

**ms consultants, inc.**  
engineers, architects, planners

2221 Schrock Road  
Columbus, Ohio 43229-1547  
p 614.898.7100  
f 614.898.7570  
www.msconsultants.com

Approved  
7/28/17  
MAL



July 6, 2017

Mr. John Piccin  
Delaware County Engineer's Office  
50 Channing Street  
Delaware, Ohio 43015

**RECEIVED**

JUL 12 2017

**DELAWARE COUNTY ENGINEER**

**Re: Traffic Access Study  
Big Walnut Road Development  
Big Walnut Road/Worthington Road  
Delaware County, Ohio**

Dear Mr. Piccin:

**ms consultants** has performed a traffic access study for the proposed detached single family condominiums located at the southwest corner of Big Walnut Road and Worthington Road in Genoa Township, Delaware County, Ohio. A map of the site location is shown on **Figure 1**.

The proposed development will have two access points onto the public road network. The main site access will be on Worthington Road, approximately 600' south of the Big Walnut Road/Worthington Road intersection. The access point on Big Walnut Road will be gated and will only allow emergency vehicles to access the site. The proposed development is 30 detached condominiums. The conceptual site layout is shown on **Figure 2**.

Trip generation has been performed using the *ITE Trip Generation Manual (9<sup>th</sup> Edition)*. The ITE Land Use used for this study was Senior Adult Housing – Detached (LU 251). The AM Peak hour is predicted to generate 35 trips, while the PM Peak hour is predicted to generate 18 trips.

The background traffic was developed from *Big Walnut Road/Worthington Road Feasibility Study (DEL-CR13-TR109)*. A growth rate of 5% was developed from this study to develop the Horizon Year Worthington Road volumes, south of Big Walnut Road. The Horizon Year traffic for the proposed development (2027) is less than the Design Year (2035) for Worthington Road. Additionally, the site traffic only represents 2% of the Design Year traffic.

**Table 1: Worthington Road Volumes south of Big Walnut Road**

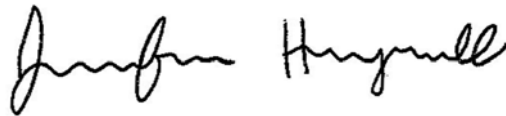
	2013 No-Build	2027 No-Build	2027 Build	2035 No-Build	2035 Build
AM Peak	640	1,090	1,125	1,440	1,475
PM Peak	850	1,450	1,468	1,680	1,698

NOTE: Access drive on Big Walnut Rd is Emergency only. IF this becomes Full Access, then TAs needs Revised. EXHIBIT G-1

Mr. John Piccin  
July 6, 2017  
Page 2

The proposed development will be required to build a northbound left turn lane at the Worthington Road site access drive. Because it is an emergency access point, no turn lanes are needed at the Big Walnut Road access drive. Turn lane sizing was calculated using the criteria from the *ODOT Location and Design Manual*. Turn lane sizing was performed for the northbound left turn lane only. The speed limit on Worthington Road is 45-mph. The calculated turn lane length is 175' (includes a 50' taper). However, the developer will be required to build a constant three-lane roadway section on Worthington Road between Big Walnut Road and St. George Avenue/Alpine Drive. The constant three-lane section is required to avoid an "hourglass" roadway between the proposed site driveway and St. George Avenue/Alpine Drive. No other roadway improvements are recommended.

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Howdyshell". The signature is fluid and cursive, with the first name "Jennifer" written in a larger, more prominent script than the last name "Howdyshell".

Jennifer Howdyshell, P.E.  
Traffic Engineer

N:\60\06768 - BigWalnut-Worthington\2017-07-06 Traffic Access Study.docx





WORTHINGTON ROAD

BIG WALNUT ROAD




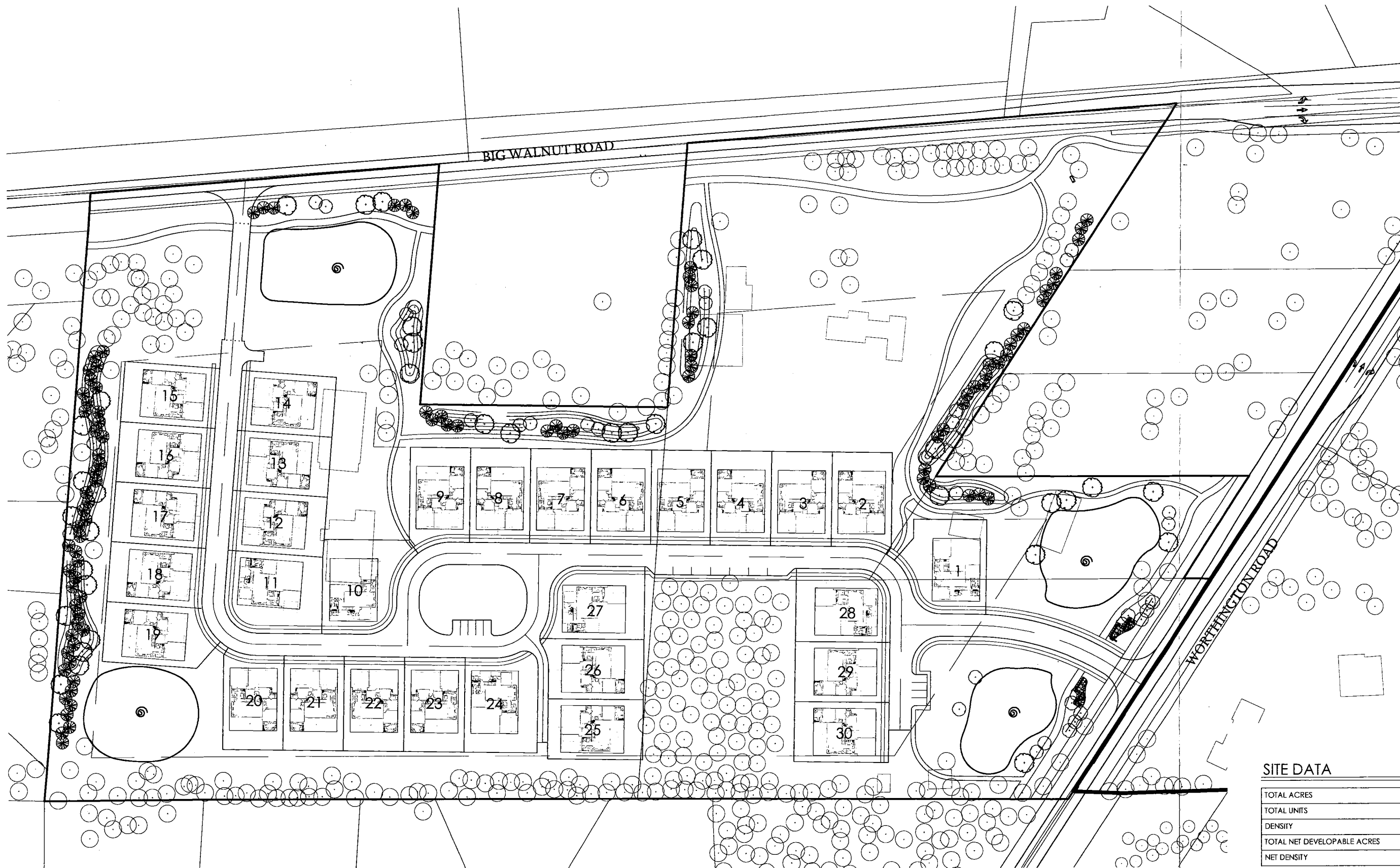
-  Proposed Development
-  Site Driveway
-  Emergency Access Only

Figure 1: Study Area Map  
Big Walnut Road Development





**SITE DATA**

TOTAL ACRES	±19.055 ACRES
TOTAL UNITS	30 UNITS
DENSITY	±1.57 D.U./AC.
TOTAL NET DEVELOPABLE ACRES	±15.69 ACRES
NET DENSITY	±1.91 D.U./AC.

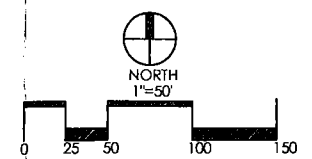
**SITE CONCEPT**

**BIG WALNUT ROAD**

PREPARED FOR NORTHGATE COMPANIES

DATE: 6-21-17

**Figure 2: Site Plan**  
Big Walnut Development

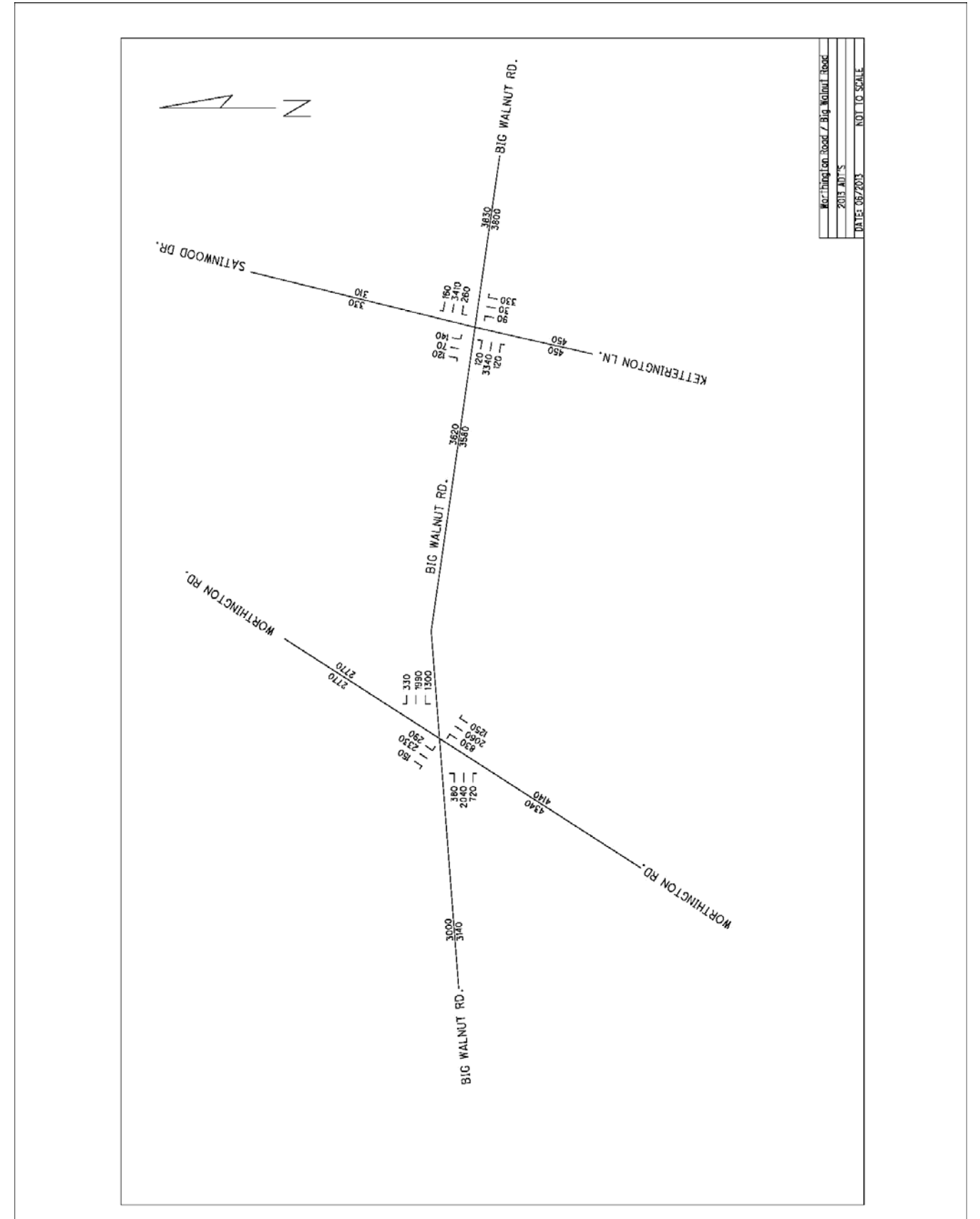
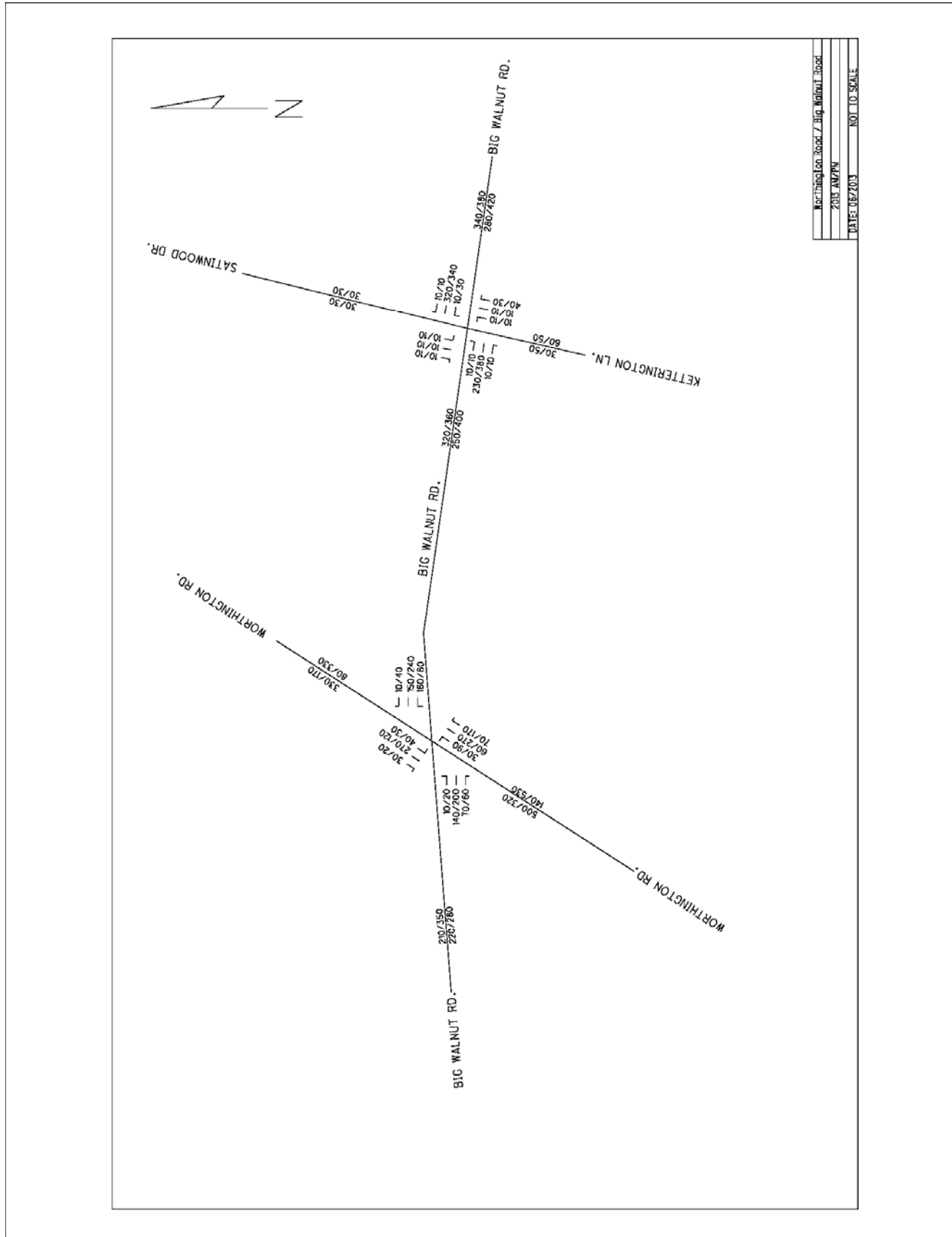


**Faris Planning & Design**

LAND PLANNING 9 LANDSCAPE ARCHITECTURE

243 N. 5th Street Columbus, OH 43215

p (614) 487-1964 Suite 401 www.farisplanninganddesign.com





# Big Walnut Road Development

## ODOT L&D Manual Turn Lane Sizing Calculation Worksheet

7/6/2017

### Worthington Road/Site Access

	NBLT AM Peak	NBLT PM Peak						
Intersection Control	Thru	Thru						
Design Speed (mph)	45	45						
Cycle Length (seconds)	60	60						
Number of Turn Lanes	1	1						
Turn Lane Volume (vph)	35	18						
Approach Volume (vph)	375	1,118						
Volume in Adjacent Thru Lane (vph)	340	1,100						
Turning Percentage	9%	2%						
Vehicles/Cycle	1	1						
Taper Length (feet)	50	50						
Deceleration Length (feet) (L1 if dual TLs)	125	125						
Total Storage Length (feet)	0	0						
<b>Total Turn Lane Length (feet)</b>	<b>175</b>	<b>175</b>						
<b>No-Block Storage Length (feet)</b>	<b>N/A</b>	<b>N/A</b>						

Intersection Control								
Design Speed (mph)								
Cycle Length (seconds)								
Number of Turn Lanes								
Turn Lane Volume (vph)								
Approach Volume (vph)								
Volume in Adjacent Thru Lane (vph)								
Turning Percentage								
Vehicles/Cycle								
Taper Length (feet)								
Deceleration Length (feet)								
Storage Length (feet)								
<b>Total Turn Lane Length (feet)</b>								
<b>No-Block Storage Length (feet)</b>								