AGENDA
CITY PLANNING COMMISSION

City Hall - Council Chambers
6131 Taylorsville Road
February 14, 2023
6:00 P.M.

1. Call Meeting To Order

2. Oath of Office

   A. David Cassity

3. Roll Call

4. Opening Remarks By The Chair and Commissioners

5. Citizens Comments

6. Swearing of Witnesses

7. Pending Business

8. New Business

   A. REZONING AN BASIC DEVELOPMENT PLAN - The applicant, METROPOLITAN HOLDINGS LTD, is requesting approval of a Rezoning to PM (Planned Mixed Use) and a Basic Development Plan of a proposed new 320 unit multi-family project. Property is located at 6801 Executive Boulevard (BDP 23-02).

9. Additional Business

10. Approval of Minutes

A. Planning Commission January 10, 2023

11. Reports and Calendar Review

12. Upcoming Meetings

A. February 28, 2023
March 14, 2023

13. Adjournment

AI-8987 **8. A.**

Planning Commission

Meeting Date: 02/14/2023

Rezoning and Basic Development Plan

Information

Agenda Title

REZONING AN BASIC DEVELOPMENT PLAN - The applicant, METROPOLITAN HOLDINGS LTD, is requesting approval of a Rezoning to PM (Planned Mixed Use) and a Basic Development Plan of a proposed new 320 unit multi-family project. Property is located at 6801 Executive Boulevard (BDP 23-02).

Purpose and Background

Attachments

Staff Report
Decision Record
Site Plan
Survey
Utility Plan
Design Standards
Renderings
Fire Assessment
Traffic Impact Study
Resident letter

Memorandum

Staff Report for Meeting of February 14, 2023

To: Huber Heights City Planning Commission

From: Aaron K. Sorrell, Interim City Planner

Date: February 9, 2023

Subject: Rezoning and Basic Development Plan
Case: BDP 23-02
(Newbauer Site – 320 Unit Apartment Development)

Department of Planning and Zoning City of Huber Heights

APPLICANT/OWNER:	Metropolitan Holdings, LTD. – Applicant Nancy Newbauer, Trustee - Owner
DEVELOPMENT NAME:	Metropolitan Holdings - Newbauer Site
ADDRESS/LOCATION:	6801 Executive Blvd.
ZONING/ACREAGE:	PEP / 25.3 Acres
EXISTING LAND USE:	Vacant / Agricultural
ZONING ADJACENT LAND:	North: R-7 East: PEP West: I-1 South: PEP (Rose Music Center)
REQUEST:	The applicant requests a rezoning to Planned Mixed Use (PM) and approval of a basic development plan to construct up to 320 residential units and commercial/retail space.
ORIGINAL APPROVAL:	N/A
APPLICABLE HHCC:	Chapter 1171, 1179, 1181
CORRESPONDENCE:	In Favor – None Received In Opposition – One email received.

STAFF ANALYSIS AND RECOMMENDATION:

Overview

The applicant requests a rezoning of 25.3 acres to Planned Mixed Use and approval of a Basic Development Plan to facilitate the construction of up to 320 residential units (1- and 2-bedroom apartments) on approximately 21.3 acres and approximately 4 acres for commercial / retail uses.

The applicant recently completed the Parkview Apartments near Executive Blvd. and Brandt Pike. That project has been extremely successful and the applicant has been in discussions with the city for quite some time regarding this development, and the city's desire to see additional housing units support the burgeoning entertainment district anchored by the Rose Music Center.

Other entertainment uses include TJ Chumps and Warped Wing, which is under construction. The current Community Entertainment District boundary does not include this site, but may be extended in the near future to capture this proposed commercial area, as well as Warped Wing to the west.

Site Characteristics

The overall site is bisected by a natural stream (non-delineated) which effectively creates two residential sites above and below the stream, and one commercial area above the stream. The developer has chosen to maintain the stream as a natural amenity and develop the area with a 70-foot stream protection buffer, typical best practice developments along waterways. Staff is very supportive of maintaining the natural stream feature.

The site has access to all utilities along Executive Blvd.

Applicable Zoning Regulations

This application is the first step in the development process and the Basic Development Plan sets the following parameters:

- Allowable Uses
- Site Density
- Development parameters (general layout, setbacks, height, massing)
- Pedestrian and vehicular connections

The applicant is proposing a comprehensive set of development standards. The staff analysis focuses on the conformity of the proposed development regulations to those found within the zoning code. Since this is a Basic Development Plan, not all development information is required, such as detailed lighting and landscaping plans.

The applicable zoning chapters include: 1171 General Provisions, 1179 Planned Mixed Use, and 1181 General Provisions.

Chapter 1171 General Provisions

1171.01 Purpose.

Planned Unit Developments Districts may be permitted as amendments to the zoning map, after application and approval of specific and detailed plans, where tracts suitable in location and character for the uses and structures proposed are to be planned and developed as units. The provisions of this chapter are adopted to unify planning and development in such districts. Applications for rezoning of land into a Planned Unit Development District shall be granted only when the basic development plan for the project is such that the public health, safety and morals shall not be jeopardized by a departure from the restrictions on corresponding uses in the standard zoning district. PUD rezonings may be approved only when a basic development plan for the area has been approved by Council. A detailed development plan shall then be approved for zoning permit to be approved for development in the District. Normally the detailed development plan shall be approved by the Planning Commission after the rezoning and basic development plan have been approved by Council. Owners shall have the option however, of submitting a combined basic and detailed development plan ("combined development plan") if they should so desire for some or all of the site.

1171.05 Contents of basic development plan.

(a) The basic development plan shall consist of at least the following information together with such other data and materials as may be required by the City:

(1) Site plan showing the actual shape and dimensions of the lot to be built upon or to be changed in its use together with the location of the existing and proposed structures with approximate square footages, number of stories including heights of structures;

(2) Typical elevation views of the front and side of each type of building;

(3) Planning location and dimensions of all proposed drives, service access road, sidewalks and curb openings;

(4) Parking lot areas (show dimensions of a typical parking space), unloading areas, fire lanes and handicapped parking;

(5) Landscaping plan, walls and fences;

(6) Storm water detention and surface drainage;

(7) Exterior lighting plan;

(8) Vehicular circulation pattern;

(9) Location and square footage of signs;

(10) Topographic survey; and

(11) Listing of proposed uses taken from the list of permitted and special uses of the PUD zoning district to which rezoning is being sought.

(b) The Planning Commission shall schedule both the proposed rezoning and the issue of approval of the basic development plan for a combined public hearing, following which it shall make its recommendation indicating approval, approval with modification or disapproval.

Chapter 1179 (PM) Planned Mixed Use District

1179.01 - Purpose

The Planned Mixed-Use District (PM) is established to promote multi-use development where a citizen can work, shop, play, and live within a planned neighborhood. This planning concept allows uses that typically are separated by traditional zoning to be part of an overall multiple use design concept allowing each use to complement another. By permitting residential, commercial, office, and institutional uses in the same district with the proper use of landscaping, buffering, access points, and parking, a PM development can provide a well balanced community for residents, visitors, and employees and provide unique characteristics that traditional land use planning often neglects. The PM also promotes different land uses that may act as transitional zoning between conflicting land use zones.

1179.02 - Permitted uses.

The uses outlined as permitted uses in the (PR) Planned Residential District, (PO) Planned Office District, (PP) Planned Public and Private Buildings and Grounds District, and (PC) Planned Commercial District are principal uses permitted in the (PM) Planned Mixed Use District except as prohibited in this chapter.

1179.03 - Accessory uses.

The uses outlined as accessory uses in the (PR) Planned Residential District, (PO) Planned Office District, (PP) Planned Public and Private Buildings and Grounds District, and (PC) Planned Commercial District are accessory uses permitted in the (PM) Planned Mixed Use District except as prohibited in this chapter.

1179.04 - Special uses.

The following shall be permitted as special uses:

(a) Places of worship.

(b) Fraternal organizations, service clubs and other nonprofit organizations in accordance with the provisions of Chapter 1135. In addition to the criteria set forth in Chapter 1135, the parking requirements may have to be reviewed yearly as determined by the Planning Commission.

(c) Service stations and filling stations.

(d) Light manufacturing, compounding, processing, assembling, packaging or treatment of goods, materials and products.

(e) Commercial printing and publishing.

(f) Technical services and professional offices, including, but not limited to architects, engineers, surveyors, data processing facilities, testing laboratories and technical schools.

(g) Any use the principal function of which is basic research, design and/or pilot or experimental product development or technical training.

(h) Business and industrial service facilities.

(i) Laboratories: experimental, film, testing, research or engineering.

(j) Computer-communications hardware assembly, testing and operation; development, testing, operation and maintenance of software; and communications services and facilities that are incidental to the principal use.

(k) Medical, dental and optical manufacturing.

1179.05 - Prohibited uses.

The following uses are specifically prohibited:

(a) Bingo Establishments and Instant Bingo Facilities;

(b) Kennels, unless as an accessory use to a veterinarian;

(c) Cemeteries;

(d) Airports;

(e) Blacksmith shops;

(f) Machine shops, sheet metal and commercial painting shops;

(g) Lumber yards;

(h) Establishments for display, hire, sale and repair of farm implements, semi-tractors, and semi-trailers;

(i) Truck stops or service stations servicing and/or repairing semis, semi-tractors and semi-trailers;

(j) Parking of semis, semi-tractors and semi-trailers except for the purposes of loading or unloading and located in a designated loading space for a reasonable length of time necessary to load or unload;

(k) Sexually oriented businesses;

(l) Outside storage except for trash containers or recycling containers that are screened as required by this chapter;

(m) Above ground parking garages.

1179.06 - Development standards.

Except when specifically modified herein, the provisions of the Planning and Zoning Code shall govern. The following development standards apply to a PM development:

(a) Minimum Land Area Requirement. A minimum of 20 acres shall be required.

(b) Covenants. The developer of a PM development shall be required to submit a set of covenants or deed restrictions with the Basic Development Plan application that will outline, at a minimum, development standards and guidelines established in this chapter and any other requirements the developer and/or Planning Commission deems necessary. The Planning Commission may require additional or amended covenants as it deems necessary to ensure compliance with the Planning and Zoning Code and the Planned Mixed-Use District.

(c) Required Mix of Land Uses. A developer shall be required to provide a mix of land uses in a PM Development. At a minimum, at least two of the following uses are required in a PM Development: residential, commercial, office, institutional, and/or industrial.

(d) Site Planning.

(1) The combination of different uses whether as part of one building or as part of the overall development shall be designed and developed so as not to create a nuisance by excessive noise, light, vibration, odor or any other annoyances for any uses within the development or neighboring properties.

(2) A PM development is to be designed so that buildings and structures are clustered and open space areas are preserved and maintained. Special care shall be given to protect preexisting natural features including, but not limited to, woodlands, ravines, streams, lakes, ponds, and/or flood plains. Impervious surface coverage, including, but not limited to, buildings, parking area, and accessways, shall not exceed 75 percent of the total development area. Therefore, 25 percent of the development area shall be reserved for green space.

(3) The number of ingress and egress points onto the public streets shall be limited in order to reduce the number of traffic conflict points. Adequate and properly arranged facilities for internal pedestrian and traffic circulations shall be provided. The street and thoroughfare network shall be designed to minimize truck traffic through residential areas of the development.

(4) Parking systems shall be designed so as to discourage single large unbroken paved lots for off-street parking and shall encourage smaller defined parking areas within the total parking system. Underground parking facilities are encouraged.

(5) The development shall be designed to tie all the uses into one overall community and encourage walking, biking, running, and alternative modes of transportation. Developers are encouraged to incorporate bus stops, bikeways, walkways, and crosswalks into an overall thematic scheme for pedestrian traffic. Sidewalks shall be required except, in the case of a golf course or specific open space development, the Planning Commission may determine them to be unnecessary.

(6) Any signs as proposed within this district, shall comply with Chapter 1189 "Signs". Additionally, a developer of a PM development shall develop and submit with the Detailed Development Plan application, a comprehensive set of graphic design criteria for signage in the development. This set of graphic design criteria for signage shall be approved by the Planning Commission and shall apply to all signage requests within the development. The criteria shall include, at a minimum, the sizes permitted (if different from Chapter 1189), colors permitted, materials permitted, typefaces permitted, type size permitted, and permitted illumination. Compliance with the on-site comprehensive graphics shall be verified by the Zoning Administrator during the sign permit review process.

(7) Minimum lot area, frontage and setback requirements may be varied to allow greater flexibility in design. However, the following shall be used as a guideline for development:

A. With multiple buildings on a single property, entirely residential buildings shall be at least 15 feet from another entirely residential building and at least 50 feet from nonresidential or mixed-use buildings.

B. With multiple buildings on a single property, nonresidential buildings or mixed-use buildings shall be at least 20 feet or one-half the height of the taller building apart, whichever is greater from another nonresidential or mixed-use building.

C. All nonresidential buildings or mixed-use buildings shall be set back at least 50 feet or the height of the structure, whichever is greater, from any residential property or residential building, whichever is closer, and from the public right-of-way. This setback applies to multiple buildings on a single property, to development within a PM development, and where it abuts to adjacent property.

(8) No maximum height restriction shall apply, except that the proposed development meets all Federal Aviation Administration (FAA), Dayton International Airport or Wright Patterson Air Force Base height or abatement requirements

(9) Common parking areas and accessways shall be lighted adequately with light fixtures that shall be designed to reflect light away from adjoining properties. Special attention will be given to protect entirely residential structures from light emitted from nonresidential land uses.

(10) Nonresidential uses shall have trash containers and/or receptacles (including recycling containers) placed to the rear of all structures and shall be screened or enclosed on four sides with opening doors for the purpose of trash removal. The placement of trash containers and/or receptacles in multi-family residential developments shall be as inconspicuous as possible. The use of a wooden or vinyl fence structure, earth mound, or wall with an opaqueness of 100 percent and a height of 12 inches above the top of the largest container is required.

(11) The architecture of nonresidential structures is encouraged to be unique yet similar in certain sections of the PM.

(12) The distribution systems for utilities are required to be underground.

(13) The use of privately owned open space and public dedicated park land is encouraged as part of a PM development. Privately owned open space shall be maintained by the developer or by a duly authorized owner's association.

(14) The use of chain link fencing is prohibited. Additionally, on an entirely residential property, no fencing shall be permitted in the front yard, and, in the case of a corner lot, no fencing shall be permitted in the side yard with frontage to a public right-of-way. The covenants submitted by the developer shall establish the height requirements for fencing in the development. Fencing in a development shall be

uniform in height in related use areas. On an entirely residential property, fence height shall not exceed six feet.

(15) With the submission of a Basic Development Plan application, the applicant is required to submit a phasing plan that details when certain sections of the development will commence construction and when the sections will be complete.

1179.07 - Landscaping.

To protect and promote a harmonious development that ensures a functional and logical arrangement of mixed uses, the effective and efficient use of landscaping and buffering is required. Therefore, a PM development shall include the following landscaping and buffering:

(a) Development Landscaping. Within the PM development that is proposed, entirely residential buildings shall be screened from nonresidential and mixed-use buildings with a 20 foot wide buffer strip that includes a six foot high earth mound, wooden or vinyl fence, wall, landscaping and/or mixture thereof that shall maintain an opaqueness of at least 80 percent year around. Parking areas, accessways, or any impervious surfaces are prohibited within this buffer strip. If planted materials are used, the screen must achieve the required height, width, and opaqueness within two years of planting. The use of pre-existing trees, natural features or amenities as part of this buffer is encouraged. The Planning Commission may approve some other arrangement of buffering if it determines that such an arrangement meets the intent of this requirement.

(b) Perimeter Landscaping. In a section of a PM development that contains nonresidential, mixed use, or multi-family buildings that abut a neighboring property with a single-family residential zoning designation or in a PM development section that contains an entirely residential section that abuts a neighboring property with a commercial, office, or multi-family zoning designation, the perimeter of the section of the PM development shall be screened with a 25 foot wide buffer strip that includes a six foot high earth mound, wooden or vinyl fence, wall, landscaping and/or mixture thereof that shall maintain an opaqueness of at least 80 percent year-round. Parking areas, accessways or an impervious surfaces are prohibited within this buffer strip. If planted materials are used, the screen must achieve the required height, width, and opaqueness within two years of planting. The use of pre-existing trees, natural features or amenities as part of this buffer is encouraged. The Planning Commission may approve some other arrangement of buffering if it determines that such an arrangement meets the intent of this requirement.

(c) Parking Lot Landscaping. All parking lots are required to have interior landscaped areas as outlined in Chapter 1185, "Parking and Loading".

(d) Street Tree Requirement. All frontage property within a PM development that abuts public rights-of-way and is developed with nonresidential, mixed use, and/or multi-family buildings is required to have one street tree per 40 feet of frontage planted just outside of the street right-of-way. Unless determined to be inappropriate by the City Engineer, street trees shall be planted at least four feet from the edge of the sidewalk on private property. All frontage property within a PM development along a major collector or better as defined by the Huber Heights Thoroughfare Plan, no matter what use, shall meet this requirement. The type of tree and size shall be proposed by the developer at the Detailed Development Plan application stage and approved by the Planning Commission. A list of appropriate trees with required caliper is available in the City Engineer's Office.

1179.08 - Parking and loading.

The provisions of Chapter 1185, "Parking and Loading" shall apply, except that the off-street loading spaces and docks shall be provided with area, location and design appropriate to the needs of the development and specific uses within it, and the space designated for off-street loading shall not be used for off-street parking. Within the PM development, off-street loading areas shall be physically isolated and/or enclosed from residences in or adjacent to the PM Development. In all cases, off-street loading spaces and docks are prohibited in the front and side yards of any property.

1179.09 - Planning commission/city council review

All requirements within this chapter are to be used as guidelines and may be varied as part of the Basic or Detailed Development Plan approval if it is determined that such deviation will not adversely affect neighboring properties or the community as a whole. Additionally, any variation of these requirements shall, in no case, change the overall plan and character of the proposed development.

Chapter 1181 General Provisions

1181.17 Street trees.

Any property that is zoned commercial, industrial, institutional or multi-family and that abuts a public street right-of-way and is being developed shall have one street tree per 40 feet of frontage planted at least four feet from the edge of the sidewalk on private property as determined appropriate by the City Engineer. If the location of the proposed street trees is determined inappropriate by the City Engineer, the City Engineer shall determine a location that is appropriate for the planting of the street trees. The City Engineer shall also approve the type of and the caliper of street trees that are to be planted. A list of appropriate trees and required caliper is available in the City Engineer's office.

1181.18 Screening of service structures.

Service structures shall be screened in all zoning districts. For the purposes of this section, service structures shall include but not be limited to loading docks, storage tanks, dumpsters, electrical transformers, utility vaults which extend above the surface, cooling towers, roof top units and other equipment or elements providing service to a nonresidential (excluding agricultural uses) or multi-family building or site. Structures may be grouped together; however, screening height shall be based upon the tallest of the structures. Service structures located in the public right-of-way or public right-of-way easement shall be exempt from these provisions.

(a) Screening Requirements.

(1) Rooftop utilities screening. All mechanical equipment located on the roof or around the perimeter of the building shall be screened by the following means and with materials that are comparable and compatible with that of the exterior building materials. Roof top mechanical units must be screened to the full height of the unit and also be fully screened from view from surrounding public rights-of-way. A sight distance analysis may be required by the City to determine the necessary height or design of rooftop utilities screening. If due to factors unique to the property or the project, it is physically impossible or impractical to screen these utilities, the Board of Zoning Appeals, may approve alternative solutions that render them aesthetically compatible with the principal structure, except for development within a planned unit development district for which the Planning Commission would have authority to approve any alternative solutions.

A. A raised parapet or other architectural feature is an integral part of the building as a method of screening for rooftop mechanical equipment or to soften rooftop view.

B. Screening for rooftop mechanical equipment shall incorporate similar architectural features of the building and/or be constructed of a material and color compatible with other elements of the building.

(2) Waste Handling Screening. All waste, recycling and related handling equipment shall be stored and kept in four-sided enclosure constructed of a brick, stone, decorative concrete material or a material compatible with the material of the principle structure.

A. Curbs to protect screening material. Whenever screening materials is placed around any trash disposal unit or waste collection unit which is emptied or removed mechanically on a regularly

occurring basis, a curb to contain the placement of the container shall be provided within the screening material on these sides where there is such material. The curbing shall be at least one foot from the material and shall be designed to prevent possible damage to the screening when the container is moved or emptied.

(3) Screening of other service structures. A continuous (having 100 percent opacity) planting, hedge, fence, wall of earth, which would enclose any service structure on all sides is required, unless such structure must be frequently moved, in which case screening on all but one side is required. The height of the screening material shall be one foot more than the height of the enclosed structure, but shall not be required to exceed 12 feet in height. Whenever a service structure is located next to a building wall or landscaping material, such walls or screening material, may fulfill the screening requirement for that side of the service structure if that wall or screening material is of sufficient height to meet the height requirement set out in this section. Plant material used to screen a service structure shall be an evergreen species which retains its needles throughout the year. Deciduous plant material cannot be used to fulfill this screening requirement. The height of the evergreen plant material at installation must be equal to, or greater than, two-thirds of the height of the service structure(s), and meet the height and opacity requirements within four years.

1181.21 Lighting standards.

(a) Intent. This section intends to regulate outdoor lighting in order to: establish appropriate minimum levels of illumination, prevent unnecessary glare, and reduce both spill-over onto adjacent properties and unnecessary transmission of light into the night sky. It is not intended to eliminate the need for an applicant to seek professional assistance to determine appropriate lighting for the use and design proposed.

(b) Approved Lighting Plan. Whenever the installation or modification of outdoor lighting is proposed or, for a commercial, industrial, multi-family or special use of a site plan approval, the enforcing officer shall review and approve all proposed lighting as part of the approval process. These standards shall also apply to modifications to existing lighting fixtures, whether or not site plan approval is required.

(1) A lighting plan submitted for review shall contain the following:

A. A site plan showing the location of all existing and proposed buildings, landscaping, streets, drives, parking areas and exterior lighting fixtures;

B. Specifications for all proposed and existing lighting fixtures. These include: photometric data, fixture height, mounting and design, glare control devices, type and color rendition of lamps, and hours of operation. A photometric plan illustrating the levels of illumination at ground level shall account for all light sources that impact the subject site, including spill-over illumination from neighboring properties; and

C. Relevant building elevation drawings showing all fixtures, the portions of the walls to be illuminated, illuminance levels of walls and the aiming of points of any remote fixtures.

(2) A proposed lighting plan shall be reviewed based upon the following considerations:

A. Whether the lighting is designed to minimize glare;

B. Whether light will be directed beyond the boundaries of the area to be illuminated or onto adjacent properties or streets;

C. Whether the lighting will cause negative impacts on residential districts and uses;

D. Whether the plan will achieve appropriate levels of illumination for the use proposed;

E. Whether the lighting is in harmony with the character of the surrounding area and the illumination levels of neighboring properties; and

F. Whether the lighting is in keeping with the city' s goal of prohibiting unnecessary illumination of the night sky.

(c) Required Conditions. When site plan or zoning permit approval is required for the installation or modification of exterior lighting, the following conditions shall apply:

(1) Light fixtures shall not be mounted in excess of the maximum height limitation of the district in which they are located. Those maximum heights are listed below:

•	*B-1, B-2, B-3, and EP*	*25' maximum mounting height*
•	*O-1*	*20' maximum mounting height*
•	*I-1 and I-2*	*35' maximum mounting height*
•	*Planned Unit Developments*	*Established by the City at the detailed plan approval stage (if not addressed, maximum mounting height shall be 25')*

Electrical service to light fixtures shall be placed underground.

(3) No flashing lights or intermittent illumination shall be permitted.

(4) Glare control shall be accomplished primarily through the proper selection and application of lighting equipment. Only after those means have been exhausted shall landscaping, fencing and similar screening methods be considered acceptable means for reducing glare.

(5) Outdoor lighting shall be designed to achieve uniform illumination levels. The ratio of the average light level of the surface being lit to the lowest light level of the surface being lit, measured in foot-candles, shall not exceed 4:1. One foot-candle is equal to the amount of light generated by one candle shining on a square foot surface one foot away. The average illumination is determined by: adding the foot-candle value of all the points in the photometric grid, and dividing the sum by the total number of points.

(6) The use of true color rendering lamps, such as metal halide, is required instead of the utilization of high and low pressure sodium lamps.

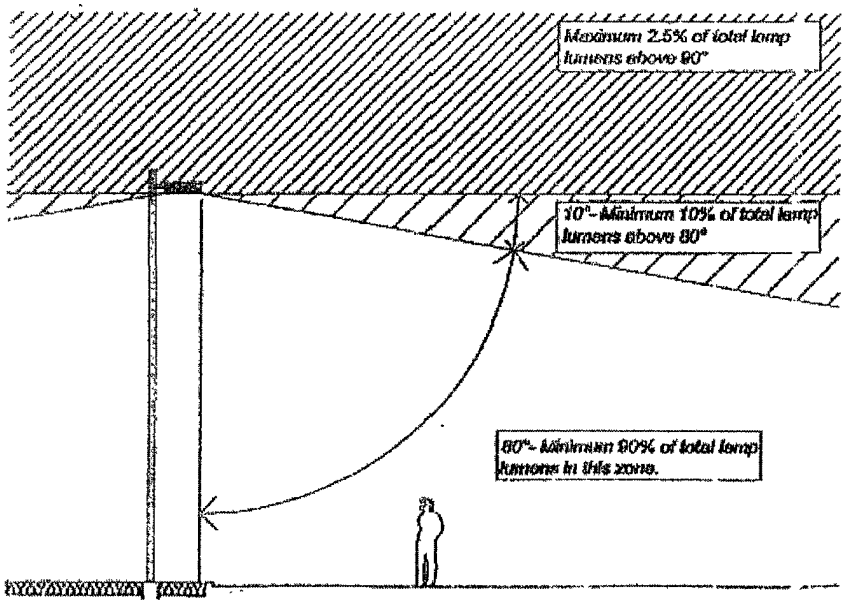
(7) Only necessary lighting for security purposes and limited operations shall be permitted after a site's hours of operation.

(8) Lighting for security purposes shall be directed only onto the area to be secured.

A. All fixtures shall be located, shielded and aimed so that light is not cast toward adjacent properties or streets or unnecessarily transmitted into the night sky.

B. Fixtures mounted on the building and designed to illuminate the facade are preferred.

(9) Parking lot lighting shall be designed to provide the minimum illumination necessary to ensure adequate vision and comfort in parking areas. Full cut-off fixtures shall be used to prevent glare and direct illumination away from adjacent properties and streets. Designs that result in even levels of illumination across a parking area are preferred

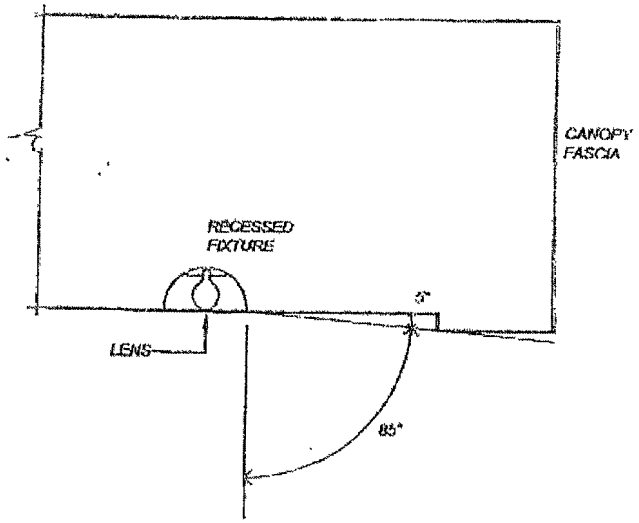


Cut-off fixture as defined by IESNA.

(10) The illumination of gasoline service stations and convenience stores shall be the minimum level necessary to facilitate such uses. Unnecessary lighting for the purposes of attraction and advertising shall not be permitted.

A. Areas away from gasoline pump islands that are used for parking and vehicle storage shall be illuminated in accordance with the parking area requirements of subsection (9) above.

B. Light fixtures mounted on canopies shall be recessed or flush with the bottom of the canopy. Where a drop-down fixture is used, the lens shall be flush with (i.e., no more than one inch beyond) the casing so that light is directed down and not sideways. All canopy lighting shall be shielded to provide a cut-off angle of 85 degrees. Fixtures shall not be mounted on the top or sides of canopies.



This illustration provides an example of a fixture with an 85-degree cut-off. Other designs that achieve the same cut-off requirement are also acceptable.

Chapter 1182 Landscaping and Screening Standards

1182.01 General information.

(a) Applicability. All of the requirements of this chapter of the Zoning Code are applicable to all new developments located in all zoning districts except for those located in ER, R-1, R-2, R-3, R-4, R-4B, RMV, A, WO, and C districts. For new developments located in ER, R-1, R-2, R-3, R-4, R-4B, RMV, A, WO, and C districts, only the requirements listed in the schedule of required buffers, detailed in figure 4 in Section 1182.05, shall apply. Property owners are under a continuing obligation to ensure that their property is maintained in accordance with these requirements.

(b) Application Process. For PUD applications and standard zoning permit applications certain landscape information must be provided.

(1) In a PUD application, proposals in the re-zoning and basic development plan stage need to illustrate conceptual buffering and screening requirements on the basic development plan.

(2) In a PUD application in the detailed development plan stage and final plat stage, a detailed landscape plan shall be submitted as outlined in 1182.02.

Chapter 1185 Parking and Loading

1185.02 Off-street parking standards.

(a) General Standards. Off-street parking facilities shall be used solely for the parking of motor vehicles except as otherwise permitted in this chapter. Other approved accessory structures such as landscaping islands, light poles, shopping cart racks, and ATMs are considered as part of the off-street parking facilities. All motor vehicles shall be in operating condition by persons on the premises in connection with any use of the premises allowed by the Zoning Ordinance.

(b) Parking of motor vehicles on a residentially zoned premises shall be on a continuous hard surface, as defined by the term "hard surface driveway" in Chapter 1123.

(c) Garage sales may be conducted on off-street parking facilities located on a residentially zoned premises.

(d) Festival and fund-raising activities sponsored by nonprofit organizations, as well as activities/events organized by government agencies, may be conducted on off-street parking facilities.

(e) Planned unit developments may be approved to permit other uses of off-street parking facilities.

1185.03 Size and design.

(a) Off-street parking spaces shall meet or exceed the minimum design standards for parking lot layouts as set forth in this chapter. The minimum size for an off-street parking space shall be 18 feet in length by ten feet wide.

(b) Off-street parking requirements and limitations for semis are defined in HHCO Chapter 1193.

(c) Minimum Design and Construction Standards.

(1) Off-street parking may be open to the sky, or enclosed in a building or structure, either above or below ground. Off-street parking areas shall meet City and, as set forth by the City Engineer, Southwest Ohio Engineers Association (S.W.O.E.A) standards. Such standards shall include, but not be limited to, driveway widths, island design, curbs, barriers, grades, turning radii, vertical clearance, stacking, and waiting areas and drainage.

(2) Nonresidential uses (including multi-family residential uses).

A. Each off-street parking space shall open directly into an aisle or driveway of adequate width and design for safe and efficient vehicular access to the parking space. No parking space shall open directly onto any public street.

B. An aisle or driveway shall not be used for parking of vehicles.

C. All off-street parking areas shall be graded and have a continuous hard surface of asphalt or concrete. When approved by the City Engineer the off-street parking areas for impound lots, junked vehicle yards, dormant semi-truck parking areas, and certain storage areas may be composed of granular aggregate and a double chip seal or a fabric type pavement with aggregate base and surface stabilization or a slurry seal pavement with aggregate base as shown on the attached sketches. A chip sealed lot or a slurry seal lot or a fabric type lot shall be resealed at a minimum of five-year intervals or as designated by the City Engineer.

1185.06 Landscaping required.

All parking lots exceeding 20 parking spaces shall have interior landscaped areas in the overall design. This requirement shall be satisfied only by those landscaped areas encompassed by the perimeter of the parking lot. Required parking or paving setbacks, screening areas, or other landscaping required by this Zoning Ordinance shall not be utilized to meet any requirement of these landscaping provisions.

(a) Any parking lot having a capacity of at least 20 parking spaces shall be required to have not less than five percent of the interior of the parking lot landscaped.

(b) The landscaped area shall include at least one tree (not less than one and three-fourths inch caliper, measured at chest height of a species approved by the City Engineer or his designee) for every 100 square yards of interior landscaped area, living plantings aesthetically located and maintained.

(c) All landscaped areas shall be designed and located in a manner that clearly defines internal streets, traffic lanes and parking areas and to standards acceptable to the Department of Engineering, Zoning and Planning.

(1) Landscaped areas shall have a minimum width of five feet.

(2) A turning radius shall be constructed where a landscaped area defines an intersection of streets, traffic lanes or parking stalls.

(3) Concrete curbing shall be placed around the perimeter of all landscaped areas.

(4) Intersection sign distance shall be maintained at all entrance and exit points to a public street and all internal intersections of streets and traffic lanes.

1185.12 Computation.

(a) Number of Spaces Rounded Up. When determination of the number of off-street parking spaces required by this chapter results in a fraction that is less than a whole, such fraction shall be rounded up to a whole number and counted as one parking space.

(c) Number of Parking Spaces Required.

(1) Residential uses.

A. Single-family or two-family residential with a date of final plat approval after the 31st day of December, 1990: three spaces per dwelling unit.

B. Planned Unit Development (PUD) with a date of detailed development plan approval 31st day of December, 1990: three spaces per dwelling unit.

C. Multi-family residential: two spaces per dwelling unit.

Standards for Approval

1171.06 – General Standards For Approval

The Planning Commission shall review the application, prepared development plan and the facts presented at the hearing. The applicant shall have the burden of proof. No approval shall be given unless the Commission shall find by a preponderance of the evidence that such PUD on the proposed locations:

(a) Is consistent with official thoroughfare plan, comprehensive development plan and other applicable plans and policies;

(b) Could be substantially completed within the period of time specified in the schedule of development submitted by the developer;

(c) Is accessible from public roads that are adequate to carry the traffic that shall be imposed upon them by the proposed development. Further, the streets and driveways on the site of the proposed development shall be adequate to serve the residents or occupants of the proposed development;

(d) Shall not impose an undue burden on public services such as utilities, fire and police protection, and schools;

(e) Contains such proposed covenants, easements and other provisions relating to the proposed development standards as may reasonably be required for the public health, safety and welfare;

(f) Shall be landscaped or otherwise improved and the location and arrangement of structures, parking areas, walks, lighting and appurtenant facilities shall be compatible with the existing intended uses, and any part of a PUD not used for structures, parking and loading areas, or accessways;

(g) Shall preserve natural features such as water courses, trees and rock outcrops, to the degree possible, so that they can enhance the overall design of the PUD;

(h) Is designed to take advantage of the existing land contours in order to provide satisfactory road gradients and suitable building lots and to facilitate the provision of proposed services;

(i) Shall place underground all electric and telephone facilities, streetlight wiring and other wiring conduits and similar facilities in any development which is primarily designed for or occupied by dwellings, unless waived by the Commission because of technical reasons;

(j) Shall not create excessive additional requirements at public cost of public facilities and services and shall not be detrimental to the economic welfare of the community;

(k) Shall not involve uses, activities, processes, materials, equipment and conditions of operation that shall be detrimental to any persons, property or the general welfare by reason of excessive production of traffic, noise, smoke, fumes, glare or odors; and

(l) Rezoning of the land to the PUD District and approval of the development plan shall not adversely affect the public peace, health, morals, safety or welfare.

Staff Analysis

The analysis below is divided into two discussions: the rezoning analysis and the conformance with the zoning regulations.

Rezoning Analysis:

The applicant desires to rezone the property from PEP to PM for the purpose of constructing up to 320 residential units and commercial / retail uses. The nature of this area is evolving to a residential and entertainment district. This movement is being facilitated by market forces as well as large community investments such as the Rose, Warped Wing and TJ Chumps. This application is consistent with the evolving nature of the area and the residential component will accelerate the development of a district with a critical mass to sustain additional entertainment uses such as restaurants, taverns and breweries.

Conformance with Comprehensive Plan

The city's comprehensive plan indicates the site is located in a "Grow and Enhance" character area. Growth areas are those locations within the city where economic development and mixed uses should be encouraged, and low-density residential developments discouraged. These areas are the future economic and entertainment engines of the city.

Staff feels the rezoning from PEP to Planned Mixed Use is consistent with the comprehensive Plan. Additionally, this development provides a high-density residential product (14.6 units/acre) which will help add to the critical mass needed to support the commercial and retail components of the entertainment district.

Conformance with Zoning Regulations:

The development standards proposed by the applicant are nearly identical with the development requirements found in the Planned Mixed-Use District and the overall zoning code. Only areas of deviation are discussed in this analysis:

1179 (PM) Planned Mixed Use

Uses: The proposed uses are more restrictive than those outlined in the zoning code, such as the prohibition of fueling stations. Staff worked with the applicant to construct

the list of permitted and prohibited uses. This use list is designed to enhance the residential and entertainment district and limit or prohibit uses that may detract from the long-term success of the area.

Site Planning: The development standards allow for buildings to be spaced at a distance of no less than 6-feet between each other. The zoning code suggests spacing of 15-feet. Staff is comfortable with the 6-feet minimum spacing. This spacing meets fire code requirements. Additionally, this is a challenging site due to the bisecting stream which significantly restricts building placement.

Chapter 1181 General Provisions

The proposed development standards meet most of the General Provision requirements. However, since this is a Basic Development Plan, there is not enough detail required to fully evaluate the consistency. This will be reviewed with the Detailed Development Plan submission.

Chapter 1182 Landscaping and Screening Standards

The Basic Development Plan and proposed development plan are largely consistent with the landscaping and screening requirements. One area of divergence is the buffering between the development and the residential district to the north. The zoning code requires a 25-foot buffer strip with 6-foot high screening (mound, fence, landscaping, etc.) with 80% opacity.

The applicant is proposing a 25-foot building setback, which is consistent with the code. They are also proposing to use a mixture of landscaping and the garage buildings to provide the necessary opacity to reduce headlight trespass from impacting the north residents.

The site currently has natural vegetation along the rear property line that is approximately 25-feet wide. If the required grading can avoid removing significant existing trees, then staff is comfortable with this buffing plan. At this point in the development process, the final grading plans are still being developed and the impact to the existing treeline will not be known until the detailed development plan submission.

Chapter 1185 Parking and Loading

The applicant is proposing residential parking stalls dimensions of 9’ x 18’. The zoning code requires 10’ x 18’. The applicant is proposing 663 spaces, 640 are required. Staff supports this deviation in parking stall size due to the site constraints. Constructing 10’ x 18’ stalls will reduce the number of parking spaces by approximately 60 spaces.

Additional Comments:

Fire: See Attached.

City Engineer: The engineer had no comments at this point in the review process.

Recommendation

Staff is fully supportive of the rezoning and the development standards being proposed in the Basic Development Plan. The standards and site plan proposed by the applicant are consistent with the zoning code and comprehensive plan.

This development will provide needed housing products in Huber Heights and help develop the critical mass necessary to support the entertainment area.

Staff recommends the following conditions:

1. The Basic Development Plan and Zoning Regulations shall be those submitted with the application dated January 30, 2023.
2. The northern property buffering requirements shall be determined during the detailed development plan review.

Planning Commission Action

Planning Commission may take the following actions with a motion to:

1) Approve the rezoning and basic development plan application, with or without conditions.
2) Deny the basic development plan.
3) Table the application in order to gather additional information.

Planning Commission Decision Record

WHEREAS, on January 30, 2023, the applicant, Metropolitan Holdings, LTD, requested approval of a Rezoning to PM (Planned Mixed Use) and a Basic Development Plan of a proposed new 320 unit multi-family project. Property is located at 6801 Executive Boulevard, further identified as Parcel Numbers P70 01820 0003 and P70 01820 0004 of the Montgomery County Auditor's Map (Case BDP 23-02), and;

WHEREAS, on February 14, 2023, the Planning Commission did meet and fully discuss the details of the request.

NOW, THEREFORE, BE IT RESOLVED that the Planning Commission hereby recommended approval of the request.

moved to approve the request by the applicant, Metropolitan Holdings, LTD, for approval of a Rezoning to PM (Planned Mixed Use) and a Basic Development Plan of a proposed new 320 unit multi-family project. Property is located on 6801 Executive Boulevard (Case BDP 23-02), in accordance with the recommendation of Staff's Memorandum dated February 9, 2023, with the following conditions:

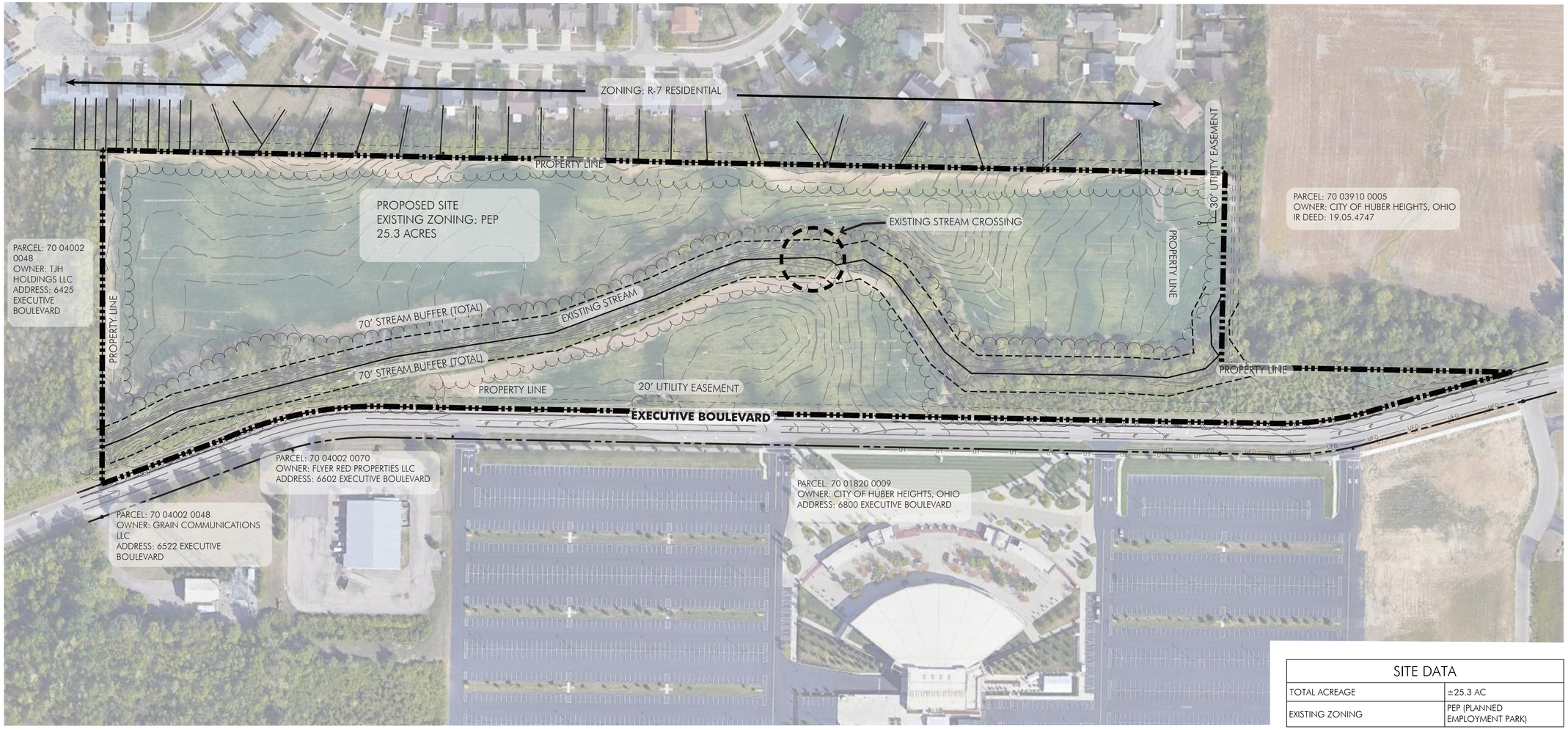
1. The Basic Development and Zoning Regulations shall be those submitted with the application dated January 30, 2023.
2. The northern property buffering requirements shall be determined during the detailed development plan review.

Seconded by Roll call showed: YEAS: NAYS: Motion to recommend approval carried .

_____ _____

Terry Walton, Chair Date
Planning Commission

Vicinity Map
N.T.S.



SITE DATA	
TOTAL ACREAGE	±25.3 AC
EXISTING ZONING	PEP (PLANNED EMPLOYMENT PARK)

Existing Conditions Plan
SCALE: 1" = 100'-0"

0 25 100 200

Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square, Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name

Newbauer Development Project

Executive Blvd.

Huber Heights, Ohio 45424

Prepared For

Metropolitan Holdings
1429 King Ave
Columbus, Ohio, 43212

Project Info

Project #	21082
Date	01/20/2023
By	NM/RY/TF
Scale	As Shown

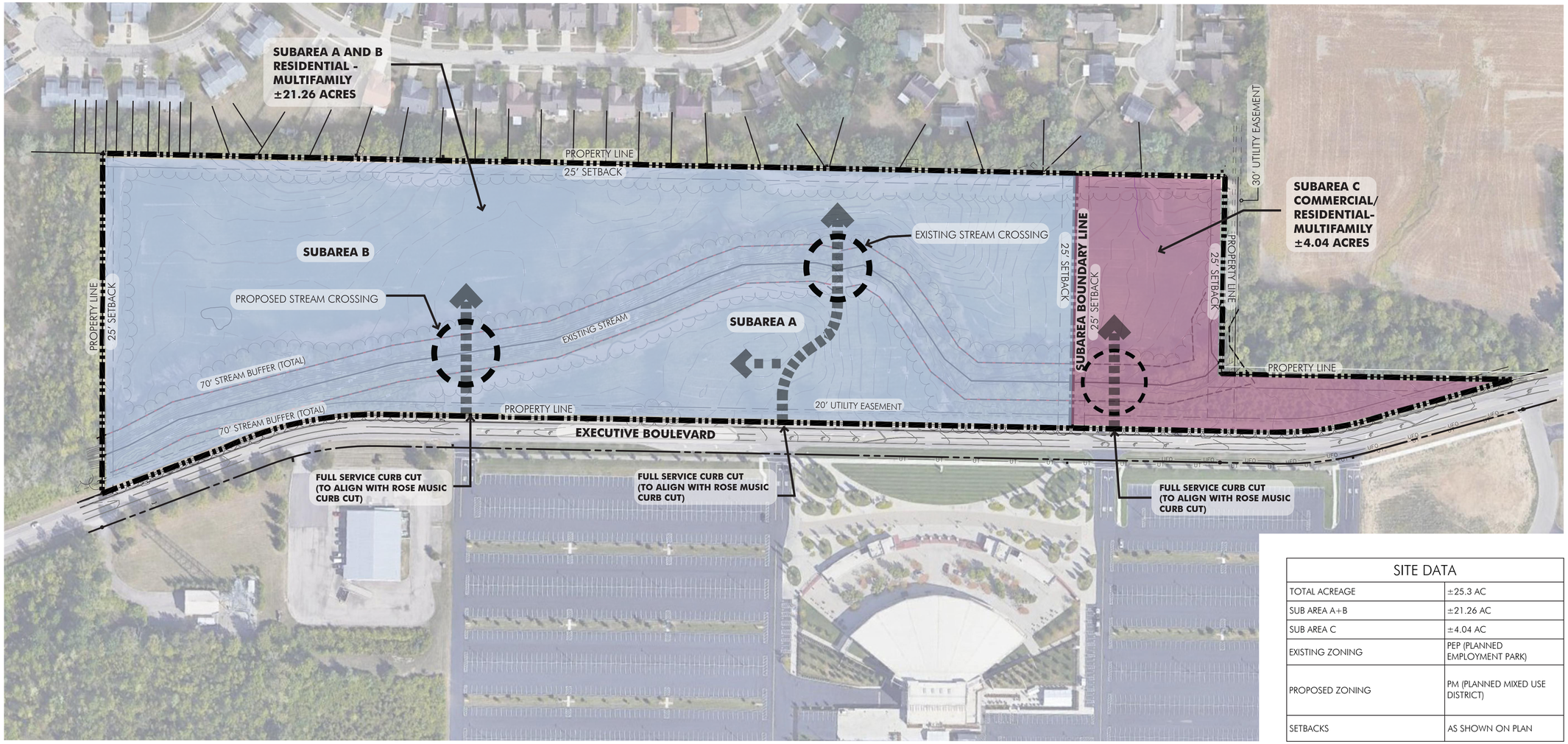
Revisions

Sheet Title

EXISTING CONDITIONS PLAN

Sheet #

L1.0



SITE DATA	
TOTAL ACREAGE	±25.3 AC
SUB AREA A+B	±21.26 AC
SUB AREA C	±4.04 AC
EXISTING ZONING	PEP (PLANNED EMPLOYMENT PARK)
PROPOSED ZONING	PM (PLANNED MIXED USE DISTRICT)
SETBACKS	AS SHOWN ON PLAN

BASIC DEVELOPMENT PLAN
SCALE: 1" = 100'-0"

0 25 100 200

POD design

Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square, Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name

Newbauer Development Project

Executive Blvd.

Huber Heights, Ohio 45424

Prepared For

Metropolitan Holdings
1429 King Ave
Columbus, Ohio, 43212

METROPOLITAN HOLDINGS

Project Info

Project #	21082
Date	01/20/2023
By	NM/RY/TF
Scale	As Shown

Revisions

Sheet Title

BASIC DEVELOPMENT PLAN

Sheet #

L2.0

SITE DATA	
TOTAL ACREAGE	±25.3 AC
SUB AREA A+B	±21.26 AC
SUB AREA C	±4.04 AC
TOTAL UNITS	320 UNIT MAX
TOTAL DENSITY	±14.6 DU/AC
PROPOSED GARAGE SURFACE	663 97 566

CONCEPTUAL SITE PLAN
SCALE: 1" = 100'-0"

0 25 100 200

Columbus
100 Northwoods Blvd, Ste A
Columbus, Ohio 43235
p 614.255.3399

Cincinnati
20 Village Square, Floor 3
Cincinnati, Ohio 45246
p 614.360.3066

PODdesign.net

Project Name

Newbauer Development Project

Executive Blvd.

Huber Heights, Ohio 45424

Prepared For

Metropolitan Holdings
1429 King Ave
Columbus, Ohio, 43212

METROPOLITAN HOLDINGS

Project Info

Project #	21082
Date	01/20/2023
By	NM/RY/TF
Scale	As Shown

Revisions

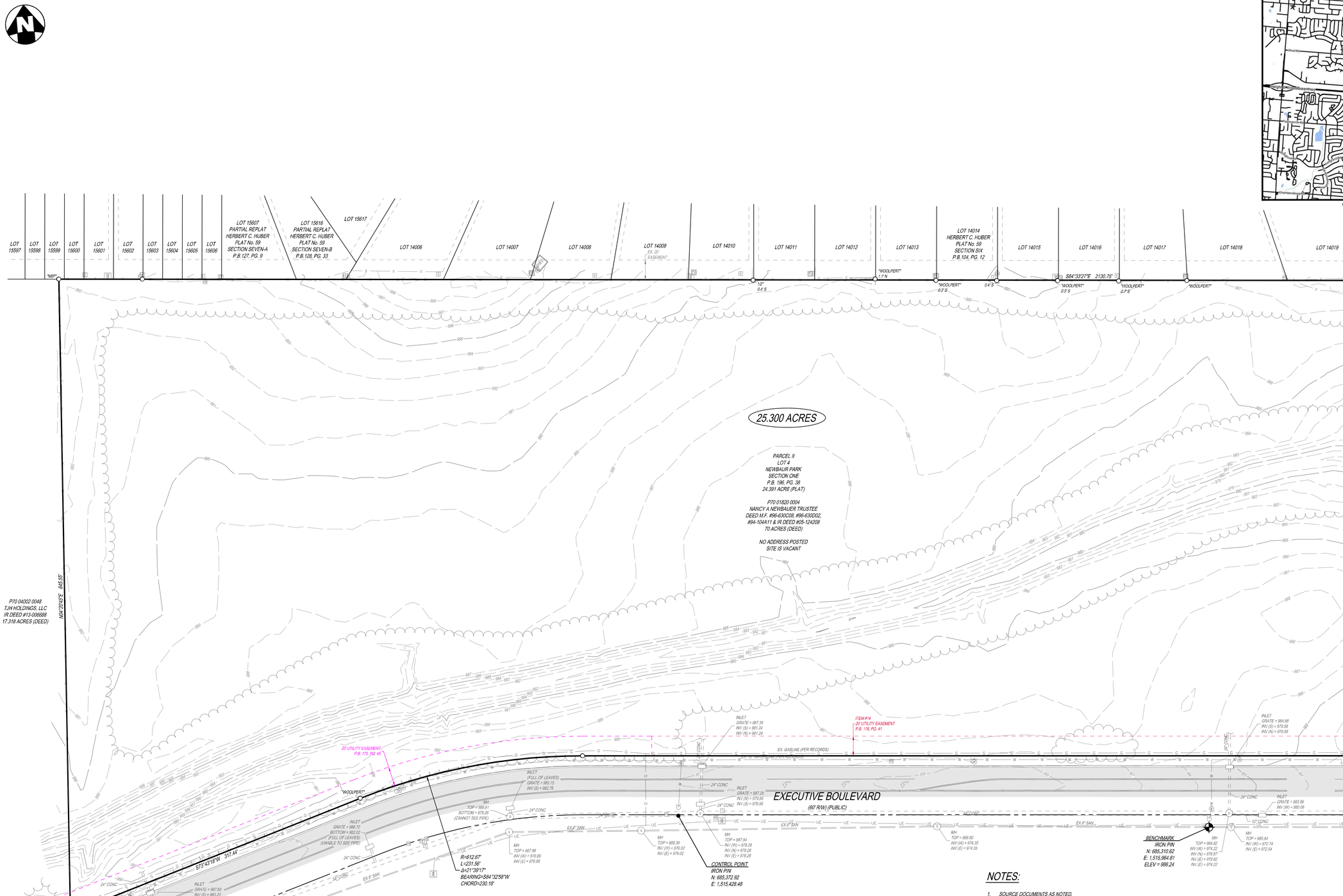
Sheet Title

CONCEPTUAL SITE PLAN

Sheet #

L3.0

INSPIRED PEOPLE ▲ CREATIVE DESIGN ▲ TRANSFORMING COMMUNITIES



VICINITY MAP
N.T.S

LEGEND

- BENCHMARK
- 5/8" IRON PIN FOUND (UNLESS OTHERWISE NOTED)
- PIPE FOUND (SIZE AS NOTED)
- 5/8" IRON PIN SET (KLEINGERS)
- SANITARY MANHOLE
- STORM MANHOLE
- CATCH BASIN
- STORM INLET
- WATER VALVE
- FIRE HYDRANT
- SIGN - SINGLE POST
- TELEPHONE BOX
- TELEVISION BOX
- PULL BOX
- TRANSFORMER
- ELECTRIC BOX
- GAS SERVICE
- FENCE LINE
- STORM SEWER
- SANITARY SEWER
- WATER LINE
- GAS LINE
- UNDERGROUND ELECTRIC
- UNDERGROUND FIBER OPTIC
- UNDERGROUND TELEPHONE
- TREE LINE
- ASPHALT

NOTES:

1. SOURCE DOCUMENTS AS NOTED.
2. OCCUPATION IN GENERAL FITS SURVEY.
3. MONUMENTATION IS IN GOOD CONDITION UNLESS OTHERWISE NOTED.
4. ALL IRON PINS SET ARE 5/8" DIAMETER x 30" IRON REBAR WITH ID CAP STAMPED "KLEINGERS".
5. BEARINGS ARE BASED ON OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, AS DERIVED FROM THE OHIO DEPARTMENT OF TRANSPORTATION'S REAL TIME NETWORK (RTN). (NAD '83 - 2011)
6. PROJECT COORDINATES ARE BASED ON OHIO STATE PLANE COORDINATE SYSTEM .
7. ELEVATIONS ARE BASED ON NAVD '88, AS DERIVED FROM THE OHIO DEPARTMENT OF TRANSPORTATION'S REAL TIME NETWORK (RTN).
8. SITE BENCHMARK AS SHOWN HEREON.
9. SUBJECT SITE IS LOCATED IN ZONE "X" - OTHER AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN PER A GRAPHICAL INTERPRETATION OF FEMA'S FLOOD INSURANCE RATE MAP NO. 39113C0180E WITH AN EFFECTIVE DATE OF JANUARY 6, 2005.
10. SUBJECT SITE CONTAINS 0 PARKING SPACES.
11. AT THE TIME OF THE FIELD SURVEY, THE SURVEYOR DID NOT OBSERVE ANY EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
12. AT THE TIME OF THE FIELD SURVEY, THE SURVEYOR DID NOT OBSERVE ANY EVIDENCE OF CHANGES IN STREET RIGHT OF WAY LINES.
13. SUBJECT SITE HAS DIRECT ACCESS TO EXECUTIVE BOULEVARD, A PUBLICLY DEDICATED ROADWAY.

STEWART TITLE GUARANTY COMPANY
COMMITMENT FOR TITLE INSURANCE
COMMITMENT NO. 1568460
EFFECTIVE DATE: NOVEMBER 25, 2022

12. Declaration of Restrictions of record in Instrument 05-124212. (PERTAINS TO SURVEYED PROPERTY. BLANKET IN NATURE. NOT PLOTTABLE.)
13. Building lines, easements and restrictions shown on the recorded plat/map of Executive Boulevard Section Three as Plat Book 185 page 4. (LIES ON, OVER OR ACROSS SURVEYED PROPERTY. PLOTTED AND LABELED AS ITEM #13.)
14. Building lines, easements and restrictions shown on the recorded plat/map of Executive Boulevard Section Two as Plat Book 176 page 41. (LIES ON, OVER OR ACROSS SURVEYED PROPERTY. PLOTTED AND LABELED AS ITEM #14.)
15. Building lines, easements and restrictions shown on the recorded plat/map of Newbauer Park Section One as Plat Book 196 page 38. (LIES ON, OVER OR ACROSS SURVEYED PROPERTY. PROPERTY AS SHOWN HEREON.)
16. Easement for Channel Purposes granted to the State of Ohio, as more fully set forth in the document recorded as Volume 84-05704A11. (DOES NOT LIE ON, OVER OR ACROSS SURVEYED PROPERTY. NOT PLOTTED)
17. Easement granted to The Dayton Power and Light Company, as more fully set forth in the document recorded as Volume 78-6789D10. (DOES NOT LIE ON, OVER OR ACROSS SURVEYED PROPERTY. NOT PLOTTED)
18. Easement granted to The Dayton Power and Light Company, as more fully set forth in the document recorded as Volume 74-367C11. (DOES NOT LIE ON, OVER OR ACROSS SURVEYED PROPERTY. NOT PLOTTED)
19. Easement granted to The Dayton Power and Light Company, as more fully set forth in the document recorded as Volume 78-6789D08. (DOES NOT LIE ON, OVER OR ACROSS SURVEYED PROPERTY. NOT PLOTTED)
20. Easement granted to the State of Ohio Department of Transportation, as more fully set forth in the document recorded as Instrument 2005-094116. (DOES NOT LIE ON, OVER OR ACROSS SURVEYED PROPERTY. NOT PLOTTED)

LEGAL DESCRIPTION:

PARCEL I: (P70 01820 0003)
LOCATED IN THE CITY OF HUBER HEIGHTS AND IN SECTION 24, TOWN 2, RANGE 8 M.RS., COUNTY OF MONTGOMERY, STATE OF OHIO AND BEING ALL OF LOT 3 OF THE PLAT OF NEWBAUER PARK SECTION ONE AS RECORDED IN PLAT BOOK 196, PAGE 38-38A IN THE PLAT RECORDS OF MONTGOMERY COUNTY, OHIO. 9.9093 ACRES.

PARCEL II: (P70 01820 0004)
LOCATED IN THE CITY OF HUBER HEIGHTS AND IN SECTION 24, TOWN 2, RANGE 8 M.RS., COUNTY OF MONTGOMERY, STATE OF OHIO AND BEING ALL OF LOT 4 OF THE PLAT OF NEWBAUER PARK SECTION ONE AS RECORDED IN PLAT BOOK 196, PAGE 38-38A IN THE PLAT RECORDS OF MONTGOMERY COUNTY, OHIO. 24.3907 ACRES.

SURVEYOR'S CERTIFICATION

TO: STEWART TITLE GUARANTY COMPANY; METROPOLITAN HOLDINGS ACQUISITIONS LLC:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA / NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1-5, 7(a), 7(b1), 7(c), 8, 9, 11(a), 13, 16 AND 17 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON 11-17-2022.
DATE OF PLAT OR MAP 12-1-2022.

MATTHEW D. HABEDANK — DATE
OHIO PROFESSIONAL SURVEYOR NO. 8611

NOTE :
UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 811 OR 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.

OHIO811.org Before You Dig

THE KLEINGERS GROUP
CIVIL ENGINEERING
SURVEYING
LANDSCAPE ARCHITECTURE
www.kleingers.com
6219 Centre Park Dr.
West Chester, OH 45069
513.779.7851

SEAL:
STATE OF OHIO — MATTHEW D. HABEDANK — 8611 — REGISTERED PROFESSIONAL SURVEYOR

NO.	DATE	DESCRIPTION
1	12-1-2022	ALTA - KPR

ALTA/NSPS LAND TITLE SURVEY
25.300 ACRES

SEC 18 & 24, TOWN 2, RANGE 8 MRS
CITY OF HUBER HEIGHTS
MONTGOMERY COUNTY, OHIO
FOR: METROPOLITAN HOLDINGS

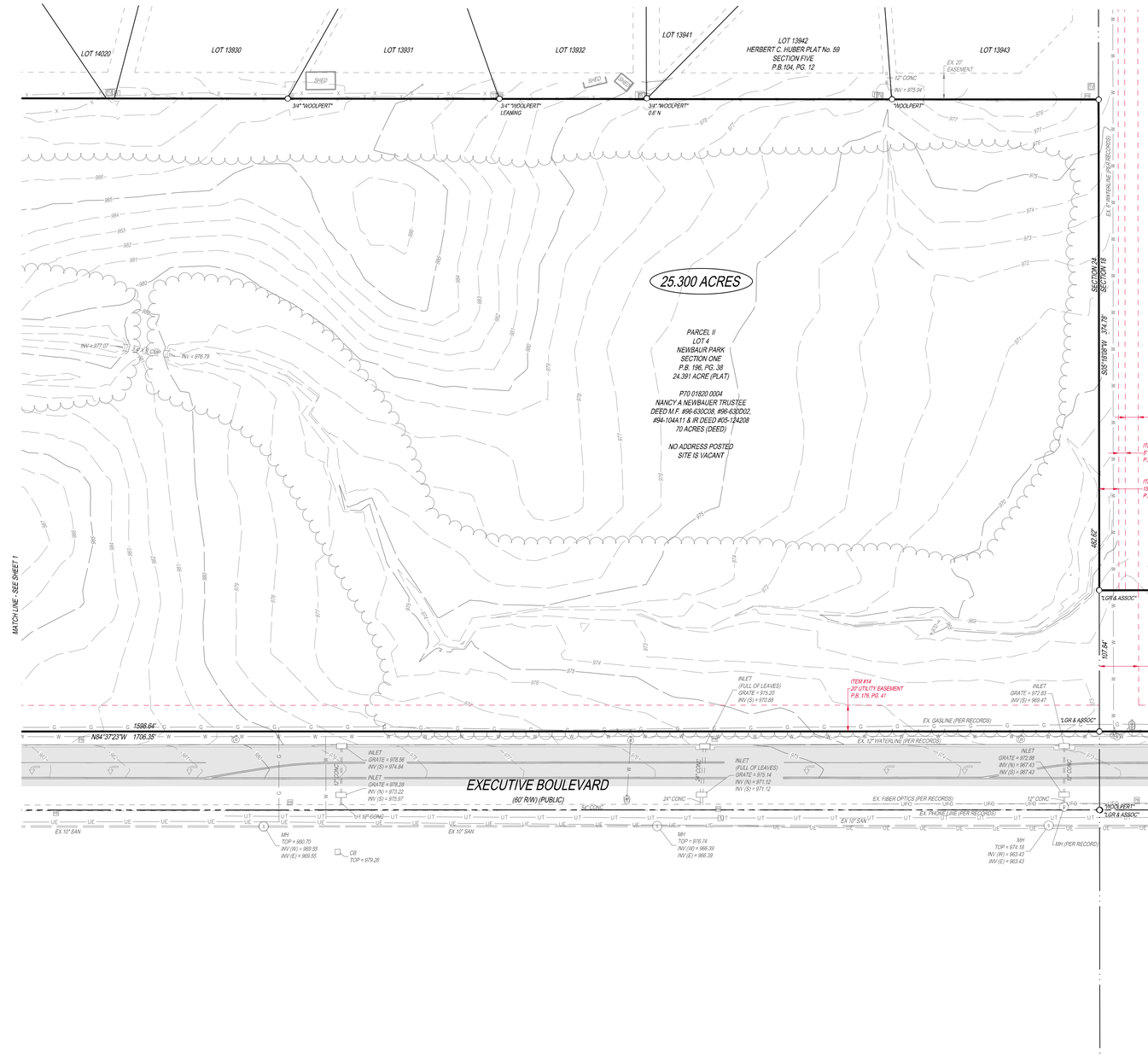
PROJECT NO: 220356VSD000
DATE: 12-1-2022
SCALE: 1" = 40'
0 20 40 80

SHEET NAME:
EXECUTIVE BOULEVARD

SHEET NO.
1 OF 2

\\kleingers.com\westchester\2022\220356\000_CIVIL\220356VSD000 - EXECUTIVE BLVD HUBER HEIGHTS ALTA.dwg, 12/5/2022 9:57:03 AM, rsmith

INSPIRED PEOPLE ▲ CREATIVE DESIGN ▲ TRANSFORMING COMMUNITIES



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513.779.7851

SEAL:
STATE OF OHIO
MATTHEW D. HABEDANK
8611
REGISTERED
PROFESSIONAL SURVEYOR

NO.	DATE	DESCRIPTION
1	12-1-2022	ALTA - KPR

ALTA/NSPS LAND TITLE SURVEY
25.300 ACRES

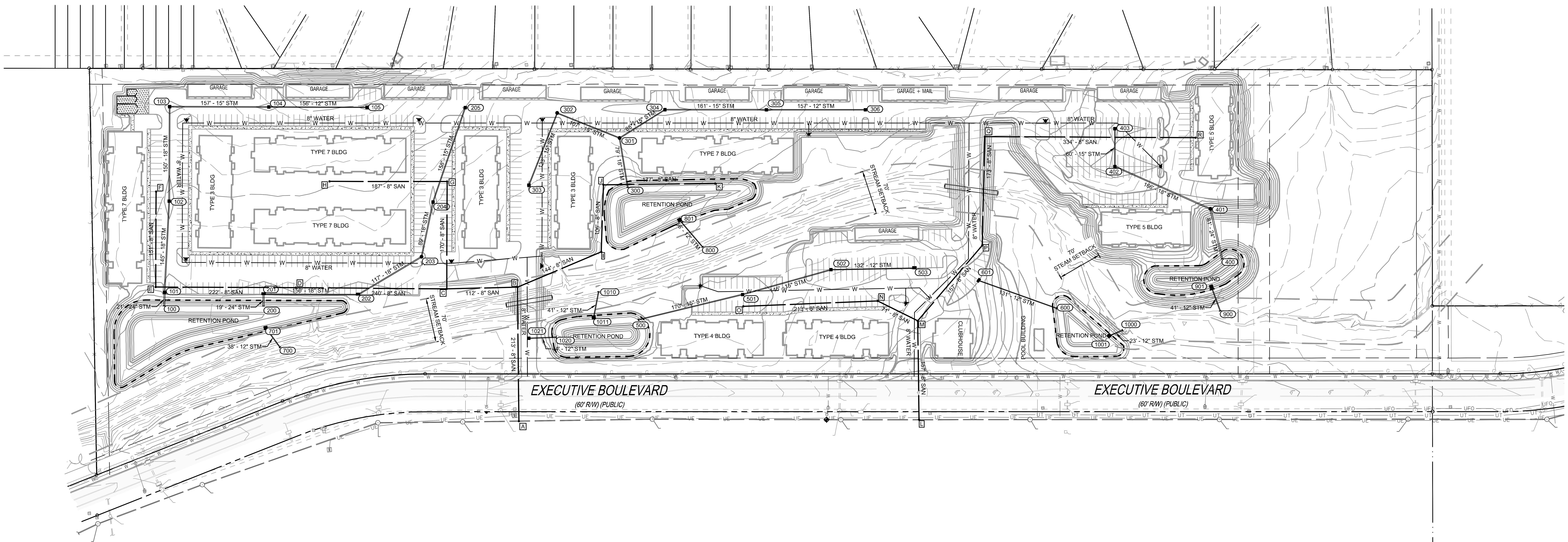
SEC 18 & 24, TOWN 2, RANGE 8 MRS
CITY OF HUBER HEIGHTS
MONTGOMERY COUNTY, OHIO
FOR: METROPOLITAN HOLDINGS

PROJECT NO: 220358VSD000
DATE: 12-1-2022
SCALE: 1" = 40'
0 20 40 80

SHEET NAME:
EXECUTIVE BOULEVARD

SHEET NO.
2 OF 2

INSPIRED PEOPLE ▸ CREATIVE DESIGN ▸ TRANSFORMING COMMUNITIES



PROPOSED LEGEND

- STORM SEWER PIPE
- CATCH BASIN
- CURB INLET
- HEADWALL
- MANHOLE
- SANITARY SEWER PIPE
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATERLINE PIPE
- FIRE HYDRANT
- WATER VALVE
- POST INDICATOR VALVE
- FIRE DEPARTMENT CONNECTION

OHIO811.org Before You Dig

NOTE :
UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 811 OR 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.

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SURVEYING
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www.kleingers.com
6219 Centre Park Dr.
West Chester, OH 45069
513.779.7851

SEAL:

NO. DATE DESCRIPTION

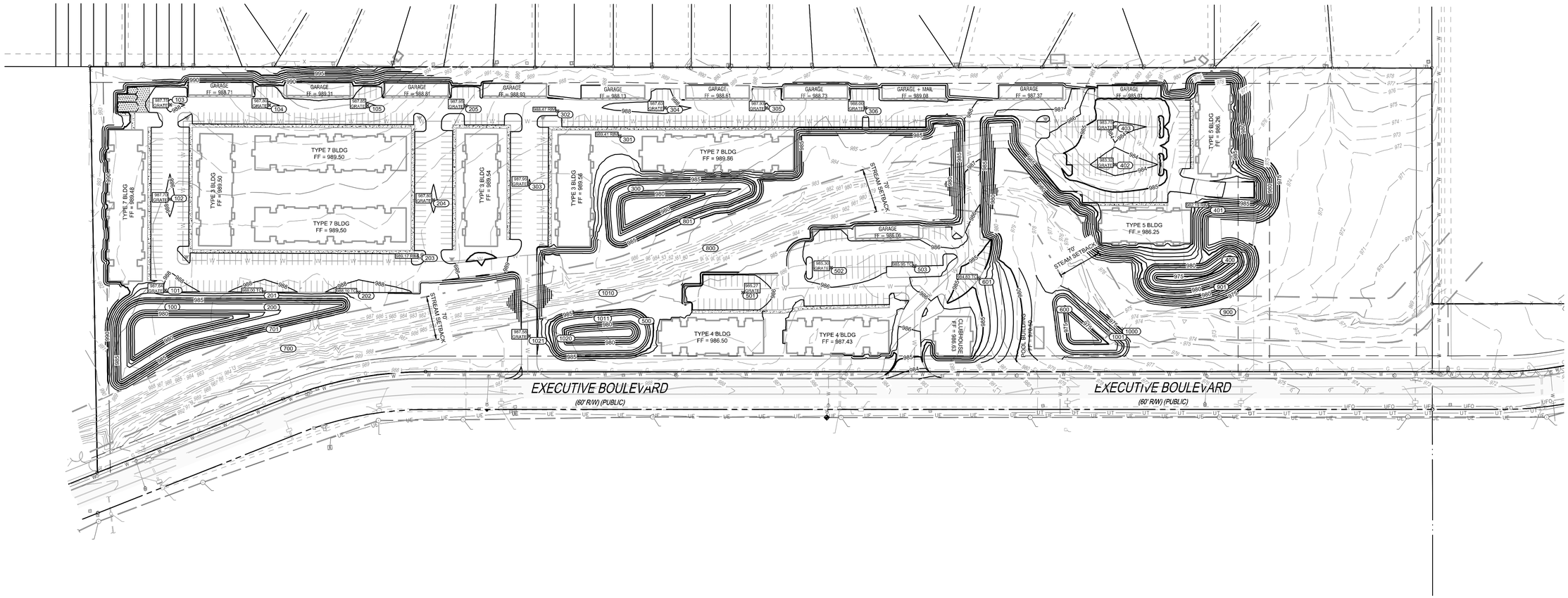
NEWBAUER DEVELOPMENT PROJECT
CITY OF HUBER HEIGHTS
MONTGOMERY COUNTY, OHIO

PROJECT NO: 220358.000
DATE: 2023/01/20
SCALE: 0 40 80 160

SHEET NAME:
OVERALL UTILITY PLAN

SHEET NO.
C400

INSPIRED PEOPLE ▲ CREATIVE DESIGN ▲ TRANSFORMING COMMUNITIES



GRADING LEGEND

- 1215 — EXISTING MAJOR CONTOUR
- 1216 — EXISTING MINOR CONTOUR
- 1215 — PROPOSED MAJOR CONTOUR
- 1216 — PROPOSED MINOR CONTOUR
- × 1215.00 PROPOSED SPOT ELEVATION
- PROPOSED SWALE
- 100-YEAR FLOOD ROUTE

OHIO811.org Before You Dig

NOTE :
UNDERGROUND UTILITIES ARE PLOTTED FROM A COMPILATION OF AVAILABLE RECORD INFORMATION AND SURFACE INDICATIONS OF UNDERGROUND STRUCTURES AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES CANNOT BE VERIFIED. PLEASE NOTIFY THE OHIO UTILITY PROTECTION SERVICE AT 811 OR 1-800-362-2764 BEFORE ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.

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6219 Centre Park Dr.
West Chester, OH 45069
513.779.7851

SEAL:

NO.	DATE	DESCRIPTION

NEWBAUER DEVELOPMENT PROJECT

CITY OF HUBER HEIGHTS
MONTGOMERY COUNTY, OHIO

PROJECT NO:	**220358.000**
DATE:	**2023/01/20**
SCALE:	0 40 80 160

SHEET NAME:

OVERALL GRADING PLAN

SHEET NO.

C500

METROPOLITAN
HOLDINGS

Project Zoning and Design Standards

+/- 25.3 Newbauer property located along Executive Blvd
within the Rose Music Center at The Heights Entertainment District
also known as Montgomery County, Ohio
Parcel #'s P70-01820-0003 and P70-01820-0004
January 23, 2023

TABLE OF CONTENTS

INTRODUCTION

Executive Drive/ Newbauer Development

The vision for the Executive Drive/ Newbauer Development (the "Project") is a Planned Mixed- Use District (PM) to promote multi-use development where a resident can live, work, and play within a planned neighborhood.

The PM district allows for integration of commercial, office, residential and open space into a cohesive development. It allows projects of unique design and layout, and innovative land planning, and can provide for a harmonious community, bringing new businesses, new residents and visitors to the area. The uses of the PM District will compliment and expand the Rose Music Center at The Heights Entertainment District (the "Entertainment District").

The Project consists of ±25.3 acres that front Executive Boulevard directly north of the Rose Music Center with the goal to include multi-family residential and commercial uses. Multi-family housing uses will create a critical mass of people necessary to support both the Project's commercial development, and those proposed on the adjacent ±60 acres east and west of the subject property. The commercial uses on the Property, and those future developments flanking either side of the subject site, will be both appropriate for the Entertainment District, offer additional complimentary services and amenities to area residents, and will be highly sustainable based on the proximity of recently added and newly expanded housing options within the Entertainment District. The Project shall be designed so that the buildings, structures and open spaces will be preserved and maintained. Special care will be taken to protect any preexisting natural features, particularly the stream that runs the entire length of the property. Attention shall be given to make sure that the design of the project will not create any nuisances within the development impacting neighboring properties. The architecture shall be encouraged to be unique but similar in certain characteristics.

Goals of the Project

All development within the Project shall conform to these Zoning and Design Standards in order to achieve the following goals:

1. Enable development that establishes a cohesive identity.
2. Incorporate similar materials, colors, and landscape features, which were used at existing developments, including the Rose Music Center at The Heights.
3. Introduce urban-style forms and design elements.
4. Place strong emphasis on connectivity, recognizing the importance of linking the various sites within the Entertainment District to reinforce a consistent character.
5. Recognizing the importance of pedestrians to the economic vitality of mixed-use neighborhood and entertainment-type areas, and diminishing the emphasis of vehicles, encourage strong pedestrian accommodations and connectivity.

ZONING

The approval of the Basic Development Plan and rezoning from Planned Commercial (PC) to Planned Mixed Use (PM) will allow for a better-balanced community for residents, visitors, and employees.

The following uses are permitted in the Planned Mixed-Use District (PM) as outlined in Chapter 1179.02 of the City of Huber Heights Zoning Code ("Zoning Code") shall be as follows:

- Entertainment Venues
- Hotels
- Colleges, schools and libraries
- Professional offices, including medical and dental clinics, and offices
- Restaurants and taverns
- Banks or other financial institutions. Pay-day lenders and/or title lenders shall be prohibited.
- Public facilities
- Recreational Uses
- Multi-Family Residential Dwellings
- Parking structures
- Retail commercial establishments, excluding convenience stores, gas stations or other commercial uses exhibiting similar characteristics of the aforementioned excluded uses as determined by the Planning Department. Outdoor sales and storage shall be prohibited.

SETBACKS

The following setbacks shall be established for the project:

- Front yard (Executive Boulevard) – 20 feet
- Side yard – 25 feet
- Rear yard (Adjacent to existing single family) – 25 feet

SIGNAGE

Any and all signs proposed in the Project shall be in compliance with Chapter 1189 of the City of Huber Heights Zoning Code. The Developer, or any future occupant, shall develop and submit a more comprehensive signage plan in the Detailed Development Plan to be approved by the Planning Commission.

ARCHITECTURE & SITE STANDARDS

The following section outlines the appropriate building materials and architectural features for the proposed development.

COMMERCIAL, OFFICE, & MIXED-USE BUILDINGS

Building Materials for Commercial, Office & Mixed-use Buildings

- All exterior walls of commercial, office and mixed-use buildings shall be 100% masonry materials. All buildings shall be architecturally designed so that there will be no rear of any building directly fronting Executive Boulevard as determined by the City and the Master Developer. All buildings shall have a minimum of two distinct building materials from the approved list with secondary materials covering a minimum of 10% of the total building facades. Window walls shall be considered windows by the City Code.
- All building façades shall be covered in fiber cement panel, stucco and exterior plaster, EIFS and synthetic stucco cladding systems, brick, stone, cast stone and/ or split face block.
- Mixing of exterior materials is permitted so long as it is configured in aesthetically appealing design style.
- The use of alternative materials such as metal panel, and other modern materials, as approved by Planning Commission, may be appropriate when they are used in a complimentary or similar fashion as traditional materials would be used or historically employed.
- The minimum building separation between buildings shall be 6 feet.

Roof Style

Buildings constructed may include the following roof styles:

- Flat roofs with appropriate parapet height to screen any rooftop mechanical systems if such systems are designed to be permanently installed on the roof.
- Gabled roofs with dormers with dimensional asphalt shingles and/ or standing seam metal.
- Pitched or contemporary shed roofs

All roofs, regardless of style, shall have sufficient parapet heights, cornices, fascia, soffits, eaves and/or overhangs of a character and scale complimentary to the overall scale of the building and architectural forms. Dormers, chimneys, and other aesthetically appropriate elements of architectural or visual interest are encouraged.

MULTI-FAMILY HOUSING

- Multi-family Housing is considered a structure designed to resemble a large house, series of townhomes, and garden style homes, and containing multiple units arranged above and/ or beside each other.
- The maximum number of dwellings permitted in the Project shall not exceed 320 multi-family housing units for Subareas A & B. Subarea C is intended to be developed as commercial or mixed use.

Building Materials for Multi-Family Housing

- A minimum of 50% in aggregate of Executive Boulevard-facing facades of buildings located south of the stream that bisects the property West-to-East, and within 100’ of the northern boundary of the Right of Way of Executive Boulevard (collectively, the “EB Facades”), shall be covered in masonry materials, which include brick, cast stone, fiber cement panel or other masonry products approved by the City. Notwithstanding the foregoing, each EB Façade shall be covered in no less than 8% masonry materials.

- A minimum of 15% in aggregate of the remaining facades of all buildings shall be covered in masonry materials.
- All buildings shall be positioned and architecturally designed so that there will be no rear of any building directly fronting or facing Executive Boulevard, as determined by the City and the developer. All buildings shall have a minimum of two distinct building materials from the approved list with secondary materials covering a minimum of 10% of the total building facades. Window walls shall be considered windows by the City Code.
- The use of alternative materials such as double 4 vinyl, board and batten vinyl, vinyl shake, fiber cement plank, and other modern materials shall be appropriate when they are used in the same way as traditional materials would have been used.

Roof Style

Buildings constructed may include the following roof styles:

Subarea A – As illustrated in Exhibit A

- Flat roofs with appropriate parapet screening

All roofs, regardless of style, shall have sufficient parapet heights and/or cornices of a character and scale complimentary to the overall scale of the building and architectural forms. Additional aesthetically appropriate elements of architectural or visual interest are encouraged. Small architectural accent or decorative canopies, eyebrows, awnings, or other features located at entryways or porches may utilize standing-seam metal roofs or other architectural appropriate materials as deemed appropriate by the City or Master Developer.

Subarea B – As illustrated in Exhibit A

- Flat roofs with appropriate parapet screening
- Gabled roofs with or without dormers with dimensional asphalt shingles
- Hip & valley and/ or gable & valley roofs with dimensional asphalt shingles
- Mansard roofs with a combination of flat roofs and dimensional asphalt shingles
- Gable & valley roofs with dimensional asphalt shingles
- Gambrel roofs with dimensional asphalt shingles (accessory buildings only)

ARCHITECTURAL FEATURES

- In general, buildings shall include highly visible features, architectural detail and pedestrian-oriented articulation.
- Carriage houses with garages on the first floor and apartments above shall be allowed.
- Detached garages and service or utility buildings shall be allowed as accessory structures.
- Gutters and downspouts shall have a color to match or complement the finish trim of the buildings.
- When a window type and grid pattern design has been chosen for a building, the same design must be used on all elevations. Use of other window designs as “accent” windows is permitted.
- Building facades shall be broken up by using varied material, windows, and/ or façade depths
- Entrances and stairways to upper story units must be internal to the building footprint. Open breezeways internal to the building footprint are acceptable.

- Buildings need to respond to any adjacent open space and natural features present.
- The principal building facades shall maintain a consistent setback throughout the development. This setback shall be a minimum of 10' from the right of way of Executive Boulevard.
- The minimum building separation shall be 6 feet.
- Balconies, stoops, and porches are encouraged, and may project beyond the primary face of the principal building facades.

Massing/Scale

- Buildings shall be appropriate in terms of scale and massing.
- Building heights shall be a minimum of one story and up to four stories in height. The number of stories is measured at the lowest floor elevation of the primary public or common entrance of the building.
- The maximum building height shall not exceed 50 feet. The building height shall be measured from the lowest floor elevation the primary public or common entrance to the elevation of the bottom of the interior ceiling of the top floor of the building.

LANDSCAPING

To protect and promote a harmonious development that ensures a functional and logical arrangement of mixed uses, the effective and efficient use of landscaping and buffering is required. The use of pre-existing trees, natural features or amenities as part of this buffer is encouraged. The project shall include the following landscaping and buffering:

- Street trees shall be installed along Executive Boulevard every 35 lineal feet. Street trees shall be planted and spaced equally between the back of the curb and edge of sidewalk within the right of way. The type of tree and size shall be proposed by the Developer at the Detailed Development Plan application stage and approved by the Planning Commission. Any existing trees that are within this area that can be saved at the discretion of the developer and the City shall be counted towards the requirement.
- For perimeter landscaping along the north and west property line, a 25-foot buffer strip shall be provided to include landscaping materials which will maintain an opaqueness of at least 80% from a height up to 6 feet tall. For the planting materials that are used, the screen must achieve the required height, width, and opaqueness within two years of planting. The use of existing trees, natural features or amenities as part of this buffer is encouraged and if preserved, they will be used towards the calculation. Parking areas, accessways or any impervious surfaces are prohibited within this buffer strip. The placement of garage buildings and their associated facades shall be permitted to achieve the screening necessary for vehicular use and parking areas.
- Trees of at least 1 ¾" caliper shall be planted within the development at an amount of one tree for every 10 parking spaces. Trees shall be reasonably spaced around the site.
- The site shall provide a total of 25% green space to be made up of landscaped and/ or natural vegetation. The existing stream and associated setbacks shall be counted in this calculation

SITE FURNISHINGS

In order to create a consistent aesthetic appearance throughout the site, any furnishings that are used shall be consistent throughout the project. This will ensure a level of quality with the details of the development that will set it apart from other developments in the area.

LIGHTING

- Site lighting fixtures shall be downcast finished in a dark hue.
- Street lighting shall be designed and consistently placed to sufficiently match those fixtures already employed within the Entertainment District and located along Brandt Pike. Street lighting within the public ROW shall be both decorative in nature yet utilitarian and appropriate in function. Street lighting fixtures shall be spaced no more than 200 feet on center, on each side of the ROW, staggered and alternated from center or mid-point of that of the respective diagonally located fixture.
- Lighting shall be placed throughout the development as necessary to create a safe environment for residents.
- Site lighting fixtures shall not exceed a height of 25 feet
- Pedestrian-scale fixtures may be located within open spaces or other areas requiring additional lighting. These fixtures shall have decorative posts and lamps and not exceed a height of 14 feet.
- Exterior building lighting shall also be decorative, in character with the architectural style of the buildings
- Lighting Standards: The following special conditions shall apply:
    - The height of any on-site light fixture shall not exceed 25 feet in height.
    - All fixtures shall have a cut-off angle of 90 degrees or less; and shall have light shields if facing the residential neighborhood to the north.
    - No direct light source shall be visible at the property line (adjacent to residential) at ground level; and
    - Maximum illumination at the property line shall not exceed one half foot-candle

STREET AND TRANSPORTATION STANDARDS

The Project is designed to encourage walkability and other alternative modes of transportation. There shall be limited ingress and egress points onto the public streets, which will reduce traffic conflicts. The facilities in the development will be properly arranged so as to provide for proper internal pedestrian and traffic circulation.

Parking requirements

It is important that parking within the Project is approached in a strategic manner. There must be enough created to support The Project, however the design of the parking shall not dominate the master plan or take away from the streetscape. In order to achieve this balance, the placement and design of parking areas

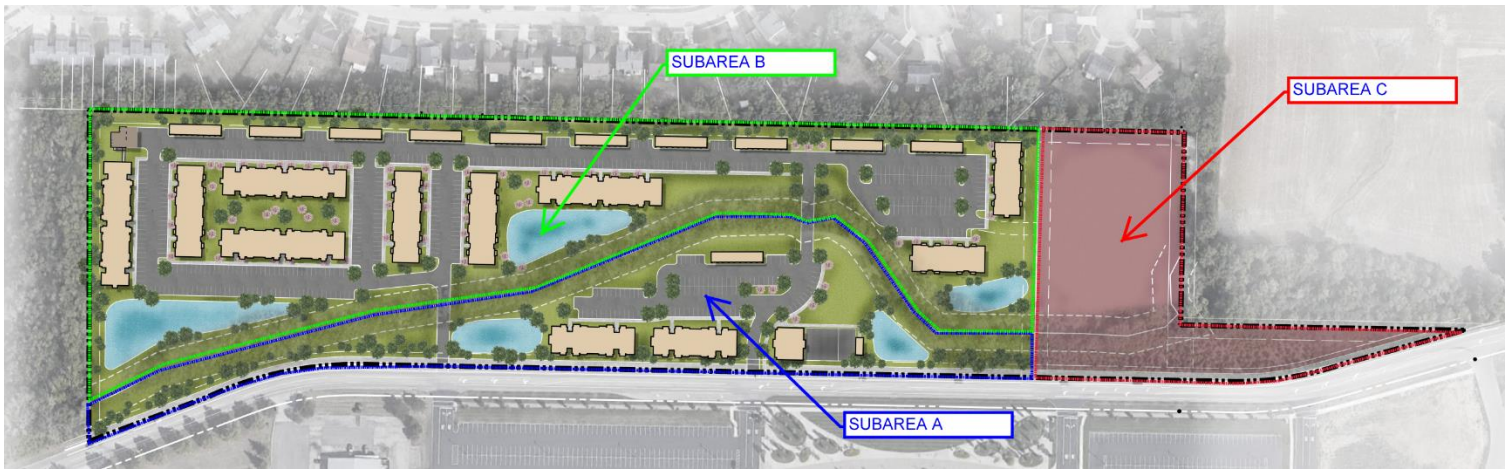
becomes very important. This design will vary depending upon the building type and the site design for each development site. The following section explores these parking requirements and considerations in more detail.

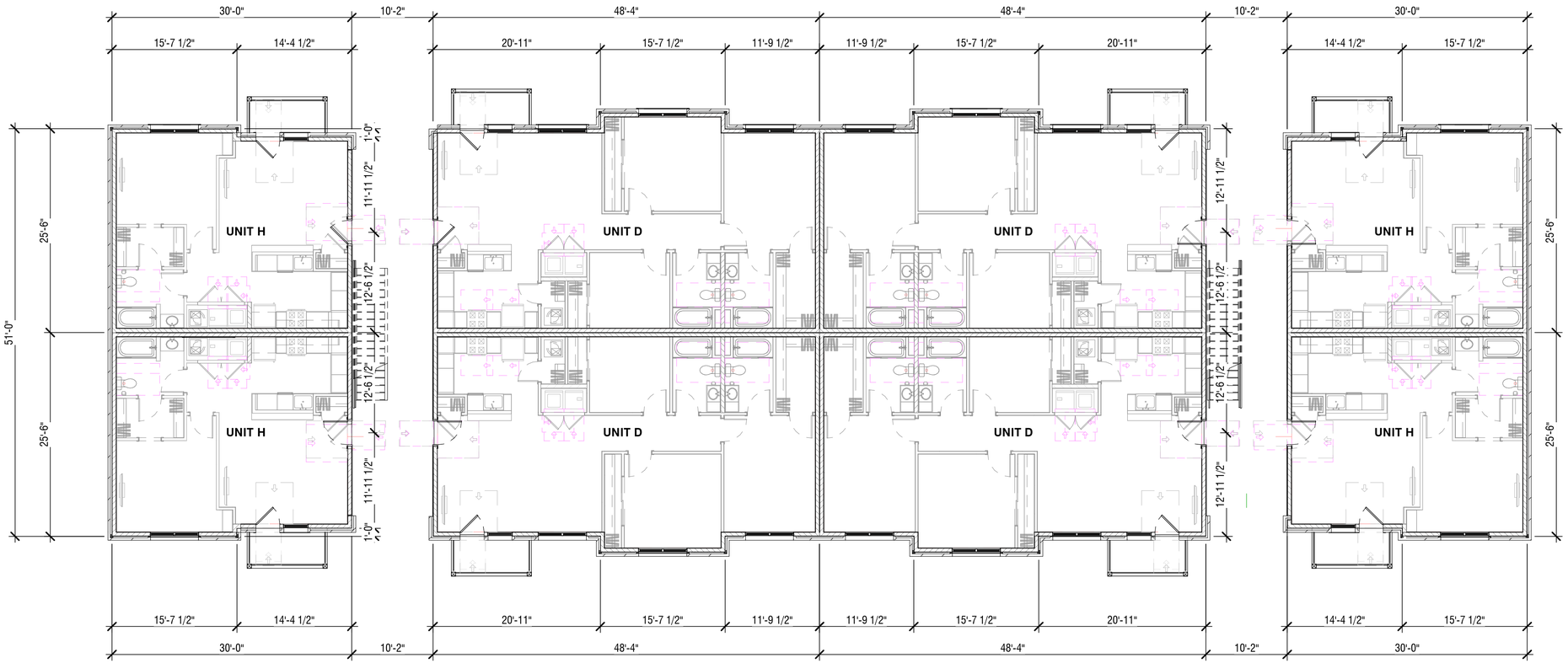
In order to ensure that there is enough parking to support future land use within The Project, the future land uses shall include a minimum of one parking space per bedroom. Parking within the Project must measure nine (9) feet by eighteen (18) feet, except on-street parallel parking spaces which shall measure eight (8) feet by twenty (20) feet. Parking drive aisles shall measure a minimum of twenty-four (24) feet in width. Additional information on parking requirements can be found in Chapter 1185 of the City of Huber Heights Zoning Codes.

CONCLUSION

The approval of a Planned Mixed-Use District (PM) will allow for a more cohesive development. The treatment of the building designs, parking, landscaping, site improvements and pedestrian spaces as outlined in these Project Zoning and Design Standards is essential to creating the pedestrian-oriented environment for the Project's walkable lifestyle community. These standards are intended to ensure the proper development of the Project, improve the quality of life for existing residents, and to attract new residents to the community.

EXHIBIT A





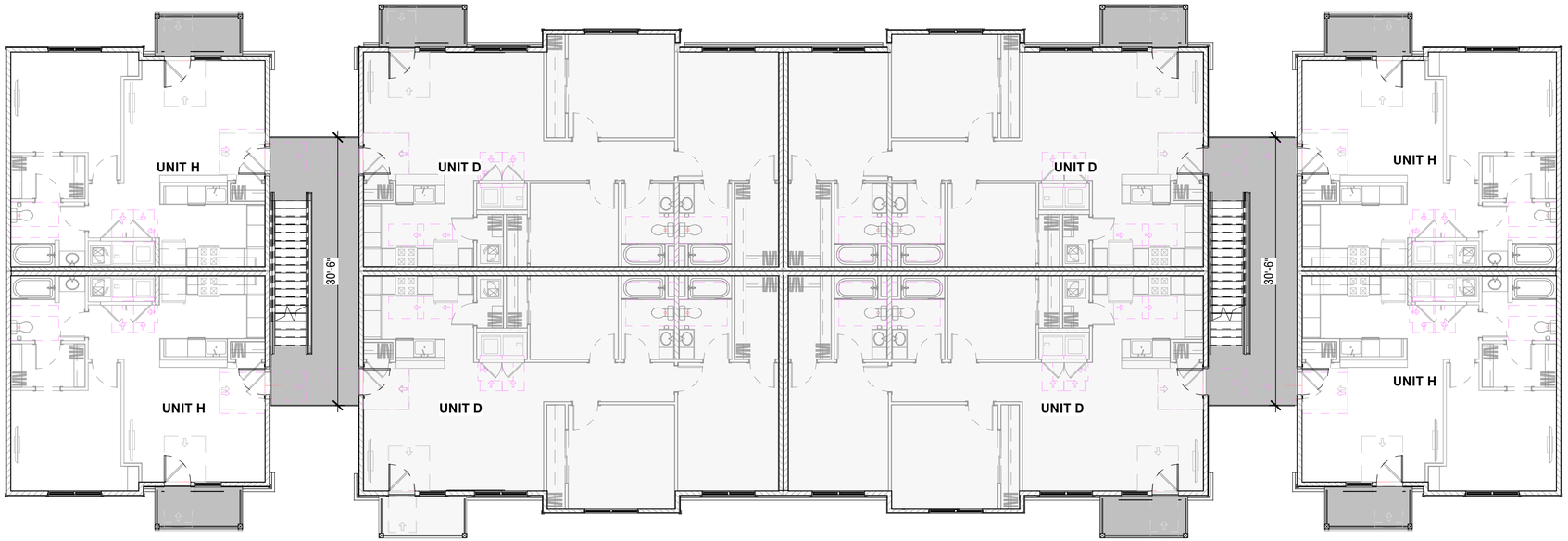
01 LEVEL - BUILDING #3

SCALE 1/16" = 1'-0"

newbauer breezeway building #3

PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall



02 LEVEL - BUILDING #3

SCALE 1/16" = 1'-0"

BUILDING #3 - SOUTH

SCALE 1/16" = 1'-0"

BUILDING #3 - NORTH

SCALE 1/16" = 1'-0"

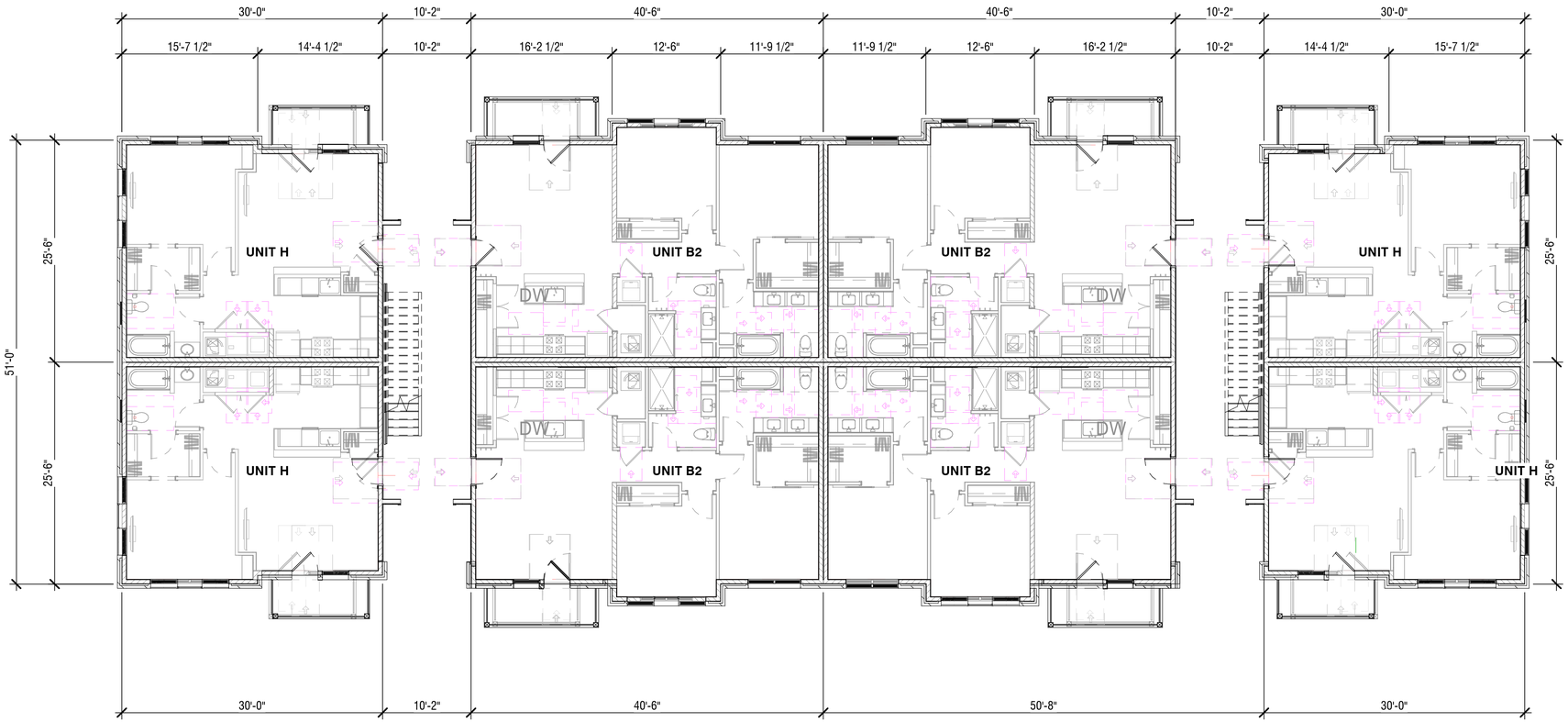
newbauer breezeway building #3

PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

BUILDING #3 - WEST
SCALE 1/16" = 1'-0"

BUILDING #3 - EAST
SCALE 1/16" = 1'-0"



01 LEVEL - BUILDING #4

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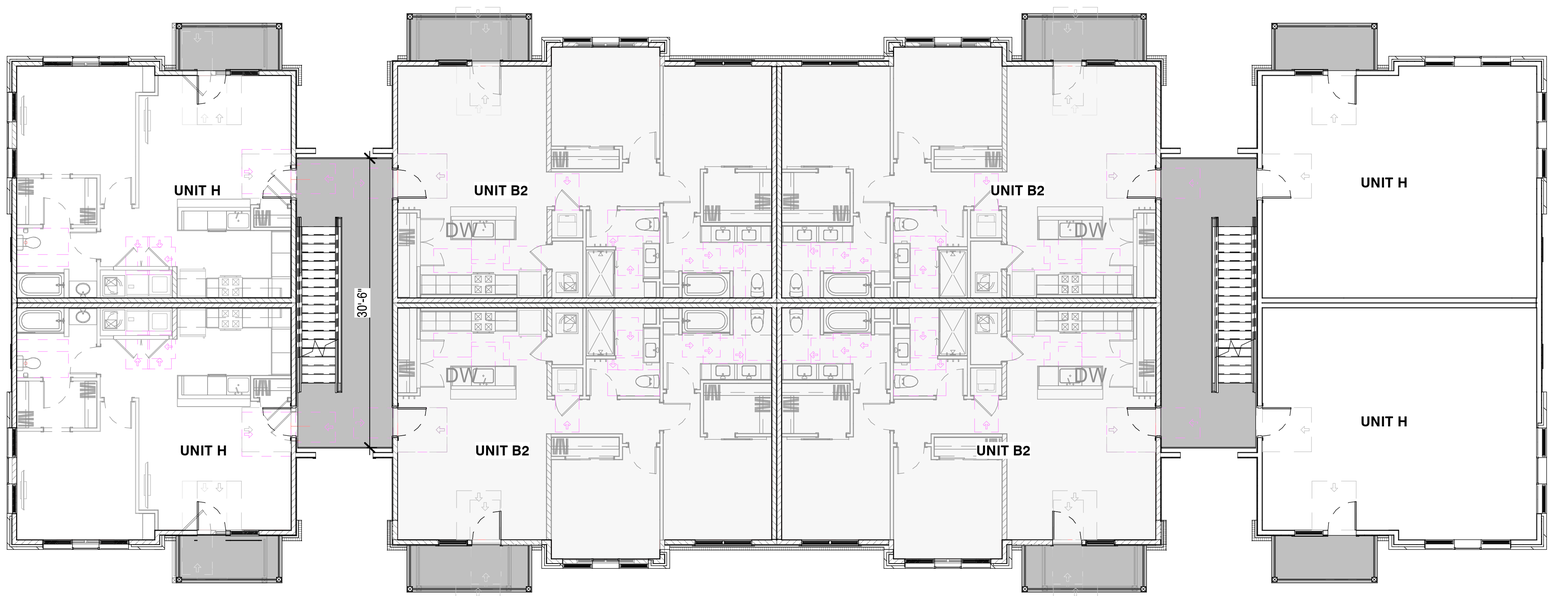


02 LEVEL - BUILDING #4

SCALE 1/16" = 1'-0"

BUILDING #4 FLAT - SOUTH

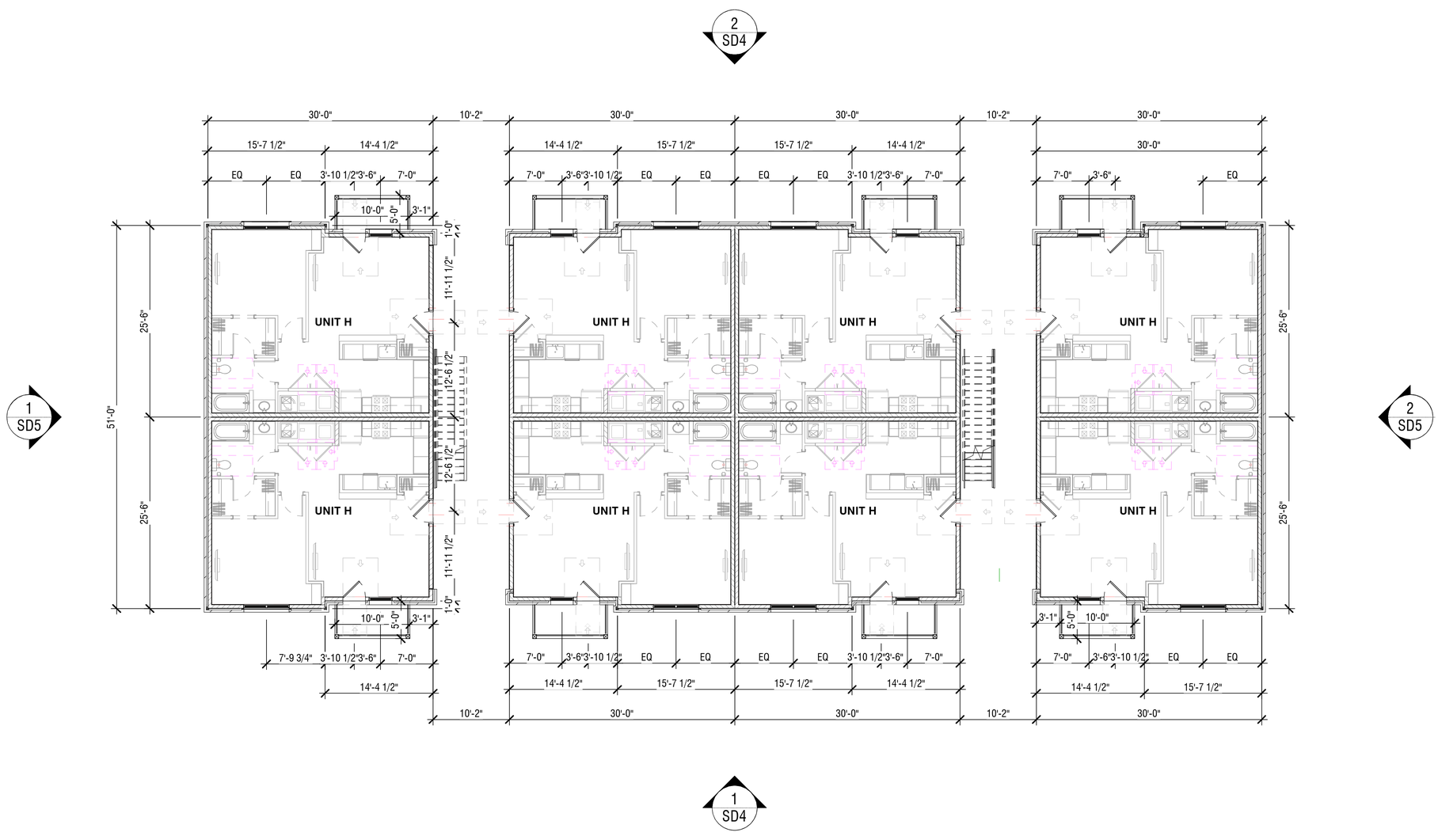
SCALE 1/16" = 1'-0"

BUILDING #4 FLAT - NORTH

SCALE 1/16" = 1'-0"

BUILDING #4 FLAT - WEST
SCALE 1/16" = 1'-0"

BUILDING #4 FLAT - EAST
SCALE 1/16" = 1'-0"



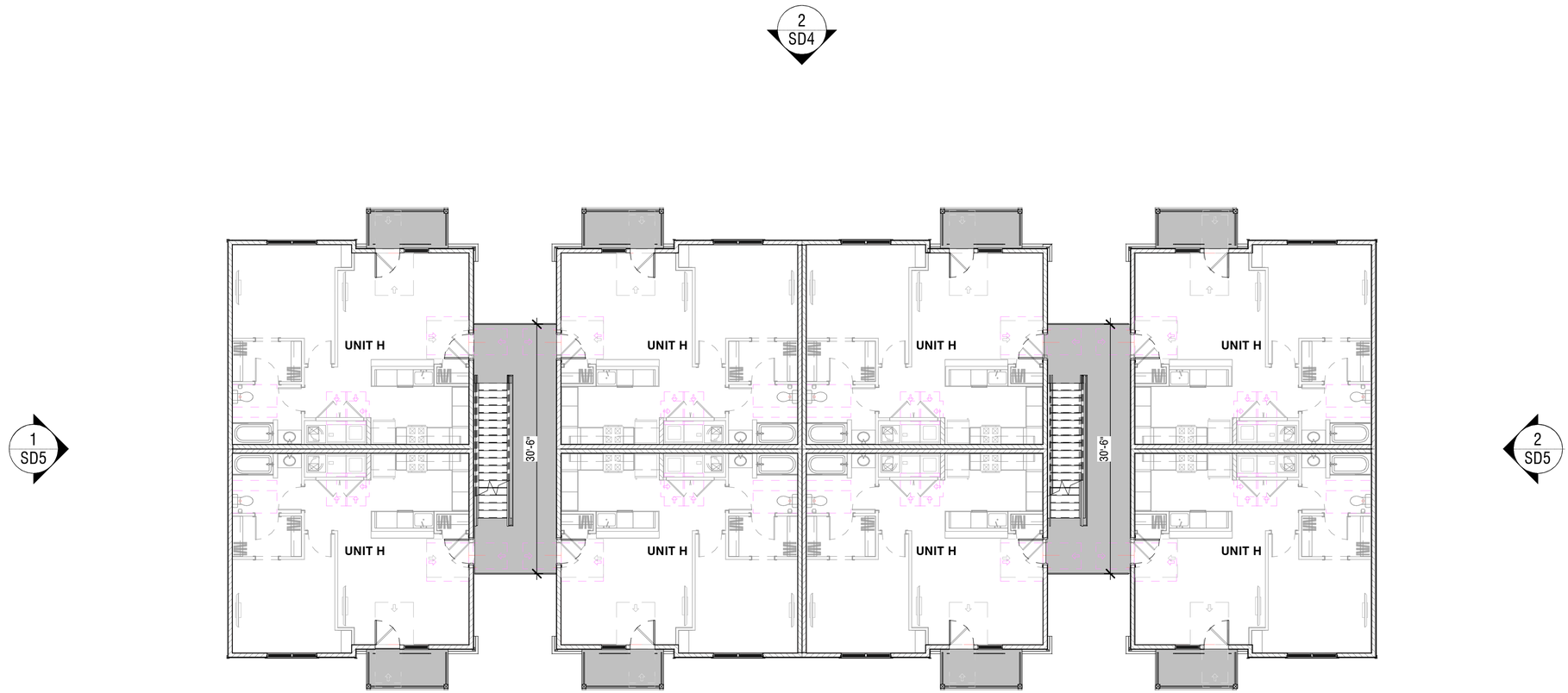
01 LEVEL - BUILDING #5

SCALE 1/16" = 1'-0"

newbauer breezeway building #5

PRELIMINARY DESIGN PACKAGE | JANUARY 17, 2023

METROPOLITAN HOLDINGS | archall



02 LEVEL - BUILDING #5

SCALE 1/16" = 1'-0"

newbauer breezeway building #5

PRELIMINARY DESIGN PACKAGE | JANUARY 17, 2023

METROPOLITAN HOLDINGS | archall

BUILDING #5 - SOUTH

SCALE 1/16" = 1'-0"

BUILDING #5 - NORTH

SCALE 1/16" = 1'-0"

newbauer breezeway building #5

PRELIMINARY DESIGN PACKAGE | JANUARY 17, 2023

METROPOLITAN HOLDINGS | archall

BUILDING #5 - WEST
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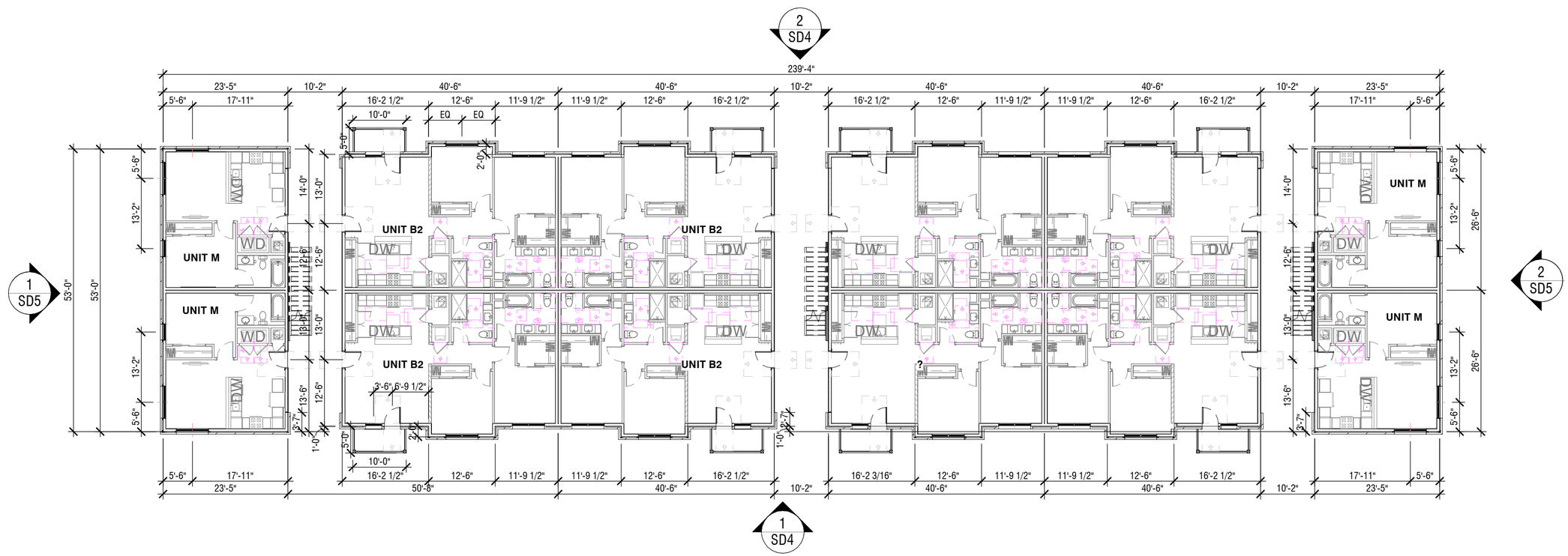
BUILDING #5 - EAST
SCALE 1/16" = 1'-0"



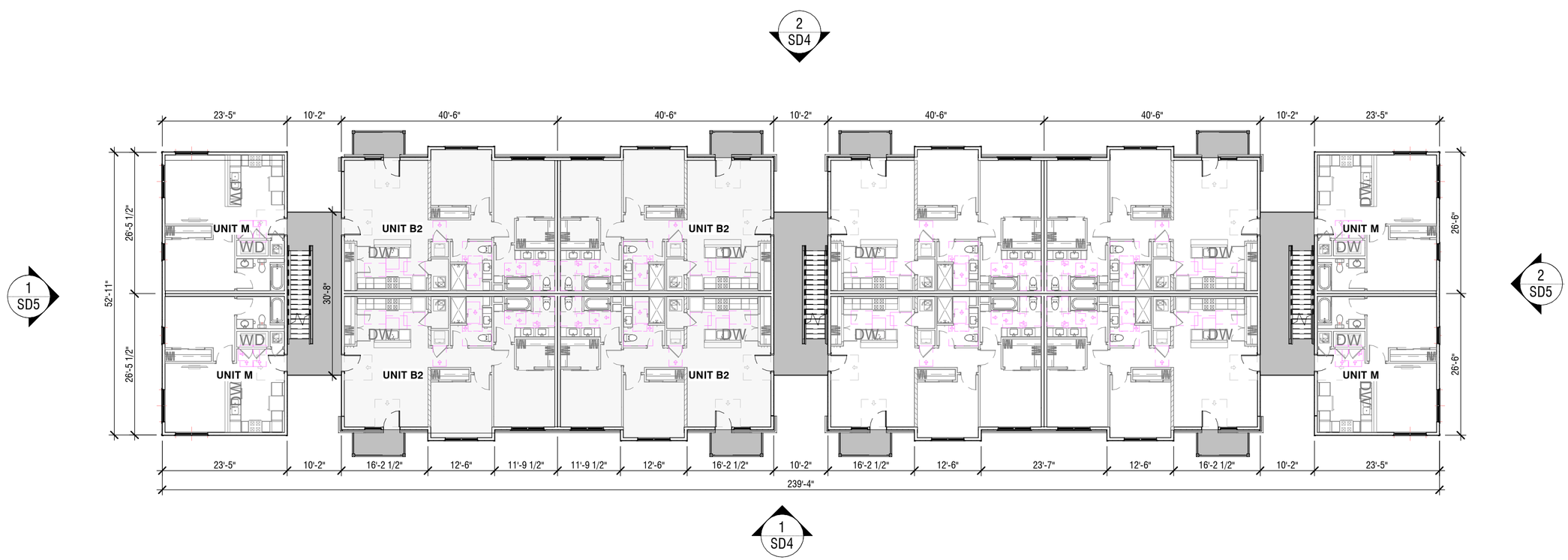
01 LEVEL - SD

SCALE 3/64" = 1'-0"

newbauer breezeway building #7

PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall



02 LEVEL - SD

SCALE 3/64" = 1'-0"

newbauer breezeway building #7

PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

BUILDING #7 - SOUTH

SCALE 3/64" = 1'-0"

BUILDING #7 - NORTH

SCALE 3/64" = 1'-0"

newbauer breezeway building #7

PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

BUILDING #7 - WEST
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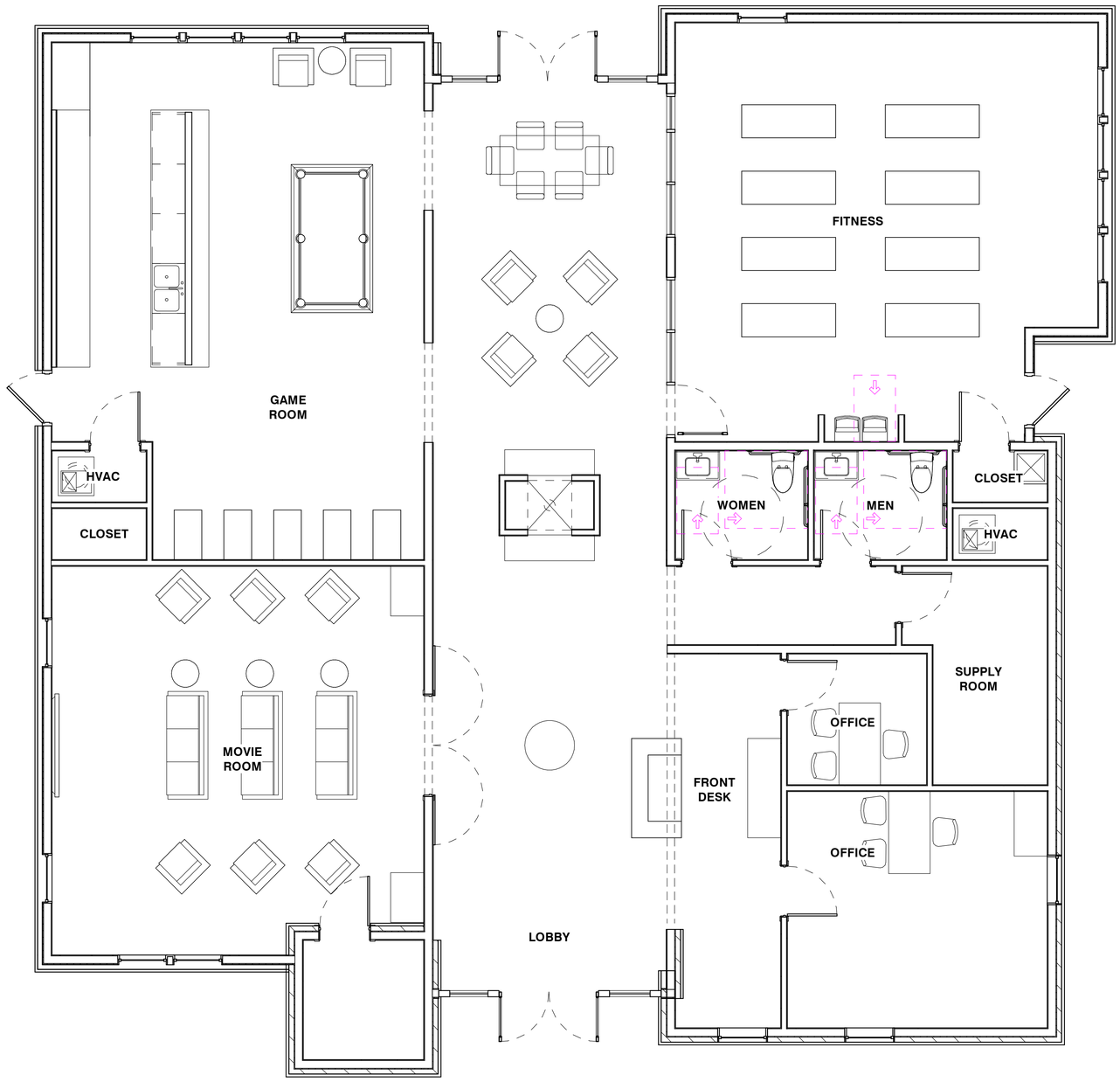
BUILDING #7 - EAST
SCALE 3/64" = 1'-0"



clubhouse plan

SCALE 1/8" = 1'-0"

newbauer clubhouse

PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

side elevation 2

SCALE 1/8" = 1'-0"

side elevation 1

SCALE 1/8" = 1'-0"

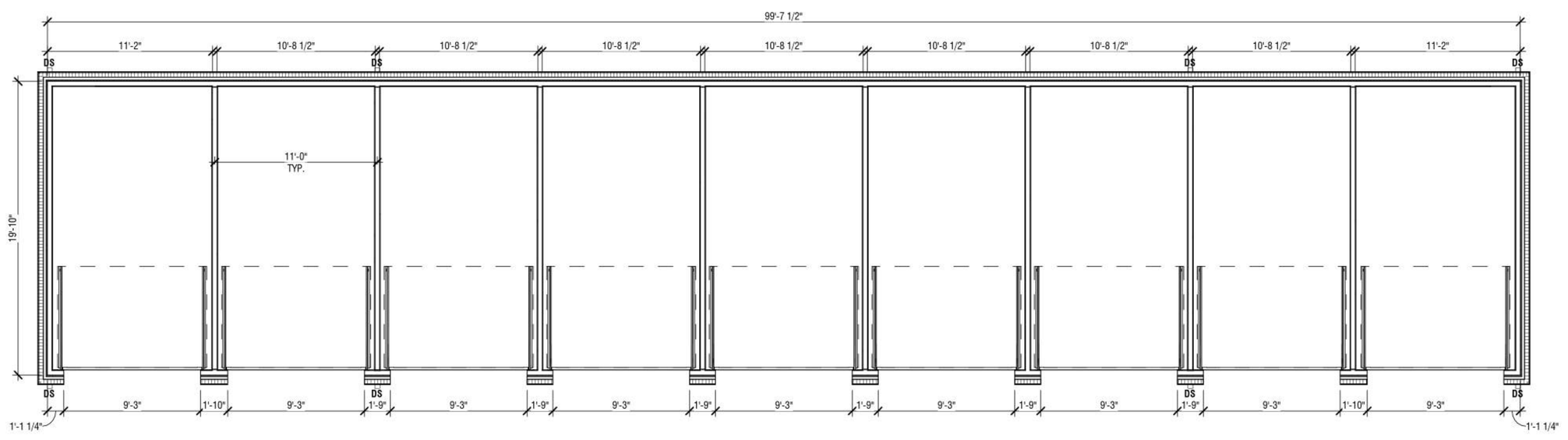
poolside elevation

SCALE 1/8" = 1'-0"

front elevation

SCALE 1/8" = 1'-0"

front elevation
SCALE 1/8" = 1'-0"



garage plan
SCALE 1/8" = 1'-0"

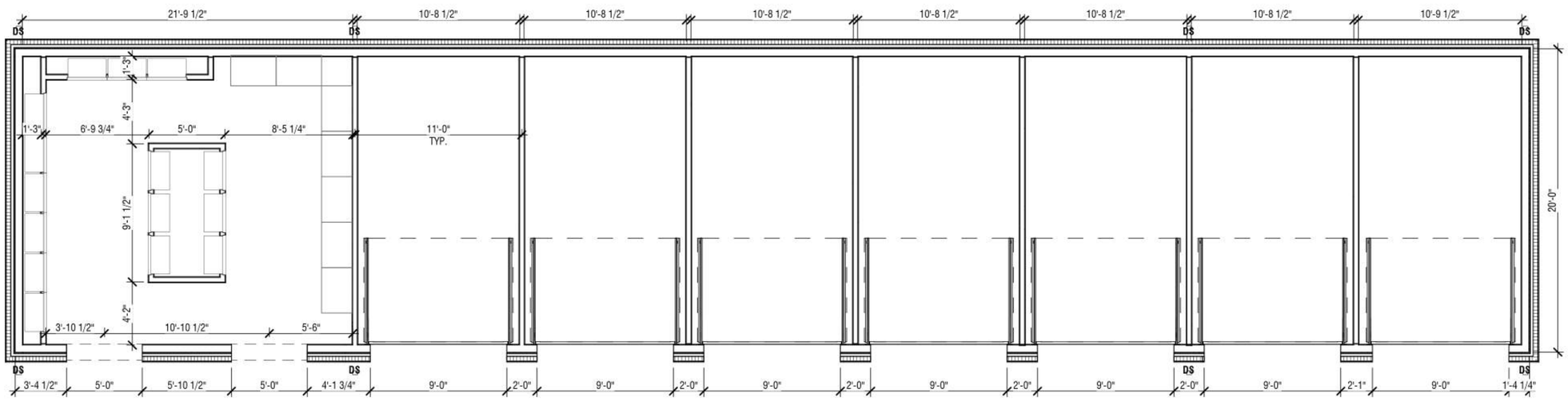
newbauer garage
PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

back elevation
SCALE 1/8" = 1'-0"

side elevation
SCALE 1/8" = 1'-0"

front elevation
SCALE 1/8" = 1'-0"



mail room plan
SCALE 1/8" = 1'-0"

newbauer garage w/ mail
PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

BACK ELEVATION
SCALE 1/8" = 1'-0"

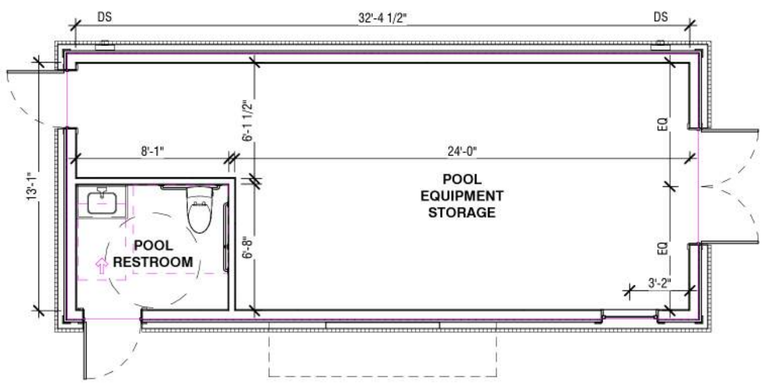
SIDE ELEVATION
SCALE 1/8" = 1'-0"

newbauer garage w/ mail
PRELIMINARY DESIGN PACKAGE | DECEMBER 12, 2022

METROPOLITAN HOLDINGS | archall

front elevation
SCALE 1/8" = 1'-0"

rear elevation
SCALE 1/8" = 1'-0"



pool bldg plan
SCALE 1/8" = 1'-0"

side elevation 1
SCALE 1/8" = 1'-0"

side elvation 2
SCALE 1/8" = 1'-0"

newbauer multi-family
PRELIMINARY DESIGN PACKAGE | DECEMBER 9, 2022

METROPOLITAN HOLDINGS | archall

Huber Heights Fire Division

Inspections require two business days advance notice! (OAC)1301:7-7-09(A)(5)

Occupancy Name:	Newbauer Development
Occupancy Address:	Executive Boulevard

Type of Permit:	HHP&D Site Plan
Additional Permits:	Choose an item.
Additional Permits:	Choose an item.

MCBR BLD:	Not Yet Assigned	HH P&D:	
MCBR MEC:		HHFD Plan:	
MCBR ELE:		HHFD Box:	
REVIEWER:	Susong	DATE:	2/7/2023

Fire Department Comments:

The Huber Heights City Code Part 15 Refers to Fire Code Requirements and has adopted by reference OFC and IFC Appendices

These comments are based only on the proposed site work, fire department access and basic fire protection concept at this time. A full plan review of the building systems, fire protection, egress and life safety will need to be conducted once the architectural plans have been submitted. The proposed development will need to meet the requirements of the Ohio Fire Code 2017, Ohio Building Code 2017, and the Huber Heights Codified Ordinance. Based on the drawings provided the following requirements need to be met. Be advised that additional questions and comments may rise as the project progresses.

Requirements:

- **Hydrants in multi-family and commercial districts shall be placed not more than 300 feet apart, measured on the main and not more than 400 feet from any opening in any building. All new fire hydrants and any existing fire hydrants that are in need of replacement, shall meet the Huber Heights hydrant standard for this district of two (2), five (5) inch diameter steamer nozzles. These steamer nozzles shall have a five (5) inch STORTZ quick connection and one steamer shall have a four (4) inch STORTZ connection approved by the Code Official. Huber Heights Codified Ordinance 1521.06(c). *(Current layout does not appear to meet the 300 feet spacing.)***
- **If buildings are required to be sprinklered at least one fire hydrant shall be provided within 75 feet of the fire department connection for each building. Huber Heights Codified Ordinance 1521.01(e).**

- **Unobstructed access to fire hydrants shall be maintained at all times. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants. Ohio Fire Code 507.5.4. *(See below.)***
- **A 3-foot (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved. *(No trees, bushes, plantings, etc.)* Ohio Fire Code 507.5.5.**
- **The water supply for fire protection shall meet the requirements of OFC 507 and Appendix B. Calculations and findings will need to be determined and provided. Water Main and hydrant extension sizes and spacing will also need to be shown in detail. Fire flow requirements shall be determined in accordance with Ohio Fire Code, Appendix B, Fire Flow Requirements for Buildings. Once the fire flow has been determined the minimum number of required fire hydrants can be confirmed. (Building Construction Classification and Square Footage will need to be determined first).**
- **Fire apparatus access roads shall have an unobstructed width of not less than 20 feet, exclusive of shoulders, except for approved security gates and an unobstructed vertical height for fire apparatus access roads shall be 13 feet 6 inches, in accordance with Ohio Fire Code 503.2.1.**
- **Bridges shall meet the requirements of Ohio Fire Code 503.2.6.**
- **Fire department access roads shall be capable of supporting the imposed load of fire apparatus weighing up to 75,000 lbs. Refer to Ohio Fire Code Appendix D102.1.**
- **Turn radius for fire department vehicle access shall meet the requirements for Huber Heights Fire Division. (Radius has not been checked at this time due to scale on drawings.) Refer to Ohio Fire Code Appendix D103.3 and 503.2.4.**
- **Dead-end fire apparatus access roads shall not exceed 150 feet without a means to turn-around. Ohio Fire Code Appendix D 103.4 and 503.2.5. (Road in front of Building 4).**
- **Buildings where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet, shall be provided with approved aerial fire apparatus access roads. OFC Appendix D105.1. Refer to D105.2, D105.3 and D105.4 for additional requirements.**
- **If required, fire department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or otherwise approved by the fire code official. Ohio Fire Code 912.2.1.**
- **If required, immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other fixed or moveable object. Access to fire department connections shall be approved by the fire code official. Ohio Fire Code 912.4.**

Please reference contact information below for questions or concerns with this document.

CARPENTER MARTY transportation

Newbauer Multifamily Development

Traffic Impact Study

Prepared for: Metropolitan Holdings

February 10, 2023

6612 Singletree Drive
Columbus, OH 43229
614.656.2424
www.cmtran.com

Table of Contents

List of Tables

List of Figures

I. Purpose of Report & Study Objectives

The purpose of this traffic analysis and report is to document the potential traffic impacts of a proposed multifamily development located in Huber Heights, OH. This traffic impact study (TIS) is required by the City of Huber Heights as part of the development approval process.

II. Proposed Development

A. Off-Site Developments

The study area includes the proposed site access points and the intersections of Executive Boulevard with Meijer Access Signal and Brandt Pike.

The surrounding area is largely developed with residential developments to the north, industrial developments to the west, retail developments to the east, and the Rose Music Center to the south. The existing site is currently undeveloped and is located opposite the Rose Music Center along Executive Boulevard.

B. On-Site Development

Location

The site is located on the north side of Executive Parkway, approximately ¾ mile west of Brandt Pike. **Figure 1** shows the location of the proposed site in western Ohio and **Figure 2** shows the study area.

Figure 1 – Location in Western Ohio (Huber Heights outlined in dashed red)

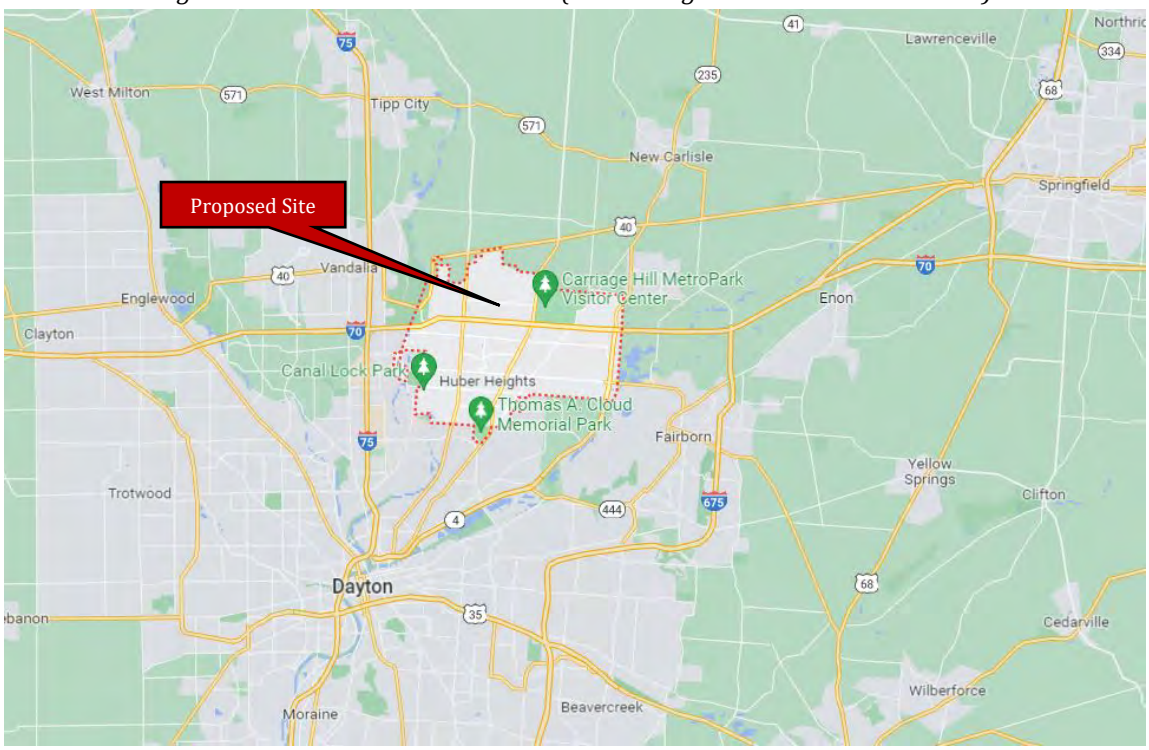


Figure 2 – Location of the Proposed Development (Yellow), Site Drives, and Study Intersections

Land Use & Intensity

The site is proposed to develop as multifamily residential with 300 total units. The development is proposed to have two full access points aligning with the two westerly, existing access points to the Rose Music Center. The site concept plan is provided in **Appendix A.**

III. Area Conditions

A. Area of Influence

The study intersections for the proposed development are listed below. Numbers correspond to **Figure 2**.

1. Executive Boulevard & Site Access 1 / Rose Music Center Access 1
2. Executive Boulevard & Site Access 2 / Rose Music Center Access 2
3. Executive Boulevard & Meijer Access
4. Executive Boulevard & Brandt Pike

Executive Boulevard is a three-lane section with a two-way left turn lane (TWLTL) and a posted speed limit of 35 MPH. Brandt Pike is generally a four-lane section with a center median and dedicated left turn lanes at intersections.

B. Jurisdictions

The proposed site and all intersections are under City of Huber Heights jurisdiction.

C. Traffic Volumes & Conditions

AM and PM peak turning movement counts for all study intersections were collected on January 19, 2023, by Carpenter Marty Transportation (CM). Growth rate data for the study area was obtained from the ODOT Traffic Forecasting Management System (TFMS). The study area shows 0% growth along Executive Boulevard and a 0.5% growth along Brandt Pike. Thus, a 0.5% growth rate was utilized for the entire study area to produce conservative results.

Count data and TFMS growth rate data can be found in **Appendix B**.

IV. Projected Traffic

A. Background Traffic

For analysis, the Opening Year of the development is 2024 and the Design, or Horizon Year, is 2044. The previously described linear annual growth rate was applied to the count data to produce background, or No Build, volumes for the Opening and Horizon Years.

B. Trip Generation

Trips for the proposed development were generated using the ITE methodologies and the Trip Generation Manual, 11th Edition. Land use code (LUC) *220 – Multifamily Housing (Low-Rise) – Not Close to Rail Transit* was used to generate trips for the proposed development. Pass-by and internal capture reductions do not apply. **Table 1** summarizes the trip generation for the proposed development. The full trip generation details can be found in **Appendix C**.

Table 1 – Proposed Site Trip Generation Summary

Land Use	Size	Weekday AM Peak		Weekday PM Peak	
		Entry	Exit	Entry	Exit
220 – Multifamily Housing (Low-Rise) – Not Close to Rail Transit	300 Dwelling Units	28	88	94	55

Site traffic was distributed to/from the site based on count data, knowledge of the surrounding area, and engineering judgement. Site traffic was added to the No Build traffic to produce Build traffic for the Opening and Horizon Years. The full volume calculations can be found in **Appendix D.**

V. Traffic Analysis

A. Turn Lane Warrant & Length Analysis

A turn lane warrant analysis was conducted at the proposed site access points using standard ODOT turn lane warrant graphs. If a turn lane was warranted in any particular scenario, the length was calculated using methodologies in the ODOT Location and Design

(L&D) Manual and it was represented as such in the capacity analysis unless otherwise noted.

B. Capacity Analysis

Synchro 11 software, using the latest module of the Highway Capacity Manual, was used to analyze capacity at all intersections. A minimum Level-of-Service (LOS) of D for the overall intersection/approaches, and LOS E for individual movements, during peak traffic hours was considered acceptable at each intersection. If unacceptable LOS/delay occurred in No Build or Build analysis scenarios, mitigation was determined to bring LOS/delay back to acceptable levels.

VI. Results

A. Turn Lane Warrant & Length Analysis

Results of the turn lane warrant analysis show that no turn lanes are warranted at either site access point. It should be noted that a TWLTL exists along the site frontage of Executive Boulevard and will be utilized by entering site traffic. The full turn lane warrant analysis, including calculated turn lane lengths for existing turn lanes at the signalized intersections, can be found in **Appendix E.**

B. Capacity Analysis

Results of the baseline capacity analysis for the study intersections in each analysis scenario can be seen in **Table 2**. Signal timings, including cycle lengths and splits, were optimized for each scenario. Planning level clearance intervals were utilized per methodology from the ODOT Analysis and Traffic Simulation (OATS) Manual. The full capacity analysis can be found in **Appendix F.**

Table 2 – Baseline Capacity Analysis Summary (LOS/delay)

Intersection	Approach/ Movement	Opening Year (2024)				Horizon Year (2044)			
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build
Brandt Pike & Executive Blvd.	EB	B/19.3	B/19.6	C/20.1	C/20.5	B/19.2	B/19.7	C/20.3	C/20.9
	NB	A/5.4	A/5.8	A/6.7	A/6.8	A/5.8	A/6.2	A/7.1	A/7.3
	SB	B/16.3	B/17.5	B/14.4	B/15.1	B/18.3	B/19.5	B/15.3	B/16.0
	Total	**B/12.6**	**B/13.7**	**B/11.1**	**B/11.6**	**B/13.8**	**B/14.9**	**B/11.6**	**B/12.1**
Meijer Drive & Executive Blvd.	EB	A/6.5	A/7.0	A/7.1	A/7.4	A/6.6	A/7.1	A/7.3	A/7.6
	WB	A/6.5	A/6.7	A/6.8	A/7.2	A/6.6	A/6.8	A/6.8	A/7.3
	NB	B/12.4	B/12.4	B/13.5	B/13.5	B/12.4	B/12.4	B/13.5	B/13.5
	Total	**A/7.2**	**A/7.3**	**A/8.8**	**A/8.7**	**A/7.2**	**A/7.4**	**A/8.8**	**A/8.8**
Site Access 1/ Rose Music Center Access 1 & Executive Blvd.	EBL	---	A/7.8	---	A/7.8	---	A/7.9	---	A/7.8
	WBL	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0
	NB	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0	A/0.0
	SB	---	B/11.7	---	B/13.3	---	B/12.1	---	B/14.0
Site Access 2/ Rose Music Center Access 2 & Executive Blvd.	EBL	---	A/7.8	---	A/7.9	---	A/7.9	---	A/7.9
	WBL	A/0.0	A/0.0	A/7.9	A/7.9	A/0.0	A/0.0	A/7.9	A/8.0
	NB	A/9.0	A/9.3	A/9.7	A/9.9	A/9.0	A/9.4	A/9.9	B/10.1
	SB	---	B/12.0	---	B/13.7	---	B/12.4	---	B/14.4

As shown in **Table 2**, all intersections operate with acceptable LOS/delay.

VII. Recommendations and Conclusions

Based on the results of the turn lane warrant analysis, no turn lanes meet warrants for the proposed access points, and none are recommended. A TWLTL is present along Executive Boulevard and will provide left turn deceleration and storage for site ingress. Based on the results of the capacity analysis, all study intersections operate with acceptable LOS/delay. Thus, no improvements are required nor recommended for any study intersection.

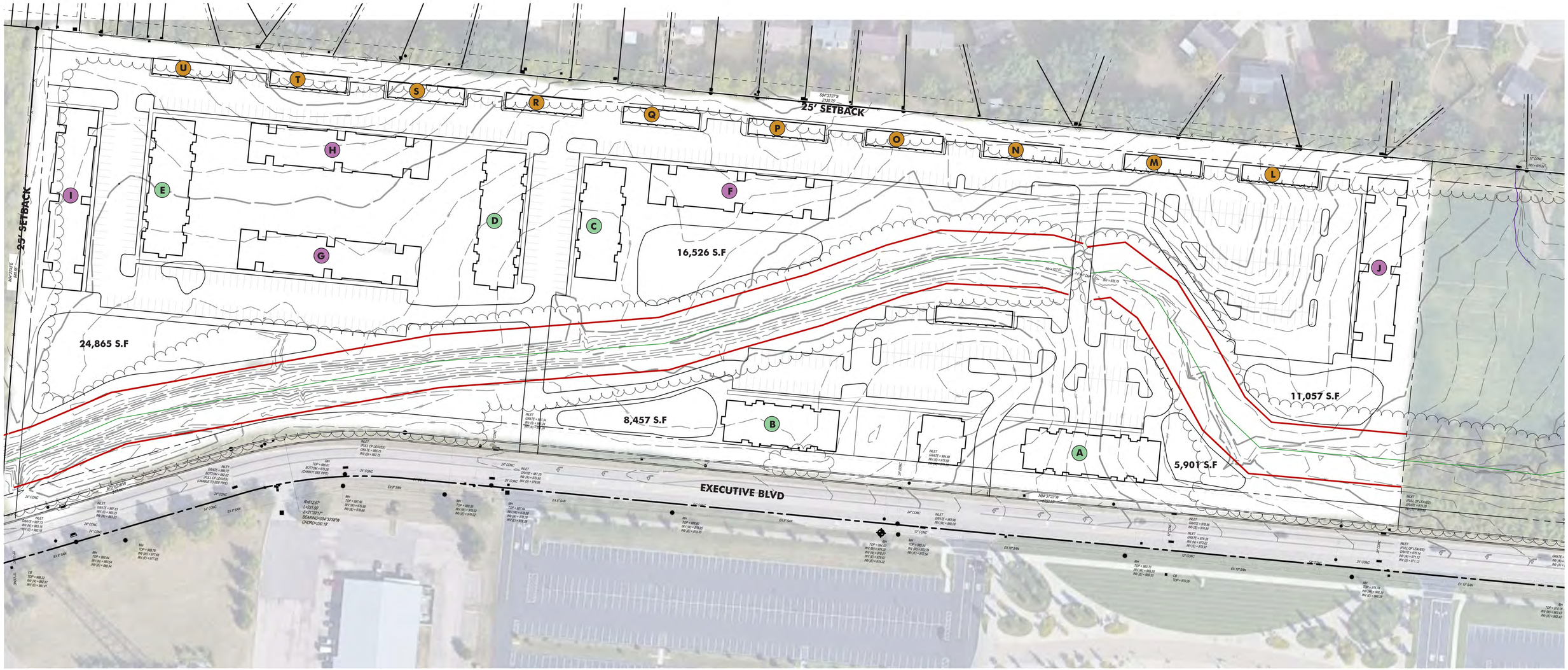
VIII. Appendices

Appendix A – Site Plan
Appendix B – Count Data and Growth Rates
Appendix C – Trip Generation
Appendix D – Volume Calculations
Appendix E – Turn Lane Warrant and Length Analysis
Appendix F – Capacity Analysis

Appendix A
Site Plan

CARPENTER MARTY transportation

Appendix A



SITE DATA

SITE ACREAGE:	21.27 AC
TOTAL UNITS:	300 UNITS
DENSITY:	14.1 DU/AC
TOTAL PARKING:	GARAGE SPACE: 88 SPACES
	SURFACE SPACE: 550 SPACES
	TOTAL SPACE: 638 SPACES PROVIDED

BUILDING TYPE SUMMARY

- CARRIAGE HOME BUILDING
- LARGE TOWN HOME BUILDING- 36 UNIT
- SMALL TOWN HOME BUILDING- 24 UNIT

0 30' 60' 120'
SCALE: 1" = 60'-0"

Appendix B
Count Data and Growth Rates

Appendix B

CARPENTER MARTY transportation

Executive Boulevard & Brandt Pike - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

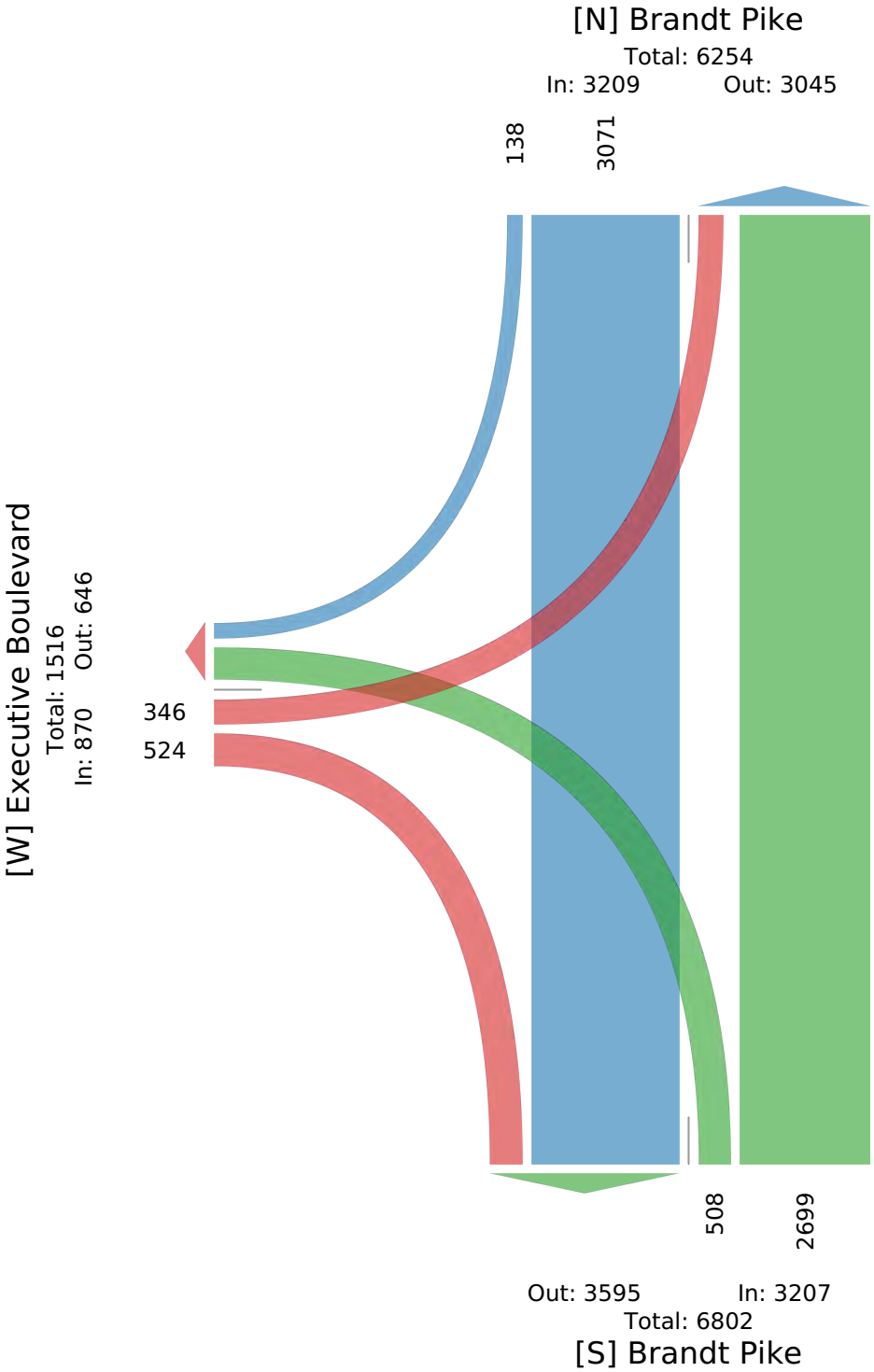
Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031227, Location: 39.872116, -84.099223

Leg	Executive Boulevard				Brandt Pike				Brandt Pike				
Direction	Eastbound				Northbound				Southbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2023-01-19 7:00AM	3	19	0	**22**	12	49	0	**61**	188	8	0	**196**	**279**
7:15AM	7	19	0	**26**	16	76	0	**92**	242	6	0	**248**	**366**
7:30AM	8	19	0	**27**	15	89	0	**104**	293	7	0	**300**	**431**
7:45AM	6	36	0	**42**	39	137	0	**176**	217	5	0	**222**	**440**
Hourly Total	24	93	0	**117**	82	351	0	**433**	940	26	0	**966**	**1516**
8:00AM	15	22	0	**37**	25	108	0	**133**	182	8	0	**190**	**360**
8:15AM	9	27	0	**36**	21	106	0	**127**	228	12	0	**240**	**403**
8:30AM	4	20	0	**24**	36	117	0	**153**	244	15	0	**259**	**436**
8:45AM	11	23	0	**34**	29	104	0	**133**	194	7	0	**201**	**368**
Hourly Total	39	92	0	**131**	111	435	0	**546**	848	42	0	**890**	**1567**
4:00PM	46	41	0	**87**	37	260	0	**297**	161	9	0	**170**	**554**
4:15PM	41	44	0	**85**	41	290	0	**331**	150	7	0	**157**	**573**
4:30PM	40	54	0	**94**	36	234	0	**270**	183	8	0	**191**	**555**
4:45PM	23	43	0	**66**	55	251	0	**306**	162	9	0	**171**	**543**
Hourly Total	150	182	0	**332**	169	1035	0	**1204**	656	33	0	**689**	**2225**
5:00PM	34	54	0	**88**	37	275	0	**312**	170	5	0	**175**	**575**
5:15PM	36	34	0	**70**	38	226	0	**264**	159	11	0	**170**	**504**
5:30PM	39	33	0	**72**	39	204	0	**243**	151	11	0	**162**	**477**
5:45PM	24	36	0	**60**	32	173	0	**205**	147	10	0	**157**	**422**
Hourly Total	133	157	0	**290**	146	878	0	**1024**	627	37	0	**664**	**1978**
Total	346	524	0	**870**	508	2699	0	**3207**	3071	138	0	**3209**	**7286**
% Approach	39.8%	60.2%	0%	**-**	15.8%	84.2%	0%	**-**	95.7%	4.3%	0%	**-**	-
% Total	4.7%	7.2%	0%	**11.9%**	7.0%	37.0%	0%	**44.0%**	42.1%	1.9%	0%	**44.0%**	-
Lights	336	487	0	**823**	468	2653	0	**3121**	3016	129	0	**3145**	7089
% Lights	97.1%	92.9%	0%	**94.6%**	92.1%	98.3%	0%	**97.3%**	98.2%	93.5%	0%	**98.0%**	97.3%
Articulated Trucks	0	23	0	**23**	21	10	0	**31**	11	0	0	**11**	65
% Articulated Trucks	0%	4.4%	0%	**2.6%**	4.1%	0.4%	0%	**1.0%**	0.4%	0%	0%	**0.3%**	0.9%
Buses and Single-Unit Trucks	10	14	0	**24**	19	36	0	**55**	44	9	0	**53**	132
% Buses and Single-Unit Trucks	2.9%	2.7%	0%	**2.8%**	3.7%	1.3%	0%	**1.7%**	1.4%	6.5%	0%	**1.7%**	1.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Brandt Pike - TMC
Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031227, Location: 39.872116, -84.099223

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Brandt Pike - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

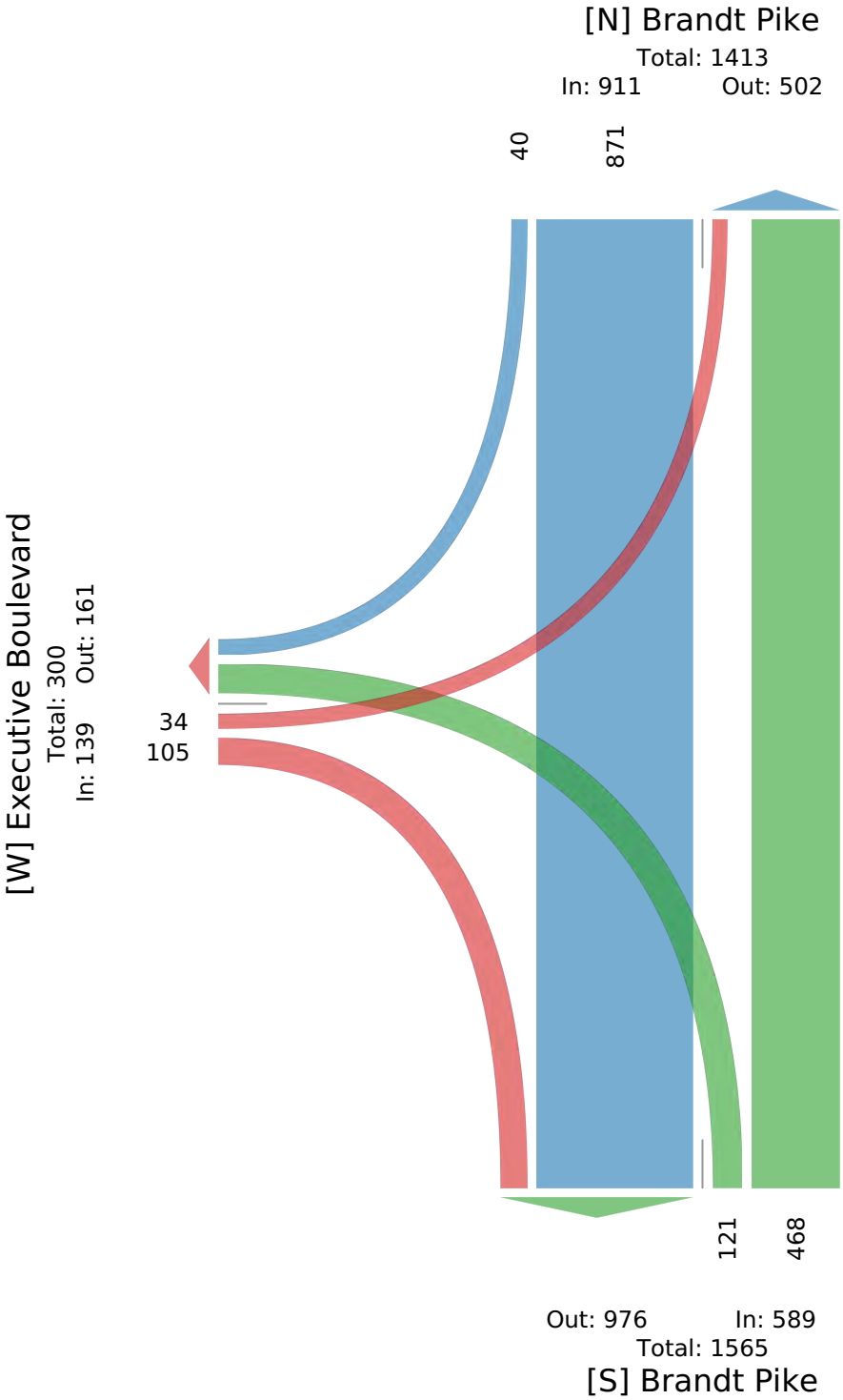
Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031227, Location: 39.872116, -84.099223

Leg	Executive Boulevard				Brandt Pike				Brandt Pike				
Direction	Eastbound				Northbound				Southbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2023-01-19 7:45AM	6	36	0	**42**	39	137	0	**176**	217	5	0	**222**	**440**
8:00AM	15	22	0	**37**	25	108	0	**133**	182	8	0	**190**	**360**
8:15AM	9	27	0	**36**	21	106	0	**127**	228	12	0	**240**	**403**
8:30AM	4	20	0	**24**	36	117	0	**153**	244	15	0	**259**	**436**
Total	34	105	0	**139**	121	468	0	**589**	871	40	0	**911**	**1639**
% Approach	24.5%	75.5%	0%	**-**	20.5%	79.5%	0%	**-**	95.6%	4.4%	0%	**-**	-
% Total	2.1%	6.4%	0%	**8.5%**	7.4%	28.6%	0%	**35.9%**	53.1%	2.4%	0%	**55.6%**	-
PHF	0.567	0.729	-	**0.827**	0.776	0.854	-	**0.837**	0.892	0.667	-	**0.879**	0.931
Lights	30	90	0	**120**	115	444	0	**559**	850	39	0	**889**	1568
% Lights	88.2%	85.7%	0%	**86.3%**	95.0%	94.9%	0%	**94.9%**	97.6%	97.5%	0%	**97.6%**	95.7%
Articulated Trucks	0	11	0	**11**	1	4	0	**5**	1	0	0	**1**	17
% Articulated Trucks	0%	10.5%	0%	**7.9%**	0.8%	0.9%	0%	**0.8%**	0.1%	0%	0%	**0.1%**	1.0%
Buses and Single-Unit Trucks	4	4	0	**8**	5	20	0	**25**	20	1	0	**21**	54
% Buses and Single-Unit Trucks	11.8%	3.8%	0%	**5.8%**	4.1%	4.3%	0%	**4.2%**	2.3%	2.5%	0%	**2.3%**	3.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Brandt Pike - TMC
Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031227, Location: 39.872116, -84.099223

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Brandt Pike - TMC

Thu Jan 19, 2023
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031227, Location: 39.872116, -84.099223

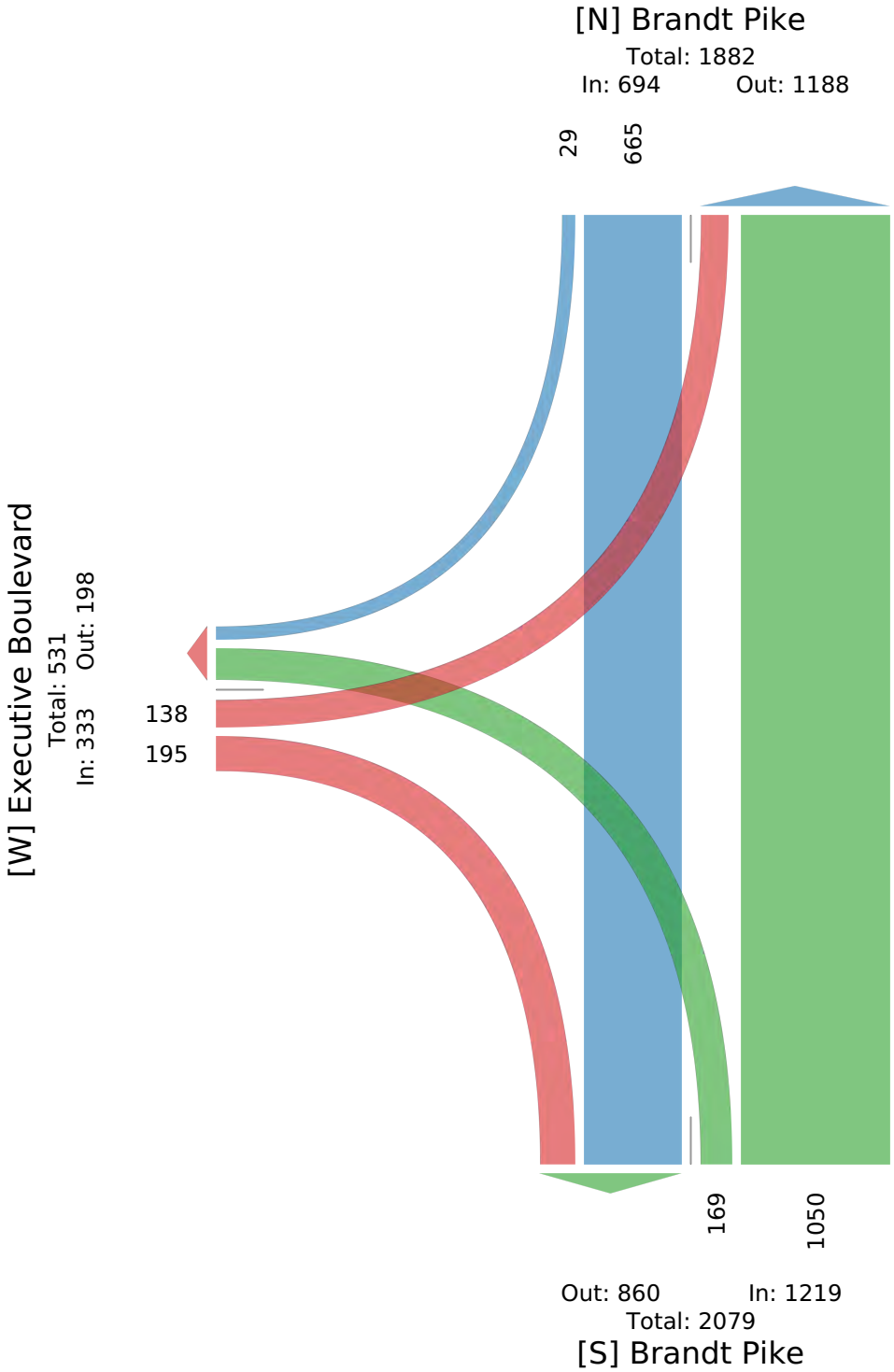
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	Executive Boulevard Eastbound				Brandt Pike Northbound				Brandt Pike Southbound				
Time	L	R	U	**App**	L	T	U	**App**	T	R	U	**App**	**Int**
2023-01-19 4:15PM	41	44	0	**85**	41	290	0	**331**	150	7	0	**157**	**573**
4:30PM	40	54	0	**94**	36	234	0	**270**	183	8	0	**191**	**555**
4:45PM	23	43	0	**66**	55	251	0	**306**	162	9	0	**171**	**543**
5:00PM	34	54	0	**88**	37	275	0	**312**	170	5	0	**175**	**575**
Total	138	195	0	**333**	169	1050	0	**1219**	665	29	0	**694**	**2246**
% Approach	41.4%	58.6%	0%	**-**	13.9%	86.1%	0%	**-**	95.8%	4.2%	0%	**-**	-
% Total	6.1%	8.7%	0%	**14.8%**	7.5%	46.7%	0%	**54.3%**	29.6%	1.3%	0%	**30.9%**	-
PHF	0.841	0.903	-	**0.886**	0.768	0.905	-	**0.921**	0.908	0.806	-	**0.908**	0.977
Lights	136	186	0	**322**	153	1041	0	**1194**	655	26	0	**681**	2197
% Lights	98.6%	95.4%	0%	**96.7%**	90.5%	99.1%	0%	**97.9%**	98.5%	89.7%	0%	**98.1%**	97.8%
Articulated Trucks	0	5	0	**5**	11	2	0	**13**	2	0	0	**2**	20
% Articulated Trucks	0%	2.6%	0%	**1.5%**	6.5%	0.2%	0%	**1.1%**	0.3%	0%	0%	**0.3%**	0.9%
Buses and Single-Unit Trucks	2	4	0	**6**	5	7	0	**12**	8	3	0	**11**	29
% Buses and Single-Unit Trucks	1.4%	2.1%	0%	**1.8%**	3.0%	0.7%	0%	**1.0%**	1.2%	10.3%	0%	**1.6%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Brandt Pike - TMC
Thu Jan 19, 2023
PM Peak (4:15 PM - 5:15 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031227, Location: 39.872116, -84.099223

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Mejier Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

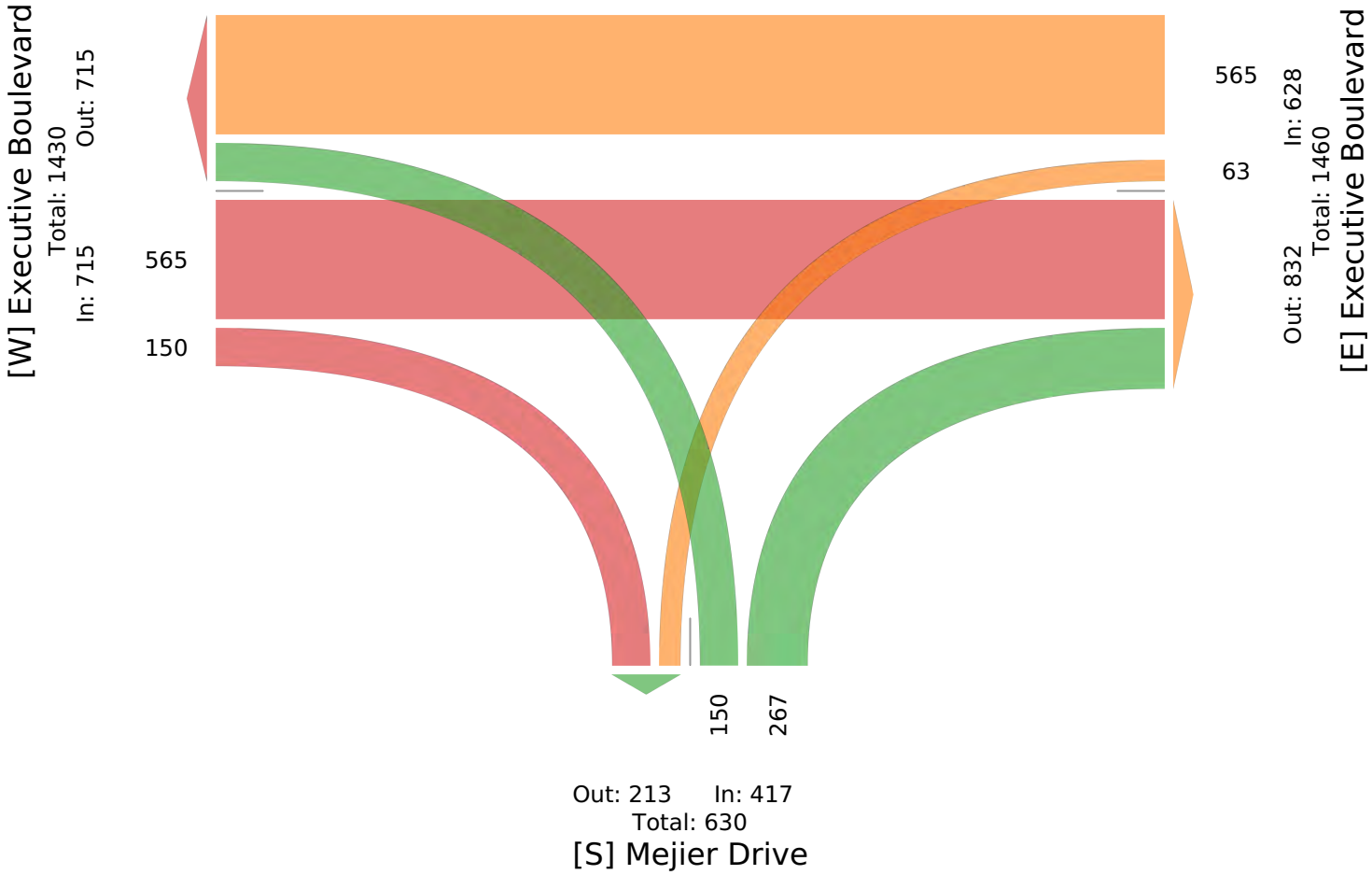
Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031238, Location: 39.870552, -84.105399

Leg	Executive Boulevard				Executive Boulevard				Mejier Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 7:00AM	13	5	0	**18**	3	19	0	**22**	3	4	0	**7**	**47**
7:15AM	10	4	0	**14**	0	20	0	**20**	6	7	0	**13**	**47**
7:30AM	14	3	0	**17**	4	20	0	**24**	5	5	0	**10**	**51**
7:45AM	33	8	0	**41**	0	45	0	**45**	8	3	0	**11**	**97**
Hourly Total	70	20	0	**90**	7	104	0	**111**	22	19	0	**41**	**242**
8:00AM	26	4	0	**30**	3	28	0	**31**	4	9	0	**13**	**74**
8:15AM	26	4	0	**30**	3	31	0	**34**	0	5	0	**5**	**69**
8:30AM	21	11	0	**32**	3	47	0	**50**	3	3	0	**6**	**88**
8:45AM	18	5	0	**23**	2	35	0	**37**	5	7	0	**12**	**72**
Hourly Total	91	24	0	**115**	11	141	0	**152**	12	24	0	**36**	**303**
4:00PM	51	23	0	**74**	7	39	0	**46**	13	38	0	**51**	**171**
4:15PM	54	14	0	**68**	6	38	0	**44**	18	36	0	**54**	**166**
4:30PM	62	13	0	**75**	5	39	0	**44**	15	27	0	**42**	**161**
4:45PM	48	10	0	**58**	6	48	0	**54**	14	20	0	**34**	**146**
Hourly Total	215	60	0	**275**	24	164	0	**188**	60	121	0	**181**	**644**
5:00PM	58	17	0	**75**	4	38	0	**42**	11	30	0	**41**	**158**
5:15PM	44	9	0	**53**	9	40	0	**49**	15	26	0	**41**	**143**
5:30PM	46	12	0	**58**	6	42	0	**48**	11	26	0	**37**	**143**
5:45PM	41	8	0	**49**	2	36	0	**38**	19	21	0	**40**	**127**
Hourly Total	189	46	0	**235**	21	156	0	**177**	56	103	0	**159**	**571**
Total	565	150	0	**715**	63	565	0	**628**	150	267	0	**417**	**1760**
% Approach	79.0%	21.0%	0%	**-**	10.0%	90.0%	0%	**-**	36.0%	64.0%	0%	**-**	-
% Total	32.1%	8.5%	0%	**40.6%**	3.6%	32.1%	0%	**35.7%**	8.5%	15.2%	0%	**23.7%**	-
Lights	534	145	0	**679**	49	533	0	**582**	149	251	0	**400**	1661
% Lights	94.5%	96.7%	0%	**95.0%**	77.8%	94.3%	0%	**92.7%**	99.3%	94.0%	0%	**95.9%**	94.4%
Articulated Trucks	21	1	0	**22**	0	19	0	**19**	0	2	0	**2**	43
% Articulated Trucks	3.7%	0.7%	0%	**3.1%**	0%	3.4%	0%	**3.0%**	0%	0.7%	0%	**0.5%**	2.4%
Buses and Single-Unit Trucks	10	4	0	**14**	14	13	0	**27**	1	14	0	**15**	56
% Buses and Single-Unit Trucks	1.8%	2.7%	0%	**2.0%**	22.2%	2.3%	0%	**4.3%**	0.7%	5.2%	0%	**3.6%**	3.2%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Mejier Drive - TMC
Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031238, Location: 39.870552, -84.105399

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Mejier Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

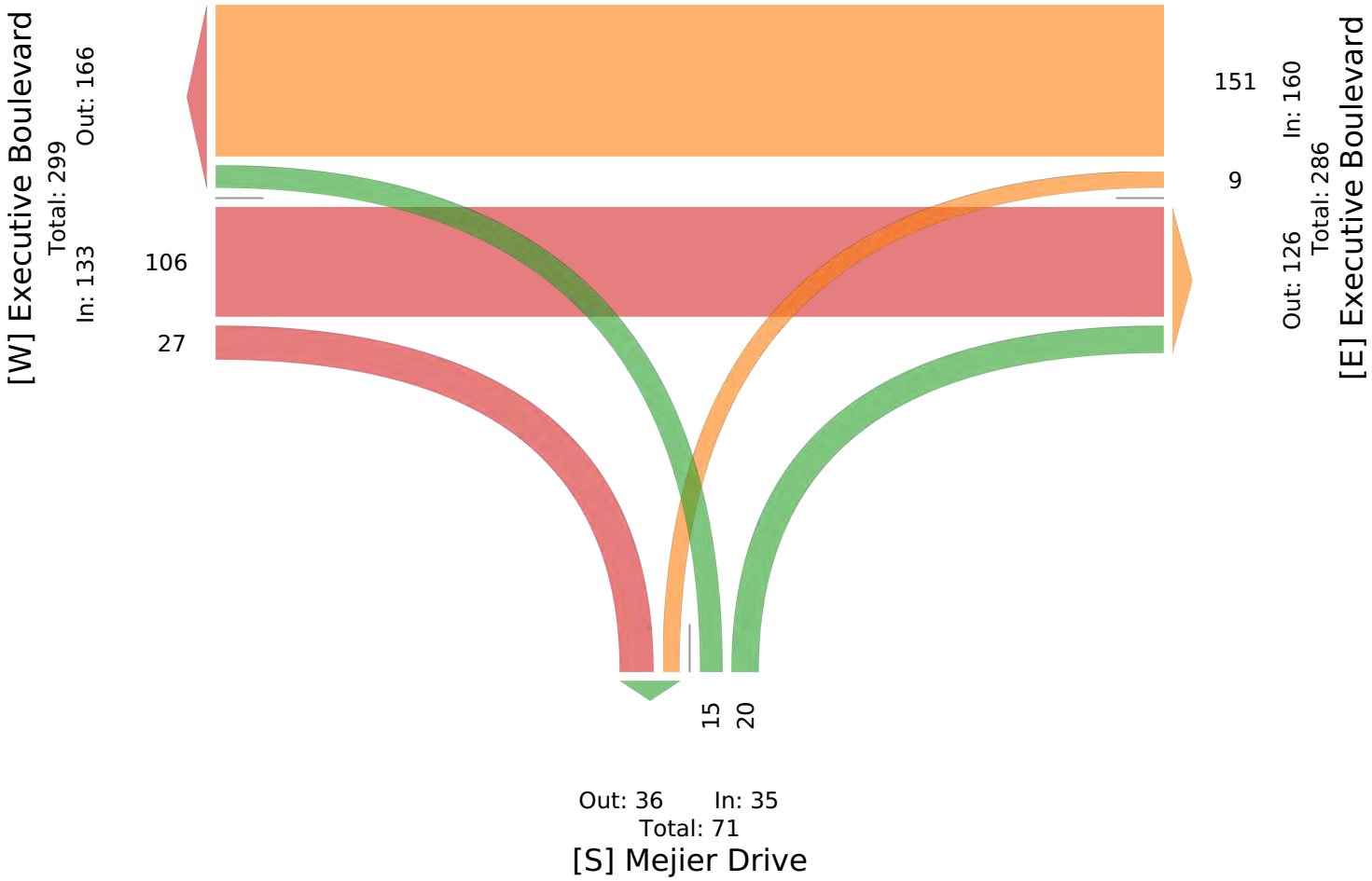
Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031238, Location: 39.870552, -84.105399

Leg	Executive Boulevard				Executive Boulevard				Mejier Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 7:45AM	33	8	0	**41**	0	45	0	**45**	8	3	0	**11**	**97**
8:00AM	26	4	0	**30**	3	28	0	**31**	4	9	0	**13**	**74**
8:15AM	26	4	0	**30**	3	31	0	**34**	0	5	0	**5**	**69**
8:30AM	21	11	0	**32**	3	47	0	**50**	3	3	0	**6**	**88**
Total	106	27	0	**133**	9	151	0	**160**	15	20	0	**35**	**328**
% Approach	79.7%	20.3%	0%	**-**	5.6%	94.4%	0%	**-**	42.9%	57.1%	0%	**-**	-
% Total	32.3%	8.2%	0%	**40.5%**	2.7%	46.0%	0%	**48.8%**	4.6%	6.1%	0%	**10.7%**	-
PHF	0.803	0.614	-	**0.811**	0.750	0.803	-	**0.800**	0.469	0.556	-	**0.673**	0.845
Lights	90	24	0	**114**	7	145	0	**152**	14	16	0	**30**	296
% Lights	84.9%	88.9%	0%	**85.7%**	77.8%	96.0%	0%	**95.0%**	93.3%	80.0%	0%	**85.7%**	90.2%
Articulated Trucks	10	1	0	**11**	0	1	0	**1**	0	1	0	**1**	13
% Articulated Trucks	9.4%	3.7%	0%	**8.3%**	0%	0.7%	0%	**0.6%**	0%	5.0%	0%	**2.9%**	4.0%
Buses and Single-Unit Trucks	6	2	0	**8**	2	5	0	**7**	1	3	0	**4**	19
% Buses and Single-Unit Trucks	5.7%	7.4%	0%	**6.0%**	22.2%	3.3%	0%	**4.4%**	6.7%	15.0%	0%	**11.4%**	5.8%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Mejier Drive - TMC
Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031238, Location: 39.870552, -84.105399

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Mejier Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

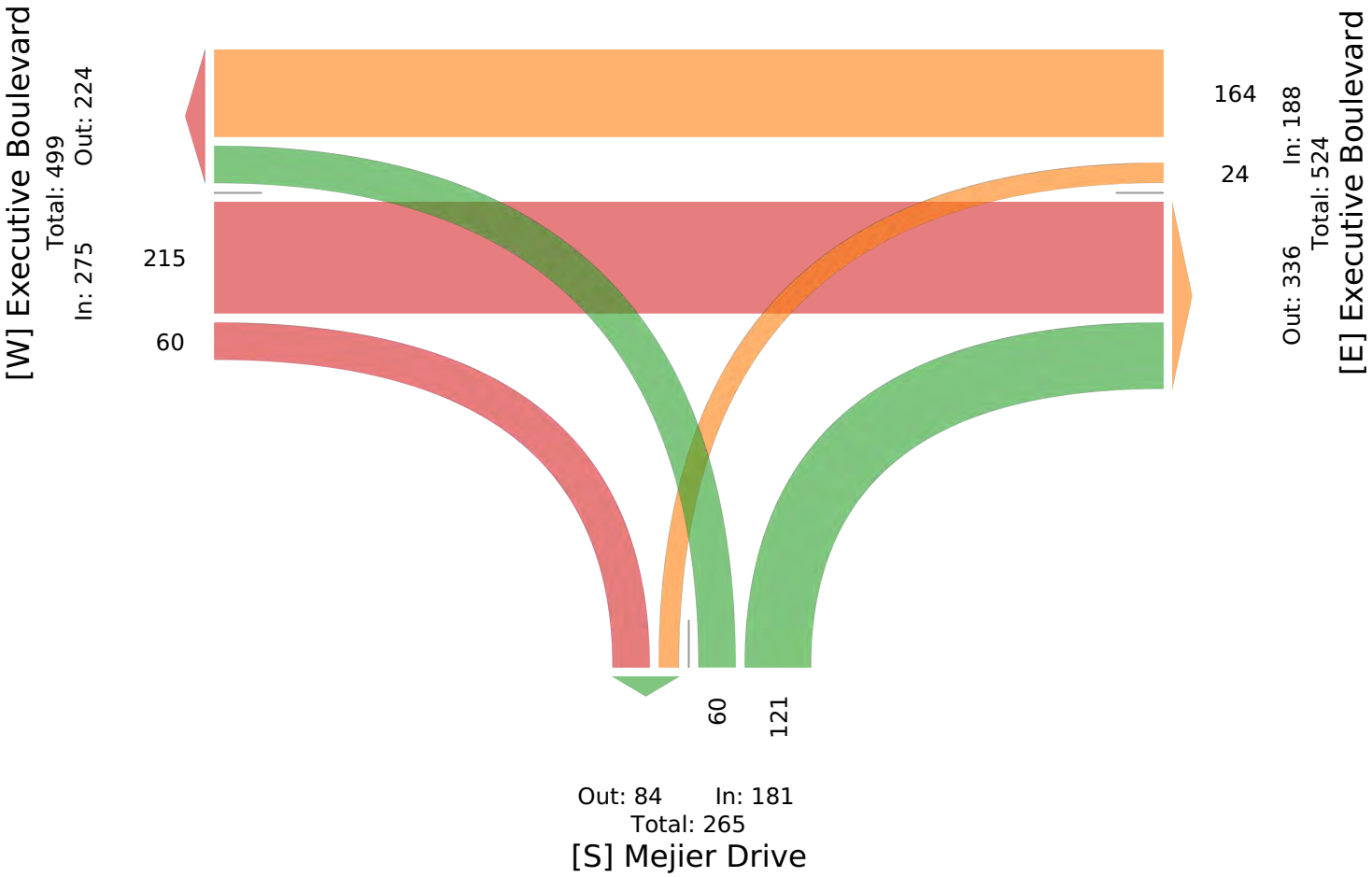
Thu Jan 19, 2023
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031238, Location: 39.870552, -84.105399

Leg Direction	Executive Boulevard Eastbound				Executive Boulevard Westbound				Mejier Drive Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 4:00PM	51	23	0	**74**	7	39	0	**46**	13	38	0	**51**	**171**
4:15PM	54	14	0	**68**	6	38	0	**44**	18	36	0	**54**	**166**
4:30PM	62	13	0	**75**	5	39	0	**44**	15	27	0	**42**	**161**
4:45PM	48	10	0	**58**	6	48	0	**54**	14	20	0	**34**	**146**
Total	215	60	0	**275**	24	164	0	**188**	60	121	0	**181**	**644**
% Approach	78.2%	21.8%	0%	**-**	12.8%	87.2%	0%	**-**	33.1%	66.9%	0%	**-**	-
% Total	33.4%	9.3%	0%	**42.7%**	3.7%	25.5%	0%	**29.2%**	9.3%	18.8%	0%	**28.1%**	-
PHF	0.867	0.652	-	**0.917**	0.857	0.854	-	**0.870**	0.833	0.796	-	**0.838**	0.942
Lights	210	59	0	**269**	18	156	0	**174**	60	117	0	**177**	620
% Lights	97.7%	98.3%	0%	**97.8%**	75.0%	95.1%	0%	**92.6%**	100%	96.7%	0%	**97.8%**	96.3%
Articulated Trucks	4	0	0	**4**	0	4	0	**4**	0	1	0	**1**	9
% Articulated Trucks	1.9%	0%	0%	**1.5%**	0%	2.4%	0%	**2.1%**	0%	0.8%	0%	**0.6%**	1.4%
Buses and Single-Unit Trucks	1	1	0	**2**	6	4	0	**10**	0	3	0	**3**	15
% Buses and Single-Unit Trucks	0.5%	1.7%	0%	**0.7%**	25.0%	2.4%	0%	**5.3%**	0%	2.5%	0%	**1.7%**	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Mejier Drive - TMC
Thu Jan 19, 2023
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031238, Location: 39.870552, -84.105399

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & West Middle Music Drive - TMC

Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031222, Location: 39.870573, -84.111955

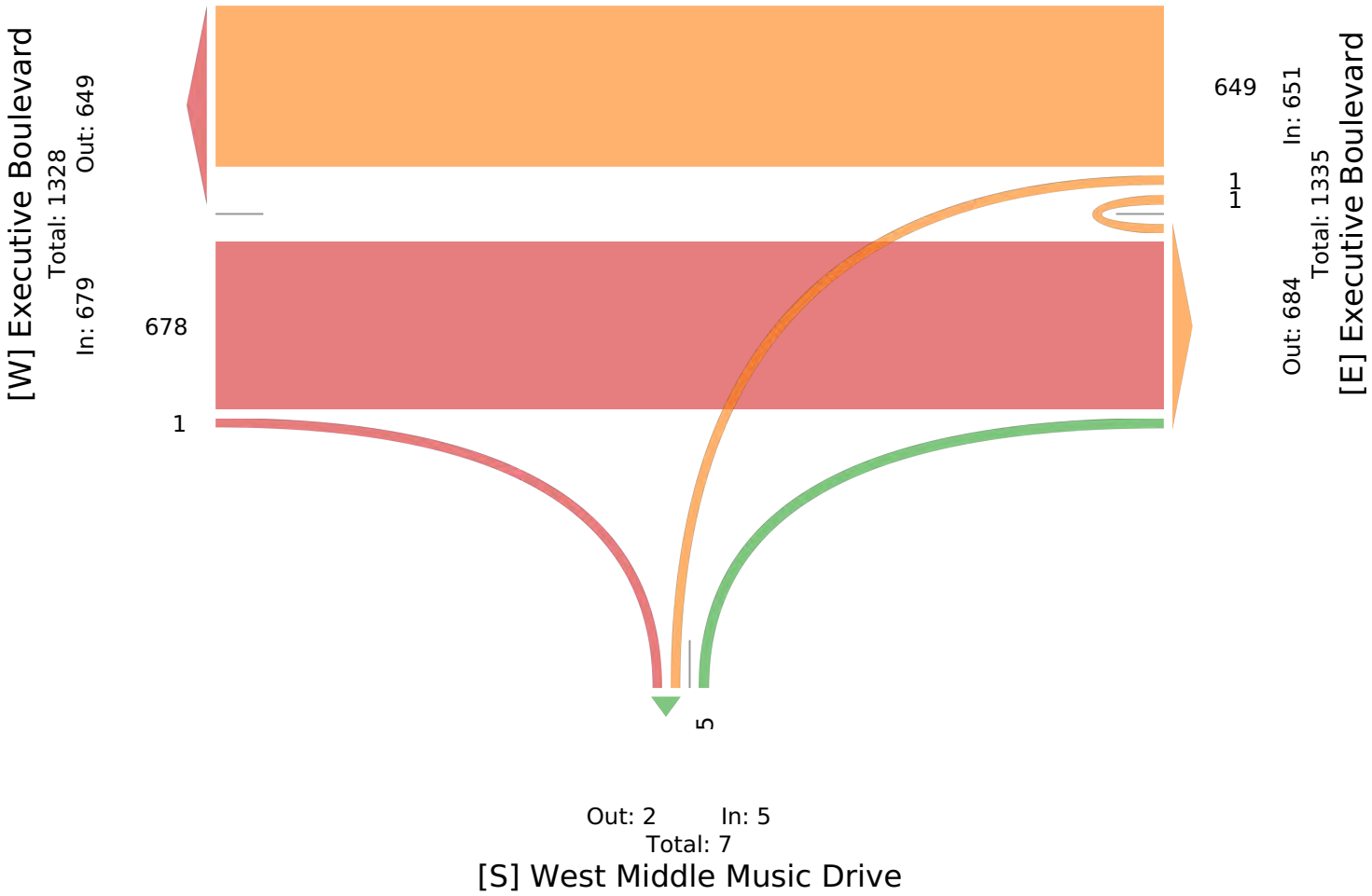
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Executive Boulevard				Executive Boulevard				West Middle Music Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 7:00AM	16	0	0	**16**	0	21	0	**21**	0	0	0	**0**	**37**
7:15AM	12	0	0	**12**	0	26	0	**26**	0	1	0	**1**	**39**
7:30AM	17	0	0	**17**	0	25	0	**25**	0	0	0	**0**	**42**
7:45AM	37	0	0	**37**	0	48	0	**48**	0	0	0	**0**	**85**
Hourly Total	82	0	0	**82**	0	120	0	**120**	0	1	0	**1**	**203**
8:00AM	28	0	0	**28**	0	36	0	**36**	0	0	0	**0**	**64**
8:15AM	22	0	0	**22**	0	27	0	**27**	0	0	0	**0**	**49**
8:30AM	30	0	0	**30**	0	47	0	**47**	0	1	0	**1**	**78**
8:45AM	20	0	0	**20**	0	42	0	**42**	0	0	0	**0**	**62**
Hourly Total	100	0	0	**100**	0	152	0	**152**	0	1	0	**1**	**253**
4:00PM	74	0	0	**74**	0	49	0	**49**	0	1	0	**1**	**124**
4:15PM	65	0	0	**65**	0	51	1	**52**	0	1	0	**1**	**118**
4:30PM	74	1	0	**75**	0	45	0	**45**	0	1	0	**1**	**121**
4:45PM	59	0	0	**59**	1	56	0	**57**	0	0	0	**0**	**116**
Hourly Total	272	1	0	**273**	1	201	1	**203**	0	3	0	**3**	**479**
5:00PM	63	0	0	**63**	0	41	0	**41**	0	0	0	**0**	**104**
5:15PM	54	0	0	**54**	0	43	0	**43**	0	0	0	**0**	**97**
5:30PM	58	0	0	**58**	0	45	0	**45**	0	0	0	**0**	**103**
5:45PM	49	0	0	**49**	0	47	0	**47**	0	0	0	**0**	**96**
Hourly Total	224	0	0	**224**	0	176	0	**176**	0	0	0	**0**	**400**
Total	678	1	0	**679**	1	649	1	**651**	0	5	0	**5**	**1335**
% Approach	99.9%	0.1%	0%	**-**	0.2%	99.7%	0.2%	**-**	0%	100%	0%	**-**	-
% Total	50.8%	0.1%	0%	**50.9%**	0.1%	48.6%	0.1%	**48.8%**	0%	0.4%	0%	**0.4%**	-
Lights	641	1	0	**642**	1	613	1	**615**	0	5	0	**5**	1262
% Lights	94.5%	100%	0%	**94.6%**	100%	94.5%	100%	**94.5%**	0%	100%	0%	**100%**	94.5%
Articulated Trucks	20	0	0	**20**	0	19	0	**19**	0	0	0	**0**	39
% Articulated Trucks	2.9%	0%	0%	**2.9%**	0%	2.9%	0%	**2.9%**	0%	0%	0%	**0%**	2.9%
Buses and Single-Unit Trucks	17	0	0	**17**	0	17	0	**17**	0	0	0	**0**	34
% Buses and Single-Unit Trucks	2.5%	0%	0%	**2.5%**	0%	2.6%	0%	**2.6%**	0%	0%	0%	**0%**	2.5%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & West Middle Music Drive - TMC
Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031222, Location: 39.870573, -84.111955

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & West Middle Music Drive - TMC

Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031222, Location: 39.870573, -84.111955

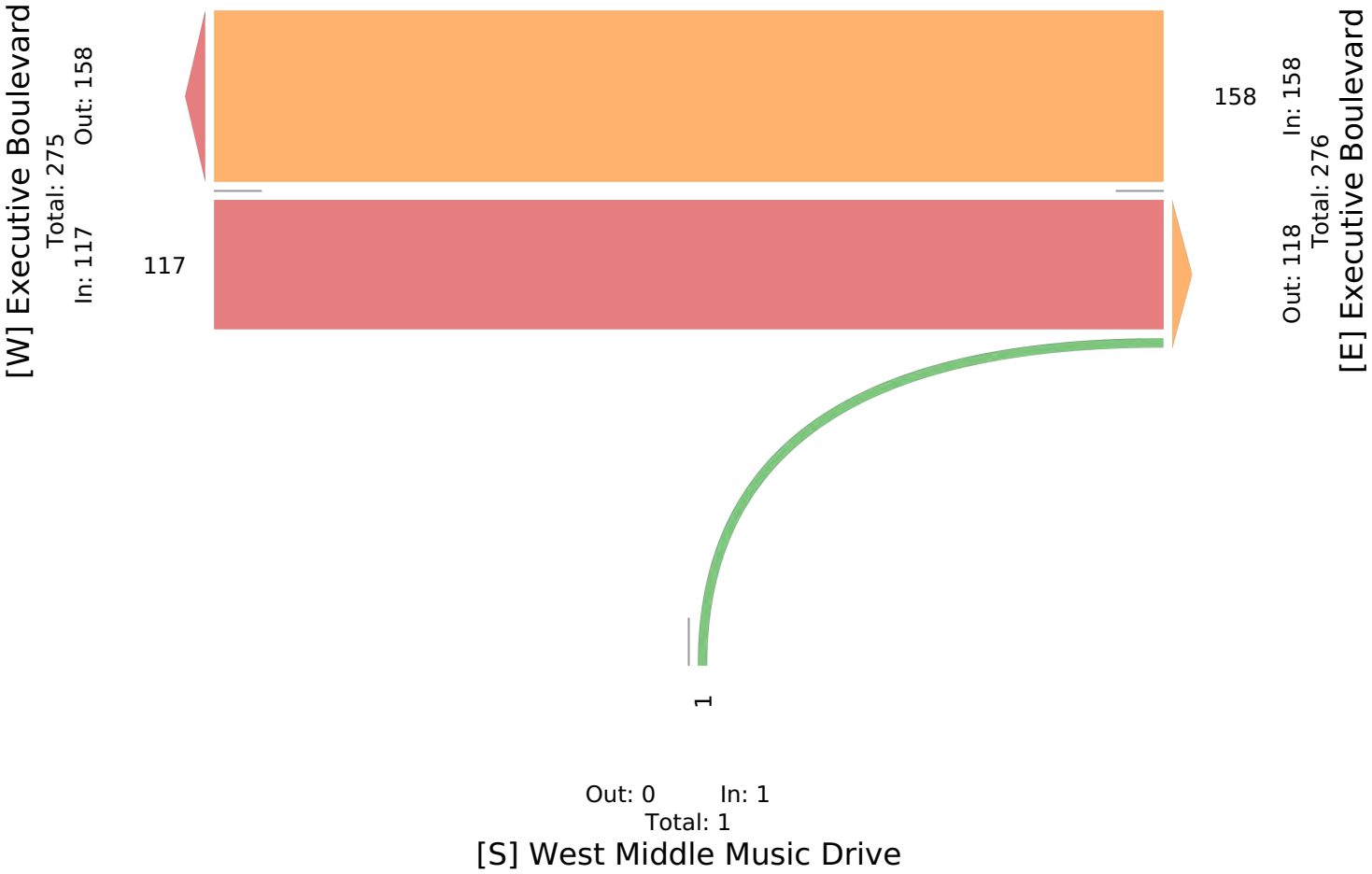
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Executive Boulevard				Executive Boulevard				West Middle Music Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 7:45AM	37	0	0	**37**	0	48	0	**48**	0	0	0	**0**	**85**
8:00AM	28	0	0	**28**	0	36	0	**36**	0	0	0	**0**	**64**
8:15AM	22	0	0	**22**	0	27	0	**27**	0	0	0	**0**	**49**
8:30AM	30	0	0	**30**	0	47	0	**47**	0	1	0	**1**	**78**
Total	117	0	0	**117**	0	158	0	**158**	0	1	0	**1**	**276**
% Approach	100%	0%	0%	**-**	0%	100%	0%	**-**	0%	100%	0%	**-**	-
% Total	42.4%	0%	0%	**42.4%**	0%	57.2%	0%	**57.2%**	0%	0.4%	0%	**0.4%**	-
PHF	0.791	-	-	**0.791**	-	0.823	-	**0.823**	-	0.250	-	**0.250**	0.812
Lights	100	0	0	**100**	0	151	0	**151**	0	1	0	**1**	252
% Lights	85.5%	0%	0%	**85.5%**	0%	95.6%	0%	**95.6%**	0%	100%	0%	**100%**	91.3%
Articulated Trucks	9	0	0	**9**	0	1	0	**1**	0	0	0	**0**	10
% Articulated Trucks	7.7%	0%	0%	**7.7%**	0%	0.6%	0%	**0.6%**	0%	0%	0%	**0%**	3.6%
Buses and Single-Unit Trucks	8	0	0	**8**	0	6	0	**6**	0	0	0	**0**	14
% Buses and Single-Unit Trucks	6.8%	0%	0%	**6.8%**	0%	3.8%	0%	**3.8%**	0%	0%	0%	**0%**	5.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & West Middle Music Drive - TMC
Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031222, Location: 39.870573, -84.111955

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & West Middle Music Drive - TMC

Thu Jan 19, 2023
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031222, Location: 39.870573, -84.111955

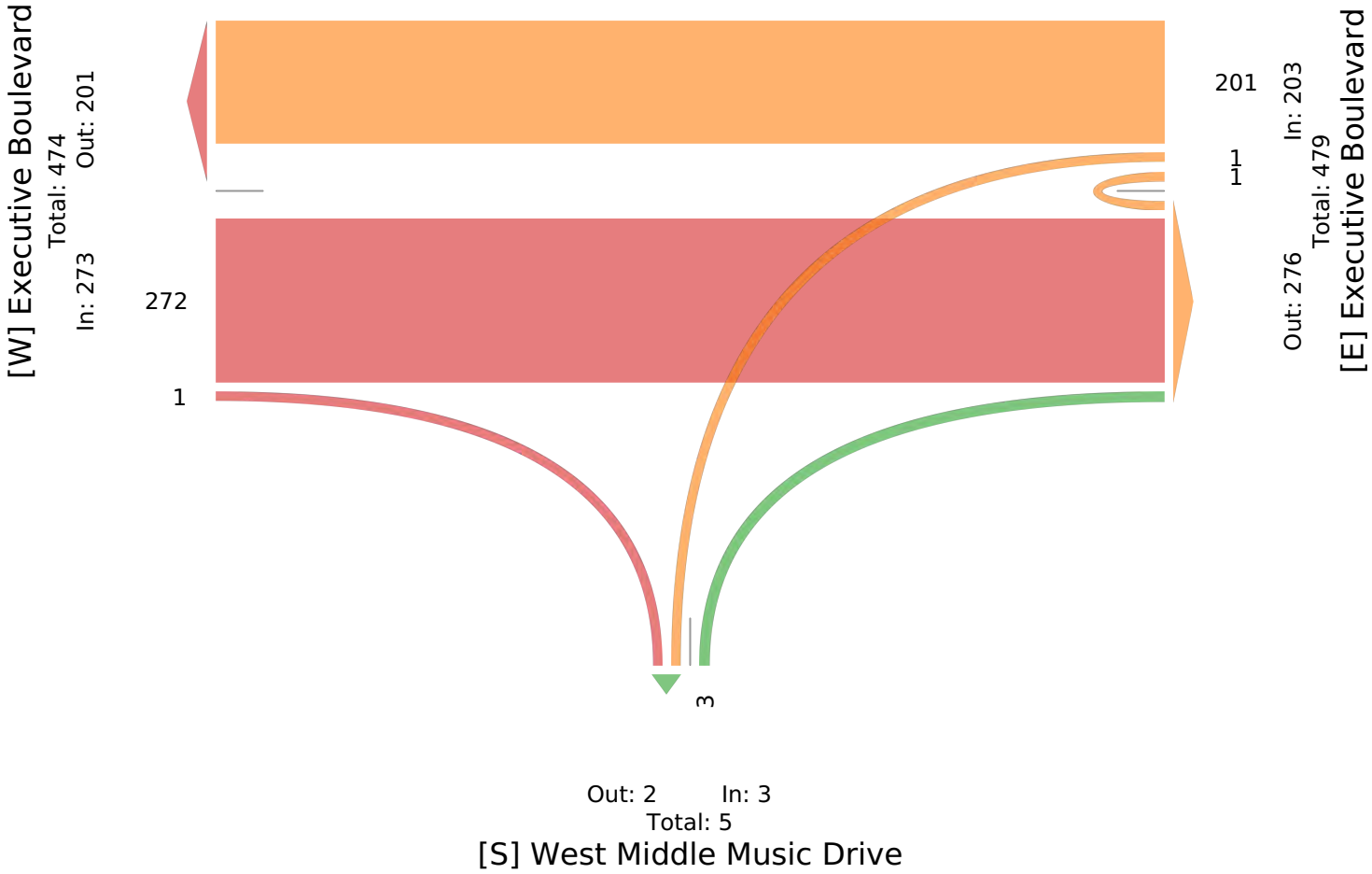
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Executive Boulevard				Executive Boulevard				West Middle Music Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 4:00PM	74	0	0	**74**	0	49	0	**49**	0	1	0	**1**	**124**
4:15PM	65	0	0	**65**	0	51	1	**52**	0	1	0	**1**	**118**
4:30PM	74	1	0	**75**	0	45	0	**45**	0	1	0	**1**	**121**
4:45PM	59	0	0	**59**	1	56	0	**57**	0	0	0	**0**	**116**
Total	272	1	0	**273**	1	201	1	**203**	0	3	0	**3**	**479**
% Approach	99.6%	0.4%	0%	**-**	0.5%	99.0%	0.5%	**-**	0%	100%	0%	**-**	-
% Total	56.8%	0.2%	0%	**57.0%**	0.2%	42.0%	0.2%	**42.4%**	0%	0.6%	0%	**0.6%**	-
PHF	0.919	0.250	-	**0.910**	0.250	0.897	0.250	**0.890**	-	0.750	-	**0.750**	0.966
Lights	265	1	0	**266**	1	192	1	**194**	0	3	0	**3**	463
% Lights	97.4%	100%	0%	**97.4%**	100%	95.5%	100%	**95.6%**	0%	100%	0%	**100%**	96.7%
Articulated Trucks	4	0	0	**4**	0	4	0	**4**	0	0	0	**0**	8
% Articulated Trucks	1.5%	0%	0%	**1.5%**	0%	2.0%	0%	**2.0%**	0%	0%	0%	**0%**	1.7%
Buses and Single-Unit Trucks	3	0	0	**3**	0	5	0	**5**	0	0	0	**0**	8
% Buses and Single-Unit Trucks	1.1%	0%	0%	**1.1%**	0%	2.5%	0%	**2.5%**	0%	0%	0%	**0%**	1.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & West Middle Music Drive - TMC
Thu Jan 19, 2023
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031222, Location: 39.870573, -84.111955

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Westernmost Music Drive - TMC

Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031236, Location: 39.870683, -84.113972

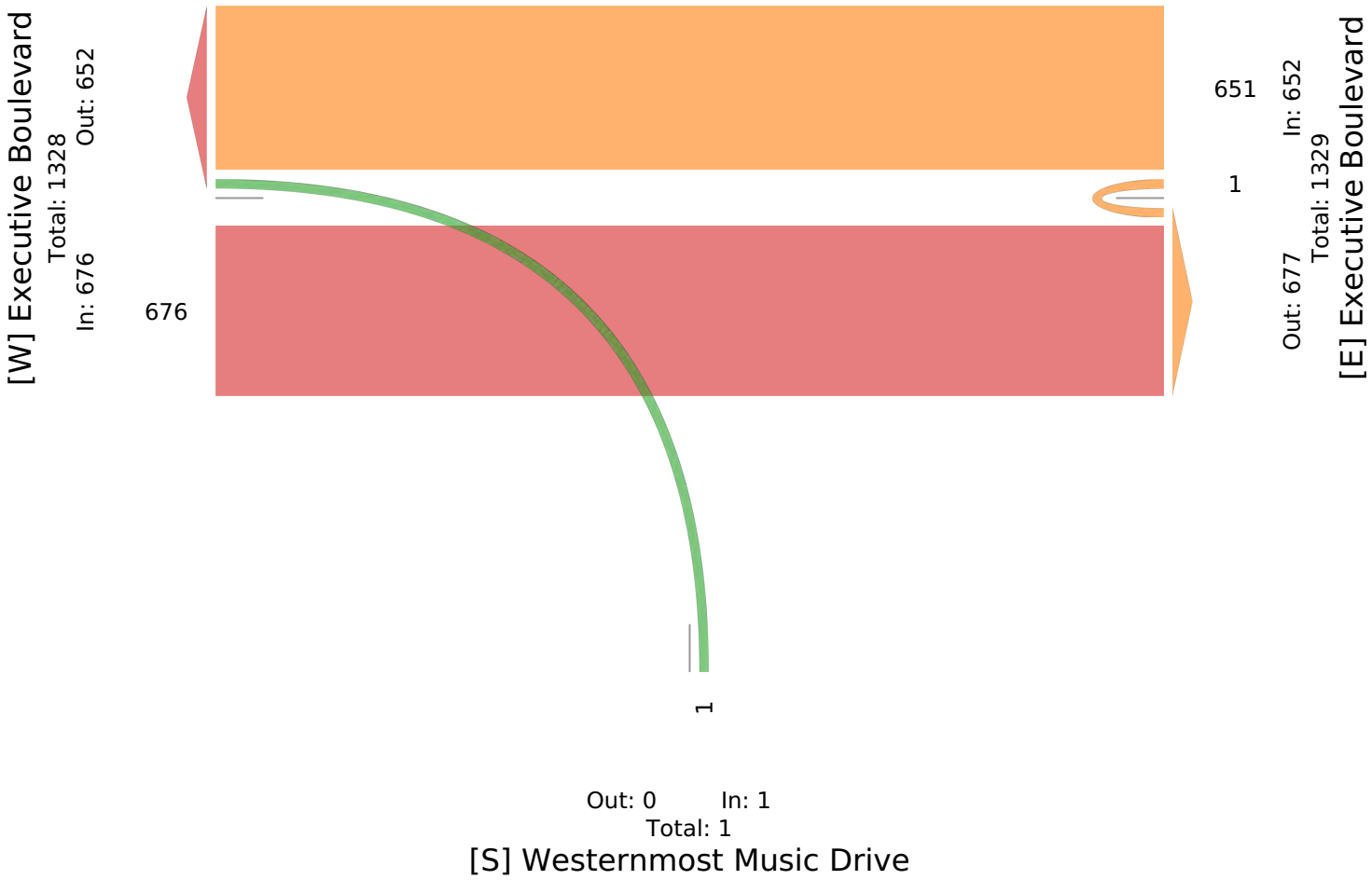
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Executive Boulevard				Executive Boulevard				Westernmost Music Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 7:00AM	15	0	0	**15**	0	21	0	**21**	0	0	0	**0**	**36**
7:15AM	12	0	0	**12**	0	26	0	**26**	0	0	0	**0**	**38**
7:30AM	17	0	0	**17**	0	25	0	**25**	0	0	0	**0**	**42**
7:45AM	38	0	0	**38**	0	49	0	**49**	0	0	0	**0**	**87**
Hourly Total	82	0	0	**82**	0	121	0	**121**	0	0	0	**0**	**203**
8:00AM	27	0	0	**27**	0	35	0	**35**	0	0	0	**0**	**62**
8:15AM	22	0	0	**22**	0	29	0	**29**	0	0	0	**0**	**51**
8:30AM	30	0	0	**30**	0	47	0	**47**	0	0	0	**0**	**77**
8:45AM	21	0	0	**21**	0	41	0	**41**	0	0	0	**0**	**62**
Hourly Total	100	0	0	**100**	0	152	0	**152**	0	0	0	**0**	**252**
4:00PM	75	0	0	**75**	0	49	0	**49**	0	0	0	**0**	**124**
4:15PM	64	0	0	**64**	0	50	0	**50**	0	0	0	**0**	**114**
4:30PM	73	0	0	**73**	0	48	0	**48**	0	0	0	**0**	**121**
4:45PM	59	0	0	**59**	0	57	0	**57**	0	0	0	**0**	**116**
Hourly Total	271	0	0	**271**	0	204	0	**204**	0	0	0	**0**	**475**
5:00PM	63	0	0	**63**	0	37	0	**37**	1	0	0	**1**	**101**
5:15PM	55	0	0	**55**	0	44	0	**44**	0	0	0	**0**	**99**
5:30PM	59	0	0	**59**	0	46	1	**47**	0	0	0	**0**	**106**
5:45PM	46	0	0	**46**	0	47	0	**47**	0	0	0	**0**	**93**
Hourly Total	223	0	0	**223**	0	174	1	**175**	1	0	0	**1**	**399**
Total	676	0	0	**676**	0	651	1	**652**	1	0	0	**1**	**1329**
% Approach	100%	0%	0%	**-**	0%	99.8%	0.2%	**-**	100%	0%	0%	**-**	-
% Total	50.9%	0%	0%	**50.9%**	0%	49.0%	0.1%	**49.1%**	0.1%	0%	0%	**0.1%**	-
Lights	641	0	0	**641**	0	618	1	**619**	1	0	0	**1**	1261
% Lights	94.8%	0%	0%	**94.8%**	0%	94.9%	100%	**94.9%**	100%	0%	0%	**100%**	94.9%
Articulated Trucks	23	0	0	**23**	0	20	0	**20**	0	0	0	**0**	43
% Articulated Trucks	3.4%	0%	0%	**3.4%**	0%	3.1%	0%	**3.1%**	0%	0%	0%	**0%**	3.2%
Buses and Single-Unit Trucks	12	0	0	**12**	0	13	0	**13**	0	0	0	**0**	25
% Buses and Single-Unit Trucks	1.8%	0%	0%	**1.8%**	0%	2.0%	0%	**2.0%**	0%	0%	0%	**0%**	1.9%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Westernmost Music Drive - TMC
Thu Jan 19, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031236, Location: 39.870683, -84.113972

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Executive Boulevard & Westernmost Music Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031236, Location: 39.870683, -84.113972

Leg	Executive Boulevard				Executive Boulevard				Westernmost Music Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 7:45AM	38	0	0	**38**	0	49	0	**49**	0	0	0	**0**	**87**
8:00AM	27	0	0	**27**	0	35	0	**35**	0	0	0	**0**	**62**
8:15AM	22	0	0	**22**	0	29	0	**29**	0	0	0	**0**	**51**
8:30AM	30	0	0	**30**	0	47	0	**47**	0	0	0	**0**	**77**
Total	117	0	0	**117**	0	160	0	**160**	0	0	0	**0**	**277**
% Approach	100%	0%	0%	**-**	0%	100%	0%	**-**	0%	0%	0%	**-**	-
% Total	42.2%	0%	0%	**42.2%**	0%	57.8%	0%	**57.8%**	0%	0%	0%	**0%**	-
PHF	0.770	-	-	**0.770**	-	0.816	-	**0.816**	-	-	-	**-**	0.796
Lights	100	0	0	**100**	0	153	0	**153**	0	0	0	**0**	253
% Lights	85.5%	0%	0%	**85.5%**	0%	95.6%	0%	**95.6%**	0%	0%	0%	**-**	91.3%
Articulated Trucks	11	0	0	**11**	0	1	0	**1**	0	0	0	**0**	12
% Articulated Trucks	9.4%	0%	0%	**9.4%**	0%	0.6%	0%	**0.6%**	0%	0%	0%	**-**	4.3%
Buses and Single-Unit Trucks	6	0	0	**6**	0	6	0	**6**	0	0	0	**0**	12
% Buses and Single-Unit Trucks	5.1%	0%	0%	**5.1%**	0%	3.8%	0%	**3.8%**	0%	0%	0%	**-**	4.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Westernmost Music Drive - TMC

Thu Jan 19, 2023
AM Peak (7:45 AM - 8:45 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031236, Location: 39.870683, -84.113972

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Executive Boulevard & Westernmost Music Drive - TMC

Thu Jan 19, 2023
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031236, Location: 39.870683, -84.113972

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Executive Boulevard				Executive Boulevard				Westernmost Music Drive				
Direction	Eastbound				Westbound				Northbound				
Time	T	R	U	**App**	L	T	U	**App**	L	R	U	**App**	**Int**
2023-01-19 4:00PM	75	0	0	**75**	0	49	0	**49**	0	0	0	**0**	**124**
4:15PM	64	0	0	**64**	0	50	0	**50**	0	0	0	**0**	**114**
4:30PM	73	0	0	**73**	0	48	0	**48**	0	0	0	**0**	**121**
4:45PM	59	0	0	**59**	0	57	0	**57**	0	0	0	**0**	**116**
Total	271	0	0	**271**	0	204	0	**204**	0	0	0	**0**	**475**
% Approach	100%	0%	0%	**-**	0%	100%	0%	**-**	0%	0%	0%	**-**	-
% Total	57.1%	0%	0%	**57.1%**	0%	42.9%	0%	**42.9%**	0%	0%	0%	**0%**	-
PHF	0.903	-	-	**0.903**	-	0.895	-	**0.895**	-	-	-	**-**	0.958
Lights	266	0	0	**266**	0	194	0	**194**	0	0	0	**0**	460
% Lights	98.2%	0%	0%	**98.2%**	0%	95.1%	0%	**95.1%**	0%	0%	0%	**-**	96.8%
Articulated Trucks	4	0	0	**4**	0	6	0	**6**	0	0	0	**0**	10
% Articulated Trucks	1.5%	0%	0%	**1.5%**	0%	2.9%	0%	**2.9%**	0%	0%	0%	**-**	2.1%
Buses and Single-Unit Trucks	1	0	0	**1**	0	4	0	**4**	0	0	0	**0**	5
% Buses and Single-Unit Trucks	0.4%	0%	0%	**0.4%**	0%	2.0%	0%	**2.0%**	0%	0%	0%	**-**	1.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Executive Boulevard & Westernmost Music Drive - TMC

Thu Jan 19, 2023
PM Peak (4 PM - 5 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1031236, Location: 39.870683, -84.113972

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

TFMS - Segment Forecast Report

Username	Email	Script Import Date	Script Version	Model Version
Lyates	lyates@cmtran.com	4/14/2020 5:30:19 PM	2020.001	2022.1900

Forecast Summary

Project ID	Project Name	Opening Year	Design Year
	Newbauer Multifamily TIS	2024	2044

Project Description

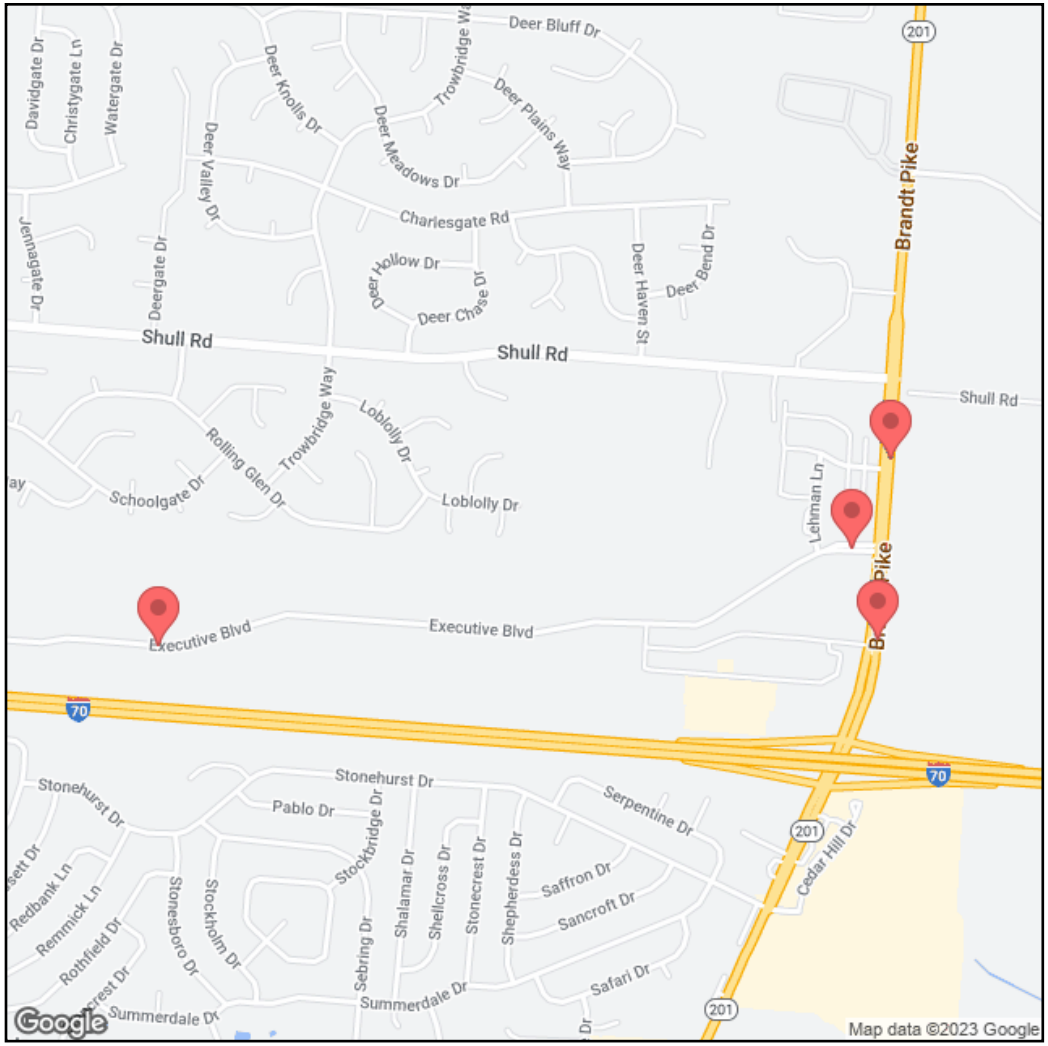
*Users of this data need to be aware that there are limitations to the forecasts generated by this product that make it suitable only for roadway design projects which are low risk.

Segment Information

Segment ID	LRS ID	BMP	EMP	Length	Latitude	Longitude
1616435	MMOTMR01780**C	0.085	2.021	1.936	-84.1183147767569	39.8701017047566
1616436	MMOTMR01780**C	2.021	2.110	0.089	-84.0999697474068	39.8720583521852
1654452	SMOTSR00201**C	8.302	8.587	0.285	-84.0992817128272	39.8702279060628
1654457	SMOTSR00201**C	8.587	8.810	0.223	-84.0989361976613	39.8738945461435

Forecast Information

Segment ID	2024 AADT	2044 AADT	DHV-30	K%	D%	T24%	TD%
1616435	5,800	5,800	600	10.0	50.8	0	0
1616436	5,800	5,800	600	10.0	60.2	0	0
1654452	19,500	21,500	2,800	12.8	60.2	2	1
1654457	19,500	21,500	2,800	12.8	60.2	2	1



Definitions:

- AADT – Annual Average Daily Traffic
- DHV30 – Design Hour Volume for 30th highest hour of the year
- DHV30 – K * AADT
- K % – Design Hour Factor
- D % – Peak Direction Factor
- T24 % – Percent Daily Trucks
- TD % – Percent Design Hour Trucks

Forecast Segment ID	Route	BMP	EMP
1616435	MMOTMR01780**C	0.085	2.021

Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	10.0	0	5,800	Model	-0.700	0.000
AADT	**D%**	**TD % (Existing)**	**BC AADT**	**BC Method**	**BC Growth Rate %**	**BC Calculated Rate %**
5,800	50.8	0	0	Model	-999999.000	0.000

Warning: The growth rate was negative and was capped.

Warning: FORECAST TRUCKS ZERO BECAUSE NO TRUCK COUNTS ON SEGMENT

Regression

Method Number	PA AADT	BC AADT	AADT
1	4,673		4,673

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-6591	12586	0	12111	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.66	0.00	0	0	-1,103		4,673	
2	1.31	0.00	0	0	2,190		7,966	
3	1.31	0.00	0	0	2,190		7,966	
4	-999999.00	0.00	0	0				
5	-999999.00	0.00	0	0				
6	-999999.00	0.00	0	0				

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-74,001	20,436	-21,539	12,111	1.52	0.00
2	RAT	0.07	6,837	0.00		0.63	0.00
3	MRAT	1.18	8,949	1.56	4,359	-0.71	0.00
4	RAF		14,693		8,235	0.41	0.00

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Model Ratio	Model Ratio	-0.700	0.000

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
4590	8325	0	12111	4590	20436

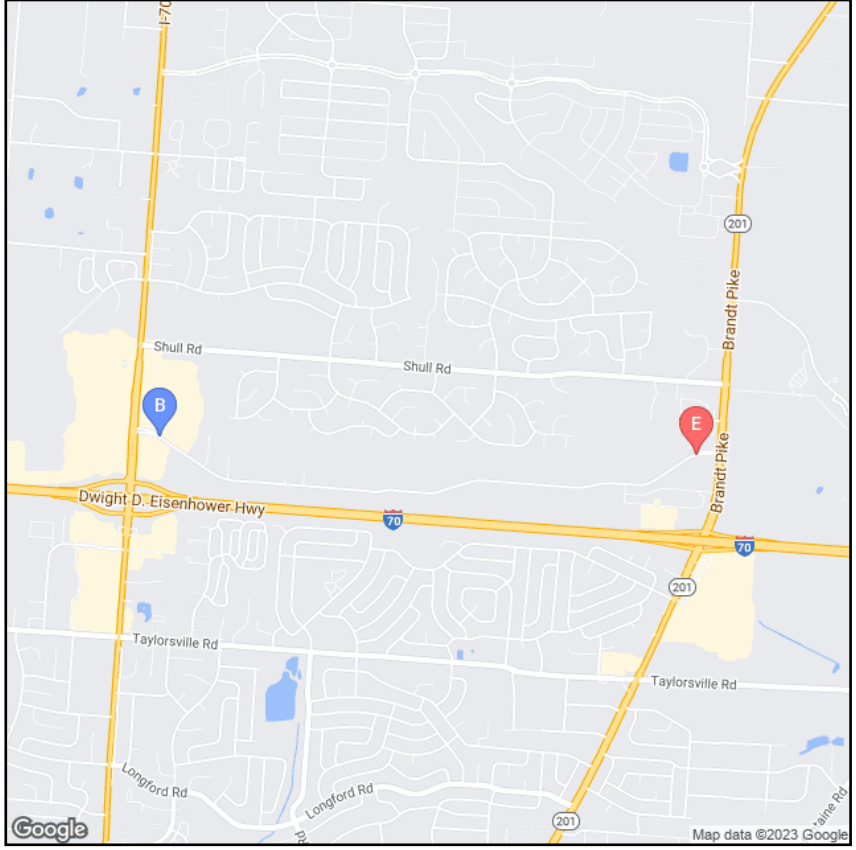
Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment: No Comment

Historical Count

Year	All	Cars	Trucks
* 2021	5,776	5,776	

* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2024 AADT	Yr 2044 AADT	DHV30	K %	D %	T24 %	TD %
1616435	MMOTMR01780**C	0.085	2.021	1.936	5,800	5,800	600	10.0	50.8	0	0

Forecast Segment ID	Route	BMP	EMP
1616436	MMOTMR01780**C	2.021	2.110

Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	10.0	0	5,800	Model	-0.200	0.000
AADT	**D%**	**TD % (Existing)**	**BC AADT**	**BC Method**	**BC Growth Rate %**	**BC Calculated Rate %**
5,800	60.2	0	0	Model	-999999.000	0.000

Warning: The growth rate was negative and was capped.

Warning: FORECAST TRUCKS ZERO BECAUSE NO TRUCK COUNTS ON SEGMENT

Regression

Method Number	PA AADT	BC AADT	AADT
1	4,673		4,673

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
-6591	12586	0	75	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	-0.66	0.00	0	0	-1,103		4,673	
2	1.31	0.00	0	0	2,190		7,966	
3	1.31	0.00	0	0	2,190		7,966	
4	-999999.00	0.00	0	0				
5	-999999.00	0.00	0	0				
6	-999999.00	0.00	0	0				

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	-9,046	4,837	-251	75	-0.61	0.00
2	RAT	0.39	5,410	0.00		-0.22	0.00
3	MRAT	0.94	5,410	1.30	17	-0.23	0.00
4	RAF		5,124		46	-0.42	0.00

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Ratio	Model Ratio	-0.200	0.000

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
4762	5410	0	75	4762	5485

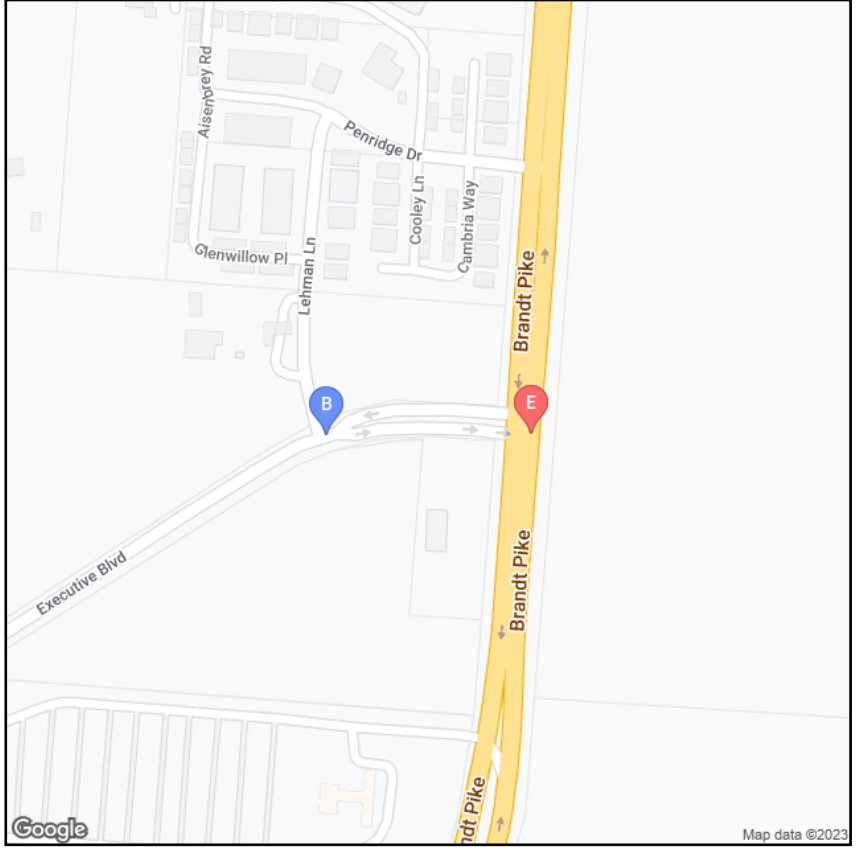
Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment: No Comment

Historical Count

Year	All	Cars	Trucks
* 2021	5,776	5,776	

* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2024 AADT	Yr 2044 AADT	DHV30	K %	D %	T24 %	TD %
1616436	MMOTMR01780**C	2.021	2.110	0.089	5,800	5,800	600	10.0	60.2	0	0

Forecast Segment ID	Route	BMP	EMP
1654452	SMOTSR00201**C	8.302	8.587

Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	◆ 12.8	2	22,000	Average	0.500	0.500
AADT	**D%**	**TD % (Existing)**	**BC AADT**	**BC Method**	**BC Growth Rate %**	**BC Calculated Rate %**
22,330	◆ 60.2	1	330	Average	● -3.800	0.000

● Warning: The growth rate was negative and was capped.

◆ K/D factors from TCDS were used.

Regression

Method Number	PA AADT	BC AADT	AADT
2	25,430	-482	24,948

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
17487	40503	-1188	590	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	1.53	-4.57	0	0	26,319	-6	27,154	-106
2	1.22	-8.55	6	1	23,094	-434	25,430	-482
3	1.81	-8.55	0	0	28,043	-434	28,671	-482
4	1.80	-8.48	4	4	28,145	-443	28,612	-476
5	2.17	-11.72	0	0	30,196	-765	30,618	-782
6	2.98	-10.93	3	4	34,898	-693	35,045	-707

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	4,300	18,183	75	401	-0.19	0.79
2	RAT	1.29	17,911	1.30	424	-0.24	1.04
3	MRAT	0.94	17,911	1.30	419	-0.24	0.98
4	RAF		18,047		410	-0.21	0.89

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Average	Average	-0.200	0.900

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
17487	17782	401	424	17888	18206

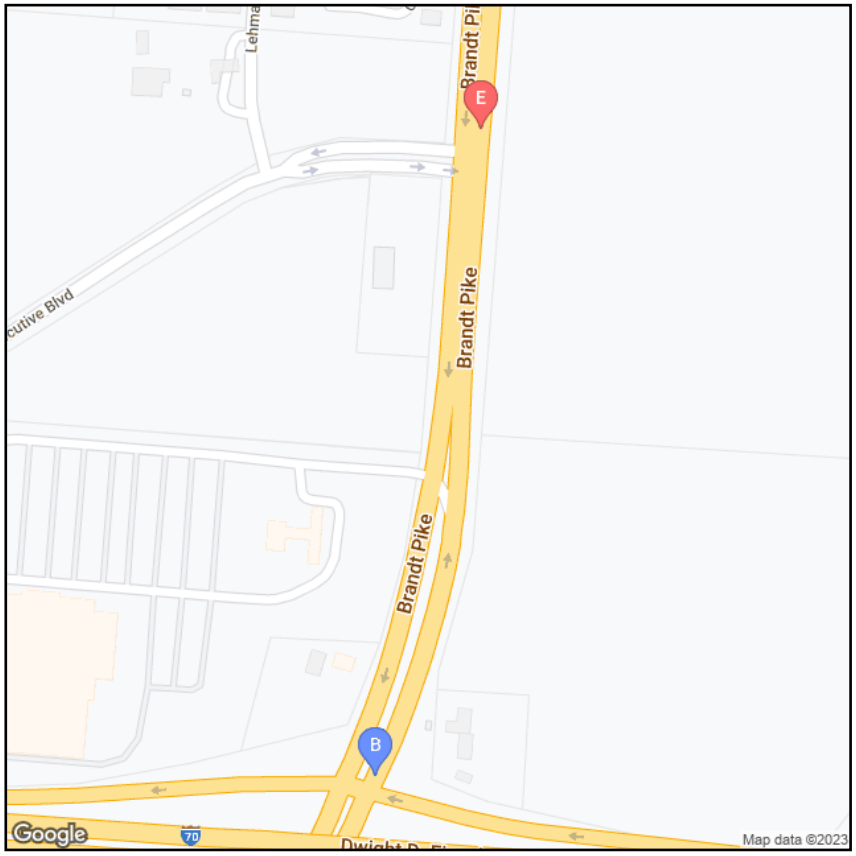
Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment: No Comment

Historical Count

Year	All	Cars	Trucks
2006	14,650	14,120	530
2009	15,060	14,400	660
2013	16,280	15,662	617
2015	16,043	15,434	608
2018	17,143	16,673	470
* 2021	19,122	18,796	326

* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2024 AADT	Yr 2044 AADT	DHV30	K %	D %	T24 %	TD %
1654452	SMOTSR00201**C	8.302	8.587	0.285	19,500	21,500	2800	12.8	60.2	2	1

Forecast Segment ID	Route	BMP	EMP
1654457	SMOTSR00201**C	8.587	8.810

Forecast

Year	K%	T24 % (Existing)	PA AADT	PA Method	PA Growth Rate %	PA Calculated Rate %
2050	12.8	2	22,000	Average	0.600	0.600
AADT	**D%**	**TD % (Existing)**	**BC AADT**	**BC Method**	**BC Growth Rate %**	**BC Calculated Rate %**
22,330	60.2	1	330	Average	-4.200	0.000

Warning: The growth rate was negative and was capped.

K/D factors from TCDS were used.

Regression

Method Number	PA AADT	BC AADT	AADT
2	25,430	-482	24,948

95% Confidence Min/Max

PA Min	PA Max	BC Min	BC Max	Year
18645	40503	-1188	590	2050

Method Number	PA Growth %	BC Growth %	PA Drop Count	BC Drop Count	PA AADT	BC AADT	PA Adjustment	PA Adjustment
1	1.53	-4.57	0	0	26,319	-6	27,154	-106
2	1.22	-8.55	6	1	23,094	-434	25,430	-482
3	1.81	-8.55	0	0	28,043	-434	28,671	-482
4	1.80	-8.48	4	4	28,145	-443	28,612	-476
5	2.17	-11.72	0	0	30,196	-765	30,618	-782
6	2.98	-10.93	3	4	34,898	-693	35,045	-707

Adjustment Info

ID	Adjustment Methods Name	Model vs Count AADT	Adjusted AADT	Model vs Count BC	Adjusted BC	PA Growth Rate %	BC Growth Rate %
1	DIF	10,054	19,059	168	335	-0.01	0.10
2	RAT	2.11	18,989	2.06	344	-0.03	0.19
3	MRAT	0.99	18,989	1.05	343	-0.03	0.18
4	RAF		19,024		339	-0.02	0.14

Adjust Method AADT	Adjust Method BC	Selected PA Growth Rate %	Selected BC Growth Rate %
Difference	Difference	0.000	0.100

Method 1 - 4 Volume

PA Min Volume	PA Max Volume	BC Min Volume	BC Max Volume	Total Min Volume	Total MaxVolume
18645	18724	335	344	18980	19068

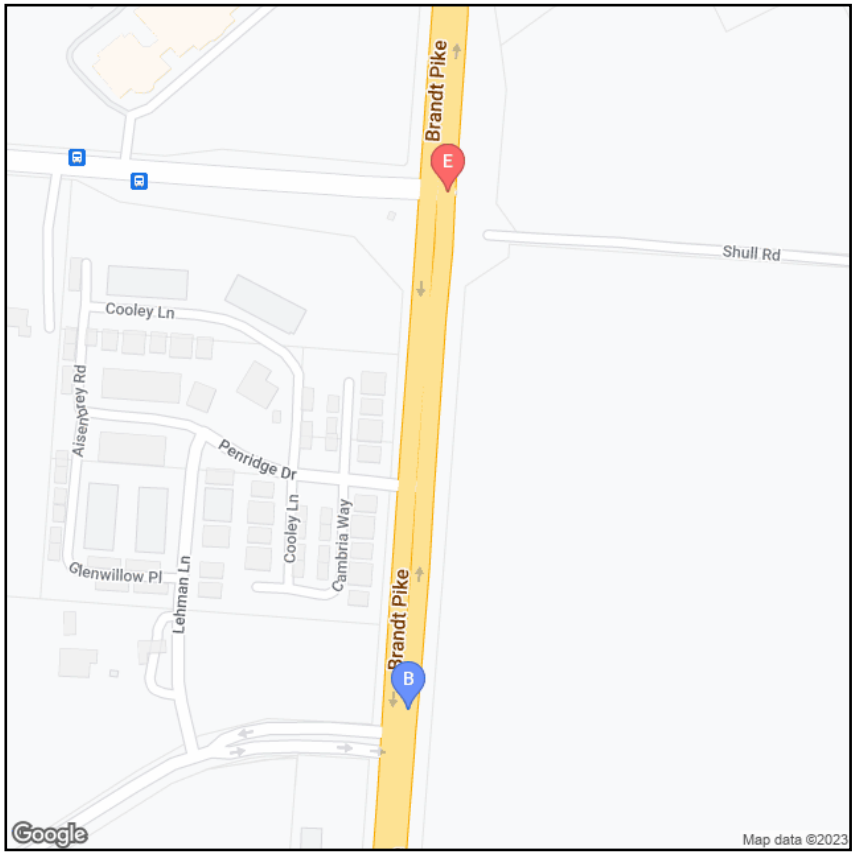
Process Flag: Adjusted model to counts with process per ODOT 255 spreadsheet

Comment: No Comment

Historical Count

Year	All	Cars	Trucks
2006	14,650	14,120	530
2009	15,060	14,400	660
2013	16,280	15,662	617
2015	16,043	15,434	608
2018	17,143	16,673	470
* 2021	19,122	18,796	326

* Pivot Point



Segment ID	LRS ID	BMP	EMP	Length	Yr 2024 AADT	Yr 2044 AADT	DHV30	K %	D %	T24 %	TD %
1654457	SMOTSR00201**C	8.587	8.810	0.223	19,500	21,500	2800	12.8	60.2	2	1

Appendix C
Trip Generation

Appendix C

CARPENTER MARTY transportation

Scenario - 1

Scenario Name: AM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	300	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	28	88	116
Data Source: Trip Generation Manual 11.1 Ed					T = 0.31(X) + 22.85	24%	76%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	24	76

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	0	0	28	88
	116		0		116	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	Residential

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	28	88	116
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	0.00%	0.00%	0	0

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	28	88	116

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	28	88	116
Internal Vehicle Trips	0	0	0
External Vehicle Trips	28	88	116
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	28	88	116

Scenario - 2

Scenario Name: PM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	General Urban/Suburban	Dwelling Units	300	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN)	94	55	149
Data Source: Trip Generation Manual 11.1 Ed					T = 0.43(X) + 20.55	63%	37%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	100	100	1	1	63	37

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	0	0	94	55
	149		0		149	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	Residential

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:
220 - Multifamily Housing (Low-Rise)-Not Close to Rail Transit

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	94	55	149
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	0.00%	0.00%	0	0

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
220 - Multifamily Housing (Low-Rise) - Not Close to Rail Transit	94	55	149

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	94	55	149
Internal Vehicle Trips	0	0	0
External Vehicle Trips	94	55	149
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	94	55	149

Appendix D
Volume Calculations

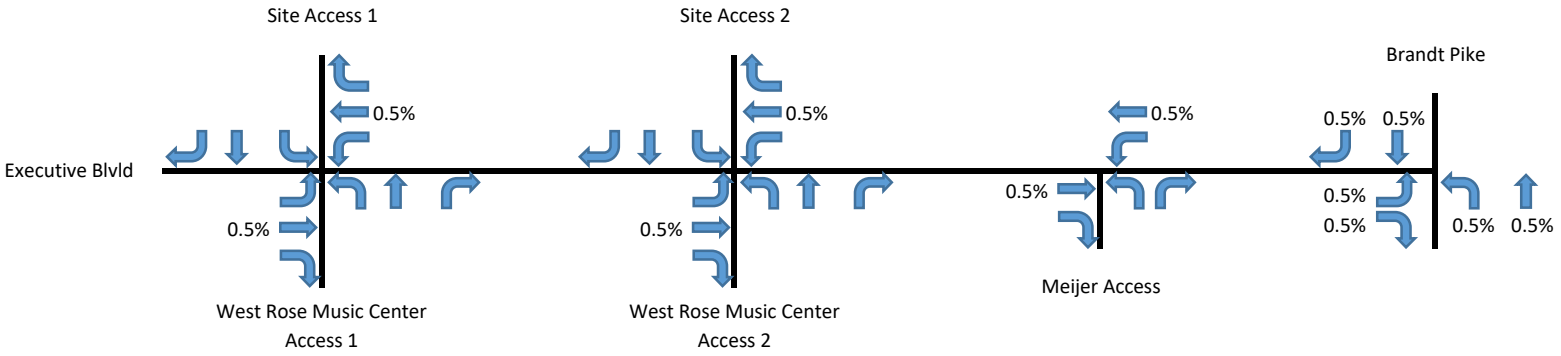
Appendix D

CARPENTER MARTY transportation

Newbauer Multifamily TIS
Traffic Volume Calculations

Year	Period	Scenario	Plate
		Growth Rates	

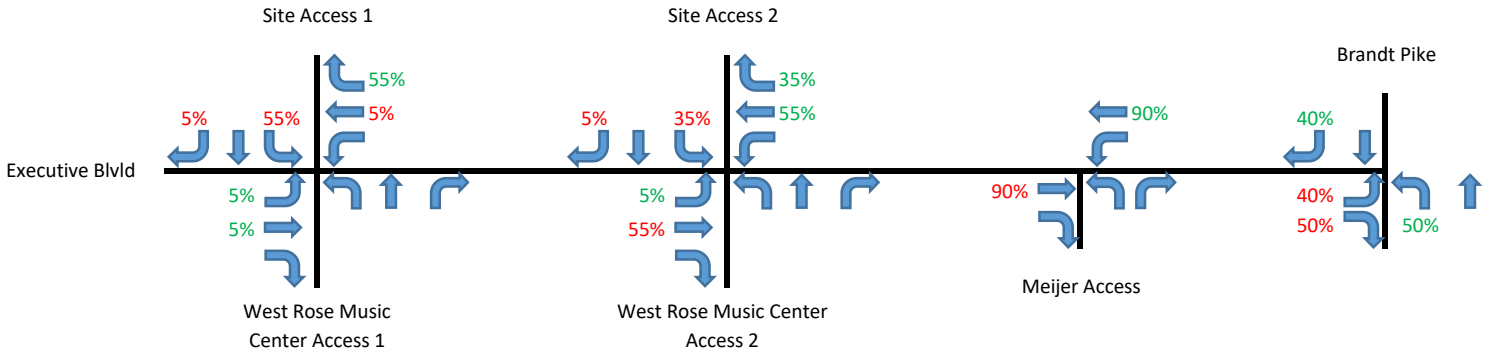
^
N



Newbauer Multifamily TIS
Traffic Volume Calculations

Year	Period	Scenario	Plate
		Distribution	

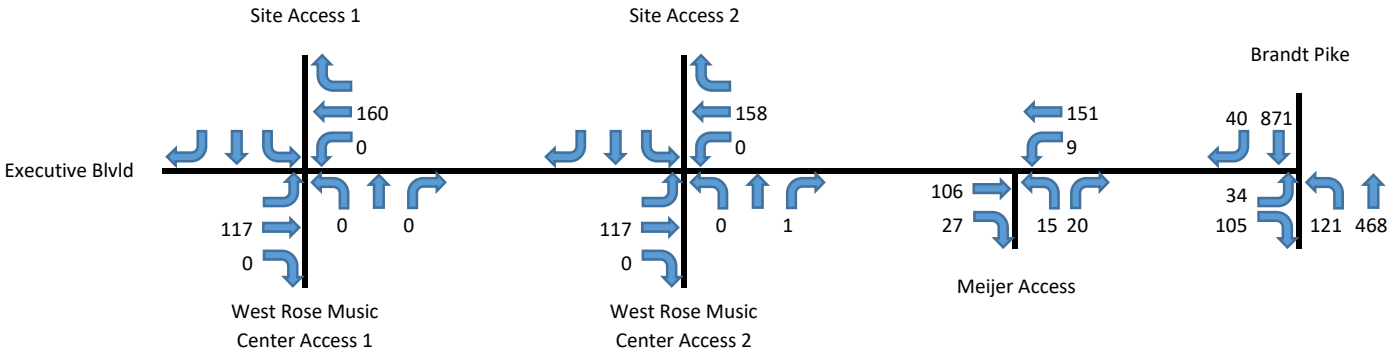
^
N



Newbauer Multifamily TIS
Traffic Volume Calculations

	Year	Period	Scenario	Plate
CARPENTER MARTY transportation	2023	AM	Count	

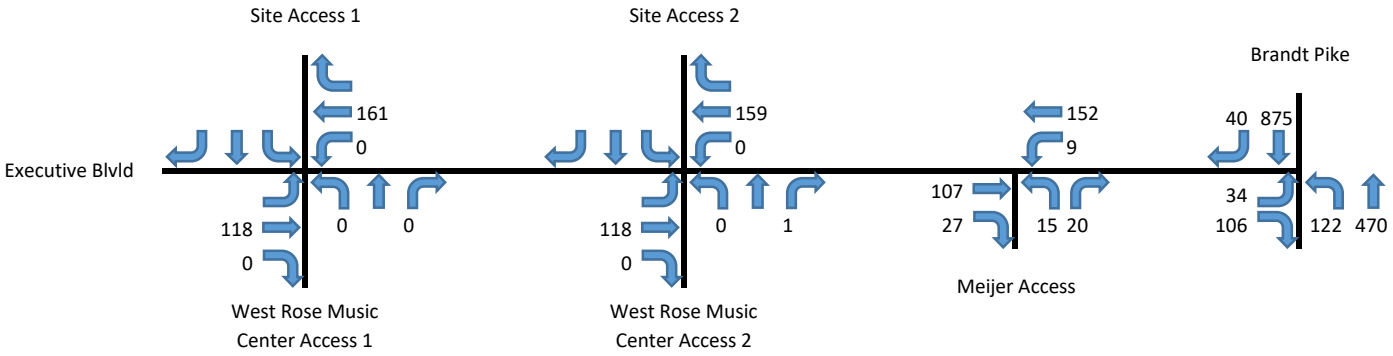
^
N



Newbauer Multifamily TIS
Traffic Volume Calculations

Year	Period	Scenario	Plate
2024	AM	No Build	A1

^
N



Newbauer Multifamily TIS
Traffic Volume Calculations

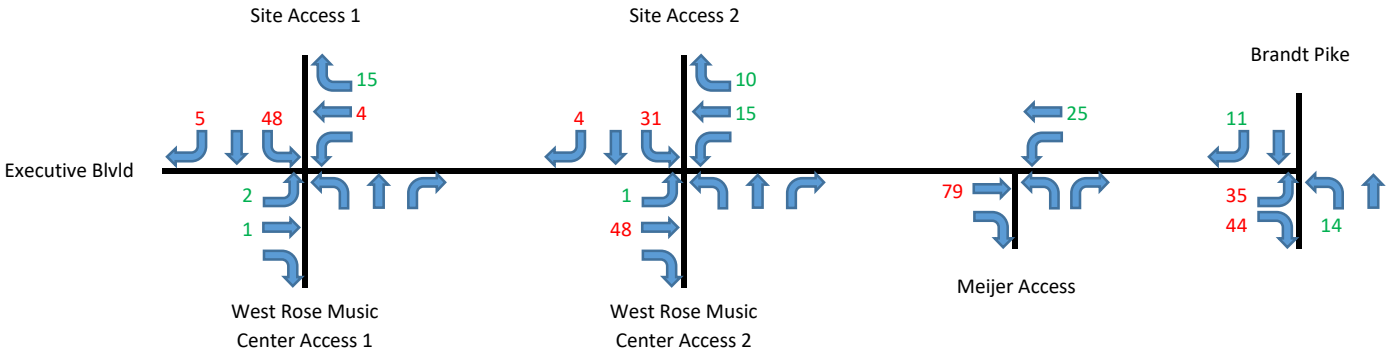
Year	Period	Scenario	Plate
	AM	Non-Pass-By Trips	B1

^

N

Enter 28

Exit 88



Year	Period	Scenario	Plate
2024	AM	Build	C1 = A1 + B1

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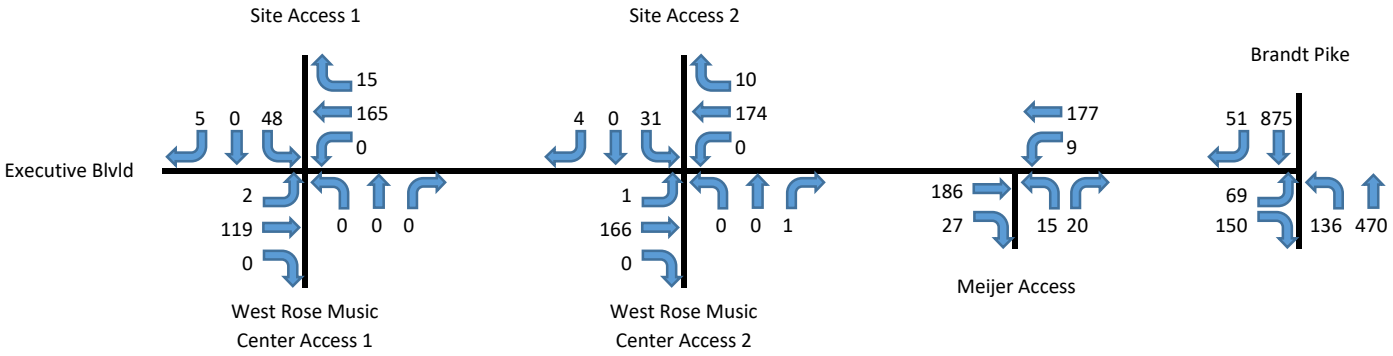
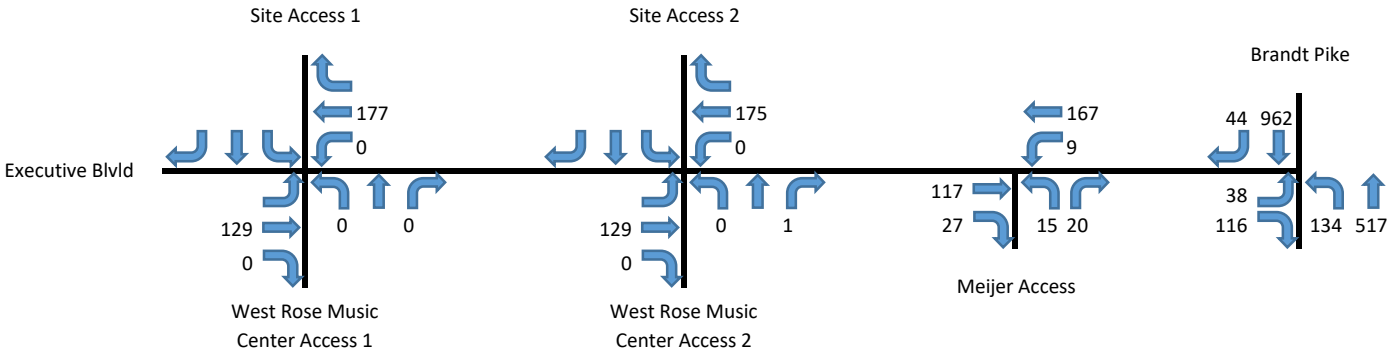


Newbauer Multifamily TIS
Traffic Volume Calculations

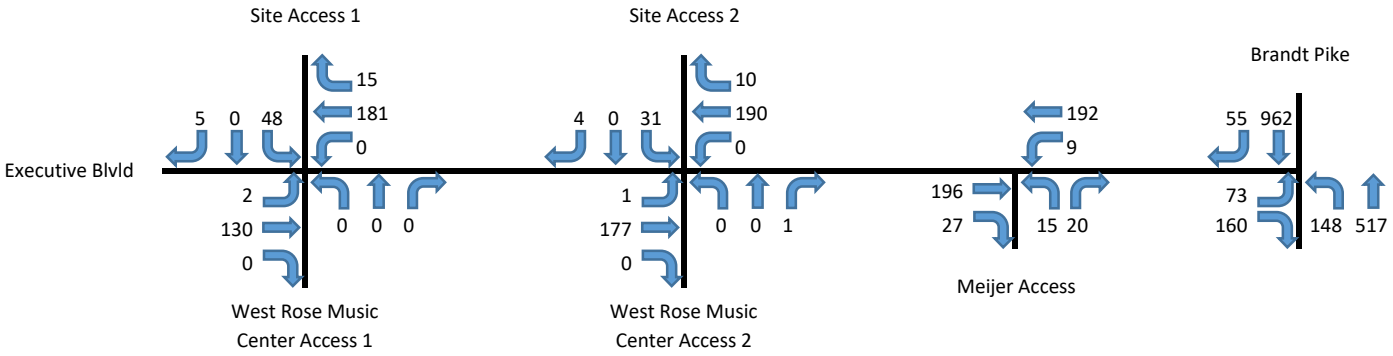
	Year	Period	Scenario	Plate
CARPENTER MARTY transportation	2044	AM	No Build	D1

^
N



Year	Period	Scenario	Plate
2044	AM	Build	E1 = B1 + D1

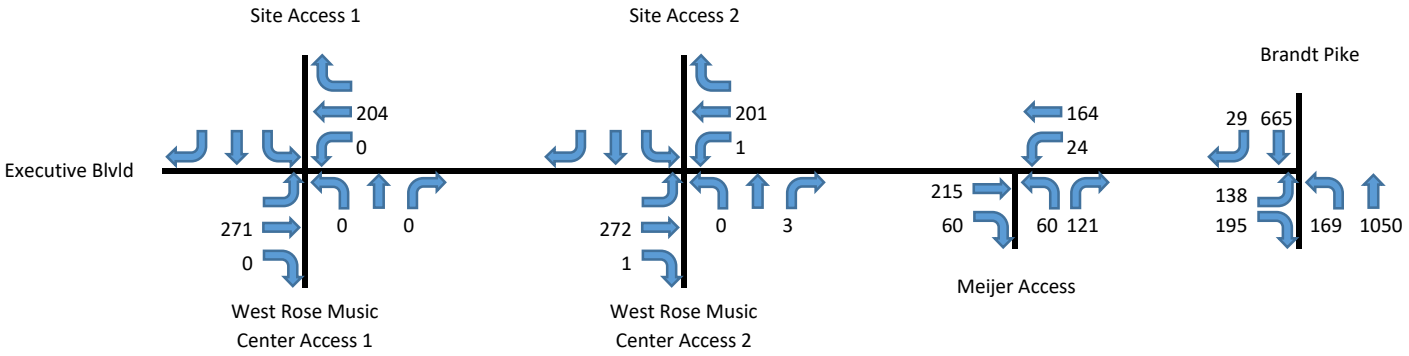
N



Newbauer Multifamily TIS
Traffic Volume Calculations

Year	Period	Scenario	Plate
2023	PM	Count	

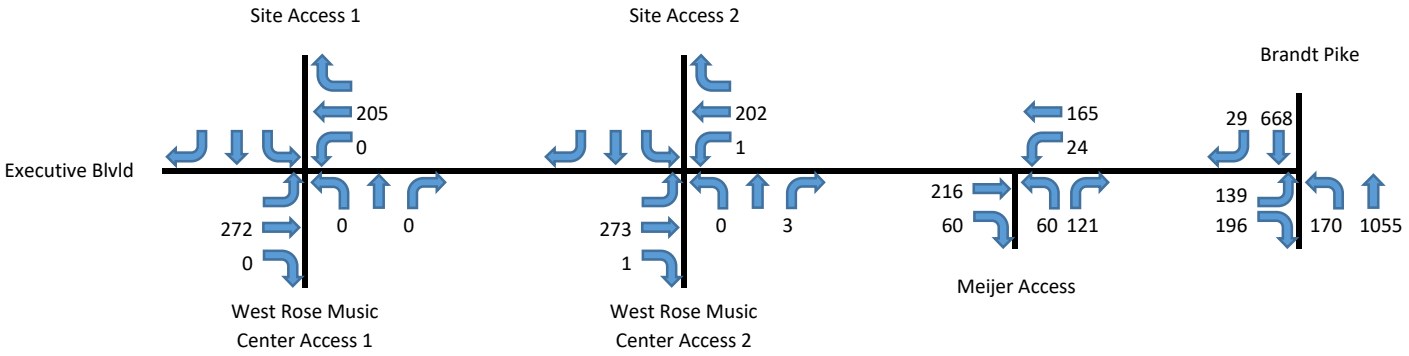
^
N



Newbauer Multifamily TIS
Traffic Volume Calculations

Year	Period	Scenario	Plate
2024	PM	No Build	A2

^
N



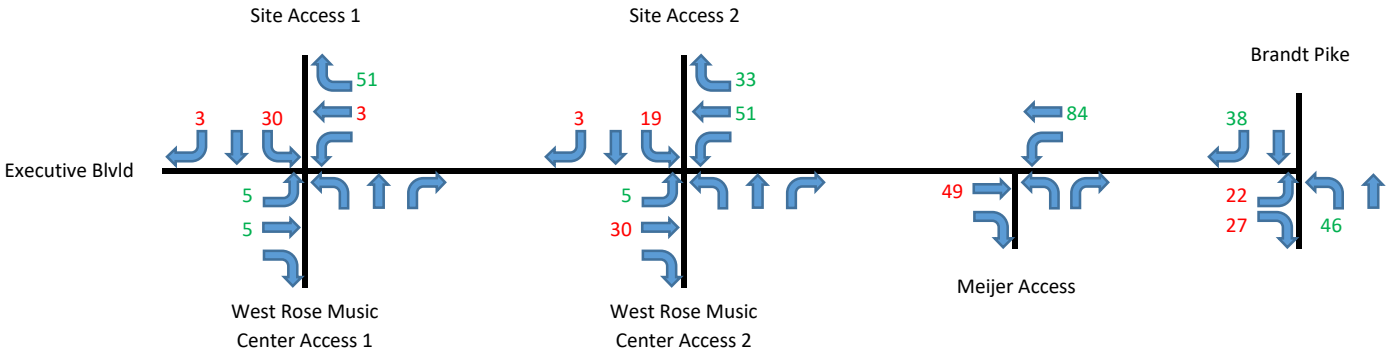
Year	Period	Scenario	Plate
	PM	Non-Pass-By Trips	B2

^

N

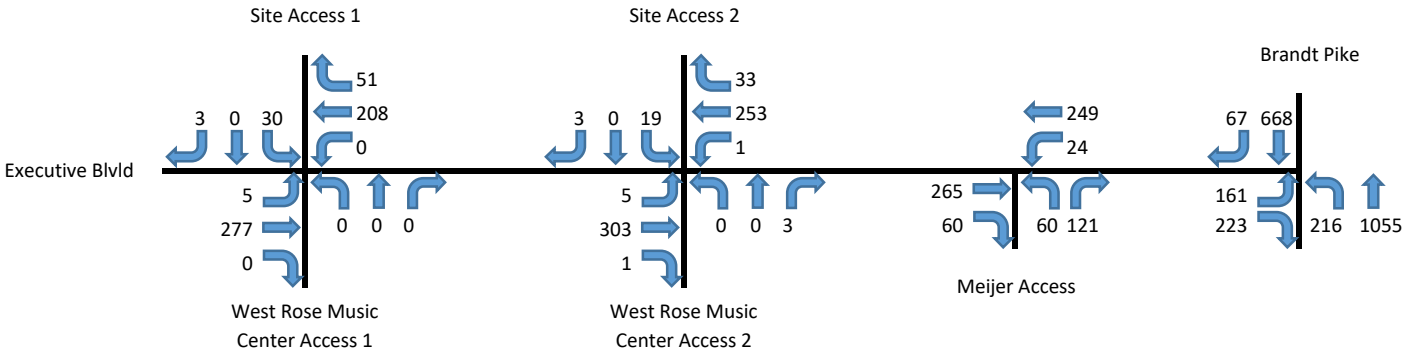
Enter 94

Exit 55



Year	Period	Scenario	Plate
2024	PM	Build	C2 = A2 + B2

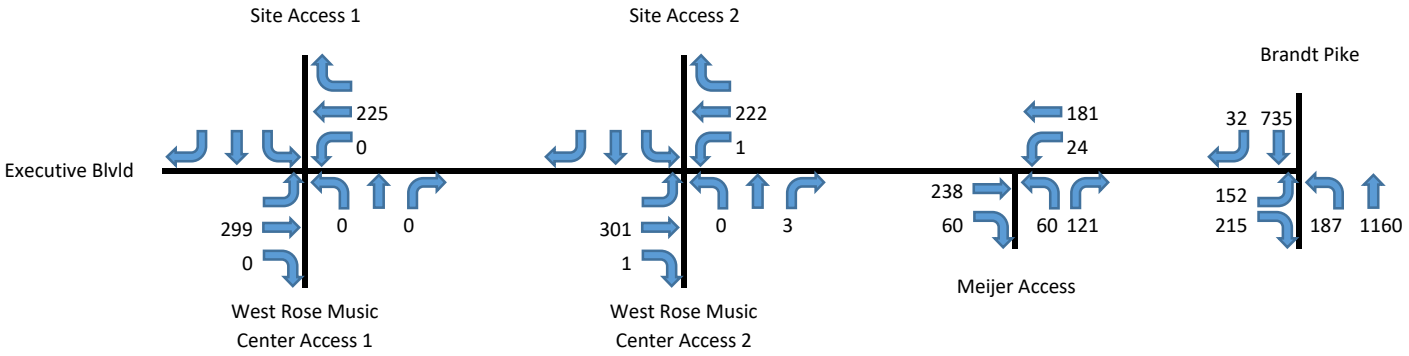
^
N



Newbauer Multifamily TIS
Traffic Volume Calculations

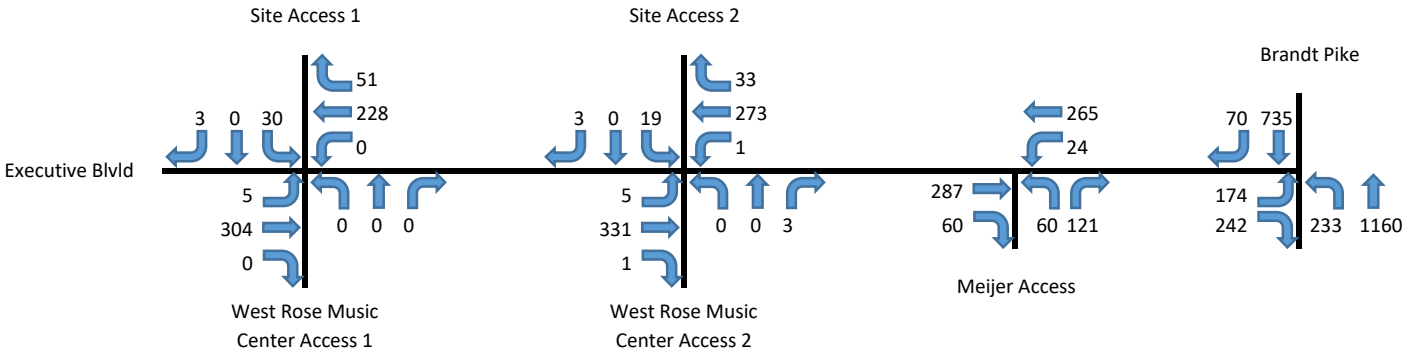
	Year	Period	Scenario	Plate
CARPENTER MARTY transportation	2044	PM	No Build	D2

^
N



Year	Period	Scenario	Plate
2044	PM	Build	E2 = B2 + D2

^
N



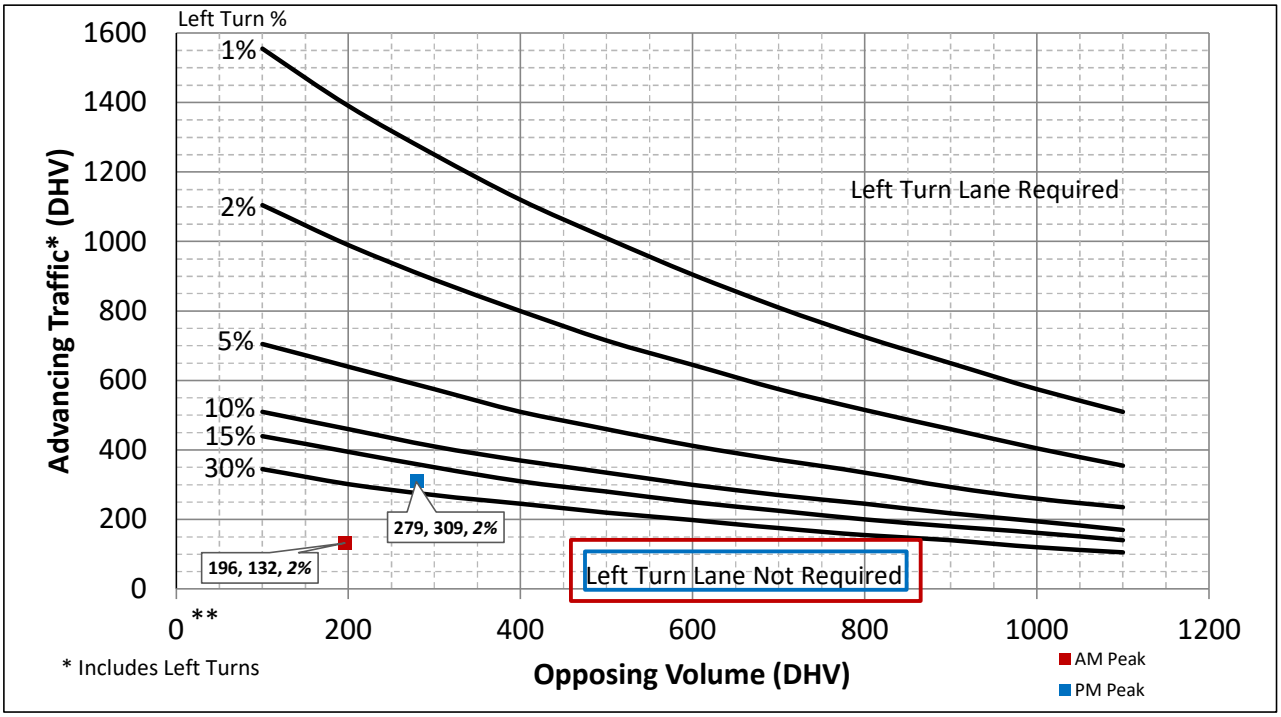
Appendix E
Turn Lane Lane Warrant and Length Analysis

Appendix E

CARPENTER MARTY transportation

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

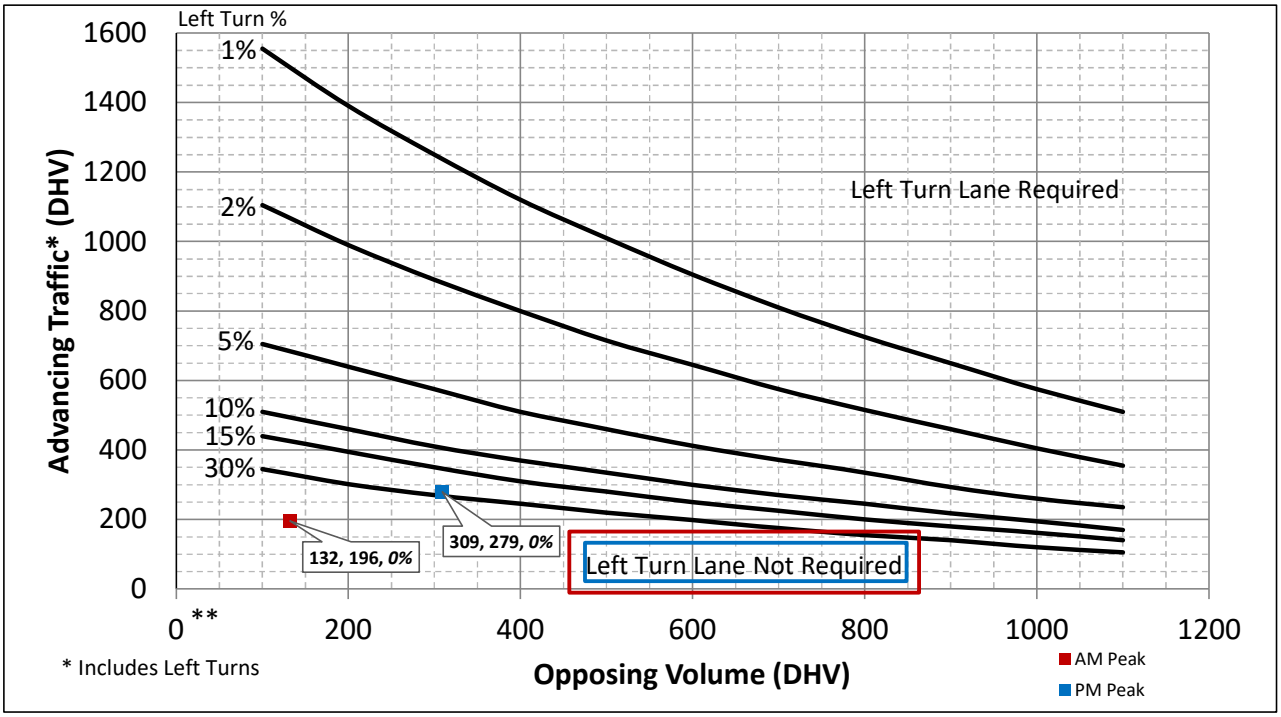
AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	2	VPH
	Advancing Traffic	132	VPH
	Opposing Volume	196	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
	Offset Width	12	
	Approach Taper	320	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	5	VPH
	Advancing Traffic	309	VPH
	Opposing Volume	279	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
	Offset Width	12	
	Approach Taper	320	
Is Left Turn Warrant Met		No	**No Left Turn Lane Required**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)

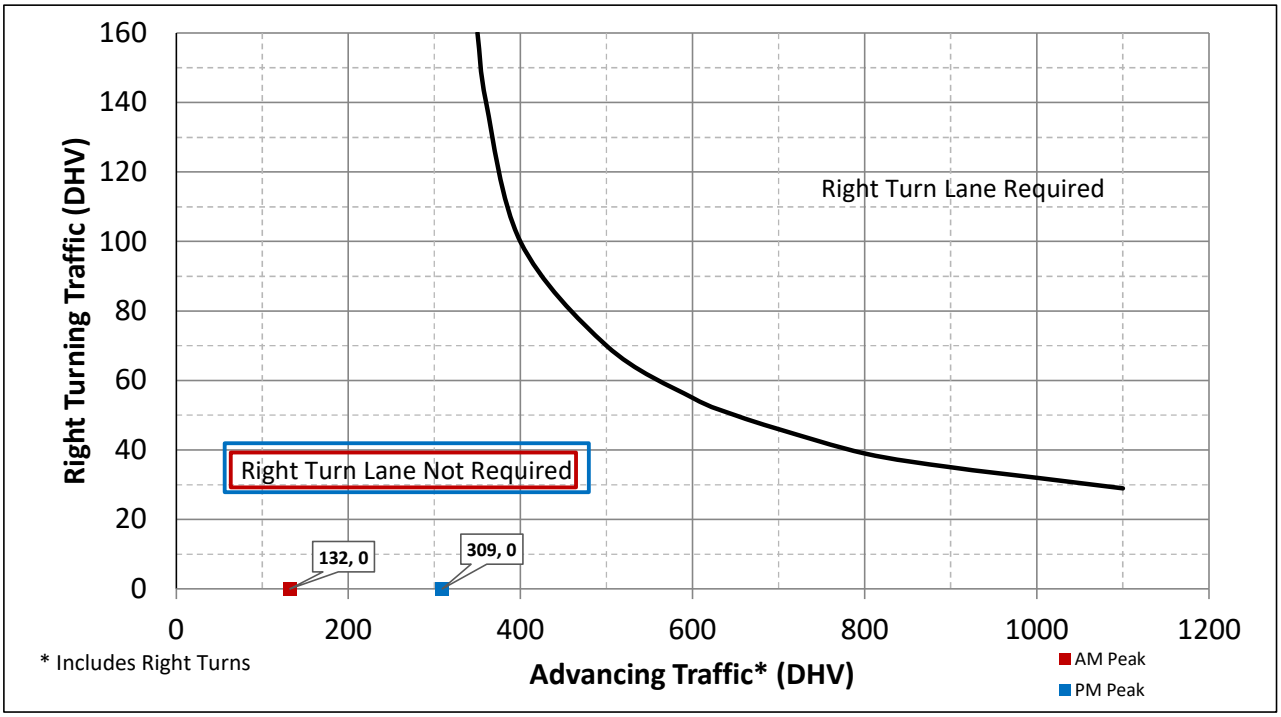


Turn Lane Length Calculations

AM Peak	Design Speed	40	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	0	VPH	
	Advancing Traffic	196	VPH	
	Opposing Volume	132	VPH	
	Left Turn Percentage	0%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
	Approach Taper	320		
PM Peak	Design Speed	40	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	0	VPH	
	Advancing Traffic	279	VPH	
	Opposing Volume	309	VPH	
	Left Turn Percentage	0%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	125		* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12		
	Approach Taper	320		
Is Left Turn Warrant Met		No	**No Left Turn Lane Required**	

2-Lane Highway Right Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

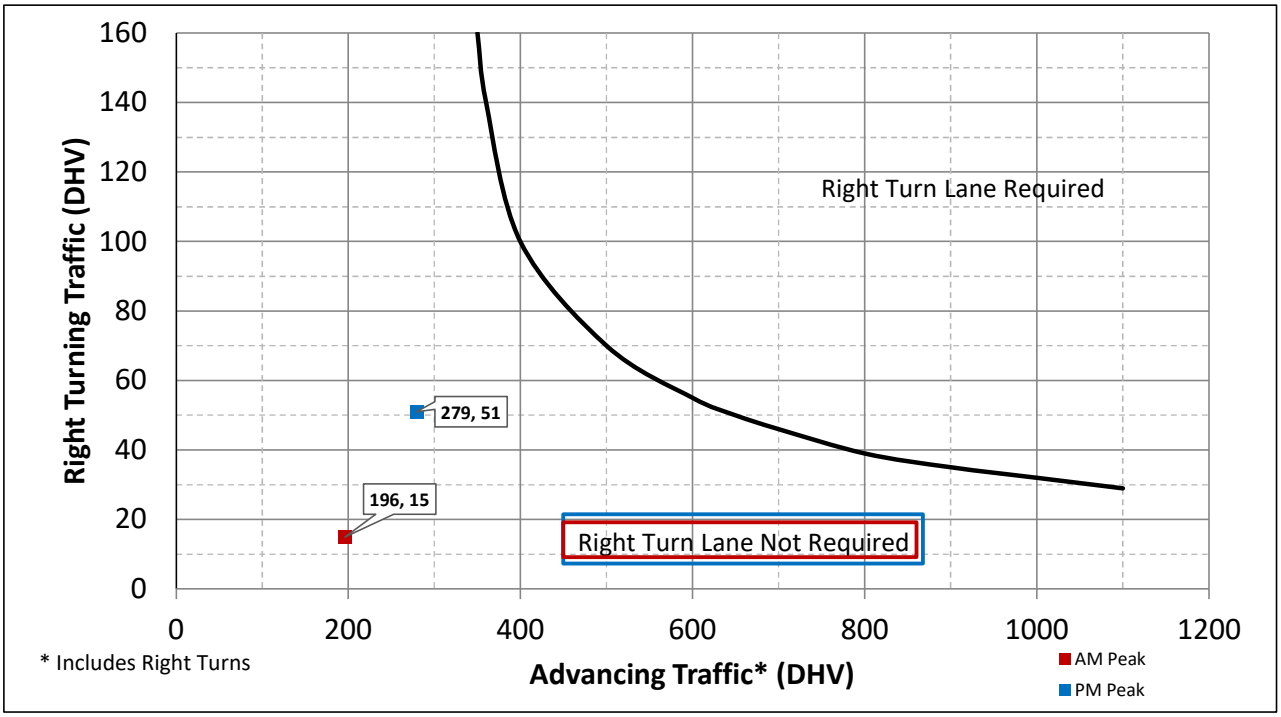
AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	0	VPH
	Advancing Traffic	132	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	0	VPH
	Advancing Traffic	309	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

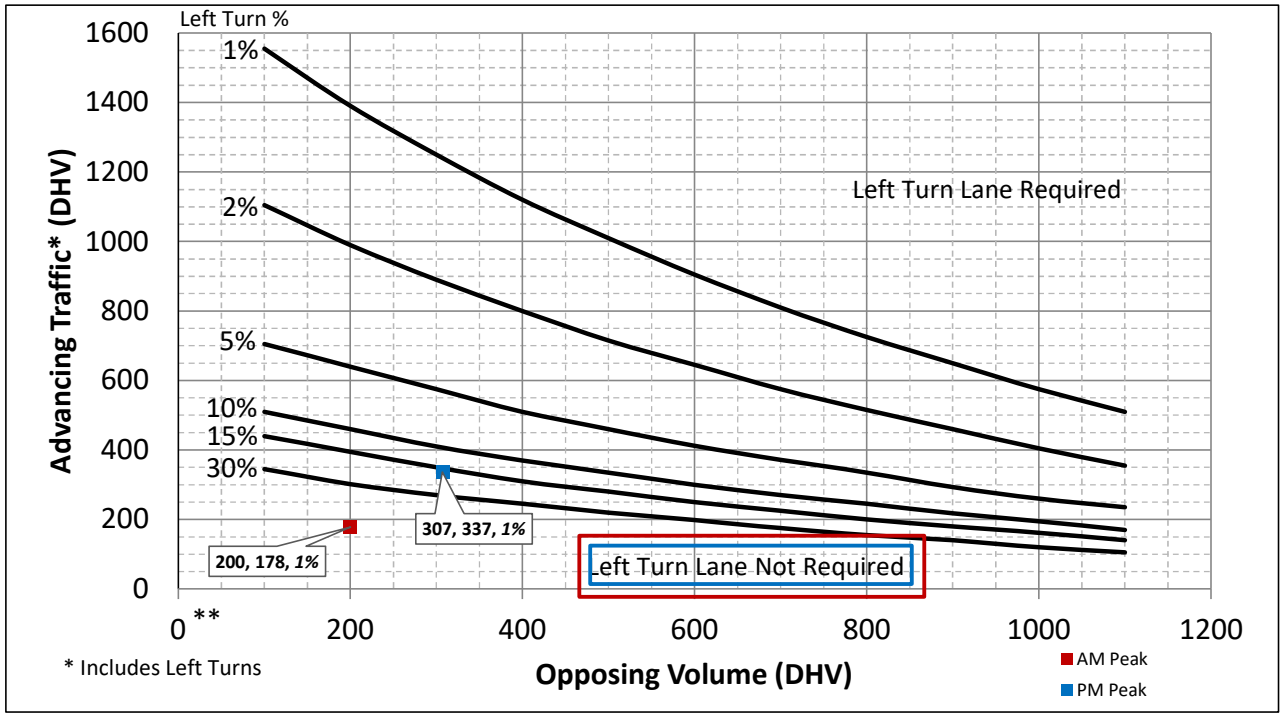
AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	15	VPH
	Advancing Traffic	196	VPH
	Right Turn Percentage	8%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	51	VPH
	Advancing Traffic	279	VPH
	Right Turn Percentage	18%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	1	
	Turn Lane Length	165	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

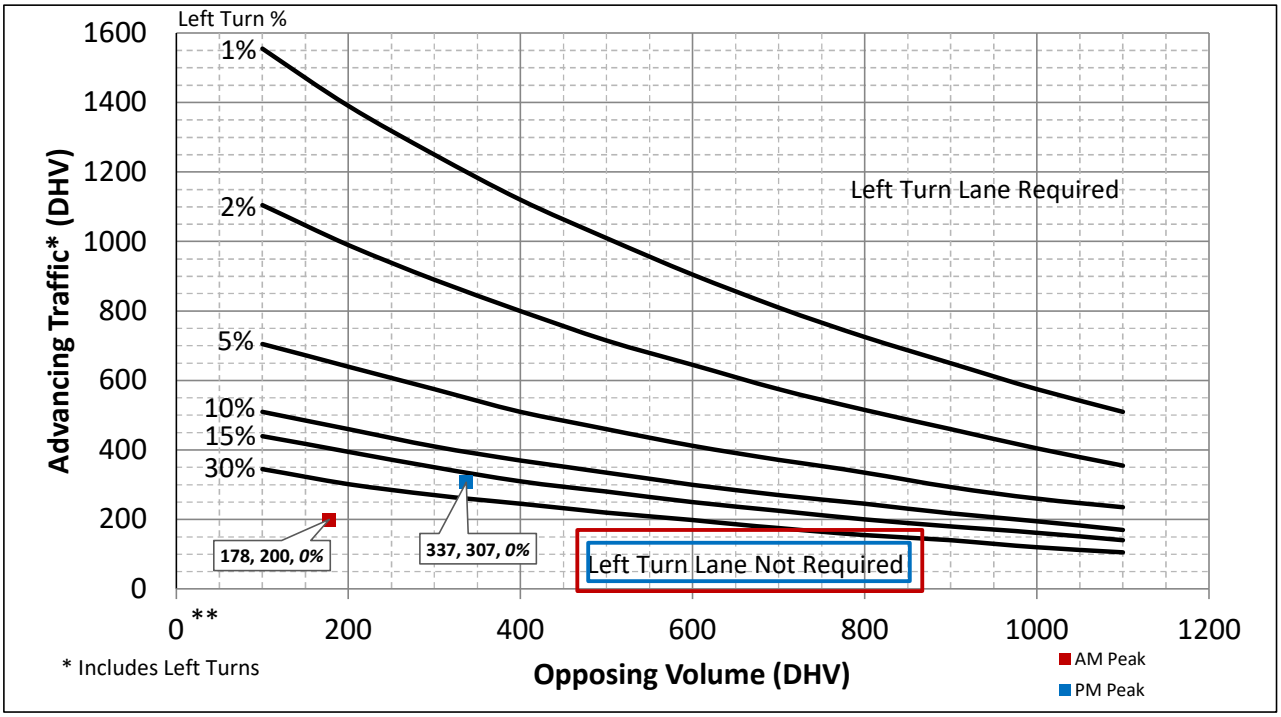
AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	1	VPH
	Advancing Traffic	178	VPH
	Opposing Volume	200	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
	Offset Width	12	
	Approach Taper	320	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	5	VPH
	Advancing Traffic	337	VPH
	Opposing Volume	307	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
	Offset Width	12	
	Approach Taper	320	
Is Left Turn Warrant Met		No	**No Left Turn Lane Required**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Left Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

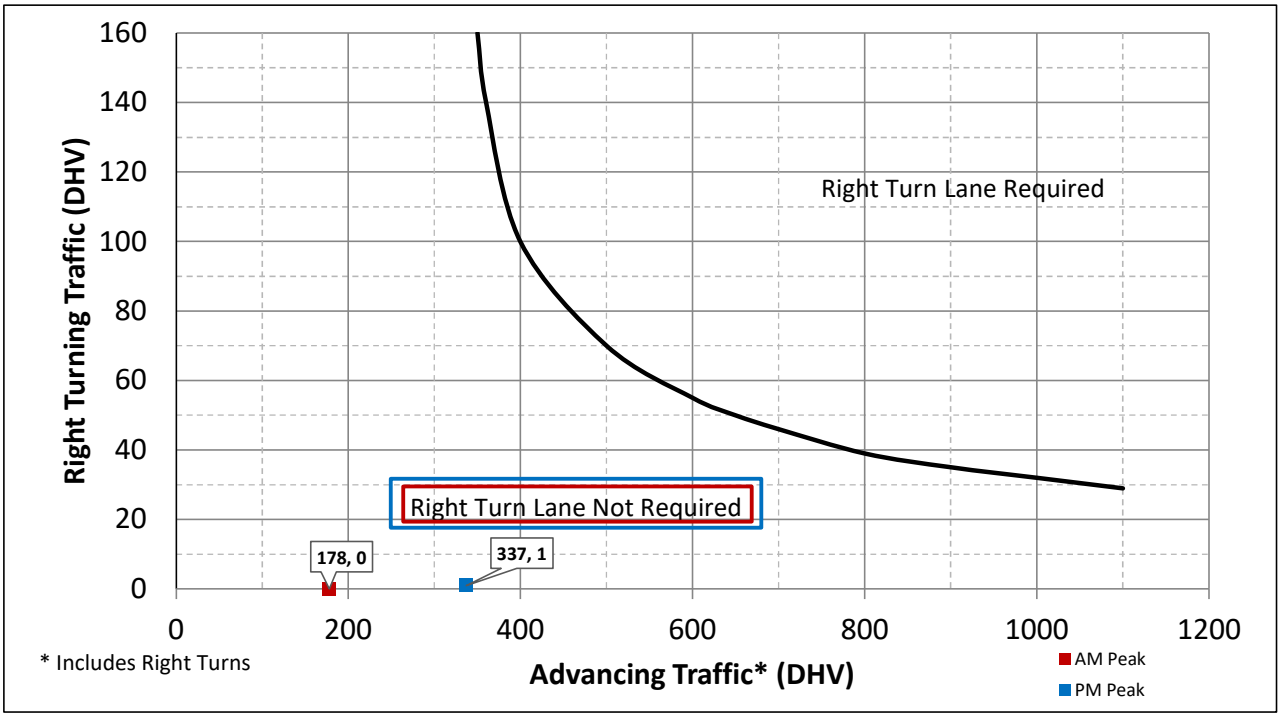
AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	0	VPH
	Advancing Traffic	200	VPH
	Opposing Volume	178	VPH
	Left Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
	Offset Width	12	
	Approach Taper	320	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	1	VPH
	Advancing Traffic	307	VPH
	Opposing Volume	337	VPH
	Left Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
	Offset Width	12	
	Approach Taper	320	
Is Left Turn Warrant Met		No	**No Left Turn Lane Required**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

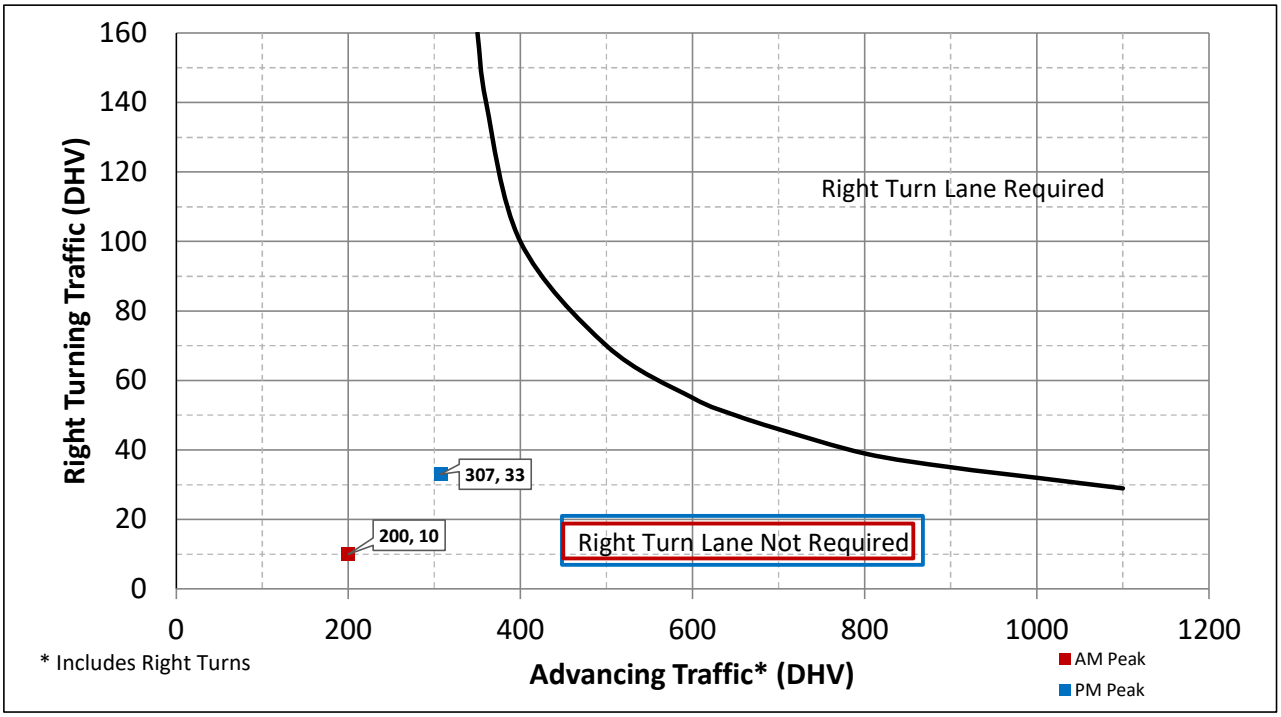
AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	0	VPH
	Advancing Traffic	178	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	1	VPH
	Advancing Traffic	337	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(= < 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	10	VPH
	Advancing Traffic	200	VPH
	Right Turn Percentage	5%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	125	
PM Peak	Design Speed	40	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	33	VPH
	Advancing Traffic	307	VPH
	Right Turn Percentage	11%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	1	
	Turn Lane Length	165	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	9	**VPH**
	Advancing Traffic	201	**VPH**
	Left Turn Percentage	4%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	1	
	Turn Lane Length	See Column to Right	165
	Offset Width	12	
	Approach Taper	320	
PM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	24	**VPH**
	Advancing Traffic	289	**VPH**
	Left Turn Percentage	8%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	1	
	Turn Lane Length	See Column to Right	165
	Offset Width	12	
	Approach Taper	320	

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	15	**VPH**
	Advancing Traffic	35	**VPH**
	Left Turn Percentage	43%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	1	
	Turn Lane Length	See Column to Right	165
	Offset Width	12	
	Approach Taper	320	
PM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	60	**VPH**
	Advancing Traffic	181	**VPH**
	Left Turn Percentage	33%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	1	
	Turn Lane Length	See Column to Right	165
	Offset Width	12	
	Approach Taper	320	

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	20	**VPH**
	Advancing Traffic	35	**VPH**
	Right Turn Percentage	57%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	1	
	Turn Lane Length	See Column to Right	165
PM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 2 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	60	***Assume 60***
	Turn Lane Volume	121	**VPH**
	Advancing Traffic	181	**VPH**
	Right Turn Percentage	67%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	3	
	Turn Lane Length	See Column to Right	265

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 3 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	40	***Assume 40***
	Turn Lane Volume	148	**VPH**
	Advancing Traffic	665	**VPH**
	Left Turn Percentage	22%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	4	
	Turn Lane Length	See Column to Right	290
	Offset Width	12	
	Approach Taper	320	
PM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 3 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	40	***Assume 40***
	Turn Lane Volume	233	**VPH**
	Advancing Traffic	1393	**VPH**
	Left Turn Percentage	17%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	6	
	Turn Lane Length	See Column to Right	365
	Offset Width	12	
	Approach Taper	320	

Left Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 3 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	40	***Assume 40***
	Turn Lane Volume	73	**VPH**
	Advancing Traffic	233	**VPH**
	Left Turn Percentage	31%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	2	
	Turn Lane Length	See Column to Right	215
	Offset Width	12	
	Approach Taper	320	
PM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 3 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	40	***Assume 40***
	Turn Lane Volume	174	**VPH**
	Advancing Traffic	416	**VPH**
	Left Turn Percentage	42%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	5	
	Turn Lane Length	See Column to Right	315
	Offset Width	12	
	Approach Taper	320	

Dual Left Turn Lane Lengths	
Storage Length Per Lane	120 ft
Outer Lane Deceleration Length	125 ft
Inner Lane Deceleration Length	75 ft
Total Outer Lane Length	245 ft
Total Inner Lane Length	195 ft

Right Turn Lane Length Calculations

AM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 3 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	40	***Assume 40***
	Turn Lane Volume	160	**VPH**
	Advancing Traffic	233	**VPH**
	Right Turn Percentage	69%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	4	
	Turn Lane Length	See Column to Right	290
PM Peak	**Design Speed**	40	**mph**
	Traffic Control	Signalized - 3 Phase	
	Cycle Length	Unknown	
	Cycles Per Hour	40	***Assume 40***
	Turn Lane Volume	242	**VPH**
	Advancing Traffic	416	**VPH**
	Right Turn Percentage	58%	
	Location Type	Intersection	
	Condition	B or C	
	Vehicles/Cycle	7	
	Turn Lane Length	See Column to Right	390

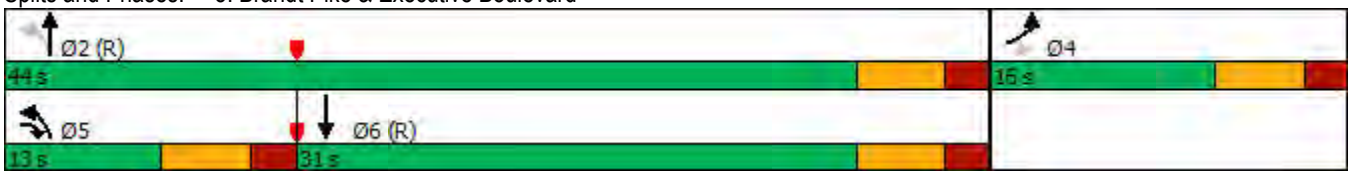
Appendix F
Capacity Analysis

CARPENTER MARTY transportation

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	13	31
Maximum Split (%)	73.3%	26.7%	21.7%	51.7%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	47	31	47	0
End Time (s)	31	47	0	31
Yield/Force Off (s)	25	41	54	25
Yield/Force Off 170(s)	25	41	54	25
Local Start Time (s)	47	31	47	0
Local Yield (s)	25	41	54	25
Local Yield 170(s)	25	41	54	25

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	106	122	470	875	40
Future Volume (veh/h)	34	106	122	470	875	40
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1870	1870
Adj Flow Rate, veh/h	37	114	131	505	941	43
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	14	14	5	5	2	2
Cap, veh/h	479	368	431	2244	1534	70
Arrive On Green	0.15	0.15	0.10	0.65	0.44	0.44
Sat Flow, veh/h	3127	1434	1739	3561	3554	158
Grp Volume(v), veh/h	37	114	131	505	483	501
Grp Sat Flow(s),veh/h/ln	1564	1434	1739	1735	1777	1842
Q Serve(g_s), s	0.6	3.9	2.1	3.6	12.5	12.5
Cycle Q Clear(g_c), s	0.6	3.9	2.1	3.6	12.5	12.5
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	479	368	431	2244	788	816
V/C Ratio(X)	0.08	0.31	0.30	0.23	0.61	0.61
Avail Cap(c_a), veh/h	521	388	454	2244	788	816
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	18.0	8.0	4.4	12.8	12.8
Incr Delay (d2), s/veh	0.1	0.5	0.4	0.2	3.6	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.4	0.6	0.9	4.9	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.8	18.5	8.4	4.6	16.3	16.2
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	151			636	984	
Approach Delay, s/veh	19.3			5.4	16.3	
Approach LOS	B			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.8		15.2	12.2	32.6
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		5.6		5.9	4.1	14.5
Green Ext Time (p_c), s		3.6		0.2	0.1	4.5

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	39	21	39
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	39	0
End Time (s)	39	0	39
Yield/Force Off (s)	33	54	33
Yield/Force Off 170(s)	33	54	33
Local Start Time (s)	0	39	0
Local Yield (s)	33	54	33
Local Yield 170(s)	33	54	33

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	107	27	9	152	15	20
Future Volume (veh/h)	107	27	9	152	15	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1693	1693
Adj Flow Rate, veh/h	126	32	11	179	18	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	14	14	5	5	14	14
Cap, veh/h	620	157	675	869	384	342
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1302	331	1199	1826	1612	1434
Grp Volume(v), veh/h	0	158	11	179	18	24
Grp Sat Flow(s),veh/h/ln	0	1633	1199	1826	1612	1434
Q Serve(g_s), s	0.0	2.4	0.2	2.4	0.4	0.5
Cycle Q Clear(g_c), s	0.0	2.4	2.6	2.4	0.4	0.5
Prop In Lane		0.20	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	778	675	869	384	342
V/C Ratio(X)	0.00	0.20	0.02	0.21	0.05	0.07
Avail Cap(c_a), veh/h	0	1283	1046	1435	576	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.4	7.1	6.4	12.3	12.4
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.5	0.0	0.6	0.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.5	7.1	6.5	12.4	12.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	158			190	42	
Approach Delay, s/veh	6.5			6.5	12.4	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		33.0		15.0		33.0
Max Q Clear Time (g_c+I1), s		4.4		2.5		4.6
Green Ext Time (p_c), s		0.9		0.1		1.0

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	0	0	161	0	0
Future Vol, veh/h	118	0	0	161	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	15	15	4	4	0	0
Mvmt Flow	148	0	0	201	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	349	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	201	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1421	-	652	904
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1421	-	652	904
Mov Cap-2 Maneuver	-	-	-	-	652	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1421	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	0	0	159	0	1
Future Vol, veh/h	118	0	0	159	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	15	15	4	4	0	0
Mvmt Flow	146	0	0	196	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	146	0	342	146
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	196	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	658	906
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	842	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	658	906
Mov Cap-2 Maneuver	-	-	-	-	658	-
Stage 1	-	-	-	-	886	-
Stage 2	-	-	-	-	842	-

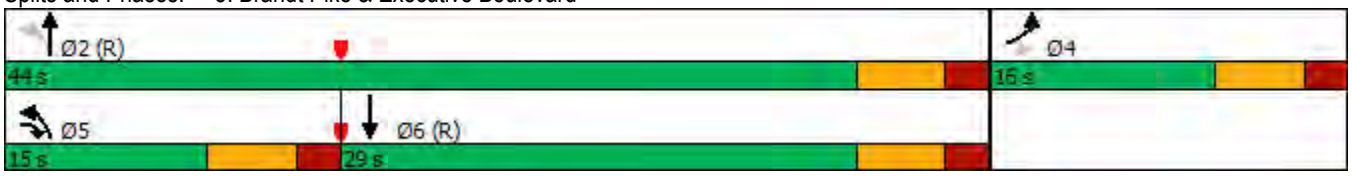
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	906	-	-	1424	-
HCM Lane V/C Ratio	-	0.001	-	-	-	-
HCM Control Delay (s)	0	9	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	15	29
Maximum Split (%)	73.3%	26.7%	25.0%	48.3%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	45	29	45	0
End Time (s)	29	45	0	29
Yield/Force Off (s)	23	39	54	23
Yield/Force Off 170(s)	23	39	54	23
Local Start Time (s)	45	29	45	0
Local Yield (s)	23	39	54	23
Local Yield 170(s)	23	39	54	23

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	150	136	470	875	51
Future Volume (veh/h)	69	150	136	470	875	51
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1870	1870
Adj Flow Rate, veh/h	74	161	146	505	941	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	14	14	5	5	2	2
Cap, veh/h	511	387	423	2209	1468	86
Arrive On Green	0.16	0.16	0.11	0.64	0.43	0.43
Sat Flow, veh/h	3127	1434	1739	3561	3505	199
Grp Volume(v), veh/h	74	161	146	505	490	506
Grp Sat Flow(s),veh/h/ln	1564	1434	1739	1735	1777	1834
Q Serve(g_s), s	1.2	5.5	2.4	3.7	13.0	13.0
Cycle Q Clear(g_c), s	1.2	5.5	2.4	3.7	13.0	13.0
Prop In Lane	1.00	1.00	1.00			0.11
Lane Grp Cap(c), veh/h	511	387	423	2209	764	789
V/C Ratio(X)	0.14	0.42	0.35	0.23	0.64	0.64
Avail Cap(c_a), veh/h	521	392	499	2209	764	789
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	18.0	8.6	4.6	13.4	13.4
Incr Delay (d2), s/veh	0.1	0.7	0.5	0.2	4.1	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	4.7	0.7	1.0	5.2	5.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.6	18.7	9.1	4.9	17.5	17.4
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	235			651	996	
Approach Delay, s/veh	19.6			5.8	17.5	
Approach LOS	B			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.2		15.8	12.4	31.8
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s		5.7		7.5	4.4	15.0
Green Ext Time (p_c), s		3.6		0.2	0.1	3.8

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	40	20	40
Maximum Split (%)	66.7%	33.3%	66.7%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	40	0
End Time (s)	40	0	40
Yield/Force Off (s)	34	54	34
Yield/Force Off 170(s)	34	54	34
Local Start Time (s)	0	40	0
Local Yield (s)	34	54	34
Local Yield 170(s)	34	54	34

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	186	27	9	177	15	20
Future Volume (veh/h)	186	27	9	177	15	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1693	1693
Adj Flow Rate, veh/h	219	32	11	208	18	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	14	14	5	5	14	14
Cap, veh/h	687	100	593	869	384	342
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1444	211	1102	1826	1612	1434
Grp Volume(v), veh/h	0	251	11	208	18	24
Grp Sat Flow(s),veh/h/ln	0	1655	1102	1826	1612	1434
Q Serve(g_s), s	0.0	3.9	0.3	2.8	0.4	0.5
Cycle Q Clear(g_c), s	0.0	3.9	4.2	2.8	0.4	0.5
Prop In Lane		0.13	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	788	593	869	384	342
V/C Ratio(X)	0.00	0.32	0.02	0.24	0.05	0.07
Avail Cap(c_a), veh/h	0	1339	960	1478	537	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	8.1	6.5	12.3	12.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.9	0.0	0.7	0.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.0	8.1	6.6	12.4	12.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	251			219	42	
Approach Delay, s/veh	7.0			6.7	12.4	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		34.0		14.0		34.0
Max Q Clear Time (g_c+I1), s		5.9		2.5		6.2
Green Ext Time (p_c), s		1.5		0.0		1.2

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	119	0	0	165	15	0	0	0	48	0	5
Future Vol, veh/h	2	119	0	0	165	15	0	0	0	48	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	15	15	15	4	4	4	0	0	0	2	2	2
Mvmt Flow	3	149	0	0	206	19	0	0	0	60	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	149	0	0	374	380	149	371	371	216
Stage 1	-	-	-	-	-	-	155	155	-	216	216	-
Stage 2	-	-	-	-	-	-	219	225	-	155	155	-
Critical Hdwy	4.25	-	-	4.14	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.236	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1270	-	-	1420	-	-	587	556	903	586	559	824
Stage 1	-	-	-	-	-	-	852	773	-	786	724	-
Stage 2	-	-	-	-	-	-	788	721	-	847	769	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1270	-	-	1420	-	-	582	555	903	585	558	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	582	555	-	585	558	-
Stage 1	-	-	-	-	-	-	850	771	-	784	724	-
Stage 2	-	-	-	-	-	-	782	721	-	845	767	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	11.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1270	-	-	1420	-	-	601
HCM Lane V/C Ratio	-	-	0.002	-	-	-	-	-	0.11
HCM Control Delay (s)	0	0	7.8	-	-	0	-	-	11.7
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	166	0	0	174	10	0	0	1	31	0	4
Future Vol, veh/h	1	166	0	0	174	10	0	0	1	31	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	175	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	15	15	15	4	4	4	0	0	0	2	2	2
Mvmt Flow	1	205	0	0	215	12	0	0	1	38	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	227	0	0	205	0	0	431	434	205	429	428	221
Stage 1	-	-	-	-	-	-	207	207	-	221	221	-
Stage 2	-	-	-	-	-	-	224	227	-	208	207	-
Critical Hdwy	4.25	-	-	4.14	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.236	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1268	-	-	1355	-	-	538	518	841	536	519	819
Stage 1	-	-	-	-	-	-	800	734	-	781	720	-
Stage 2	-	-	-	-	-	-	783	720	-	794	731	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1268	-	-	1355	-	-	534	517	841	535	518	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	517	-	535	518	-
Stage 1	-	-	-	-	-	-	799	733	-	780	720	-
Stage 2	-	-	-	-	-	-	778	720	-	792	730	-

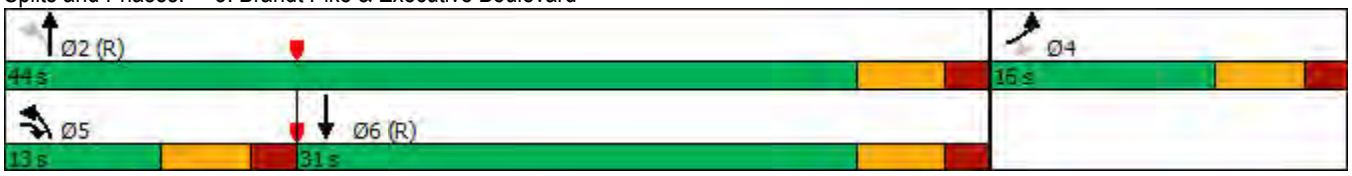
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.3	12
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	841	1268	-	-	1355	-	-	557
HCM Lane V/C Ratio	-	0.001	0.001	-	-	-	-	-	0.078
HCM Control Delay (s)	0	9.3	7.8	-	-	0	-	-	12
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	0	-	-	0	-	-	0.3

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	13	31
Maximum Split (%)	73.3%	26.7%	21.7%	51.7%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	47	31	47	0
End Time (s)	31	47	0	31
Yield/Force Off (s)	25	41	54	25
Yield/Force Off 170(s)	25	41	54	25
Local Start Time (s)	47	31	47	0
Local Yield (s)	25	41	54	25
Local Yield 170(s)	25	41	54	25

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	139	196	170	1055	668	29
Future Volume (veh/h)	139	196	170	1055	668	29
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1870	1870
Adj Flow Rate, veh/h	142	200	173	1077	682	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	2	2	2	2
Cap, veh/h	569	434	525	2253	1469	65
Arrive On Green	0.17	0.17	0.11	0.63	0.42	0.42
Sat Flow, veh/h	3428	1572	1781	3647	3561	152
Grp Volume(v), veh/h	142	200	173	1077	349	363
Grp Sat Flow(s),veh/h/ln	1714	1572	1781	1777	1777	1843
Q Serve(g_s), s	2.2	6.3	2.8	9.6	8.5	8.5
Cycle Q Clear(g_c), s	2.2	6.3	2.8	9.6	8.5	8.5
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	569	434	525	2253	753	781
V/C Ratio(X)	0.25	0.46	0.33	0.48	0.46	0.46
Avail Cap(c_a), veh/h	571	435	536	2253	753	781
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	18.0	7.4	5.8	12.4	12.4
Incr Delay (d2), s/veh	0.2	0.8	0.4	0.7	2.1	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	5.8	0.8	2.5	3.3	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.0	18.8	7.8	6.5	14.5	14.4
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	342			1250	712	
Approach Delay, s/veh	20.1			6.7	14.4	
Approach LOS	C			A	B	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		16.0	12.6	31.4
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		11.6		8.3	4.8	10.5
Green Ext Time (p_c), s		8.6		0.2	0.1	3.7
Intersection Summary						
HCM 6th Ctrl Delay			11.1			
HCM 6th LOS			B			

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	37	23	37
Maximum Split (%)	61.7%	38.3%	61.7%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	37	0
End Time (s)	37	0	37
Yield/Force Off (s)	31	54	31
Yield/Force Off 170(s)	31	54	31
Local Start Time (s)	0	37	0
Local Yield (s)	31	54	31
Local Yield 170(s)	31	54	31

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	216	60	24	165	60	121
Future Volume (veh/h)	216	60	24	165	60	121
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1796	1796	1870	1870
Adj Flow Rate, veh/h	230	64	26	176	64	129
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	7	7	2	2
Cap, veh/h	670	187	561	855	424	377
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1408	392	1042	1796	1781	1585
Grp Volume(v), veh/h	0	294	26	176	64	129
Grp Sat Flow(s),veh/h/ln	0	1800	1042	1796	1781	1585
Q Serve(g_s), s	0.0	4.3	0.7	2.4	1.2	2.8
Cycle Q Clear(g_c), s	0.0	4.3	5.0	2.4	1.2	2.8
Prop In Lane		0.22	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	857	561	855	424	377
V/C Ratio(X)	0.00	0.34	0.05	0.21	0.15	0.34
Avail Cap(c_a), veh/h	0	1328	834	1326	721	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.9	8.4	6.4	12.6	13.3
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.1	0.6	0.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.1	8.5	6.5	12.8	13.8
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	294			202	193	
Approach Delay, s/veh	7.1			6.8	13.5	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		31.0		17.0		31.0
Max Q Clear Time (g_c+I1), s		6.3		4.8		7.0
Green Ext Time (p_c), s		1.7		0.4		1.0

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	272	0	0	205	0	0
Future Vol, veh/h	272	0	0	205	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	5	5	0	0
Mvmt Flow	283	0	0	214	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	283	0	497	283
Stage 1	-	-	-	-	283	-
Stage 2	-	-	-	-	214	-
Critical Hdwy	-	-	4.15	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1262	-	536	761
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1262	-	536	761
Mov Cap-2 Maneuver	-	-	-	-	536	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	826	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1262	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	273	1	1	202	0	3
Future Vol, veh/h	273	1	1	202	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	5	5	0	0
Mvmt Flow	281	1	1	208	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	282	0	491	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	-	-	4.15	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1263	-	540	763
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	830	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1263	-	539	763
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	829	-

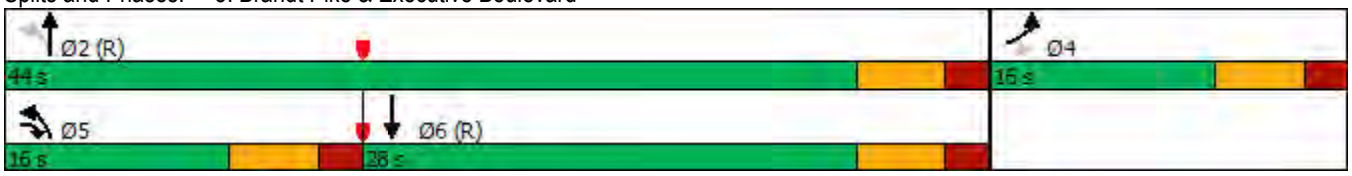
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	763	-	-	1263	-
HCM Lane V/C Ratio	-	0.004	-	-	0.001	-
HCM Control Delay (s)	0	9.7	-	-	7.9	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	16	28
Maximum Split (%)	73.3%	26.7%	26.7%	46.7%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	44	28	44	0
End Time (s)	28	44	0	28
Yield/Force Off (s)	22	38	54	22
Yield/Force Off 170(s)	22	38	54	22
Local Start Time (s)	44	28	44	0
Local Yield (s)	22	38	54	22
Local Yield 170(s)	22	38	54	22

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	161	223	216	1055	668	67
Future Volume (veh/h)	161	223	216	1055	668	67
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1870	1870
Adj Flow Rate, veh/h	164	228	220	1077	682	68
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	2	2	2	2
Cap, veh/h	571	440	512	2252	1370	137
Arrive On Green	0.17	0.17	0.11	0.63	0.42	0.42
Sat Flow, veh/h	3428	1572	1781	3647	3357	325
Grp Volume(v), veh/h	164	228	220	1077	371	379
Grp Sat Flow(s),veh/h/ln	1714	1572	1781	1777	1777	1812
Q Serve(g_s), s	2.5	7.3	3.7	9.6	9.2	9.2
Cycle Q Clear(g_c), s	2.5	7.3	3.7	9.6	9.2	9.2
Prop In Lane	1.00	1.00	1.00			0.18
Lane Grp Cap(c), veh/h	571	440	512	2252	746	761
V/C Ratio(X)	0.29	0.52	0.43	0.48	0.50	0.50
Avail Cap(c_a), veh/h	571	441	607	2252	746	761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	18.2	7.9	5.8	12.8	12.8
Incr Delay (d2), s/veh	0.3	1.1	0.6	0.7	2.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.7	1.1	2.5	3.6	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.2	19.2	8.5	6.5	15.1	15.1
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	392			1297	750	
Approach Delay, s/veh	20.5			6.8	15.1	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		16.0	12.8	31.2
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	10.0	22.0
Max Q Clear Time (g_c+I1), s		11.6		9.3	5.7	11.2
Green Ext Time (p_c), s		8.6		0.1	0.2	3.4

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	38	22	38
Maximum Split (%)	63.3%	36.7%	63.3%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	38	0
End Time (s)	38	0	38
Yield/Force Off (s)	32	54	32
Yield/Force Off 170(s)	32	54	32
Local Start Time (s)	0	38	0
Local Yield (s)	32	54	32
Local Yield 170(s)	32	54	32

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	265	60	24	249	60	121
Future Volume (veh/h)	265	60	24	249	60	121
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1796	1796	1870	1870
Adj Flow Rate, veh/h	282	64	26	265	64	129
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	7	7	2	2
Cap, veh/h	703	159	522	855	424	377
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1475	335	994	1796	1781	1585
Grp Volume(v), veh/h	0	346	26	265	64	129
Grp Sat Flow(s),veh/h/ln	0	1810	994	1796	1781	1585
Q Serve(g_s), s	0.0	5.2	0.7	3.8	1.2	2.8
Cycle Q Clear(g_c), s	0.0	5.2	5.9	3.8	1.2	2.8
Prop In Lane		0.18	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	862	522	855	424	377
V/C Ratio(X)	0.00	0.40	0.05	0.31	0.15	0.34
Avail Cap(c_a), veh/h	0	1379	806	1369	679	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.1	9.0	6.8	12.6	13.3
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.4	0.1	1.0	0.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.4	9.1	7.0	12.8	13.8
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	346			291	193	
Approach Delay, s/veh	7.4			7.2	13.5	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		32.0		16.0		32.0
Max Q Clear Time (g_c+I1), s		7.2		4.8		7.9
Green Ext Time (p_c), s		2.1		0.4		1.6

Intersection Summary	
HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	277	0	0	208	51	0	0	0	30	0	3
Future Vol, veh/h	5	277	0	0	208	51	0	0	0	30	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	5	5	5	0	0	0	2	2	2
Mvmt Flow	5	289	0	0	217	53	0	0	0	31	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	270	0	0	289	0	0	544	569	289	543	543	244
Stage 1	-	-	-	-	-	-	299	299	-	244	244	-
Stage 2	-	-	-	-	-	-	245	270	-	299	299	-
Critical Hdwy	4.12	-	-	4.15	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.245	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1293	-	-	1256	-	-	453	435	755	451	447	795
Stage 1	-	-	-	-	-	-	714	670	-	760	704	-
Stage 2	-	-	-	-	-	-	763	690	-	710	666	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1293	-	-	1256	-	-	450	433	755	450	445	795
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	433	-	450	445	-
Stage 1	-	-	-	-	-	-	711	667	-	757	704	-
Stage 2	-	-	-	-	-	-	760	690	-	707	663	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	13.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1293	-	-	1256	-	-	468
HCM Lane V/C Ratio	-	-	0.004	-	-	-	-	-	0.073
HCM Control Delay (s)	0	0	7.8	-	-	0	-	-	13.3
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	303	1	1	253	33	0	0	3	19	0	3
Future Vol, veh/h	5	303	1	1	253	33	0	0	3	19	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	175	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	5	5	5	0	0	0	2	2	2
Mvmt Flow	5	312	1	1	261	34	0	0	3	20	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	295	0	0	313	0	0	604	619	312	604	603	278
Stage 1	-	-	-	-	-	-	322	322	-	280	280	-
Stage 2	-	-	-	-	-	-	282	297	-	324	323	-
Critical Hdwy	4.13	-	-	4.15	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1261	-	-	1230	-	-	413	407	733	410	413	761
Stage 1	-	-	-	-	-	-	694	655	-	727	679	-
Stage 2	-	-	-	-	-	-	729	671	-	688	650	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1261	-	-	1230	-	-	410	405	733	407	411	761
Mov Cap-2 Maneuver	-	-	-	-	-	-	410	405	-	407	411	-
Stage 1	-	-	-	-	-	-	691	652	-	724	678	-
Stage 2	-	-	-	-	-	-	725	670	-	682	647	-

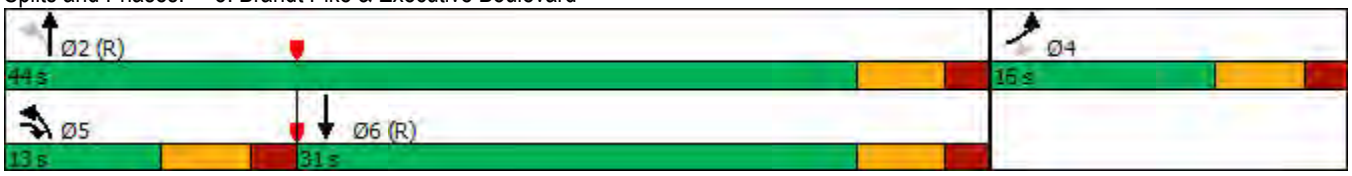
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.9	13.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	733	1261	-	-	1230	-	-	435
HCM Lane V/C Ratio	-	0.004	0.004	-	-	0.001	-	-	0.052
HCM Control Delay (s)	0	9.9	7.9	-	-	7.9	-	-	13.7
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	0	-	-	0	-	-	0.2

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	13	31
Maximum Split (%)	73.3%	26.7%	21.7%	51.7%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	47	31	47	0
End Time (s)	31	47	0	31
Yield/Force Off (s)	25	41	54	25
Yield/Force Off 170(s)	25	41	54	25
Local Start Time (s)	47	31	47	0
Local Yield (s)	25	41	54	25
Local Yield 170(s)	25	41	54	25

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	116	134	517	962	44
Future Volume (veh/h)	38	116	134	517	962	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1870	1870
Adj Flow Rate, veh/h	41	125	144	556	1034	47
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	14	14	5	5	2	2
Cap, veh/h	488	376	405	2234	1515	69
Arrive On Green	0.16	0.16	0.11	0.64	0.44	0.44
Sat Flow, veh/h	3127	1434	1739	3561	3555	157
Grp Volume(v), veh/h	41	125	144	556	531	550
Grp Sat Flow(s),veh/h/ln	1564	1434	1739	1735	1777	1842
Q Serve(g_s), s	0.7	4.2	2.3	4.1	14.4	14.4
Cycle Q Clear(g_c), s	0.7	4.2	2.3	4.1	14.4	14.4
Prop In Lane	1.00	1.00	1.00			0.09
Lane Grp Cap(c), veh/h	488	376	405	2234	778	806
V/C Ratio(X)	0.08	0.33	0.36	0.25	0.68	0.68
Avail Cap(c_a), veh/h	521	391	424	2234	778	806
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	17.9	9.0	4.5	13.5	13.5
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.3	4.8	4.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	3.7	0.7	1.0	5.8	6.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.7	18.4	9.5	4.8	18.3	18.2
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	166			700	1081	
Approach Delay, s/veh	19.2			5.8	18.3	
Approach LOS	B			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.6		15.4	12.4	32.3
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		6.1		6.2	4.3	16.4
Green Ext Time (p_c), s		4.0		0.2	0.1	4.3

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	39	21	39
Maximum Split (%)	65.0%	35.0%	65.0%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	39	0
End Time (s)	39	0	39
Yield/Force Off (s)	33	54	33
Yield/Force Off 170(s)	33	54	33
Local Start Time (s)	0	39	0
Local Yield (s)	33	54	33
Local Yield 170(s)	33	54	33

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	117	27	9	167	15	20
Future Volume (veh/h)	117	27	9	167	15	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1693	1693
Adj Flow Rate, veh/h	138	32	11	196	18	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	14	14	5	5	14	14
Cap, veh/h	633	147	664	869	384	342
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1329	308	1186	1826	1612	1434
Grp Volume(v), veh/h	0	170	11	196	18	24
Grp Sat Flow(s),veh/h/ln	0	1637	1186	1826	1612	1434
Q Serve(g_s), s	0.0	2.5	0.2	2.6	0.4	0.5
Cycle Q Clear(g_c), s	0.0	2.5	2.8	2.6	0.4	0.5
Prop In Lane		0.19	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	780	664	869	384	342
V/C Ratio(X)	0.00	0.22	0.02	0.23	0.05	0.07
Avail Cap(c_a), veh/h	0	1286	1031	1435	576	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.4	7.2	6.5	12.3	12.4
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	0.7	0.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.6	7.3	6.6	12.4	12.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	170			207	42	
Approach Delay, s/veh	6.6			6.6	12.4	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		33.0		15.0		33.0
Max Q Clear Time (g_c+I1), s		4.5		2.5		4.8
Green Ext Time (p_c), s		0.9		0.1		1.1

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	0	0	177	0	0
Future Vol, veh/h	129	0	0	177	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	15	15	4	4	0	0
Mvmt Flow	161	0	0	221	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	161	0	382	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1406	-	624	889
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	821	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1406	-	624	889
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	821	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1406	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	0	0	175	0	1
Future Vol, veh/h	129	0	0	175	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	15	15	4	4	0	0
Mvmt Flow	159	0	0	216	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	159	0	375	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	216	-
Critical Hdwy	-	-	4.14	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.236	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1408	-	630	892
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	825	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1408	-	630	892
Mov Cap-2 Maneuver	-	-	-	-	630	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	825	-

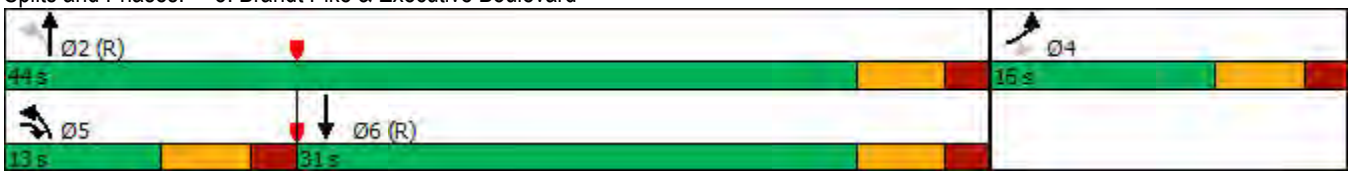
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	892	-	-	1408	-
HCM Lane V/C Ratio	-	0.001	-	-	-	-
HCM Control Delay (s)	0	9	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	13	31
Maximum Split (%)	73.3%	26.7%	21.7%	51.7%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	47	31	47	0
End Time (s)	31	47	0	31
Yield/Force Off (s)	25	41	54	25
Yield/Force Off 170(s)	25	41	54	25
Local Start Time (s)	47	31	47	0
Local Yield (s)	25	41	54	25
Local Yield 170(s)	25	41	54	25

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	73	160	148	517	962	55
Future Volume (veh/h)	73	160	148	517	962	55
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1870	1870
Adj Flow Rate, veh/h	78	172	159	556	1034	59
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	14	14	5	5	2	2
Cap, veh/h	513	391	399	2206	1461	83
Arrive On Green	0.16	0.16	0.11	0.64	0.43	0.43
Sat Flow, veh/h	3127	1434	1739	3561	3511	195
Grp Volume(v), veh/h	78	172	159	556	538	555
Grp Sat Flow(s),veh/h/ln	1564	1434	1739	1735	1777	1835
Q Serve(g_s), s	1.3	5.9	2.6	4.2	14.9	14.9
Cycle Q Clear(g_c), s	1.3	5.9	2.6	4.2	14.9	14.9
Prop In Lane	1.00	1.00	1.00			0.11
Lane Grp Cap(c), veh/h	513	391	399	2206	760	785
V/C Ratio(X)	0.15	0.44	0.40	0.25	0.71	0.71
Avail Cap(c_a), veh/h	521	395	413	2206	760	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	18.0	9.6	4.7	14.1	14.1
Incr Delay (d2), s/veh	0.1	0.8	0.6	0.3	5.5	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.0	0.8	1.1	6.1	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.6	18.8	10.3	5.0	19.6	19.4
LnGrp LOS	C	B	B	A	B	B
Approach Vol, veh/h	250			715	1093	
Approach Delay, s/veh	19.7			6.2	19.5	
Approach LOS	B			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.2		15.8	12.5	31.6
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	7.0	25.0
Max Q Clear Time (g_c+I1), s		6.2		7.9	4.6	16.9
Green Ext Time (p_c), s		4.0		0.2	0.1	4.2

Intersection Summary	
HCM 6th Ctrl Delay	14.9
HCM 6th LOS	B

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	40	20	40
Maximum Split (%)	66.7%	33.3%	66.7%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	40	0
End Time (s)	40	0	40
Yield/Force Off (s)	34	54	34
Yield/Force Off 170(s)	34	54	34
Local Start Time (s)	0	40	0
Local Yield (s)	34	54	34
Local Yield 170(s)	34	54	34

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	196	27	9	192	15	20
Future Volume (veh/h)	196	27	9	192	15	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1693	1693	1826	1826	1693	1693
Adj Flow Rate, veh/h	231	32	11	226	18	24
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	14	14	5	5	14	14
Cap, veh/h	693	96	583	869	384	342
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1455	202	1090	1826	1612	1434
Grp Volume(v), veh/h	0	263	11	226	18	24
Grp Sat Flow(s),veh/h/ln	0	1656	1090	1826	1612	1434
Q Serve(g_s), s	0.0	4.2	0.3	3.1	0.4	0.5
Cycle Q Clear(g_c), s	0.0	4.2	4.4	3.1	0.4	0.5
Prop In Lane		0.12	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	789	583	869	384	342
V/C Ratio(X)	0.00	0.33	0.02	0.26	0.05	0.07
Avail Cap(c_a), veh/h	0	1341	946	1478	537	478
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	8.2	6.6	12.3	12.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.0	0.0	0.8	0.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.1	8.2	6.7	12.4	12.5
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	263			237	42	
Approach Delay, s/veh	7.1			6.8	12.4	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		34.0		14.0		34.0
Max Q Clear Time (g_c+I1), s		6.2		2.5		6.4
Green Ext Time (p_c), s		1.6		0.0		1.3

Intersection Summary		
HCM 6th Ctrl Delay		7.4
HCM 6th LOS		A

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	130	0	0	181	15	0	0	0	48	0	5
Future Vol, veh/h	2	130	0	0	181	15	0	0	0	48	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	15	15	15	4	4	4	0	0	0	2	2	2
Mvmt Flow	3	163	0	0	226	19	0	0	0	60	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	163	0	0	408	414	163	405	405	236
Stage 1	-	-	-	-	-	-	169	169	-	236	236	-
Stage 2	-	-	-	-	-	-	239	245	-	169	169	-
Critical Hdwy	4.25	-	-	4.14	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.236	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1249	-	-	1404	-	-	557	532	887	556	535	803
Stage 1	-	-	-	-	-	-	838	763	-	767	710	-
Stage 2	-	-	-	-	-	-	769	707	-	833	759	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1249	-	-	1404	-	-	551	531	887	555	534	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	551	531	-	555	534	-
Stage 1	-	-	-	-	-	-	836	761	-	765	710	-
Stage 2	-	-	-	-	-	-	763	707	-	831	757	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	12.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1249	-	-	1404	-	-	572
HCM Lane V/C Ratio	-	-	0.002	-	-	-	-	-	0.116
HCM Control Delay (s)	0	0	7.9	-	-	0	-	-	12.1
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	177	0	0	190	10	0	0	1	31	0	4
Future Vol, veh/h	1	177	0	0	190	10	0	0	1	31	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	175	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	15	15	15	4	4	4	0	0	0	2	2	2
Mvmt Flow	1	219	0	0	235	12	0	0	1	38	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	219	0	0	465	468	219	463	462	241
Stage 1	-	-	-	-	-	-	221	221	-	241	241	-
Stage 2	-	-	-	-	-	-	244	247	-	222	221	-
Critical Hdwy	4.25	-	-	4.14	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.335	-	-	2.236	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1247	-	-	1339	-	-	511	496	826	509	497	798
Stage 1	-	-	-	-	-	-	786	724	-	762	706	-
Stage 2	-	-	-	-	-	-	764	706	-	780	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1247	-	-	1339	-	-	507	496	826	508	497	798
Mov Cap-2 Maneuver	-	-	-	-	-	-	507	496	-	508	497	-
Stage 1	-	-	-	-	-	-	785	723	-	761	706	-
Stage 2	-	-	-	-	-	-	759	706	-	778	719	-

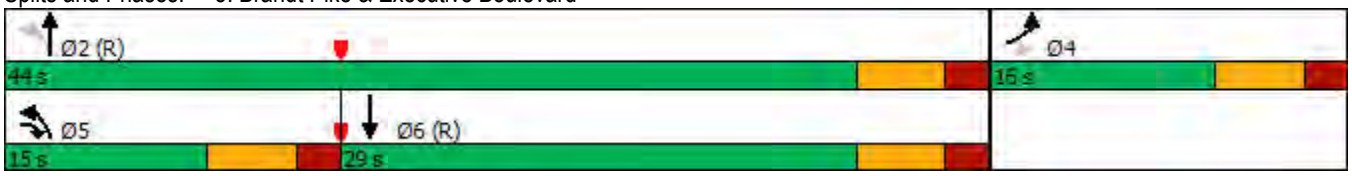
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.4	12.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	826	1247	-	-	1339	-	-	530
HCM Lane V/C Ratio	-	0.001	0.001	-	-	-	-	-	0.082
HCM Control Delay (s)	0	9.4	7.9	-	-	0	-	-	12.4
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	0	-	-	0	-	-	0.3

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	15	29
Maximum Split (%)	73.3%	26.7%	25.0%	48.3%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	45	29	45	0
End Time (s)	29	45	0	29
Yield/Force Off (s)	23	39	54	23
Yield/Force Off 170(s)	23	39	54	23
Local Start Time (s)	45	29	45	0
Local Yield (s)	23	39	54	23
Local Yield 170(s)	23	39	54	23

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	152	215	187	1160	735	32
Future Volume (veh/h)	152	215	187	1160	735	32
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1870	1870
Adj Flow Rate, veh/h	155	219	191	1184	750	33
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	2	2	2	2
Cap, veh/h	570	437	500	2252	1463	64
Arrive On Green	0.17	0.17	0.11	0.63	0.42	0.42
Sat Flow, veh/h	3428	1572	1781	3647	3561	153
Grp Volume(v), veh/h	155	219	191	1184	384	399
Grp Sat Flow(s),veh/h/ln	1714	1572	1781	1777	1777	1843
Q Serve(g_s), s	2.4	7.0	3.1	11.0	9.6	9.6
Cycle Q Clear(g_c), s	2.4	7.0	3.1	11.0	9.6	9.6
Prop In Lane	1.00	1.00	1.00			0.08
Lane Grp Cap(c), veh/h	570	437	500	2252	750	777
V/C Ratio(X)	0.27	0.50	0.38	0.53	0.51	0.51
Avail Cap(c_a), veh/h	571	438	568	2252	750	777
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.8	18.2	7.8	6.0	12.8	12.8
Incr Delay (d2), s/veh	0.3	0.9	0.5	0.9	2.5	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	6.4	0.9	2.9	3.7	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.1	19.0	8.3	6.9	15.3	15.2
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	374			1375	783	
Approach Delay, s/veh	20.3			7.1	15.3	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		16.0	12.7	31.3
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	9.0	23.0
Max Q Clear Time (g_c+I1), s		13.0		9.0	5.1	11.6
Green Ext Time (p_c), s		9.5		0.2	0.2	3.7

Intersection Summary		
HCM 6th Ctrl Delay		11.6
HCM 6th LOS		B

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	37	23	37
Maximum Split (%)	61.7%	38.3%	61.7%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	37	0
End Time (s)	37	0	37
Yield/Force Off (s)	31	54	31
Yield/Force Off 170(s)	31	54	31
Local Start Time (s)	0	37	0
Local Yield (s)	31	54	31
Local Yield 170(s)	31	54	31

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	238	60	24	181	60	121
Future Volume (veh/h)	238	60	24	181	60	121
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1796	1796	1870	1870
Adj Flow Rate, veh/h	253	64	26	193	64	129
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	7	7	2	2
Cap, veh/h	686	174	543	855	424	377
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1440	364	1021	1796	1781	1585
Grp Volume(v), veh/h	0	317	26	193	64	129
Grp Sat Flow(s),veh/h/ln	0	1805	1021	1796	1781	1585
Q Serve(g_s), s	0.0	4.7	0.7	2.6	1.2	2.8
Cycle Q Clear(g_c), s	0.0	4.7	5.4	2.6	1.2	2.8
Prop In Lane		0.20	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	859	543	855	424	377
V/C Ratio(X)	0.00	0.37	0.05	0.23	0.15	0.34
Avail Cap(c_a), veh/h	0	1332	811	1326	721	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.0	8.7	6.5	12.6	13.3
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.1	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.1	0.7	0.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.3	8.7	6.6	12.8	13.8
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	317			219	193	
Approach Delay, s/veh	7.3			6.8	13.5	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		31.0		17.0		31.0
Max Q Clear Time (g_c+I1), s		6.7		4.8		7.4
Green Ext Time (p_c), s		1.9		0.4		1.1

Intersection Summary		
HCM 6th Ctrl Delay		8.8
HCM 6th LOS		A

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	299	0	0	225	0	0
Future Vol, veh/h	299	0	0	225	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	5	5	0	0
Mvmt Flow	311	0	0	234	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	311	0	545	311
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	-	-	4.15	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1233	-	503	734
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	810	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1233	-	503	734
Mov Cap-2 Maneuver	-	-	-	-	503	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	810	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	-	1233	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	301	1	1	222	0	3
Future Vol, veh/h	301	1	1	222	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	175	150	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	3	5	5	0	0
Mvmt Flow	310	1	1	229	0	3

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	311	0	541	310
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	-	-	4.15	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1233	-	506	735
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1233	-	505	735
Mov Cap-2 Maneuver	-	-	-	-	505	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	811	-

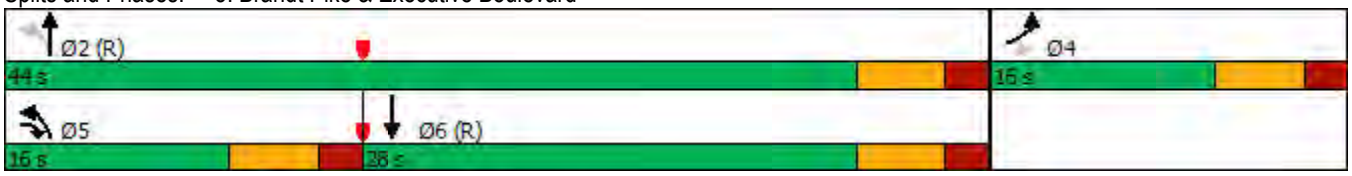
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	735	-	-	1233	-
HCM Lane V/C Ratio	-	0.004	-	-	0.001	-
HCM Control Delay (s)	0	9.9	-	-	7.9	-
HCM Lane LOS	A	A	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-

Phase Number	2	4	5	6
Movement	NBTL	EBL	NBL	SBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	C-Min	None	None	C-Min
Maximum Split (s)	44	16	16	28
Maximum Split (%)	73.3%	26.7%	26.7%	46.7%
Minimum Split (s)	26	16	13	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	20	10	7	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	44	28	44	0
End Time (s)	28	44	0	28
Yield/Force Off (s)	22	38	54	22
Yield/Force Off 170(s)	22	38	54	22
Local Start Time (s)	44	28	44	0
Local Yield (s)	22	38	54	22
Local Yield 170(s)	22	38	54	22

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Coordinated
Natural Cycle	55
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	

Splits and Phases: 5: Brandt Pike & Executive Boulevard



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	174	242	233	1160	735	70
Future Volume (veh/h)	174	242	233	1160	735	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1856	1870	1870	1870	1870
Adj Flow Rate, veh/h	178	247	238	1184	750	71
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	2	2	2	2
Cap, veh/h	571	442	488	2251	1374	130
Arrive On Green	0.17	0.17	0.11	0.63	0.42	0.42
Sat Flow, veh/h	3428	1572	1781	3647	3374	310
Grp Volume(v), veh/h	178	247	238	1184	406	415
Grp Sat Flow(s),veh/h/ln	1714	1572	1781	1777	1777	1814
Q Serve(g_s), s	2.7	8.0	4.0	11.0	10.3	10.3
Cycle Q Clear(g_c), s	2.7	8.0	4.0	11.0	10.3	10.3
Prop In Lane	1.00	1.00	1.00			0.17
Lane Grp Cap(c), veh/h	571	442	488	2251	744	760
V/C Ratio(X)	0.31	0.56	0.49	0.53	0.55	0.55
Avail Cap(c_a), veh/h	571	442	581	2251	744	760
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.0	18.4	8.5	6.0	13.1	13.1
Incr Delay (d2), s/veh	0.3	1.6	0.8	0.9	2.9	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	7.3	1.2	2.9	4.1	4.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	22.3	20.0	9.2	6.9	16.0	15.9
LnGrp LOS	C	B	A	A	B	B
Approach Vol, veh/h	425			1422	821	
Approach Delay, s/veh	20.9			7.3	16.0	
Approach LOS	C			A	B	

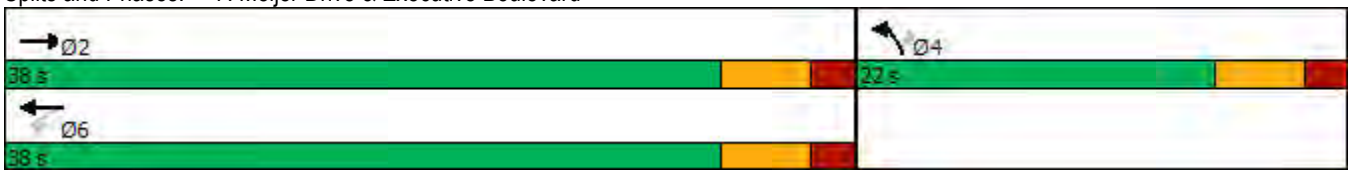
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		44.0		16.0	12.9	31.1
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s		38.0		10.0	10.0	22.0
Max Q Clear Time (g_c+I1), s		13.0		10.0	6.0	12.3
Green Ext Time (p_c), s		9.5		0.0	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	12.1
HCM 6th LOS	B

Phase Number	2	4	6
Movement	EBT	NBL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Min	Min	None
Maximum Split (s)	38	22	38
Maximum Split (%)	63.3%	36.7%	63.3%
Minimum Split (s)	26	16	26
Yellow Time (s)	4	4	4
All-Red Time (s)	2	2	2
Minimum Initial (s)	20	10	20
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)			
Flash Dont Walk (s)			
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	38	0
End Time (s)	38	0	38
Yield/Force Off (s)	32	54	32
Yield/Force Off 170(s)	32	54	32
Local Start Time (s)	0	38	0
Local Yield (s)	32	54	32
Local Yield 170(s)	32	54	32

Intersection Summary	
Cycle Length	60
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 7: Meijer Drive & Executive Boulevard



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	287	60	24	265	60	121
Future Volume (veh/h)	287	60	24	265	60	121
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1796	1796	1870	1870
Adj Flow Rate, veh/h	305	64	26	282	64	129
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	7	7	2	2
Cap, veh/h	714	150	505	855	424	377
Arrive On Green	0.48	0.48	0.48	0.48	0.24	0.24
Sat Flow, veh/h	1499	315	973	1796	1781	1585
Grp Volume(v), veh/h	0	369	26	282	64	129
Grp Sat Flow(s),veh/h/ln	0	1814	973	1796	1781	1585
Q Serve(g_s), s	0.0	5.6	0.8	4.1	1.2	2.8
Cycle Q Clear(g_c), s	0.0	5.6	6.4	4.1	1.2	2.8
Prop In Lane		0.17	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	864	505	855	424	377
V/C Ratio(X)	0.00	0.43	0.05	0.33	0.15	0.34
Avail Cap(c_a), veh/h	0	1382	783	1369	679	604
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.2	9.3	6.8	12.6	13.3
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.5	0.1	1.1	0.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.6	9.4	7.1	12.8	13.8
LnGrp LOS	A	A	A	A	B	B
Approach Vol, veh/h	369			308	193	
Approach Delay, s/veh	7.6			7.3	13.5	
Approach LOS	A			A	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		26.0		16.0		26.0
Change Period (Y+Rc), s		6.0		6.0		6.0
Max Green Setting (Gmax), s		32.0		16.0		32.0
Max Q Clear Time (g_c+I1), s		7.6		4.8		8.4
Green Ext Time (p_c), s		2.2		0.4		1.7

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	304	0	0	228	51	0	0	0	30	0	3
Future Vol, veh/h	5	304	0	0	228	51	0	0	0	30	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	5	5	5	0	0	0	2	2	2
Mvmt Flow	5	317	0	0	238	53	0	0	0	31	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	291	0	0	317	0	0	593	618	317	592	592	265
Stage 1	-	-	-	-	-	-	327	327	-	265	265	-
Stage 2	-	-	-	-	-	-	266	291	-	327	327	-
Critical Hdwy	4.12	-	-	4.15	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.245	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1271	-	-	1226	-	-	420	408	728	418	419	774
Stage 1	-	-	-	-	-	-	690	651	-	740	689	-
Stage 2	-	-	-	-	-	-	744	675	-	686	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1271	-	-	1226	-	-	417	406	728	417	417	774
Mov Cap-2 Maneuver	-	-	-	-	-	-	417	406	-	417	417	-
Stage 1	-	-	-	-	-	-	687	648	-	737	689	-
Stage 2	-	-	-	-	-	-	741	675	-	683	645	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	0	14
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1271	-	-	1226	-	-	435
HCM Lane V/C Ratio	-	-	0.004	-	-	-	-	-	0.079
HCM Control Delay (s)	0	0	7.8	-	-	0	-	-	14
HCM Lane LOS	A	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	331	1	1	273	33	0	0	3	19	0	3
Future Vol, veh/h	5	331	1	1	273	33	0	0	3	19	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	175	150	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	3	3	3	5	5	5	0	0	0	2	2	2
Mvmt Flow	5	341	1	1	281	34	0	0	3	20	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	315	0	0	342	0	0	653	668	341	653	652	298
Stage 1	-	-	-	-	-	-	351	351	-	300	300	-
Stage 2	-	-	-	-	-	-	302	317	-	353	352	-
Critical Hdwy	4.13	-	-	4.15	-	-	7.1	6.5	6.2	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.12	5.52	-
Follow-up Hdwy	2.227	-	-	2.245	-	-	3.5	4	3.3	3.518	4.018	3.318
Pot Cap-1 Maneuver	1240	-	-	1200	-	-	383	382	706	380	387	741
Stage 1	-	-	-	-	-	-	670	636	-	709	666	-
Stage 2	-	-	-	-	-	-	712	658	-	664	632	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1240	-	-	1200	-	-	380	380	706	377	385	741
Mov Cap-2 Maneuver	-	-	-	-	-	-	380	380	-	377	385	-
Stage 1	-	-	-	-	-	-	667	633	-	706	665	-
Stage 2	-	-	-	-	-	-	708	657	-	658	629	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	10.1	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	706	1240	-	-	1200	-	-	404
HCM Lane V/C Ratio	-	0.004	0.004	-	-	0.001	-	-	0.056
HCM Control Delay (s)	0	10.1	7.9	-	-	8	-	-	14.4
HCM Lane LOS	A	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	0	-	-	0	-	-	0.2

I just read the City is considering authorizing a zoning change to allow major changes to the Executive Boulevard "**A developer has proposed a $40 million, 320-unit apartment complex immediately north of the Rose Music Center, just a few hundred yards down Executive Boulevard from an even bigger recently approved 530-unit apartment complex.**

If both projects come to fruition, the area could see well over 1,000 new residents in a matter of years. " (from the DDNs)

I live north of the Executive Boulevard street, and we have a major problem with traffic now. Highly suggest before any zoning change are made, the City do an traffic study of the entire I-70 area @01 &202). Adding a 1,000 new residents(1,000 cars) just north of I-70 will create a significant impact to the problem we now have.

Delbert Balster

Rose Petal Dr.

AI-8959 **10. A.**

Planning Commission

Meeting Date: 02/14/2023

Minutes

Information

Agenda Title

Planning Commission January 10, 2023

Purpose and Background

Attachments

Minutes

Planning Commission
January 10. 2023, Meeting
City of Huber Heights

I. Chair Terry Walton called the meeting to order at approximately 6:00 p.m.

II. Present at the meeting: Mr. Jeffries, Ms. Thomas, Ms. Vargo, and Mr. Walton.

Members absent: None.

Staff Present: Aaron K. Sorrell, Interim City Planner, and Geri Hoskins, Planning & Zoning Administrative Secretary.

III. Opening Remarks by the Chairman and Commissioners

IV. Citizens Comments

None.

V. Swearing of Witnesses

Mr. Walton explained the proceedings of tonight's meeting and administered the sworn oath to all persons wishing to speak or give testimony regarding items on the agenda. All persons present responded in the affirmative.

VI. Pending Business

None.

VII. New Business

1. **LOT SPLIT/REPLAT - The applicant, HOMESTEAD DEVELOPMENT, is requesting approval of a Lot Split/Replat of 23.749 acres to create two lots to facilitate the redevelopment of the former Marian Meadows shopping center. Property is located West of the terminus of Miami Valley Way (LS 23-01).**

   Mr. Sorrell stated this application contains two real estate actions: First is a lot split to transfer (swap) property between the City of Huber Heights and Premier Health Center, totaling 0.619 acres. The second is a replat of one parcel into two lots of record. These actions will facilitate the construction of the previously approved Marian Meadows residential apartments, now called Heritage Commons and Homestead Senior Living. The internal roads serving the development are still being designed, and the right-of-way dedication will be a separate forthcoming application. The approved master plan is attached for your reference.

   This application is the first two steps of three required to subdivide lands and dedicate the necessary public right of way needed for the redevelopment of the former shopping center.

The first step is a lot split that transfers land between the City of Huber Heights and Premier Health to provide for the new street alignments. Premier is transferring 0.470 acres to the city and the city is transferring 0.149 acres to Premier. Premier will have one contiguous parcel for future development.

The second step is a replat of the city-owned land totaling 23.749 acres into two lots:

Lot 1 contains 12.272 acres. The west side of this lot is the site of the planned Heritage Commons apartments. A future replat will dedicate the public streets and retention areas to serve this development.

Lot 2 contains 11.477 acres. The west side of this lot is the site of the senior apartments. A future replat will dedicate the public streets to serve this development, retention and open space areas, and connection to Brandt Pike.

The proposed replat meets all requirements of the subdivision regulations.

Action

Mr. Jeffries moved to approve the request by the applicant, HOMESTEAD DEVELOPMENT, for approval of a Lot Split/Replat of 23.749 acres to create two lots to facilitate the redevelopment of the former Marian Meadows shopping center. Property is located West of the terminus of Miami Valley Way (LS 23-01).

Seconded by Ms. Thomas. Roll call showed: YEAS: Ms. Vargo, Ms. Thomas, Mr. Jeffries, and Mr. Walton. NAYS: None. Motion to approve carried 4-0.

VIII. Additional Business

Election of Officers

Action

Ms. Vargo moved to nominate Terry Walton as the 2023 Chair.

Seconded by Ms. Thomas. Roll call showed: YEAS: Mr. Jeffries. Ms. Vargo, Ms. Thomas, and Mr. Walton. NAYS: None. Motion to approve carried 4-0.

Action

Mr. Walton moved to nominate Jan Vargo as the 2023 Vice Chair.

Seconded by Ms. Thomas. Roll call showed: YEAS: Mr. Jeffries. Ms. Vargo, Ms. Thomas, and Mr. Walton. NAYS: None. Motion to approve carried 4-0.

IX. Approval of the Minutes

Without objection, the minutes of the December 13, 2022, Planning Commission meeting are approved.

X. Reports and Calendar Review

Mr. Sorrell stated nothing has been turned by the deadline for the 1/24/23 meeting but expects new projects by the end of the month. That will give more time to work on each case

Approval of 2023 Meeting Schedule

Discussion on moving to one meeting a month starting in April.

Action

Mr. Walton moved to approve the 2023 meeting schedule.

Seconded by Ms. Vargo. Roll call showed: YEAS: Mr. Jeffries, Ms. Thomas, Ms. Vargo, and Mr. Walton. NAYS: None. Motion to approve carried 4-0.

XI. Upcoming Meetings

January 24, 2023

XII. Adjournment

There being no further business to come before the Commission, the meeting was adjourned at approximately 6:20 p.m.

_____ _____

Terry Walton, Chair **Date**

_____ _____

Geri Hoskins, Administrative Secretary **Date**