

# Memorandum

## Department of Planning & Development Services



**To:** Planning and Public Works Committee

**From:** Cassie Harashe, Project Planner

**Date:** December 7, 2017

**RE:** **P.Z. 08-2017 Brite Worx Carwash (Wallis Companies):** A request for a zoning map amendment from a "PC" Planned Commercial District to a new "PC" Planned Commercial District for 1.8 acres located on the western corner of the intersection of Baxter Road and Clayton Road. (21R410960).

### **Summary**

Wallis Companies, on behalf of Brite Worx Carwash, has submitted a request for a zoning map amendment from a "PC" Planned Commercial District to a new "PC" Planned Commercial District. The request is for a 1.8 acre parcel located on the western corner of the intersection of Baxter Road and Clayton Road.

The public hearing was held on May 8, 2017, at which time several issues were raised regarding noise, traffic, waste and storm water, the proposed masonry wall, lighting, and architectural standards.

Planning Commission recommended approval of the request, as presented, on September 25, 2017 by a vote of 5 to 3.

This item was presented to the Planning and Public Works Committee on October 4, 2017, where it received a recommendation of denial by a vote of 4-0 citing concerns of continued growth towards residential properties.

At the City Council Meeting on October 16, 2017, the applicant requested to hold their first reading until November 6, 2017. The City Council honored this request. The applicant wished to make changes to the plan to address the concerns of the Planning and Public Works Committee members. The applicant revised the plan, and at the November 6, 2017 City Council Meeting the applicant requested to return to the Planning and Public Works Committee. City Council agreed and also encouraged the applicant to meet with the residents.

The applicant has made revisions to the plan based on feedback from the Planning and Public Works Committee, increasing the setbacks along the north and western sides of the development.

Attached to this report, please find a copy of Staff's Planning Commission report, Attachment "A", Applicant's Response Letter, Preliminary Development Plan, and Acoustical Sound Study. Links to public comment are in the agenda on the City's website.

Respectfully submitted,

Cassie Harashe, AICP  
Project Planner

Attachments: September 25, 2017 Planning Commission Report  
Attachment A  
Applicant's Response Letter, dated June 5, 2017  
Preliminary Plan  
Acoustical Sound Study  
Updated Public Correspondence (links provided on Agenda on City's website)

## Planning Commission Staff Report

**Project Type:** Rezoning

**Meeting Date:** September 25, 2017

**From:** Cassie Harashe, Project Planner

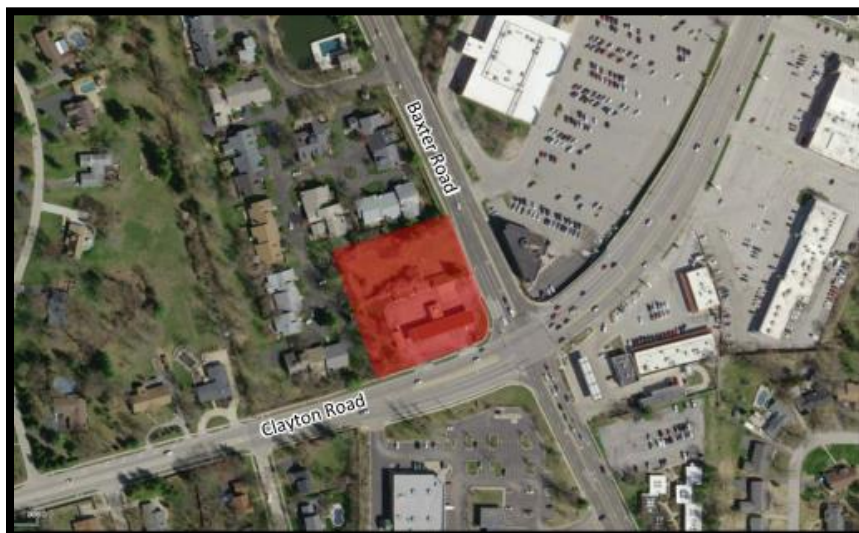
**Location:** Western corner of the intersection of Baxter Road and Clayton Road

**Petition:** **P.Z. 08-2017 Brite Worx Carwash (Wallis Companies)**: A request for a zoning map amendment from a “PC” Planned Commercial District to a new “PC” Planned Commercial District for 1.8 acres located on the western corner of the intersection of Baxter Road and Clayton Road. (21R410960).

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### **SUMMARY**

Wallis Companies, on behalf of Brite Worx Carwash, is requesting a zoning map amendment from the City of Chesterfield to change the zoning of a tract of land currently zoned “PC” Planned Commercial District to a new “PC” Planned Commercial District. The new “PC” Planned Commercial District would allow for development of a freestanding carwash on the site, and define development criteria for the site.



*Figure 1: Subject Site Aerial*

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**SITE HISTORY**

The subject property was originally zoned “C8” Planned Commercial District. In 1998, Arch Energy petitioned to change the zoning to allow for a filling station, including emergency towing and repair services provided that no automobile, truck, or other vehicle may be parked or stored in the open on the premises for longer than twenty-four (24) hours, a fast food restaurant, and a vehicle washing facility for automobiles. After initially being denied by the City, the zoning was changed to “PC” Planned Commercial District in June 2001 by Ordinance 1750. Ordinance 1750 was amended in October 2001 by Ordinance 1793 to allow for an internal automatic teller machine, a small increase in the size of the convenience/food store and fast food restaurant, some minor changes to setbacks (+/- 1 foot) on various sides, a two foot (2’) increase to the canopy height, an increase in the setbacks for the retaining wall, a reduction in setbacks for parking along the eastern and western sides of the development, restrictions on the hours of operation for lighting along the north and west sides of the development were removed, and some design standards for the roof were removed. A second amendment was approved in December 2001 by Ordinance 1803. This amendment increased the size of the carwash, reduced the setback for the convenience store/fast food structure from the right-of-way along Baxter Road to thirty-nine feet (39’) from fifty-nine feet (59’) and along the northern property line to eighty-two (82’) feet from eighty-four point one four feet (84.14’), removed all setbacks for any retaining walls, and increased the amount of masonry fencing required along the northern property line.

**SURROUNDING LAND USES**

The land use and zoning for the properties surrounding this parcel are as follows:

Direction	Zoning	Land Use
North & West	“R3” Residence District (10,000 sq. ft.)	Attached single family residences within the Woodfield Subdivision
South	“PC” Planned Commercial and “C2” Shopping Districts	Pharmacy and Bank located within the Walgreens at Clayton and Baxter Center and No Subdivision Ward 3
East	“C8” Planned Commercial District	Commercial properties within the Baxter Center Subdivision

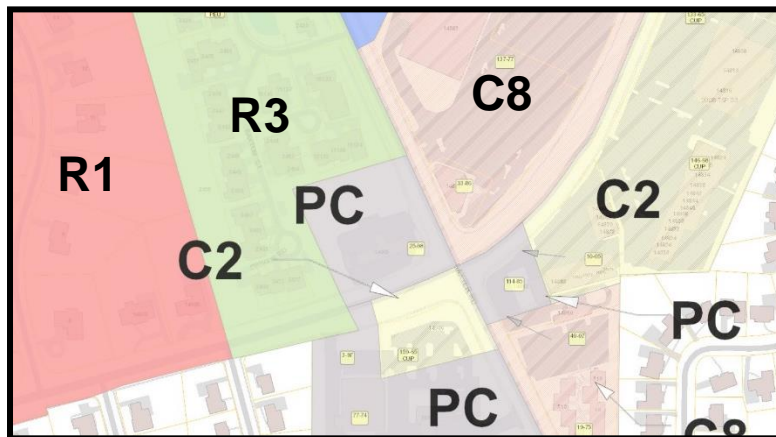


Figure 2: Surrounding Land Uses

## **COMPREHENSIVE PLAN ANALYSIS**

The subject site is located within Ward 3 of the City of Chesterfield. The City of Chesterfield Land Use Plan gives this parcel a Community Retail designation. The Plan Policies chapter of the Code calls for:

*“Community Retail development along Highway 340 (Clarkson Road/Olive Boulevard) should be limited to the Urban Core and a select number of high quality, well-planned nodes clustered at the following locations: Baxter Road, Hilltown Center, Woods Mill/Highway 141.”*

More specifically in the Land Use Element chapter, it defines Community Retail as “Serving Multiple Neighborhoods and Neighboring Communities”. It further clarifies locations of Community Retail to include the intersection of Clayton Road and Baxter Road. The proposed use would be compliant with the Land Use Plan. This subject site is not located in any sub-area identified by the Comprehensive Plan; therefore there are no additional development guidelines for this site.

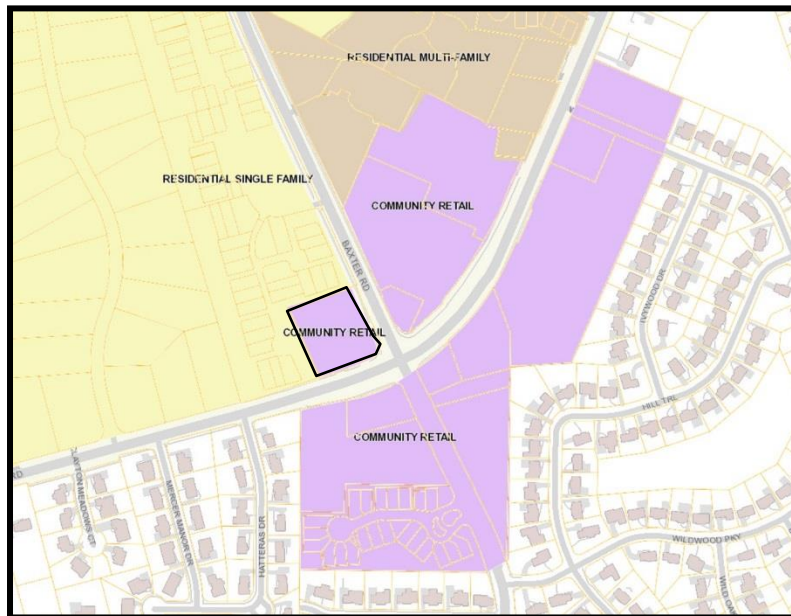


Figure 3: Comprehensive Land Use Plan

## **PRELIMINARY PLAN**

A zoning map amendment to a planned zoning district, such as “PC” Planned Commercial District, requires a Preliminary Development Plan which has been included in the Planning Commission’s packet. Notable features of the proposal include, but aren’t limited to:

- A change in the entrances to be Right-In/Right-Out only on both Clayton Road and Baxter Road.
- Changes to setbacks for the buildings, parking, and landscaping.

## **PUBLIC HEARING**

A public hearing was held at the May 8, 2017 City of Chesterfield Planning Commission meeting. There were thirteen (13) speakers at the meeting who spoke in opposition to the proposed zoning map amendment.

Following the Public Hearing, Staff sent a comment letter to the Petitioner requesting additional information and clarification on a number of items, including noise, traffic, and water on the site. The Petitioner's response is attached for the Planning Commission's consideration, and additional information regarding some of these items is provided in the following paragraphs.

- ***Noise from carwash, vacuums, and traffic.***

The Petitioner hired an acoustical engineer to show the mitigation abilities of the proposed 6' tall artisan Fencestone system shown on the Preliminary Development Plan along the north and western sides of the development. A copy of this study has been included in your meeting packet. This study shows a reduction in noise for the adjacent property owners from the current levels of noise. The applicant has indicated in previous meetings that the vacuums will be utilizing a central vacuum system in lieu of individual canisters normally seen at car washes. This condition has also been included in the draft Attachment "A".

- ***Information regarding traffic impacts of the development:***

The Petitioner is aware that a Traffic Impact Study may be required during the Site Development Plan review phase of development. The Attachment "A" drafted for this request also reflects that requirement. This is typical of information provided regarding traffic at the zoning phase of development, and the Traffic Impact Study would be reviewed by the City, St. Louis County Department of Transportation, and MoDOT before the Site Development Plan is brought to the Planning Commission for action. The Petitioner indicated that proposed carwash would generate less trips than the approved site development plan. Staff have reviewed national data from the ISTE for similar uses which support this claim.

- ***Wastewater from the carwash:***

Wastewater and stormwater is regulated by MoDNR and MSD. The applicant's full response is included in their attached narrative.

- ***Lighting Standards***

Residents and the Commission raised concerns about site lighting. The current ordinance governing this site has restrictions on the maximum height of lights. The Attachment A drafted for this request includes similar requirements for this topic.

- ***Architectural Standards***

At the public hearing, residents raised concerns regarding the design of the building. The draft Attachment "A" addresses the maximum building height of the car wash. The specific building facades, and all other new commercial developments, would be reviewed by the Architectural Review Board, who would issue a recommendation to the Planning Commission during time of Site Development Plan review.

## **REQUEST**

Staff has completed review of this petition and all agency comments have been received. Staff requests action on P.Z. 08-2017 Brite Worx Carwash (Wallis Companies).

A copy of the existing governing Ordinance 1803 may be obtained at:  
<https://www.chesterfield.mo.us/ord/2001/ord1803.pdf>

Respectfully submitted,

Cassie Harashe, AICP  
Project Planner

### Attachments

1. Draft Attachment A
2. Petitioner's Response Letter
3. Preliminary Plan Packet
4. Acoustic Study
5. Public Correspondence (links provided on the Agenda on City's website)

## ATTACHMENT A

**All provisions of the City of Chesterfield City Code shall apply to this development except as specifically modified herein.**

### **I. SPECIFIC CRITERIA**

#### **A. PERMITTED USES**

1. The uses allowed in this Planned Commercial District shall be:
  - a. Car wash
2. Hours of Operation.
  - a. Hours of operation for this "PC" District shall be restricted to 7:00 am to 8:00 pm all days of the week.

#### **B. FLOOR AREA, HEIGHT, BUILDING AND PARKING STRUCTURE REQUIREMENTS**

1. Height
  - a. The maximum height of the building, exclusive of roof screening, shall not exceed 25 feet.
2. Building Requirements
  - a. A minimum of 35% openspace is required for each lot within this development.
  - b. This development shall have a maximum F.A.R. of 0.55.

#### **C. SETBACKS**

1. Structure Setbacks

No building or structure, other than: a freestanding project identification sign, light standards, or flag poles will be located other than as depicted on the Preliminary Plan attached hereto as Attachment B.
2. Parking Setbacks



No parking stall, loading space, internal driveway, or roadway, except points of ingress or egress, will be located other than as depicted on the Preliminary Plan attached hereto as Attachment B.

#### **D. PARKING AND LOADING REQUIREMENTS**

1. Parking and loading spaces for this development will be as required in the City of Chesterfield Code.
2. Parking lots shall not be used as streets.
3. No construction related parking shall be permitted within right of way or on any existing roadways. All construction related parking shall be confined to the development.

#### **E. LANDSCAPE AND TREE REQUIREMENTS**

1. The development shall adhere to the Landscape and Tree Preservation Requirements of the City of Chesterfield Code.
2. A masonry screening wall with landscaping on both sides shall be required as depicted on the Preliminary Plan attached hereto as Attachment B.

#### **F. SIGN REQUIREMENTS**

1. Signs shall be permitted in accordance with the regulations of the City of Chesterfield Code or a Sign Package may be submitted for the planned district. Sign Packages shall adhere to the City Code and are reviewed and approved by the City of Chesterfield Planning Commission.
2. Ornamental Entrance Monument construction, if proposed, shall be reviewed by the City of Chesterfield, and/or the St. Louis County Department of Transportation (or MoDOT), for sight distance considerations prior to installation or construction.

#### **G. LIGHT REQUIREMENTS**

1. Provide a lighting plan and light fixture cut sheets.
2. No on-site light standard shall exceed sixteen (16) feet in height, nor be so situated that light is cast directly on adjoining properties or public roadways. Light standards north and west of the building shall not exceed eight (8) feet in height, shall be directed toward the building, and shall be a shoe box design. The light standard at the entrance on Clayton Road shall not exceed sixteen (16) feet in height and shall be a box design.

## **H. ARCHITECTURAL**

1. The development shall adhere to the Architectural Review Standards of the City of Chesterfield Code.
2. Trash enclosures: All exterior trash areas will be enclosed with a minimum six (6) foot high sight-proof enclosure complemented by adequate landscaping. The location, material, and elevation of any trash enclosures will be as approved by the City of Chesterfield on the Site Development Plan.

## **I. ACCESS/ACCESS MANAGEMENT**

1. Access to the development shall be from one right-in/right-out on Clayton Road and one right-in/right-out on Baxter Road and adequate sight distance shall be provided, as directed by the City of Chesterfield and St. Louis County Department of Transportation, as applicable.
2. If adequate sight distance cannot be provided at the access location(s), acquisition of right-of-way, reconstruction of pavement and other off-site improvements may be required to provide the required sight distance as required by the City of Chesterfield and the agency in control of the right of way off which the access is proposed.

## **J. PUBLIC/PRIVATE ROAD IMPROVEMENTS, INCLUDING PEDESTRIAN CIRCULATION**

1. Any request to install a gate at the entrance to this development must be approved by the City of Chesterfield and the agency in control of the right of way off of which the entrance is constructed. No gate installation will be permitted on public right of way.
2. If a gate is installed on a street in a development, the streets within the development or that portion of the development that is gated shall be private and remain private forever.
3. Provide street connections to the adjoining properties as directed by the City of Chesterfield. Stub street signage, in conformance with Article 04-09 of the Unified Development Code of the City of Chesterfield, shall be posted within 30 days of the street pavement being placed.
4. Provide a 5 foot wide sidewalk, conforming to ADA standards, along Clayton Road and Baxter Road. The sidewalk shall provide for future connectivity to adjacent developments and/or roadway projects. The sidewalk may be located within right-of-way controlled by another agency, if permitted by that agency or on private property within a 6 foot wide sidewalk, maintenance and utility

easement dedicated to the City of Chesterfield.

5. Required accessibility improvements associated with this commercial development shall include new and existing sidewalk along the project frontage, replacing non-compliant curb ramps, and any upgrades to the connected signalized intersection corner to ensure that current accessibility standards are met. If the intersection requires upgrades for ADA compliance, the signalized intersection shall be brought up to current Saint Louis County design standards, as directed by the St. Louis County Department of Transportation.
6. Obtain approvals from the City of Chesterfield and the St. Louis County Department of Transportation and other entities as necessary for locations of proposed curb cuts and access points, areas of new dedication, and roadway improvements.
7. Additional right-of-way and road improvements shall be provided, as required by the Missouri Department of Transportation and the City of Chesterfield.

#### **K. TRAFFIC STUDY**

1. Provide a traffic study as directed by the City of Chesterfield and/or St. Louis County. The scope of the study shall include internal and external circulation and may be limited to site specific impacts, such as the need for additional lanes, entrance configuration, geometrics, sight distance, traffic signal modifications or other improvements required, as long as the density of the proposed development falls within the parameters of the City's traffic model. Should the density be other than the density assumed in the model, regional issues shall be addressed as directed by the City of Chesterfield.
2. Provide a sight distance evaluation report, as required by the City of Chesterfield, for the proposed entrance onto Clayton and Baxter. If adequate sight distance cannot be provided at the access location, acquisition of right-of-way, reconstruction of pavement, including correction to the vertical alignment, and/or other off-site improvements shall be required, as directed by the City of Chesterfield and/or the Missouri Department of Transportation.

#### **L. POWER OF REVIEW**

Either Councilmember of the Ward where a development is proposed or the Mayor may request that the plan for a development be reviewed and approved by the entire City Council. This request must be made no later than twenty-four (24) hours after Planning Commission review. The City Council will then take appropriate action relative to the proposal. The plan for a development, for purposes of this

section, may include the site development plan, site development section plan, site development concept plan, landscape plan, lighting plans, architectural elevations, sign package or any amendment thereto.

#### **M. STORM WATER**

1. The site shall provide for the positive drainage of storm water and it shall be discharged at an adequate natural discharge point or connected to an adequate piped system.
2. Detention/retention and channel protection measures are to be provided in each watershed as required by the City of Chesterfield. The storm water management facilities shall be operational prior to paving of any driveways or parking areas in non-residential development or issuance of building permits exceeding sixty percent (60%) of approved dwelling units in each plat, watershed or phase of residential developments. The location and types of storm water management facilities shall be identified on the Site Development Plan(s). Emergency overflow drainage ways to accommodate runoff from the 100-year storm event shall be provided for all storm sewers, as directed by the City of Chesterfield.
3. Offsite storm water shall be picked up and piped to an adequate natural discharge point. Such bypass systems must be adequately designed.
4. The lowest opening of all structures shall be set at least two (2) feet higher than the one hundred (100) year high water elevation in detention/retention facilities. All structures shall be set at least 30 feet horizontally from the limits of the one hundred (100) year high water.
5. Locations of site features such as lakes and detention ponds must be approved by the City of Chesterfield and the Metropolitan Saint Louis Sewer District.

#### **N. SANITARY SEWER**

1. Sanitary sewers shall be as approved by the City of Chesterfield and the Metropolitan St. Louis Sewer District.

#### **O. GEOTECHNICAL REPORT**

Prior to Site Development Plan approval, provide a geotechnical report, prepared by a registered professional engineer licensed to practice in the State of Missouri, as directed by the Department of Public Services. The report shall verify the suitability of grading and proposed improvements with soil and geologic conditions and address the existence of any potential sinkhole, ponds, dams, septic fields, etc., and recommendations for treatment. A statement of compliance, signed and

sealed by the geotechnical engineer preparing the report, shall be included on all Site Development Plans and Improvement Plans.

## **P. MISCELLANEOUS**

1. All utilities will be installed underground.
2. An opportunity for recycling will be provided. All provisions of Chapter 25, Article VII, and Section 25-122 thru Section 25-126 of the City Code shall be required where applicable.
3. Road improvements and right-of-way dedication shall be completed prior to the issuance of an occupancy permit. If development phasing is anticipated, the developer shall complete road improvements, right-of-way dedication, and access requirements for each phase of development as directed by the City of Chesterfield and Saint Louis County Department of Transportation. Delays due to utility relocation and adjustments will not constitute a cause to allow occupancy prior to completion of road improvements.
4. Prior to record plat approval, the developer shall cause, at his expense and prior to the recording of any plat, the reestablishment, restoration or appropriate witnessing of all Corners of the United States Public Land Survey located within, or which define or lie upon, the out boundaries of the subject tract in accordance with the Missouri Minimum Standards relating to the preservation and maintenance of the United States Public Land Survey Corners, as necessary.

## **II. TIME PERIOD FOR SUBMITTAL OF SITE DEVELOPMENT PLANS**

- A.** The developer shall submit a concept plan within eighteen (18) months of City Council approval of the change of zoning.
- B.** In lieu of submitting a Site Development Concept Plan and Site Development Section Plans, the petitioner may submit a Site Development Plan for the entire development within eighteen (18) months of the date of approval of the change of zoning by the City.
- C.** Failure to comply with these submittal requirements will result in the expiration of the change of zoning and will require a new public hearing.
- D.** Said Plan shall be submitted in accordance with the combined requirements for Site Development Section and Concept Plans. The submission of Amended Site Development Plans by sections of this project to the Planning Commission shall be permitted if this option is utilized.

- E. Where due cause is shown by the developer, the City Council may extend the period to submit a Site Development Concept Plan or Site Development Plan for eighteen (18) months.

### **III. COMMENCEMENT OF CONSTRUCTION**

- A. Substantial construction shall commence within two (2) years of approval of the Site Development Concept Plan or Site Development Plan, unless otherwise authorized by ordinance.
- B. Where due cause is shown by the developer, the City Council may extend the period to commence construction for two (2) additional years.

### **IV. GENERAL CRITERIA**

#### **A. SITE DEVELOPMENT PLAN SUBMITTAL REQUIREMENTS**

The Site Development Plan shall include, but not be limited to, the following:

1. Location map, north arrow, and plan scale. The scale shall be no greater than one (1) inch equals one hundred (100) feet.
2. Outboundary plat and legal description of property.
3. Density calculations.
4. Parking calculations. Including calculation for all off street parking spaces, required and proposed, and the number, size and location for handicap designed.
5. Provide openspace percentage for overall development including separate percentage for each lot on the plan.
6. Provide Floor Area Ratio (F.A.R.).
7. A note indicating all utilities will be installed underground.
8. A note indicating signage approval is separate process.
9. Depict the location of all buildings, size, including height and distance from adjacent property lines, and proposed use.
10. Specific structure and parking setbacks along all roadways and property lines.
11. Indicate location of all existing and proposed freestanding monument signs.

12. Zoning district lines, subdivision name, lot number, dimensions, and area, and zoning of adjacent parcels where different than site.
13. Floodplain boundaries.
14. Depict existing and proposed improvements within 150 feet of the site as directed. Improvements include, but are not limited to, roadways, driveways and walkways adjacent to and across the street from the site, significant natural features, such as wooded areas and rock formations, and other karst features that are to remain or be removed.
15. Depict all existing and proposed easements and rights-of-way within 150 feet of the site and all existing or proposed off-site easements and rights-of-way required for proposed improvements.
16. Indicate the location of the proposed storm sewers, detention basins, sanitary sewers and connection(s) to the existing systems.
17. Depict existing and proposed contours at intervals of not more than one (1) foot, and extending 150 feet beyond the limits of the site as directed.
18. Address trees and landscaping in accordance with the City of Chesterfield Code.
19. Comply with all preliminary plat requirements of the City of Chesterfield Subdivision Regulations per the City of Chesterfield Code.
20. Signed and sealed in conformance with the State of Missouri Department of Economic Development, Division of Professional Registration, Missouri Board for Architects, Professional Engineers and Land Surveyors requirements.
21. Provide comments/approvals from the appropriate Fire District, Monarch Levee District, Spirit of St. Louis Airport, Metropolitan St. Louis Sewer District (MSD) and the Missouri Department of Transportation.
22. Compliance with Sky Exposure Plane.
23. Compliance with the current Metropolitan Sewer District Site Guidance as adopted by the City of Chesterfield.

## V. TRUST FUND CONTRIBUTION

### A. ROADS

As this development is not subject to traffic generation assessment, the roadway improvements required herein represent the developer's road improvement obligation. These improvements will not exceed an amount established by multiplying the ordinance-required parking spaces by the following applicable rates:

<u>Type of Development</u>	<u>Required Contribution</u>
Car Wash	\$75,988.71/acre

(Parking spaces as required by the City of Chesterfield Code.)

If types of development differ from those listed, St. Louis County Department of Transportation will provide rates.

If a portion of the improvements required herein are needed to provide for the safety of the traveling public, their completion as part of this development is mandatory.

Allowable credits for required roadway improvements will be awarded as directed by the St. Louis County Department of Transportation and the City of Chesterfield. Sidewalk construction and utility relocation, among other items, are not considered allowable credits.

Prior to Special Use Permit issuance by the St. Louis County Department of Transportation, a special cash escrow or a special escrow supported by an Irrevocable Letter of Credit, must be established with the St. Louis County Department of Transportation to guarantee completion of the required roadway improvements.

If this development is located within a trust fund area, any portion of the traffic generation assessment contribution which remains following completion of road improvements required by the development will be retained in the appropriate trust fund.

The applicable rates limiting required road improvements shall be adjusted on January 1, 2018 and on the first day of January in each succeeding year thereafter in accordance with the construction cost index as determined by the St. Louis County Department of Transportation.



Trust Fund contributions shall be deposited with St. Louis County in the form of a cash escrow prior to the issuance of building permits.

## **VI. RECORDING**

Within sixty (60) days of approval of any development plan by the City of Chesterfield, the approved Plan will be recorded with the St. Louis County Recorder of Deeds. Failure to do so will result in the expiration of approval of said plan and require re-approval of a plan by the Planning Commission.

## **VII. ENFORCEMENT**

- A.** The City of Chesterfield, Missouri will enforce the conditions of this ordinance in accordance with the Plan approved by the City of Chesterfield and the terms of this Attachment A.
- B.** Failure to comply with any or all the conditions of this ordinance will be adequate cause for revocation of approvals/permits by reviewing Departments and Commissions.
- C.** Non-compliance with the specific requirements and conditions set forth in this Ordinance and its attached conditions or other Ordinances of the City of Chesterfield shall constitute an ordinance violation, subject, but not limited to, the penalty provisions as set forth in the City of Chesterfield Code.
- D.** Waiver of Notice of Violation per the City of Chesterfield Code.
- E.** This document shall be read as a whole and any inconsistency to be integrated to carry out the overall intent of this Attachment A.



June 5, 2017

City of Chesterfield  
Attn: Cassie Harashe, AICP  
690 Chesterfield Pkwy W  
Chesterfield, MO 63017

Dear Ms. Harashe:

Subject: P.Z. 08-2017 Brite Worx (Wallis Companies)  
14905 Clayton Road  
Chesterfield, MO 63017  
CEC Project #153-224

This letter addresses some of the items discussed at the Public Hearing on May 8<sup>th</sup>, 2017 for the zoning map amendment request by Wallis Companies. We received the letter dated May 15<sup>th</sup>, 2017 from City of Chesterfield itemizing those items. Our response is as follows:

**COMMENTS:**

1	<p><i>Comment: Concerns were raised regarding proposed masonry wall. Please provide information on the proposed height and acoustic qualities, how does this wall attenuate noise?</i></p> <p><b>Response: The proposed height of the masonry block retaining wall is tiered and the average height is just over 4'. The fencing is proposed to be cementitious material and is a product by Artisan precast (<a href="http://www.artisanprecast.com/">http://www.artisanprecast.com/</a>). This fencing, unlike vinyl or wood, has been used in other projects by the owner and been found to provide a more substantial barrier, not just visually, but also for the purposes of deflecting noise.</b></p>
2	<p><i>Comment: Concerns were raised regarding the self-serve nature of the vacuum cleaners. Please clarify how these will be controlled outside of the hours of operation.</i></p> <p><b>Response: Vacuums will only be operational during business hours. A difference in this proposed location and the two existing Briteworx locations the vacuum to the system will be centralized with the motor being housed inside the building. The power to this unit will be turned off during off hours.</b></p>

3	<p><i>Comment: During the meeting, different hours of operation were stated than were in the narrative letter. Please clarify the desired hours of operation.</i></p> <p><b>Response: Operating hours will be 7am-8pm.</b></p>
4	<p><i>Comment: Please provide information from the Department of Natural Resources on how the water from the car wash is regulated, specifically waste water.</i></p> <p><b>Response: From the MDNR fact sheet, “Businesses that wash automobiles and trucks at a permanent facility and do <u>not</u> have access to a publicly-owned sewage collection system (that is, a sanitary sewer) are required to apply to the Missouri Department of Natural Resources for a Missouri State Operating Permit to discharge.” St. Louis Metropolitan Sewer District (MSD), the publicly-owned sewage collection system, is the jurisdictional agency overseeing this site’s sanitary and storm discharge in accordance with and regulated under a Master General Permit with MoDNR. As such, the site’s discharge will be reviewed and will comply with those regulations. MSD typically will require a sampling manhole just downstream of the sanitary waste and grease interceptor but before connection with the public main.</b></p>
5	<p><i>Comment: Address concerns regarding the traffic impacts of the proposed development, especially compared to the existing development and the approved. Additionally, be advised that the City may require a Traffic Impact Study at the Site Development Plan phase if this zoning is approved.</i></p> <p><b>Response: The trips generated by a wash facility only are less than a full convenience store, gas station and carwash. Further, the limited access on both legs of the intersection will lessen the traffic impact on the adjacent roadways. The internal circulation will also provide for easy movements for users of the site.</b></p>
6	<p><i>Comment: Narrow the setbacks on the proposed plan to more accurately reflect the placement of the building on the property. This will clarify the distances between the approved renovation and the proposal.</i></p> <p><b>Response: The setbacks have been revised to show the separate elements of the site and their corresponding setbacks.</b></p>

7	<p><i>Comment: During the meeting, lowering the height of the tower elements was mentioned, please revise section plans to include a revised height.</i></p> <p><b>Response: The height of the tallest tower has been revised to be height of 25'(max.). The specific architecture will be further refined and adjusted as needed during the Site Development Plan phase.</b></p>
8	<p><i>Comment: Provide a clear comparison of the existing conditions, approved renovation, and proposed plan.</i></p> <p><b>Response: The plans have been revised to provide a comparison of the existing conditions, the approved redevelopment plan, and the proposed plan. (see C200)</b></p>

We thank you for your continued efforts in reviewing the proposed redevelopment. We have also revised the plans submitted with the application per your comments. Please let us know if there are any additional comments or questions we can address.

Sincerely,

**CIVIL & ENVIRONMENTAL CONSULTANTS, INC.**



Cynthia A. Nagel  
Assistant Project Manager

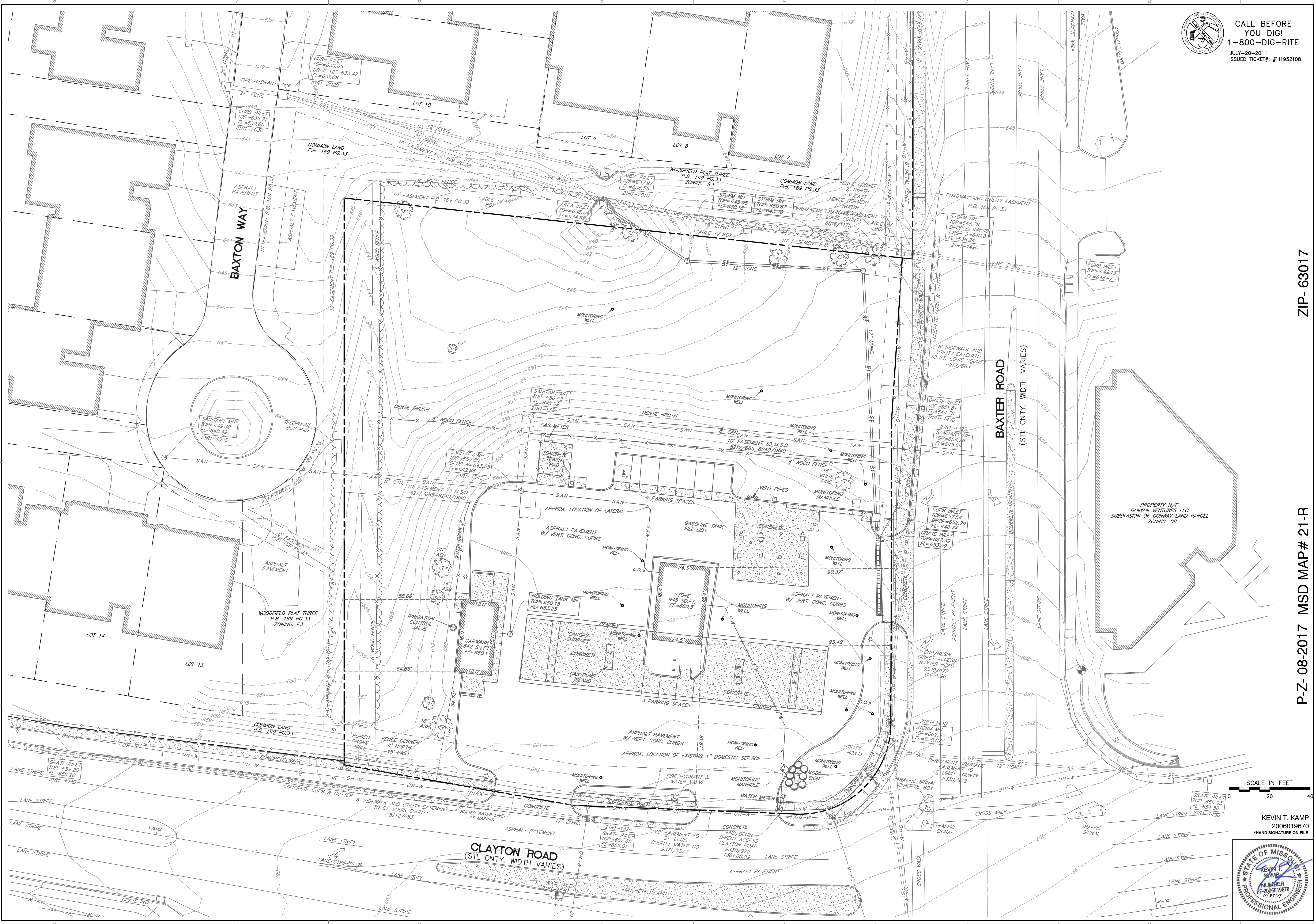


Kevin T. Kamp, P.E.  
Vice President



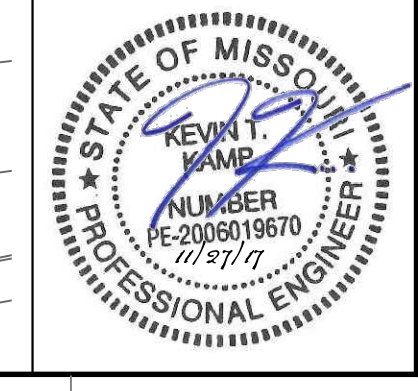


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NO.	DATE	DESCRIPTION
1	11/09/16	PRE-APPLICATION MEETING
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3	06/09/17	RE-SUBMITTAL FROM ISSUES MEETING COMMENTS
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6	11/09/17	RE-SUBMITTAL FOR CHANGE OF ZONING WITH ADDITION OF TRIP FOR REC. TRIP MEETING
7		
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PRELIMINARY DEVELOPMENT PLAN  
BRITE WORX  
EXISTING CONDITIONS

DATE: NOV. 2016 (DRAWN BY: CAC)  
DWG SCALE: 1" = 20' (CHECKED BY: KTK)  
PROJECT NO.: 153-224  
APPROVED BY: KTK

DRAWING NO.: **C100**  
SHEET 02 OF 06

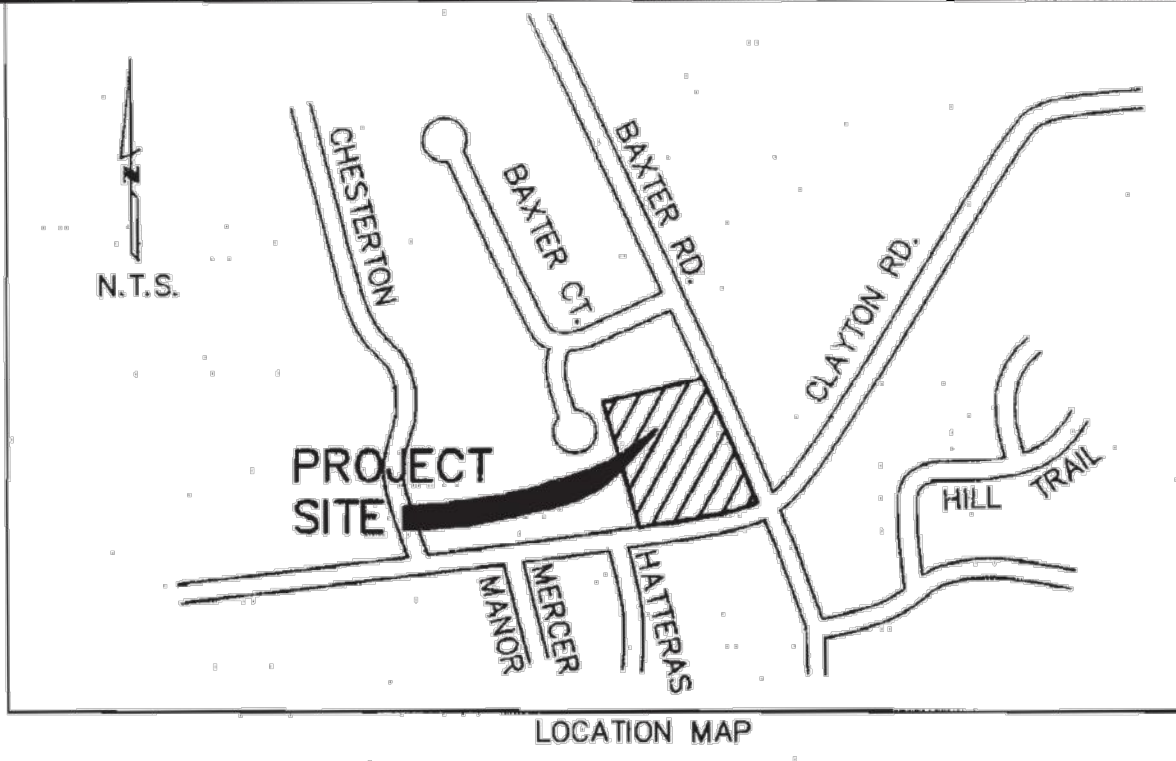
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BOOK 355 PAGE 509/512  
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1036

PROJECT BENCHMARK: "L" ON THE SOUTHWEST CORNER OF THE SOUTH HEADWALL OF A BOX CULVERT, 100' EAST OF THE CENTERLINE OF BAXTER ROAD AND 31' SOUTH OF MANOR KNOLL DRIVE. ELEV. = 584.94 (UGS DATUM) AS PUBLISHED IN THE METROPOLITAN ST. LOUIS SEWER DISTRICT ST. LOUIS COUNTY BENCHMARK BOOK (REVISED 6/97) BM# 12-89.

SITE BENCHMARK: "L" ON THE WEST CORNER AT NORTH END OF 10' CONCRETE WALL AT THE NORTHEAST CORNER OF BAXTER AND CLAYTON ROADS, 45' EAST OF THE CENTERLINE OF BAXTER ROAD AND 125' NORTH OF THE CENTERLINE OF BAXTER ROAD AND 125' NORTH OF THE CENTERLINE OF CLAYTON ROAD. ELEV. = 661.30



- INDEX
1. SITE DEVELOPMENT PLAN
  2. SETBACK LINES
  3. SECTIONS & DETAILS
  4. AERIAL TOPO
  5. LANDSCAPE PLAN

SCALE IN FEET  
 Scale 1" = 20'

509

SITE DATA:

1.) TOTAL AREA OF THIS SITE IS 1.75 ACRES	76,055 S.F.	
BUILDING AREA	3,925 S.F.	5%
(RESTAURANT PORTION SHALL NOT EXCEED	981 S.F.)	
CAR WASH	1,920 S.F.	2%
PAVEMENT AREA	32,662 S.F.	44%
GREEN AREA	37,460 S.F.	49%

- SITE DATA:
- 1.) EXISTING ZONING IS C-8, PROPOSED ZONING IS PC PLANNED COMMERCIAL.
  - 2.) EXISTING USE IS MOBIL MART.
  - 3.) THE SITE IS SERVED BY THE FOLLOWING UTILITIES:  
 LA CLEDE GAS COMPANY  
 METROPOLITAN ST. LOUIS SEWER DISTRICT (MSD)  
 ST. LOUIS COUNTY WATER COMPANY  
 SOUTHWESTERN BELL TELEPHONE  
 UNION ELECTRIC COMPANY
  - 4.) EXISTING SITE LOCATOR NUMBER IS 21R41-0960.
  - 5.) SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL.
  - 6.) DRAINAGE NOTES:  
 A. SITE GRADING AND DRAINAGE PER CITY OF CHESTERFIELD STANDARDS.  
 B. ALL STORMWATER SHALL BE DISCHARGED AT AN ADEQUATE NATURAL DISCHARGE POINT. SINK HOLES ARE NOT ADEQUATE NATURAL DISCHARGE POINTS.  
 C. SITE DRAINAGE SHALL CONFORM TO THE MISSOURI HIGHWAYS AND TRANSPORTATION DEPARTMENT, THE METROPOLITAN ST. LOUIS SEWER DISTRICT AND CITY OF CHESTERFIELD STANDARDS.
  - 7.) NO STEPS AT HANDICAPPED ACCESSIBLE DOORS.
  - 8.) ALL SIDEWALKS TO BE CONSTRUCTED TO CITY OF CHESTERFIELD AND ADA STANDARDS.
  - 9.) ALL PROPOSED IMPROVEMENTS SHALL BE IN CONFORMANCE WITH THE CITY OF CHESTERFIELD AND MSD STANDARDS.
  - 10.) TO SURVEYORS KNOWLEDGE EXISTING AND PROPOSED EASEMENTS ARE SHOWN ON THIS PLAN.
  - 11.) NO ONSITE LIGHT STANDARD SHALL EXCEED SIXTEEN (16) FEET IN HEIGHT AND BE SO SITUATED THAT LIGHT IS CAST DIRECTLY ON ADJOINING PROPERTIES OR PUBLIC ROADWAYS. LIGHT STANDARDS NORTH AND WEST OF THE NORTH AND WEST BUILDING SHALL NOT EXCEED EIGHT (8) FEET IN HEIGHT AND SHALL BE A SHOEBOX DESIGN. THE LIGHT STANDARD AT THE WEST ENTRANCE ON CLAYTON ROAD SHALL NOT EXCEED SIXTEEN (16) FEET IN HEIGHT AND SHALL BE A BOX DESIGN.

PARKING CALCULATIONS  
 C-STORE  
 3- 1/3 per 1,000 S.F.  
 4,132 S.F. = 14 Spaces Required  
 14 Spaces Provided

THIS PLAN IS A CORRECT REPRESENTATION OF ALL EXISTING AND PROPOSED CONDITIONS.

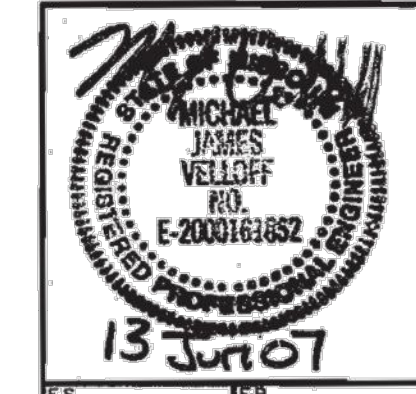


The signed and sealed original of this drawing is on file at the offices of The Clayton Engineering Company, Inc. The signed and sealed original is the official document and shall take precedence over any digital version.

NO.	DATE	BY	REVISIONS
5	05/15/07	BMS	EXISTING FENCE TO REMAIN
4	04/10/07	SLH	ADDED MEDIAN
3	03/07/07	JAK	ADDED NOTE ABOUT MEDIAN
2	5/25/05	DSB	REVISIONS PER CITY OF CHESTERFIELD COMMENTS
1	3/14/05	MRW	REVISED CAR WASH ENTRANCE

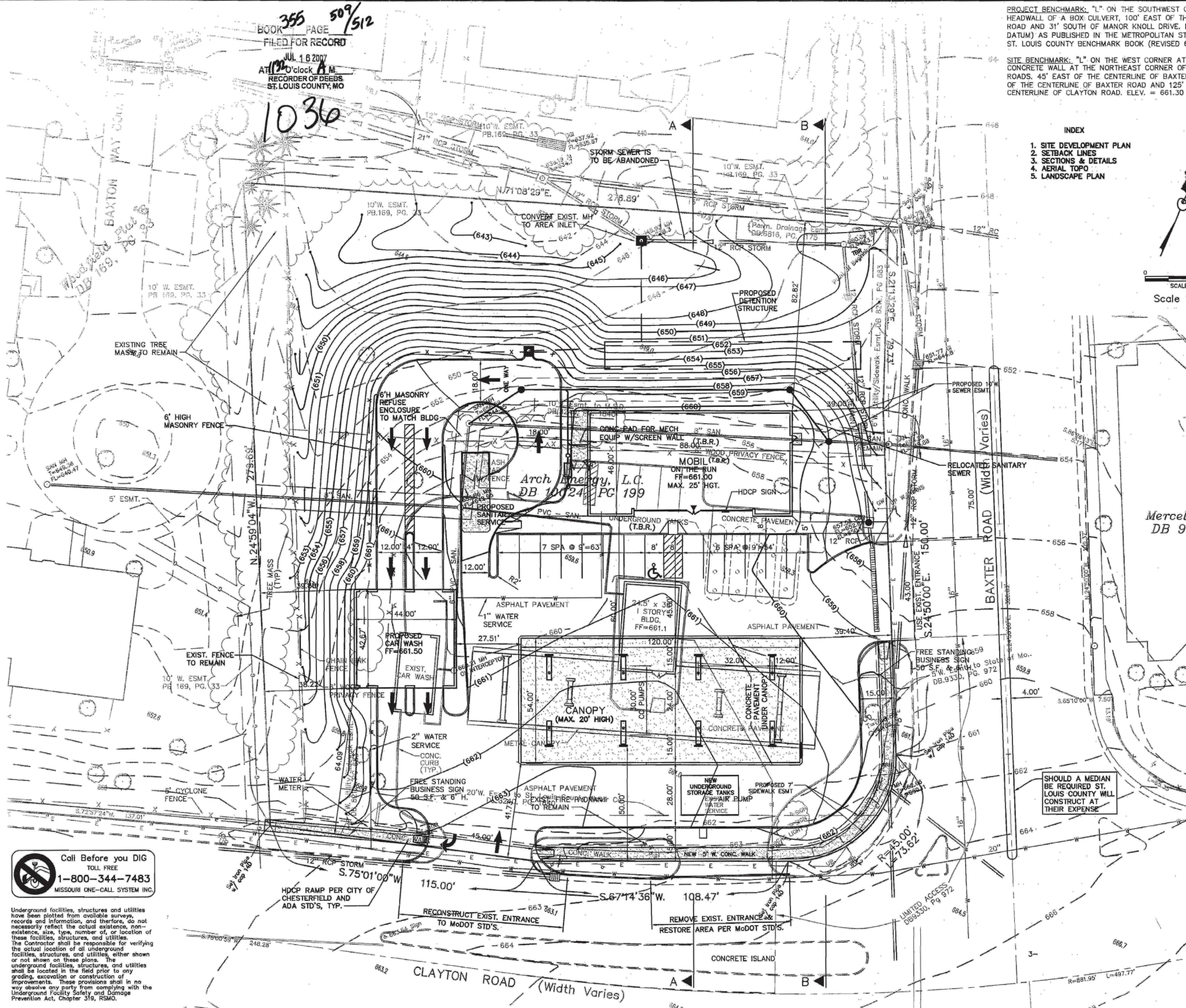
**SITE DEVELOPMENT PLAN**  
**MOBIL "ON THE RUN"**  
 14905 Clayton Rd. Chesterfield, MO 63017  
 Prepared for:  
**ARCH ENERGY**  
 106 East Washington  
 Cuba, MO. 65453  
 (573) 885-2277

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the clayton engineering company, inc.  
 ENGINEERS • SURVEYORS • PLANNERS  
 11920 WESTLINE INDUSTRIAL DRIVE  
 ST. LOUIS, MISSOURI 63146  
 (314) 892-8888 FAX (314) 892-8688  
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Drawn	HRL, MRW
Checked	SWQ
Date	03/10/05
Project Number	97318
Sheet Number	1 of 5



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Underground facilities, structures and utilities have been plotted from available surveys, records and information, and therefore, do not necessarily reflect the actual existence, non-existence, size, type, number of, or location of these facilities, structures, and utilities. The Contractor shall be responsible for verifying the actual location of all underground facilities, structures, and utilities, either shown or not shown on these plans. The underground facilities, structures, and utilities shall be located in the field prior to any grading, excavation or construction of improvements. These provisions shall in no way absolve any party from complying with the Underground Facility Safety and Damage Prevention Act, Chapter 319, RSMO.

C101  
 SHEET 03 OF 06

sub

748



NORTH

BAXTON WAY

6' HIGH MASONRY FENCE

PROPOSED DETENTION STRUCTURE

BAXTER ROAD  
(STL CNTY. WIDTH VARIES)

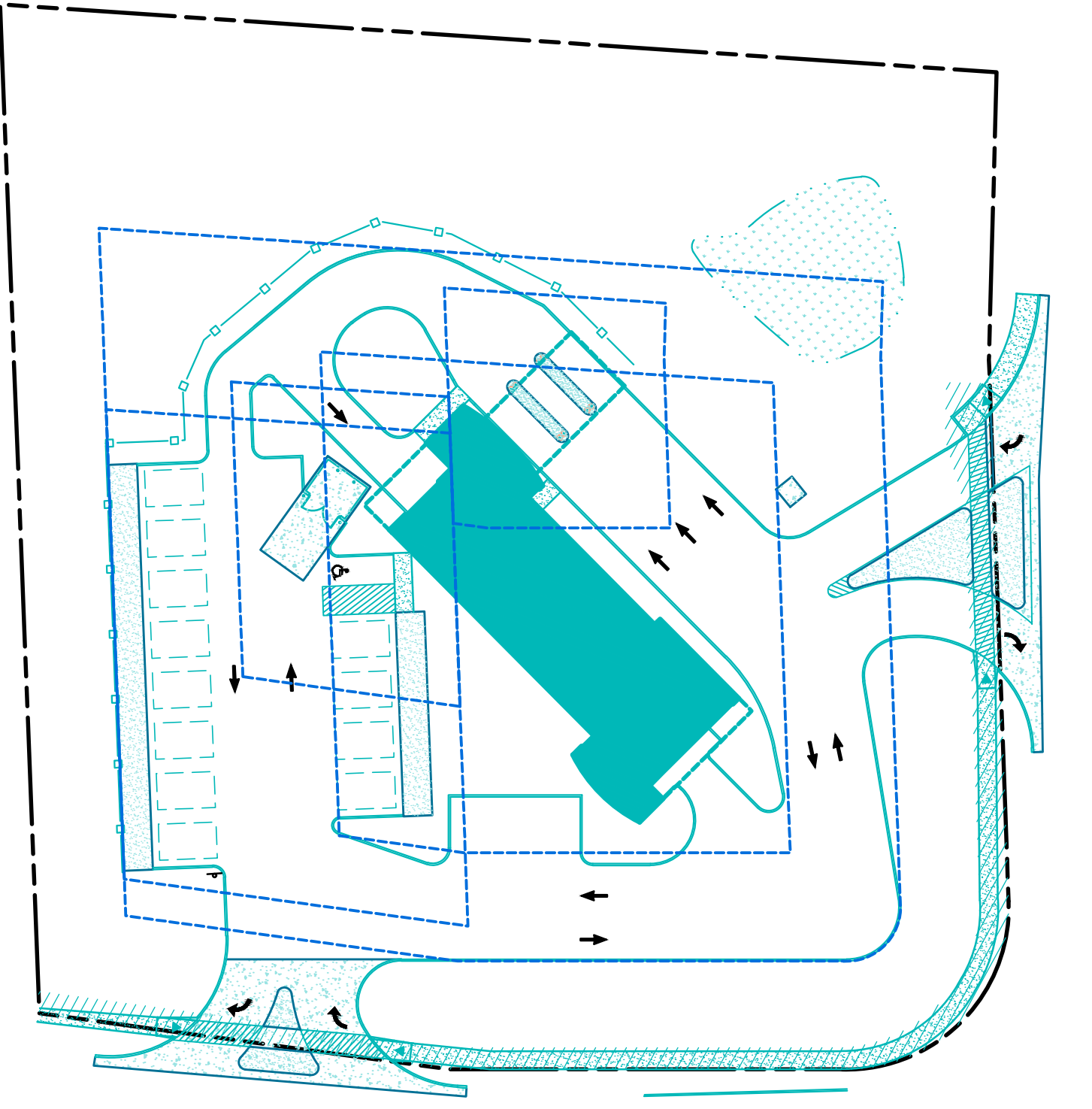
CLAYTON ROAD  
(STL CNTY. WIDTH VARIES)



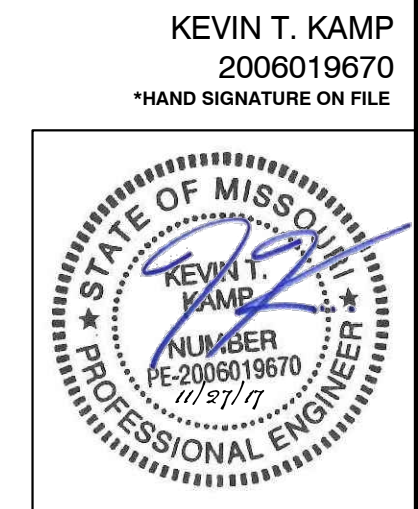
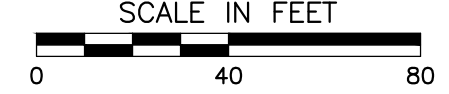
### KEY MAPS



APPROVED PLAN PER ORDINANCE #1803



PROPOSED PLAN PER P.Z. 08-2017



NO	DATE	REVISION RECORD
1	11/20/16	PRE-APPLICATION MEETING
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3	06/05/17	RE-SUBMITTAL FROM ISSUES MEETING COMMENTS
4	08/15/17	RE-SUBMITTAL FROM ISSUES MEETING COMMENTS
5	08/15/17	RE-SUBMITTAL WITH THE ADDITION OF ACOUSTIC STUDY REPORT
6	11/27/17	RE-SUBMITTAL FOR CHANGE OF ZONING WITH ADDITION OF TRIP FOR DEC 7TH MEETING
7		
8		

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PRELIMINARY DEVELOPMENT PLAN  
 BRITTE WORX  
 SETBACK COMPARISON

DATE: NOV. 2016 DRAWN BY: CAC  
 DWG SCALE: (AS NOTED) CHECKED BY: KTK  
 PROJECT NO: 153-224  
 APPROVED BY: KTK

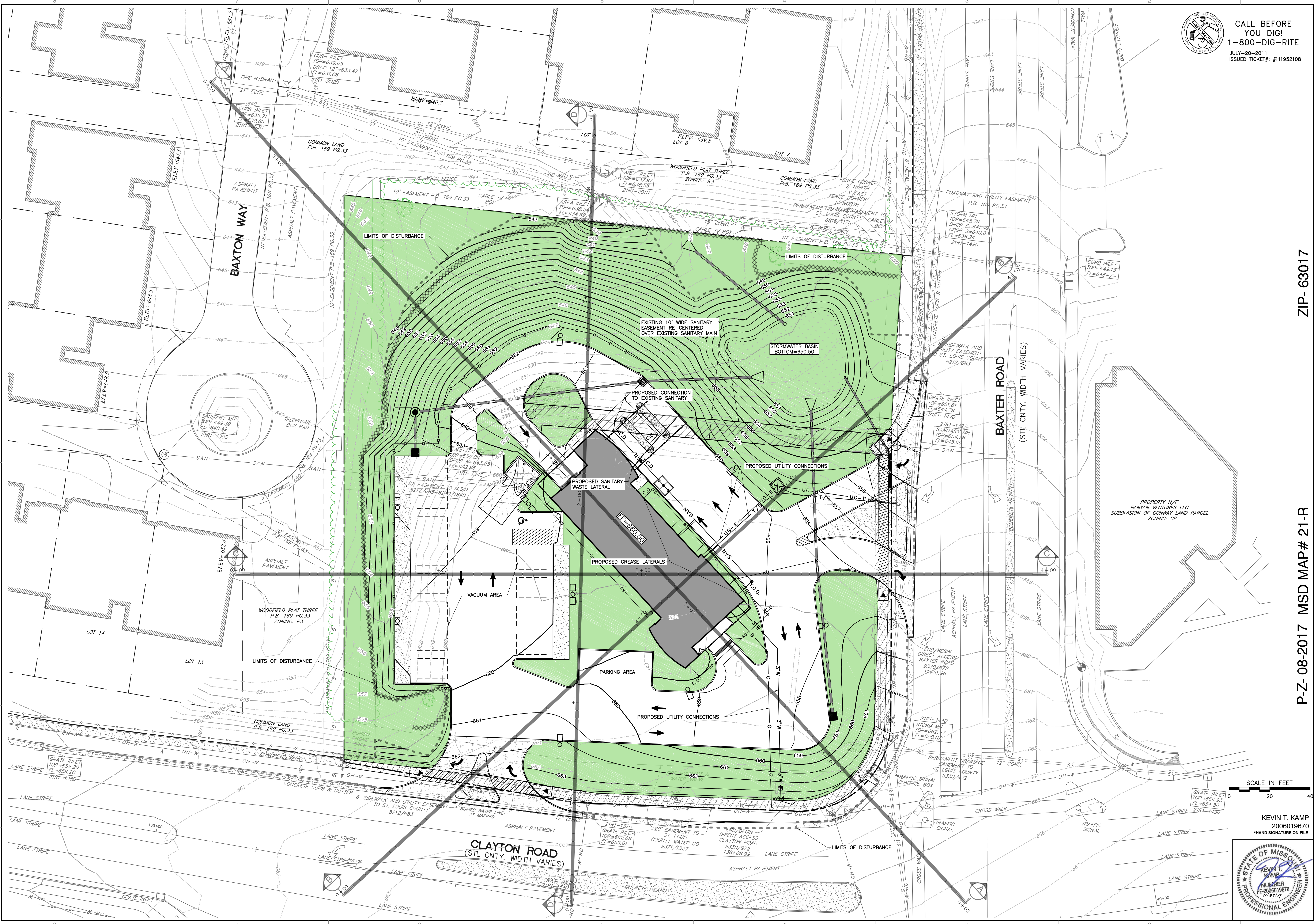
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6	11/09/17	RE-SUBMITTAL FOR CHANGE OF ZONING WITH ADDITION OF TRIP FOR BIC TRIP PLAN MEETING
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**P-Z-08-2017 MSD MAP# 21-R**

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**PRELIMINARY DEVELOPMENT PLAN**  
**BRITE WORK**

**SITE DEVELOPMENT PLAN**

DATE: NOV. 2016 (DRAWN BY: CAC)  
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PROJECT NO: 163-224  
APPROVED BY: KTK

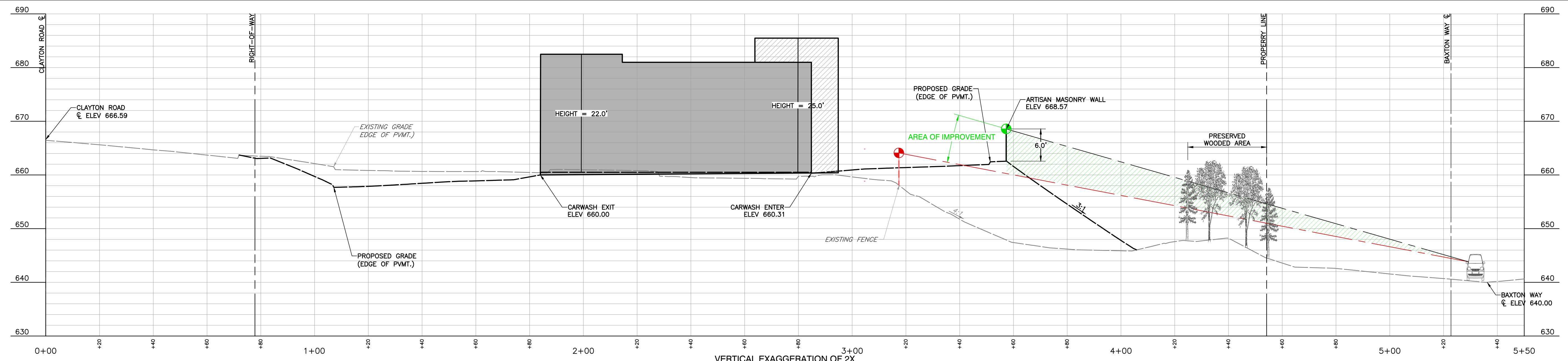
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STATE OF MISSOURI  
KEVIN T. KAMP  
PROFESSIONAL ENGINEER  
NUMBER  
PE-2006019670  
11/17/17

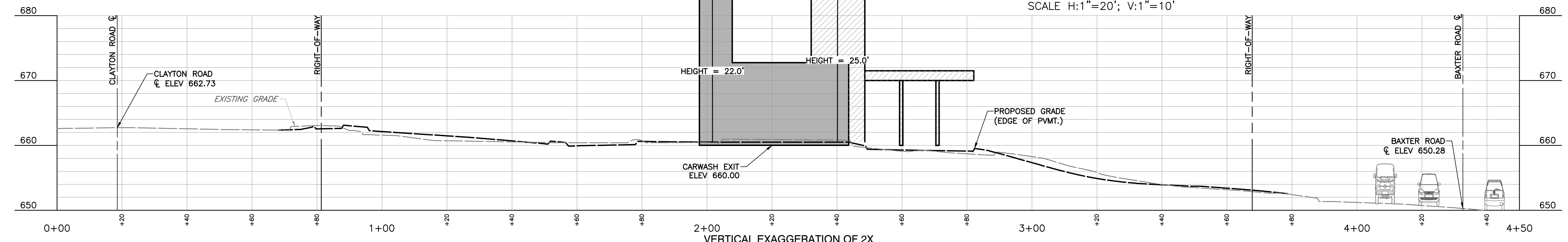
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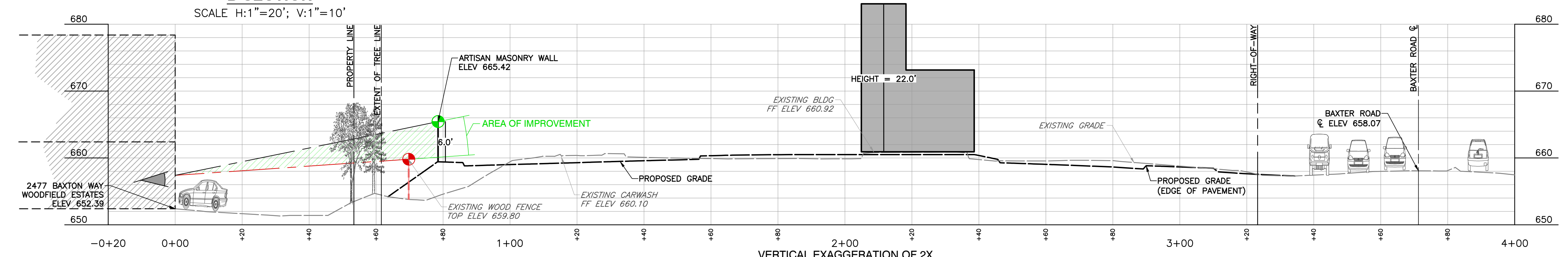
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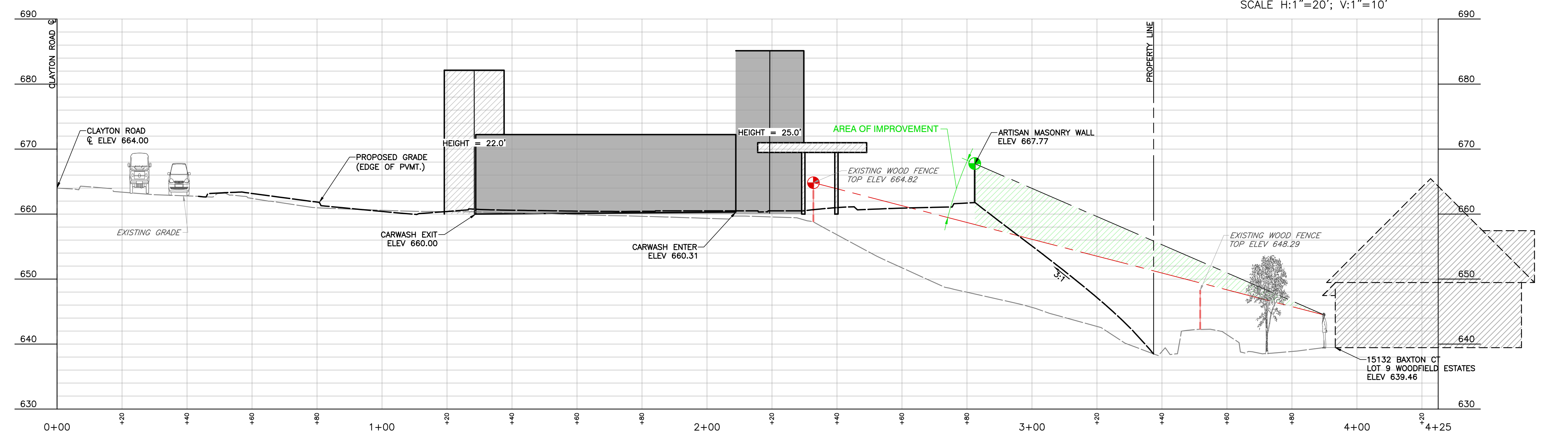
VERTICAL EXAGGERATION OF 2X  
**A SECTION**  
 SCALE H:1"=20'; V:1"=10'



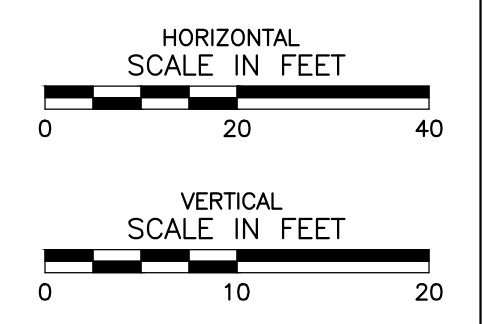
VERTICAL EXAGGERATION OF 2X  
**B SECTION**  
 SCALE H:1"=20'; V:1"=10'



VERTICAL EXAGGERATION OF 2X  
**C SECTION**  
 SCALE H:1"=20'; V:1"=10'



VERTICAL EXAGGERATION OF 2X  
**D SECTION**  
 SCALE H:1"=20'; V:1"=10'



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P-Z- 08-2017 MSD MAP# 21-R

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**PRELIMINARY DEVELOPMENT PLAN**  
**BRITE WORX**  
**SECTION VIEWS**

DATE:	NOV. 2016	DRAWN BY:	CAC
DWG SCALE:	1" = 20'	CHECKED BY:	KTK
PROJECT NO.:	153-224	APPROVED BY:	KTK

DRAWING NO. **C301**  
 SHEET 06 OF 06



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# AcoustiControl Report H1293 Revised

Environmental Noise Study / Mobil Car Wash

14905 Clayton Road / Chesterfield, Missouri 63017

Client: Civil and Environmental Consultants, Inc. (CEC)

Report Date: August 29, 2017

---

## Definition of Terms

### **Decibel: (also referred to as dB, dBA, dBC)**

A decibel is a measurement of sound. The higher the decibel number, the louder the sound.

### **Outdoor Background Noise Level (sometimes referred to as Ambient Noise)**

The amount of sound generated by lawnmowers, road traffic, construction, industrial noise, human and animals sources, outdoor mechanical equipment, train whistles, airplane noise etc.

### **Sound Pressure Level ( LAeq )**

A-Weighted equivalent sound pressure level in dB (decibels measured over a period of time).

### **Sound Level A - Weighted (dBA)**

The A – Weighted is the most common single number measure of loudness. This standard scale in decibels is a measure of the human response to noise which correlate to judgments of loudness from a broad band noise that are characteristic in the environment. A-weighting takes into account the frequency of the sound so that correlates with how people notice noise. The A-weighting was used in the noise assessment for its prevalent use for environmental noise assessments and large body of correlations of A-weighted sound levels and people's sensitivity to noise. In Table 1 is a list of some common noises and their levels recorded in dBA .

### **Nearest Residential Property Line**

The adjacent residential property line that separates 14905 Clayton Road and the Woodfield Condominiums.

### **Examples of Human Responses to Changes in Noise Levels**

There is variation in individual perception of the power of a sound; studies have shown that the changes in noise levels of less than 3 dBA are barely perceptible to most people.

However; a 10 dBA change are reported by people as either a doubling (halving) of noise by a normal human ear. This means that a 10 dBA reduction of noise is actually perceived by the listener as a reduction of ½ the noise. The average ability of a listener to detect changes in noise levels are outlined in Table 2. ( All tables and figures may be found in the Appendix.)

---

### **Environmental Noise Study and Acoustical Model and Analysis**

This parcel of land will fall within the noise ordinance of St Louis County, Chapter **625-Noise Control Code**.

**Appendix: All tables and figures may be found in the Appendix.**

**A: Environmental Noise Study performed at 14905 Clayton Road Chesterfield, Missouri 63017.**

**Conditions: This is a Mobil single bay car wash.**

AcoustiControl conducted continuous 24 hour environmental noise monitoring from 10AM on Wednesday July 26<sup>th</sup> 2017 through 11PM on Saturday July 29<sup>th</sup> 2017.

The purpose of this noise study was to determine what the existing average ambient background noise levels are at the site. This noise study captured all existing nearby environmental noise which includes the noise generated by traffic from Clayton Road and Baxter Road.

Environmental noise was monitored at 3 different locations on the property. (Please see Figure 1 for locations of noise monitoring equipment.)

#### **Results of the Environmental Noise Study:**

The average measured sound pressure levels (LAeq) at the residential property lines of Woodfield Condominiums, which are adjacent to 14905 Clayton Road, varied from 56 dBA to 65 dBA. (Please see Table 3 for the daily average measurements).

Based on traffic counts provided by St. Louis County, and the results of the Environmental Noise Study, it is clear that the background noise levels at 14905 Clayton Road **is controlled by vehicles noise from Clayton Road and Baxter Road.**

## **B: Acoustical Spot Measurements**

Acoustical Spot Measurements were taken at the existing Mobil Brite Worx facilities located of 123 Admiral Troste Drive in Columbia, Illinois and 4132 North Highway 67 in Florissant Missouri (see Table 4).

The purpose of the acoustical spot measurements was to capture all existing noises generated by the operation of the car washes. This data was used in the building of the SoundPlan Computer Model.

Conditions at:

123 Admiral Troste Drive : This is a tunnel car wash with 14 Tommy's Carwash Systems canister vacuums located alongside the tunnel building in the vacuum area. The car drying system located within the tunnel is an AVW Equipment Company 9 Blower Car Wash Drying System.

4132 North Highway 67 : This is a tunnel car wash with 12 Tommy's Carwash Systems canister vacuums located alongside the tunnel building at the vacuum area. The car drying system located the tunnel is an AVW Equipment Company 9 Blower Car Wash Drying System.

### **Bruel & Kjaer ( B&K ) Equipment and Methodology**

The measurement procedures conformed to the requirements of ANSI Standard S1.13-1971 (R2010).

All measurements were made on the A-scale (dBA).

A windscreen was used during all measurements.

Two Softdb Piccolo Type II Sound Level Meters.

The two Piccolo Sound Level Meters were mounted on a tripod at the standard testing height of 5 feet above the ground surface ( this is considered ear level ) and at least 10 feet away from any sound-reflecting surface, such as the fence at the property line.

One B&K Model 2250 Sound Level Meter

While standard testing methodology would be to locate the microphone 5 feet from the ground surface ( which is considered ear at level ) for purposes of these measurements, the sound level

meter was mounted on the tripod at a height of 10 feet above the ground surface and located at least 10 feet away from the fence at the property line. To gather accurate acoustical data, this microphone positioning was selected so that it would be above any sound-reflecting surface, such as the fence at the property line.

A B&K Type 4231 sound-level calibrator was used to calibrate all three instruments prior to and after noise measurements were taken.

### **C: SoundPlan Acoustic Model One Results / Versions A B & C**

Based on data collected during the environmental noise study, the acoustical spot measurements, acoustical data provided by Aerodry Drying Systems and Vacutech Vacuum Systems, (see Table 4) and drawings provided by CEC, Inc, a series of predictive SoundPlan scenarios were performed. Because we understand that this car wash will only operate between the hours of 7AM and 8PM and because this time frame falls under the St. Louis County Daytime Noise Ordinance, nighttime noise measurements are not considered relevant and are not included in this report.

#### **Version A = Figure 2**

This model shows the current building and car wash located at 14905 Clayton Road and the acoustical data shows traffic noise only. This model does not include any environmental noise other than traffic noise.

The scenario illustrated in the Version A would allow the reader to understand what acoustic impact noise generated from traffic on Clayton and Baxter Roads would be realized at the nearest residential property line.

#### **Version B = Figure 3**

This model shows the proposed building and barrier wall to be located at 14905 Clayton Road. The acoustical data shows traffic noise only. This model does not include any environmental noise other than traffic noise.

The scenario illustrated in Version B would allow the reader to understand what acoustic impact the proposed building and barrier wall would have on the traffic noise realized at the nearest residential property line.

#### **Version C = Figure 4**

This model shows the proposed car wash to be located at 14905 Clayton Road. The acoustical data in this model shows only noise generated by the Aerodry Drying Systems and the Vacutech Vacuum Systems central vacuum when they are in operation. This model does not include traffic noise or any other environmental noise.

The results of the acoustical scenarios A, B and C are as follows:

1. Version A:

The predicted environmental background noise levels due to vehicle traffic only, varies between 56 dBA to 65 dBA. The noise levels predicted in the SoundPlan Acoustic Model match the actual sound pressure levels that were measured during the Environmental Noise Study conducted in July 2017. (Please see Figure 2, Table 3 ).

2. Version B:

Figure 3 predicts that the acoustical effect of adding the currently designed 8 foot high concrete barrier only reduces the noise level generated from road traffic by 0 to 2 dBA at the west property line of 14905 Clayton Road. It would not reduce the noise level generated by road traffic at the north property line of 14905 Clayton Road.

3. Version C:

Figure 4 predicts the acoustical impact of the operation of the proposed car wash that would be realized at the nearest residential property line. This acoustical prediction includes an 8 foot high concrete barrier wall and addresses only noise generated by the operation of the car wash and does not include any environmental noise or noise generated by road traffic.

Based on the SoundPlan Acoustic Model, the predicted sound pressure level at the nearest residential property line is 50 dBA. 50 dBA is 5 dBA below the St. Louis County Daytime Noise Ordinance of 55 dBA or less. This is also 13 to 15 dBA below the measured daytime sound pressure level. This sound pressure level is generated by vehicle traffic noise on Clayton and Baxter Roads. (See Table 3 Location A ).

As the predicted noise levels that would be generated from the operation of the car wash is at least 10 dBA below the existing daytime sound pressure level, there would be no additional acoustical impact predicted at the nearest residential property line.

## Conclusion

Based on the SoundPlan Acoustic Model, the predicted sound pressure levels that would be generated by the operation of the proposed car wash at 14905 Clayton Road would be 50 dBA at the nearest residential property line. It is clear that the noise at 14905 Clayton Road is controlled by traffic noise generated on Clayton Road and Baxter Road.

Because traffic noise is the loudest noise source at 14905 Clayton Road, any noise generated from the operation of the proposed car wash will not increase the levels of noise already being experienced at the nearest residential property line.

Based on the predictions of the SoundPlan Acoustic Model, the operation of the proposed Mobil Car Wash will be compliant with the St. Louis County Daytime Noise Ordinance of 55 dBA or less.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Jim Holtrop".

Jim Holtrop, INCE ASA ASHRAE

**AcoustiControl LLC**



Appendix Figures and Tables

Table 1: Common Noise Levels

Sound Source	(dBA)
Air Raid Siren at 50 feet	120
Maximum Levels at Rock Concert (Rear Seats) On	110
Platform by Passing Subway Train	100
On Sidewalk by Passing Heavy Truck or Bus	90
On Sidewalk by Typical Highway	80
On Sidewalk by Passing Automobiles with Mufflers	70
Typical Urban Area	60-70
Typical Suburban Area	50-60
Quiet Suburban Area at Night Typical	40-50
Rural Area at Night	30-40
<p><b>Note:</b> A change in 3 dB(A) is just noticeable change in SPL. A change in 10 dB(A) is perceived as a doubling or halving in SPL.</p> <p><b>Source:</b> Cowan, James P. Handbook of Environmental, Acoustics. Van Nostrand Reinhold, New York, 1994.</p> <p>Egan, M. David, Architectural Acoustics. McGraw-Hill Book Company, 1988.</p>	

**Table 2: Average Ability of a Person to Perceive Changes in Noise Levels**

Change (dBA)	Human Perception of Sound
2-3	Barely perceptible
5	Readily noticeable
10	A doubling or halving of the loudness of sound
20	A dramatic change
40	Difference between a faintly audible sound and a very loud sound

**Source:** Bolt Beranek and Neuman, Inc., *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. Prepared for Federal Highway Administration, June 1973.

**Table 3: Environmental Noise Measured during Noise Study**

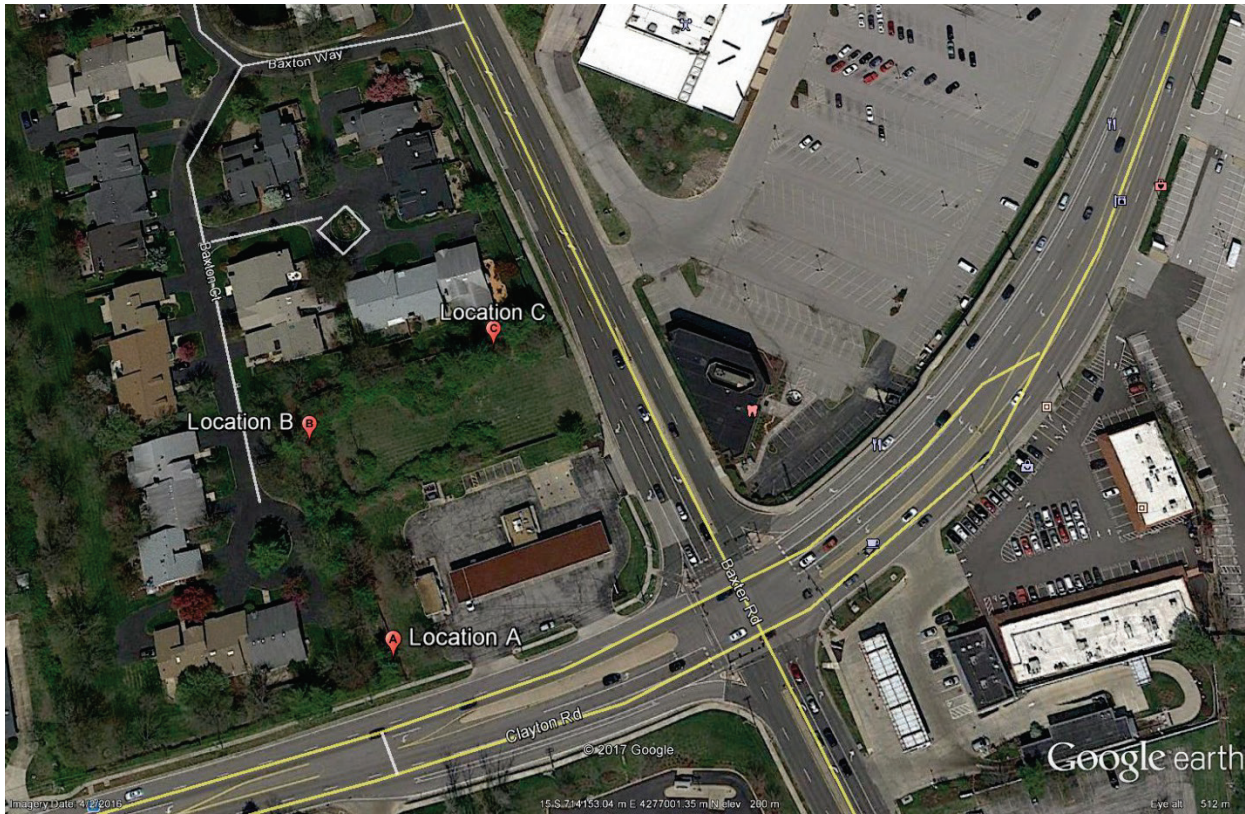
	July 26, 2017 LA <sub>eq</sub> (dBA)*	July 27, 2017 LA <sub>eq</sub> (dBA)*	July 28, 2017 LA <sub>eq</sub> (dBA)*	July 29, 2017 LA <sub>eq</sub> (dBA)*	Soundplan Predicted LA <sub>eq</sub> (dBA)
Location A	64	63	65	63	65
Location B	57	56	57	58	57
Location C	60	59	61	61	61

\*Average Daytime LA<sub>eq</sub>

**Table 4: Car Wash Sound Pressure Level Measurements**

Description of Measurement	LAeq
Columbia Brite Worx 1 meter from Exit	96
Columbia Brite Worx 20 feet from Exit	90
Columbia Brite Worx 50 feet from Exit	82
Columbia Brite Worx 1 meter from Entrance	85
Columbia Brite Worx 20 feet from Entrance	77
Columbia Brite Worx 50 feet from Entrance	70
Brite Work Florissant 1 meter from Entrance	82
Brite Worx Florissant 20 feet from Entrance	78
Brite Worx Florissant 50 feet from Entrance	72
Brite Worx Florissant 1 meter from Exit	97
Brite Worx Florissant 20 feet from Exit	90
Brite Worx Florissant 50 feet from Exit	81
Aerodry Model A120 1 Meter	85
Aerodry Model A120 20 Feet	76
Aerodry Model A120 50 Feet	69
Vacutech Vacuum 1 Meter From Exit of Hose	70

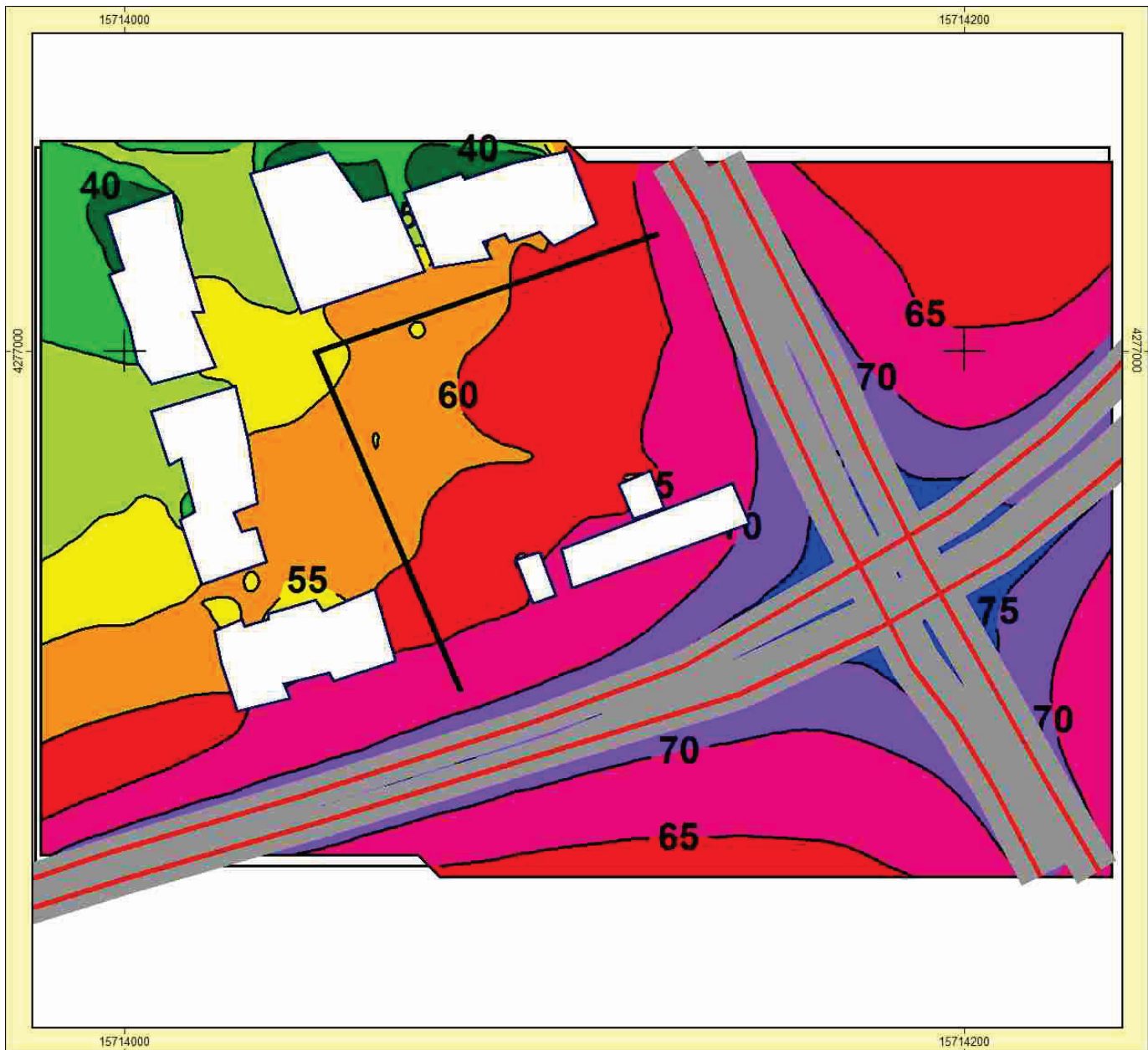
Figure1: Locations of Noise Monitoring Equipment



SoundPlan Graphics

Figure 2:

Version A = Current Building and Carwash @ 14905 Clayton Road / Traffic Noise Levels Only (in dBA)  
 Thickest solid black lines represent approximate residential property lines.

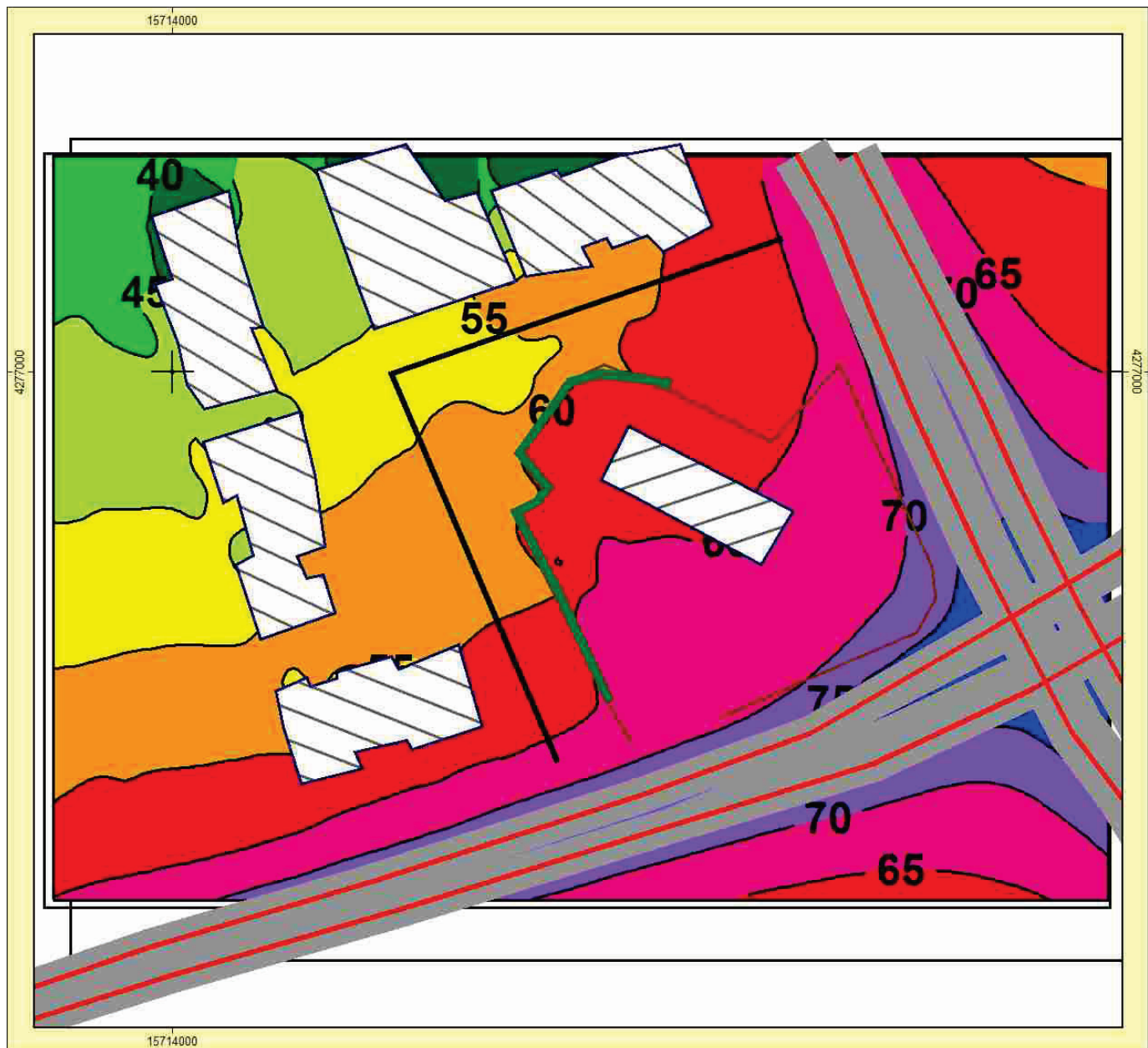


**Figure 3:**

Version B = Proposed Car Wash Building & Barrier Wall @14905 Clayton Rd / Traffic Noise Levels Only (in dBA)

Thickest solid black lines represent approximate residential property lines.

Thick green line represents the barrier wall.



**Figure 4:**

Version C = Proposed Car Wash with Barrier Wall located @ 14905 Clayton Rd / Car Wash Noise Only ( in dBA ). This does not include traffic noise.

Thickest solid black lines represent approximate residential property lines.

Thick green line represents the barrier wall.

