



**REQUEST FOR REZONING, CONDITIONAL USE
PERMIT & SITE PLAN APPROVAL
BOARD OF ALDERMEN RATIONALE**

REQUESTED ACTION: Rezoning from "PD" to "UD", Conditional Use Permit and Site Plan Approval

MEETING DATE: July 18, 2016 (Public Hearing & 1st Reading of Ordinances)

PETITIONER: Garrison Development, represented by Gary Hassenflu
2020 Broadway
Kansas City, MO 64108

LOCATION OF SITE: 8071 & 8075 Manchester (NW corner of Manchester and Hanley)

PROJECT: The Metro on Manchester - Six (6) Story Apartment Building

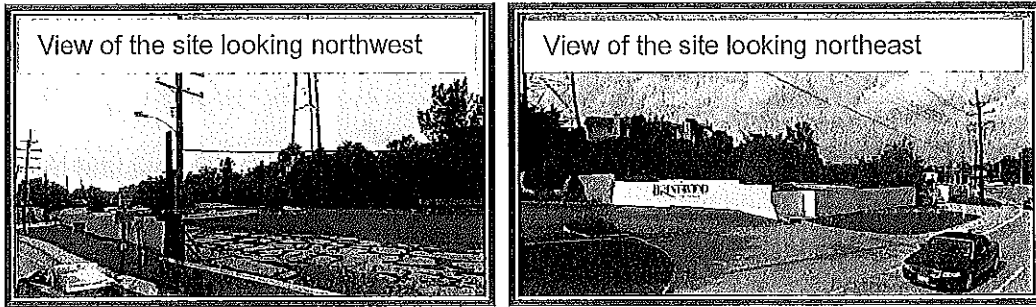
SIZE OF TRACT: 2.19 acres

LOCATOR NUMBERS: 21K341360 & 21K341351

PROJECT DESCRIPTION

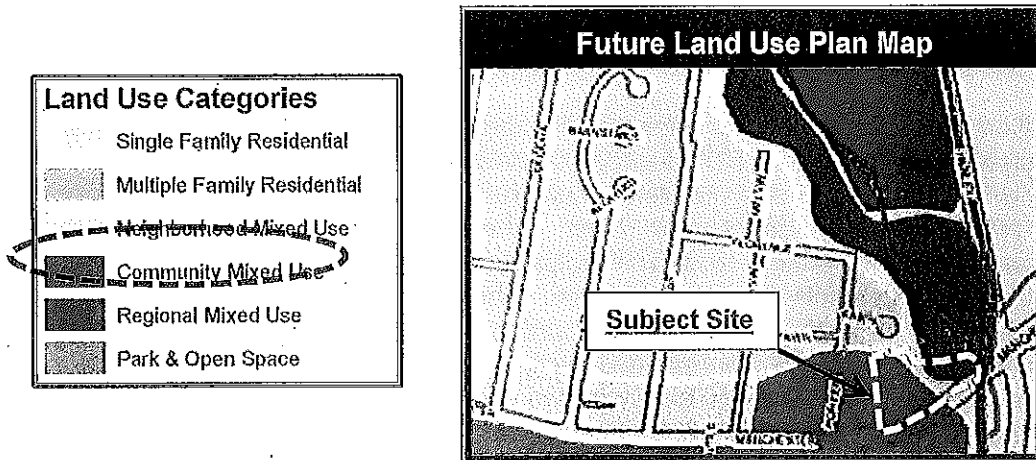
The petitioner is requesting to change the zoning for the 2.19 acre site from Planned Development Overlay District "PD" to Urban Development "UD" and requests a conditional use permit (CUP) and approval of a site plan to construct a six (6) story multi-family structure with 80 units at 8071 and 8075 Manchester Road. The property is located at the intersection of Manchester Road and Hanley Road. The footprint of the building is 29,398 square feet, and the proposed site plan depicts 37 units per acre. The site coverage includes a building area of 31%, a pavement area of 22%, and the remaining 47% is open space. The proposal includes the construction of a two (2) story parking garage, surface parking, court yard and a dog park. The proposed development would eliminate two existing curb cuts along Manchester Road and utilize a shared access with property located west of the subject site.





A. COMPREHENSIVE PLAN ANALYSIS

The 2006 Comprehensive Plan designates the subject site as "Community Mixed Use", see Future Land Use Plan section below. According to Table 1 on page 39, **multi-family residential** is included as a recommended use in the Community Mixed Use Category. The Concept Plan portion of the Comprehensive Plan identifies a demand for multi-family housing but recognizes that Brentwood has limited opportunities for multi-family construction. The Plan recommends incorporating multi-family units in the redevelopment of commercial property along the City's arterial roadways (i.e. Manchester). The proposed development is consistent with this recommendation and takes advantage of the closest site to the Metro Train Station to the east (in Maplewood) and offers excellent arterial access.



B. REZONING

Based on the recommendations of the City's Comprehensive Plan, the proposed "UD" District is a more compatible zoning district with the Comprehensive Plan than the current Planned Development Overlay "PD" Zoning District. The proposed rezoning would forward or update the City Zoning Map to become more compliant with the City's Comprehensive Plan.

C. ZONING CODE ANALYSIS

The purpose of the requested "UD" zoning district is to encourage the development of multi-family. The following is a comparison of the proposed development and the requirements of the "UD" District Regulations:

- 1) **Permitted Uses:** Apartments over two (2) stories are permitted pursuant to the City's Site Plan and Conditional Use Permit (CUP) procedures and requirements in the "UD" District.
- 2) **Density:** 80 units per acre. *The proposed site plan shows 37 units per acre. (80 units on 2.19 acres).*
- 3) **Minimum Lot Area:** 1 acre and 150' in depth and width. *The site is 2.19 acres and measures approximately 480' (along Manchester Road) and is approximately 245' in depth.*
- 4) **Maximum Structure Height:** Six (6) stories or 75'. *There are six (6) stories; 2 stories of structured parking and 4-stories of apartments. The proposed height is 68'.*
- 5) **Front Yard Setback:** 25' from the right-of-way (Manchester Road) when there is no parking in front of the building. If parking is located in the front, a 50' front yard is required. *The proposed front yard setback is 25'.*
- 6) **Side Yard Setback:** 15'. *The proposed side yard setback is 15'.*
- 7) **Rear Yard Setback:** 25'. *The proposed rear yard setback is 25'.*
- 8) **Maximum Site Coverage:** 80%. *The proposed site coverage does not exceed the current paved development footprint, which is approximately 53% of the site. The remaining 47% of the site is greenspace.*
- 9) **Off-Street Parking:** 1.5 stalls per unit with considerations. *The petitioner is proposing just over 1.8 stalls per dwelling unit with a rational and/or amenities to address considerations. The Parking Plan includes 11 surface parking stalls and 134 structured stalls with a total of 145 spaces.*
- 10) **Landscaping & Screening:** Landscaping is provided along the perimeter of the site and within the parking areas. A trash enclosure, as required by the City Code, is proposed just east of the building. The City's Landscape Architect has reviewed the project. *Attached please find the comments of Mr. L. Andrew Franke, ASLA, RLA.*
- 11) **Lighting:** The plan includes lighting around the building and street lighting along Manchester Road to match the existing light standards. These lights will be required to comply with City Code requirements.
- 12) **Underground Wiring:** Pursuant to Section 400.1910 all electrical, cable television and telephone distribution lines primarily intended for the use of buildings, and structures constructed after May 5, 1985 shall be installed underground. Note #19 on the Site Plan addresses this requirement.

D. PLANNING & ZONING COMMISSION RECOMMENDATION TO REZONE SITE FROM "PD" TO "UD"

The Planning and Zoning Commission reviewed the rezoning request at the June 8th, 2016 meeting. Mr. Daming proposed a motion to rezone the site from PD to UD. Mr. Nuemberger seconded.

Roll call: Ritter- yes, Jacobs – yes, Nuernberger- yes, Shipley – yes, Hansen – yes, Hart – yes, Favazza – yes, Schuering – yes, Moran – yes, Nelson – yes. **MOTION PASSED**

E. CONDITIONAL USE FINDINGS/RATIONALE

Section 400.1400.C. requires any building or structure exceeding two (2) stories or thirty-five (35) feet in height to obtain a conditional use permit. Therefore, this development requires a CUP. In presenting any application for a Conditional Use Permit, the burden of proof shall rest with the petitioner to clearly establish that the proposed conditional use meets the standards set forth in Section 400.670. The application information provided by the petitioner should be considered when deliberating on these findings of fact.

1. **Will increase traffic hazards or congestion** – The proposed conditional use permit will not increase traffic hazards or congestion. The applicant is proposing to change access to the site by reducing two (2) curb cuts along Manchester Rd. The City's Traffic Engineer, Mr. Lee Cannon of CBB, conducted a review of the traffic impact and parking analysis and submitted a report to the City on May 9, 2016. *Attached is the traffic and parking studies for your review.* The studies indicate that based on the minimal impact of the proposed apartments on local traffic, no physical improvements are recommended other than the eastbound left-turn at the site driveway. This improvement is depicted on the proposed site plan. Additionally, the study concluded that the proposed parking supply of 1.63 spaces per unit is a reasonable parking supply when compared to the recommended supply based on typical industry standards, as well as St. Louis County standards even though it does not meet the City's required parking rate of two spaces per unit. Furthermore, the proposed development and site plan was reviewed by Mr. Jay Jay Braden of the Missouri Department of Transportation and Mr. Adam Spector, P.E. of the St. Louis County Transportation Department. The preliminary review concluded that the impacts of this proposed development to St. Louis County and MoDOT facilities are minimal and find the site plan feasible. *Attached are the comment letters received from St. Louis County Transportation Department and MoDOT for your review.*
2. **Will increase fire hazards** –The Fire Chief has reviewed the plan and his recommended changes have been addressed.
3. **Will affect the character of the neighborhood** – The site has been vacant for years. The proposal would solidify development of this high profile parcel and provide a compatible land use along two major arterials, residential, and non-residential development. The six (6) story building height is mitigated by the grade changes between the subject site and the residential properties to the north.
4. **Will affect the general welfare of the community** – See response to #3 above.
5. **Will overtax public utilities** – No negative impacts on public utilities are expected due to this new use.
6. **Does not comply with all other applicable provisions of the Zoning Ordinance** – The proposed development meets the applicable requirements of the Zoning Ordinance and the "UD" Zoning District.

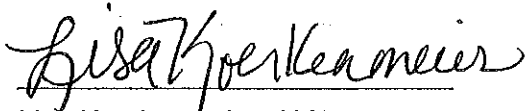
7. **Will not contribute to and promote the community welfare and convenience at the specific location** –The proposal is consistent with the Comprehensive Plan and compliant with this standard.
8. **Will cause injury to the value of neighboring property** – With consideration given to site design issues, injury is not anticipated.
9. **Does not comply with the Brentwood Comprehensive Plan** – See Section A of this report for information relating to compliance with the Comprehensive Plan.
10. **Will not provide, if applicable, erosion control and on-site storm water detention in accordance with the standards contained in this chapter** – Erosion control and detention plans will be required to be approved by the City of Brentwood and MSD prior to building permits being issued.
11. **Will not be compatible with the surrounding area and thus will impose a burden or have a negative impact on surrounding or adjacent uses or on community facilities or services** – Based on the information from the Comprehensive Plan, the proposal will not have a negative impact.

**F. PLANNING & ZONING COMMISSION RECOMMENDATION TO APPROVE
CONDITIONAL USE PERMIT AND SITE PLAN**

The Planning and Zoning Commission reviewed the rezoning request at the June 8th, 2016 meeting. Mr. Nelson proposed a motion to approve the Site Plan & Conditional Use Permit (CUP). Mr. Nuernberger seconded the motion.

Roll call: Nelson – yes, Moran – yes, Schiering – yes, Favazza – yes, Hart – yes, Hansen – yes, Shipley – yes, Nuernberger yes, Jacobs – yes, Ritter- yes. **MOTION PASSED.**

Respectfully submitted,



Lisa Koerkenmeier, AICP
Director of Planning and Development



PLANNING DESIGN STUDIO

Planning Urban Design Landscape Architecture

Metro on Manchester
Garrison Development
2020 Broadway
Kansas City, Missouri, 64108
Landscape Plan Second Review Comments

Date: April 25, 2016

To: Mr. Todd M. Streiler, AICP, LEED AP
STREILER PLANNING, LLC

From: L. Andrew Franke, ALSA,

Location: 8071 & 8075 Manchester Road, Brentwood, MO

Referenced Subject: Landscape Plan Second Review Comments on:
Landscape Plan L1.0, dated 4/20/2016, seal dated 4/20/2016

We have completed our second review of the landscape plan prepared for the Metro on Manchester project site referenced above. Based on this review, we have prepared our comments as requested.

Comments:

1. Civil plans show the Fire Lane as reinforced grass pavers while architectural plans show it as permeable pavers. Review is based on assumption that reinforced grass pavers will be utilized.
2. Provide typical planting details with landscape plan.
3. Wheel stops should be provided for parking spaces which are adjacent to planting areas to avoid damage to plant material.
4. Proposed building appears to be within the 100 year and 500 year flood plain. A no-rise flood study may be required for this project by the City of Brentwood.
5. Consider an alternate paving material for the courtyard. Grass will be difficult to grow, especially within a grass paver system in the proposed location, and it will be difficult to maintain. Grass may also create maintenance issues for the adjacent pool.
6. Consider an alternate tree species for the Dogwood (*Cornus florida*). Dogwood is an understory species, and while the courtyard is north facing, the building is not anticipated to provide enough shade for this plant to thrive.
7. Provide details for providing irrigation for the planters proposed within the courtyard.
8. Provide additional details such as surfacing materials, fencing, and furnishings for the Dog Park.
9. An adequate irrigation system shall be provided for all landscape plantings per the City Ordinance.

10. Confirm plant quantities shown on plant schedule as discrepancies were found between the plan drawing and the schedule.
11. Landscape plantings near the MSD Approved Water Quality Unit may need field adjustments to avoid conflicts with the unit.
12. Provide clarification on entrance and exit routes that fire truck will be using when entering and exiting the site to insure adequate curb radii have been provided along Manchester Road.

If you have any additional questions, or would like to discuss these items further, please feel free to contact us.

A handwritten signature in black ink, appearing to read "L. Andrew Franke". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

L. Andrew Franke ASLA, RLA
Principal Landscape Architect, Planning Design Studio

May 9, 2016

Ms. Bola Akande
City Administrator
City of Brentwood
2348 S. Brentwood Blvd.
Brentwood, MO 63144

RE: Traffic and Parking Studies
Proposed Metro on Manchester Apartments
Northwest Quadrant of Manchester Road at Hanley Road
Brentwood, Missouri
CBB Job No. 027-16-48

Dear Ms. Akande:

In accordance with your request, CBB has prepared a traffic impact and parking study for the proposed Metro on Manchester Apartments development located in the northwest quadrant of Manchester Road (Missouri Route 100) and Hanley Road in Brentwood, Missouri. It is our understanding that the property will be developed with the construction of 80 apartment units. The existing site consists of an undeveloped tract of land with two curb cut remnants onto Manchester Road. Access to the site is proposed via one shared access driveway with the adjacent office building at 8077 Manchester Road using the existing curb cut. The site location and surrounding properties are shown in **Figure 1**.

The primary emphasis of this study was to expand upon the trip generation assessment already prepared and evaluate the impact on the operating conditions at the intersections of Manchester Road and Hanley Road, Manchester Road and Porter Avenue/Breckenridge Industrial Court and the shared entrance on Manchester Road, as well as determine the ability of motorists to safely enter and exit the site. Where necessary, we have identified the need for roadway improvements to mitigate the development's impact. The focus of this study was the weekday AM and PM peak hours of a typical weekday.

The following analysis scenarios were considered:

- 2016 Existing Conditions; and
- 2016 Build Conditions Approved Uses (Existing plus Site Generated Trips).

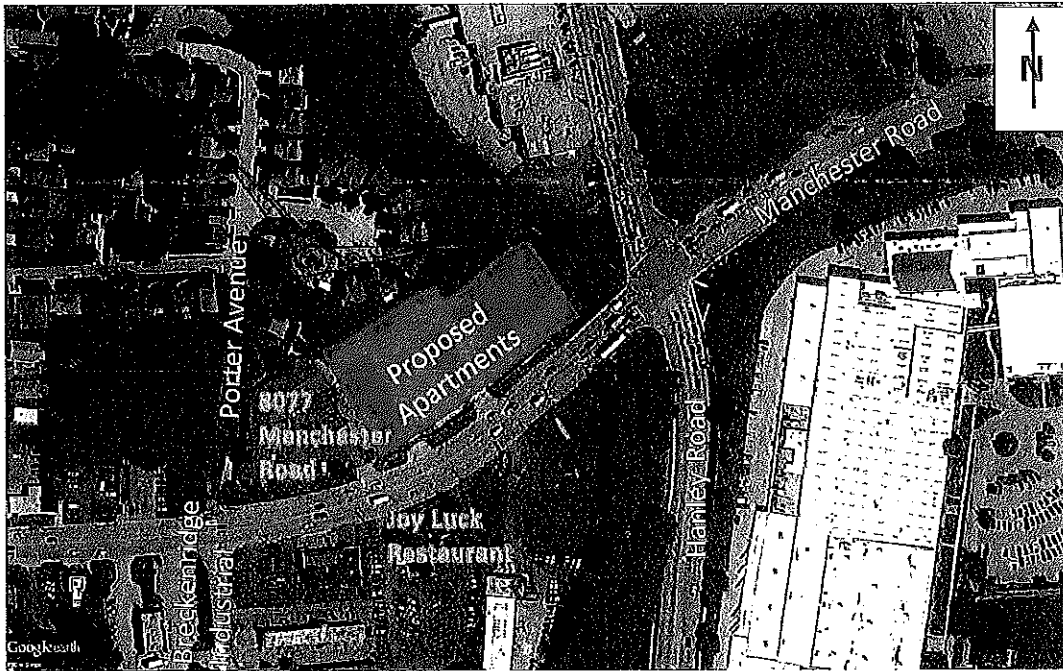
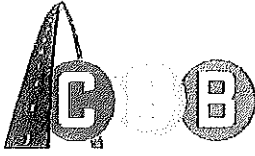


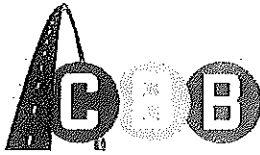
Figure 1: Site Location Map

The following report presents the methodology and findings relative to the Existing Conditions and 2016 Build Conditions.

EXISTING CONDITIONS

Area Roadway System: Manchester Road is a principal arterial road maintained by the Missouri Department of Transportation (MoDOT) that runs east-west. Near the study area, the road provides four lanes, two in each direction. The posted speed limit on Manchester Road through the study area is 30 miles per hour (mph). Within the study area, sidewalks are provided along both sides of the roadway except for a short section on the south side between the Frederic Roofing driveway and Hanley Road. Land uses along Manchester Road are primarily commercial.

Hanley Road is a principal arterial road maintained by the St. Louis County Department of Transportation (SLCDOT) that runs north-south. Near the study area, the road provides six lanes north of Manchester Road: three southbound, two northbound and one center two-way left-turn lane (TWLTL). South of Manchester Road, Hanley Road provides five lanes: two in each direction with a center TWLTL. The posted speed limit on Hanley Road near the study area is 35 mph. Sidewalks are provided along both sides of the roadway south of Manchester Road and on the east side of the roadway north of Manchester Road.



Porter Avenue is a local road maintained by the City that runs north-south and provides access to residential uses. To the south of Manchester Road, Porter Road changes names to **Breckenridge Industrial Court**, which provides access to industrial uses. The intersection of Manchester Road and Porter Avenue/Breckenridge Industrial Court is controlled by a side-street STOP.

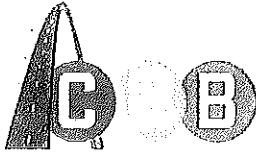
The intersection of Manchester Road and Hanley Road is controlled by a traffic signal. The eastbound, westbound and southbound approaches each provide one left-turn lane, two through-only lanes and one right-turn lane. The northbound approach provides one left-turn lane, one through-only lane and one shared through/right-turn lane. Northbound and southbound left-turns operate under protected-only phasing. Eastbound and westbound left-turns operate under lead-lag protected/permissive phasing.

Existing Traffic Volumes: In order to establish existing traffic conditions, manual turning movement counts were performed during the AM (7:00-9:00 a.m.) and PM (4:00-6:00 p.m.) peak periods at the intersections of Manchester Road with Hanley Road, Porter Avenue/Breckenridge Industrial, and the driveway to 8077 Manchester Road (Remax Driveway)/Joy Luck restaurant (across the street) in early February 2016. Based on the counts, the weekday AM peak hour occurred from 7:45 to 8:45 a.m., and the weekday PM peak hour occurred from 5:00 to 6:00 p.m. The existing peak hour traffic volumes in the study area are summarized in **Exhibit 1**.

Given the traffic characteristics in the area and the anticipated trip generation for the proposed development, the peak periods identified would represent a “worst-case scenario” with regards to the traffic impact. That is, if traffic operations are acceptable during the weekday commuter peak hours, it can be reasoned that conditions would be acceptable throughout the remainder of the day.

Proposed Development: Eighty (80) apartment units are proposed on the property, generally located in the northwest quadrant of Manchester Road with Hanley Road. The site proposes access via one shared access driveway with 8077 Manchester Road, directly to the west of the subject site. The two exiting access drives to the east (closer to Hanley Road) would be abandoned.

A preliminary site plan dated February 16, 2016 provided by the site civil engineer is shown in **Exhibit 2**. This site plan was updated from the site plan shared at the scoping meeting in an attempt to address some of the review agency concerns. The new site plan includes the apartment access road that traverses around the rear of the building instead of the front which was in close proximity and parallel to Manchester Road. MoDOT also requested AutoTurn drawings at the entrance and provided preferences for pedestrian accommodations.



As recommended by CBB, the site plan addresses the ability to provide an eastbound left-turn lane that accommodates MoDOT's minimum deceleration requirements at the 8077 Manchester Road access driveway to retain the full access as proposed. This report also includes the latest site plan attached at the end (**Attachment A**) which was submitted by the applicant to the City of Brentwood that shows the concept to provide a separate eastbound left-turn lane on Manchester Road at the entrance.

Trip Generation: As a primary step in this analysis, traffic forecasts were prepared to estimate the amount of traffic that the proposed Metro on Manchester Apartments would generate during both the AM and PM peak hours. These forecasts were based upon 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 characteristics of various land uses.

Based upon the recommended procedure for estimating trip generation outlined in the "Trip Generation Handbook, A Recommended Practice", published by ITE (March 2001), the regression equation was utilized for Land Use: 220 – Apartment. The proposed apartments are expected to generate approximately 45 total trips during the AM peak hour and 65 total trips during the PM peak hour, as shown in **Table 1**.

Table 1: Trip Generation Estimate

Land Use	Square Feet	Daily Traffic	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Apartment (ITE Code 220)	80 Units	610	10	35	45	40	25	65

Trip Distribution: The traffic generated by the proposed residential development will be assigned to the adjoining roadway system based on the following directional distribution:

- 40% to/from the west on Manchester Road;
- 25% to/from the north on Hanley Road;
- 20% to/from the east on Manchester Road; and
- 15% to/from the south on Hanley Road.

The Site-Generated Traffic Volumes are shown in **Exhibit 3**, and the 2016 Build Traffic Volumes are shown in **Exhibit 4** for the weekday AM and PM peak hours.

The Metro on Manchester - Traffic Impact Study
 Brentwood, Missouri

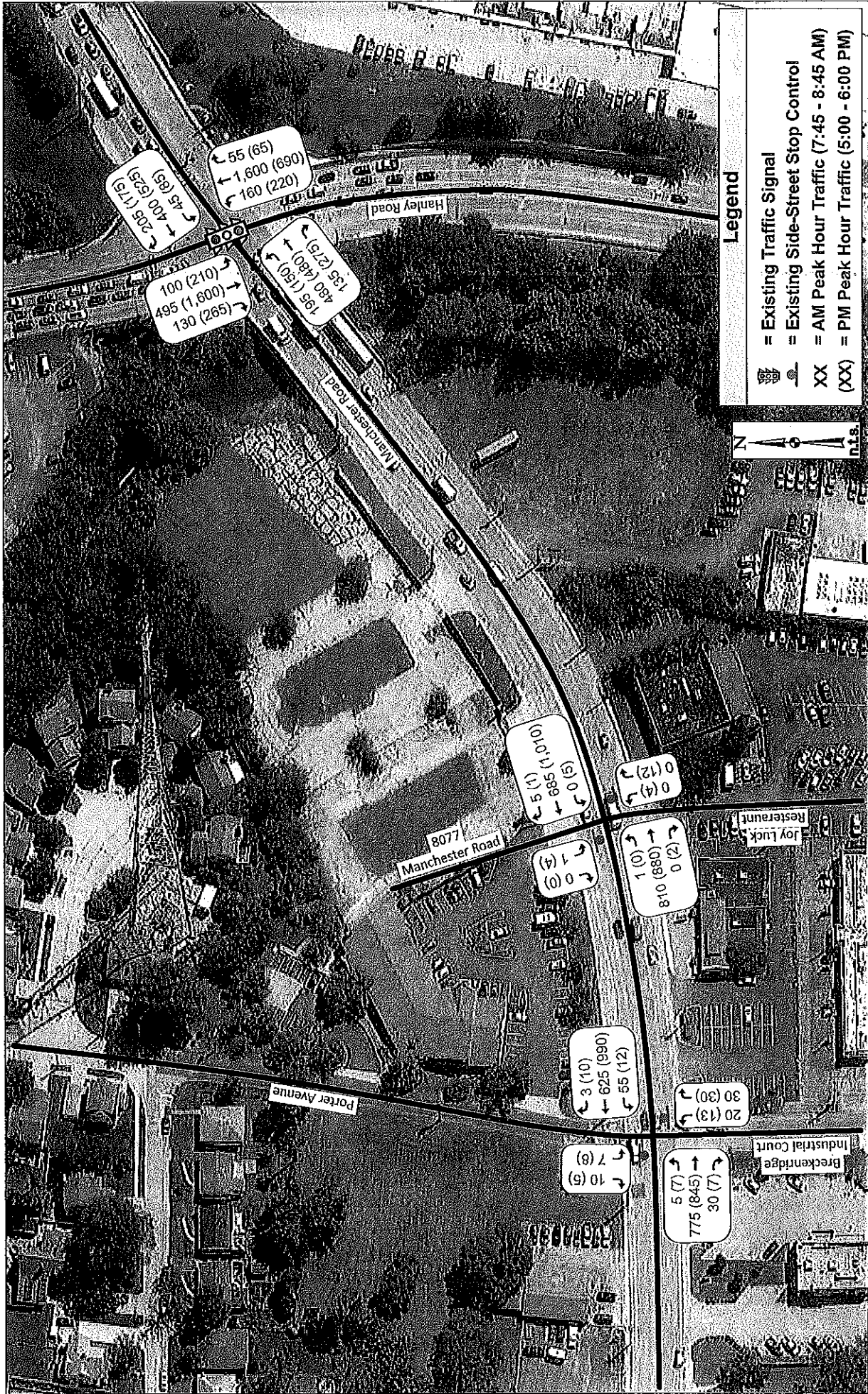


Exhibit 1: Existing Traffic Volumes

The Metro on Manchester - Traffic Impact Study
 Brentwood, Missouri



MANCHESTER FORDS



1 SITE PLAN - SEE UNIT DEVELOPMENT

1. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
 2. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE LOT.
 3. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE ROAD.
 4. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE DRIVEWAY.
 5. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE SIDEWALK.
 6. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE CURB.

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 6. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE CURB.

DATE: 02/24/16
 PROJECT: THE METRO ON MANCHESTER
 PREPARED BY: THE METRO ON MANCHESTER
 CHECKED BY: [Name]
 APPROVED BY: [Name]

THE METRO ON MANCHESTER
 BRENTWOOD, MISSOURI
PH1
 PRELIMINARY STUDIES

Exhibit 2: Proposed Site Plan (Provided by Others)

Job# 173-07-48
 02/24/16



The Metro on Manchester - Traffic Impact Study
 Brentwood, Missouri

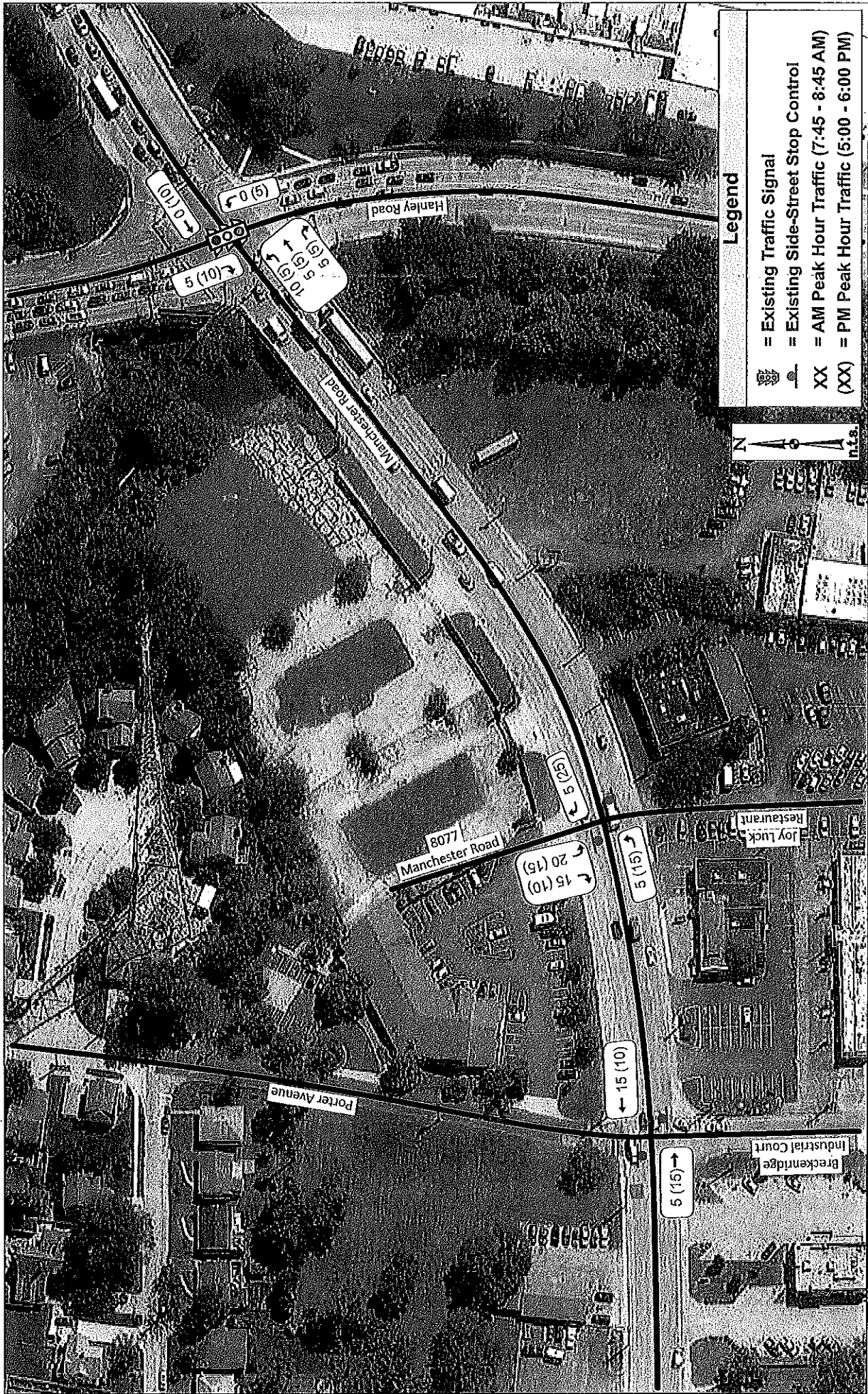


Exhibit 3: Site-Generated Traffic Volumes

Job# 173-07-48
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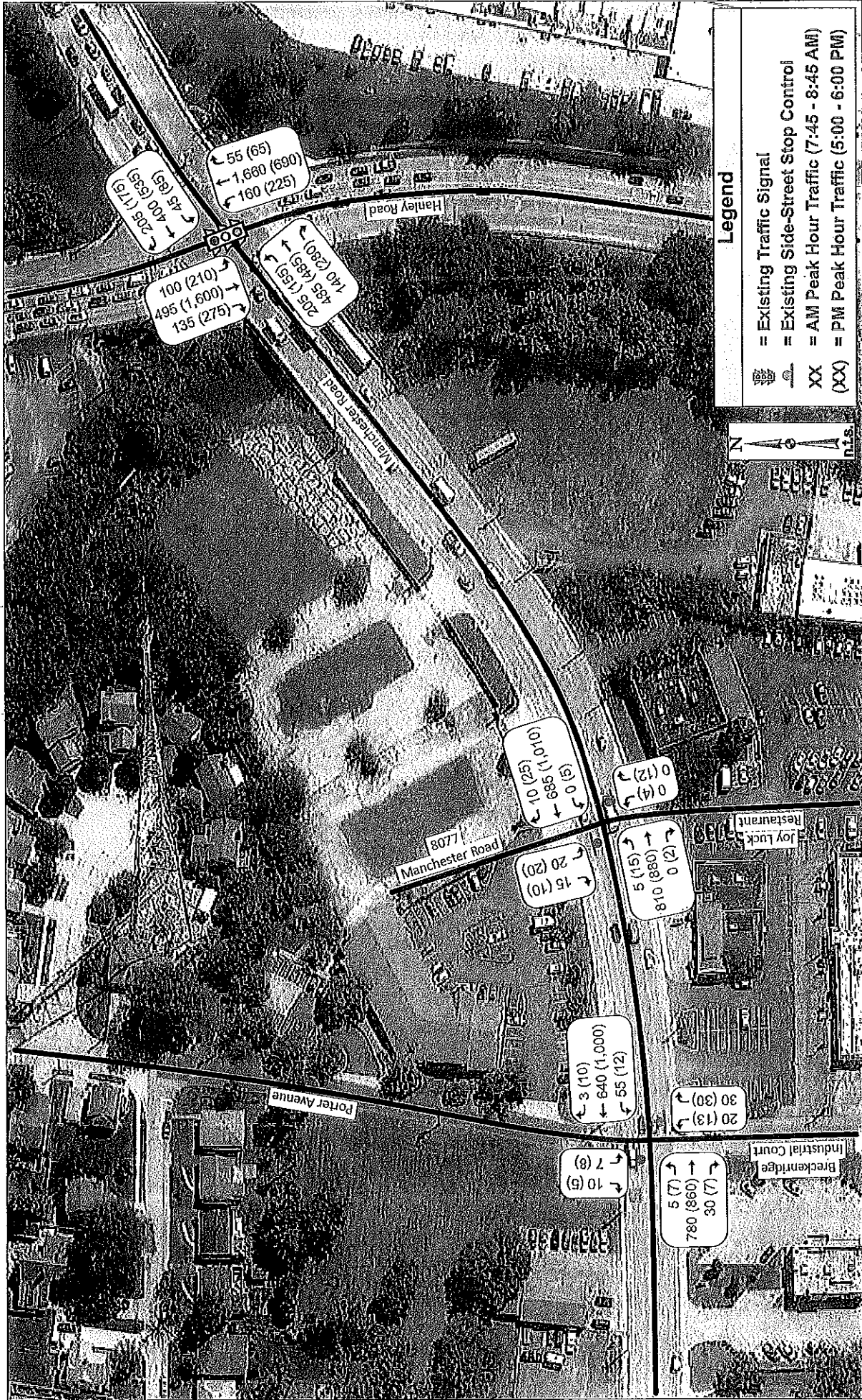


Exhibit 4: 2016 Build Traffic Volumes



Auxiliary Turn Lane Needs: The need for separate turn lanes at the at-grade intersections along Manchester Road was compared to turn lane criteria using MoDOT's Access Management Guidelines (AMG). The guideline considers auxiliary lanes an asset in promoting safety and improved traffic flow at relatively high conflict locations. Separate turn lanes are intended to remove turning vehicles from the through lanes to reduce the potential number of collisions at intersections.

2016 Build Left-Turn Lane Evaluations: The MoDOT method provides volume guidelines for the consideration of separate left-turn lanes on a four-lane roadways by comparing the total opposing volume (which includes opposing through and right-turning traffic) to the number of left-turns for a given design speed.

The need for an eastbound left-turn lane on Manchester Road at the site driveway was evaluated using MoDOT's *Left-Turn Lane Guideline for Four-lane Roadways*. **Figure 2** graphically illustrates the left-turn evaluation assuming the 2016 Build Traffic Volumes during the AM and PM Peak hours along Manchester Road at the proposed site entrance. Based on these volumes, the eastbound left-turn along Manchester Road is expected to be 5 vph during the AM peak and 15 vph during the PM peak. Based on MoDOT AMG standards, a separate left-turn lane is warranted on Manchester Road at the Proposed Site Entrance.

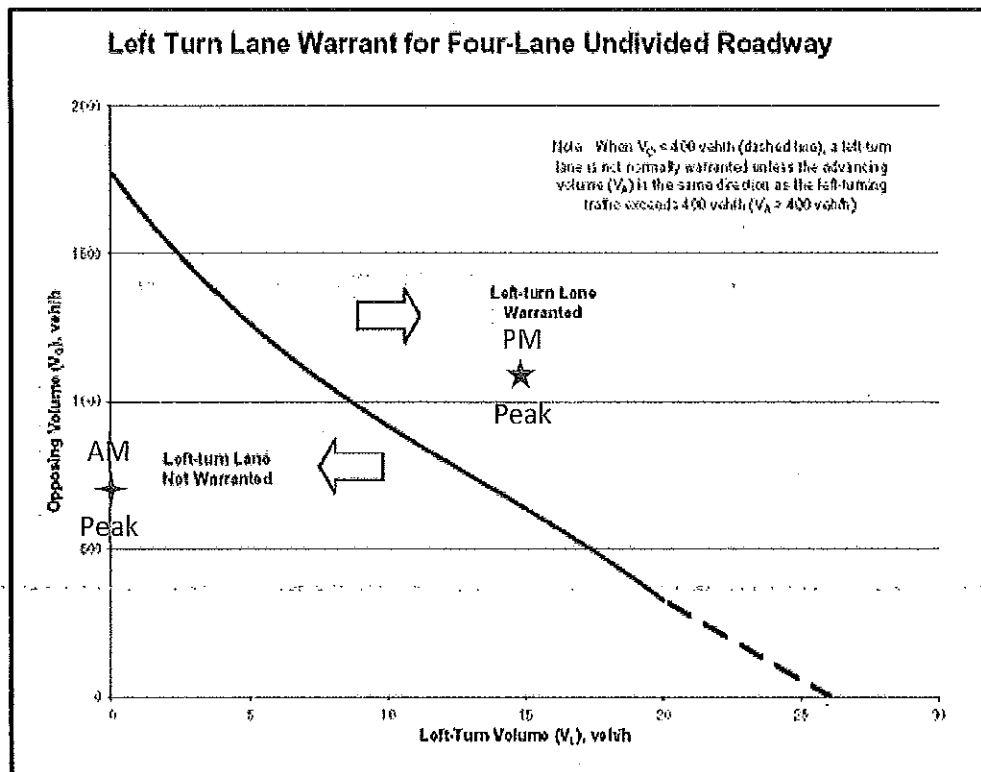
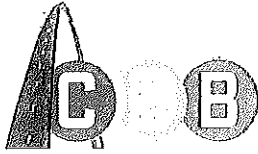


Figure 2: MoDOT Left Turn Lane Warrant - Four-Lane Undivided Roadway



TRAFFIC ANALYSIS

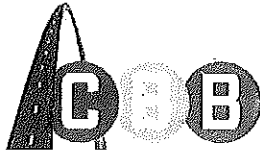
Study Procedures: The existing and forecasted operating conditions for the various alternatives were analyzed using SYNCHRO 8, a macro-level analytical traffic flow model. SYNCHRO is based on study procedures outlined in the *Highway Capacity Manual*, published by the Transportation Research Board. This manual, which is used universally by traffic engineers to measure roadway capacity, establishes six levels of traffic service: Level A ("Free Flow"), to Level F ("Fully Saturated"). 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 often considered acceptable for peak period conditions in urban and suburban areas.

The thresholds that define level 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 then 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.

Level of service is directly related to control delay. At signalized intersections, the level of service criteria differ from that at unsignalized intersections primarily because varying transportation facilities create different driver expectations. The expectation is that a signalized intersection is designed to carry higher traffic volumes and consequently may experience greater delay than an unsignalized intersection. **Table 2** summarizes the thresholds used in the analysis for signalized and unsignalized intersections.

Table 2: Level of Service Thresholds

<i>Level of Service (LOS)</i>	<i>Control Delay per Vehicle (sec/veh)</i>	
	<i>Signalized Intersections</i>	<i>Unsignalized Intersections</i>
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



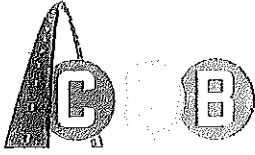
Operating Conditions: The study intersections were evaluated using the methodologies described above. **Table 3** summarizes the average delays for the study intersections during the weekday AM and PM peak hours for the Existing and 2016 Build scenarios.

Table 3: Operating Conditions Summary

Intersection / Approach	AM Peak Hour		PM Peak Hour	
	Existing	2016 Build	Existing	2016 Build
Manchester Road at Hanley Road (Signalized)				
Eastbound Manchester Road Approach	F (96.3)	F (104.5)	E (78.5)	F (81.9)
Westbound Manchester Road Approach	F (82.8)	F (82.8)	E (79.3)	F (83.2)
Northbound Hanley Road Approach	E (68.0)	E (68.0)	F (86.9)	F (91.5)
Southbound Hanley Road Approach	C (25.6)	C (25.5)	E (58.6)	E (58.4)
Overall	E (68.5)	E (70.2)	E (71.7)	E (73.8)
Manchester Road at Proposed Apartment Entrance (Side-Street Stop)				
Eastbound Manchester Road Left-Turn	A (<1.0)	A (8.7)	A (<1.0)	B (10.3)
Westbound Manchester Road Left-Turn	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)
Northbound Joy Luck Driveway Approach	C (19.2)	C (20.0)	C (19.4)	C (20.6)
Southbound Apartment Entrance Approach	C (16.7)	C (20.1)	E (47.7)	E (49.2)
Manchester Road at Porter Avenue/Breckenridge Industrial Court (Side-Street Stop)				
Eastbound Manchester Road Left-Turn	A (<1.0)	A (<1.0)	A (<1.0)	A (<1.0)
Westbound Manchester Road Left-Turn	A (1.1)	A (1.3)	A (<1.0)	A (<1.0)
Northbound Breckenridge Ind. Approach	C (24.4)	C (24.9)	C (23.4)	C (24.2)
Southbound Porter Ave Approach	C (18.6)	C (19.2)	E (37.5)	E (39.3)

X (XX.X) - Level of Service (Vehicular delay in seconds per vehicle)

Existing Traffic Conditions: As shown in Table 3, the intersection of Manchester Road and Hanley Road currently operates at less than desirable levels of service during both the AM and PM peak hours. The intersection operates at LOS E overall during both peak hours with multiple approaches operating at LOS F. The side-street approaches of the proposed apartment entrance as well as Porter Avenue/Breckenridge Industrial Court at Manchester Road both generally operate at acceptable levels of service. Both side-street southbound approaches operate at LOS E during the PM peak hour, but this is expected for side-street approaches with appreciable volumes to major arterials.



Per field observations and our Synchro calculations, eastbound Manchester Road queues at Hanley Road are not long enough to affect traffic at the proposed apartment entrance during either peak hour.

Forecasted 2016 Build Traffic Conditions

As shown in Table 3, the proposed apartments would not have a significant traffic impact on the study intersections. The proposed apartments are expected to add roughly two seconds of overall delay to the intersection of Manchester Road at Hanley Road during each peak hour. Furthermore, only a few seconds of delay would be added to the side street approaches of the proposed apartment entrance and/or Porter Avenue/Breckenridge Industrial Court at Manchester Road.

Based on the minimal impact of the proposed apartments on local traffic, no physical improvements are recommended other than the eastbound left-turn lane at the site driveway, which is already included on the site plan.

It should be noted that CBB, the owner, and the review agencies are all well aware of the current congestion at the intersection of Manchester Road and Hanley Road. The County has an unfunded project on their list for an improvement to a Michigan U-Turn Intersection (MUTI) that should address those concerns.

Parking Review

Based on information provided by the City, the proposed apartment development would provide 123 parking spaces in a garage and 12 surface spaces for a total of 135 parking spaces to serve the 80 apartment units for a ratio of 1.68 spaces per unit.

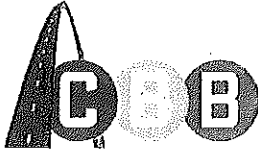
The City of Brentwood parking code requires two spaces per unit for multiple-family dwellings and apartments, but CBB supports a parking supply ratio as low as 1.60 spaces per vehicle for a suburban core area such as the proposed location.

CBB compared several parking supply codes in the region and industry standards for peak parking demands to the proposed parking supply for the proposed development.

Parking Code – City of Brentwood, MO

Section 400.1600:B:2 Multiple-family dwellings or apartments:

- Two (2) parking spaces for each dwelling unit. The allowable parking for multi-family, rental apartments designed for and exclusively occupied by individuals over the age of sixty (60) may be reduced to one (1) parking space per two (2) households at the specific approval of the Planning and Zoning Commission.



Parking Code – St. Louis County, MO

Section 1003.165E *Dwellings, Multiple Family, Row Houses, or Other Group or Attached House Arrangements:*

- 1.5 spaces for every living unit

Peak Parking Demand ITE Parking Generation – 4th Edition

Parking Generation, 4th Edition, has very few study sites for all of the housing types. The parking *demand* rates for the residential types ranged from 1.20 to 1.83 spaces per dwelling unit.

Land Use 210 – Single Family Detached Housing

- Average Peak Period Parking Demand = 1.83 vehicles/dwelling unit with 6 study sites.

Land Use 221 – Low/Mid-Rise Apartment (suburban)

- Average Peak Period Parking Demand = 1.23 vehicles/dwelling unit with 21 study sites.

Land Use 222 – High-Rise Apartment (Central City, not downtown)

- Average Peak Period Parking Demand = 1.37 vehicles/dwelling unit with 7 study sites.

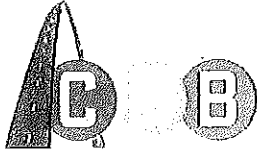
Land Use 230 – Residential Condominium/Townhouse (suburban)

- Average Peak Period Parking Demand = 1.38 vehicles/dwelling unit with 12 study sites.

The single-family detached housing land use (210) has the highest demand (1.83 vehicles per unit) but is the least appropriate land use for comparison to the proposed apartments. The apartment and townhome uses are more appropriate and have a lower peak parking demand (1.23 to 1.38 vehicles per unit) which would be expected when compared to single-family homes.

Based on a proposed parking supply of 135 spaces for the 80 apartment units, the corresponding rate would be 1.68 spaces per unit. Assuming the ITE peak parking demand of 1.38 vehicles per dwelling unit, the peak hour occupancy would only be approximately 82% of the parking spaces supplied, which is well within the recommended range of 80-90%.

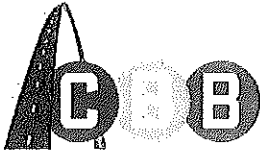
Based on the summary of parking conditions above, the proposed parking supply of 1.63 spaces per unit is a reasonable parking supply when compared to the recommended supply based on typical industry standards (ITE), as well as St. Louis County standards even though it does not meet the City's required parking rate of two spaces per unit.



SUMMARY

CBB has completed a traffic impact study for the Metro on Manchester Apartments proposed in the northwest quadrant of Manchester Road (Missouri Route 100) and Hanley Road in Brentwood, Missouri. The following summarizes our findings:

- The intersection of Manchester Road and Hanley Road currently operates at less than desirable levels of service (LOS E) during the AM and PM peak hours. The County has a future improvement planned to address those regional issues. A Michigan U-Turn Intersection (MUTI) has been designed but is not yet funded for construction.
- Access to the site is proposed via one shared access driveway with the adjacent office building at 8077 Manchester Road. Two existing curb cuts will be closed.
- The proposed 80 apartment units are expected to generate approximately 45 total trips during the AM peak hour and 65 total trips during the PM peak hour.
- The proposed development is not expected to significantly affect operations at the intersection of Manchester Road at Hanley Road. The intersection delay would increase by roughly two seconds overall during both the AM and PM peak hours and would remain at LOS E.
- The site driveway intersection and the intersection of Manchester Road at Porter Avenue/Breckenridge Industrial Court are expected to operate at levels of service similar to current conditions with the additional traffic.
- The proposed driveway is located at an appropriate location to minimize the potential for eastbound queues on Manchester Road to block the entrance.
- No further roadway improvements are necessary to accommodate the proposed apartment building beyond the proposed eastbound left-turn lane at the site entrance, which is already included on the site plan.
- The proposed parking supply of 1.68 spaces per unit exceeds the recommended supply based on typical industry standards (ITE) as well as St. Louis County standards. Therefore, the proposed parking supply is reasonable and is expected to be adequate to meet the needs of the proposed uses even though it does not meet Brentwood's two spaces per unit code requirement.



Proposed Metro on Manchester Apartments

May 9, 2016

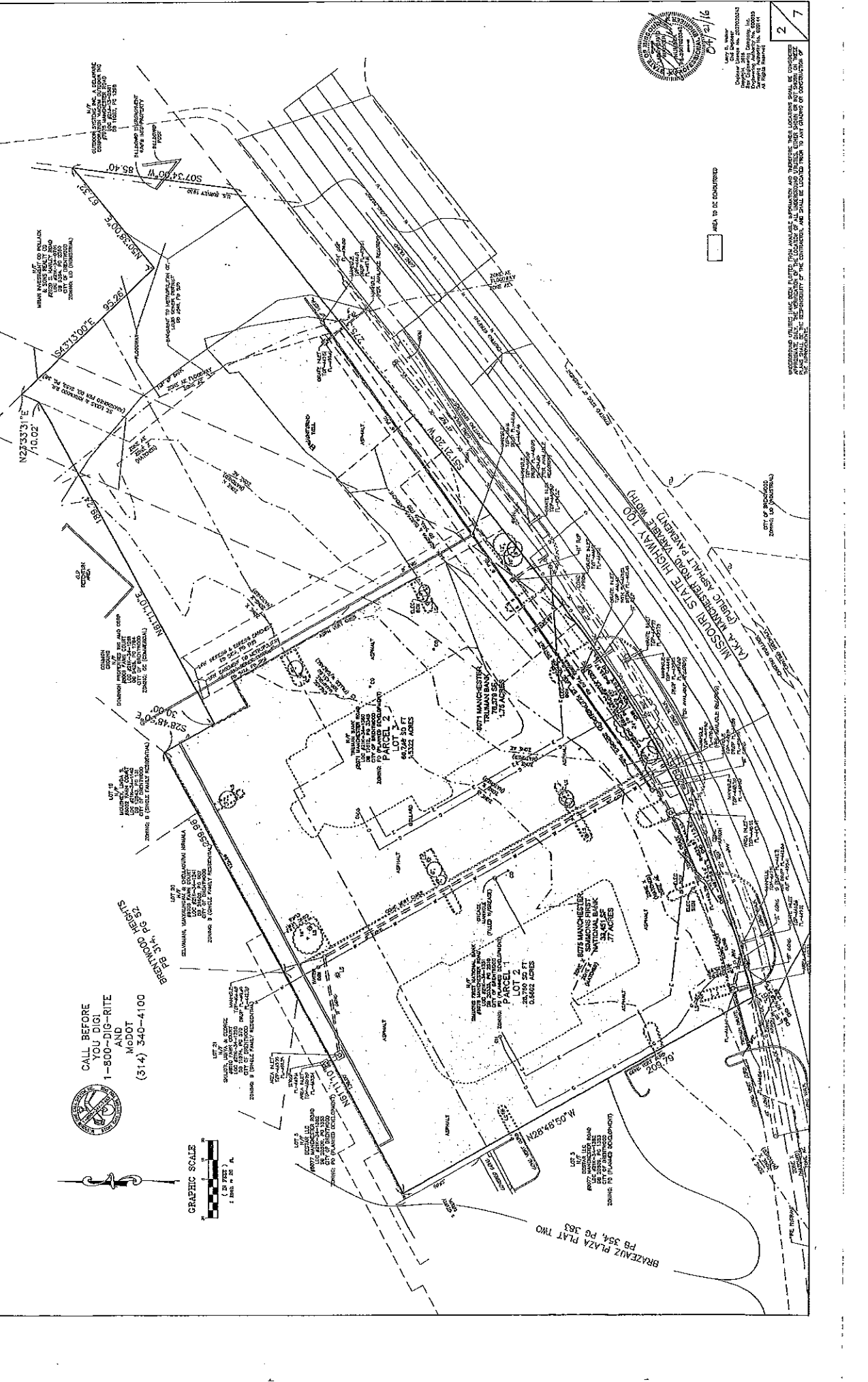
Page 15 of 15

We trust that you will find the information presented in this report useful in evaluating the traffic impacts associated with the proposed apartments. Please do not hesitate to contact me in our St. Louis office (314) 878-6644, ext. 12 or Lcannon@cbbtraffic.com should you have any questions or comments concerning this material.

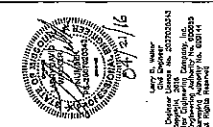
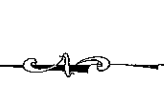
Sincerely,

Lee Cannon, P.E., PTOE
Principal – Traffic Engineer

Attachment A



CALL BEFORE
 YOU DIG!
 1-800-DIG-RITE
 AND
 MCDOT
 (314) 340-4100

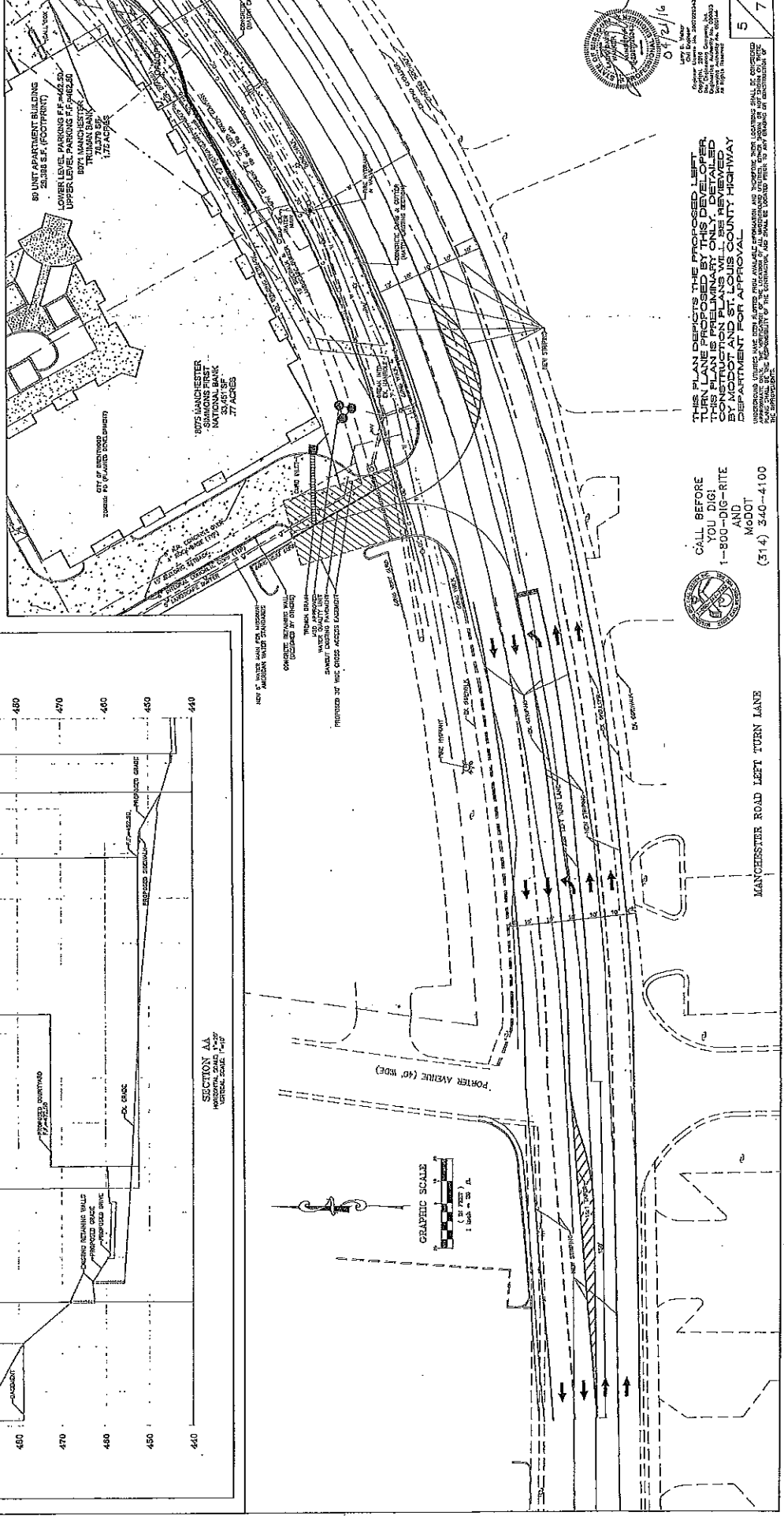
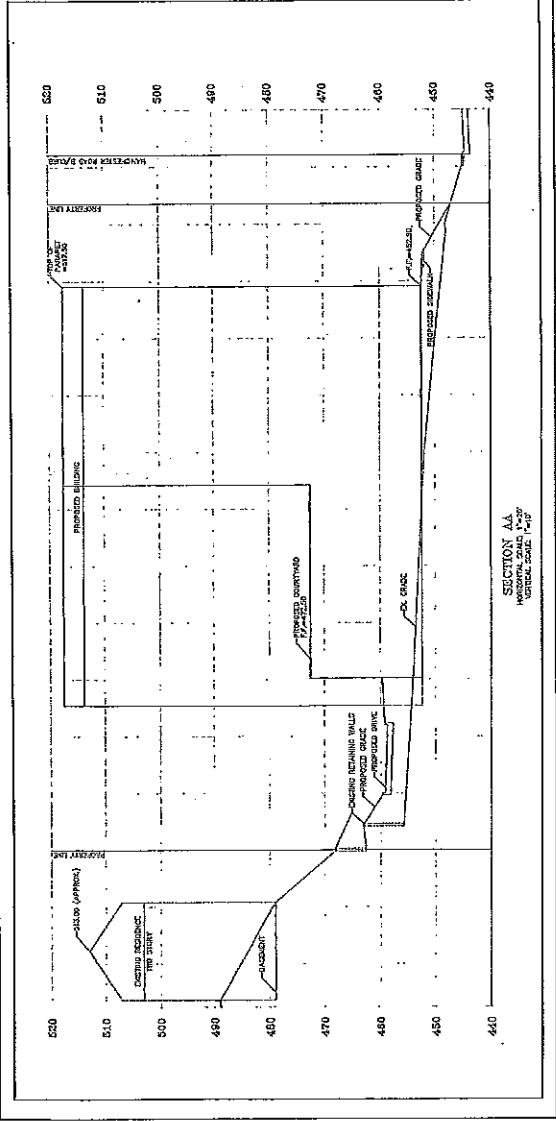


10/16
 27

AREA TO BE DEDICATED

UNDESIGNED UTILITIES HAVE BEEN LOCATED FROM AVAILABLE APPROXIMATIONS AND THEREFORE THESE LOCATIONS SHOULD BE CHECKED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES TO BE DEDICATED OR CONVEYED TO THE CITY OF MANCHESTER.

BRAZENVILLE PLAZA PLAT TWO
 PG 354, PG 383



01/16
 CIVIL ENGINEER
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF MISSOURI
 NUMBER 10000
 EXPIRES 12/31/16

THIS PLAN REPRESENTS THE PROPOSED LEFT TURN LANE PROPOSED BY THIS DEVELOPER. THIS PLAN IS PRELIMINARY ONLY. DETAILED CONSTRUCTION PLANS WILL BE PROVIDED UPON RECEIPT OF A COUNTY HIGHWAY DEPARTMENT FOR APPROVAL. UNDESIGNED ITEMS HAVE BEEN ADDED FROM AVAILABLE INFORMATION AND THEREFORE THESE LOCATIONS SHALL BE CONSIDERED APPROXIMATE. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF THE INFORMATION AND SHALL BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS OF THE INFORMATION.

CALL BEFORE YOU DIG!
 1-800-DIG-RITE
 AND
 MDDOT
 (314) 340-4100



MANCHESTER ROAD LEFT TURN LANE



Steven V. Stenger
County Executive

Saint Louis
COUNTY
TRANSPORTATION
PUBLIC WORKS

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

Stephanie Leon Streeter, P.E.
Deputy Director

May 26, 2016

Mr. Lee Cannon, P.E., P.T.O.E.
Principal- Traffic Engineer
Crawford, Bunte, Brammeier
12400 Olive Boulevard, Suite 430
St. Louis, MO 63141

RE: Traffic Impact Study
Metro on Manchester Apartments

Dear Mr. Cannon:

I have completed my review of the May 9, 2016 traffic impact and parking study that you prepared for the proposed development in the northwest quadrant of the intersection of Manchester Road and South Hanley Road in Brentwood, Missouri.

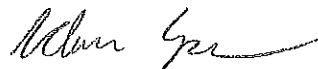
I am satisfied that your study conclusions are a reasonably accurate assessment of traffic conditions that might be anticipated upon completion of this project. I am generally satisfied that the methodology of the study is valid.

The impacts to St. Louis County facilities related to this proposed development appear to be acceptable. At this time, St. Louis County's main interest in regard to this project is to maintain the viable reconstruction of the Manchester Road and South Hanley Road intersection. The roadway configurations presented in this study appear compatible with our latest plans.

Please submit site plans for concept approval showing roadway improvements, however please 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 impacting St. Louis County facilities or the assumptions stated in this approved traffic impact study are made. Any revisions required by other reviewing agencies will need to be reviewed by this Department.

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: Lisa A. Koerkenmeier, AICP, Director of Planning and Development, City of Brentwood
Karen Yeomans, Southwest Area Engineer, MoDOT

Missouri Department of Transportation

1590 Woodlake Drive
Chesterfield, Missouri 63017-5712
314.275.1500
Fax: 573.522.6475
1.888.ASK MODOT (275.6636)

Date: 06/01/16

Subject: Conceptual approval for the Metro on Manchester

Dear Mr. Todd M. Streiler,

After review of the plans for the subjected development MoDOT finds the site plan feasible. Final approval will be in the form of a permit issued from this office after review of the detailed site plan. Once the developer is ready to move forward with obtaining a MoDOT permit for all work in MoDOT right of way they can contact me at the email address below.

If you have any questions please feel free to contact me via email at john.braden@modot.mo.gov.

Sincerely



Jay Jay Braden
Senior Traffic Specialist
Missouri Department of Transportation



Our mission is to provide a world-class transportation experience that delights our customers and promotes a prosperous Missouri.

www.modot.org