



February 12, 2015

Tina Wawzkiewicz, PE  
City of Dublin, Engineering  
5800 Shier-Rings Rd  
Dublin, OH 43016

Subject: COTA Park and Ride on Bright Road  
Traffic Access Point Study

Dear Ms. Wawzkiewicz,

The purpose of this letter is to summarize traffic analysis methodologies and results associated with the development of the above referenced site, located on the northeast quadrant of Emerald Parkway and Bright Road in City of Dublin, Ohio. As requested, this analysis considers elements associated with the proposed access driveways only. A copy of the approved Memorandum of Understanding dated January 13, 2015 is attached (without attachments) for reference.

#### **Proposed Development**

The project site is planned to develop with a Park and Ride parking lot made up of 170 parking stalls to support the planned COTA facility. The lot will be served by two proposed site access driveways, one on each adjacent roadway. The planned access on Emerald Parkway is proposed as a right-in/right-out drive (Drive 1) and the second access drive on Bright Road is proposed to be full access (Drive 2). A copy of the site plan is attached for reference.

#### **Existing Conditions**

Bright Road is a two-lane roadway that is posted with a 25 mile per hour speed limit. Emerald Parkway is a brand new, four-lane roadway with a wide median that varies at its approach and departure to the roundabout there. Its posted speed limit is 35 miles per hour. City of Dublin staff indicated that Bright Road will be closed at Riverside Drive in the future.

#### **Data Collection**

Traffic data representing Model Year 2030 AM and PM peak hour traffic volumes were supplied by City of Dublin personnel from the Dublin Travel Demand Model. No count was conducted for the purpose of this study. A copy of the model output is attached for reference.

#### **Traffic Volume Projections**

Estimated site generated traffic was added to background traffic to determine Horizon Year 2025 full build traffic volumes for use in completing traffic analyses for this study. Traffic volumes were projected for morning and afternoon weekday peak hour conditions. Detailed traffic volume calculations are attached.

### Background Traffic Volumes

The Year 2030 peak hour traffic volumes from Dublin Travel Demand Model were interpolated to determine appropriate year 2025 horizon year traffic volumes. These volumes were estimated by assuming a 1.5 percent annual linear growth factor to account for background traffic growth throughout the study period.

### Site Generated Traffic Volumes

Peak hour trip generation characteristics of the proposed development were determined using the data and methodology contained in Trip Generation, 9<sup>th</sup> Edition (Institute of Transportation Engineers, 2012). Estimated weekday morning and evening peak hour traffic volumes were determined for ITE land use code 090 (Park-and-Ride Lot with Bus Service). Detailed calculations are attached and are summarized in **Table 1**.

**Table 1**  
Trip Generation

<b>Time Period</b>	<b>Entering Trips</b>	<b>Exiting Trips</b>	<b>Total Trips</b>
<b>Weekday AM Peak</b>	85	23	108
<b>Weekday PM Peak</b>	27	80	107

All site generated trips were assigned to the proposed access points. The following distribution assumptions were used to assign traffic for this study, and are based on data for the existing Dublin Dale Drive park & ride lot, as provided by COTA:

- 30% to/from the east on Bright Road
- 60% to/from the south on Emerald Parkway
- 10% to/from the north on Emerald Parkway

### **Traffic Analyses**

Traffic volume projections identified above were used to analyze the 2 proposed access points. Right turn lane warrants were conducted to determine if dedicated turn lanes are warranted on the two proposed site driveways. Turn lane lengths were calculated for those warranted or required turn lanes. Intersection sight distances (ISD) at the two site driveways were examined to determine whether the location of the driveways meet the policy requirements of City of Dublin. Intersection capacity analyses were completed to determine anticipated levels-of-service and vehicle queues at the two proposed site driveways.

#### Turn Lane Warrants

Right turn lane warrants were evaluated at the proposed site driveways pursuant to the requirements set forth in the Location and Design Manual, Volume 1 (Ohio Department of Transportation, 2013). The graphs for two-lane and four-lane roadways with posted speed limits less than 40 miles per hour were consulted. No right turn lane is warranted and therefore is not recommended. Results are attached and indicate right turn lanes are not warranted at the two proposed site driveways. An eastbound left turn lane at the Bright Road/Drive 2 intersection is required by City of Dublin regardless of the turn volumes. A southbound left turn lane at Emerald Parkway/Drive 1 intersection is not necessary since it would be a right-in/right-out only access.

#### Turn Lane Length Calculations

Lengths of all warranted/required turn lanes were determined using storage calculations provided in the Location and Design Manual § 401 (Ohio Department of Transportation, 2013). The eastbound left turn lane at Bright Road/Drive 2 intersection should be 100 feet (50 feet taper included) in length. However, this calculation is sized based on typical passenger vehicles so we recommend the storage length be increased to 175 feet (a 50-foot taper included) to accommodate Cota buses. A copy of the turn lane length calculation is attached.

#### Intersection Sight Distances (ISDs)

Intersection sight distance requirements for the two stop controlled site access points were analyzed per the City of Dublin policy for intersection sight distances. The attached exhibit shows that sufficient ISDs are available at the Bright Road/Drive 2 intersection. The available ISDs at the Emerald Parkway/Drive 1 intersection is 290 feet (at 30 MPH design speed) for motorists making right turn from Bright Road, and 335 feet (at 35 MPH design speed) for motorists in roundabout. Available ISD for right turning vehicles on Bright Road is limited, so stopping sight distance (SSD) was evaluated at Emerald Parkway/Drive 1. The results indicate available SSD is longer than 250 feet (at 35 MPH design speed), which meets the minimum requirements there. Sight distance exhibits are attached for reference.

#### Capacity Analyses

Highway Capacity Software (HCS2010) was used to evaluate operational characteristics of the proposed site driveway based on weekday morning and afternoon peak hour traffic volume conditions. Intersections are graded using a level of service designation, expressed in terms of letter grades with LOS A representing the highest quality traffic flow and minimal delay, and LOS F representing poor traffic operations, significant delay, and substantial queuing. Based on the results of the capacity analyses, both COTA park & ride site access drives are expected to operate acceptably at LOS C or better in year 2025 full build conditions. Copies of the analysis reports are attached for reference.

### **Conclusions and Recommendations**

The proposed site driveways for the planned COTA park and ride facility are expected to operate adequately and provide good access to/from the site. Turn lane warrants were evaluated and results indicate turn lanes are not required. The City did require an eastbound left turn lane provided at Bright Road/Drive 2 intersection. The calculated length is 100 feet (50 feet taper included), however 175 feet (50 feet taper included) is recommended in order to accommodate Cota buses. A scaled layout of this turn lane, including pavement taper, is included in the ISD exhibit of Bright Road/Drive 2 intersection. Capacity analyses were evaluated and indicate the driveways are expected to operate acceptably.

The ISDs at Bright Road/Drive 2 intersection are sufficient based on Dublin policy. The ISD at Emerald Parkway/Drive 1 intersection would be 300 feet or 335 feet. The SSD was examined and the available SSD is over 250 feet which means that a motorist on Emerald Parkway will be able to achieve a full stop safely if a motorist were to exit the COTA site in front of them.

Should you have any questions or if I may be of further assistance in this matter, please feel free to contact me at (614) 775-4643.

Sincerely,

*Charles Wu*

Charles Wu, PE  
Traffic Engineer

Enclosures:

Copies:



January 13, 2015  
Tina Wawzkiewicz, PE  
City of Dublin, Engineering  
5800 Shier-Rings Rd  
Dublin, OH 43016

Subject: Cota Park and Ride on Bright Road  
Traffic Access Point Study  
Updated Memorandum of Understanding (MOU)

Dear Ms. Wawzkiewicz,

This Memorandum of Understanding is submitted to document the scope and methodology of the above captioned traffic access point study. A draft MOU was submitted for your review dated on December 30, 2014. Review comments were issued through an e-mail dated on January 12, 2015. This MOU address the review comments. A copy of the comments is attached. Following your concurrence, EMH&T will prepare a traffic access point study in accordance with the methodologies and assumptions described below.

#### **Proposed Development & Access Plan**

Cota is proposing a park and ride facility on the northeast quadrant of Emerald Parkway and Bright Road. This site will consist of 170 parking spaces with two site access driveways proposed, one on each roadway. The planned access drive on Emerald Parkway will be right-in/right-out and the second access drive on Bright Road will be full access. A copy of the site plan is attached.

#### **Intersections to Analyze**

The proposed intersections to be analyzed are as follow.

- Emerald Parkway & Site Drive 1
- Bright Road & Site Drive 2

#### **Data Collection**

City of Dublin personnel provided volume projection data from the 2030 Dublin Travel Demand Model for the horizon year background traffic condition for the Emerald Parkway/Bright Road intersection to use in this study.

#### **Trip Generation**

Site generated trip ends will be forecast using data and methodology contained in Trip Generation, 9<sup>th</sup> Edition (Institute of Transportation Engineers, 2012). Morning and afternoon peak hour traffic volumes will be estimated using trip generation rates published for ITE land use codes 090 (Park-and-Ride Lot with Bus Service). The proposed site is expected to generate 108 external trips in the morning peak hour (85 entering, 23 exiting) and 107 external trips in the afternoon peak hour (27 entering, 80 exiting).

### **Trip Distribution**

Site generated traffic volumes will be assigned to the existing street system. All site generated trips will be assigned to the proposed access points. The following distribution assumptions are proposed to be used, it is based on existing Dublin Dale Drive park & ride data provided by COTA.

- 30% to/from the east on Bright Road
- 60% to/from the south on Emerald Parkway
- 10% to/from the north on Emerald Parkway

### **Traffic Projections**

The Year 2030 peak hour traffic volumes from Dublin Travel Demand Model will be reduced to year 2025 horizon year background traffic volumes by applying a 1.5 percent annual linear growth factor to account for background growth. Traffic volumes generated by the proposed development will be combined with 2025 background traffic volumes to establish horizon year (2025) full build traffic volumes for use in traffic analyses.

### **Traffic Analyses**

#### **Capacity Analysis**

HCS2010 will be utilized to analyze the capacity of the two site access driveways.

#### **Intersection Sight Distance**

Intersection sight distance requirements for the two stop controlled site access points will be determined per the City of Dublin policy for intersection sight distances dated September 24, 2008. A copy of the policy is attached for reference.

#### **Turn Lane Warrants**

Right turn lane warrants will be evaluated at the two proposed stop controlled access driveways for 2025 full build conditions, pursuant to the requirements set forth in the Location and Design Manual (Ohio Department of Transportation, 2010). Per the requirement of City of Dublin, an eastbound left turn lane at Bright Road/Site Drive 2 is required regardless of the turn volumes.

#### **Turn Lane Length Calculations**

Lengths of all warranted right turn lanes and the required eastbound left turn lane will be determined using storage calculations provided in the Location and Design Manual § 401 (Ohio Department of Transportation, 2013). A scaled layout of those turn lanes, including pavement tapers, will be included in the study.

January 13, 2015

A study including applicable figures and tables will be prepared to summarize study methodologies, analysis, findings and recommendations. The study will be submitted to the City of Dublin for review. Please signify your concurrence with the scope of work outlined herein by signing below and returning this Memorandum of Understanding to me. Please contact me directly at (614) 775-4643 if I may be of further assistance as you review this matter.

Sincerely,



Charles Wu, PE  
Traffic Engineer

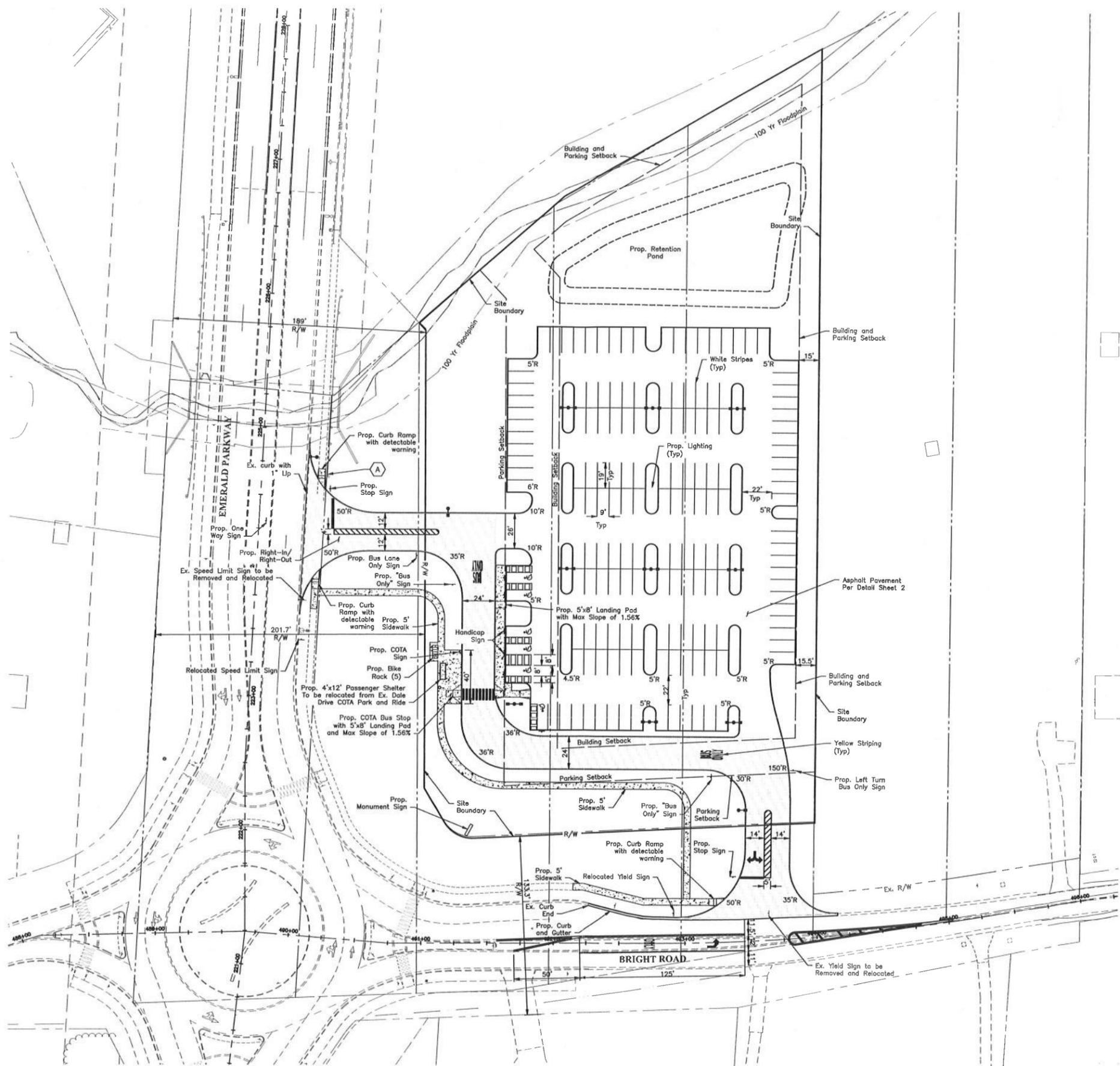
Attachments

**ACCEPTANCE AND APPROVAL OF MEMORANDUM OF UNDERSTANDING**

By: Tina Wawszkiewicz, PE

Date: 1/13/2015

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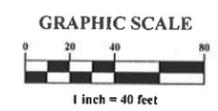


**NOTE:**  
 (A) Existing guard rail to be reconstructed as a beginning flare per Emerald Parkway Phase 8 Plans (07-008-CIP)

**NOTE:**  
 All Radii are 5' unless otherwise noted.

**LEGEND**

	Concrete Pavement, See Detail, Sheet 2
	Concrete Sidewalk, See Detail, Sheet 2



**PRELIMINARY**  
 NOT TO BE USED FOR CONSTRUCTION

**PLAN SET DATE**  
 January 26, 2015

MARK	DATE	DESCRIPTION



CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
 PRIVATE SITE IMPROVEMENT PLAN  
 FOR  
**COTA PARK AND RIDE**  
 SITE STAKING PLAN



DATE  
 January 26, 2015

SCALE  
 1" = 40'

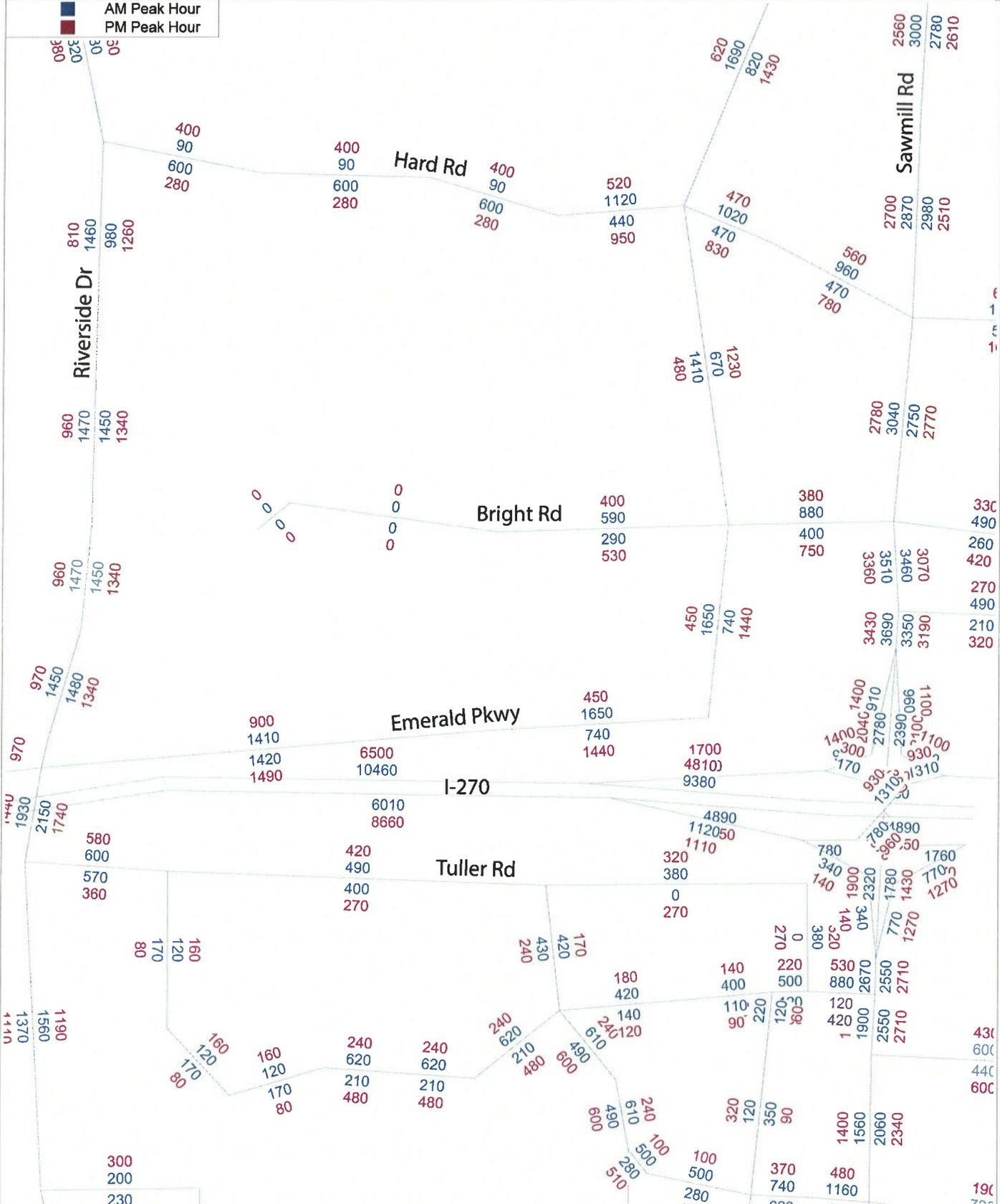
JOB NO.  
 2014-0588

SHEET  
 4/13

# Dublin Travel Demand Model, Year 2030 Output

## Peak Hour Volumes

■ AM Peak Hour  
■ PM Peak Hour

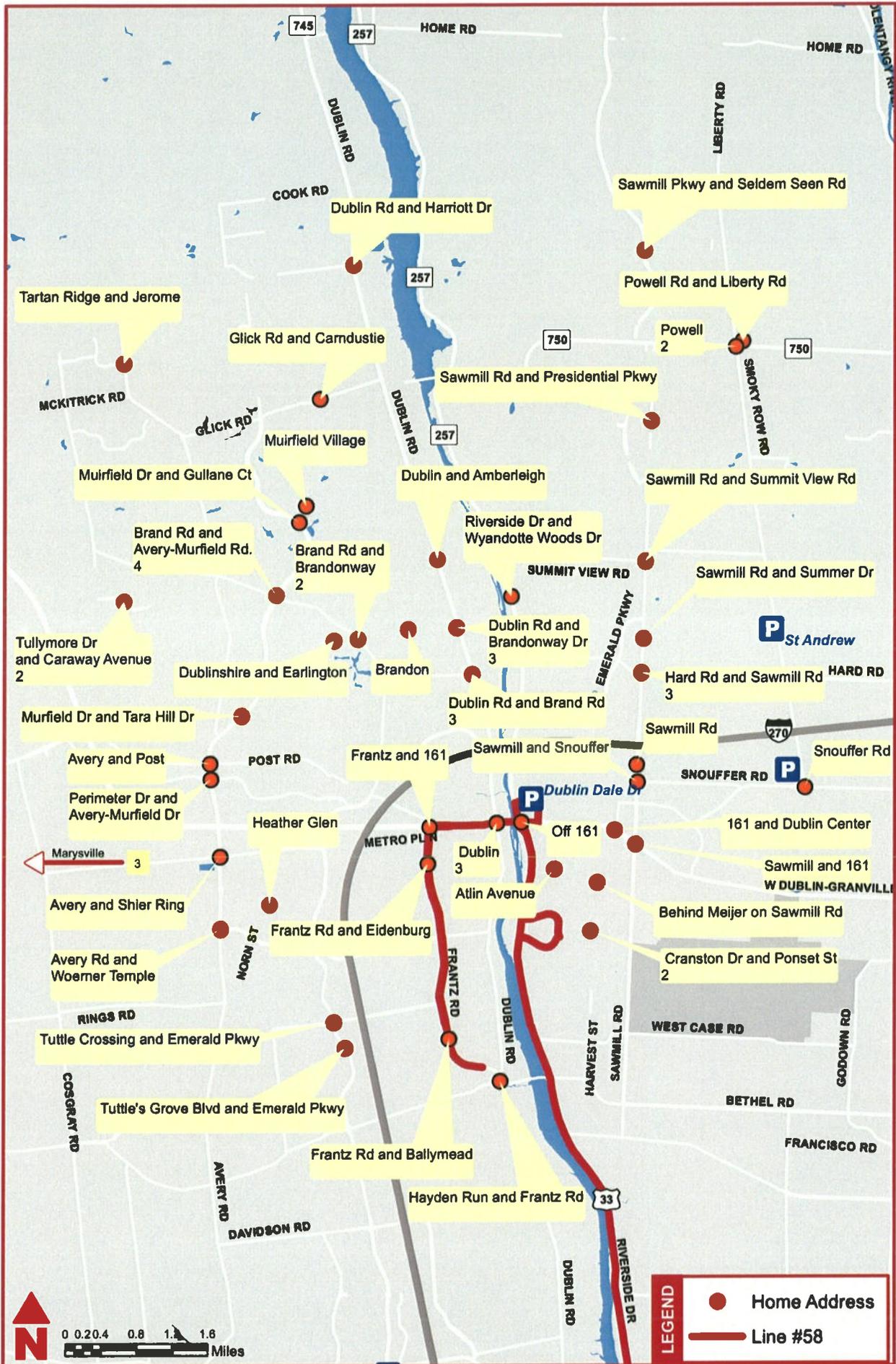


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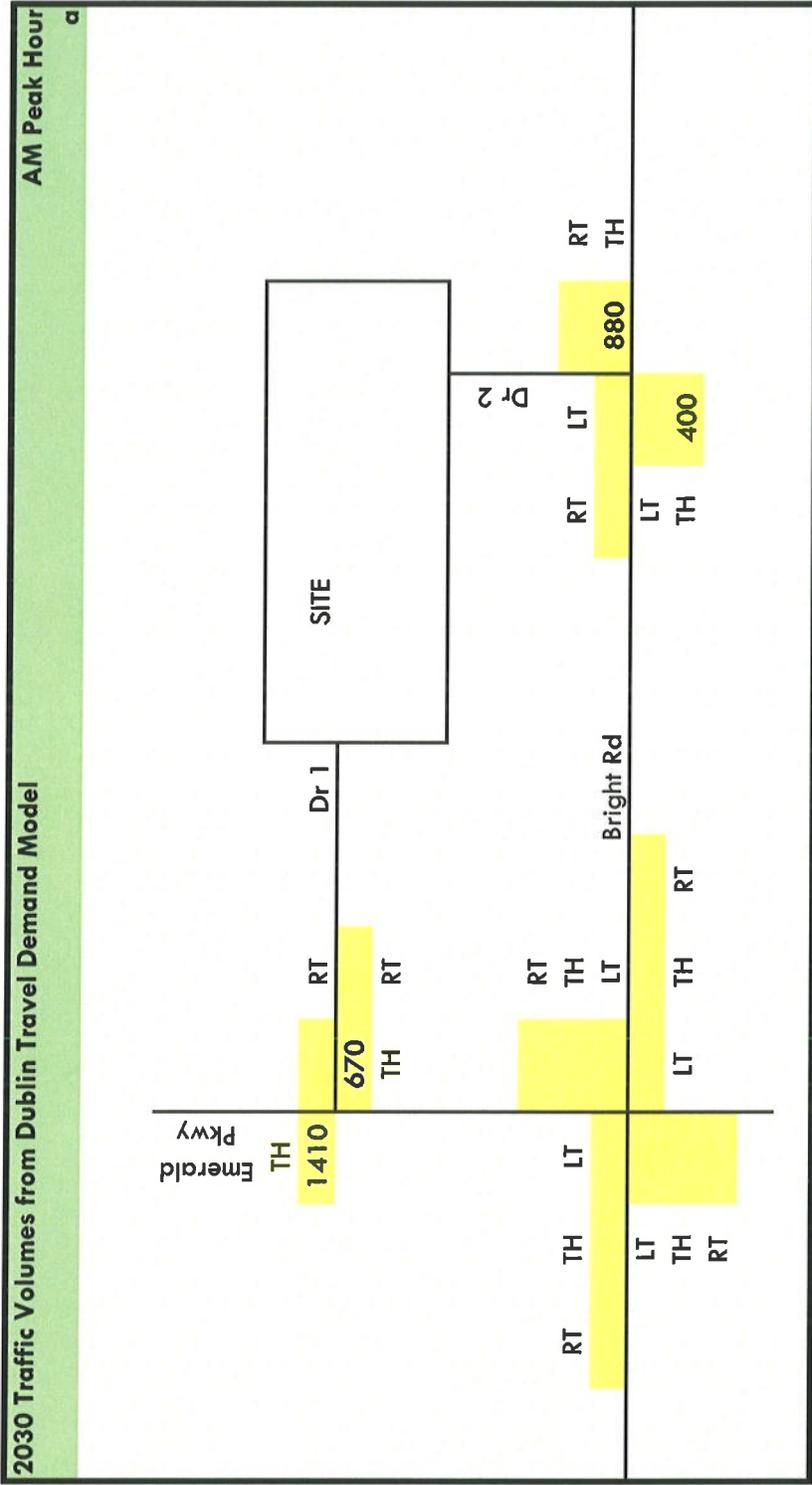
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(Licensed to City of Dublin, OH)

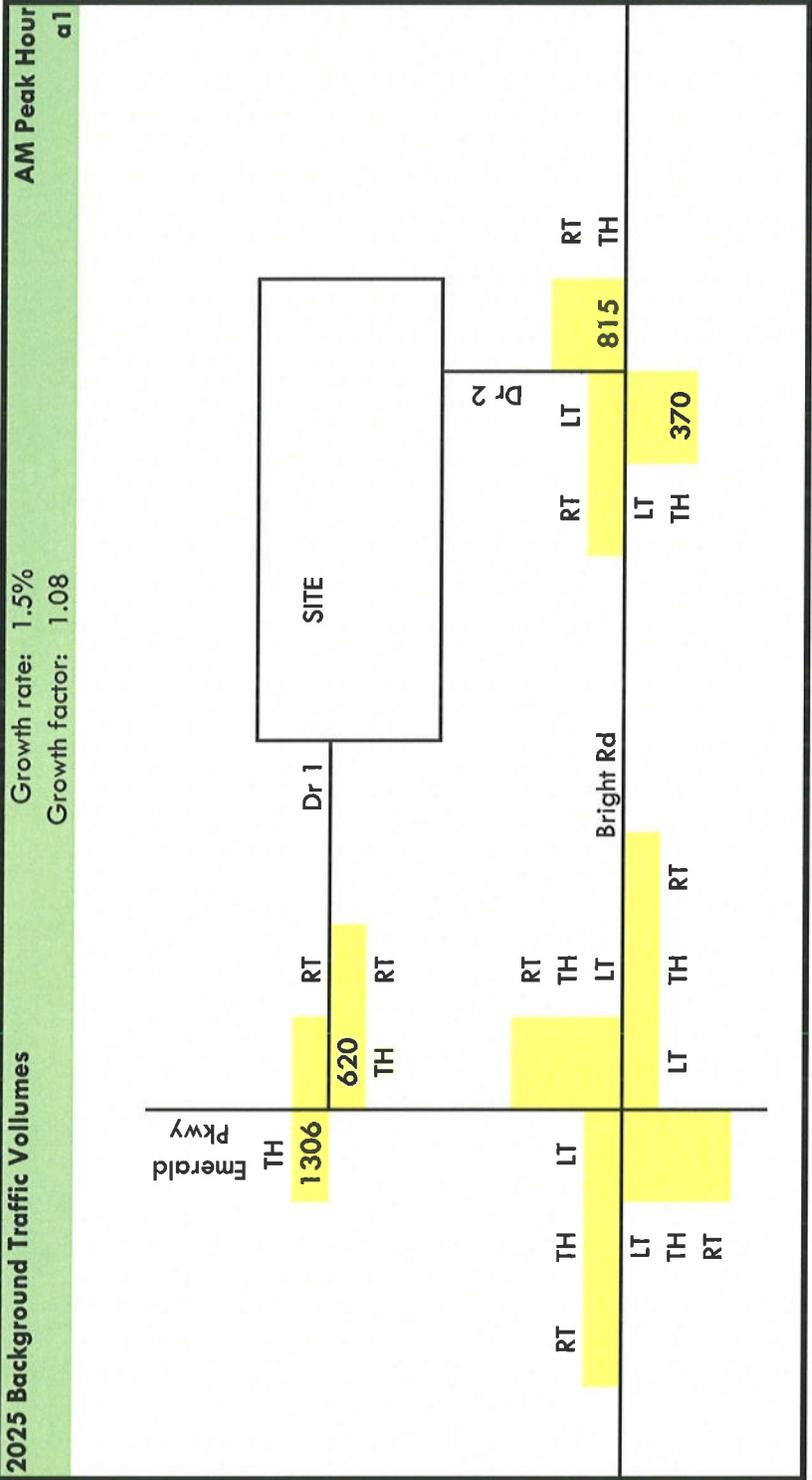
# April 2013 Dublin Dale P&R Survey: Home Locations



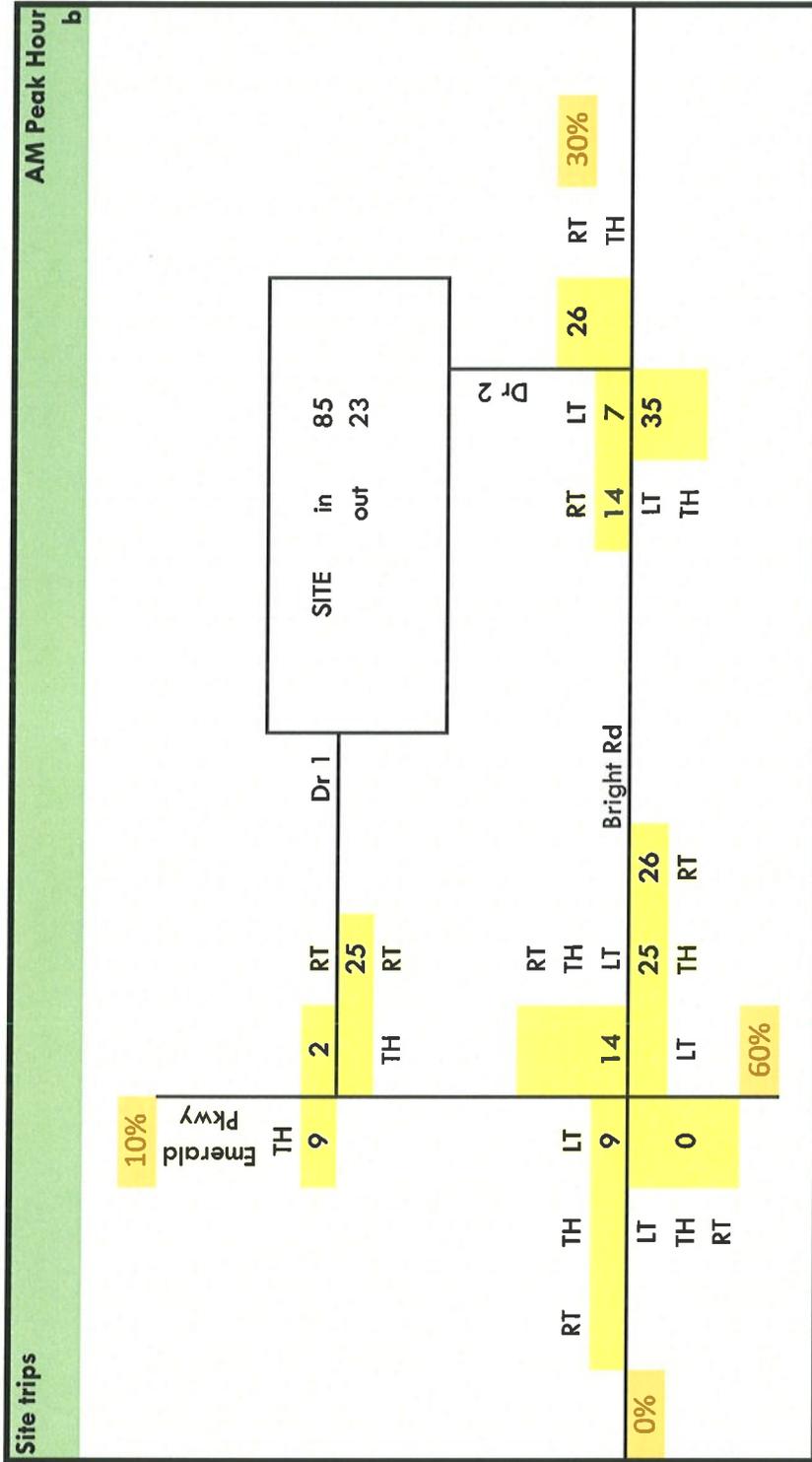
**Cota Park and Ride  
Traffic Access Point Study  
Traffic Volume Calculations**



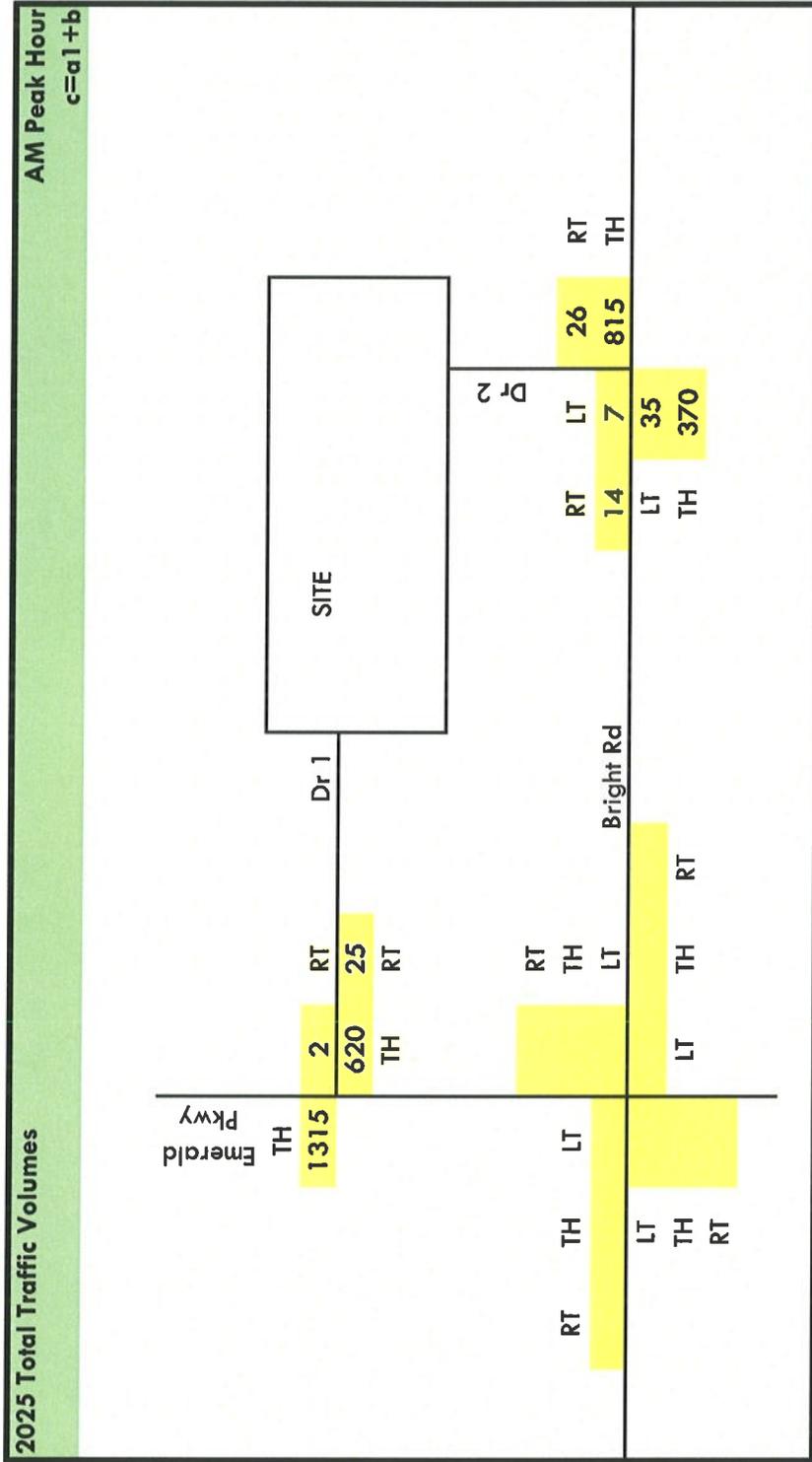
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Traffic Access Point Study  
Traffic Volume Calculations**



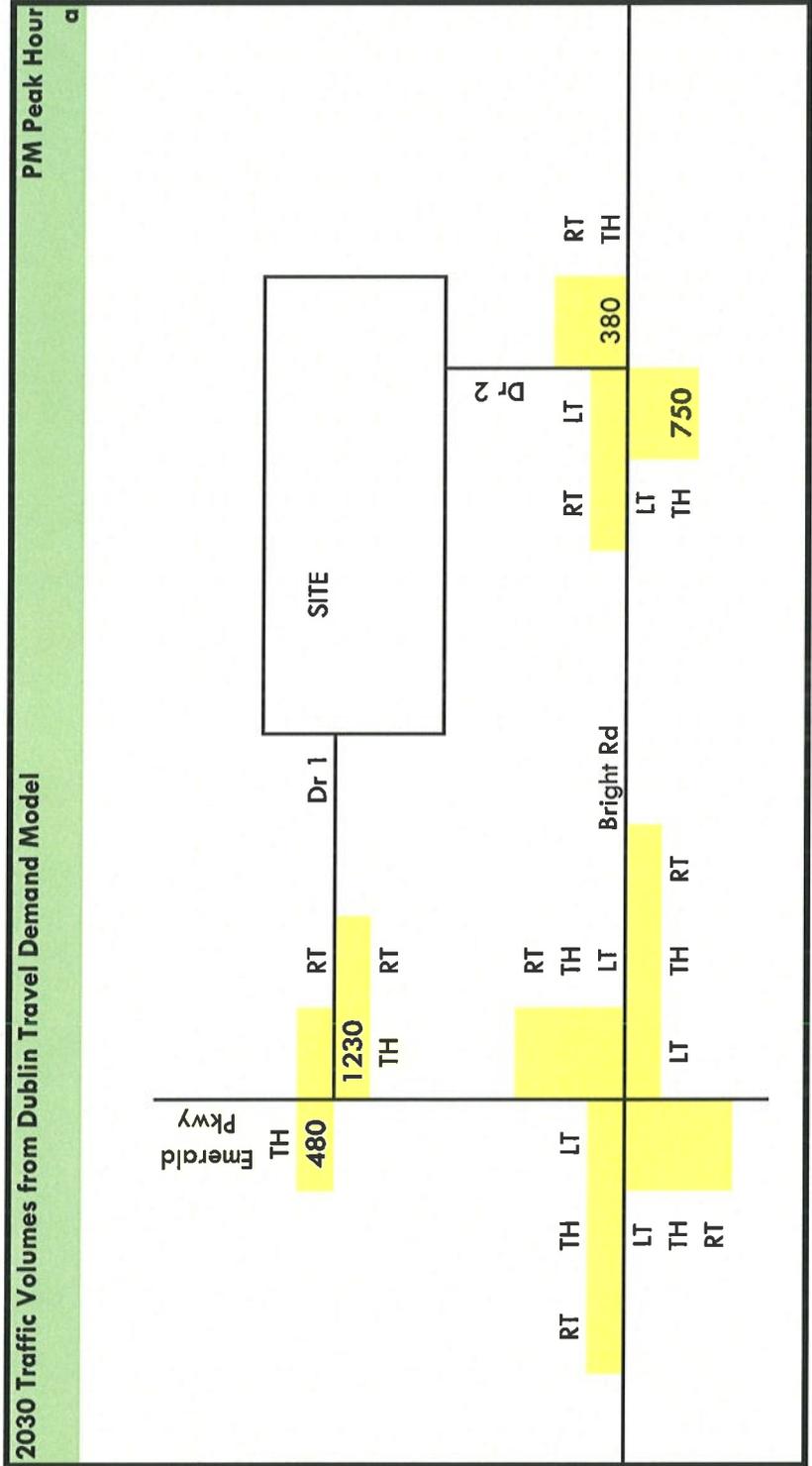
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Traffic Access Point Study  
Traffic Volume Calculations**



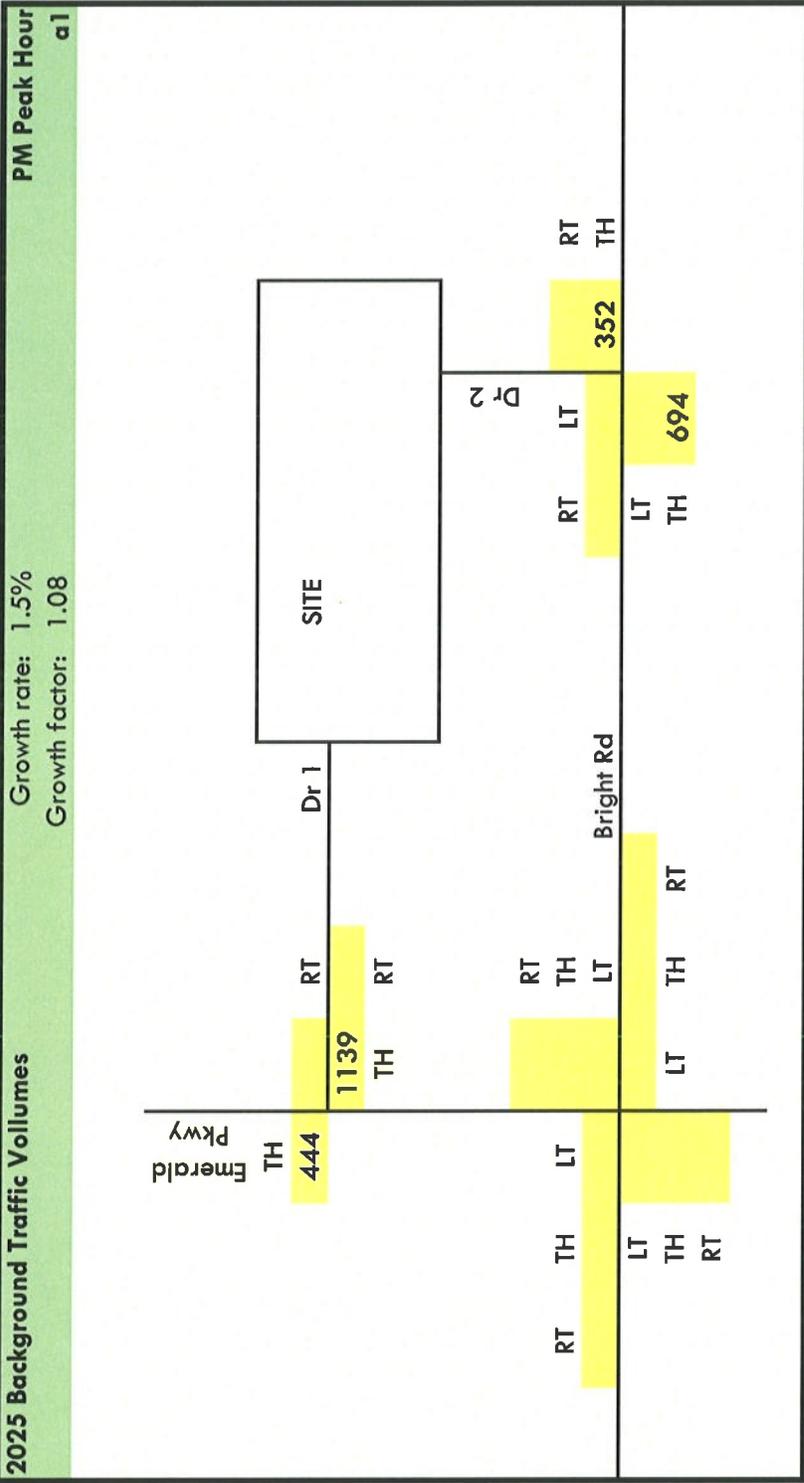
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Traffic Volume Calculations**



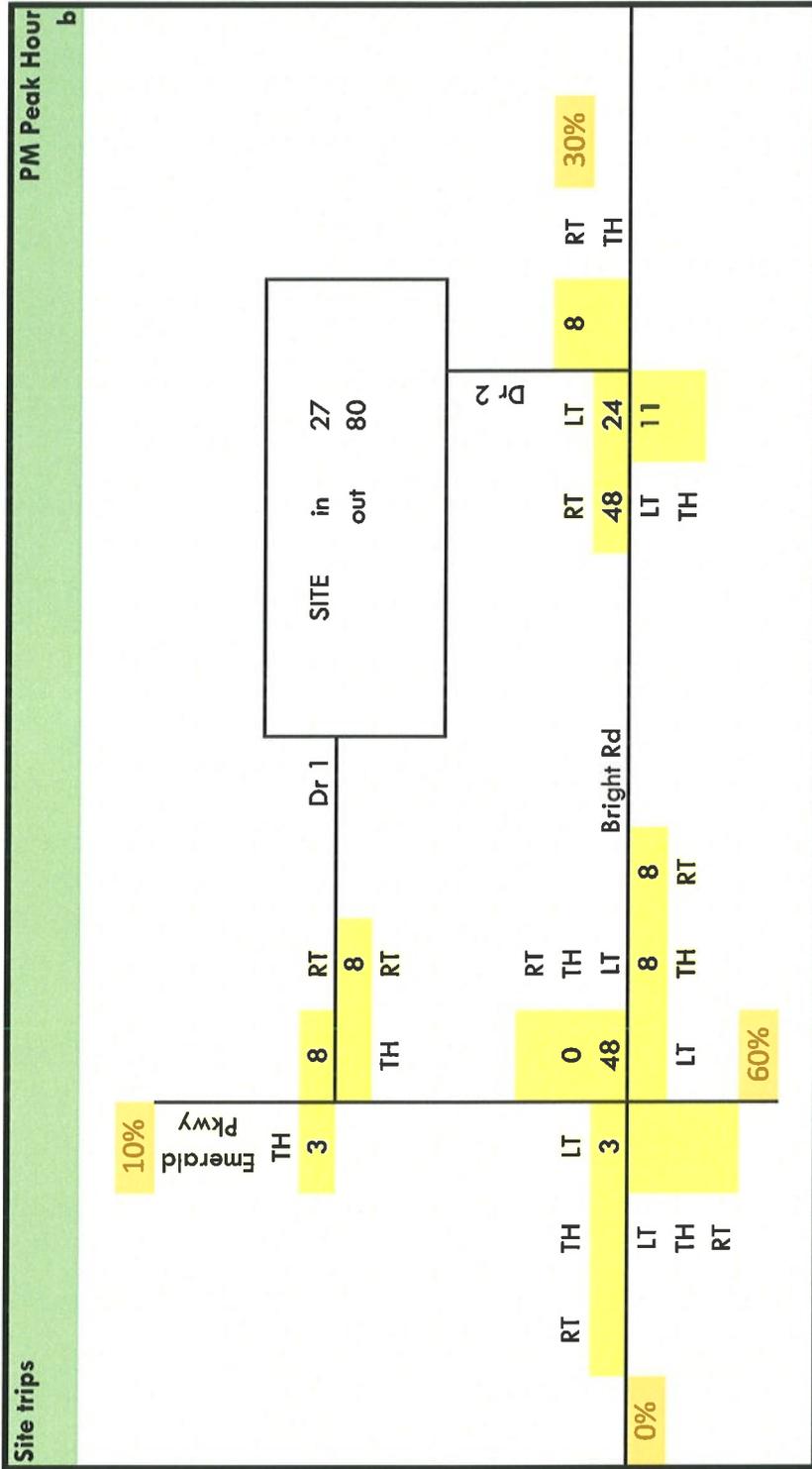
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Traffic Access Point Study  
Traffic Volume Calculations**



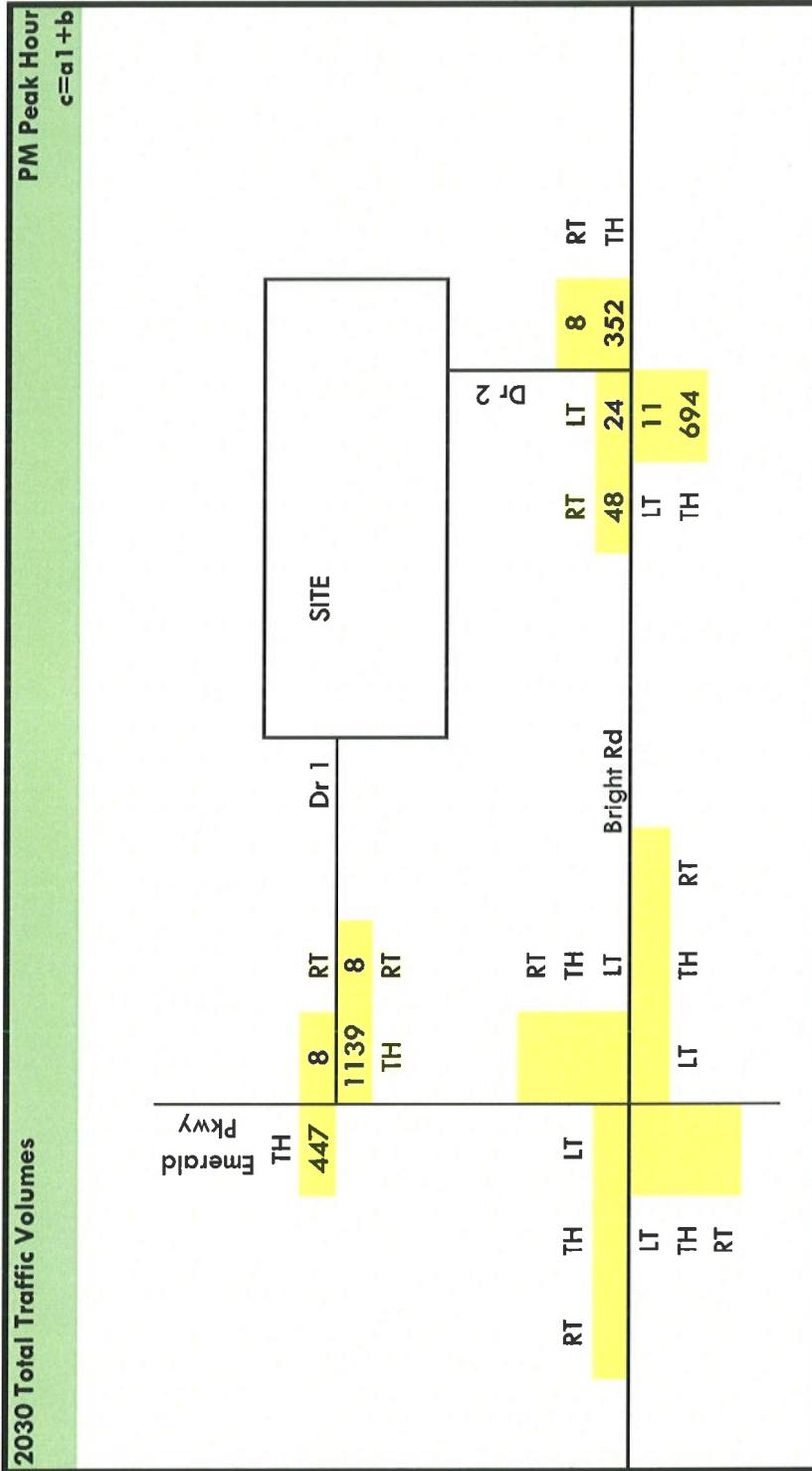
**Cota Park and Ride  
Traffic Access Point Study  
Traffic Volume Calculations**



**Cota Park and Ride  
Traffic Access Point Study  
Traffic Volume Calculations**



**Cota Park and Ride  
Traffic Access Point Study  
Traffic Volume Calculations**



## TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	Charles Wu	Intersection	Emerald Pkwy & Dr 1
Agency/Co.	EMH&T	Jurisdiction	City of Dublin
Date Performed	1/13/2015	Analysis Year	
Analysis Time Period	2025 AM Peak Hour		

Project Description Cota Park & Ride at Bright Rd, 2014-0588	
East/West Street: Drive 1	North/South Street: Emerald Pkwy
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments						
Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		620	25		1315	
Peak-Hour Factor, PHF	1.00	0.92	0.92	1.00	0.92	1.00
Hourly Flow Rate, HFR (veh/h)	0	673	27	0	1429	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T	TR		T	
Upstream Signal		0			0	
Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						2
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.92
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	2
Percent Heavy Vehicles	0	0	0	0	0	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					2			
C (m) (veh/h)					692			
v/c					0.00			
95% queue length					0.01			
Control Delay (s/veh)					10.2			
LOS					B			
Approach Delay (s/veh)	--	--	10.2					
Approach LOS	--	--	B					

## TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	Charles Wu	Intersection	Emerald Pkwy & Dr 1
Agency/Co.	EMH&T	Jurisdiction	City of Dublin
Date Performed	1/13/2015	Analysis Year	
Analysis Time Period	2025 PM Peak Hour		

Project Description Cota Park & Ride at Bright Rd, 2014-0588	
East/West Street: Drive 1	North/South Street: Emerald Pkwy
Intersection Orientation: North-South	Study Period (hrs): 0.25

Vehicle Volumes and Adjustments						
Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		1139	8		447	
Peak-Hour Factor, PHF	1.00	0.92	0.92	1.00	0.92	1.00
Hourly Flow Rate, HFR (veh/h)	0	1238	8	0	485	0
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	0
Configuration		T	TR		T	
Upstream Signal		0			0	
Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)						8
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	0.92
Hourly Flow Rate, HFR (veh/h)	0	0	0	0	0	8
Percent Heavy Vehicles	0	0	0	0	0	2
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	1
Configuration						R

Delay, Queue Length, and Level of Service								
Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration					R			
v (veh/h)					8			
C (m) (veh/h)					484			
v/c					0.02			
95% queue length					0.05			
Control Delay (s/veh)					12.6			
LOS					B			
Approach Delay (s/veh)	--	--	12.6					
Approach LOS	--	--	B					

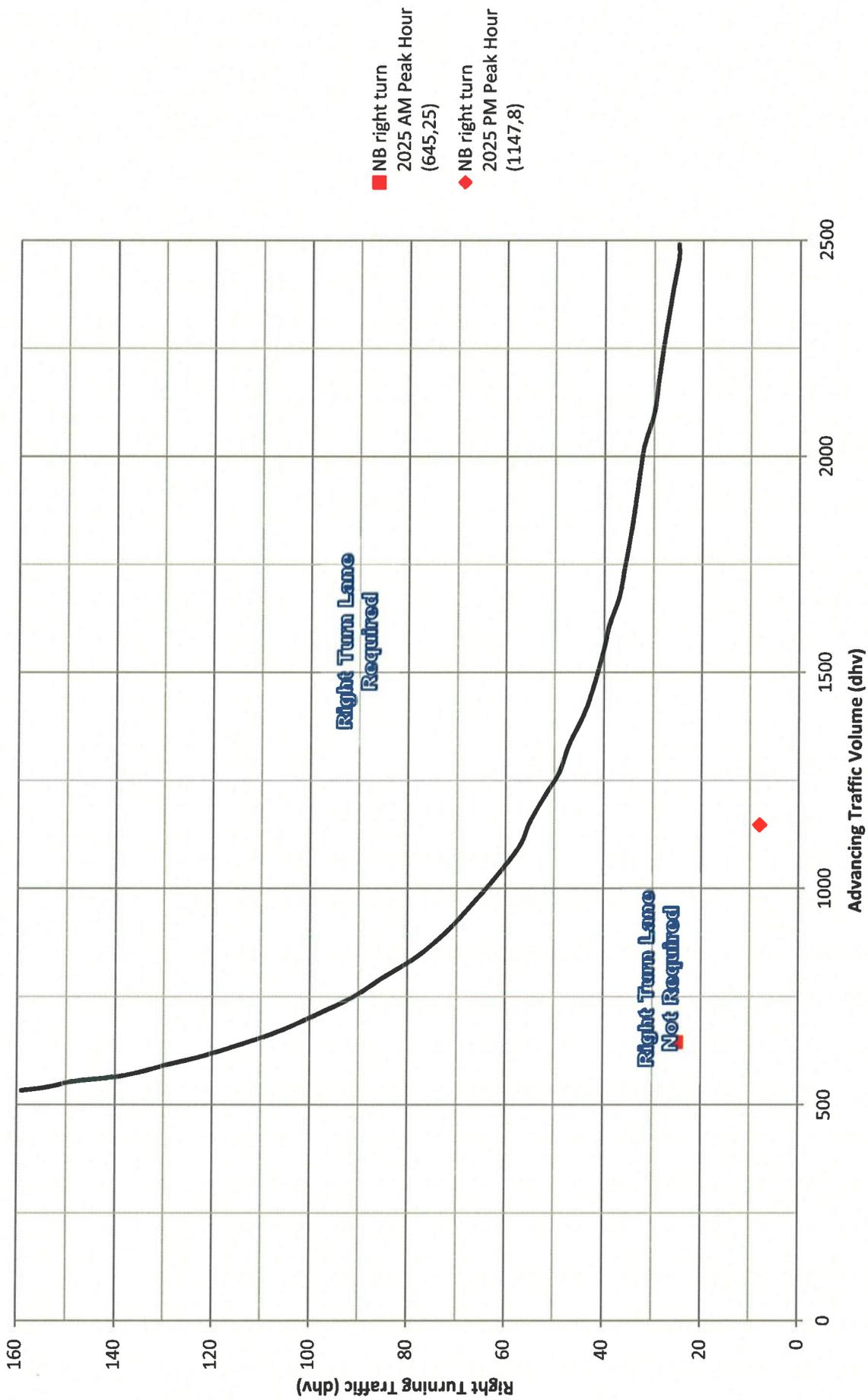
## TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	Charles Wu		Intersection	Bright Rd & Dr 2				
Agency/Co.	EMH&T		Jurisdiction	City of Dublin				
Date Performed	1/13/2015		Analysis Year					
Analysis Time Period	2025 PM Peak Hour							
Project Description Cota Park & Ride at Bright Rd, 2014-0588								
East/West Street: Bright Road			North/South Street: Drive 2					
Intersection Orientation: East-West			Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	11	694			352	8		
Peak-Hour Factor, PHF	0.92	0.92	1.00	1.00	0.92	0.92		
Hourly Flow Rate, HFR (veh/h)	11	754	0	0	382	8		
Percent Heavy Vehicles	2	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				24		48		
Peak-Hour Factor, PHF	1.00	0.92	0.92	0.92	0.92	0.92		
Hourly Flow Rate, HFR (veh/h)	0	0	0	26	0	52		
Percent Heavy Vehicles	0	0	0	2	0	2		
Percent Grade (%)		0			0			
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	11						78	
C (m) (veh/h)	1169						390	
v/c	0.01						0.20	
95% queue length	0.03						0.74	
Control Delay (s/veh)	8.1						16.5	
LOS	A						C	
Approach Delay (s/veh)	--	--					16.5	
Approach LOS	--	--					C	

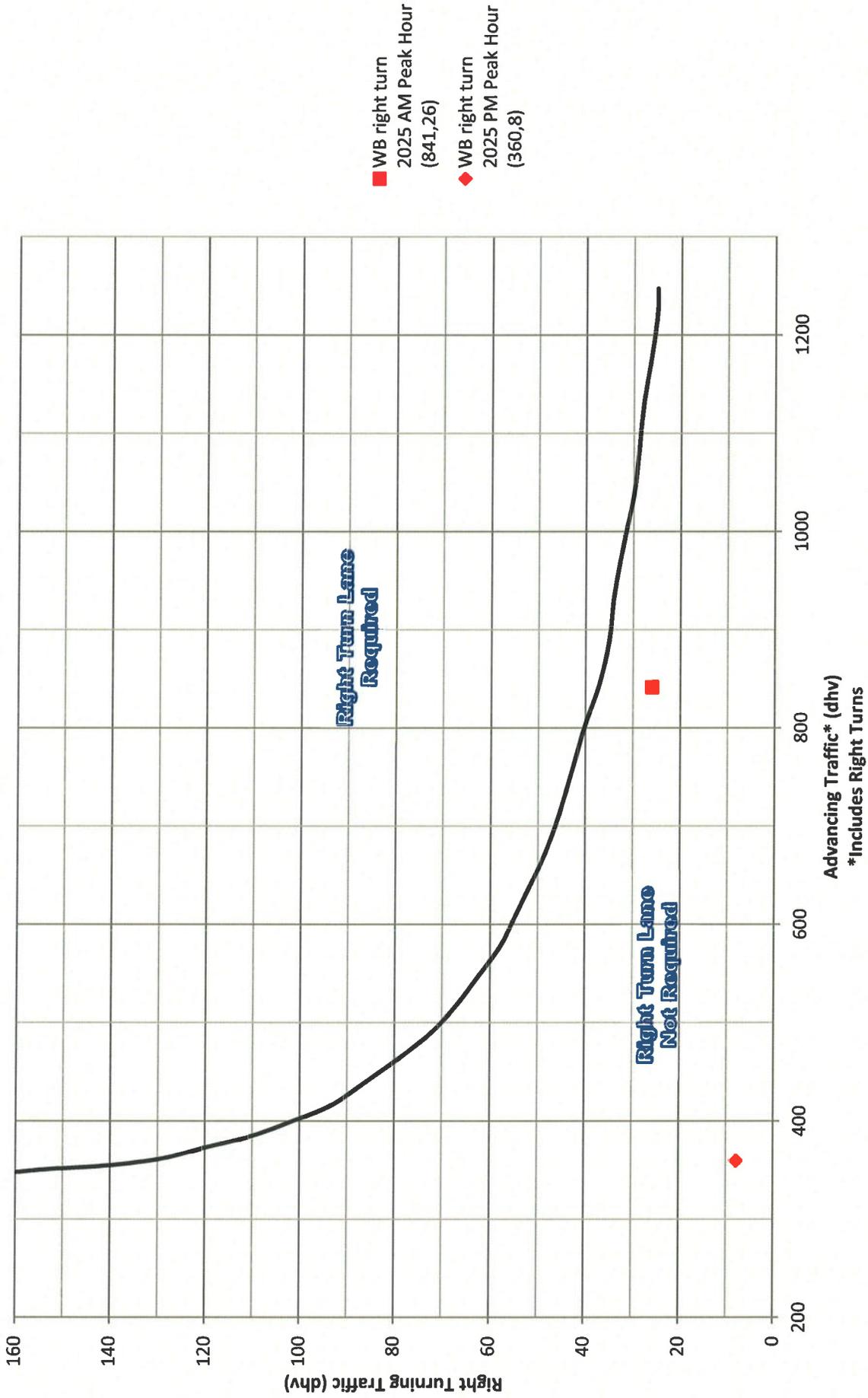
## TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	Charles Wu		Intersection	Bright Rd & Dr 2				
Agency/Co.	EMH&T		Jurisdiction	City of Dublin				
Date Performed	1/13/2015		Analysis Year					
Analysis Time Period	2025 AM Peak Hour							
Project Description Cota Park & Ride at Bright Rd, 2014-0588								
East/West Street: Bright Road			North/South Street: Drive 2					
Intersection Orientation: East-West			Study Period (hrs): 0.25					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	35	370			815	26		
Peak-Hour Factor, PHF	0.92	0.92	1.00	1.00	0.92	0.92		
Hourly Flow Rate, HFR (veh/h)	38	402	0	0	885	28		
Percent Heavy Vehicles	2	--	--	0	--	--		
Median Type	Undivided							
RT Channelized			0			0		
Lanes	1	1	0	0	1	0		
Configuration	L	T				TR		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)				7		14		
Peak-Hour Factor, PHF	1.00	0.92	0.92	0.92	0.92	0.92		
Hourly Flow Rate, HFR (veh/h)	0	0	0	7	0	15		
Percent Heavy Vehicles	0	0	0	2	0	2		
Percent Grade (%)	0			0				
Flared Approach		N			N			
Storage		0			0			
RT Channelized			0			0		
Lanes	0	0	0	0	0	0		
Configuration					LR			
Delay, Queue Length, and Level of Service								
Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L						LR	
v (veh/h)	38						22	
C (m) (veh/h)	746						243	
v/c	0.05						0.09	
95% queue length	0.16						0.30	
Control Delay (s/veh)	10.1						21.3	
LOS	B						C	
Approach Delay (s/veh)	--	--					21.3	
Approach LOS	--	--					C	

**Emerald Pkwy @ Dr 1**  
**4-Lane Highway Right Turn Lane Warrant**  
 =<40 mph or 70 kph Posted Speed



**Bright Rd @ Dr 2**  
**2-Lane Highway Right Turn Lane Warrant**  
 =<40 mph or 70 kph Posted Speed

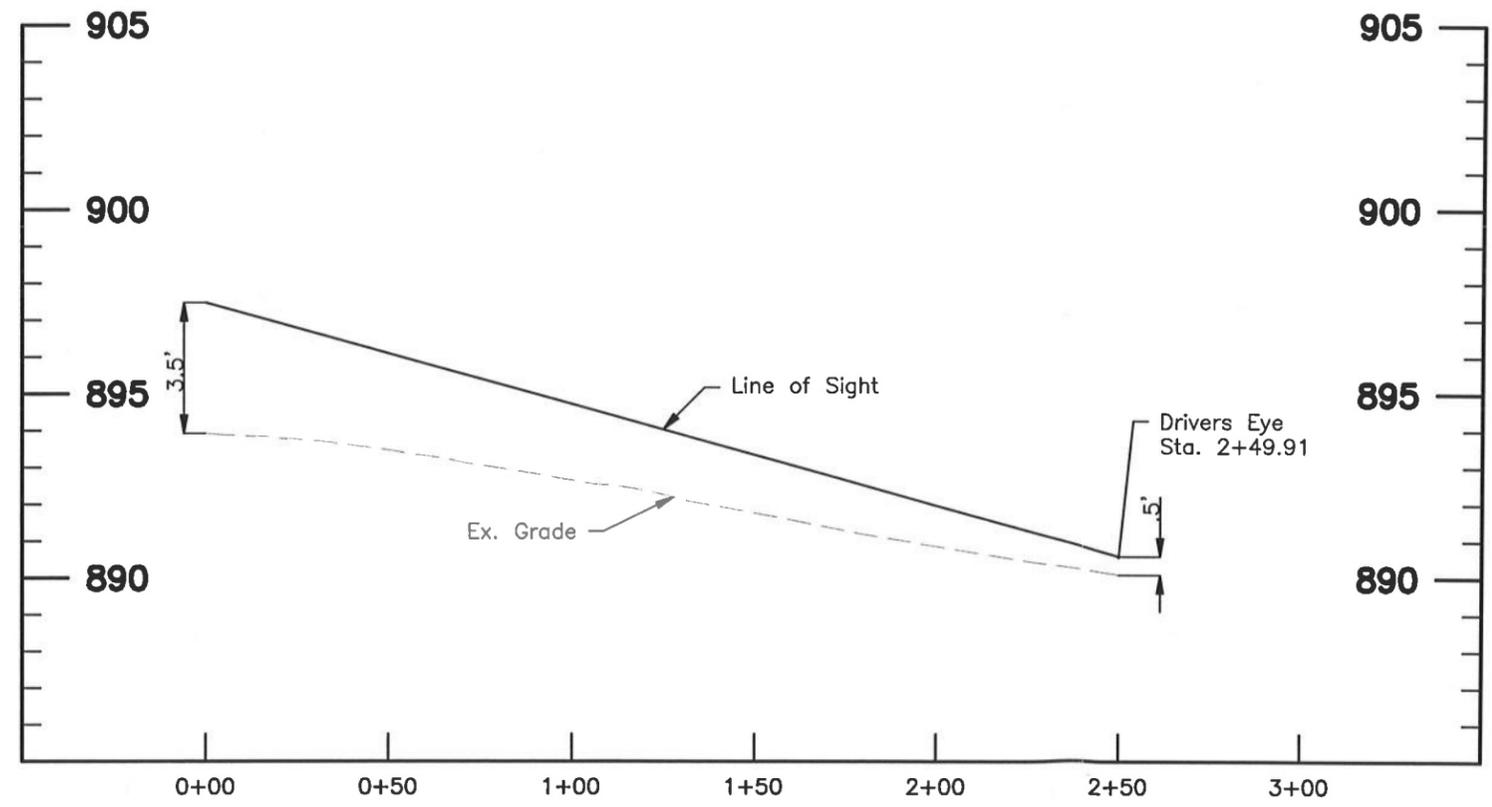
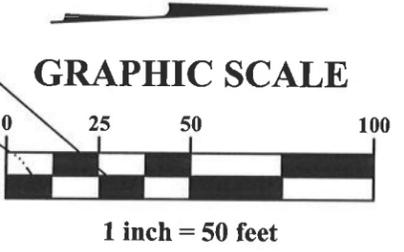
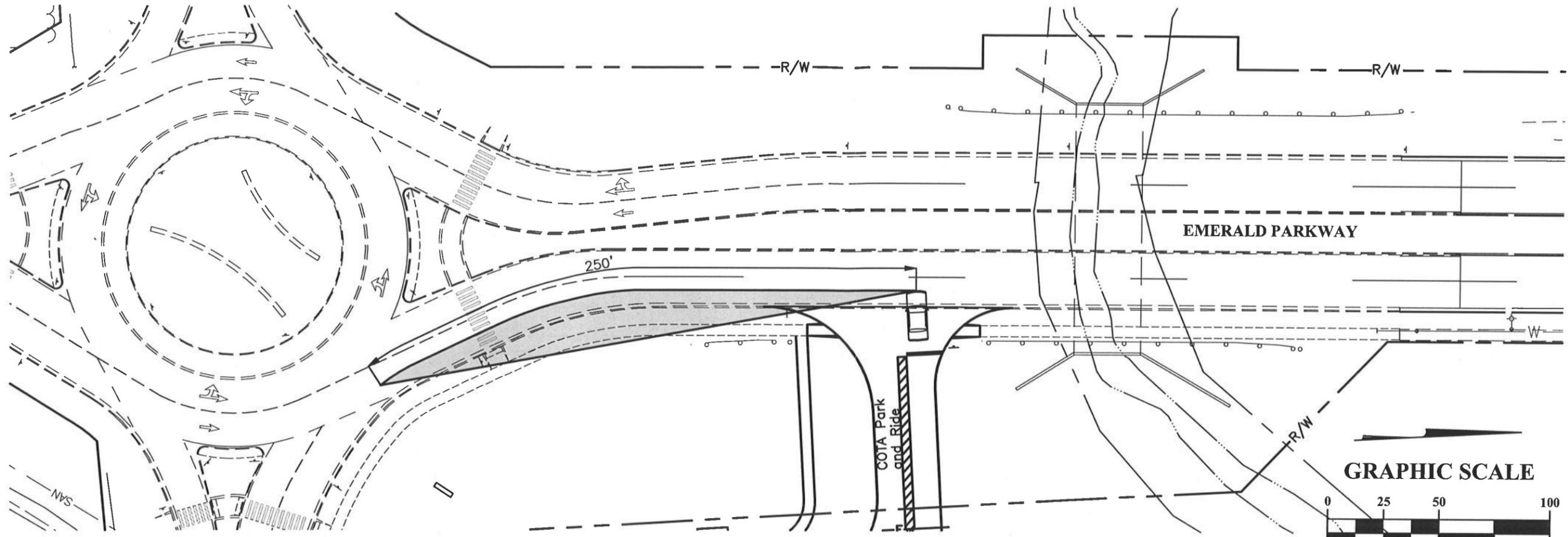


- WB right turn  
2025 AM Peak Hour  
(841,26)
- ◆ WB right turn  
2025 PM Peak Hour  
(360,8)

**Cota Park & Ride at Bright Road  
Traffic Access Point Study  
Turn Lane Length Calculations**

AM Peak Hour	
2025 Full Build	
Bright Road/Drive 2	
Movement	EBLT
Design Speed	30 mph
Cycle Length	60 seconds
Control (Stop or Signal)	Stop
Through Volume	370 vph
Number of Through Lanes	1
Turning Volume	35 vph
Number of Turning Lanes	1
Design Condition	A A, B, or C
Turning Percentage	9%
Vehicles Per Cycle	0.6
Storage Length	50 feet
Deceleration/Taper	50 feet
<b>Calculated Turn Lane Length</b>	<b>100 feet</b>
No Block Distance	N.A. feet
No Block Turn Lane Length	N.A. feet

PM Peak Hour	
2025 Full Build	
Bright Road/Drive 2	
Movement	EBLT
Design Speed	30 mph
Cycle Length	60 seconds
Control (Stop or Signal)	Stop
Through Volume	694 vph
Number of Through Lanes	1
Turning Volume	11 vph
Number of Turning Lanes	1
Design Condition	A A, B, or C
Turning Percentage	2%
Vehicles Per Cycle	0.2
Storage Length	50 feet
Deceleration/Taper	50 feet
<b>Calculated Turn Lane Length</b>	<b>100 feet</b>
No Block Distance	N.A. feet
No Block Turn Lane Length	N.A. feet



DATE: January 16, 2015

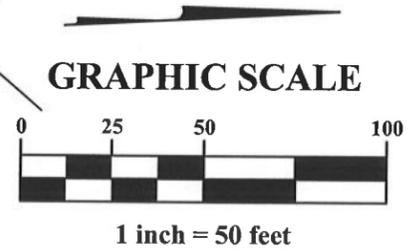
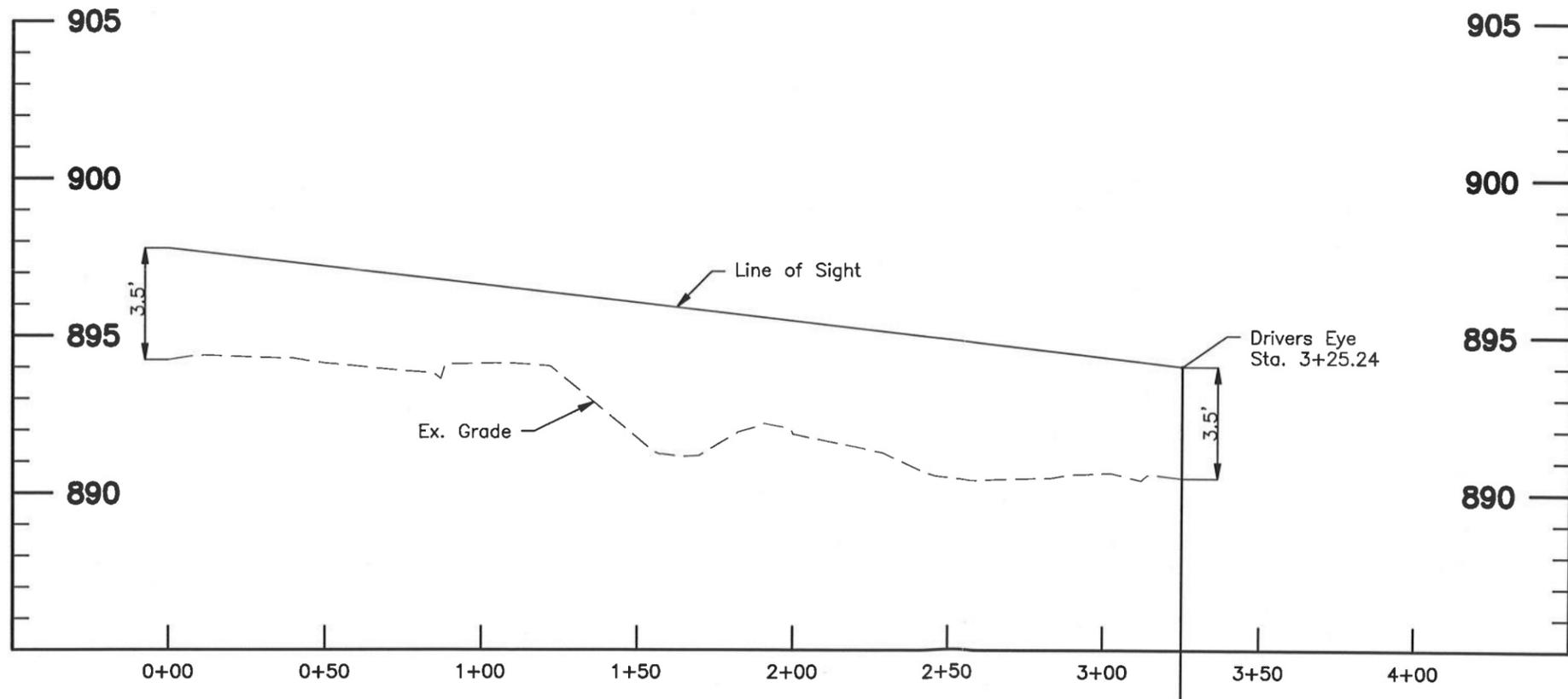
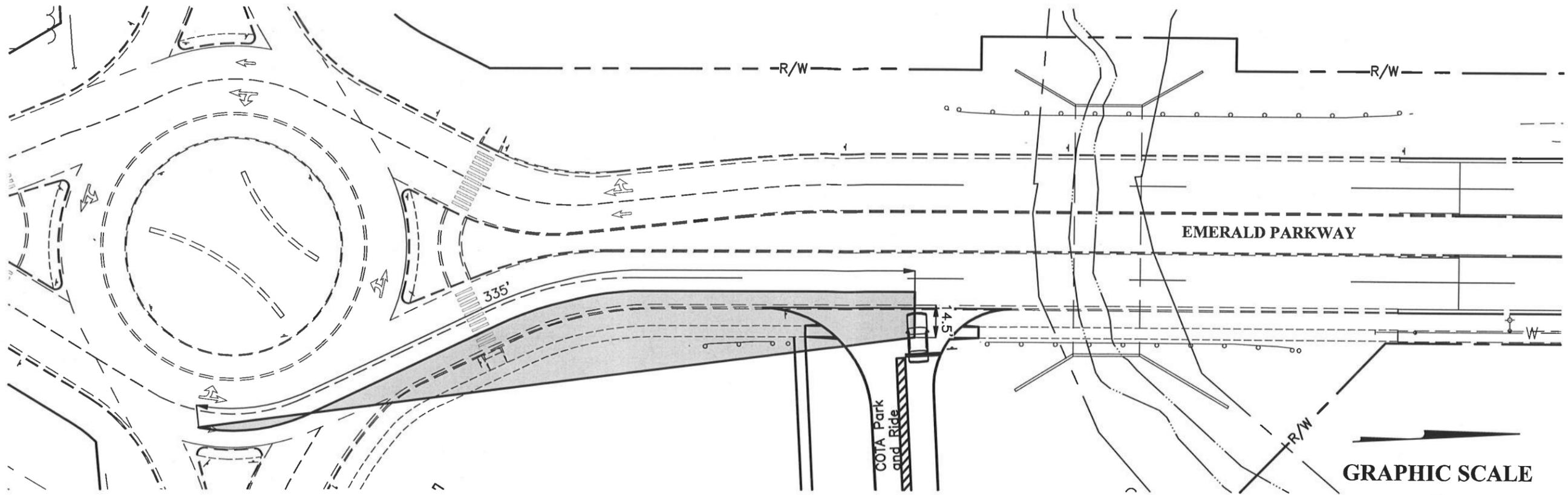
SCALE: H: 1" = 50' V: 1" = 10'

JOB NO.: 2014-0588

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
EXHIBIT

FOR  
**COTA PARK AND RIDE**  
EMERALD PARKWAY  
STOPPING SIGHT DISTANCE

**EMHT**  
Evans, Mechwart, Hambleton & Tilton, Inc.  
Engineers • Surveyors • Planners • Scientists  
5500 New Albany Road, Columbus, OH 43054  
Phone: 614.775.4500 Toll Free: 888.775.3648  
emht.com



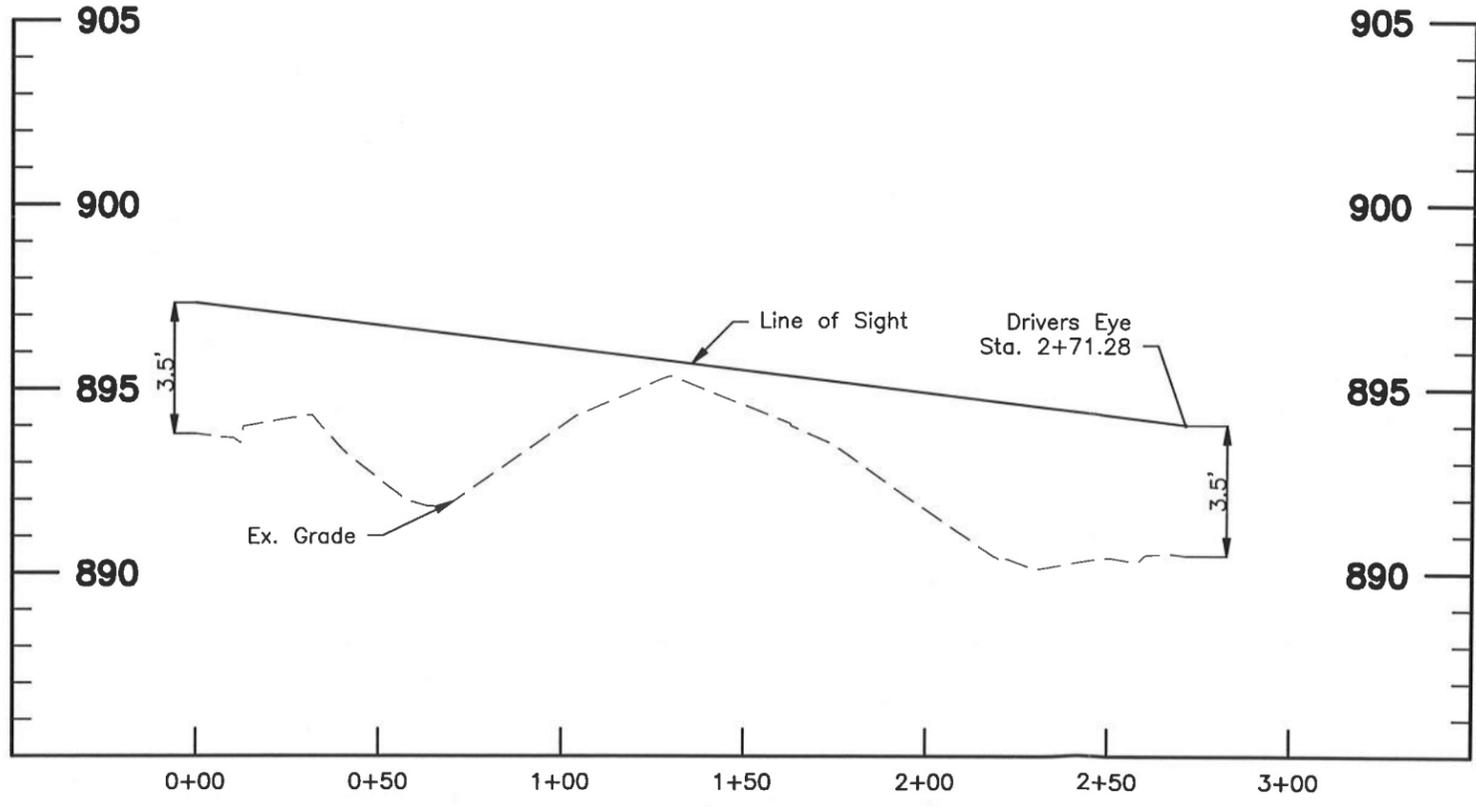
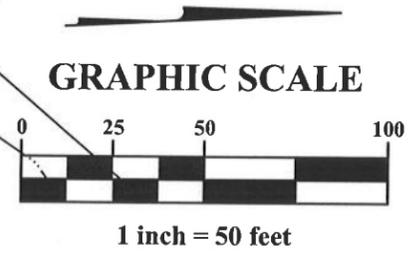
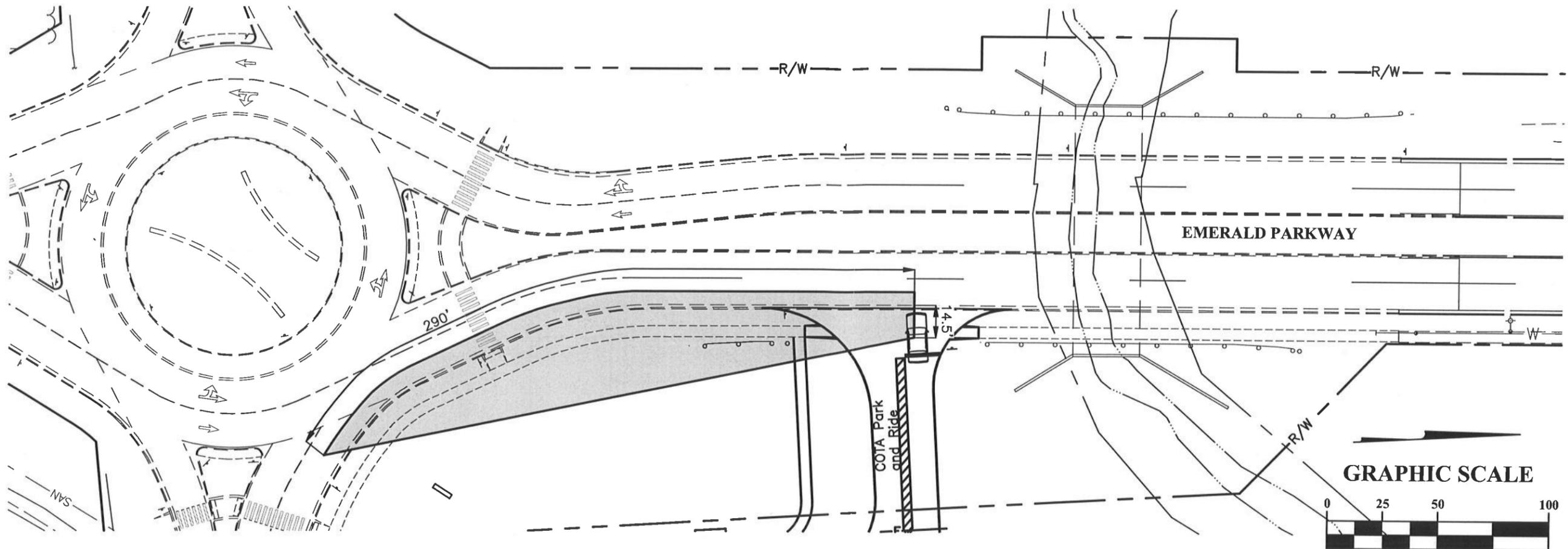
DATE: January 16, 2015

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CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
 EXHIBIT  
 FOR  
**COTA PARK AND RIDE**  
 EMERALD PARKWAY  
 INTERSECTION SIGHT DISTANCE

**EMH&T**  
 Evans, Mechwart, Hambleton & Tilton, Inc.  
 Engineers • Surveyors • Planners • Scientists  
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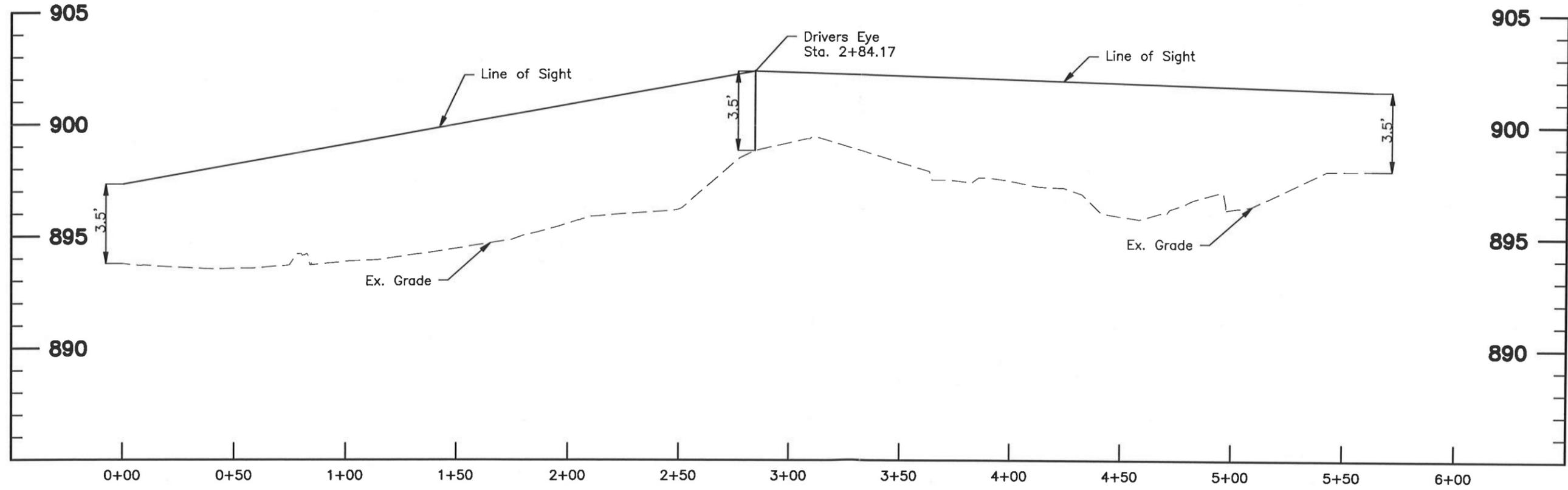
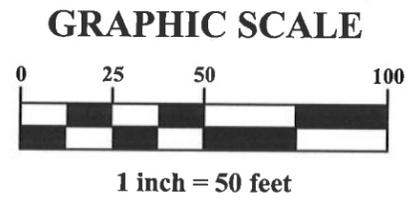
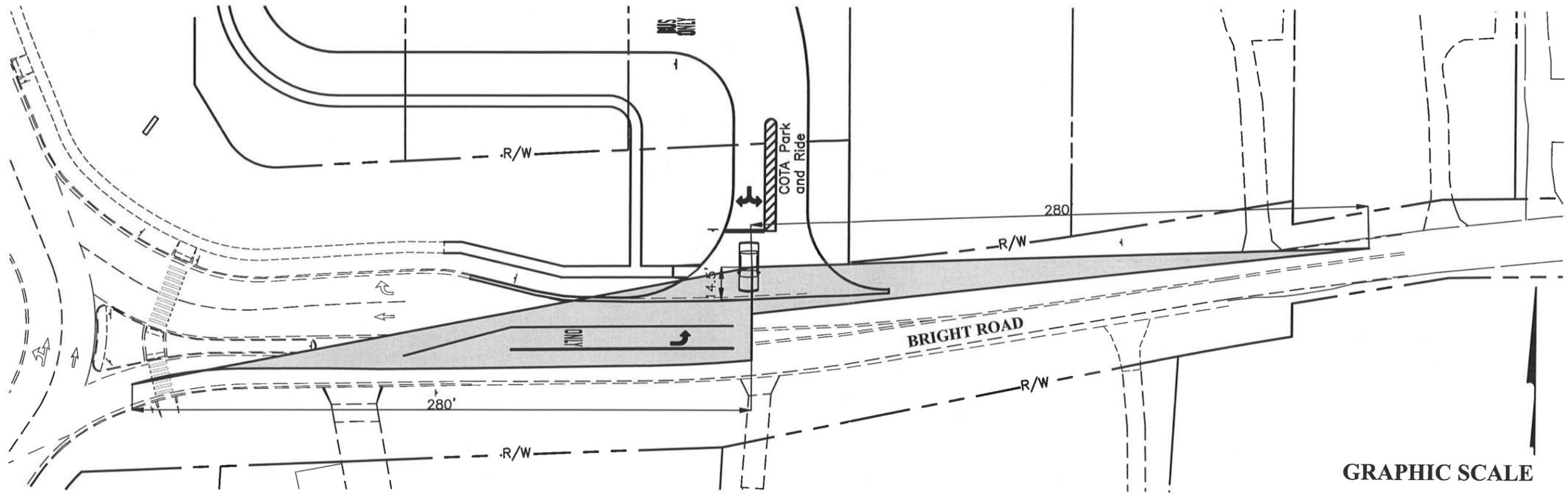
SCALE: H: 1" = 50' V: 1" = 10'

JOB NO.: 2014-0588

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
EXHIBIT

FOR  
**COTA PARK AND RIDE**  
EMERALD PARKWAY  
INTERSECTION SIGHT DISTANCE

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DATE: January 16, 2015

SCALE: H: 1" = 50' V: 1" = 10'

JOB NO.: 2014-0588

CITY OF DUBLIN, FRANKLIN COUNTY, OHIO  
**EXHIBIT**  
 FOR  
**COTA PARK AND RIDE**  
**BRIGHT ROAD**  
 INTERSECTION SIGHT DISTANCE

**EMHT**  
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