD. SHALL BE FIVE-FOOT IN WIDTH UNLESS ABUTTING CURB, IN WHICH CASE SHALL BE INCREASED TO SIX-FOOT WIDE.
4.3. PLAN SHALL BE SO DEVELOPED TO INCLUDE AN INTEGRATED PEDESTRIAN CIRCULATION SYSTEM.
- FIRE DISTRICT: CREVE COEUR
- FLOOD NOTE:
ACCORDING TO THE FLOOD INSURANCE RATE MAP OF THE CITY OF CREVE COEUR, MISSOURI (COMMUNITY PANEL NUMBER 290344 0166 H, EFFECTIVE DATE AUGUST 2, 1995), AND THE FLOOD INSURANCE RATE MAP OF ST. LOUIS COUNTY, MISSOURI (UNINCORPORATED AREAS) (COMMUNITY PANEL NUMBER 290327 0166 H, EFFECTIVE DATE AUGUST 2, 1995) THIS PROPERTY LIES WITHIN ZONE X. ZONE X IS DEFINED AS AN AREA OF MINIMAL FLOOD HAZARD.
- ALL PROPOSED UTILITIES SHALL BE LOCATED UNDERGROUND.
- TRASH ENCLOSURES SHALL BE SIX FOOT (6') IN HEIGHT AND SHALL BE CONSTRUCTED W/ A SIGHT-PROOF GATE; MATERIALS SHALL BE COMPATIBLE WITH THE ARCHITECTURE OF MAIN BUILDINGS AND OF SIMILAR MATERIALS.
- STACKING: GENERAL STANDARDS
9.1. DRIVE-THROUGH STACKING LANES SHALL HAVE A MINIMUM WIDTH OF TWELVE FEET.
9.2. STACKING LANES SHALL BE SET BACK 20 FEET FROM RESIDENTIALLY ZONED PROPERTY LINES.
9.3. AUDIBLE ELECTRONIC DEVICES SUCH AS LOUSPEAKERS, AUTOMOBILE SERVICE ORDER DEVICES, AND SIMILAR INSTRUMENTS SHALL NOT BE LOCATED WITHIN 50 FEET OF ANY RESIDENTIAL PROPERTY LINE.
9.4. ALL DRIVE-THROUGH AREAS, INCLUDING BUT NOT LIMITED TO MENU BOARDS, STACKING LANES, TRASH RECEPTACLES, LOUSPEAKERS, DRIVE UP WINDOWS, AND OTHER OBJECTS ASSOCIATED WITH THE DRIVE-THROUGH AREA SHALL BE LOCATED IN THE SIDE OR REAR YARD OF A PROPERTY, AND SHALL NOT CROSS, INTERFERE WITH, OR IMPEDE ANY PUBLIC RIGHT-OF-WAY.

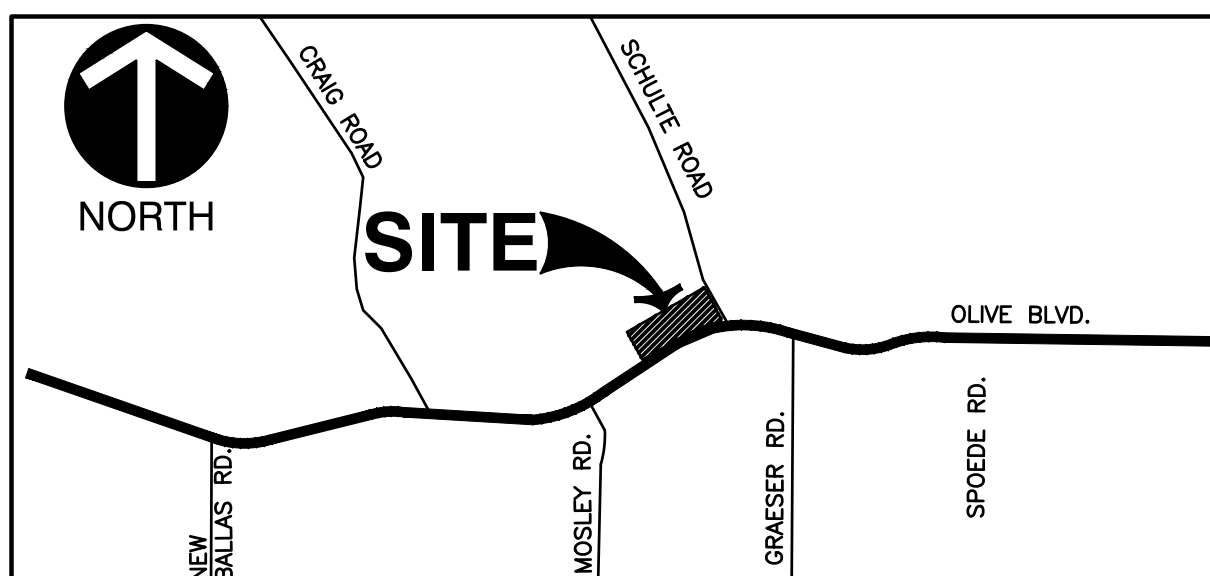
SITE CALCULATIONS 170,736 SQ.FT.:	
AREA CREVE COEUR	= 122,277 SQ.FT. (2.807 ACRES)
GREENSPACE (CC)	= 52,805
IMPERVIOUS (CC)	= 69,472 (56.8%)
AREA UNINCORPORATED	= 48,459 SQ.FT. (1.113 ACRES)
GREENSPACE (UNI)	= 40,098
IMPERVIOUS (CC)	= 8,361 (17.3%)
TOTAL GREENSPACE	= 91,548 (54.4%)
TOTAL IMPERVIOUS	= 77,833 (45.6%)
RATIO OF FLOOR TO SITE IN SQ.FT. (FAR)	
1:17.2 (1 SQ.FT. OF FLOOR SPACE TO 17.2 SQ.FT. OF PARCEL AREA)	

PARKING CALCULATIONS:	
CREVE COEUR	
REQUIRED = GENERAL RETAIL @ 4 PER 1,000 SQ.FT. = 19.2	
UNINCORPORATED:	
REQUIRED = CARWASH @ 1/BAY + 5 STACKING PER BAY = 20	
= FOOD MARKET @ 3-1/3 PER 1,000 SQ.FT. = 15.9	
PROVIDED = 27 STACKING	
= 30 SPACES INCLUSIVE OF 2 ACCESSIBLE SPACES	

PRELIMINARY PLAT FOR

Mobil On the Run

A TRACT OF LAND BEING ALL OF LOTS 1, 2, 3 AND 4 OF "OAK LAKE ESTATES", P.B.92 PG.3 AND PART OF LOTS 3, 4, AND 5 OF THE SUBDIVISION OF THE FARM OF S.S. MATSON IN U.S. SURVEY 1962, TOWNSHIP 45 NORTH, RANGE 5 EAST OF THE FIFTH PRINCIPAL MERIDIAN ST. LOUIS COUNTY, MISSOURI

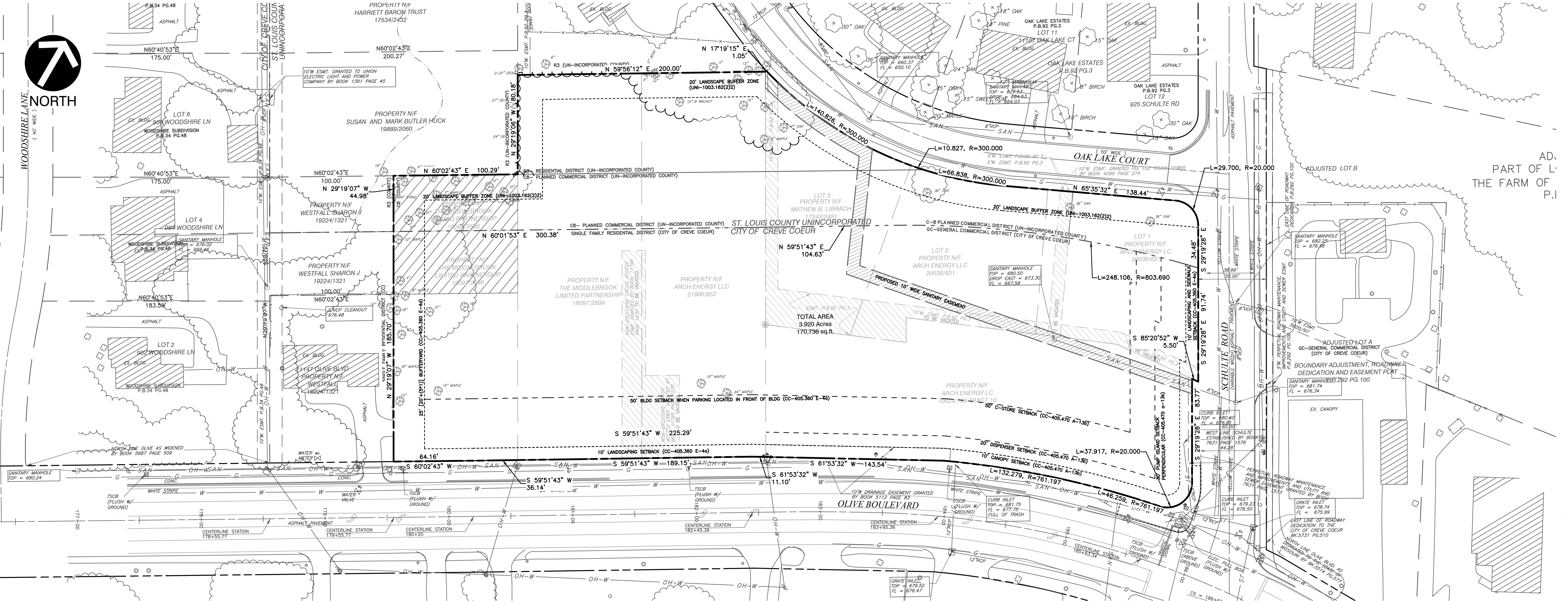


PRELIMINARY DRAINAGE NOTES

- PROJECT AREA: 170,736 (3.92 ACRES)
 - WATERSHED: FEE FEE
 - 15YR/20MIN DIFFERENTIAL RUNOFF (Q=A*Pi, PER MSD):
PRE: Q=(3.92AC)*(0.38)*(3.54)+(3.92AC)*(0.62)*(1.70)=9.43 CFS
POST: Q=(3.92AC)*(0.10)*(4.20)+(3.92AC)*(0.41)*(3.54)+
(3.92AC)*(0.49)*(4.60)=9.84 CFS
DIFFERENTIAL RUNOFF: Q=(+)-1.17 CFS
 - PER MSD SECTION 4.080.01(2B), THIS PROJECT DOES NOT REQUIRE DETENTION, HOWEVER THE SITE MUST PROVIDE WATER QUALITY.
 - PER THE NATIONAL RESOURCE CONSERVATION SERVICE (NRCS) THIS PROJECT IS WITHIN HYDROLOGIC SOIL GROUP 'D' HAVING A LOW INFILTRATION RATE AND HIGH RUNOFF POTENTIAL.
 - WATER QUALITY VOLUME FOR THE ENTIRE SITE (3.92 ACRES AT 51% IMPERVIOUS) PER MARYLAND STORMWATER DESIGN MANUAL APPENDIX D-10:
WQp=3.02 CFS OR WQv=8,300 CF
- WATER QUALITY BMPs:
- HYDRODYNAMIC SEPARATOR AND SNOUT FOR HOTSPOT AREA AT GAS PUMPS
 - BIORETENTION (WILL ALSO PROVIDE VOLUME REDUCTION)

THE FOLLOWING UTILITIES AND OWNERS ARE LOCATED WITHIN THE WORK LIMITS OF THIS PROJECT

LACLEDE GAS COMPANY COMMERCIAL & INDUSTRIAL MARKETING 720 OLIVE STREET ST. LOUIS, MO 63101 CONTACT: DAWN SPINK PHONE: 314-342-0687 EMAIL: JTravis@lacledegas.com	MISSOURI AMERICAN WATER 727 CRAIG RD. CREVE COEUR, MO 63141 CONTACT: DAWN SPINK PHONE: 314-996-2379 EMAIL: dawn.spink@amwater.com	AMEREN DORSETT DISTRICT 1212 DORSETT ROAD MARYLAND HEIGHTS, MO 63043 CONTACT: RYAN ALEXANDER PHONE: (314) 344-9560 EMAIL: RAlexander2@ameren.com
AT&T TELEPHONE 402 N 3RD ST. CHARLES, MO 63301 CONTACT: JIM LILLY PHONE: (636) 949-4228	CREVE COEUR FIRE PROTECTION DISTRICT 11221 OLIVE BLVD. CREVE COEUR, MO 63141 CONTACT: MR. KENNETH BLACK PHONE:	CHARTER COMMUNICATIONS 815 CHARTER COMMONS TOWN & COUNTRY, MO 63017 CONTACT: RICHARD STURK PHONE: (636) 387-6650 EMAIL: mapping-design@chartercom.com
MCI FIBER 2400 NORTH GLENVIEW RICHARDSON, TX 75082 CONTACT: PHONE: (972) 729-6016 EXT. 1	ST. LOUIS METROPOLITAN SEWER DISTRICT 2350 MARKET ST. ST. LOUIS, MO 63103 PHONE: (314) 768-6200	MODOT WEST AREA PERMITS 1590 WOODLAKE DRIVE CHESTERFIELD, MO 63017-5712 CONTACT: JIM BODART PHONE: (314) 434-4318 EMAIL: James.Bodart@modot.mo.gov



- REFERENCE
- TOPOGRAPHIC SURVEY PROVIDED BY CLIENT DATED SEPTEMBER 9, 2006. TREE SURVEY PROVIDED BY CIVIL & ENVIRONMENTAL CONSULTANTS, INC. DATED JANUARY 15, 2009.



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1-800-DIG-RITE

LEGEND

---	PARCEL LINE
---	SETBACK LINE
---	PROPOSED EASEMENT
---	EASEMENT VACATE

SCALE IN FEET
0 30 60



SITE DEVELOPMENT PLAN
MOBIL ON THE RUN & BRITE WORX
PRELIMINARY PLAT

DATE:	AUG. 2016	DRAWN BY:	CAC
DWG SCALE:	AS NOTED	CHECKED BY:	KTK
PROJECT NO:	110-241	APPROVED BY:	KTK

DRAWING NO. 110-241
SHEET 1 OF 1
PLAT

MSD MAP# 17-N

ZIP- 63146

WALLIS COMPANIES
106 EAST WASHINGTON
CUBA, MO 65453
(636) 549-1600

Civil & Environmental Consultants, Inc.
CERTIFICATION/LICENSE NO. 2002013942
4848 Park 370 Blvd., Suite F - Hazelwood, MO 63042
314-656-4566 - 866-250-3679
www.cecinc.com

REVISION RECORD

NO	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		

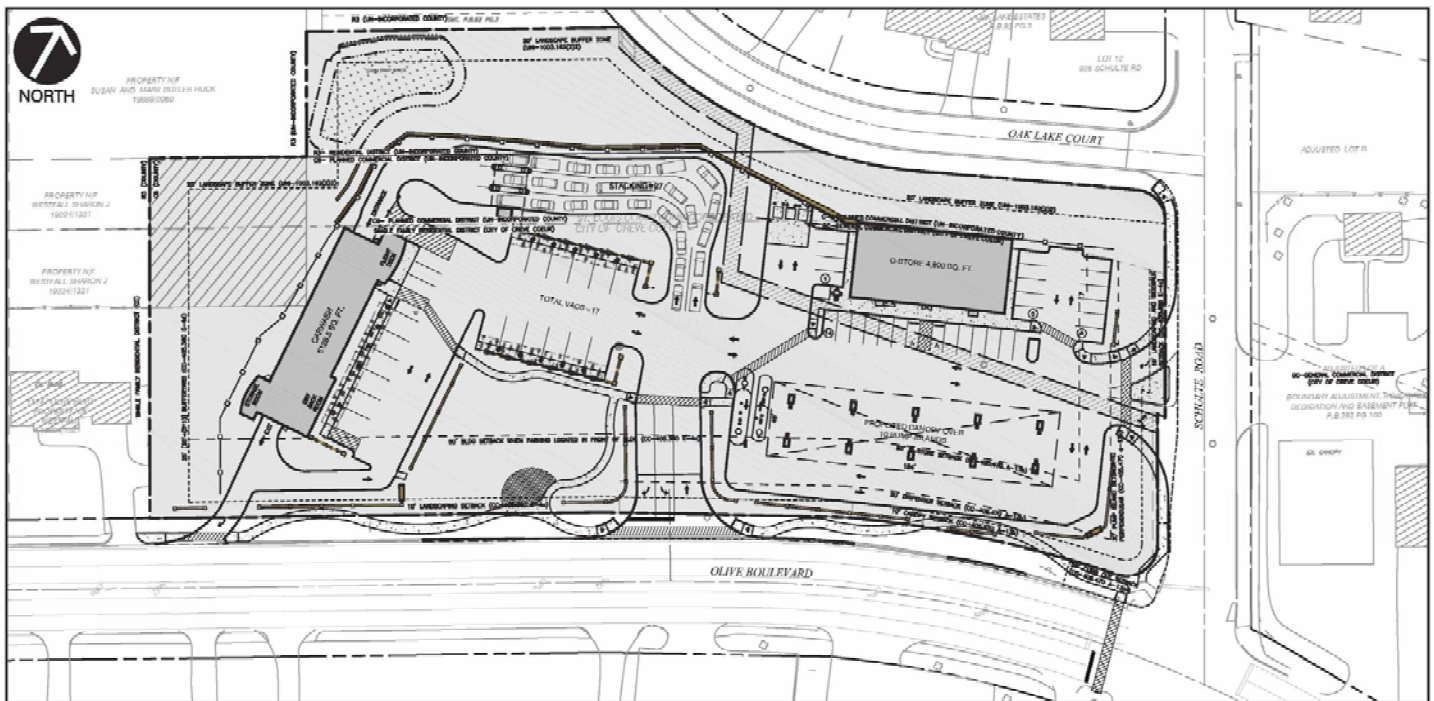
Traffic Impact Study

for

Proposed Mobil Rebuild with Car Wash

Creve Coeur, Missouri

11.04.2016



OVERALL SITE MAP

SCALE: 1" = 50'

prepared by:



prepared for:

Civil & Environmental Consultants, I
4848 Park 370 Boulevard, Suite F
Hazelwood, Missouri 63042

Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri

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Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri

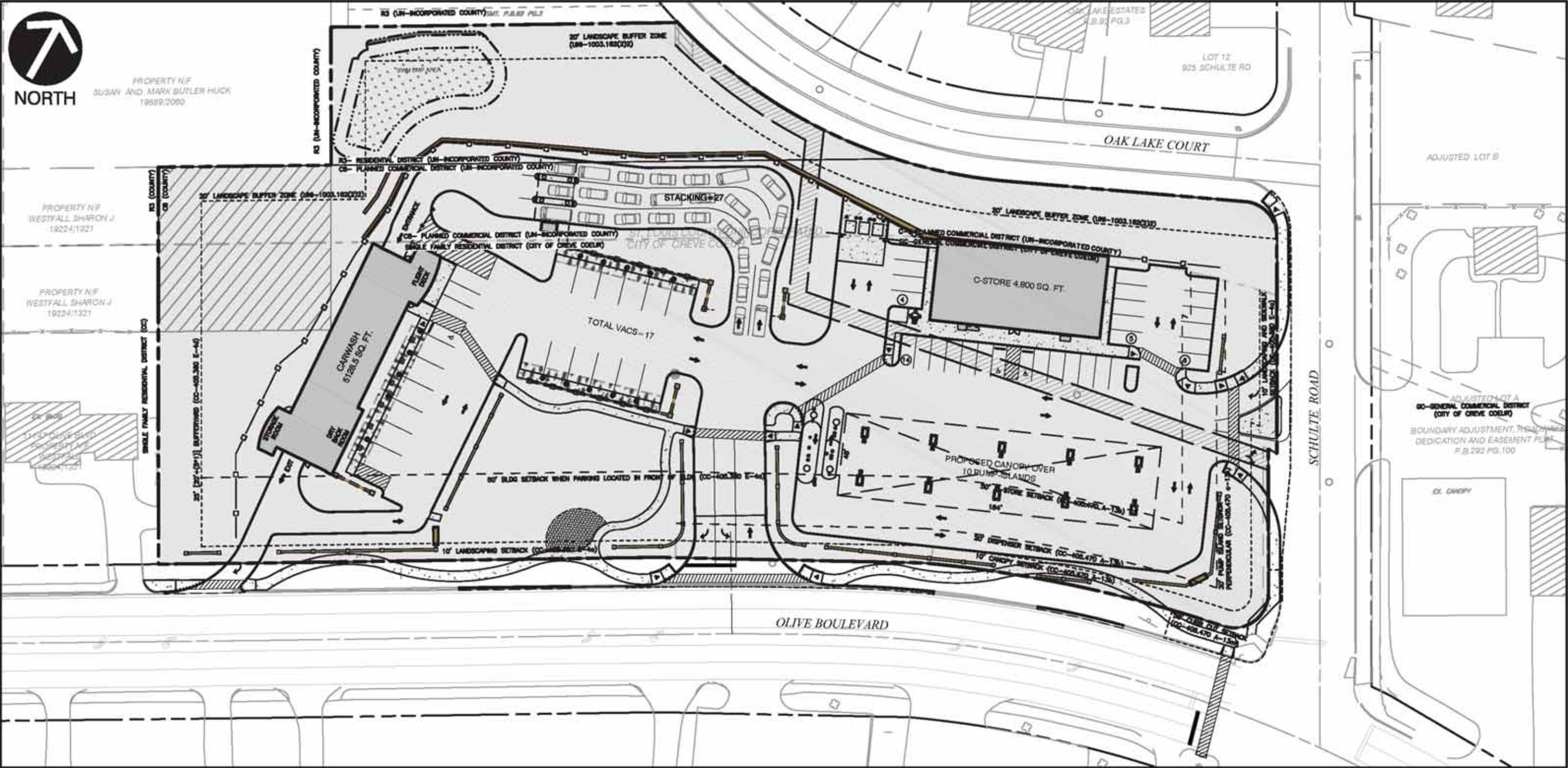
Introduction

CBB has completed a traffic impact study for the Mobil Gas and Convenience Store with Car Wash redevelopment in Creve Coeur, Missouri. The redevelopment site is located on the northwest quadrant of Olive Boulevard at Schulte Road. The site location and the adjacent roadways are depicted in **Figure 1**.



Figure 1: Site Location Map

The existing Mobil gas station with eight vehicle fueling positions, small convenience kiosk, and car wash as well as three single-family homes along Olive Boulevard (currently used as commercial businesses) and three single-family homes along Oak Lake Court occupy the site today. It is our understanding that the existing Mobil gas station would be re-built with twenty vehicle fueling positions and an expanded convenience store, as well as an improved car wash. Access to the site would be provided via one right-out only driveway along Olive Boulevard near the west property line and one full access driveway on Olive Boulevard. Additionally, one three-quarter access driveway (no left-turn in) is proposed on Schulte Road. No access is proposed to Oak Lake Court. **Exhibit 1** illustrates the preliminary site plan provided by your civil engineer.



OVERALL SITE MAP

SCALE: 1" = 50'

***Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri***

It should be noted that five curb cuts along Olive Boulevard (two to the existing Mobil site and three that serve residential structures operating as business) would be consolidated into the two access points noted above. The existing access to Schulte Road would be moved further to the north (away from the signal) to align with the existing Shell gas station on the east side of the road and would be limited to three-quarter access.

A scoping meeting was held with representatives from the Missouri Department of Transportation (MoDOT), the City of Creve Coeur and the development team. St. Louis County Department of Transportation (SLCDOT) was not able to attend the initial meeting but provided their comments and input separately. The purpose of this traffic study was to determine the number of trips that would be generated by the proposed re-development; evaluate the impact of those trips on operating conditions along the adjacent roadways; determine the ability of motorists to safely enter and exit the site and recommend appropriate access locations and configurations. Where necessary, roadway improvements and/or traffic control modifications have been recommended to mitigate the impact of the re-development. The focus of our analysis was the a.m., midday, and p.m. peak hours of a typical weekday. This scope does not include an analysis of internal circulation on the site itself or parking sufficiency.

The following report presents CBB's analysis comparing traffic conditions with and without the proposed redevelopment. The methodology employed to complete this study, along with the findings and conclusions, are discussed in greater detail in the subsequent sections. CBB followed current industry standard methods and processes in the completion of our work.

***Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri***

Base Traffic Conditions

In order to identify the traffic impacts associated with the proposed development, it is essential to understand the pre-development traffic conditions in the area. To that end, it was necessary to perform an operational analysis of the base traffic volumes on the surrounding road system. Therefore, any deficiencies in the current road system will be identified before the traffic generated by the proposed redevelopment is added to the system.

Existing Road System

Olive Boulevard (Missouri Route 340) is owned and maintained by MoDOT. Olive Boulevard is a major east-west arterial with a five-lane cross-section: two through lanes in each direction and a center left-turn lane. However, the left-turn lanes at Schulte Road/Mary Meadows Lane are substandard in width – 9 feet on the east and west leg. There is also a sweeping horizontal curve at this intersection that restricts sight distance along the roadway, particularly visibility on the south side. The approaches of Schulte Road and Mary Meadows Lane are offset (Mary Meadows Lane intersects Olive Boulevard further to the west) and skewed relative to the Olive Boulevard centerline, which is undesirable from an operational and safety perspective.

Schulte Road is a two-lane urban collector owned and maintained by SLCDOT. Schulte Road serves a large residential area to the north. A dedicated southbound left-turn lane and a shared through/right-lane are provided at the signalized intersection with Olive Boulevard. A separate northbound left-turn lane, albeit very short, is marked on Schulte Road at Oak Lake Court.

Oak Lake Court is a cul-de-sac residential street that currently serves 10 single-family homes. Oak Lake Court has access to Schulte Road a few hundred feet north of Olive Boulevard. Oak Lake Court is owned and maintained by SLCDOT.

Mary Meadows Lane is a private 24-foot wide, residential street that serves eighteen homes with one commercial driveway connection for the building in the southeast quadrant of Olive Boulevard and Mary Meadows. A channelized lane for eastbound-to-southbound right-turns is provided (this lane is separated by a raised median). The alignment and configuration of this lane is awkward and appears to be a remnant of a previous alignment modification. It was also noted that the vertical profile and horizontal alignment of Mary Meadows Lane restricts the sight distance across Olive Boulevard between northbound and southbound motorists approaching the intersection.

This study intersection is part of a coordinated system along Olive Boulevard with cycle lengths that are set at 140 seconds during the AM and PM peak hours and 120 seconds during the weekday and Saturday midday peak hours. At the signalized intersection of Olive Boulevard with Schulte Road/Mary Meadows Lane, the northbound and southbound approaches operate on a common phase while the eastbound and westbound left-turns operate with protected-plus-permitted Flashing Yellow Arrow (FYA) phasing.

***Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri***

Dautel Lane is a local roadway that serves a residential area north of Olive Boulevard with two commercial driveways that serve a pharmacy and jewelry store/thrift shop. A dedicated southbound left-turn lane and a shared through/right-lane are provided at the signalized intersection with Olive Boulevard.

Graeser Road is a two-lane urban collector owned and maintained by SLCDOT. Graeser Road serves a large residential area to the south with driveway access to commercial uses that front Olive Boulevard. A dedicated northbound left-turn lane and a shared through/right-lane are provided at the signalized intersection with Olive Boulevard.

At the signalized intersection of Olive Boulevard with Dautel Lane/Graeser Road, the northbound and southbound approaches operate on a common phase with Flashing Yellow Arrow phasing while the eastbound and westbound left-turns operate with protected-plus-permitted Flashing Yellow Arrow phasing.

Woodshire Lane is a cul-de-sac local residential street that serves eighteen single-family homes to the north of Olive Boulevard. Woodshire Lane is located nearly opposite Renee Lane, offset slightly to the east.

Renee Lane is a local residential street that provides access to two cul-de-sac residential streets and serves approximately forty single-family homes to the south of Olive Boulevard.

Mosley Road is a local urban collector road that serves a large residential area to the south with access driveways to commercial/office uses that front Olive Boulevard. Separate northbound left-turn and right-turn lanes are provided at the signalized intersection with Olive Boulevard.

The signalized intersection of Olive Boulevard with Mosley Road is a “T” intersection with the westbound left-turns operating with protected-plus-permitted Flashing Yellow Arrow phasing.

Base Traffic Volumes

The following intersections were included in the traffic impact study analyses:

- Olive Boulevard at Mosley Road (Signalized);
- Olive Boulevard at Schulte Road/Mary Meadows Lane (Signalized);
- Olive Boulevard at Dautel Lane/Graeser Road (Signalized);
- Olive Boulevard at Woodshire Lane/Renee Lane (Side-Street Stop); and
- Oak Lake Court at Schulte Road (Side-Street Stop).

Turning movement traffic counts were collected by CBB in 2013 as part of the Olive Boulevard (Route 340) signal retiming project. The traffic counts collected at the signalized intersections of Olive Boulevard with Mosley Road, Schulte Road/Mary Meadows Lane, and Dautel Lane/Graeser Road were used for this traffic study. Based on this count data, the peak hours of the intersection identified for analysis were the morning (7:45 to 8:45 a.m.), midday (12:00 p.m. to 1:00 p.m.), and afternoon (4:30 to 5:30 p.m.) peak hours of a typical weekday.

***Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri***

These counts were supplemented with new traffic counts and delay observations conducted by CBB during the weekday morning (7:00 - 9:00 a.m.), midday (11:00 a.m. to 1:00 p.m.) and weekday afternoon (4:00 - 6:00 p.m.) peak periods at the intersection of Olive Boulevard with Woodshire Lane/Renee Lane. Spot counts were also performed at the existing Mobil driveways to determine peak hour trips. Queue observations were also made for westbound Olive Boulevard at Schulte Road and southbound Schulte Road at Olive Boulevard. Trip estimates were utilized to address traffic for the 10 homes on Oak Lake Court. The Base Traffic Volumes are summarized in **Exhibit 2**.

As can be seen, the traffic volumes are relatively consistent during the three peak hours. The east-west volumes on Olive Boulevard are heavy during each peak hour. Traffic volumes to and from Mary Meadows Lane are relatively light since the street only serves eighteen homes. Traffic to and from Schulte Road is moderate with the heaviest volumes occurring in the p.m. peak hour.

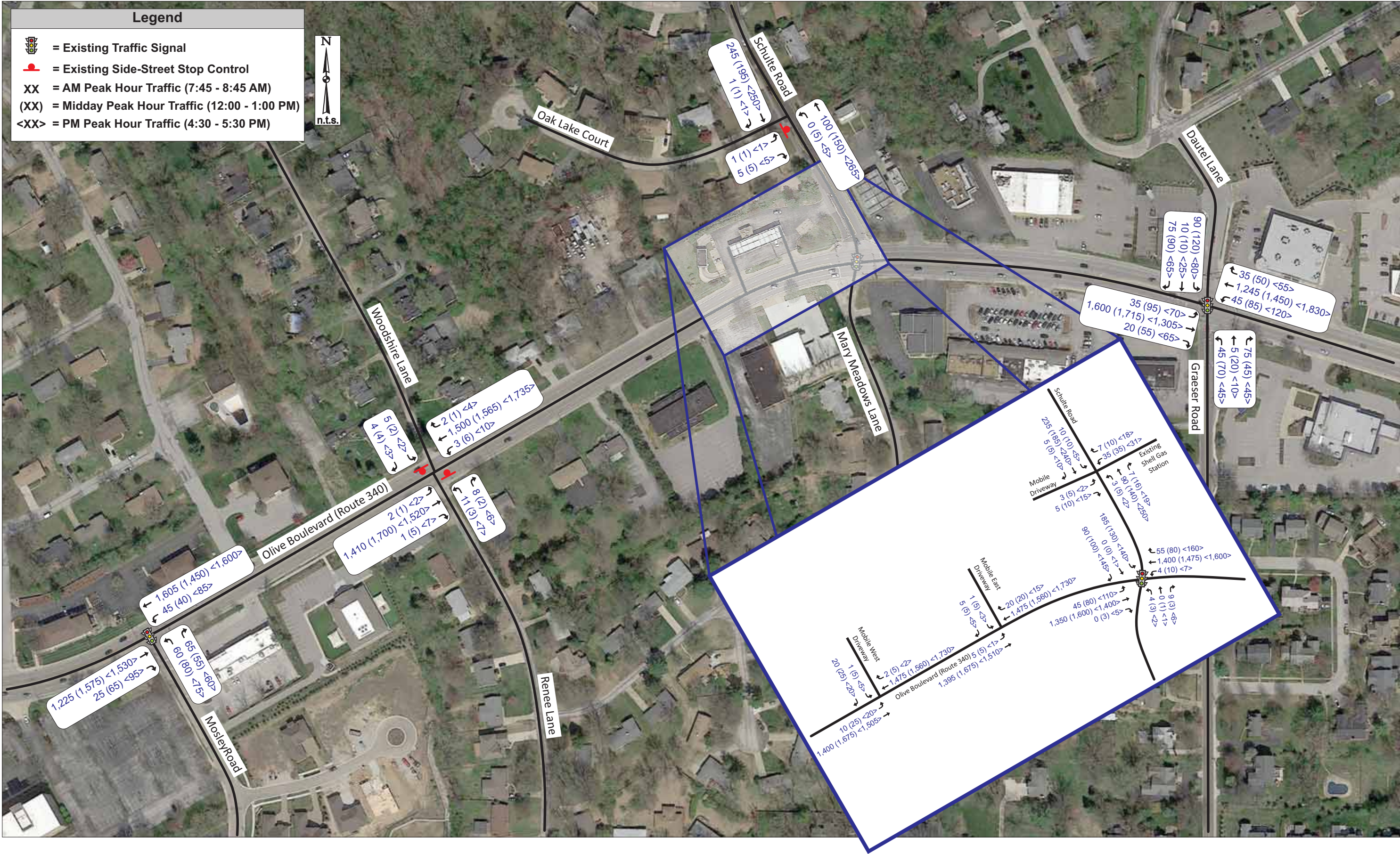
Base Operating Conditions

The base operating conditions for the study area intersections were evaluated using SYNCHRO 8, which is based on procedures outlined in the *Highway Capacity Manual* to determine estimates of capacity and operational performance of signalized and unsignalized intersections. Our traffic operations analysis includes measures of effectiveness generated by the SYNCHRO software.

The operating conditions were graded in accordance with six levels of traffic service (Level A "Free Flow" to Level F "Fully Saturated") established by the *Highway Capacity Manual*. Levels of service (LOS) are measures of traffic flow which consider such factors as speed, delay, traffic interruptions, safety, driver comfort, and convenience. Level 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 generally considered acceptable for peak period conditions.

It must also be acknowledged that the perception of acceptable traffic service varies widely by area. Specifically, more delay is usually tolerated in urban areas compared to rural areas. Based on the character of this area, we believe that LOS D would be a desirable target for overall peak period traffic operations but may not be achievable for the unsignalized movements due to the heavy peak hour volumes along Olive Boulevard.

The thresholds that define levels of service at an intersection are based upon the type of control used (i.e., whether it is signalized or unsignalized) and the calculated delay. For signalized and all-way stop intersections, the average control delay per vehicle is estimated for each movement and aggregated for each approach and the intersection as a whole. At intersections with partial (side-street) stop control, delay is calculated for the minor movements only since motorists on the main road are not required to stop. Furthermore, criteria differ for the two, since control types create different driver expectations. **Table 1** summarizes the level of service thresholds used in this analysis.



hibit 2: Base Traffic Volumes (2013 Counts)

Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri

Table 1: Level of Service Thresholds

Level of Service (LOS)	Control Delay per Vehicle (sec/veh)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	0-10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

It should be noted that the unsignalized intersections within the study area were evaluated using the HCM 2010 module in the Synchro software. Each of the study intersections was evaluated using the methodologies described above. The results of the SYNCHRO evaluations are summarized in **Table 2**. Levels of service and average delay for each intersection approach are reported for the weekday AM, Midday, and PM peak hours.

Operating conditions at the study intersections are generally favorable (LOS C or better overall and LOS D or better by approach) with the exception of northbound Renee Lane during the midday and PM peak hours, the southbound approach of Woodshire Lane during the PM peak hour, the southbound approach of Schulte Road at Olive Boulevard during the AM peak hour, the southbound approach of the Mobil West Driveway during the midday and PM peak hours, and the southbound approach of the Mobil East Driveway during the AM, midday and PM peak hours.

The lengthy delays for southbound Schulte Road are primarily due to a relatively long cycle (140 second AM/PM and 120 second midday) with a relatively small amount of green time allocated to Schulte Road/Mary Meadows Lane. It should be noted that the calculated volume to capacity ratios (v/c) do not exceed 1.0 during the peak hours but did reach 0.92 during the AM peak hour, 0.78 during the Midday peak hour and 0.82 during the PM peak hour. In this case, the cycle length dictates the poor level of service during the AM peak hour and drives the longer delays in the Midday and PM peak hours. The northbound and southbound approaches have minimal green times to maximize progression bands for the heavy eastbound and westbound through movements.

The southbound approaches exiting the current Mobil East and West Driveways operate poorly due to the heavy traffic volumes along Olive Boulevard and the close spacing of the Mobil Driveways from the Schulte Road signal, which typically does not allow for two-stage left-turns; therefore, no two-stage left-turns were assumed in the analyses for the Mobil driveways. If two-stage left-turns were completed by motorists, then the calculated southbound delays may improve.

The analyses software results indicate that the existing movements from Renee Lane and Woodshire Lane operate at less than desirable levels during the PM peak and southbound

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approach during the midday peak, primarily due to the heavy east-west traffic along Olive Boulevard. It should be noted that current delay observations were made at Renee Lane/Woodshire Lane, which is discussed further below.

Table 2: Traffic Operating Conditions – Base Traffic Volumes

Intersection/Approach	AM Peak Hour	Midday Peak Hour	PM Peak Hour
<i>Olive Boulevard and Mosley Road – Signalized</i>			
Eastbound Olive Boulevard	A (2.4)	A (5.3)	A (5.9)
Westbound Olive Boulevard	B (12.1)	A (9.6)	B (10.9)
Northbound Mosley Road	D (43.9)	D (43.3)	D (48.5)
Overall Intersection	A (9.4)	A (8.9)	B (10.0)
<i>Olive Boulevard and Woodshire Lane/Renee Lane – Side-Street Stop</i>			
Eastbound Left-Turn Olive Boulevard	B (14.2)	B (14.8)	C (16.6)
Westbound Left-Turn Olive Boulevard	B (13.4)	C (16.4)	B (14.6)
Northbound Renee Lane	D (32.6)	E (43.5)	E (35.5)
Southbound Woodshire Lane	D (33.3)	D (28.2)	E (36.7)
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>			
Eastbound Olive Boulevard	B (17.0) 20' LT	B (10.4) 30' LT	B (16.8) 105' LT
Westbound Olive Boulevard	B (11.0)	A (4.8)	A (8.3)
Northbound Mary Meadows Lane	D (51.2)	D (44.3)	D (51.3)
Southbound Schulte Road	E (71.8) 335' LT	D (46.3) 190' LT	D (53.8) 225' LT
Overall Intersection	B (19.2)	B (10.3)	B (15.6)
<i>Olive Boulevard and Dautel Lane/Graeser Road – Signalized</i>			
Eastbound Olive Boulevard	A (6.2)	B (15.3)	B (11.4)
Westbound Olive Boulevard	B (15.0)	B (15.9)	C (29.1)
Northbound Dautel Lane	C (32.3)	D (36.6)	D (41.6)
Southbound Graeser Road	D (49.9)	D (42.6)	D (50.4)
Overall Intersection	B (13.1)	B (17.9)	C (23.6)
<i>Oak Lake Court and Schulte Road – Side-Street Stop</i>			
Eastbound Oak Lake Court	A (9.9)	A (9.6)	B (10.2)
Northbound Left-Turn Schulte Road	A (7.7)	A (7.7)	A (7.8)
<i>Schulte Road at Mobil/Shell Driveway – Side-Street Stop</i>			
Eastbound Mobil Driveway	B (10.4)	B (10.2)	B (10.3)
Westbound Shell Driveway	B (11.5)	B (11.6)	B (13.0)
Northbound Schulte Road	A (7.7)	A (7.7)	A (7.8)
Southbound Schulte Road	A (7.4)	A (7.6)	A (7.8)
<i>Olive Boulevard at Mobil West Driveway – Side-Street Stop</i>			
Eastbound Left-Turn Olive Boulevard	B (14.2)	B (13.3)	C (17.3)
Southbound Mobil Driveway	C (23.9)	F (77.7)	F (104.8)
<i>Olive Boulevard at Mobil East Driveway – Side-Street Stop</i>			
Eastbound Left-Turn Olive Boulevard	B (14.2)	C (15.5)	C (16.7)
Southbound Mobil Driveway	E (36.7)	F (78.0)	F (115.0)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

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Queue Observations

The eastbound queues along Olive Boulevard from the traffic signal at Schulte Road and southbound queues along Schulte Road from the Olive Boulevard signal were observed during the AM, Midday and PM peak hours. Queue observations were made to verify the Synchro estimated queues and determine potential blockages of the proposed access points.

The location of the existing Mobil East driveway allows approximately two vehicles to stack on Olive Boulevard eastbound (approximately 65 feet) before it is blocked, while the Mobile West Driveway allows approximately 5 or 6 vehicles to stack (approximately 185 feet) before it is blocked. The proposed full access further to the west on Olive Boulevard will allow 10 or 11 vehicles to stack (approximately 265 feet) before it will be blocked.

Based on the field observations during the AM, Midday and PM peak hours, there is a heavy, steady flow of traffic on Olive Boulevard during the AM and PM peak hours, with moderate to heavy traffic during the Midday peak hour. The eastbound queues on Olive Boulevard at Schulte Road/Mary Meadows Lane are routinely long during the AM, Midday and PM peak hours.

AM peak observations indicate that the eastbound left-turn queue along Olive Boulevard from Schulte Road had a maximum length of 3, 6, and 5 vehicles during the AM, Midday, and PM peak hours, respectively. Observations indicate that the eastbound left-turn queues all cleared each time the cycle changed to green during the AM, Midday and PM peak hours. Observations also indicated that the eastbound left-turn queues blocked the existing driveways several times during the peak hours. However, since the proposed relocated access will allow for more storage in the eastbound left-turn lane, the proposed driveway location should not be blocked during any of the peak hours.

The existing Mobil gas station driveway on Schulte Road allows approximately 3 vehicles to stack (approximately 75 feet) before it is blocked. The proposed three-quarter access (no left-turn in) on Schulte Road would allow approximately 4 vehicles to stack (approximately 100 feet) before will be blocked.

Observations indicate that the southbound left-turn queue along Schulte Road from Olive Boulevard had a maximum queue of 11, 7 and 10 vehicles during the AM, Midday, and PM peak hours, respectively, while average queues were 8, 6 and 7 vehicles, respectively. Observations further indicate that the southbound left-turn queues cleared a vast majority of the time each cycle during the AM, Midday and PM peak hours. Peak hour observations indicate that the southbound left-turn queues blocked the existing Mobil and Shell driveways several times during the peak hours and local drivers tend to spill back into the northbound left-turn lane marked for Oak Lake Court in order to leave the right-turn lane clear.

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Delay Observations at Olive Boulevard and Woodshire Lane/Renee Lane

CBB also recorded the actual delays experienced by vehicles attempting to turn from Woodshire Lane and Renee Lane onto Olive Boulevard during the AM, Midday and PM peak hours to verify the accuracy of the average delays reported in the analyses. Based on the total volume on the side streets and the total measured delay for each vehicle, the average delays observed for the southbound approach of Woodshire Lane and northbound Renee Lane are summarized in **Table 3**. These average delays included both left and right-turning vehicles which share each exit lane.

Table 3: Observed Delays – Existing Conditions

Intersection/Approach	AM Peak Hour	Midday Peak Hour	PM Peak Hour
<i>Olive Boulevard and Woodshire Lane/Renee Lane – Side-Street Stop</i>			
Northbound Renee Lane	21.6 sec	25.2 sec	36.2 sec
Southbound Woodshire Lane	28.3 sec	40.7 sec	24.6 sec

Average Vehicular delay in seconds per vehicle

It should be noted that some vehicles experienced more delay than the average listed in Table 3, and some vehicles experienced less. The maximum delays for southbound Woodshire Lane were observed to be 80 seconds, 110 seconds and 65 seconds during the AM, Midday and PM peak hour, respectively, while the minimum delays observed were approximately 5 seconds during each peak hour. The maximum delays for northbound Renee Lane were observed to be 67 seconds, 67 seconds and 174 seconds during the AM, Midday and PM peak hour, respectively, while the minimum delays observed were approximately 4 seconds during the AM and PM peak hours, and 2 seconds during the Midday peak hour.

Overall, the delays estimated by the computer analysis software were reasonably accurate (some lower and some higher) when compared to actual delays observed in the field. It should also be noted that the southbound volume on Woodshire Lane was very low (less than 10 vph), and the northbound volume on Renee Lane was also low (5 vph to 19 vph) which is a small sample size and may create quite a lot of volatility on those delays experienced by each approach from day to day.

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Proposed Redevelopment

The proposed redevelopment would rebuild the existing Mobil gas station to provide twenty vehicle fueling positions, an expanded convenience store, and a new car wash. It is our understanding that three-single family home structures along Olive Boulevard and three single-family residences along Oak Lake Court would be razed to make way for the new gas station.

Proposed Access

Access to the site is proposed via one full access curb cut on Olive Boulevard approximately 345 feet west of Schulte Road and one right-out-only curb cut approximately 290 feet to the west of the proposed full access driveway. This access arrangement remains similar to the previous redevelopment proposed on the site. It is our understanding that MoDOT traffic and permits staff was agreeable to these access locations for the previous project. It is acknowledged that the proposed full access driveway is slightly closer to Schulte than MoDOT's desired corner clearance distance per their Access Management Guidelines, but the proposed development significantly improves access management along Olive by reducing the five existing full-access curb cuts to two curb cuts: one full access and one right-out-only.

Access is also proposed on Schulte Road in the form of a three-quarter access driveway (no left-turn in) that would be located opposite the existing Shell gas station driveway. It is our understanding that the SLCDOT has insisted on the no left-turn-in restriction due to the southbound queues from the signal at Olive Boulevard even though a similar, yet worse access management is currently in place for the existing Mobil Station.

Driveway Sight Distance

Adequate sight distance is necessary at intersections to allow drivers to perceive potentially conflicting vehicles or other road users and allow those motorists sufficient time to adjust their speed to avoid a collision or make a choice of when to cross or enter the mainline traffic flow. All drivers approaching or stopped at an intersection should have an unobstructed view of the entire intersection so that potential collisions can be avoided.

MoDOT's Engineering Policy Guide (EPG) Section 233.2.1 Intersection sight distance, was referenced to determine the minimum sight distance needs at the site driveway. The MoDOT method incorporates the method from A Policy on Geometric Design of Highways and Streets published by the American Association of State Highway and Transportation Officials (AASHTO), commonly referred to as the "Green Book", which uses the design speed of the major road and the required gap time from a minor road to enter or cross the major road to define the minimum safe distance for entrance visibility. The minimum intersection sight distance according to the MoDOT EPG on a 35 mph roadway is **390 feet**. The minimum stopping sight distance along a 35 mph roadway is **200 feet**.

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The sight distance available at the proposed full access driveway was not measured, but field observations verified ample visibility in excess of the minimums. The site engineer should verify the sight distance all proposed driveways on the site plan with respect to all site improvements. Careful consideration should always be given to sight distance obstructions when planning any aesthetics enhancements, such as berms, fencing, signs and landscaping, to ensure that these improvements do not obstruct the view of entering and exiting traffic at the site intersections with the public roads. It is generally recommended that all improvements higher than 3.0 feet above the elevation of the nearest pavement edge be held back at least 20 feet from the traveled roadway.

Trip Generation

In order to estimate the trip generation of the improved gas station, convenience store and car wash, several methods were considered. The first method compared several gas station land use codes as identified by ITE. The second comparison considered the local data from the existing location at Schulte and transactional data from another facility within the area, which is similar to the proposed.

Trip Generation – ITE Data

Traffic forecasts were estimated by using information provided in the “Trip Generation Manual”, Ninth Edition, published by the Institute of Transportation Engineers (ITE). This manual, which is a standard resource for transportation engineers, is based on a compilation of nationwide studies documenting the traffic characteristics of various land uses.

Based on the preliminary site plan provided, the proposed development consists of twenty vehicle fueling positions, a convenience store, and a car wash. Trip generation was reviewed for land uses similar to those shown on the site plan to provide an average number of trips during each peak hour.

Based upon the recommended procedure for estimating trip generation outlined in the “Trip Generation Handbook, A Recommended Practice”, published by ITE (March 2001), the average trip rate was utilized for:

- Land Use 944 – Gasoline/Service Station
- Land Use 945 – Gasoline/Service Station with Convenience Market
- Land Use 946 – Gasoline/Service Station with Convenience Market and Car Wash

As shown in **Table 4**, the forecasted average number of trips for a 20 vehicle fueling position gas station is expected to be 230 total trips during the AM peak hour, 310 total trips during the Midday peak hour, and 280 total trips during the PM peak hour.

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Table 4: ITE Trip Generation Estimate – Mobil Gas Station Rebuild

<i>Land Use</i>	<i>Vehicle Fueling Positions</i>	<i>AM Peak Hour</i>			<i>Midday Peak Hour</i>			<i>PM Peak Hour</i>		
		<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>
Gasoline/Service Station (Land Use 944)	20	125	120	245	185	185	370	140	140	280
Gasoline/Service Station with Convenience Market (Land Use 945)	20	105	105	210	135	135	270	135	135	270
Gasoline/Service Station with Convenience Market and Car Wash (Land Use 946)	20	120	120	240	145	145	290	140	140	280
Average Number of Trips		115	115	230	155	155	310	140	140	280

Trip Generation – Local Data

Based on CBB's driveway counts, the current gas station generates 80 total trips during the AM peak hour, 120 total trips during the Midday peak hour and 100 trips during the PM peak hour with 8 vehicle fueling positions. As noted above, the proposed Mobil gas station will provide twenty vehicle fueling positions. In order to estimate the forecasted trips for the new store, the trips to the current store were increased based on the percentage increase in the number of vehicle fueling positions. **Table 5** summarizes the trips counted at the existing Mobil and the projected trips based on the increase in the number of pumps.

Table 5: Local Trip Generation Estimate – Based on Current Trips and Fueling Positions

<i>Land Use</i>	<i>No. of Vehicle Fueling Positions</i>	<i>AM Peak Hour</i>			<i>Midday Peak Hour</i>			<i>PM Peak Hour</i>		
		<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>
Existing Mobil Station	8	45	35	80	65	55	120	50	50	100
Proposed Mobil Station Estimate	20	115	85	200	165	135	300	125	125	250

CBB was provided customer transaction counts (gross receipts) for a similar Mobil gas station further east on Olive Boulevard in Olivette, Missouri. This location was also recently rebuilt to provide the improved convenience store, car wash and sixteen vehicle fueling positions. Based on the transaction counts, a trip generation estimate was made based on the higher number of vehicle fueling positions at the proposed Schulte Store. **Table 6** summarizes the trip estimated based on the similar facility records.

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Table 6: Estimated Trips for Proposed Mobil Gas Station Rebuild based on Transaction Data

Land Use	No. of Vehicle Fueling Positions	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Similar Mobil Station (Transaction Data)	16	80	80	160	125	125	250	95	95	190
Proposed Mobil Station Estimate	20	100	100	200	155	155	310	120	120	240

When comparing all the different methods above, trips are expected to be in the same order of magnitude. However, the trip estimate for the Mobil gas station based on transaction data is expected to be the most accurate trip forecast since it is based on local data for this exact use. Therefore, the trips estimated by the transactional data (Table 6) were used in this study.

It should be reiterated that the existing Mobil station already generates trips on the roadway system. Therefore, the existing trips were negated from the trip estimate resulting in a net increase in trips, as shown in **Table 7**.

Furthermore, not all of the added site trips would represent *new* traffic on the adjacent roadways. A significant portion of the traffic attracted to this site would already be traveling on Olive Boulevard or Shulte Road as part of another trip (i.e., “pass-by” trips). These trips would represent patrons attracted to the gas station on their way to or from home, work, or another destination as a “convenience stop”. Based upon statistical information provided in the *Trip Generation Handbook, A Recommended Practice* it was assumed that 62% of the development’s traffic would be pass-by in nature during the AM peak hour, and 56% of the development’s traffic would be pass-by during the PM peak hour. ITE does not provide a pass-by percentage for the Midday peak hour so the pass-by percentage from the PM peak hour was also used during the Midday peak hour. As seen in Table 7, the proposed gas station would generate 50 *new* trips during the AM peak hour, 80 *new* trips during the Midday peak hour, 60 *new* trips during the PM peak hour.

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Table 7: Increase in Trips for Proposed Mobil Gas Station Rebuild

	AM Peak Hour			Midday Peak Hour			PM Peak Hour		
	<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>	<i>In</i>	<i>Out</i>	<i>Total</i>
Estimated Trips to Improved Mobil Site	100	100	200	155	155	310	120	120	240
Trips to Existing Mobil Site	(45)	(35)	(80)	(65)	(55)	(120)	(50)	(50)	(100)
Net Increase in Trips	55	65	120	90	100	190	70	70	140
Pass-By Trips	35	35	70	55	55	110	40	40	80
New Trips	20	30	50	35	45	80	30	30	60

Trip Distribution

The traffic generated by the redevelopment was assigned to the adjoining roadway system based on existing traffic patterns. The directional distribution of the existing trips was assumed to remain constant for the increase in trips during the AM, Midday and PM peak hours. The pass-by trips were assigned to Olive Boulevard based on the existing traffic patterns.

Exhibit 3 illustrates the net increase of trips for the proposed Mobil station rebuild at the study intersections. As would be expected, the biggest impact of the development is at the proposed driveways. Added turns at the main Olive Boulevard driveway are expected range from 96 to 160 trips. These trips equate to approximately one and a half vehicle per minute to about 3 trips per minute on average during the peak hours.

The impacts of the proposed Mobil redevelopment are expected to be diminished outside of the direct vicinity of the site due to the high number of pass-by trips associated with the use. As seen in Exhibit 3, the added trips outside of the vicinity of the Mobil driveways are expected to be less than 30 vph during the AM and PM peak hours and 40 vph or less during the Midday peak hour.

The added trips at the intersection of Olive Boulevard and Schulte Road is expected to be 18 vph, 33 vph, and 26 vph during the AM, Midday, and PM peak hours, respectively. These trips equate to approximately one vehicle per two minutes on average during the Midday and PM peak hours or one vehicle every three minutes on average during the AM peak hour.

As can be seen, the increase in the southbound left-turn from Schulte Road to Olive Boulevard is expected to be less than 10 vph during the AM, Midday and PM peak hours. The site trips represent less than one additional vehicle each six minutes on average.



hibit 3: Net Increase of Site-Generated Traffic Volumes

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2016 Build Conditions

2016 Build Traffic Volumes

The traffic generated by the proposed Mobil gas station rebuild (Exhibit 3) was aggregated with the Base Traffic Volumes (Exhibit 2) to reflect the Forecasted Traffic Volumes. **Exhibit 4** reflects the 2016 Build Traffic Volumes.

Right-Turn Lane Warrants

The MoDOT figure, *Right Turn Lane Warrant for a Four-Lane Roadway*, was utilized to address traffic volumes at the intersection of Olive Boulevard with the proposed full access driveway for the proposed Mobil redevelopment. **Figure 2** illustrates the 2016 Build Traffic Volumes plotted on the MoDOT figure for evaluation of a westbound right-turn lane. Based on the minimal number of right-turns needed to satisfy the criteria in conjunction with the heavy traffic volumes along Olive Boulevard, a separate westbound right-turn lane is warranted. Based on the posted speed limit of 35 mph, a 90-foot storage length with taper is required to meet MoDOT's deceleration minimum.

However, it should be noted that the addition of a separate westbound right-turn lane on Olive Boulevard at the proposed main access would have minimal impacts to operating conditions. It should also be noted that a Metro Bus stop is located near Schulte Road and overhead utilities are located in this area. Furthermore, the Olive Boulevard corridor does not have separate right-turn lanes at unsignalized intersections that do not feed into additional through lanes to right-turn lanes at signals; Therefore, a separate westbound right-turn lane is not recommended at this location.

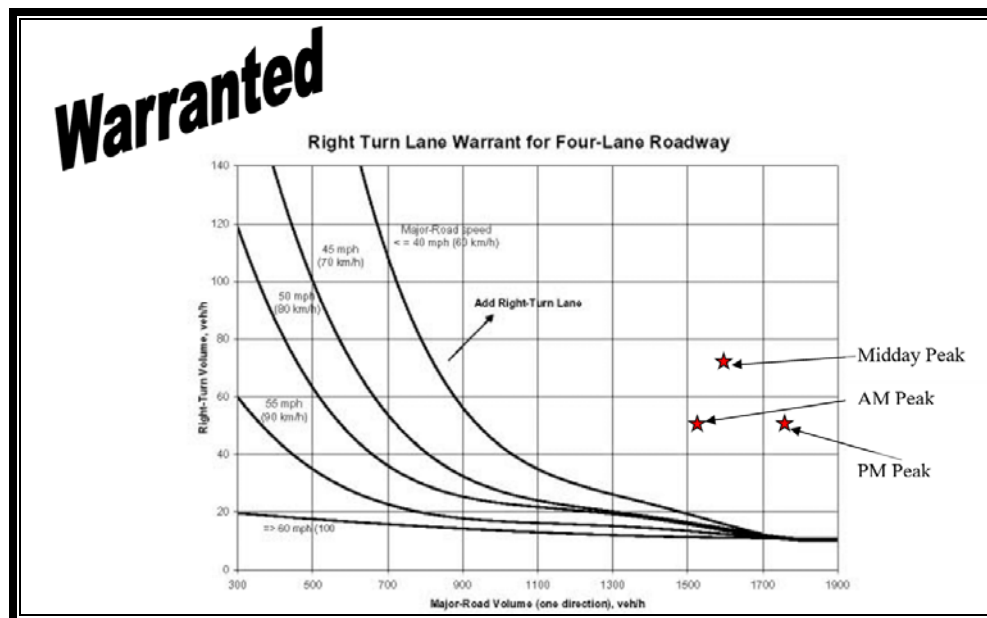


Figure 2: Right-Turn Lane Warrants (MoDOT)

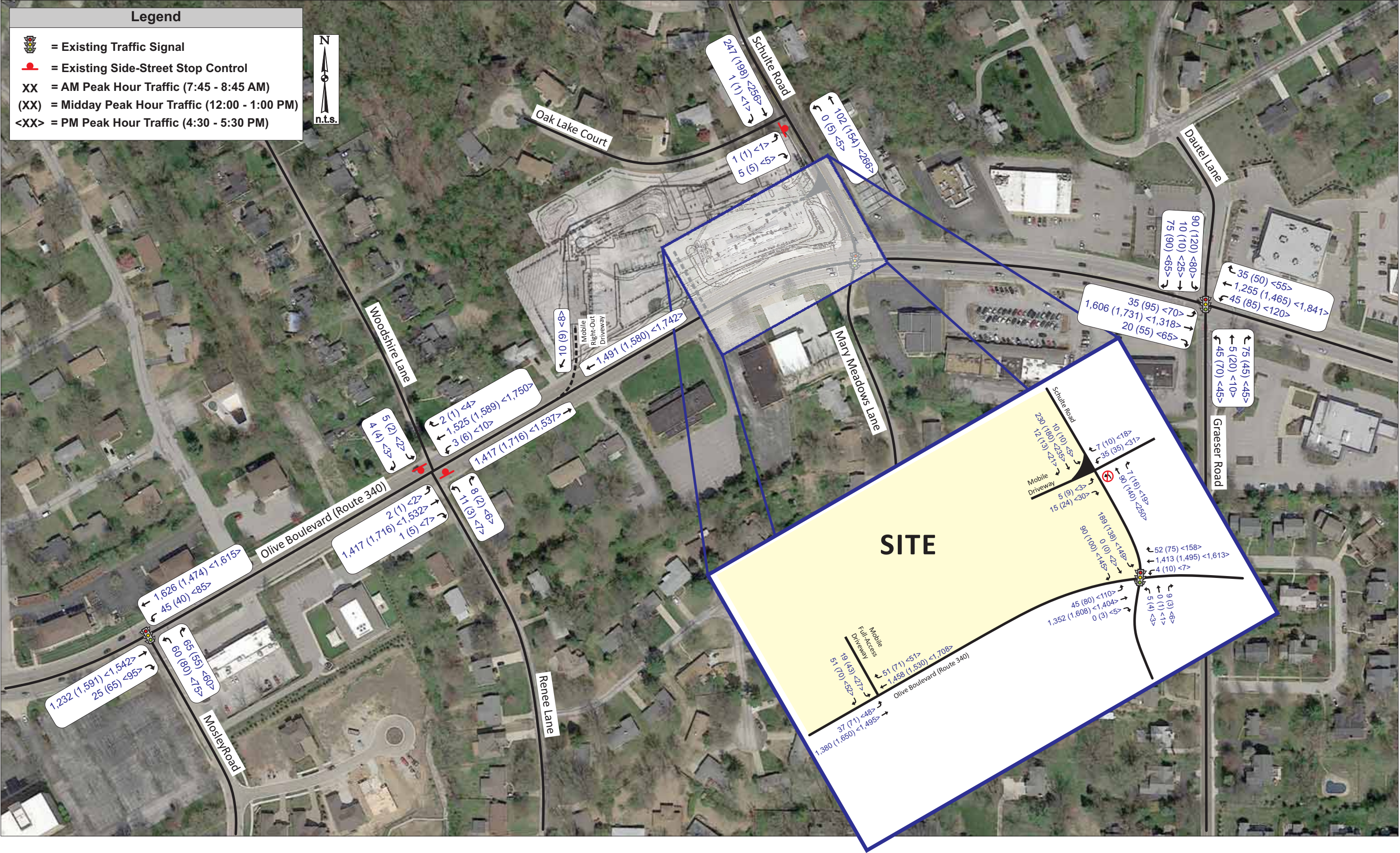


Exhibit 4: 2016 Build Traffic Volumes

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2016 Build Operating Conditions

The 2016 Build Traffic Volumes were reanalyzed using the same methodology applied to the baseline conditions in an effort to identify any impacts of the proposed development. **Table 8** summarizes the levels of service and average delays at the study intersections during both peak hours with the 2016 Build Traffic Volumes.

As can be seen in **Table 8**, the overall intersection operations are expected to remain at similar levels as the base conditions during the weekday AM, Midday and PM peak hours. This analysis assumes no changes in the signal timing at Olive Boulevard and Schulte Road which gives preference to the east-west movements on Olive Boulevard. In fact, the overall change in delay is less than one second during all three peak hours at the Schulte signal. The southbound approach is expected to have minimal increases with 5.2 seconds during the AM peak hour, 4.9 seconds during the Midday peak hour and 1.9 seconds during the PM peak hour. The southbound levels of service would remain poor, again primarily due to the long cycle lengths.

The forecasted build v/c ratios for the southbound approach of Schulte Road remain less than 1.0 during the peak hours. The southbound v/c ratio is forecasted to be 0.95 during the AM peak hour, 0.80 during the Midday peak hour and 0.84 during the PM peak hour. In this case, the cycle length dictates the poor level of service during the AM peak hour and drives the poor movement levels in the PM peak hour. The northbound and southbound approaches have minimal green times to maximize green available to the heavy eastbound and westbound through movements on Olive Boulevard.

As previously noted, the increase in the southbound left-turns from Schulte Road to Olive Boulevard is expected to be less than 10 vph during all peaks, which represents less than one additional vehicle every six minutes on average.

The right-out-only Mobil driveway on Olive Boulevard and the three-quarter access drive on Schulte Road are expected to operate at acceptable levels of service during all three peak hours. It should be noted that the evaluations cannot effectively address the impact of the southbound queue along Schulte Road that would block the three-quarter access drive at times during the peak hours. Any queueing created by blockages would occur on the site. It was noted that the southbound left-turn delays at the unsignalized intersection are generally less than those forecasted for the southbound left-turn from Schulte Road at Olive Boulevard.

The main full access driveway on Olive Boulevard is expected to operate at acceptable levels, except for the southbound left-turn exiting movement during the peak hours. It is acknowledged that the through volumes on Olive Boulevard are heavy during the peak hours, which limits the availability of gaps at the proposed Olive Boulevard access drive during the peak hours. However, the presence of a center-left-turn lane along Olive Boulevard does allow for a motorist to complete their turn in two stages as opposed to waiting for a simultaneous gap in both directions of traffic flow, which is a common practice along the Olive Boulevard

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Corridor and throughout the greater St. Louis Metropolitan area and therefore was assumed in these analyses.

Table 8: Traffic Operating Conditions – Build Traffic Volumes

Intersection/Approach	AM Peak Hour	Midday Peak Hour	PM Peak Hour
<i>Olive Boulevard and Mosley Road – Signalized</i>			
Eastbound Olive Boulevard	A (2.4)	A (5.3)	A (5.9)
Westbound Olive Boulevard	B (11.7)	A (9.5)	B (10.8)
Northbound Mosley Road	D (43.9)	D (43.3)	D (48.5)
Overall Intersection	A (9.2)	A (8.8)	A (10.0)
<i>Olive Boulevard and Woodshire Lane/Renee Lane – Side-Street Stop</i>			
Eastbound Left-Turn Olive Boulevard	B (14.4)	C (15.0)	C (16.8)
Westbound Left-Turn Olive Boulevard	B (13.5)	C (16.6)	B (14.8)
Northbound Renee Lane	D (33.0)	E (43.9)	E (36.3)
Southbound Woodshire Lane	D (34.2)	D (28.9)	D (37.3)
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>			
Eastbound Olive Boulevard	B (17.0) 20' LT	B (10.8) 30' LT	B (17.2) 110' LT
Westbound Olive Boulevard	B (11.2)	A (5.1)	A (8.8)
Northbound Mary Meadows Lane	D (51.3)	D (44.3)	D (51.2)
Southbound Schulte Road	E (77.0) 345' LT	D (51.2) 210' LT	E (55.7) 250' LT
Overall Intersection	B (19.7)	B (11.1)	B (16.3)
<i>Olive Boulevard and Dautel Lane/Graeser Road – Signalized</i>			
Eastbound Olive Boulevard	A (6.4)	B (15.7)	B (11.4)
Westbound Olive Boulevard	B (15.1)	B (16.0)	C (29.4)
Northbound Dautel Lane	C (32.3)	D (36.6)	D (41.6)
Southbound Graeser Road	D (49.9)	D (42.6)	D (50.4)
Overall Intersection	B (13.2)	B (18.1)	C (23.7)
<i>Oak Lake Court and Schulte Road – Side-Street Stop</i>			
Eastbound Oak Lake Court	A (9.9)	A (9.7)	B (10.3)
Northbound Left-Turn Schulte Road	A (7.7)	A (7.7)	A (7.8)
<i>Schulte Road at Mobil/Shell Driveway – Side-Street Stop</i>			
Eastbound Mobil Driveway	B (10.2)	B (10.1)	B (10.3)
Westbound Shell Driveway	B (11.5)	B (11.6)	B (13.2)
Southbound Schulte Road	A (7.4)	A (7.6)	A (7.8)
<i>Olive Boulevard at Mobil Right-Out Only Driveway – Side-Street Stop</i>			
Southbound Mobil Driveway	C (16.5)	C (17.4)	C (19.2)
<i>Olive Boulevard at Mobil Full Access Driveway – Side-Street Stop</i>			
Eastbound Left-Turn Olive Boulevard	C (15.3)	C (17.8)	C (19.2)
Southbound Mobil Left-Turn	E (48.0)	F (93.8)	F (81.0)
Southbound Mobil Right-Turn	C (18.7)	C (21.4)	C (22.8)
Southbound Mobil Driveway Approach	D (26.7)	E (49.0)	E (42.7)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

The impacts of the new Mobil are also diminished outside of the direct access points to Olive Boulevard. As can be seen, minimal increases are expected at the signalized intersections with Olive Boulevard with Schulte Road, Mosely Road and Greaser/Dautel Lane. The analysis software estimates an increase of less than one second of delay for the northbound approach

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of Renee Lane and less than one second of delay increase for the southbound approach of Woodshire Lane during each of the peak hours.

Alternatives Analysis

Several alternatives were evaluated to identify the impacts of each potential improvement. **Tables 9-11** summarize the build conditions with various alternative modifications.

Signal Timing Adjustments

The green time was increased for Schulte Road/Mary Meadows Lane to obtain similar levels of service as the existing conditions. An additional two seconds of green time during the AM peak, four seconds during the Midday peak and 2 seconds during the PM peak could be reallocated from the mainline to the north-south approaches to reach comparable levels to the existing conditions. As can be seen, the minimal change in signal timing would not result in major impacts to the mainline Olive Boulevard traffic conditions. **Table 12** illustrates the impacts to progression along the Olive Boulevard corridor. As can be seen in Table 12, the impacts to east-west progression are also minimal.

Add Flashing Yellow Arrow

During the traffic scoping meeting, Flashing Yellow Arrows (FYA) for the northbound and southbound approaches were discussed to improve safety at the intersection. Therefore, an analysis scenario was generated to show the operational impacts of switching to northbound and southbound FYA.

Based on the analysis, the FYA would provide negligible changes in operating conditions for the southbound approach, but the safety at the intersection may be improved substantially. The www.CMFClearinghouse.org was consulted in order to attempt to quantify the safety implications of installing a FYA. Based on countermeasure “Changing from permissive only to FYA- Permissive only (CMF ID: 7698)” in the CFM Clearinghouse, various Crash Reduction Factors (CRF) could be applied to various crash types as summarized below.

- CRF of 10.8% (decrease) to all crash types and all severities;
- CRF of 31.1% (decrease) to all crash types; Fatal, serious injury and minor injuries;
- CRF of 50.2% (decrease) to Left-turn crash types; all severities; and
- CRF of 65.1% (decrease) to Left-turn crash types and Fatal, serious injury and minor injury severities.

Although a crash analysis was not identified as a specific part of this study scope, the CMF's listed above would appear to have the potential to significantly improve safety (decrease the number of crashes) for the southbound left-turns.

Provide a Southbound Right-Turn Lane

During the traffic scoping meeting, it was specifically requested that one analysis scenario consider a separate southbound left-turn lane, through lane and right-turn lane. Therefore, an analysis scenario was generated to show the operational impacts of providing a separated southbound right-turn lane.

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Based on the analysis, the addition of a southbound right-turn lane on Schulte Road would provide no improvement in operations when compared to the current condition. The minimal southbound through volumes (3 to 5 vph) have a low potential to block the southbound right-turns; therefore, the through/right-turn lane acts as a *defacto* right-turn lane in the existing condition. In addition, the westbound through volumes along Olive Boulevard are very heavy during the peak hours making it more difficult to find an adequate gap in westbound traffic to complete the right turn movement versus reaching the southbound stop bar due to other conflicting southbound through vehicles. Since there appears to be no benefit to provide a separate right-turn lane, it is not recommended.

Provide Dual Southbound Left-Turn Lanes and Split-Phase North-South

Previous studies of this intersection recommended split phasing and/or a horizontal and vertical realignment of Schulte Road and/or Mary Meadow Lane to decrease the offset and skew of the north-south approaches as well as the northbound sight distance obstruction created by the cresting of the profile grades. In order to realign the intersection, multiple property owners would be impacted. Previous plans, by others, to redevelopment the southwest quadrant of the intersection did not materialize. Consequently, the subject development has reserved ground in the northeast quadrant of the intersection so that realignment can occur in the future.

CBB also considered an alternative analysis where the intersection is re-aligned with dual southbound left-turn lanes (one southbound left-turn and one southbound shared left-turn/though lane) and a separate southbound right-turn lane. This would also require split-phasing the north-south approaches.

In order to maximize the amount of green time provided to the mainline, the northbound approach (Mary Meadows Lane) was given the minimum amount of split time (13.1 seconds), while the southbound approach was only provided enough split time to obtain similar levels of service as the existing conditions. The southbound green time was assumed to 17.9, 16.9, 17.9 seconds during the AM, Midday and PM peak hours, for a total north-south green time of 31, 30, and 31 seconds. The overall north-south green time would be slightly more with the split-phase when comparable to the 2016 Build conditions with modified signal timings.

Table 12 illustrates the impacts to progression along the Olive Boulevard corridor. As can be seen, the split-phase condition would have a negative impact on progression when compared to the existing conditions, except for the eastbound link between Mosley Road and Schulte Road during the Midday as well as the westbound link between Schulte Road and Mosley Road during the Midday peak hour. However, the link changes would have no effect on the corridor green bands, shown in Table 12.

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The biggest benefit of the dual left-turn alternative is the reduction in length of the southbound queues by approximately 40% during the AM peak hour, approximately 36% during the Midday peak hour and approximately 38% during the PM peak hour when compared to the single left-turn lane with modified signal timing. Even with the dual southbound left-turn scenario, the 95th percentile queues would still block the proposed relocated access to Schulte Road during all three peak hours.

It should also be noted that the while a split-phase scenario for the northbound and southbound approaches improves the southbound queueing, the 13.1 to 17.9 seconds assumed for those approaches would not provide adequate pedestrian accommodations (during every signal cycle) across Olive Boulevard. As a result, when the push button is activated it would give ample crossing time to accommodate pedestrians but the signal would become out-of-step for several cycles.

Pedestrian Issues

MoDOT requested that pedestrian accommodations (pedestrian push buttons and indications with marked crosswalks) be installed across Olive Boulevard. CBB recommends that the pedestrian accommodations be located on the west side of the intersection only. CBB believes that it is better and safer to have the pedestrians crossing the west leg, since it is closer to the MetroBus stop and the pedestrian phase would run with the heavier traffic flow so it would cause less disruptions. If the crosswalks were provided on the east side of the intersection the pedestrians would be crossing paths with the heavy southbound left-turn vehicles and would potential be less safe than crossing on the west side because there is lower northbound left-turn volume verses the southbound left-turn.

Table 9: Build Operating Conditions with Alternative Improvement Scenarios – AM Peak Hour

Intersection/Approach	<i>Original Timing [28 sec n-s]</i>	<i>with Timing Adjustments [30 Sec n-s]</i>	<i>Add Flashing Yellow Arrow NB & SB [28 Sec n-s]</i>	<i>Separate SB Right-Turn Lane [28 Sec n-s]</i>	<i>With Dual Left and Split- Phase ¹ [31 Sec n-s]</i>
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>					
Eastbound Olive Boulevard	B (17.0) 20' LT	B (18.0) 20' LT	B (17.0) 20' LT	B (17.0) 20' LT	B (13.7) 20' LT
Westbound Olive Boulevard	B (11.2)	B (11.1)	B (11.2)	B (11.2)	A (7.4)
Northbound Mary Meadows Ln.	D (51.3)	D (49.5)	D (51.2)	D (51.2)	E (69.0)
Southbound Schulte Road	E (77.0) 345' LT	E (69.4) 325' LT	E (77.3) 345' LT	E (77.0) 345' LT	E (69.0) 190' LT
Overall Intersection	B (19.7)	B (19.5)	B (19.8)	B (19.7)	B (15.9)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

¹ Dual Southbound Lefts and Split Phase (13.1 sec +17.9 sec)

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Table 10: Build Operating Conditions with Alternative Improvement Scenarios – Midday Peak Hour

Intersection/Approach	Original Timing [24 sec n-s]	Timing Adjustments [26 Sec n-s]	Add Flashing Yellow Arrow NB & SB [24 Sec n-s]	Separate SB Right-Turn Lane [24 Sec n-s]	With Dual Left and Split-Phase ¹ [30 Sec n-s]
Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized					
Eastbound Olive Boulevard	B (10.8) 30' LT	B (10.1) 40' LT	B (10.8) 30' LT	B (10.8) 30' LT	A (7.7) 40' LT
Westbound Olive Boulevard	A (5.1)	A (6.6)	A (5.1)	A (5.1)	A (6.6)
Northbound Mary Meadows Ln.	D (44.3)	D (41.9)	D (44.3)	D (44.3)	E (55.4)
Southbound Schulte Road	D (51.2) 210' LT	D (46.3) 180' LT	D (51.2) 210' LT	D (51.2) 210' LT	D (44.9) 115' LT
Overall Intersection	B (11.1)	B (11.0)	B (11.1)	B (11.1)	A (9.8)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

¹ Dual Southbound Lefts and Split Phase (13.1 sec +16.9 sec)

Table 11: Build Operating Conditions with Alternative Improvement Scenarios – PM Peak Hour

Intersection/Approach	Original Timing (28 sec n-s)	Timing Adjustments [30 Sec n-s]	Add Flashing Yellow Arrow NB & SB [28 Sec n-s]	Separate SB Right-Turn Lane [28 Sec n-s]	With Dual Left and Split-Phase ¹ [31 Sec n-s]
Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized					
Eastbound Olive Boulevard	B (17.2) 110' LT	B (16.3) 110' LT	B (17.3) 110' LT	B (17.2) 110' LT	B (13.4) 110' LT
Westbound Olive Boulevard	A (8.8)	B (10.5)	A (8.8)	A (8.8)	A (9.5)
Northbound Mary Meadows Ln.	D (51.2)	D (49.8)	D (51.2)	D (51.1)	E (67.3)
Southbound Schulte Road	E (55.7) 250' LT	D (53.3) 225' LT	E (55.7) 250' LT	E (55.7) 250' LT	D (53.2) 140' LT
Overall Intersection	B (16.3)	B (16.6)	B (16.4)	B (16.3)	B (14.9)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

¹ Dual Southbound Lefts and Split Phase (13.1 sec +17.9 sec)

Table 12: Progression Analysis – 70th Percentile Link Bands

<i>70th Percentile Link Green Bands</i>	<i>Weekday AM Peak Hour</i>			<i>Weekday Midday Peak Hour</i>			<i>Weekday PM Peak Hour</i>		
	<i>Existing</i>	<i>Timing Adjustment</i>	<i>Dual LT/Split-Phase</i>	<i>Existing</i>	<i>Timing Adjustment</i>	<i>Dual LT/Split-Phase</i>	<i>Existing</i>	<i>Timing Adjustment</i>	<i>Dual LT/Split-Phase</i>
Eastbound									
Mosley Road to Schulte Road link	81 sec	79 sec	78 sec	77 sec	78 sec	89 sec	83 sec	83 sec	83 sec
Schulte to Dautel Lane Link	97 sec	97 sec	97 sec	78 sec	78 sec	78 sec	101 sec	99 sec	98 sec
Eastbound Arterial Green Band (Craig Road to Spoede Road)	70 sec	70 sec	70 sec	47 sec	47 sec	47 sec	71 sec	71 sec	71 sec
Westbound									
Dautel Lane to Schulte Road Link	98 sec	97 sec	96 sec	73 sec	70 sec	68 sec	88 sec	86 sec	85 sec
Schulte Road to Mosley Road Link	82 sec	80 sec	79 sec	63 sec	59 sec	68 sec	73 sec	71 sec	70 sec
Westbound Arterial Green Band (Spoede Road to Craig Road)	60 sec	60 sec	60 sec	50 sec	50 sec	50 sec	55 sec	55 sec	55 sec

20-Year Conditions

Forecasted 20-Year No-Build Conditions (2036)

In order to assess the long-term traffic impacts, 20-year traffic projections were also analyzed. Specifically, traffic growth was assumed at a rate of 0.5% annually for 20 years (or 10.5% overall) along each of the roadways within the study area. The 20-year background growth was applied to the base traffic volumes to compare future traffic conditions assuming that the site remains as it currently stands. Forecasted 20-Year No-Build Volumes (only background growth added) are shown in **Exhibit 5**.

As can be seen, the 20-Year No-Build traffic forecast represents an increase over the base traffic forecast due to the background growth. East-west through traffic volumes along Olive Boulevard are expected to increase by as much as 180 vph during the peak periods due to incremental background growth.

Forecasted 20-Year Build Conditions (2036)

The 20-year No-Build Traffic Volumes (Exhibit 5) were aggregated with the site-generated trips for the new Mobil redevelopment trips (Exhibit 3) to create the 20-Year Build Traffic Volumes shown in **Exhibit 6**. It should be noted that traffic oriented to/from the proposed development was not increased since full build-out of the site was assumed to take place during the opening year. In other words, site-generated traffic volumes would reach their peak during the opening year and therefore would not experience any appreciable growth, which is consistent with standard industry practice. The anticipated operating conditions at the study intersections for the 20-Year No-Build and 20-year Build Traffic conditions are summarized in **Table 13**.

As shown in the LOS Table, all of the study intersections would degrade more in the 2036 No-Build Condition due to the increase in background traffic. As can be seen, the southbound approach of Schulte Road would operate at LOS F during the AM peak hour and LOS E during the PM peak hour. The v/c ratio for the southbound approach will reach 1.02 during the AM peak hour but remain less than 0.85 during the Midday and PM peak hours.

The east-west through lanes reach a volume-to-capacity ratio of 1.00 during the PM peak hour which indicates the east-west lanes would be approaching their capacity, and ultimately, a third lane would be necessary along Olive Boulevard to obtain acceptable levels for the long-term growth conditions. It should be reiterated that the 20-Year design scenarios are included to provide a general idea of future conditions as a planning tool and should not be used to dictate physical improvements required for construction under permit where background traffic growth is the critical element. Due to capacity constraints upstream or downstream, resulting congestion and the build-out of the surrounding area, the future traffic projections may not be realized/feasible unless major capacity improvements are built.



hibit 5: 20-Year No-Build Traffic Volumes

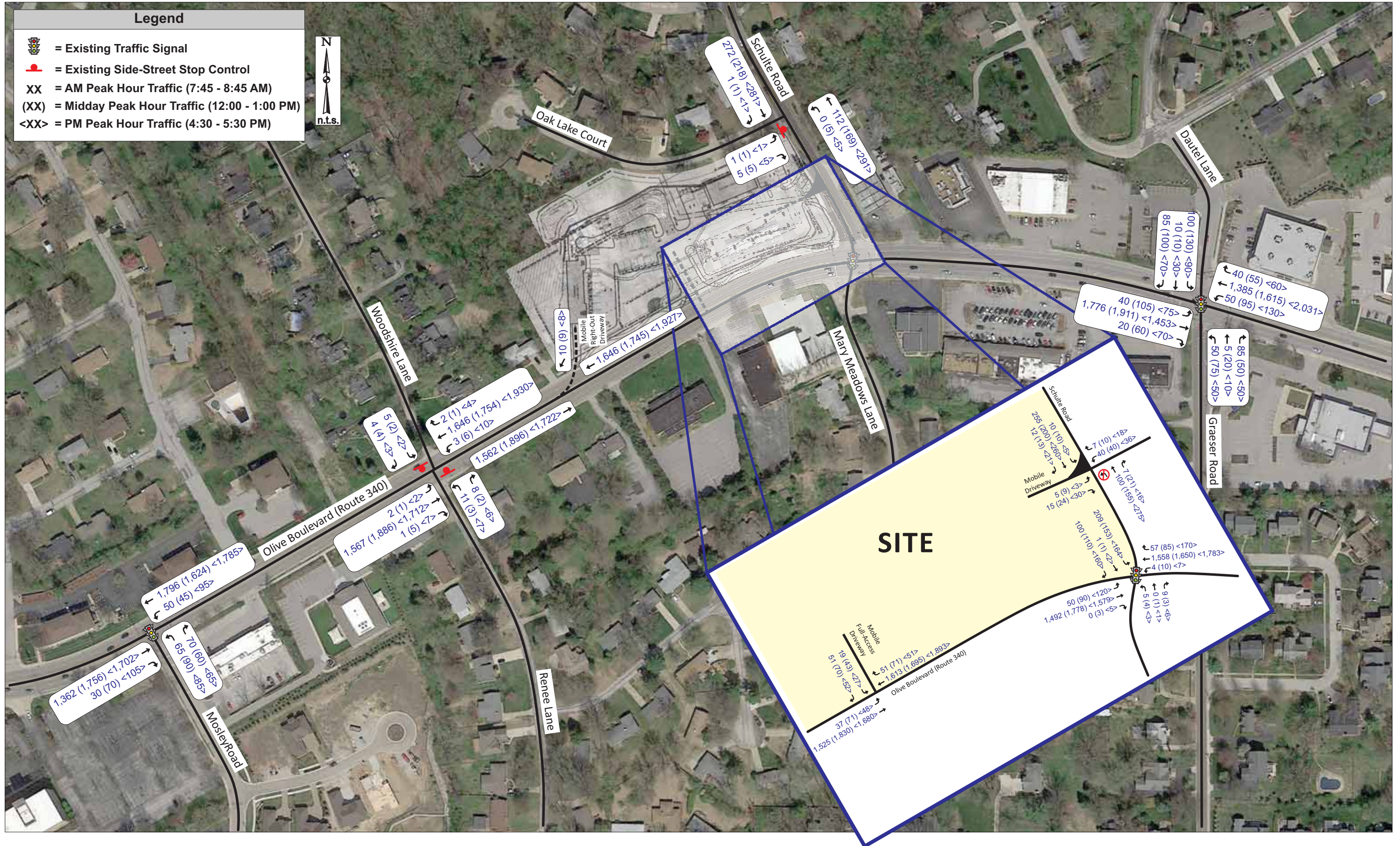


Exhibit 6: 20-Year Build Traffic Volumes

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Table 13: 20-Year Operating Conditions

Intersection/Approach	AM Peak Hour		Midday Peak Hour		PM Peak Hour	
	20-Year No Build	20-Year Build <i>Original Timing</i> (28 sec n-s)	20-Year No Build	20-Year Build <i>Original Timing</i> (24 sec n-s)	20-Year No Build	20-Year Build <i>Original Timing</i> (28 sec n-s)
<i>Olive Boulevard and Mosley Road – Signalized</i>						
Eastbound Olive Boulevard	A (2.5)	A (2.5)	A (6.6)	A (6.6)	A (7.2)	A (7.4)
Westbound Olive Boulevard	B (13.1)	B (12.8)	B (10.7)	B (10.8)	B (13.3)	B (13.6)
Northbound Mosley Road	D (44.1)	D (44.1)	D (44.4)	D (44.4)	D (49.2)	D (49.2)
Overall Intersection	A (10.0)	A (9.8)	B (10.0)	B (10.1)	B (11.9)	B (12.0)
<i>Olive Boulevard and Woodshire Lane/Renee Lane – Side-Street Stop</i>						
Eastbound Left-Turn Olive Blvd	C (15.4)	C (15.6)	C (16.5)	C (16.8)	C (18.9)	C (19.0)
Westbound Left-Turn Olive Blvd	B (14.8)	B (14.8)	C (18.5)	C (18.7)	C (16.6)	C (16.7)
Northbound Renee Lane	E (40.8)	E (40.8)	F (55.3)	F (55.3)	E (45.4)	E (46.4)
Southbound Woodshire Lane	E (39.2)	E (39.9)	D (33.9)	D (35.1)	E (46.6)	E (48.1)
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>						
Eastbound Olive Boulevard	B (18.0) 20' LT	B (17.9) 20' LT	B (13.9) 50' LT	B (14.6) 50' LT	B (17.9) 105' LT	B (18.2) 105' LT
Westbound Olive Boulevard	B (12.5)	B (12.6)	A (8.4)	A (9.0)	C (21.6)	C (24.2)
Northbound Mary Meadows Lane	D (51.2)	D (51.2)	D (44.2)	D (44.3)	D (51.0)	D (51.1)
Southbound Schulte Road	F (83.9) 385' LT	F (90.2) 395' LT	D (50.6) 225' LT	D (54.6) 240' LT	E (58.4) 260' LT	E (61.0) 285' LT
Overall Intersection	C (21.4)	C (22.0)	B (13.9)	B (14.9)	C (23.0)	C (24.7)
<i>Olive Boulevard and Dautel Lane/Graeser Road – Signalized</i>						
Eastbound Olive Boulevard	A (8.1)	A (8.3)	C (25.8)	C (27.4)	B (13.5)	B (13.7)
Westbound Olive Boulevard	B (17.0)	B (17.1)	B (18.7)	B (19.0)	D (40.0)	D (42.1)
Northbound Dautel Lane	C (31.8)	C (31.8)	D (36.2)	D (36.2)	D (41.3)	D (41.3)
Southbound Graeser Road	D (51.6)	D (51.6)	D (42.0)	D (42.0)	D (52.9)	D (52.9)
Overall Intersection	B (15.0)	B (15.1)	C (24.1)	C (25.0)	C (30.4)	C (31.6)
<i>Oak Lake Court and Schulte Road – Side-Street Stop</i>						
Eastbound Oak Lake Court	B (10.1)	B (10.1)	A (9.8)	A (9.8)	B (10.4)	B (10.5)
Northbound Left-Turn Schulte Rd	A (7.7)	A (7.7)	A (7.7)	A (7.7)	A (7.9)	A (7.9)
<i>Schulte Road at Mobil/Shell Driveway – Side-Street Stop</i>						
Eastbound Mobil Driveway	B (10.6)	B (10.4)	B (10.4)	B (10.4)	B (10.5)	B (10.5)
Westbound Shell Driveway	B (12.0)	B (12.1)	B (12.2)	B (12.2)	B (14.1)	B (14.2)
Northbound Schulte Road	A (7.8)	--	A (7.7)	--	A (7.9)	--
Southbound Schulte Road	A (7.5)	A (7.5)	A (7.6)	A (7.6)	A (7.9)	A (7.9)
<i>Olive Boulevard at Mobil West Driveway – Side-Street Stop</i>						
Eastbound Left-Turn Olive Blvd	C (15.7)	--	C (17.7)	--	C (19.9)	--
Southbound Mobil Driveway	C (29.8)	C (18.2)	F (150.1)	C (19.3)	F (>200)	C (21.6)
<i>Olive Boulevard at Mobil East Driveway – Side-Street Stop</i>						
Eastbound Left-Turn Olive Blvd	C (15.7)	C (17.2)	C (16.8)	C (20.8)	C (18.9)	C (22.7)
Southbound Mobil Left-Turn	--	F (61.3)	--	F (141.2)	--	F (118.7)
Southbound Mobil Right-Turn	--	C (21.0)	--	C (24.8)	--	D (26.8)
Southbound Mobil Driveway	F (50.8)	D (31.9)	F (>200)	F (69.1)	F (>200)	F (58.2)

Attachment: 20161104_Traffic Study CBB (2200 : 16-031 Mobil on the Run and Brite Worx Car Wash RZG,CUP,SDP)

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Under the 2036 Build condition, the overall intersection operations are expected to remain at similar overall levels as the 2036 No-Build with minimal changes in delay during the weekday AM, Midday and PM peak hours. Without signal timing adjustments, the overall delay is expected to increase less than 2 seconds during the AM, Midday or PM peak hour at Schulte Road and Olive Boulevard. The southbound approach is expected to have minimal increases with 6.3 seconds during the AM peak hour, 4 seconds during the Midday peak hour and 2.6 seconds during the PM peak hour. Without signal timing adjustments, the 2036 forecasted build v/c ratios for the southbound approach would remain more than 1.0 during the AM peak hour. The southbound v/c ratio is forecasted to be 0.88 or better during the Midday or PM peak hour. Again, the cycle length dictates and high v/c ratios drive the poor level of service during the AM and PM peak hours. The northbound and southbound approaches have minimal green times to maximize green times to the heavy eastbound and westbound through movements on Olive Boulevard.

As previously noted, the increase in the southbound left-turns from Schulte Road to Olive Boulevard is expected to be less than 10 vph during all peaks. The increase in site trips represent less than one additional vehicle every six minutes on average.

Again, the three Mobil driveways (main access to Olive Boulevard, right-out only to Olive Boulevard and the three-quarter access driveway on Schulte Road) are expected to operate at acceptable levels of service during the peak hours with the exception of the southbound left-turn out of the site during the peak hours. It should also be noted that the southbound left-turn delay exiting the Mobil Driveway was generally less than the southbound left-turn delay on Schulte Road at Olive Boulevard since Schulte vehicles turns must wait for green.

Again, the impacts of the new Mobil are diminished outside of the direct access points to Olive Boulevard. As can be seen, minimal increases are expected at the signalized intersections including Olive Boulevard at Schulte Road. The impacts of the new Mobil are also expected to be minimal at the signalized intersections adjacent to Schulte (Mosely Road and Greaser/Dautel Lane). Furthermore, the analysis software estimates an increase in delay of one second or less for the northbound approach of Renee Lane and less than two seconds of delay for the southbound approach of Woodshire Lane during each of the peak hours as compared to the 2036 No-Build.

Similar to the 2016 build conditions, various alternatives were re-evaluated to summarize the impacts of the potential improvements. Again, the modified signal timing would improve the southbound approach and have minimal impacts to the mainline; the separate right-turn lane would have no worthwhile impacts; the Flashing Yellow Arrow provided minimal operation changes but potentially a safety improvement; and the dual left-turn would provide improved operations but would have the most negative impact to adjacent link progression.

Table 14: 20-Year Operating Conditions with Alternative Improvement Scenarios – AM Peak Hour

Intersection/Approach	20-Year No Build	20-Year Build Original Timing [28 sec n-s]	20-Year Build Timing Adjustments [29 Sec n-s]	20-Year Build Add Flashing Yellow Arrow NB& SB [28 Sec n-s]	20-Year Build Separate SB Right-Turn Lane [28 Sec n-s]	20-Year Build with Dual Left and Split-Phase ¹ [30 Sec n-s]
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>						
Eastbound Olive Boulevard	B (18.0) 20' LT	B (17.9) 20' LT	B (18.7) 20' LT	B (17.9) 20' LT	B (17.9) 20' LT	B (13.8) 20' LT
Westbound Olive Boulevard	B (12.5)	B (12.6)	B (12.8)	B (12.6)	B (12.6)	A (8.5)
Northbound Mary Meadows Lane	D (51.2)	D (51.2)	D (50.3)	D (51.2)	D (51.2)	E (69.0)
Southbound Schulte Road	F (83.9) 385' LT	F (90.2) 395' LT	F (82.1) 385' LT	F (91.1) 395' LT	F (90.3) 395' LT	F (82.7) 230' LT
Overall Intersection	C (21.4)	C (22.0)	C (21.7)	C (22.1)	C (22.0)	B (17.7)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

¹ Dual Southbound Lefts and Split Phase (13.1 sec +16.9 sec)

Table 15: 20-Year Operating Conditions with Alternative Improvement Scenarios – Midday Peak Hour

Intersection/Approach	20-Year No Build	20-Year Build Original Timing [24 sec n-s]	20-Year Build Timing Adjustments [27 Sec n-s]	20-Year Build Add Flashing Yellow Arrow NB& SB [24 Sec n-s]	20-Year Build Separate SB Right-Turn Lane [24 Sec n-s]	20-Year Build with Dual Left and Split-Phase ¹ [30 Sec n-s]
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>						
Eastbound Olive Boulevard	B (13.9) 50' LT	B (14.6) 50' LT	B (15.4) 50' LT	B (14.6) 50' LT	B (14.6) 50' LT	B (10.4) 55' LT
Westbound Olive Boulevard	A (8.4)	A (9.0)	B (10.2)	A (9.0)	A (9.0)	A (8.4)
Northbound Mary Meadows Lane	D (44.2)	D (44.3)	D (41.9)	D (44.3)	D (44.1)	E (55.4)
Southbound Schulte Road	D (50.6) 225' LT	D (54.6) 240' LT	D (48.7) 210' LT	D (54.6) 240' LT	D (54.6) 240' LT	D (50.6) 135' LT
Overall Intersection	B (13.9)	B (14.9)	B (15.4)	B (14.9)	B (14.9)	B (12.3)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

Dual Southbound Lefts and Split Phase (13.1 sec +15.9 sec)

Table 16: 20-Year Operating Conditions with Alternative Improvement Scenarios – PM Peak Hour

Intersection/Approach	20-Year No Build	20-Year Build Original Timing [28 sec n-s]	20-Year Build Timing Adjustments [30 Sec n-s]	20-Year Build Add Flashing Yellow Arrow NB& SB [28 Sec n-s]	20-Year Build Separate SB Right-Turn Lane [28 Sec n-s]	20-Year Build with Dual Left and Split-Phase ¹ [30 Sec n-s]
<i>Olive Boulevard and Schulte Road/Mary Meadows Lane – Signalized</i>						
Eastbound Olive Boulevard	B (17.9) 105' LT	B (18.2) 105' LT	B (17.5) 105' LT	B (18.3) 105' LT	B (18.2) 105' LT	B (13.9) 105' LT
Westbound Olive Boulevard	C (21.6)	C (24.2)	C (28.2)	C (24.5)	C (24.2)	B (15.6)
Northbound Mary Meadows Lane	D (51.0)	D (51.1)	D (49.5)	D (51.0)	D (51.0)	E (67.3)
Southbound Schulte Road	E (58.4) 260' LT	E (61.0) 285' LT	E (57.2) 265' LT	E (61.1) 285' LT	E (61.0) 285' LT	E (57.8) 175' LT
Overall Intersection	C (23.0)	C (24.7)	C (26.0)	C (24.9)	C (24.7)	B (18.4)

(xx.x) - Level of Service (Vehicular delay in seconds per vehicle)

Dual Southbound Lefts and Split Phase (13.1 sec + 16.9 sec)

Table 17: 20-Year Progression Analysis – 70th Percentile Link Bands

<i>70th Percentile Link Green Bands</i>	<i>Weekday AM Peak Hour</i>			<i>Weekday Midday Peak Hour</i>			<i>Weekday PM Peak Hour</i>		
	<i>Existing</i>	<i>Timing Adjustment</i>	<i>Dual LT/Split- Phase</i>	<i>Existing</i>	<i>Timing Adjustment</i>	<i>Dual LT/Split- Phase</i>	<i>Existing</i>	<i>Timing Adjustment</i>	<i>Dual LT/Split- Phase</i>
Eastbound									
Mosley Road to Schulte Road Link	80 sec	79 sec	78 sec	77 sec	77 sec	88 sec	83 sec	83 sec	83 sec
Schulte to Dautel Lane Link	97 sec	97 sec	97 sec	76 sec	76 sec	76 sec	96 sec	94 sec	94 sec
Eastbound Arterial Green Band (Craig Road to Spoeede Road)	70 sec	70 sec	70 sec	46 sec	46 sec	46 sec	67 sec	67 sec	67 sec
Westbound									
Dautel Lane to Schulte Road Link	98 sec	98 sec	97 sec	72 sec	70 sec	68 sec	86 sec	84 sec	84 sec
Schulte Road to Mosley Road Link	82 sec	81 sec	80 sec	63 sec	60 sec	68 sec	72 sec	70 sec	70 sec
Westbound Arterial Green Band (Spoeede Road to Craig Road)	60 sec	60 sec	60 sec	50 sec	50 sec	50 sec	52 sec	52 sec	52 sec

***Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri***

Conclusions

CBB completed a traffic impact study for the proposed Creve Coeur Mobil with Car Wash redevelopment in Creve Coeur, Missouri. The site located on the northwest quadrant of Olive Boulevard at Schulte Road. The site is currently occupied by a Mobil gas station with a small convenience store and a car wash as well as a several homes.

- Access to the redeveloped site is proposed via one full access driveway on Olive Boulevard, one right-turn exit-only driveway on Olive Boulevard at the west end of the property, and one three-quarter driveway (no left-turn in) on Schulte Road generally opposite the existing Shell station driveway.
- Base traffic conditions were observed and evaluated to reveal constraints that currently exist at the signalized intersection of Olive Boulevard with Schulte Road/Mary Meadows Lane. The north-south approaches currently operate at less than desirable levels of service during the AM and PM peak hours primarily as a result of long signal cycle lengths dictated by other critical intersections on the Olive Boulevard corridor. The horizontal and vertical physical configuration of the existing intersection is also less than desirable.
- The new Mobil gas station would be expected to generate approximately 120, 190, and 140 additional trips during the AM, Midday and PM peak hours of a typical weekday, respectively.
- Based on MoDOT's Access Management Guidelines, a separate westbound right-turn lane would be warranted on Olive Boulevard at the proposed full-access driveway. However, that lane would have minimal impact on operating conditions, have impacts to utilities and separate right-turn lanes are not currently provided at unsignalized intersections along the Olive Boulevard corridor, CBB does not recommend the installation of the right-turn lane on Olive Boulevard at the proposed full access driveway.
- The proposed access drives would operate at acceptable levels of service, except for the southbound left-turns out of the main entrance, which is primarily due to the heavy east-west volumes on Olive Boulevard. The left-turning motorists should be able to make two-stage turns onto eastbound Olive Boulevard via the center left-turn lane or go to the signal via Schulte Road.
 - A two-lane exit is recommended and proposed on the conceptual site plan to separate exiting left and right-turns. It should also be noted that this driveway has the ability to storage approximately 4 or 5 vehicles that would be queued in the southbound direction before impacting internal circulation.

***Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri***

- The impacts of the proposed Mobil can be mitigated at the intersection of Olive Boulevard with Schulte Road by providing two seconds of additional north-south green time during the AM and PM peak hour and four seconds of additional north-south green time in the Midday peak hour. On-site observations found that the southbound approach currently clears during a vast majority of the cycles, even during the peak hours, so timing adjustments may not be necessary to allow acceptable operations in the field.
- Minimal operational impacts would be gained by providing a separate southbound right-turn lane since the southbound through volumes are so low, the lane currently operates as a defacto right-turn lane. CBB does not recommend this improvement.
- Minimal operational impacts are expected with the installation of Flashing yellow arrows for the northbound and southbound approaches, but could provide significant improvements in safety, especially related to left-turn crashes. CBB recommends this change.
- If dual southbound left-turns (one left-turn and one share left-turn/through lane) are constructed, a slightly larger north-south split is needed to accommodate the forecasted traffic since split phasing should be required which would negatively impact progression along Olive Boulevard. The primary benefits of the dual left-turn lanes would be accommodation of a safer north-south phasing (split phased) and cutting the southbound queue length nearly in half.
 - o It should be noted that the proposed rebuilding of the Mobil gas station has very little impact at the signalized intersection and the existing safety concerns with the horizontal and vertical alignment of the north and south legs are present with or without the proposed development.
 - o This improvement would help to address the long-term needs of the intersection. It is not feasible to construct the full intersection improvements without the coordination and concurrence with the private ownership of Mary Meadows on the south side of the road.
 - o As a result, the subject development has reserved ground in the northeast quadrant of the intersection so that a better horizontal alignment can occur in the future when all parties can come to an agreement.
- A marked pedestrian crossing is recommended across the west side of the intersection to accommodate pedestrians crossing Olive Boulevard.
- Since traffic to and from the development is not expected to create a noticeable change in traffic along Olive Boulevard to the west (limited to less than 25 vph in either direction), there will be limited impact to ingress/egress for the adjacent neighboring streets (Renee Lane and Woodshire Lane). The delay increases are estimated to be less than one additional second for the northbound approach and one additional second for the southbound approach.

*Traffic Impact Study – Proposed Mobil Rebuild with Car Wash
Creve Coeur, Missouri*

- The results for the Year 2036 No-Build Scenario and 2036 Build Scenario are very similar, where only slight increases in north-south green times are needed to effectively accommodate the traffic from the proposed new Mobil gas station.

We trust that you will find that the information in this report useful in evaluating the traffic impacts of the subject site. Please contact Brian Rensing in our St. Louis office (314) 449-9569 or via email at Brensing@cbbtraffic.com should there be any questions or need for additional information.

CBB Job No. 2016-91

prepared by:



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Suite 430
St. Louis, MO 63141
(314) 878-6644



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for a higher quality of life

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www.gbateam.com

MEMORANDUM

To: Jason W. Jaggi, AICP (City of Creve Coeur)
From: Amanda J. Anderson P.E., PTOE
David J. Mennenga, P.E., PTOE
Date: November 21, 2016
Subject: Proposed Mobil Rebuild – Traffic Impact Study Review

As requested, GBA staff has completed a review of the traffic impact study report and site plans submitted in association with the proposed redevelopment of the Mobil gas and convenience store with car wash, located in the northwest quadrant of the intersection of Olive Boulevard with Schulte Road in Creve Coeur, Missouri. The traffic impact study report prepared by CBB Transportation was determined to be a very thorough evaluation of the existing traffic conditions, as well as for the expected future traffic operations with the redevelopment of this proposed Mobil gas station / car wash site.

As part of this study, CBB developed trip generation estimates based on a Mobil station with similar improvements to the east on Olive Boulevard in Olivette, Missouri. It should be noted that the trip generation estimates for the proposed Mobil station redevelopment site are lower than the trip generation rates as described in the Institute of Transportation Engineers' (ITE) "Trip Generation Manual" for Land Use 946 – Service Station with Convenience Market and Car Wash by nearly 20% in both the morning and evening peak hour. The mid-day peak hour estimate is higher than the ITE trip generation rate. Due to the proximity of the existing Mobil gas station used for estimating trips for the study, the CBB developed trip generation rates seem reasonable for this location.

Using information provided in the ITE "Trip Generation Manual" for similar land uses, the assumed "average" pass-by trip reduction of 62 percent during the morning peak hour and 56 percent during both the mid-day and evening peak hours are appropriate.

Attachment: GBA Mobil Rebuild Memo 11-21-2016 (2200 : 16-031 Mobil on the Run and Brite Worx Car Wash RZG,CUP,SDP)

Based upon the trip generation rates for the similar Mobil station near the study site and the reduction of pass-by trips and existing trips generated by the site, the proposed Mobil station would only be expected to create 50 “new” trips (i.e., 20 inbound trips, 30 outbound trips) during the morning peak traffic hour. The site would generate 80 “new” trips (i.e., 35 inbound trips, 45 outbound trips) during the mid-day peak hour, and 60 “new” trips (i.e., 30 inbound trips, 30 outbound trips) during the evening peak hour.

The traffic impact study stated the site-generated traffic was assigned to the adjoining roadway system based on existing traffic patterns. This assignment is reasonable for the proposed redevelopment of the Mobil gas station / car wash site, with the majority of the site-generated traffic expected to access the site via Olive Boulevard. The assumed annual background traffic growth rate of 0.5% per year for the future 20-year design horizon is also reasonable for this location, due to the limited potential for other new developments in the surrounding area.

Related to the traffic impact study report itself, we do have the following comments regarding several erroneous statements or factual discrepancies contained therein:

- The report states that Version 8 of the Synchro analysis software was utilized for this traffic study. Although we would not expect significantly different analysis results, the consultant should consider using the most current version (Ver. 9) of Synchro for future studies submitted to the City.
- It is standard practice to report the 95th-percentile queue length for each movement at a signalized intersection. Queue lengths have been only reported for the critical left-turns on the southbound approach and the eastbound approach at the intersection of Olive Boulevard with Schulte Road. The City may consider requesting additional queue length information within the study area.
- On page 8 of the Base Operating Conditions analyses, it was stated that, “...no two-stage left-turn were assumed in the analyses...” because the spacing to the signal does not typically allow for the these turns. On page 20, the study report indicates two-stage left-turn were included as part of the analyses for the 2016 Build Operating Conditions. The City may consider requesting clarification for the discrepancies between the two scenarios since the 2016 Build results may be optimistically reported for southbound movements with this assumption.
- On Schulte Road, left-turns are prohibited into the site. This will be difficult to enforce without constructing a non-traversable median on Schulte Road. However, such a median cannot be

constructed without impacting the southbound left-turn operations into the Shell Station or onto Schulte Road.

- The proposed full access driveway appears to be approximately 320 feet from Schulte Road. Using MoDOT's Access Management Guidelines, the suggested corner clearance for a Major – Non Freeway type facility is 440 to 660 feet. As noted in the study report, the project consolidates several access points onto Olive Boulevard, and MoDOT staff has preliminarily approved the proposed access locations.
- The proposed right-out on Olive Boulevard, at the west edge of the site, is approximately 50 feet from the existing driveway for the adjacent property. If the drive were constructed more perpendicular to Olive Boulevard, the separation distance could be increased. Additionally, the distance between the right-out driveway and the full access driveway on Olive Boulevard appears to be approximately 350 feet, also short of the recommended 440 feet of separation distance. Final MoDOT traffic and permits staff approval may be required for these proposed access locations.

The on-site parking lot layout provides for a very straight-forward internal circulation pattern, including the one-way ingress point into the car wash lanes, one-way egress routes exiting the carwash, and two-way circulation lanes elsewhere.

The submitted site plan includes a total of 29 parking spaces adjacent to the convenience store. Based upon a review of ITE's "Parking Generation" criterion for this type of gasoline/service station with convenience market land use, the average peak period parking demand rate of 0.75 vehicles per fueling position would indicate that about 15 parking spaces should be required. In order to fully cover the upper end of ITE's 85th-percentile confidence interval range (i.e., a rate of 1.03 vehicles per fueling position), a total of 21 parking spaces would instead need to be provided for this site. Based on the City's Zoning Ordinance 405.820, four parking spaces are required per 1,000 square feet of gross floor area. Therefore, more than adequate parking has been provided for this proposed site redevelopment project.

cc: MCE, file

Steven V. Stenger
County Executive

Saint Louis
COUNTY
TRANSPORTATION
PUBLIC WORKS

Nichalos D. Gardner, Ph.D., P.E.
Director

Stephanie Leon Streeter, P.E.
Deputy Director

November 21, 2016

Mr. Brian Rensing, P.E., P.T.O.E.
Associate – Transportation Engineer
Crawford, Bunte, Brammeier
12400 Oliver Boulevard, Suite 430
St. Louis, Missouri 63141

RE: Traffic Impact Study
Mobil Rebuild with Car Wash

Dear Mr. Rensing:

I have completed my review of the November 4, 2016 traffic impact study that you prepared for the proposed development in the northwest quadrant of the intersection of Olive Boulevard (Missouri Route 340) and Schulte Road in Creve Coeur, Missouri.

Based on the assumption of:

- A 20-pump service station with convenience market and car wash

I am satisfied that your study conclusions are a reasonably accurate assessment of traffic conditions that might be anticipated upon completion of this project. I am generally satisfied that the methodology of this study is valid. I agree with the following required roadway improvements:

- Relocation and reconfiguration of Schulte Road access to be opposite the service station access to the east while restricting left turns into the subject site
- Appropriate signal improvements as directed by the Missouri Department of Transportation
- Reservation of ground for potential future alignment of Schulte Road

Please submit site plans for concept approval showing roadway improvements, however note that any change to the approved site plan or traffic impact study may require review, and approval from this Department and may result in changes in requirements. No further submittals of the traffic impact study to St. Louis County Department of Transportation will be required unless changes to the site study are made. Any submittals required by other reviewing agencies will need to be reviewed by this Department. While no resubmittal of this study is being required at this time, should it become necessary in the future, please address the following comment:

- Traffic exiting the site should be more balanced amongst access points when level of service is particularly deficient at one while considerable excess capacity exists at others. In this case, is it reasonable to assume the large number of left turns at the unsignalized Olive Boulevard access when access to the signal is provided at Schulte Road?

Thank you for the opportunity to review your traffic impact study for this development. Please feel free to contact me at (314) 615-8594, if you require any further information or assistance.

Sincerely,



Adam J. Spector, P.E.
Transportation Planning Project Manager

AJS:mtb

cc: Kevin Kamp, Civil & Environmental Consultants
Whitney Kelly, City Planner, City of Creve Coeur
Karen Yeomans, Southwest Area Engineer, MoDOT



**ENVIRONMENTAL
NOISE STUDY OF PROPOSED
NEW COMMERCIAL DEVELOPMENT
ON THE NORTH WEST CORNER OF OLIVE AND SCHULTE,
LOCATED IN CREVE COUER MISSOURI**

PREPARED FOR:

Arch Energy (Wallis Companies)
106 E. Washington
Cuba, Missouri 65453

PREPARED BY:

KEVIN TANKERSLEY
President / Senior Engineer
DESIGNED ACOUSTICS, LLC
PROJECT #
11824

DATE
NOVEMBER 10th, 2016

Environmental Noise Study
November 10th, 2016

Environmental Noise Study Report

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Environmental Noise Study November 10th, 2016

INTRODUCTION

Designed Acoustics was retained by Wallis Companies to perform an Environmental Noise Study and to provide an evaluation of existing and potential noise levels that could be generated by a proposed new commercial development. The property is at northwest corner of Olive & Schulte located in Creve Coeur Missouri. This report summarizes Designed Acoustics' noise investigation and the potential audible effects at the property lines of the proposed site. Environmental noise studies, being investigative by nature, are often forced to make assumptions concerning the properties of the noise source(s) under such study. Designed Acoustics recognizes the proposed uses and have elected to base the study upon a conservative "worst case situation" in order to ensure the validity of calculated results.

The following report explains the methodology used to gather data as well as Designed Acoustics' findings and compliance with the City of Creve Coeur criteria which is:

An acoustical study shall be submitted demonstrating that the order facility and service windows will not produce sounds exceeding sixty (60) dB as measured at any property line abutting a residential use, up to a height of eight (8) feet above ground at the property line and demonstrating that the order facility and service windows will not increase ambient sound levels at other property lines above the average Monday to Friday midday level.

For the development proposed at this location, no service order window is proposed however, some of the mechanical components of the car wash have higher decibel levels and will be evaluated. It should also be noted that the hours of operation proposed for the carwash portion of the facility are from approximately 7 am until 8 pm.

NOISE MEASUREMENTS

Long-term 24-hour noise measurements were completed at the subject site. While on-site short term measurements were also taken at the same time that the long term monitoring was beginning, approximately 4pm on Thursday, November 3rd, 2016. Additionally, short term background noise measurements were again taken at the time that the long term monitors were retrieved, approximately 10am on Wednesday, November 9th, 2016.

Environmental Noise Study November 10th, 2016

INSTRUMENTATION

A Larson-Davis Laboratories Model Sound Expert LxT precision sound level meter was used for all octave band measurements reported here. This meter conforms to the ANSI Standard Specifications for Sound Level Meters S1.4-1983, Type 1 (Precision), and the IEC Standard 651-1979, Sound-Level Meters, Type 1 Peak. The instrument was calibrated and is traceable to The National Institute of Standards. Evidence of traceability is on file at the Larson Davis Corporate Headquarters. The meter calibration was field verified before and after the measurement session.

Larson-Davis Laboratories Model Sound Expert LxT sound meters were used for A-weighted long-term sound level measurements. This meter conforms to ANSI Standard Specifications for Sound Level Meters S1.4-1983, Type 2, and the IEC 651-1979, Sound Level Meters Type 2. The instruments were calibrated and are traceable to the National Institute of Standards. Evidence of traceability is on file at the Larson Davis Corporate Headquarters. The meters were field verified before and after the measurement session.

MEASUREMENTS

Long Term monitor results

Date	Ldn (dBA)	Lday (dBA)	Ln timer (dBA)
Friday, November 4 th , 2016	65.8	64.9	57.0
Saturday, November 5 th , 2016	65.7	66.4	54.3
Sunday, November 6 th , 2016	65.1	63.2	57.1
Monday, November 7 th , 2016	65.3	65.2	55.4
Tuesday, November 8 th , 2016	65.8	64.7	57.1
Wednesday, November 9 th , 2016	64.9*	64.9*	54.3*

*Not a complete 24 hour cycle of data.

FINDINGS

The estimated impact of speaker noise at the nearest property line was calculated using provided manufactures data. The total attenuation at the nearest property line (and beyond) was calculated based on land topography supplied to Designed Acoustics by the site civil engineer, barrier height and location(s) (insertion loss¹), and distance from source. The calculations show no increase of noise impact at the property line. It is important to note that as a conservative approach Designed Acoustics did NOT take into consideration the large amounts of trees and shrubs at the property lines and beyond. Due to seasonal changes in the geometry, shape, and consistency of such barriers, sound attenuation is difficult to predict when these are figured into the calculations. Designed Acoustics acknowledges that trees and foliage, in bloom, will add a slight degree of extra attenuation beyond those factors accounted for in this study. Therefore, the addition of trees and / or foliage near the property lines will have a positive impact on the noise environment beyond the property line.

The estimated SPLs assume a 6' barrier (that Designed Acoustics supports installing) placed between the given property lines and proposed carwash. Additionally, estimated SPLs at the northwest property line took into consideration the elevation difference between the carwash and the nearby property. This topography increases the barrier effectiveness at the northwest property line. Designed Acoustics estimated these SPLs at an 8' height per the aforementioned city code.

The site plan, provided by CEC and included in the appendix, indicates the approximate distance from the closest point on the North West property line to the entrance to the car wash. Designed Acoustics estimates a sound level of 70dBA at this area. Distance attenuation along with barrier attenuation was used to calculate the estimated property line dBA at 8'. The worst case is calculated to be 49 dBA at the property line. It's important to note that these estimated SPLs are lower than the onsite background measurements that have been taken. We recognize that the driers exiting the car wash are in fact the loudest noise generator on site, approximately 95dBA to 100dBA during its cycle, the direction of those driers will face the highway. It's our conclusion that the highway noise and the distance would dampen those levels significantly. While we did check all property line dBA levels during our study, Designed Acoustics has chosen the car wash entrance area to focus on because we are confident it would be the worst case scenario for noise on the proposed new development and any residential property line.

It is Designed Acoustics professional opinion that the operation of the proposed new development will have no negative environmental noise impact on adjacent properties and that the proposed noise levels that will be present upon development as proposed will meet the regulations presented.

Environmental Noise Study
November 10th, 2016

CONCLUDING REMARKS

As stated earlier environmental noise impact studies, being investigative by nature, are often forced to make assumptions concerning the properties of the noise source under such study. Designed Acoustics recognizes the usage of this proposed development. We have elected to base our study upon this worst case situation in order to ensure the validity of calculated results.

As a first step, Designed Acoustics placed a long term noise monitor at the proposed location in order to quantify the day, night, Leq background noise levels as a base starting point for our acoustical analysis

Designed Acoustics was supplied with manufacturer's noise measurements of the proposed equipment for our review and to establish if the equipment proposed would have the potential for negative effects on the surrounding areas.

As an additional step we were given access to an existing location with similar equipment. (475 N. Lindberg, Florissant. Missouri)
Designed Acoustics visited that location on November 9th, 2016 at approximately 11:30am. While on site sound level readings of the car wash were taken. It's important to note that the sound level readings taken matched the manufacturer's data that was given to us for review. While still on site, sound levels were taken at the wall (barrier) located behind the carwash that separates the carwash from a residential neighborhood. (53dBA to 56dBA) Additional sound level readings were taken behind the wall. The sound level readings behind the wall were significantly lower. (42dBA – 45dBA)

Based on our acoustical analysis and the factors mentioned in this report the new development shall meet the aforementioned city code requirements.

ACOUSTIC NOMENCLATURE AND TERMINOLOGY

ANSI: American National Standards Institute

A-Weighing: Prescribed frequency response defined by ANSI Standard S-1971. Used to obtain a single number representing the sound pressure level of a noise in a manner approximating the response of the ear, by de-emphasizing the effects of the low and high frequencies.

Background Sound: Sound that remains when sound of interest is removed is background sound relative to the sound of interest.

Daytime: The hours 0700 (7:00 am) to 2200 (10:00 pm).

Day-night average sound level (L_{dn}): A measure of the noise environment over a 24-hour A-weighted sound level with a 10 dB weighing applied to the nighttime levels. When equivalent level (L_{eq}) information is available, the L_{dn} is calculated as follows:

Where $L_{eq}(d) = L_{eq}$ for the hours 0700-2200.

$L_{eq}(n) = L_{eq}$ for the hours 2200-0700.

Annualized L_{dn} is effective L_{dn} determined over a full year accounting for daily and seasonal variations.

dBA: Overall A-weighted sound pressure level expressed in decibels referenced to 20 micro-pascals.

Decibel (dB): Ten times the logarithm of the ratio of a quantity (X) to a reference quantity (X_r).

Equivalent Sound Level (L_{eq}): The level of a constant sound which, in a given situation and time period, has the same sound energy as a time varying sound level.

f_i = percent of time period in which a particular L_i occurs.

L_i = sound level in dB.

Exceedance Level - L_n: The sound pressure level exceeded n percent of the time. Example: L₁₀ is the sound pressure level exceeded 10% of the time during a measurement period. L₅₀ corresponds to the median level.

Frequency: Number of complete oscillation cycles per unit of time. The frequency is the reciprocal of the period. The unit of frequency often used is the Hertz.

Hertz (Hz): Unit of frequency equal to one cycle per second.

L_{dn}: See day-night average sound level.

L_{eq}(n): Equivalent sound level for a period n in length.

L_{max}: The maximum sound level detected during the period of measurement.

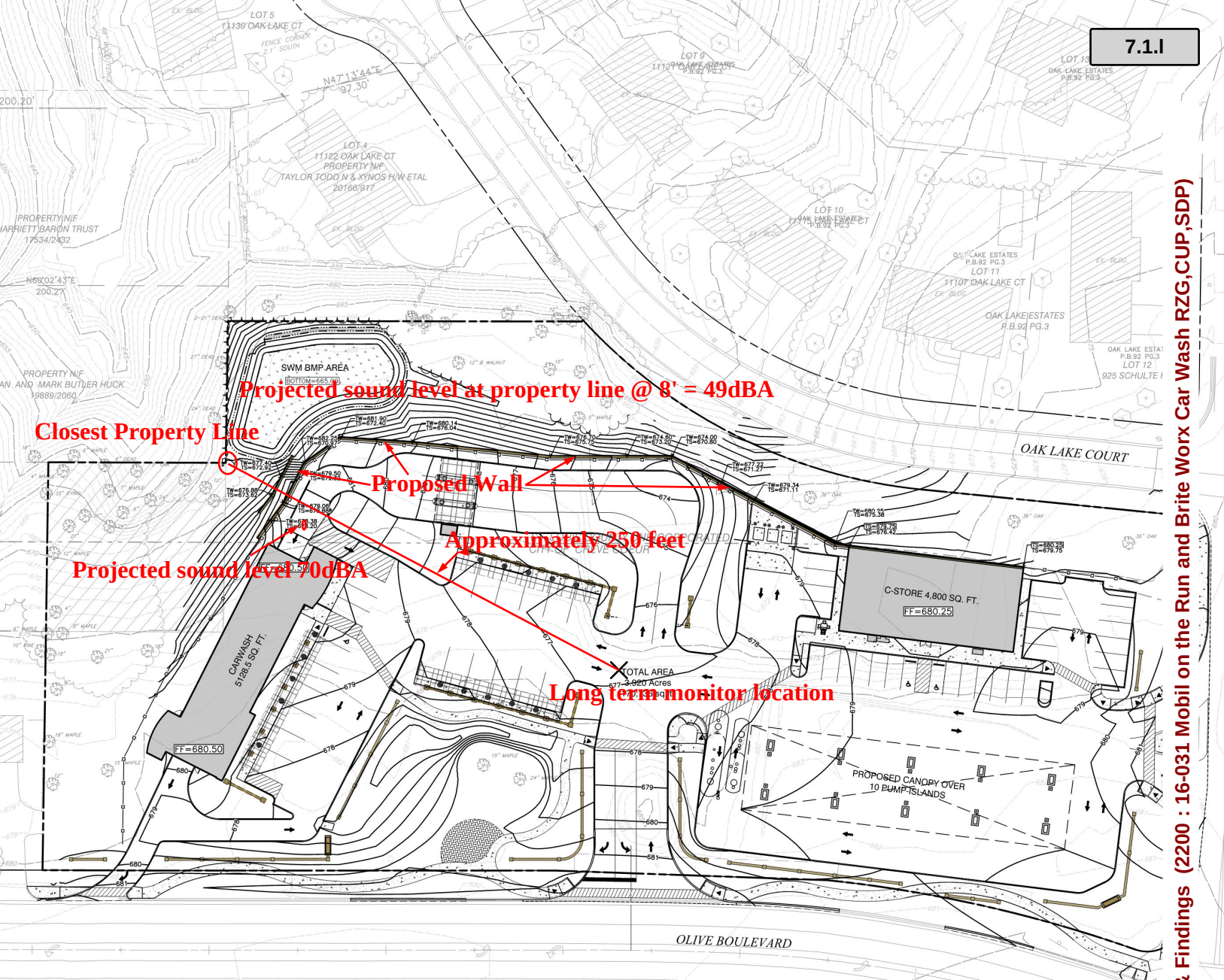
L_{min}: The minimum sound level detected during the period of measurement.

L_n: See Exceedance Level, the sound level exceeded n percent of the time.

Nighttime: The hours 2200 (10:00 pm) to 0700 (7:00 am).

Sound Pressure Level (SPL): In decibels, 20 times the logarithm to the base 10 of the ratio of a sound pressure to the reference sound pressure of 20 micro-pascals. Where p = sound pressure to be quantified $p_{ref} = 20$ micro-Pascals (metric). 2.9×10^{-9} psi (English)

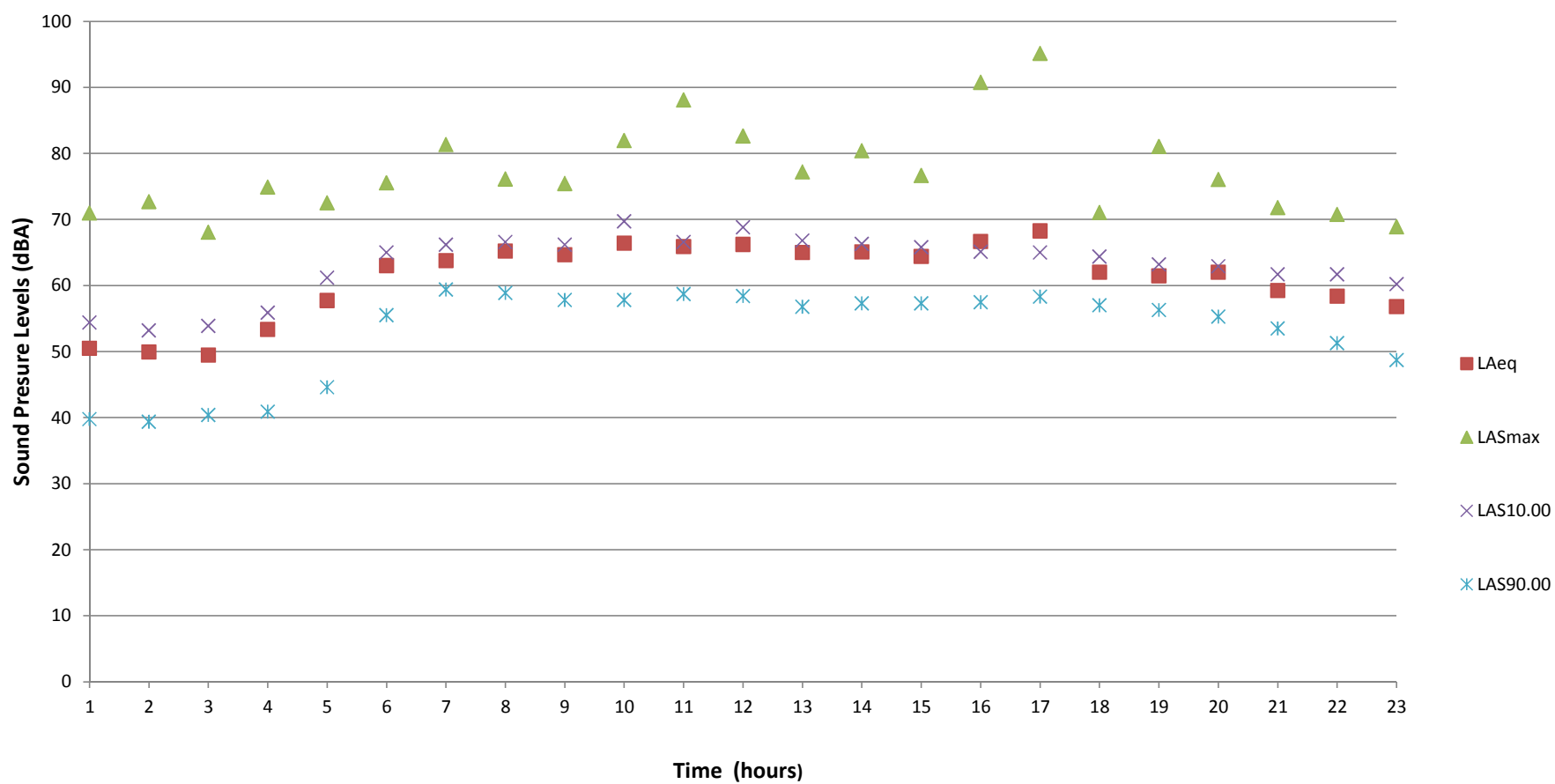
Figures 1 & Graphs 1 – 6





Olive & Schulte
 Enviromental Noise Study
 November 4th, 2016

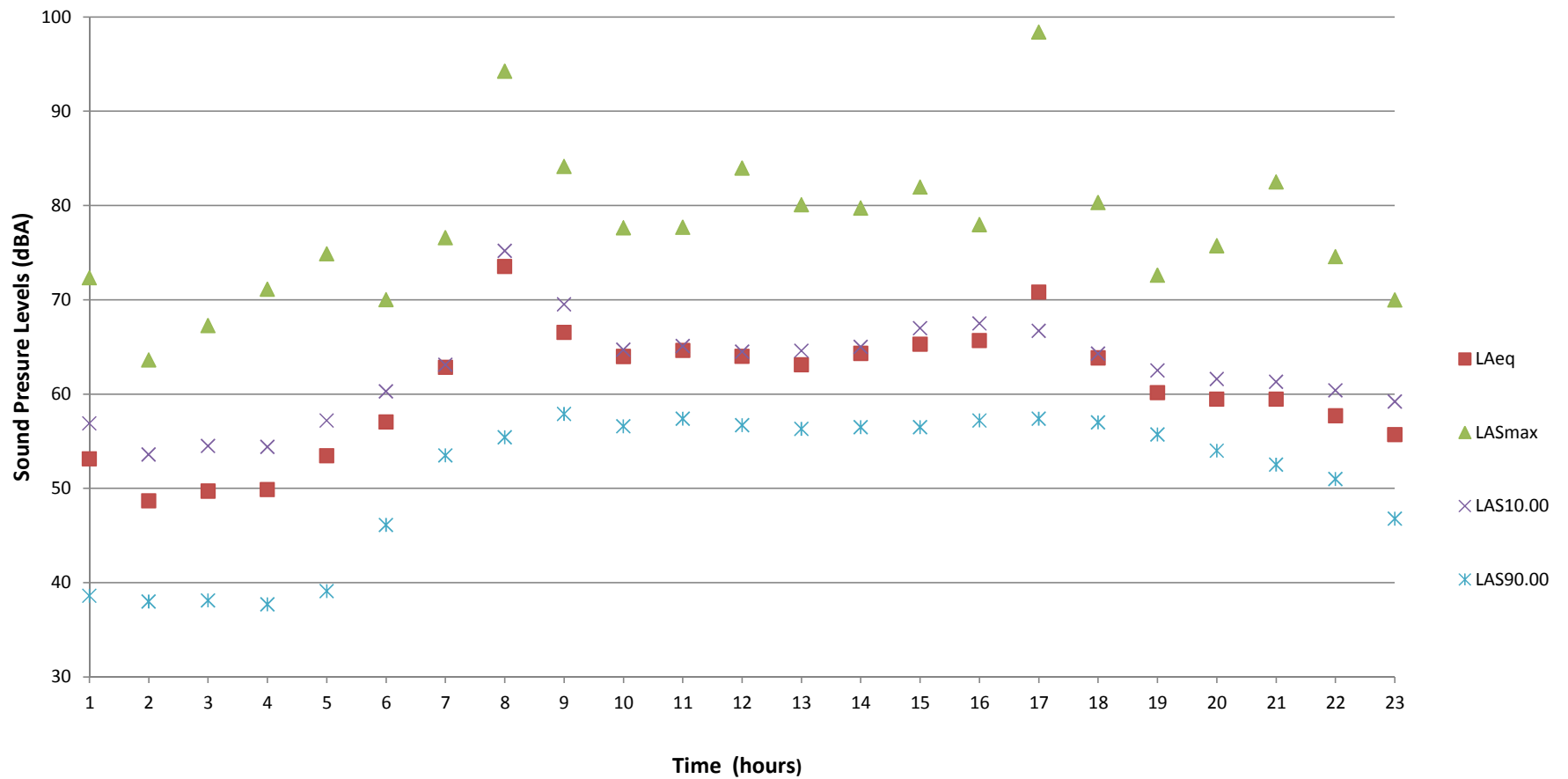
Ldn 24 = 65.8
 Leq (Day) = 64.9
 Leq (Night) = 57.0





Olive & Schulte
 Enviromental Noise Study
 November 5th, 2016

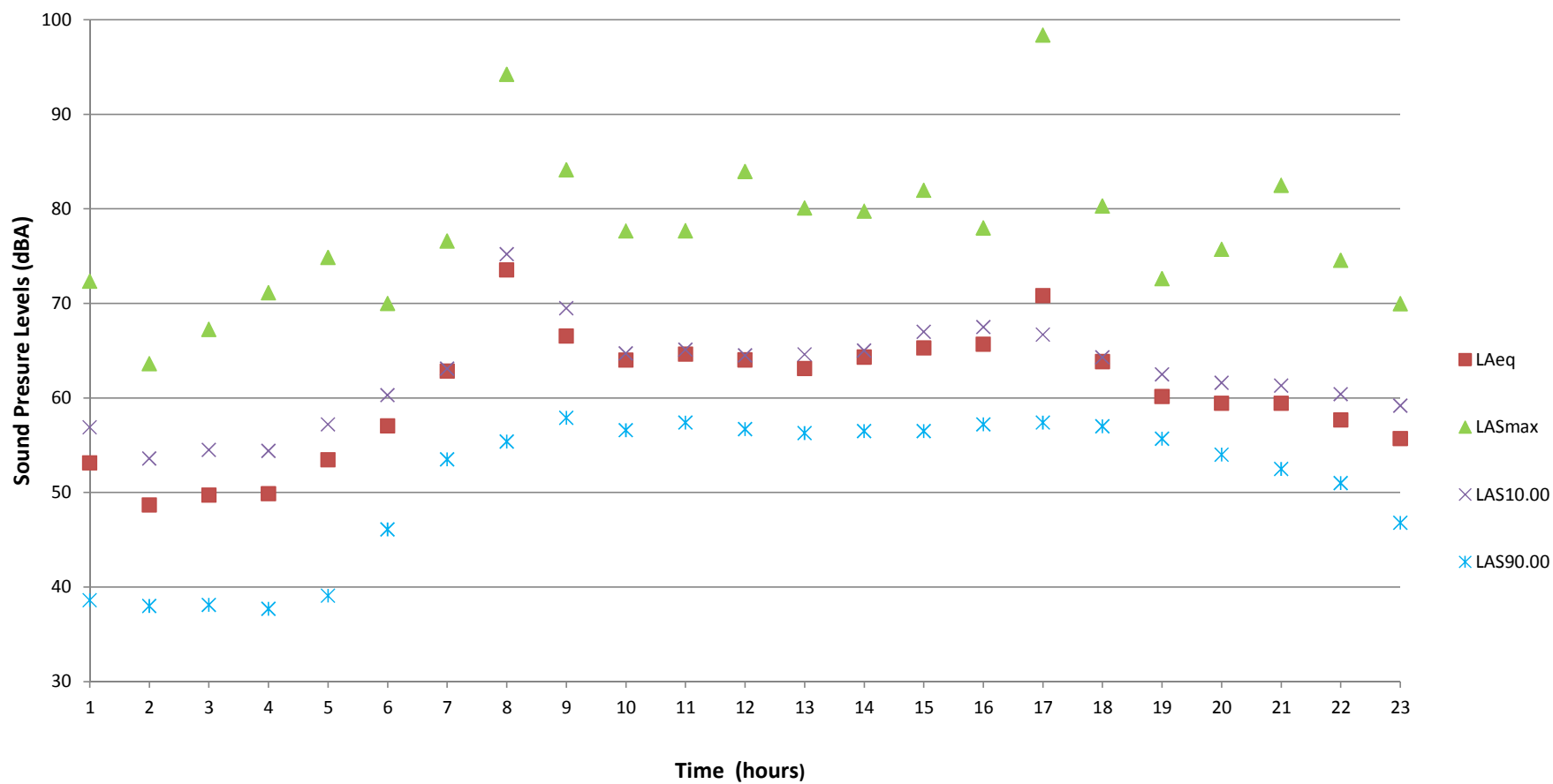
Ldn 24 = 65.7
 Leq (Day) = 66.4
 Leq (Night) = 54.3





Olive & Schulte
 Enviromental Noise Study
 November 6th, 2016

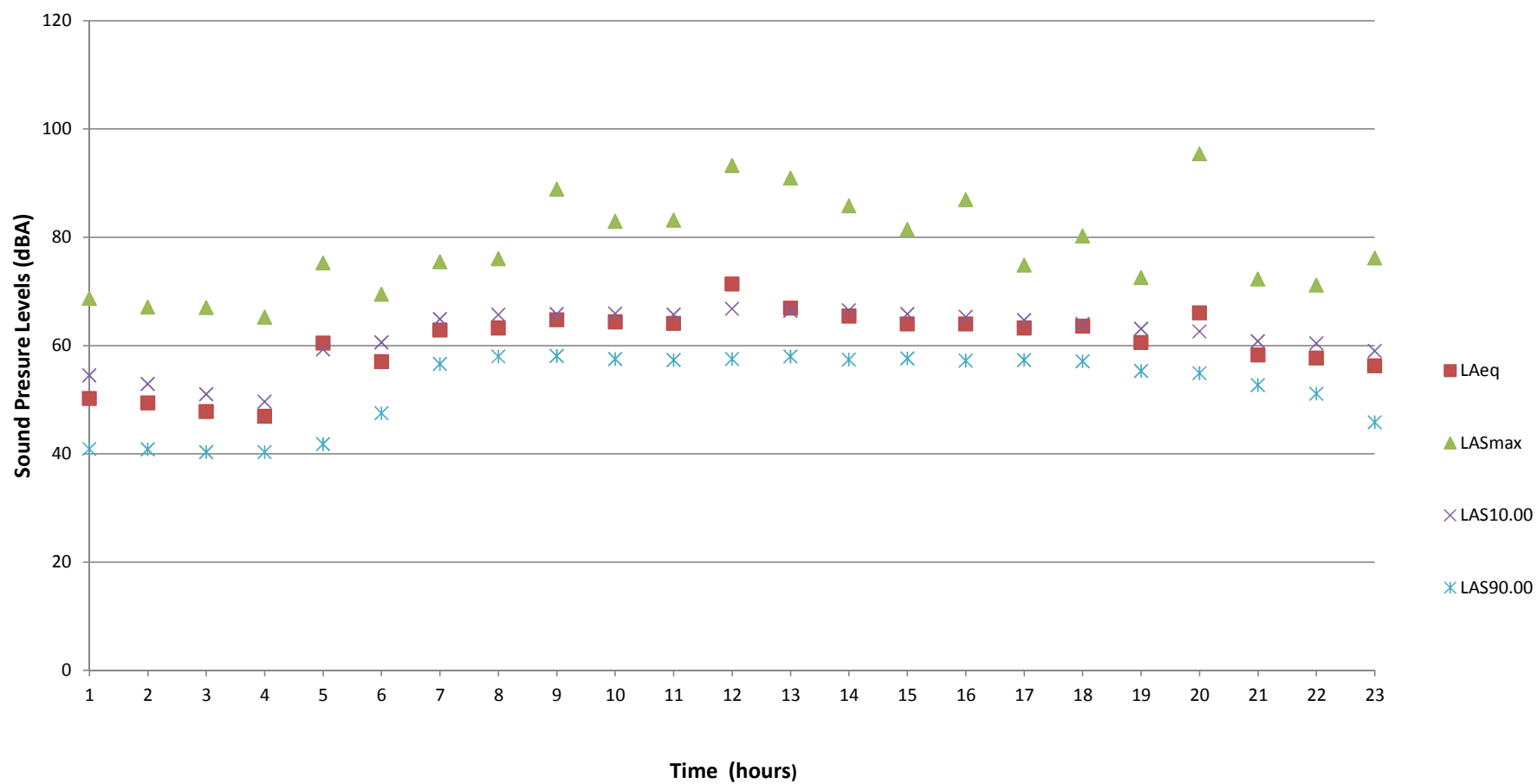
Ldn 24 = 65.1
 Leq (Day) = 63.2
 Leq (Night) = 57.1





Olive & Schulte
 Enviromental Noise Study
 November 7th, 2016

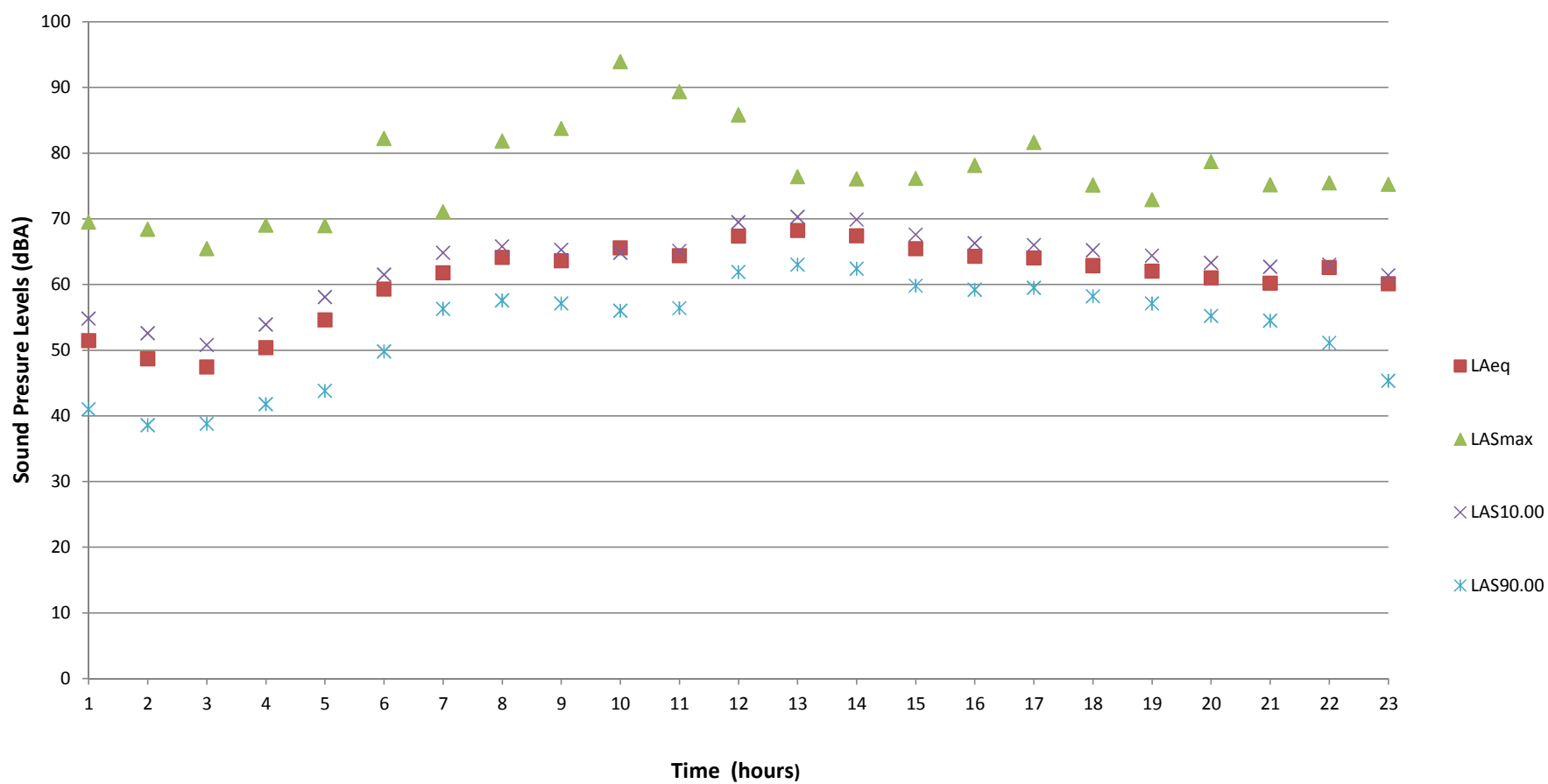
Ldn 24 = 65.3
 Leq (Day) = 65.2
 Leq (Night) = 55.4





Olive & Schulte
 Enviromental Noise Study
 November 8th, 2016

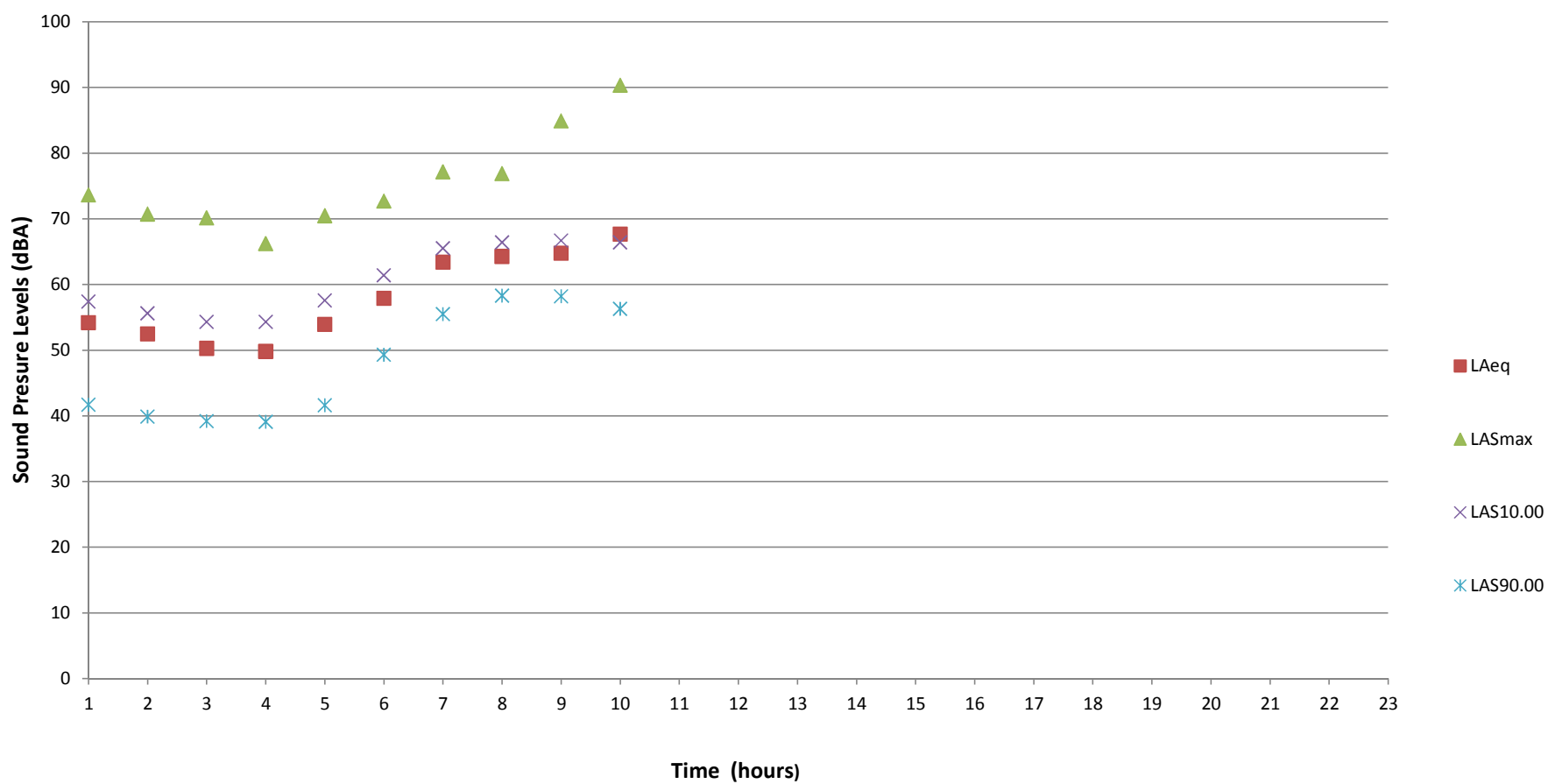
Ldn 24 = 65.8
 Leq (Day) = 64.7
 Leq (Night) = 57.1





Olive & Schulte
 Enviromental Noise Study
 November 9th, 2016
 (Only partial day of recordings)

Ldn 24 = 64.9
 Leq (Day) = 64.9
 Leq (Night) = 54.3





Whitney Kelly <wkelly@crevecoeurmo.gov>

#16-031 For The Rezoning Of 11109-11141 Olive Blvd for Mobil On The Run, meeting Dec.5, 2016

Bill Halliburton <billhfs@sbcglobal.net>

Mon, Nov 28, 2016 at 1:22 PM

To: wkelly@crevecoeurmo.gov, Jason Jaggi <jjaggi@crevecoeurmo.gov>, jfaron@crevecoeurmo.gov, atravers@crevecoeurmo.gov, bglantz@ci.creve-coeur.mo.us

Dear Concerned City Officials:

I received the Notice Of Public Hearing, Application to Planning and Zoning Commission for the rezoning and conditional use permit for 11109-11141 Olive Blvd. and 11100-11114 Oak Lake Ct., currently Zoned GC General Commercial and C Single Family Residential to be held December 5th, 2016.

Reading the Key Issues, the request does not integrate with the existing surrounding uses. Were this to be approved, i would become the next door neighbor to the project, and be the only remaining residence in the block at 11147 Olive Blvd. I would have a residence next door to a very large and bright service station-car wash-and possible Quick Mart.

It this seems to advance I will study Section 405.210; Regulation of Uses, Table A.,
Section 405.360 GC-General Core Business District,
Section 405.470 Conditional Uses,
Section 405-1060 Zoning Changes and Text Amendments.

Obviously, this does not give me a sense of well being. I would be the 'proverbial lonely petunia in an onion patch', and all I'd do is cry all day.

Thank you for sending the information.

Sincerely,

Bill Halliburton

11147 Olive Blvd.

Creve Coeur, Mo. 63141-7650

Attachment: Public Comment received 11-29-2016 (2200 : 16-031 Mobil on the Run and Brite Worx Car Wash RZG,CUP,SDP)

November 30, 2016

PLANNING DEPT.
DEC 1 2016
RECEIVED

To the members of the Creve Coeur Planning and Zoning Commission:

My name is Joan Althaus. I reside at 11107 Oak Lake Court in the residence into which my husband and I and three young children moved fifty five years ago. We looked at numerous properties before selecting this house. It was well constructed by a local builder but the main reason we chose to live here was the quiet location and the safety that living on a cul de sac provided.

When the rest of the houses on the cul de sac were completed, the 11 houses were occupied by professional people with children similar in age, There would be 13 children who would line up at Oak Lake Court and Schulte Road to await the school bus which would take them to Weber School (now Creve Coeur City Hall). The children played together and enjoyed the safety of very little traffic on our little street. The families knew one another and enjoyed neighborhood picnics in our backyards. Of course the scene has changed over the years as the children grew up and the ownership of the properties changed. We now have families with pre school children who enjoy the safety that the cul de sac provides as they walk with their children and pets in the street. There are no sidewalks. It is presently a safe, quiet environment for those families and their children.

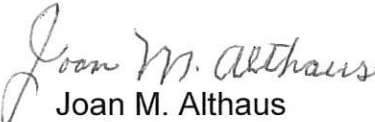
If the Mobil on the Run is approved, this will no longer be the safe, quiet street now being enjoyed by those families who chose to live here.

I have several concerns, my main one being the traffic that such an expanded operation would generate and its effect on Oak Lake Court. Even now there are times when the traffic on Schulte Road is so heavy it is difficult to exit Oak Lake Court. There are accesses to the present Mobil Station and the Shell station opposite each other on Schulte Road which also presents a traffic problem and will only intensify. Even now, I often have cars turning around in my drive.

I have some other concerns and I hope that it will remain a requirement that there will be no access to the expanded facility from Oak Lake Court.

If the expansion is approved, there would be a need for a place for the workmen to park. I request that it be a contingent that a place be provided and that they be prevented from parking on Oak Lake Court.

Although my property is located in the unincorporated county, I have always aligned myself with Creve Coeur and put much effort into working for the betterment of the community.


Joan M. Althaus
Creve Coeur Squire

314 872 7922

Attachment: Public Comment Letter Dated 11-30-16 (2200 : 16-031 Mobil on the Run and Brite Worx Car Wash RZG,CUP,SDP)



MEMO TO PLANNING AND ZONING COMMISSION

Meeting Date: December 5, 2016

Subject: Planning Review Process—Feedback Received

Memo Prepared by: Jason W. Jaggi, AICP, Director of Community Development
December 2, 2016

Attachment: Planning Review Process Recommendations from Barry Thalden 12-1-16

I'm sharing with the Commission feedback that was received from a commercial property owner, Mr. Barry Thalden, based upon his experience with the City's planning application review process. Mr. Thalden's application involved site and exterior building modifications to the Shoppes at Westgate, located at the southwest corner of Olive Blvd. and Tempo Drive. The Commission approved the Site Development Plan proposal on December 21, 2015 and the project is essentially complete with only a few minor items left to address.

At the request of Mr. Thalden, myself along with Mayor Glantz, City Administrator Perkins and Mr. Dan Tierney, Chair of the Arts Committee participated in a phone conference on Thursday, December 1st to discuss his concerns and to receive feedback. Whitney and I look forward to discussing these comments and to answer any questions from the Commission relative to Mr. Thalden's remarks at the meeting.

Recommendations to Creve Coeur to Improve their Planning Review Process

Barry Thalden 12-1-16

1. The planning staff reviews submissions for completion of applications only. Staff is specifically directed to not play architect or landscape architect, but leave that to the professionals expected to do professional work.
2. As an application requirement, all building design is required to have been provided by a licensed architect, and all landscape design and land planning design is expected to have been done by a licensed landscape architect.
3. All completed submissions are to be given to the Planning Commission for review.
4. The Planning Commission makes one of three determinations:
 - a. Approved
 - b. Denied
 - c. Approved with conditions
 - d. Table

If it tabled, or approved with conditions, it shall remain on the Planning Commission's "Active Project List" until a final determination is made, or the application is withdrawn. The Planning Commission always needs to know what's going on.
5. Planning Commission should make recommendations to revise some of the Zoning Ordinance requirements, which through their experience reviewing applications are seen to be unclear or too restrictive.
6. Planning staff should understand that they should not be the "gatekeepers" to the Commission, should not be extorting property owners to meet their discretionary demands, should not be designing the projects, and are not to be making the decisions when the code states: "at the Commission's discretion."
7. All decisions of the Planning Commission may be appealed to the City Council. They are the elected body of the city.
8. Empower the Planning Commission. In general move the decision making authority from staff to appointed and elected officials.
9. The Arts Committee shall prepare a "Guidelines for Public Art," encouraging public art and defining an approval process. This shall be submitted to the City Council for approval.
10. The City should "partner" with its commercial centers and let its citizens know how important it is for them to support "**buying locally**" instead of online.
11. Meet with local business owners to ask them how the city can help support its retail core. And, it may mean revisiting sign ordinances and parking regulations. It may even mean providing public parking, or supporting Chamber of Commerce projects.
12. Set a different precedent. Instead of being the city that makes it difficult to do things, be the city where good things are supported and continue to happen.