

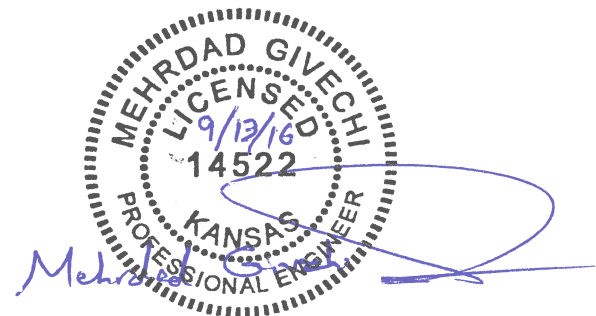


Traffic Impact Data for Lawrence Express Wash

1020 E. 23rd Street
Lawrence, Kansas

Prepared
for
Landplan Engineering, P.A.

Prepared
By



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September 2016

According to City Ordinance #7650, collection of Traffic Impact Data (TID) is required for all non-residential new developments or redevelopments and all residential developments of eleven (11) or more lots or dwelling units. The following information is compiled to fulfill the requirements of this ordinance for the proposed *Lawrence Express Wash* development located at 1020 E. 23rd Street in Lawrence, Kansas (See Location Map in the Appendix).

1. The site is currently vacant and is located just east of the existing *QT convenient store* on northeast corner of 23rd Street and Haskell Avenue. The proposed development will be an automated single-bay carwash.
2. The existing zoning for this site is Commercial Strip (CS). The proposed zoning will remain as CS. According to the Horizon 2020 (Map 3-2), the designated land use for this site is “Office and/or Commercial”.
3. The street network surrounding the site consists of:
 - E. 23rd Street, running east/west along south side of the site, designated as “Principal Arterial” on City’s T2040 Thoroughfare Map.
 - Haskell Avenue, running north/south approximately 350 ft. west of the site, designated as “Minor Arterial” north of E. 23rd Street and as “Principal Arterial” south of E. 23rd Street on City’s T2040 Thoroughfare Map.
4. The proposed development will share access with the *QT Convenient Store* (adjoining property to the west) at its current location onto E. 23rd Street (See Site Plan in Appendix for details).
5. In the vicinity of this redevelopment:
 - E. 23rd Street is a four-lane divided roadway with a Two-Way Left-Turn Lane (TWLTL) and posted speed limit of 45 mph. On-street parking is prohibited on both sides.
 - Haskell Avenue is a two-way two-lane roadway with posted speed limit of 30 mph north of E. 23rd Street and 35 mph south of E. 23rd Street. On-street parking is prohibited on both sides.

- The intersection of E. 23rd Street and Haskell Avenue is a fully-actuated signalized intersection with camera detection and “protected/permmissive” left-turn phasing for north/south approaches and “protected only” left-turn phasing for east/west approaches.
 - East/west approach, each has two through lanes with a dedicated left-turn lane and no dedicated right-turn lane. There is a near-side bus stop for both westbound and eastbound movements on E. 23rd Street.
 - North/south approach, each has one through lane, one dedicated left-turn lane and one dedicated right-turn lane.
6. As mentioned earlier, under the proposed development plan, the existing curb cut on E. 23rd Street remains unchanged at its current location and will be used as a shared driveway for both QT and the proposed carwash. Field observations indicate that sight distance is not restricted at this driveway location.
7. The trip generation of a proposed land development project is typically estimated using trip generation rates suggested by the latest edition of the Institute of Transportation Engineers, Trip Generation Manual (Currently, the 9th Edition). For this analysis, ITE Land Use Code 948 (Automated Carwash) was selected. The results, as summarized in the Appendix, indicate that the ITE Manual does not provide trip data for a typical weekday for this land use. However, data for a typical Saturday indicates that total number of trips likely to be generated by the proposed development will likely be an average of 41 trip-ends (19 inbound and 22 outbound) during the afternoon peak-hour of generator.

It is to be noted that, for a land use of this type, trip numbers for Saturday peak-hour of the generator is typically larger than those during any peak-hour of a typical weekday. That said, it is highly unlikely that the number of trips generated by the proposed *Lawrence Express Wash* will exceed 41 vph (Saturday peak-hour of the generator). This is less than the 100 vph threshold (stated in the City Ordinance #76500, and less than 50 vph threshold (for a medium volume access drive per KDOT Access Management Policy).

APPENDIX

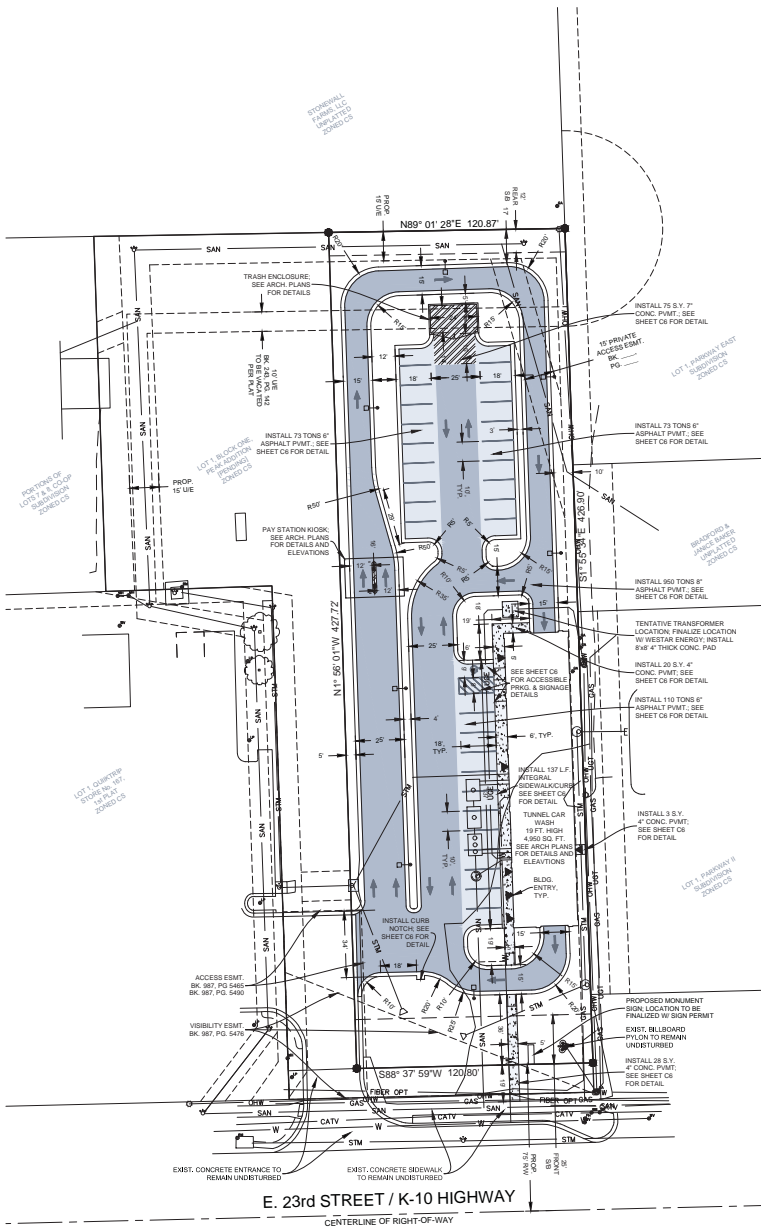
- Location Map
- Site Plan
- Results of Trip Generation Analysis, Using the ITE Trip Generation Manual, 9th Edition



Figure 1
Location Map

Figure 2

(Site Plan, Attached)



GENERAL NOTES:

- OWNER: AXROM, LLC
2601 DOVER SQUARE
LAWRENCE, KANSAS 66049
- DEVELOPER: PEAK OF MANTENO, INC.
250 S. DIVERSATECH DRIVE
MANTENO, ILLINOIS 60550
- LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A.
1310 WAKARUSA DRIVE
LAWRENCE, KANSAS 66045
- EXISTING ZONING: C5
- PROPOSED ZONING: C5
- EXISTING LAND USE: VACANT
- PROPOSED LAND USE: CAR WASH
- TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM A FIELD SURVEY PERFORMED BY LANDPLAN ENGINEERING IN AUGUST, 2016.
- NO PORTION OF THE SUBJECT PROPERTY LIES WITHIN A DESIGNATED 'SPECIAL FLOOD HAZARD AREA' AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM), PANEL NO. 176, MAP NUMBER 20040201760, DOUGLAS COUNTY, KANSAS, BEARING AN EFFECTIVE DATE OF SEPTEMBER 2, 2015.
- THIS SITE HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDINGS AND FACILITIES, APPENDIX A TO 28 CFR PART 36.
- ALL CONCRETE CURBS AND GUTTER SHALL BE INSTALLED AS 'TYPE CG-1' PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS, UNLESS OTHERWISE NOTED.
- ALL STORM SEWER CURB INLETS AND JUNCTION BOXES SHALL BE INSTALLED PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS.
- ALL INTERNAL SIDEWALKS AND ACCESS RAMPS SHALL BE INSTALLED PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS.
- THE LOCATION OF THE MONUMENT SIGN, AS DEPICTED, IS PRELIMINARY AND WILL BE FINALIZED UNDER A SEPARATE PERMIT THROUGH THE CITY OF LAWRENCE DEVELOPMENT SERVICES DIVISION.
- THE CITY OF LAWRENCE SHALL NOT BE HELD RESPONSIBLE FOR PAVEMENT DAMAGE ON PRIVATE STREETS CAUSED DUE TO THE WEIGHT OF SOLID WASTE MANAGEMENT VEHICLES. ALL MECHANICAL EQUIPMENT WILL BE MOUNTED ON THE ROOF AND SCREENED IN ACCORDANCE WITH SECTION 20-100(b) OF THE CITY CODE.
- TREES SHALL BE PLANTED NO CLOSER THAN 8 FEET FROM EXISTING UTILITY LINES, WHERE PRACTICAL, AND APPROVED BY THE PLANNING DIRECTOR, IN ACCORDANCE WITH SECTION 20-110(d)(2)(iii) OF THE CITY CODE.
- UNLESS OTHERWISE NOTED, ALL AREAS NOT DESIGNATED AS PAVEMENT OR BUILDING WILL BE SEEDED, SOODED OR LANDSCAPED WITH PLANT MATERIALS. REFER TO SHEET C5 FOR THE LANDSCAPE PLAN.
- A PHOTOGRAPHIC PLAN IS REQUIRED FOR REVIEW AND ACCEPTANCE BY THE DEPARTMENT OF PLANNING AND DEVELOPMENT SERVICES PRIOR TO ISSUANCE OF BUILDING PERMITS.
- SITE LIGHTING WILL BE SHIELDED TO PREVENT OFF-SITE GLARE.
- THE SITE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF ALL BUILDINGS INCLUDING THE PAY STATION CANOPY AND TRASH ENCLOSURE.
- THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL PROPOSED DIMENSIONS FOR BUILDINGS, WALLS, CONCRETE SLABS, UTILITY SERVICE POINT CONNECTIONS, ETC. AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO CONSTRUCTION.
- ALL TRAFFIC CONTROL SIGNS, PAVEMENT MARKINGS AND STRIPPING SHALL CONFORM TO THE LATEST ADDITION OF THE MANUAL ON UNIFORM PRACTICE CONTROL DEVICES (MUTCD), UNLESS OTHERWISE NOTED ON THE PLANS.
- THE SITE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PLANS, SHOP DRAWINGS, LAYOUTS AND SURVEY INFORMATION IN ACCORDANCE WITH THE SURVEY FIELD WORK REQUIRED, TO PERFORM CONSTRUCTION IN ACCORDANCE WITH THE DRAWINGS.
- WHENEVER REQUIRED OR APPROPRIATE, THE SITE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS AND MATERIALS TO THE OWNER'S REPRESENTATIVE, ENGINEER AND JURISDICTIONAL AUTHORITY, AND SHALL ACQUIRE ALL NECESSARY CONSTRUCTION PERMITS, FABRICATION AND/OR DELIVERY TO THE SITE, ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW AND APPROVAL.
- THE SITE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS, PERMIT FEES, LICENSES AND LICENSE FEES.
- ALL SITE WORK INCLUDING, BUT NOT LIMITED TO, PAYING, GRADING, EXCAVATION, TRENCHING AND COMPACTION MUST BE IN ACCORDANCE WITH OR SURPASS THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEERING REPORT PREPARED BY TERRACON, INC. AND DATED JULY 7, 2016. IN CASE OF DISCREPANCIES BETWEEN THE DRAWINGS AND GEOTECH REPORT, ATTAIN CLARIFICATION FROM THE OWNER'S REPRESENTATIVE.
- THE SITE CONTRACTOR SHALL ENSURE THAT ALL SITE INSPECTIONS REQUIRED BY CITY AND/OR STATE AGENCIES ARE SCHEDULED A MINIMUM OF FIVE WORKING DAYS IN ADVANCE OF REQUESTED INSPECTION DATE.
- MATERIAL TESTING SHALL BE SUPPLIED AND PAID FOR BY THE OWNER'S REPRESENTATIVE. THE SITE CONTRACTOR SHALL COORDINATE WITH THE TESTING FIRM ALL RE-TESTING IS THE RESPONSIBILITY OF THE SITE CONTRACTOR.
- THE SITE CONTRACTOR SHALL MAINTAIN A CLEAN WORK AREA. TRASH AND WASTE MATERIALS SHALL BE COLLECTED AT A SAFE POINT AWAY FROM FLAMES OR OTHER FIRE SOURCES. THE SITE CONTRACTOR SHALL PREVENT ANY LEAKS OR DROPS OF HYDRAULIC FLUID, MOTOR OIL, MOTOR FUELS, SOLVENTS, AND OTHER HYDROCARBONS FROM CONTAMINATING THE GROUND. SUCH SPILLS SHALL BE IMMEDIATELY COVERED WITH AN OIL ABSORBING MEDIUM (E.G. 'DOL DRY') AND REMOVED FROM THE SITE IN A LEGAL AND ENVIRONMENTALLY SOUND MANNER. TRASH SHALL BE PROPERLY DISPOSED OF DAILY, UNLESS A COVERED DUMPSTER IS PROVIDED AND ITS LOCATION APPROVED BY THE OWNER'S REPRESENTATIVE.
- PROVIDE ADEQUATE BARRICADES AT DRIVES, ENTRANCES, EXCAVATIONS, OTHER OPENINGS, AND HAZARDOUS AREAS TO KEEP OUT UNAUTHORIZED PERSONS, FOR PUBLIC SAFETY, AND TRAFFIC CONTROL. SAFETY PROVISIONS OF APPLICABLE LAWS SHALL BE OBSERVED AT ALL TIMES. BARRICADES LEFT IN PLACE AT NIGHT SHALL BE LIGHTED.
- PROMPTLY REMOVE ALL DEMOLITIONS, PROJECT DISCARDS, RUBBISH, AND DEBRIS FROM THE LIMITS OF THE OWNER'S PROPERTY AND/OR EFFECTIVE PROJECT LIMITS, AND DISPOSE IN A LEGAL MANNER.
- THE SITE CONTRACTOR'S MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREA SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATION AND WRITTEN APPROVAL OF AFFECTED OWNERS', JURISDICTIONAL AUTHORITY, AND/OR AUTHORITIES, AS APPLICABLE.
- FOR THE DURATION OF CONSTRUCTION OPERATIONS, THE SITE CONTRACTOR, SUBCONTRACTORS, AND THEIR EMPLOYEES WILL PARK AND STORE ALL EQUIPMENT IN A LOCATION(S) DESIGNATED BY THE OWNER'S REPRESENTATIVE. NO EQUIPMENT OR MATERIAL STORAGE IS PERMITTED WITHIN THE E. 23rd STREET RIGHT-OF-WAY.
- THE SITE CONTRACTOR SHALL RESTORE ANY AND ALL STRUCTURES, UTILITIES, PIPES, CURBSETS, PAVEMENT, CURB, SIDEWALK, LANDSCAPE, ETC. DISTURBED WITHIN THE SITE AND/OR ADJOINING PROPERTIES DURING DEMOLITION AND/OR CONSTRUCTION. SUCH FACILITIES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR BETTER, TO THE SATISFACTION OF THE AFFECTED OWNERS', JURISDICTIONAL AUTHORITY, AND/OR AUTHORITIES, AS APPLICABLE. ALL COSTS FOR CLEAN-UP, RESTORATION WORK AND OTHER RESTORATION OPERATIONS INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION SIGNALS, STREET SWEEPING AND MAINTAINING EXISTING UTILITIES SHALL BE THE SITE CONTRACTOR'S RESPONSIBILITY.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.
- CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL QUANTITIES.
- WRITTEN DIMENSIONS SHALL PREVAIL OVER SCALED DIMENSIONS. COORDINATES AND/OR DIMENSIONS SHOWN ON THESE DRAWINGS ARE TO BACK OF CURB, OUTSIDE FACE OF BUILDING FOUNDATIONS, EDGE OF PAVEMENT, OR CENTER OF STRUCTURE OR SIGN UNLESS NOTED OTHERWISE REFER ANY UNCLEAR ITEMS TO THE OWNER'S REPRESENTATIVE FOR INTERPRETATION.
- THE SITE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE OWNER'S REPRESENTATIVE IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE DRAWINGS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE ADJUSTMENTS AND/OR REVISIONS CAN BE MADE PRIOR TO CONSTRUCTION. ANY CONFLICTS BETWEEN THE DRAWINGS AND PROJECT MANUAL SHALL BE IDENTIFIED BY THE SITE CONTRACTOR AND CONFIRMED WITH THE OWNER'S REPRESENTATIVE PRIOR TO BIDDING.
- ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED IN THE DRAWINGS MAY BE USED IF REVIEWED AND APPROVED BY THE OWNER'S REPRESENTATIVE AND OTHER AFFECTED JURISDICTIONAL AUTHORITY PRIOR TO INSTALLATION.
- THE SITE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE HORIZONTAL AND VERTICAL

- LOCATION OF ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION.
- IN ALL CASES THE LOCATION OF EXISTING UTILITIES SHOWN ON THESE PLANS IS ASSUMED TO BE APPROXIMATE. LOCATIONS ARE BASED ON THE BEST AVAILABLE REFERENCE PLANS AND AN ACTUAL FIELD SURVEY OF VISIBLE STRUCTURES. CONTACT KANSAS UTILITY ONE-CALL, 1-800-344-7233 OR 8-1-1, BEFORE COMMENCING ANY EXCAVATION. CONTRACTOR MUST ALLOW SUFFICIENT TIME FOR MARKING AND COORDINATION WITH APPROPRIATE UTILITY AUTHORITIES. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH OCCUR DUE TO THE FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.
- ALL CONSTRUCTION OPERATIONS MUST BE ACCOMPLISHED IN ACCORDANCE WITH ANY AND ALL APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
- THE CONTRACTOR SHALL NOT INTERRUPT UTILITIES SERVING OCCUPIED OR EXISTING FACILITIES EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE AFFECTED OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER NOT LESS THAN TWO (2) DAYS IN ADVANCE OF THE PROPOSED UTILITY INTERRUPTION. INTERRUPTIONS SHALL OCCUR ONLY AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
- THE CONTRACTOR SHALL MAINTAIN, AT THE JOB SITE, A COMPLETE SET OF CONSTRUCTION DOCUMENTS AND MAKE THEM AVAILABLE TO THE OWNER'S REPRESENTATIVE, SUBCONTRACTORS, AND/OR ALLIED CONSULTANTS THROUGHOUT THE CONSTRUCTION PROCESS.
- AFTER ALL WORK HAS BEEN COMPLETED AND THE PROJECT HAS BEEN TESTED AND ACCEPTED, THE SITE CONTRACTOR SHALL SWEEP THE ENTIRE WORK AREA CLEAN AND REMOVE ALL DIRT, MUD, TRASH, WASTE MATERIAL, CONSTRUCTION EQUIPMENT, AND VEHICLES. DAMAGED PARKING STRIPES OR STAINED PAVEMENT SHALL BE REFINISHED TO ITS ORIGINAL CONDITION BY THE SITE CONTRACTOR.

LEGAL DESCRIPTION:

LOT 2, BLOCK ONE, PEAK ADDITION, A MINOR SUBDIVISION/REPLAT OF LOT 1 AND PORTIONS OF LOTS 3, 4, 7 AND 8, C&O#P SUBDIVISION, A SUBDIVISION IN THE CITY OF LAWRENCE, DOUGLAS COUNTY, KANSAS. (FINAL PLAT PENDING)

PARKING SUMMARY:

OFF-STREET PARKING

REQUIRED: CAR WASH
2 PARKING SPACES + 4 STACKING SPACES

PROVIDED: 1 VAN ACCESSIBLE PARKING SPACE
31 VACUUM EQUIPPED PARKING SPACES
36 STACKING SPACES

PAVEMENT SCHEDULE:

- 6" ASPHALT PAVEMENT; PER GEOTECH REPORT RECOMMENDATIONS, REFER TO SHEET C6 FOR DETAIL.
- 8" ASPHALT PAVEMENT; PER GEOTECH REPORT RECOMMENDATIONS, REFER TO SHEET C6 FOR DETAIL.
- 4" CONCRETE PAVEMENT; PER GEOTECH REPORT RECOMMENDATIONS, REFER TO SHEET C6 FOR DETAIL.
- 7" CONCRETE PAVEMENT; PER GEOTECH REPORT RECOMMENDATIONS, REFER TO SHEET C6 FOR DETAIL.



Landplan Engineering, P.A. 2016, this drawing is prepared by a licensed professional engineer, the engineer's seal is on this drawing. It is the engineer's responsibility to ensure that the drawing is in accordance with the applicable laws and regulations of the state of Kansas.

1020 E. 23rd STREET
LAWRENCE, KANSAS 66046
LAWRENCE EXPRESS WASH
LAYOUT PLAN

REV	DATE	DESCRIPTION

BID SET
DRAWINGS

NOT FOR
CONSTRUCTION

DATE: 9/16/16
PROJECT NO.: 2016002
DESIGNED BY: LFE
DRAWN BY: BS
CHECKED BY: CMS

ISSUE SHEET NO.
A C3
OF 7 SHEETS

Detailed Land Use Data
For 1 Wash Stalls of CARWASHAUTO 1
(948) Automated Car Wash

Project: Lawrence Express Wash
Phase: Phase 1
Description: E. 23rd Street & Haskell Ave. (NEC)

Open Date: 9/9/2016
Analysis Date: 9/9/2016

<u>Day / Period</u>	<u>Total Trips</u>	<u>Pass-By Trips</u>	<u>Avg Rate</u>	<u>Min Rate</u>	<u>Max Rate</u>	<u>Std Dev</u>	<u>Avg Size</u>	<u>% Enter</u>	<u>% Exit</u>	<u>Use Eq.</u>	<u>Equation</u>	<u>R2</u>
Saturday Peak Hour of Generator	41	0	41				1	46	54	False		