



TRAFFIC PLANNING AND DESIGN, INC.

WWW.TRAFFICPD.COM

April 6, 2023

PennDOT Engineering District 8-0
Highway Occupancy Permits Unit
2140 Herr Street
Harrisburg, PA 17103-1699

Attention: Mr. Eric Kinard, District Permits Manager, via E-Permitting System

Re: SR 0934 & Clear Springs Road – Roundabout Line & Grade Submission #1
EPS Application #304648, Cycle #1
North Annville Township, Lebanon County, PA
TPD# WHRS.00007

Eric,

Enclosed please find a **preliminary line and grade submission** for a proposed Roundabout at the intersection of SR 0934 & Clear Springs Road in North Annville Township, Lebanon County, PA.

The following documents have been submitted electronically via PennDOT's E-Permitting System:

1. Line & Grade Plans and Profiles, dated 04/05/23;
2. Fastest Path Calculations and Plans;
3. Sight Distance Calculations and Plans;
4. Design Vehicle Turning Exhibits;
5. Detour Route Plan;
6. Intersection Control Evaluation (ICE) form;
7. Minutes from 3/15/23 preliminary design meeting with PennDOT District 8-0/Central Office.

The proposed project involves a public/private partnership between North Annville Township and DHL; DHL is developing the Clear Springs Logistics Park along Killinger Road (Township-owned roadway) in South Annville Township, Lebanon County. In conjunction with this project, a PennDOT Multimodal Transportation Fund (MTF) grant has been obtained to construct a new roundabout at the intersection of SR 0934 and Clear Springs Road. Based on coordination with PennDOT District 8-0, the project will follow PennDOT's HOP process for approvals. Since the Clear Springs Logistics Park development does not access a State Highway (it accesses Killinger Road, a roadway owned by South Annville Township), PennDOT is not requiring submission of a Transportation Impact Study (TIS) in conjunction with the roundabout project, but is requiring an Intersection Control Evaluation (ICE) form to evaluate improvements options and why the roundabout was selected as the preferred alternative. The ICE form has been prepared and uploaded to EPS.

Since the proposed improvements involve the design of a Roundabout, TPD has prepared preliminary plans showing the proposed horizontal and vertical design of the roadways. ***This submission does not provide a complete Highway Occupancy Permit (HOP) plan/design package; rather, it is a preliminary submission showing key horizontal and vertical design elements for the proposed improvements so***

that initial PennDOT feedback can be received. Once feedback from PennDOT is received on line and grade, TPD will fully engineer the improvements and submit a complete HOP/Right of Way design package to PennDOT for review. Additionally, since the proposed improvements involve a roundabout, we request that a copy of the design submission be provided to Central Office for review/comment.

It is anticipated that North Annville Township will be the HOP applicant for the proposed roundabout improvements; TPD is submitting the Line and Grade Submission to North Annville Township and Lebanon County Planning concurrently with the PennDOT submission, and it is anticipated that an M-950AA form from North Annville Township will be provided in the next PennDOT design submission.

The proposed roundabout design requires right of way acquisition from multiple properties; the project team is in the process of contacting the impacted property owners and discussing ROW impacts. One of the impacted properties (Bomgardner) is a preserved farm; as such, the specific ROW acquisition process pertaining to preserved farms must be followed, and the applicant team is coordinating those efforts with Dustin Palmer, PennDOT ROW Manager.

Additionally, due to the significant cut/fill reprofiling necessary to construct this roundabout, it will not be feasible to maintain traffic through the intersection during construction. A preliminary Detour Route Plan has been uploaded which shows a preliminary route for consideration. Full detour plans will follow once the route has been established.

TPD is requesting PennDOT feedback on the following design items identified in this submission:

- » Proposed Lane and Shoulder Widths;
- » Proposed Horizontal Curvature, Vertical Profiles, Superelevation along realignment of the Frontage Road;
- » Proposed Vertical Profiles of the roundabout approaches;
- » Fastest Path and Sight Distance Analysis;
- » Design Vehicle Turning Maneuvers;
- » Proposed Sight Distances and Sight Line Profiles;
- » Detour Route and MPT Considerations;
- » Any other design considerations or feedback PennDOT is willing to provide at this preliminary stage.

If you have any questions or require additional information, please call anytime.

Sincerely,

TRAFFIC PLANNING AND DESIGN, INC.



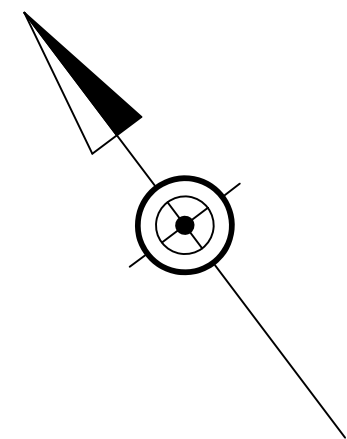
Adam C. Wagner
Project Manager
AWagner@TrafficPD.com



Craig Mellott, P.E., PTOE
Vice President
CMellott@TrafficPD.com

Enclosures

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	4 OF 7
NORTH ANNVILLE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	
1	REVISED PER MEETING	03/20/23	JS	



MATTHEW J. & AMIE S. BOMGARDNER
 UP1: 25-2304739-374698
 DEED: 2168-6266

BRUCE & DAWN M. FELTY, ETAL
 UP1: 25-2304213-373997
 DEED: 2151-2438

LYNN J. & ALINE M. STRUPHAR
 UP1: 25-2303111-374488
 DEED: 2053-8428

723.9' R
 477' R

985' R
 996' R
 1001' R

416' R
 400' R
 411' R

JESSICA K. MERANTE
 UP1: 25-2304282-373519
 DEED: 2291-4120

LYNN J. & ALINE M. STRUPHAR
 UP1: 25-2303111-374488
 DEED: 2053-8428

GRACELIFE CHURCH
 UP1: 25-2304666
 DEED: 2234-
 TRACT: B-

BELLSGROVE ROAD (SR 0934)
 POSTED SPEED LIMIT 45 MPH

TEMPORARY CONSTRUCTION EASEMENT

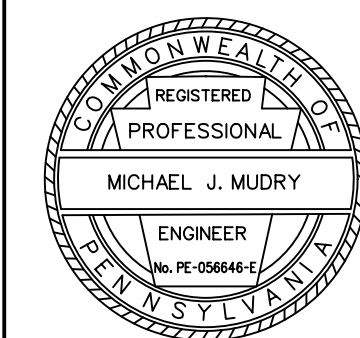
REQUIRED LEGAL RIGHT-OF-WAY

TEMPORARY CONSTRUCTION EASEMENT

CLEAR SPRINGS
 ROAD (T-376)
 POSTED SPEED
 LIMIT 40 MPH

0 25 50 FEET

REQUIRED RIGHT OF WAY AND EASEMENTS
 DEPICTED ON THIS PLAN ARE PRELIMINARY
 AND ARE SUBJECT TO CHANGE BASED ON
 FINAL DESIGN



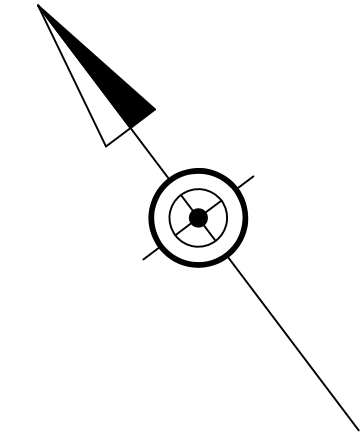
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 DATE: 03/15/23 | PROJECT DESIGNER: ACW | JOB NO: WHRS.00007

PRELIMINARY ROUNDABOUT DESIGN
 THIS IS A COPY. THE ORIGINAL DRAWING IS ON FILE WITH TRAFFIC PLANNING AND DESIGN, INC. ANY AND ALL LIABILITY IS LIMITED TO THE ORIGINAL, UP TO AND INCLUDING THE LAST REVISIONS.

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REQUIRED RIGHT OF WAY AND EASEMENTS
 DEPICTED ON THIS PLAN ARE PRELIMINARY
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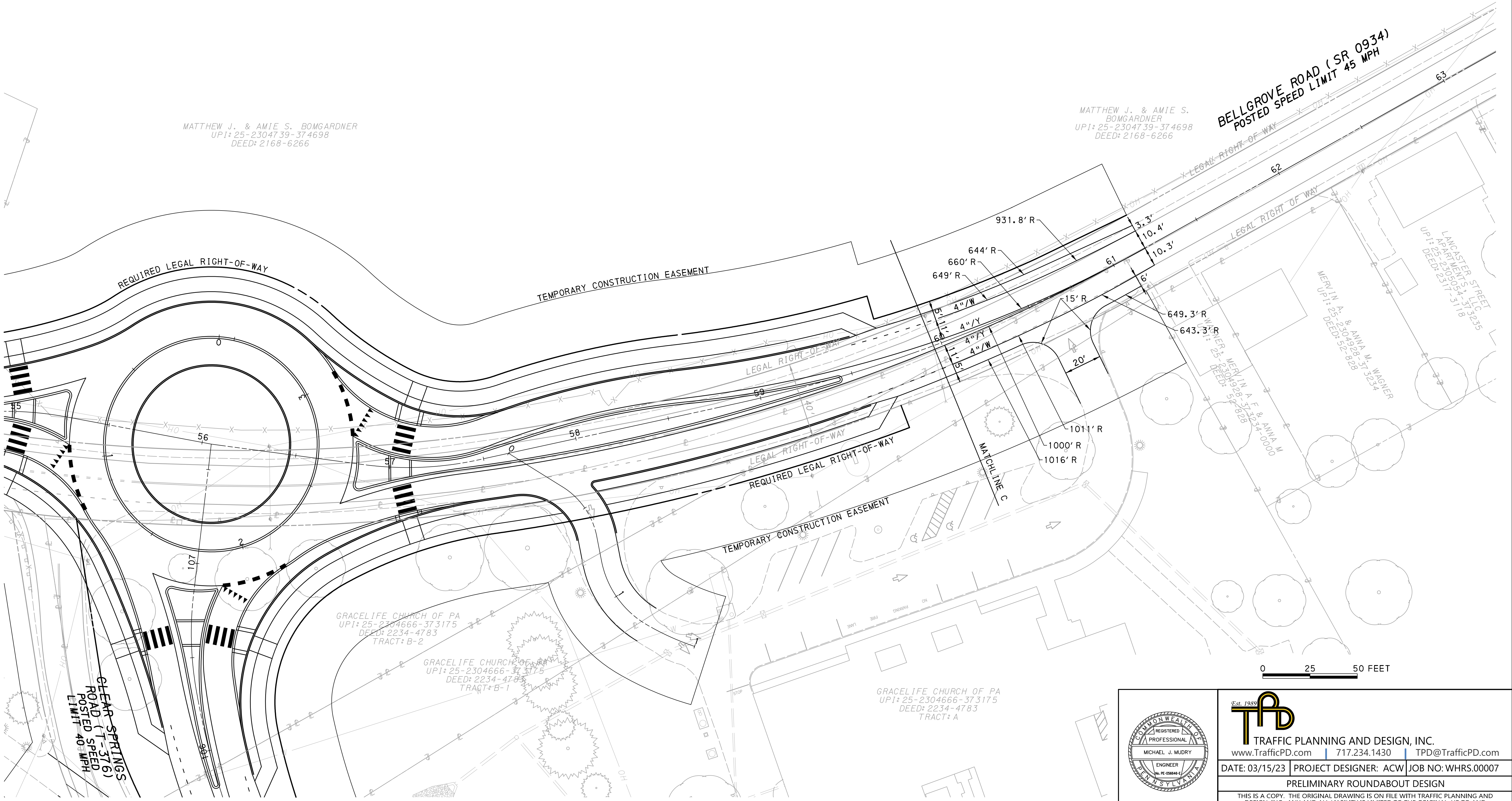
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	5 OF 7
NORTH ANNVILLE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	
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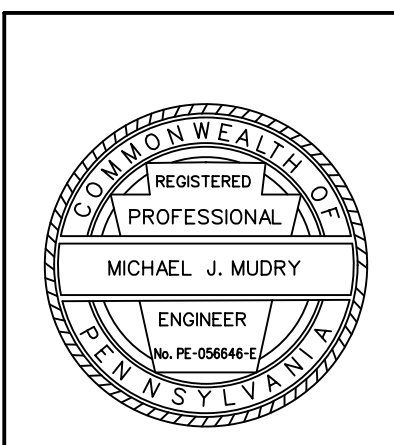
MATTHEW J. & AMIE S. BOMGARDNER
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 DEED: 2168-6266

BELMGROVE ROAD (SR 0934)
 POSTED SPEED LIMIT 45 MPH



0 25 50 FEET

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Est. 1989

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DATE: 03/15/23 | PROJECT DESIGNER: ACW | JOB NO: WHRS.00007

PRELIMINARY ROUNDABOUT DESIGN

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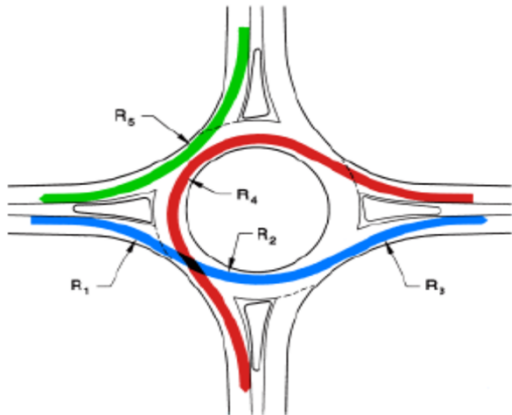
DRN BY: JS

Project:
 Roadway:
 Township:
 County:

WHR.S.00007
Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
North Annville
Lebanon



Vehicle Path Resource Material:



- R₁:** Entry Path Radius
- R₂:** Circulatory Path Radius
- R_{3A}:** Exit Path Radius (Based on Path Radius)
- R_{3B}:** Exit Path Radius (Acceleration Based)
- R₄:** Left Turn Path Radius
- R₅:** Right Turn Path Radius

NCHRP Report 672 - Roundabouts: An Informational Guide (Fastest Path Calculation Resources)

Exhibit 6-47

Site Category	Recommended Maximum Theoretical Entry Design Speed
Mini-Roundabout	20 mph (30 km/h)
Single Lane	25 mph (40 km/h)
Multilane	25 to 30 mph (40 to 50 km/h)

$$V = 3.4415R^{0.3861}, \text{ for } e = +0.02$$

Equation 6-1

$$V = 3.4614R^{0.3673}, \text{ for } e = -0.02$$

Equation 6-2

where

V = predicted speed, mph;
 R = radius of curve, ft; and

Equation 6-4

$$V_3 = \min \left\{ \frac{V_{3\text{phase}}}{1.47 \sqrt{(1.47V_2)^2 + 2a_{23}d_{23}}} \right\}$$

where

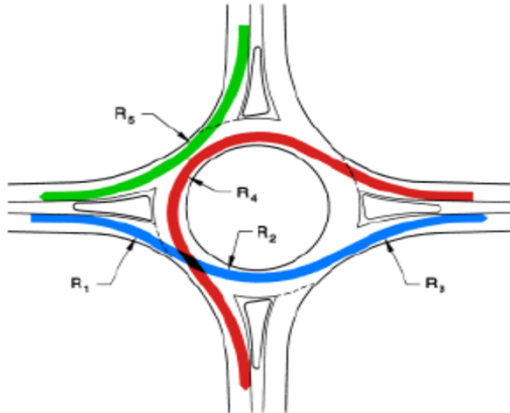
- V₃ = exit speed, mph;
- V_{3phase} = V₃ speed predicted based on path radius, mph;
- V₂ = circulatory speed for through vehicles predicted based on path radius, mph;
- a₂₃ = acceleration between the midpoint of V₂ path and the point of interest along V₃ path = 6.9 ft/s²; and
- d₂₃ = distance along the vehicle path between midpoint of V₂ path and point of interest along V₃ path, ft.

Project:
Roadway:
Township:
County:

WHR.S.00007
Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
North Annville
Lebanon



Vehicle Path Definitions:



- R₁:** Entry Path Radius
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- R_{3B}:** Exit Path Radius (Acceleration Based)
- R₄:** Left Turn Path Radius
- R₅:** Right Turn Path Radius

Approach No. 1: NB Clear Springs Road (T-374)

Equation No. 6-1	R₁ =	100 ft	V_{R1} =	20 mph
Equation No. 6-2	R₂ =	62 ft	V_{R2} =	16 mph
Equation No. 6-1	R_{3A} =	350 ft	V_{R3} =	33 mph
Equation No. 6-4	R_{3B} =	350 ft	V_{R3} =	29 mph
Equation No. 6-2	R₄ =	62 ft	V_{R4} =	16 mph
Equation No. 6-1	R₅ =	108 ft	V_{R5} =	21 mph

Relative Speed Differential

5 mph
0 mph
17 mph
13 mph
0 mph
5 mph

Speed Consistency Checks:

- V₁ = 20-25 mph: OK**
- Max Speed Differential of 15 mph: OK**
- V₂ = 15-25 mph: OK**
- V₄ = 10-20 mph: OK**
- V₅ = 15-25 mph: OK**
- R₁>R₂<R₃: OK**
- R₁>R₄: OK**
- R₃>R₁: OK**

Speed Consistency Notes:

For R_{3B}, Equation 6-4 yields a V_{R3} value of 29 mph, which indicates that the acceleration characteristics of vehicles will determine the actual speeds that can be achieved upon roundabout exit.

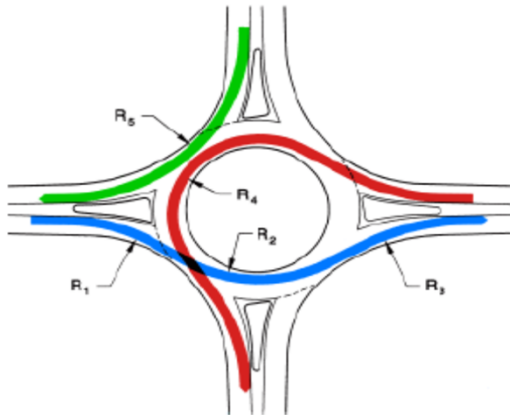
D₂₃ = 95 ft

Project:
Roadway:
Township:
County:

WHR.S.00007
Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
North Annville
Lebanon



Vehicle Path Definitions:



- R₁:** Entry Path Radius
- R₂:** Circulatory Path Radius
- R_{3A}:** Exit Path Radius (Based on Path Radius)
- R_{3B}:** Exit Path Radius (Acceleration Based)
- R₄:** Left Turn Path Radius
- R₅:** Right Turn Path Radius

Approach No. 3: SB Bellegrove Road (SR .934)

Equation No. 6-1	R₁ =	100 ft	V_{R1} =	20 mph
Equation No. 6-2	R₂ =	62 ft	V_{R2} =	16 mph
Equation No. 6-1	R_{3A} =	504 ft	V_{R3} =	38 mph
Equation No. 6-4	R_{3B} =	504 ft	V_{R3} =	30 mph
Equation No. 6-2	R₄ =	62 ft	V_{R4} =	16 mph
Equation No. 6-1	R₅ =	119 ft	V_{R5} =	22 mph

Relative Speed Differential	
	5 mph
	0 mph
	22 mph
	15 mph
	0 mph
	6 mph

Speed Consistency Checks:

- V₁ = 20-25 mph: OK**
- Max Speed Differential of 15 mph: OK**
- V₂ = 15-25 mph: OK**
- V₄ = 10-20 mph: OK**
- V₅ = 15-25 mph: OK**
- R₁>R₂<R₃: OK**
- R₁>R₄: OK**
- R₃>R₁: OK**

Speed Consistency Notes:

For R_{3B}, Equation 6-4 yields a V_{R3} value of 30 mph, which indicates that the acceleration characteristics of vehicles will determine the actual speeds that can be achieved upon roundabout exit.

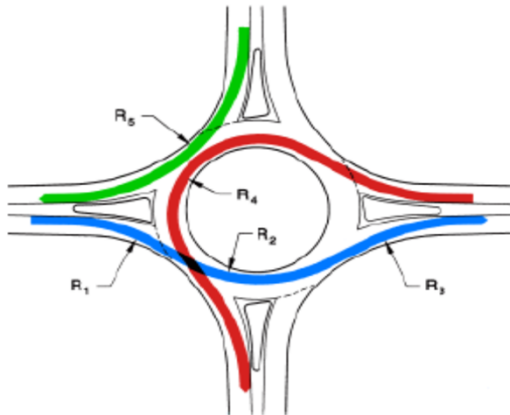
D₂₃ = 105.0 ft

Project:
Roadway:
Township:
County:

WHR.S.00007
Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
North Anville
Lebanon



Vehicle Path Definitions:



- R₁:** Entry Path Radius
- R₂:** Circulatory Path Radius
- R_{3A}:** Exit Path Radius (Based on Path Radius)
- R_{3B}:** Exit Path Radius (Acceleration Based)
- R₄:** Left Turn Path Radius
- R₅:** Right Turn Path Radius

Approach No. 4: WB Bellegrove Road (SR .934)

Equation No. 6-1	R₁ = 90 ft	V_{R1} = 20 mph	Relative Speed Differential
Equation No. 6-2	R₂ = 62 ft	V_{R2} = 16 mph	
Equation No. 6-1	R_{3A} = 397 ft	V_{R3} = 35 mph	
Equation No. 6-4	R_{3B} = 397 ft	V_{R3} = 30 mph	
Equation No. 6-2	R₄ = 62 ft	V_{R4} = 16 mph	
Equation No. 6-1	R₅ =	V_{R5} = -	
			4 mph
			0 mph
			19 mph
			15 mph
			0 mph
			-

Speed Consistency Checks:

- V₁ = 20-25 mph: OK**
- Max Speed Differential of 15 mph: OK**
- V₂ = 15-25 mph: OK**
- V₄ = 10-20 mph: OK**
- V₅ = <30 mph: N/A** (No right turn from this approach)
- R₁ > R₂ < R₃: OK**
- R₁ > R₄: OK**
- R₃ > R₁: OK**

Speed Consistency Notes:

For R_{3B}, Equation 6-4 yields a V_{R3} value of 30 mph, which indicates that the acceleration characteristics of vehicles will determine the actual speeds that can be achieved upon roundabout exit.

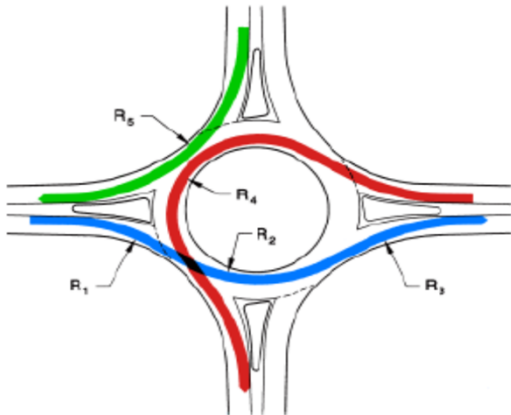
D₂₃ = 105.0 ft

Project:
 Roadway:
 Township:
 County:

WHR.S.00007
Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
North Annville
Lebanon



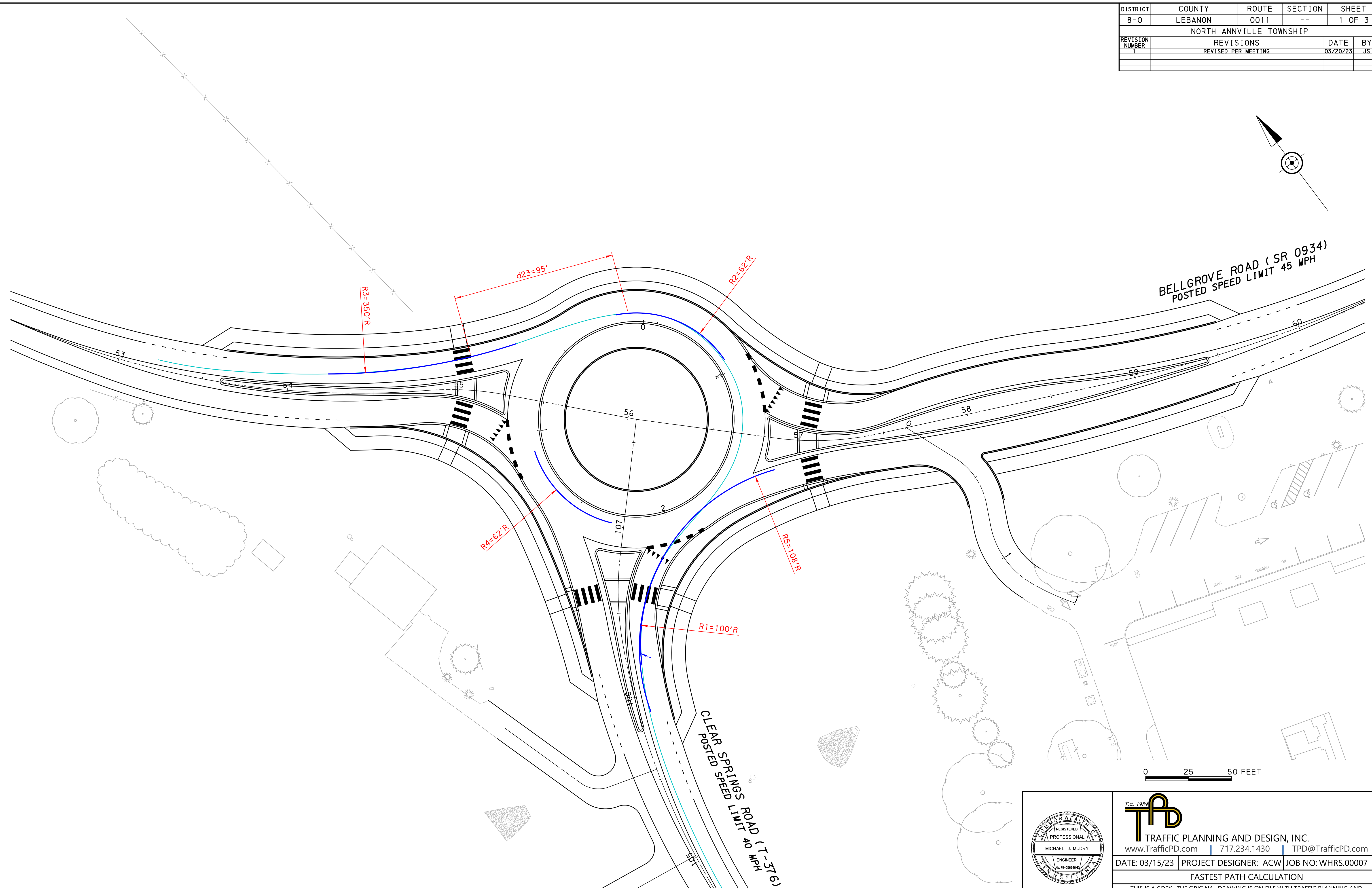
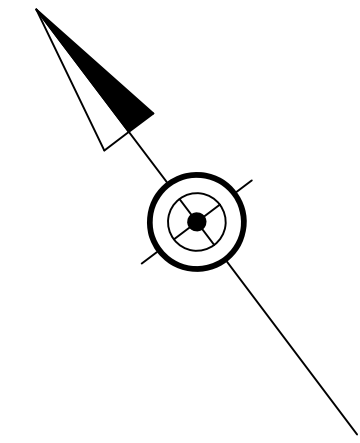
Vehicle Path Definitions:



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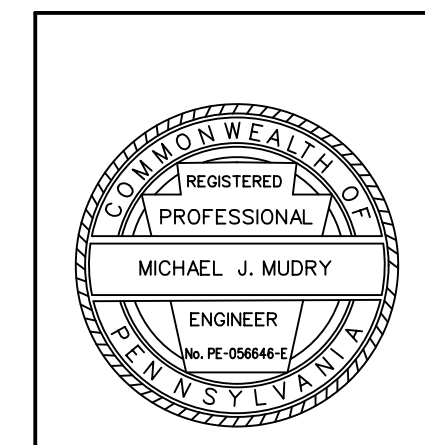
Speed Summary Table				
Approach	Path Radius, ft		Speed, mph	Relative Speed Differential, mph
NB	R₁ =	100 ft	20 mph	5 mph
	R₂ =	62 ft	16 mph	0 mph
	R_{3A} =	350 ft	33 mph	17 mph
	R_{3B} =	350 ft	29 mph	13 mph
	R₄ =	62 ft	16 mph	0 mph
	R₅ =	108 ft	21 mph	5 mph
SB	R₁ =	100 ft	20 mph	5 mph
	R₂ =	62 ft	16 mph	0 mph
	R_{3A} =	504 ft	38 mph	22 mph
	R_{3B} =	504 ft	30 mph	15 mph
	R₄ =	62 ft	16 mph	0 mph
	R₅ =	119 ft	22 mph	6 mph
WB	R₁ =	90 ft	20 mph	4 mph
	R₂ =	62 ft	16 mph	0 mph
	R_{3A} =	397 ft	35 mph	19 mph
	R_{3B} =	397 ft	30 mph	15 mph
	R₄ =	62 ft	16 mph	0 mph
	R₅ =	N/A	-	-

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	1 OF 3
NORTH ANNVILLE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	
1	REVISED PER MEETING	03/20/23	JS	



0 25 50 FEET

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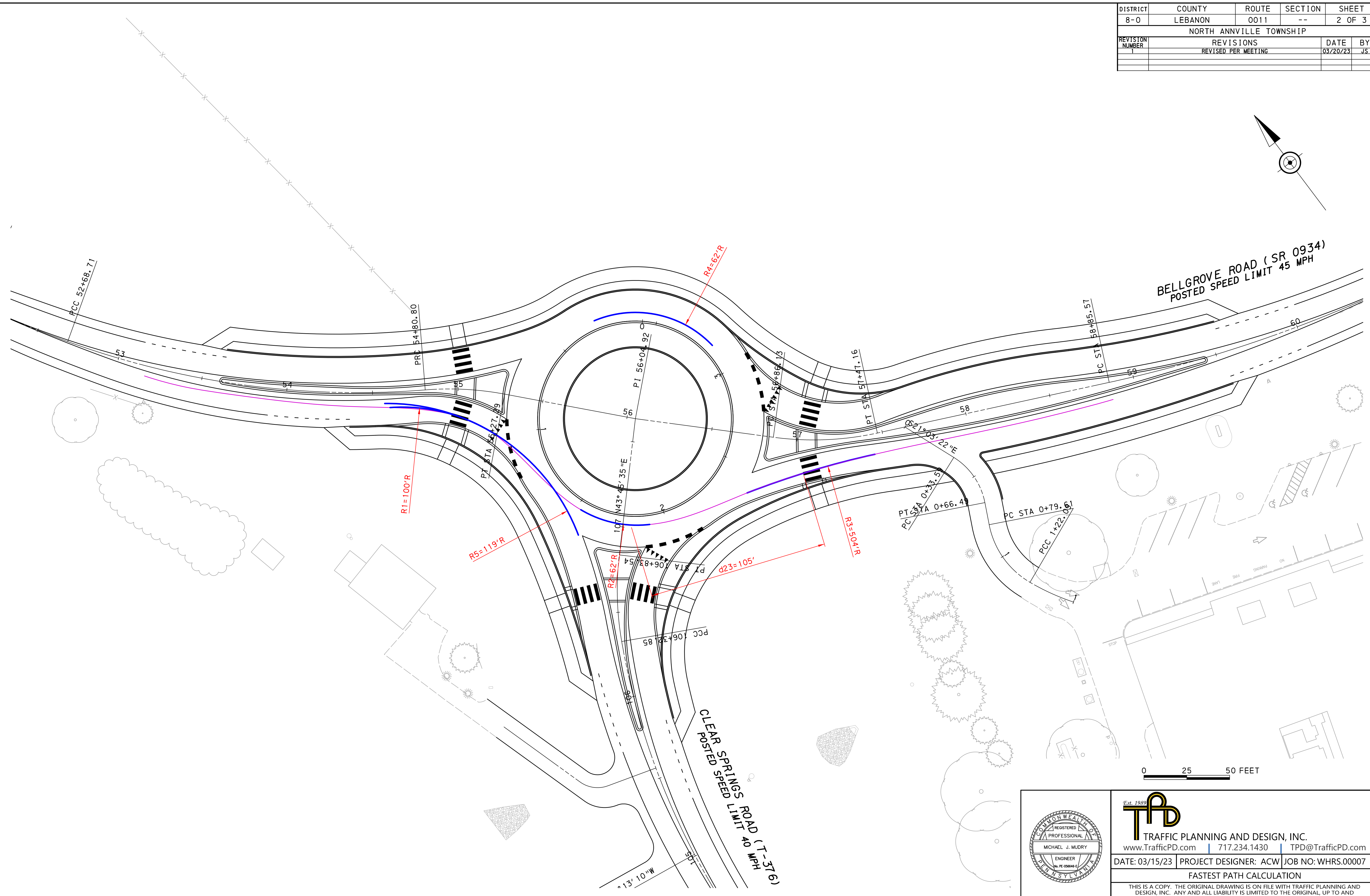
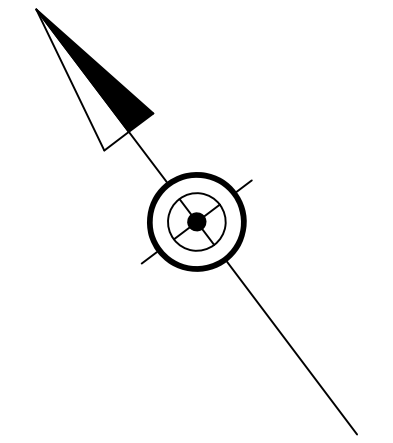


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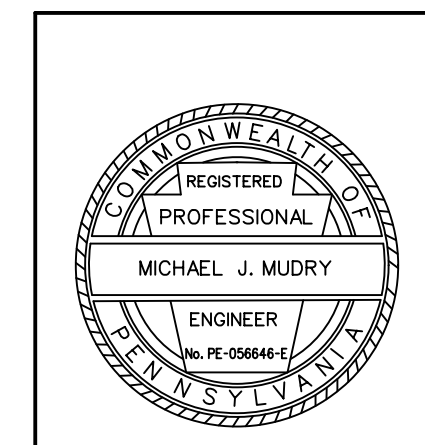
FASTEST PATH CALCULATION
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	2 OF 3
NORTH ANNVILLE TOWNSHIP				
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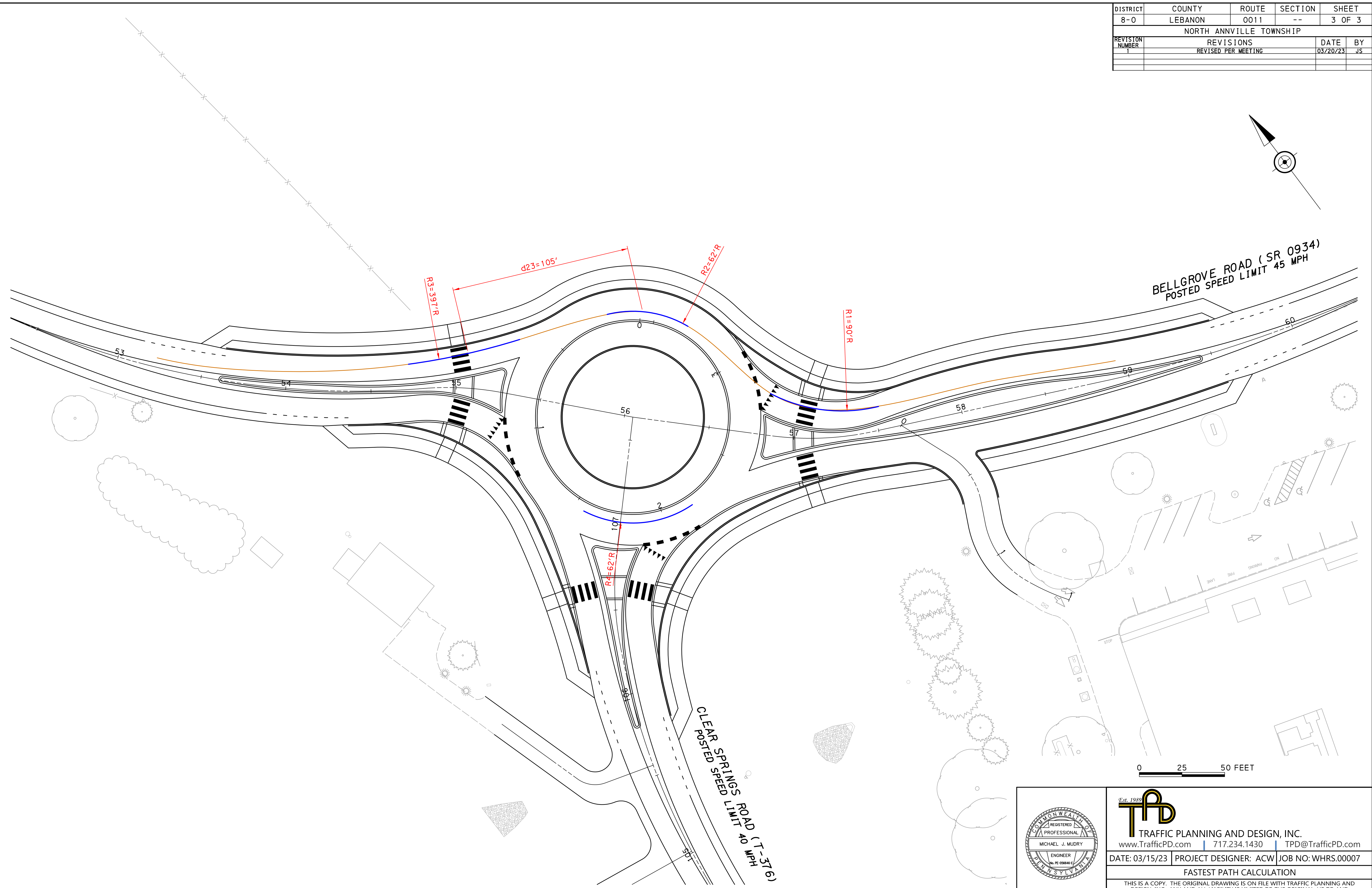
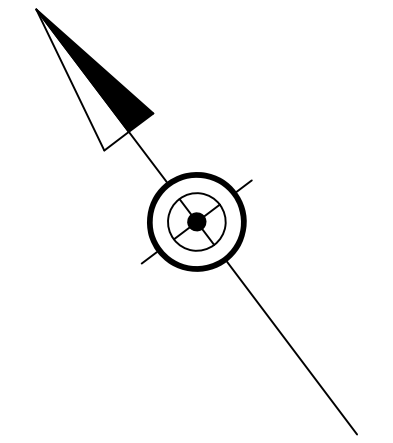
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
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 4/6/2023 3:44:19 PM 1:25

REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. MUDRY
No. PE-006646
PENNSYLVANIA

Est. 1989

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www.TrafficPD.com | 717.234.1430 | TPD@TrafficPD.com

DATE: 03/15/23	PROJECT DESIGNER: ACW	JOB NO: WHRS.00007
FASTEST PATH CALCULATION		
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BRN BY: JS

Project:
 Roadway:
 Township:
 County:

WHR.S.00007
Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
North Anville
Lebanon



Roundabout Sight Distance Resource Material:

NCHRP Report 672 - Roundabouts: An Informational Guide (Sight Distance Calculation Resources)

$$d = (1.468)(t)(V) + 1.087 \frac{V^2}{a}$$

Equation 6-5

where

- d = stopping sight distance, ft;
- t = perception-brake reaction time, assumed to be 2.5 s;
- V = initial speed, mph; and
- a = driver deceleration, assumed to be 11.2 ft/s².

Exhibit 6-55
 Stopping Sight Distance
 on the Approach

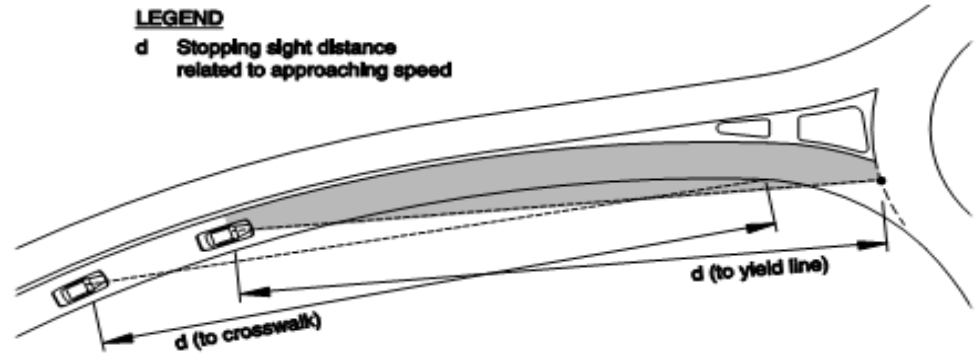
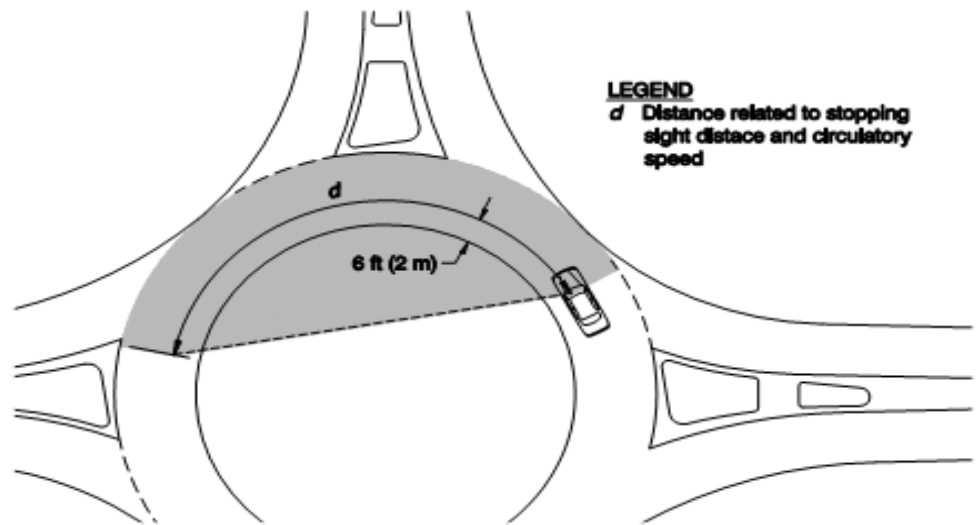


Exhibit 6-56
 Stopping Sight Distance
 on Circulatory Roadway



Project:

WHRS.00007

Roadway:

Bellegrove Road (SR 0934) and Clear Springs Road (T-376)

Township:

North Anville

County:

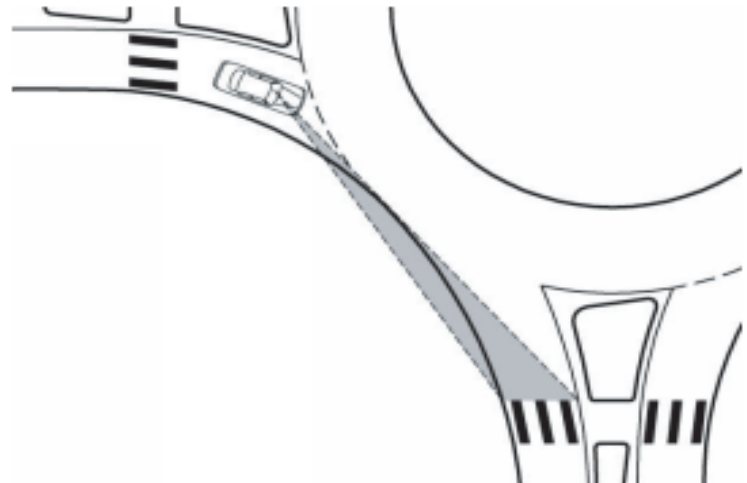
Lebanon



Roundabout Sight Distance Resource Material:

NCHRP Report 672 - Roundabouts: An Informational Guide (Sight Distance Calculation Resources)

Exhibit 6-57
Sight Distance to
Crosswalk on Exit



Equation 6-6

$$d_1 = (1.468)(V_{major, entering})(t_c)$$

Equation 6-7

$$d_2 = (1.468)(V_{major, circulating})(t_c)$$

where

d_1 = length of entering leg of sight triangle, ft;

d_2 = length of circulating leg of sight triangle, ft;

V_{major} = design speed of conflicting movement, mph, discussed below; and

t_c = critical headway for entering the major road, s, equal to 5.0 s.

LEGEND

d_1 Entering stream distance

d_2 Circulating stream distance

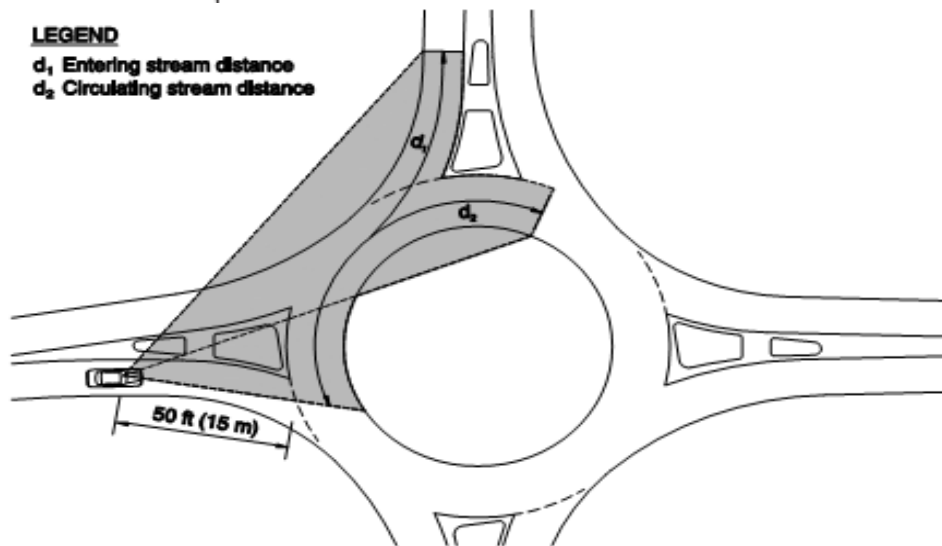


Exhibit 6-58

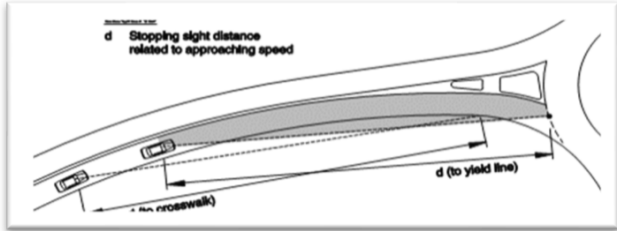
Intersection Sight Distance

Project:	WHRS.00007
Roadway:	Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
Township:	North Annville
County:	Lebanon



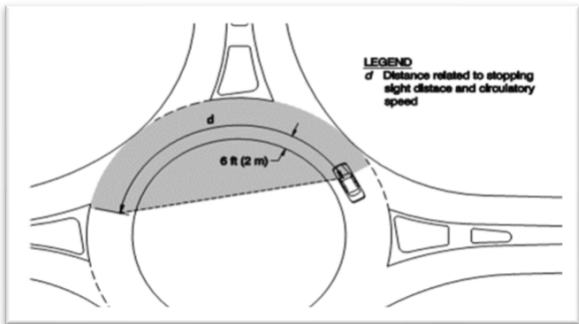
Sight Distance Calculations, Worksheet A:

Approach Sight Distance (d, based on posted speed)



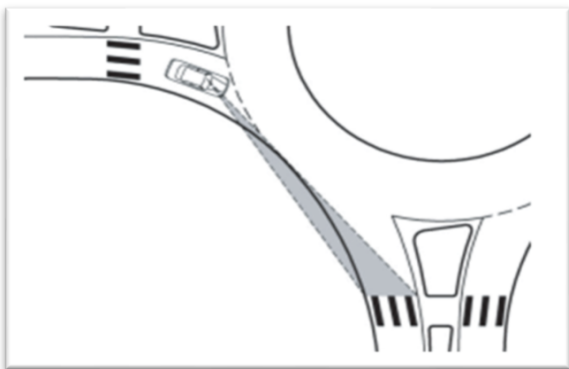
	V, Entry Posted Speed	Computed Distance, d	Actual Sight Distances: Verified
E1	40 mph	302.1 ft	<input checked="" type="checkbox"/>
E2	0 mph	0.0 ft	<input checked="" type="checkbox"/>
E3	45 mph	361.7 ft	<input checked="" type="checkbox"/>
E4	45 mph	361.7 ft	<input checked="" type="checkbox"/>

Sight Distance on Circulatory Roadway (d, based on R₄ Design Speed)



	V, R ₄ Design Speed	Computed Distance, d	Actual Sight Distance: Verified
	16 mph	82.0 ft	<input checked="" type="checkbox"/>

Sight Distance to Crosswalk on Exit (no distance, sight line only)



	Clear Line of Sight: Verified
E1	<input checked="" type="checkbox"/>
E2	<input type="checkbox"/>
E3	<input type="checkbox"/>
E4	<input checked="" type="checkbox"/>

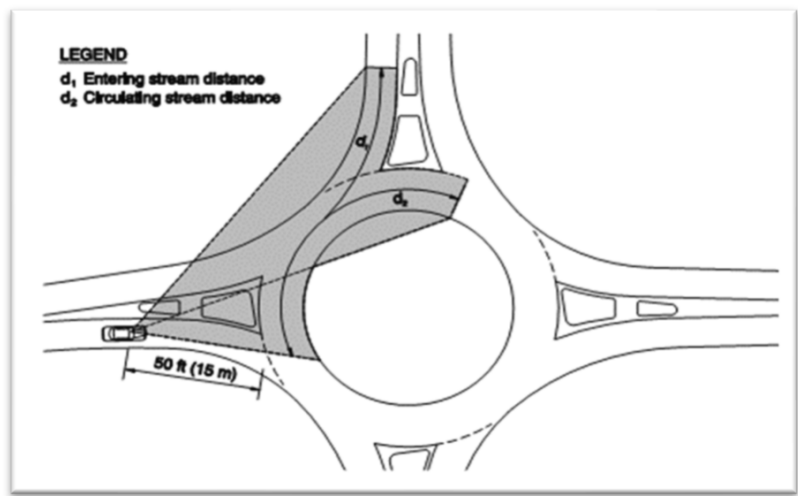
Project:	WHR.S.00007
Roadway:	Bellegrove Road (SR 0934) and Clear Springs Road (T-376)
Township:	North Annville
County:	Lebanon



Sight Distance Calculations, Worksheet B:

Intersection Sight Distance

- d₁, Sight Distance for Entering Stream, (ft) - Based on an average of R₁ and R₂ speeds
- d₂, Sight Distance for Circulating Stream, (ft) - Based on speed of R₄

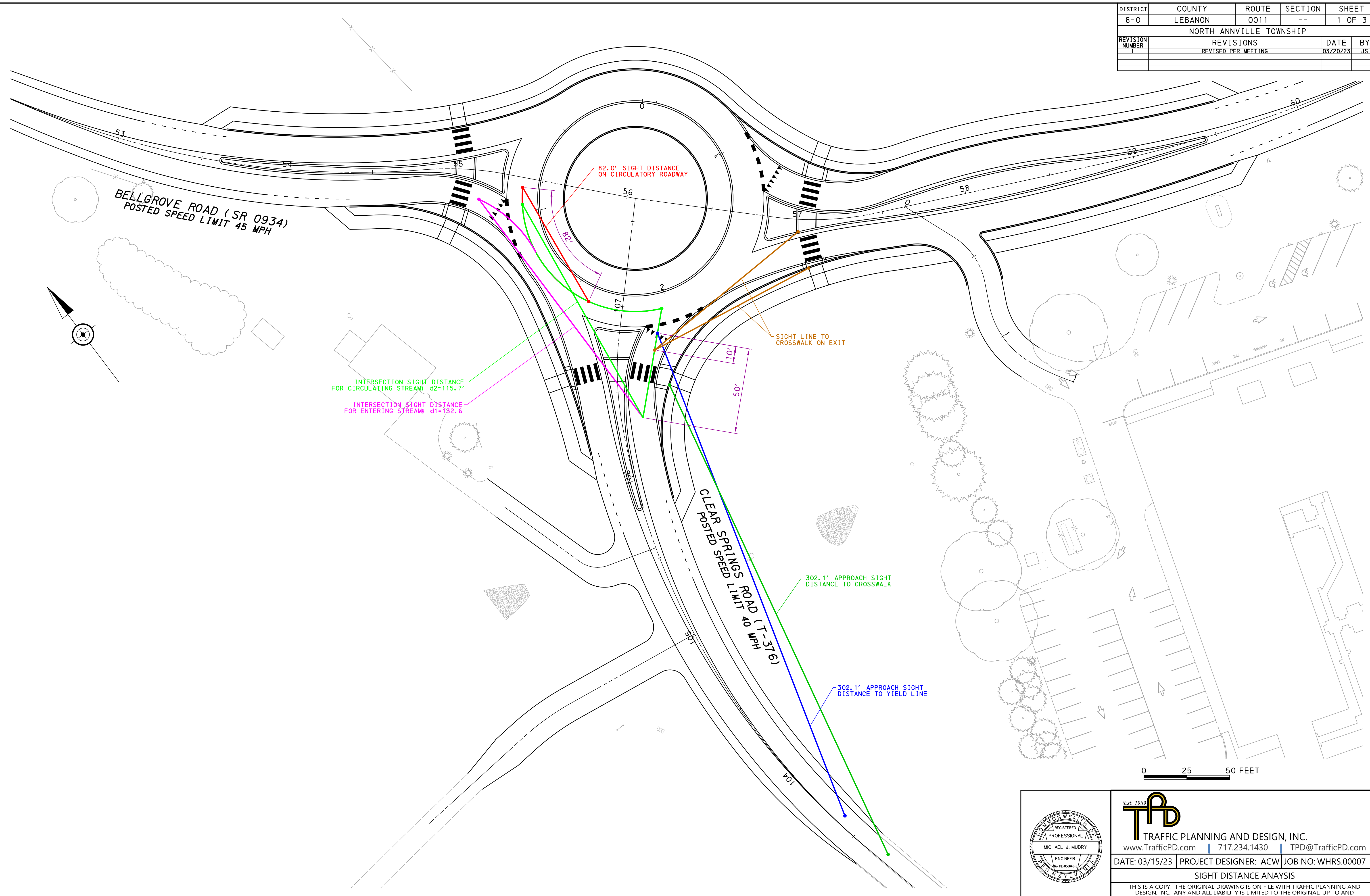


Enter t_c value to be used (6.5 or 4.6 secs) = **5.0 sec**

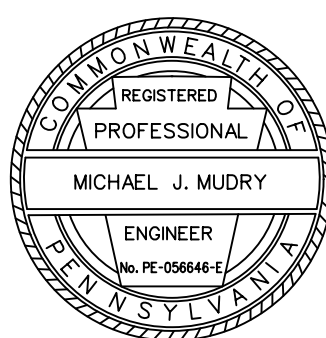
	V _{R1}	V _{R2}	Average V _{R1} & V _{R2}	d ₁ ¹	V _{R4}	d ₂ ¹	Actual Sight Distances: Verified
E1	20.4 mph	15.8 mph	18.1 mph	132.6 ft	15.8 mph	115.7 ft	✓
E2	-	-	-	-	-	-	✓
E3	20.4 mph	15.8 mph	18.1 mph	132.6 ft	15.8 mph	115.7 ft	✓
E4	19.6 mph	15.8 mph	17.7 mph	129.6 ft	15.8 mph	115.7 ft	✓

¹ The sight distance required is measured along the curved vehicle path, *not* as a straight line


DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	1 OF 3
NORTH ANNVILLE TOWNSHIP				
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REGISTERED PROFESSIONAL ENGINEER
MICHAEL J. MUDRY
No. PE-008644

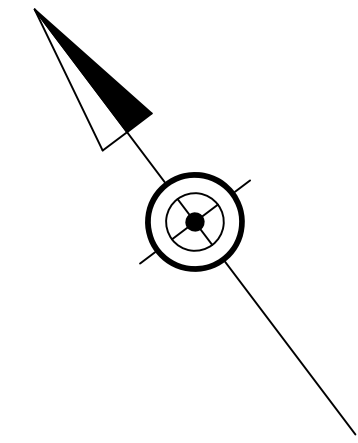


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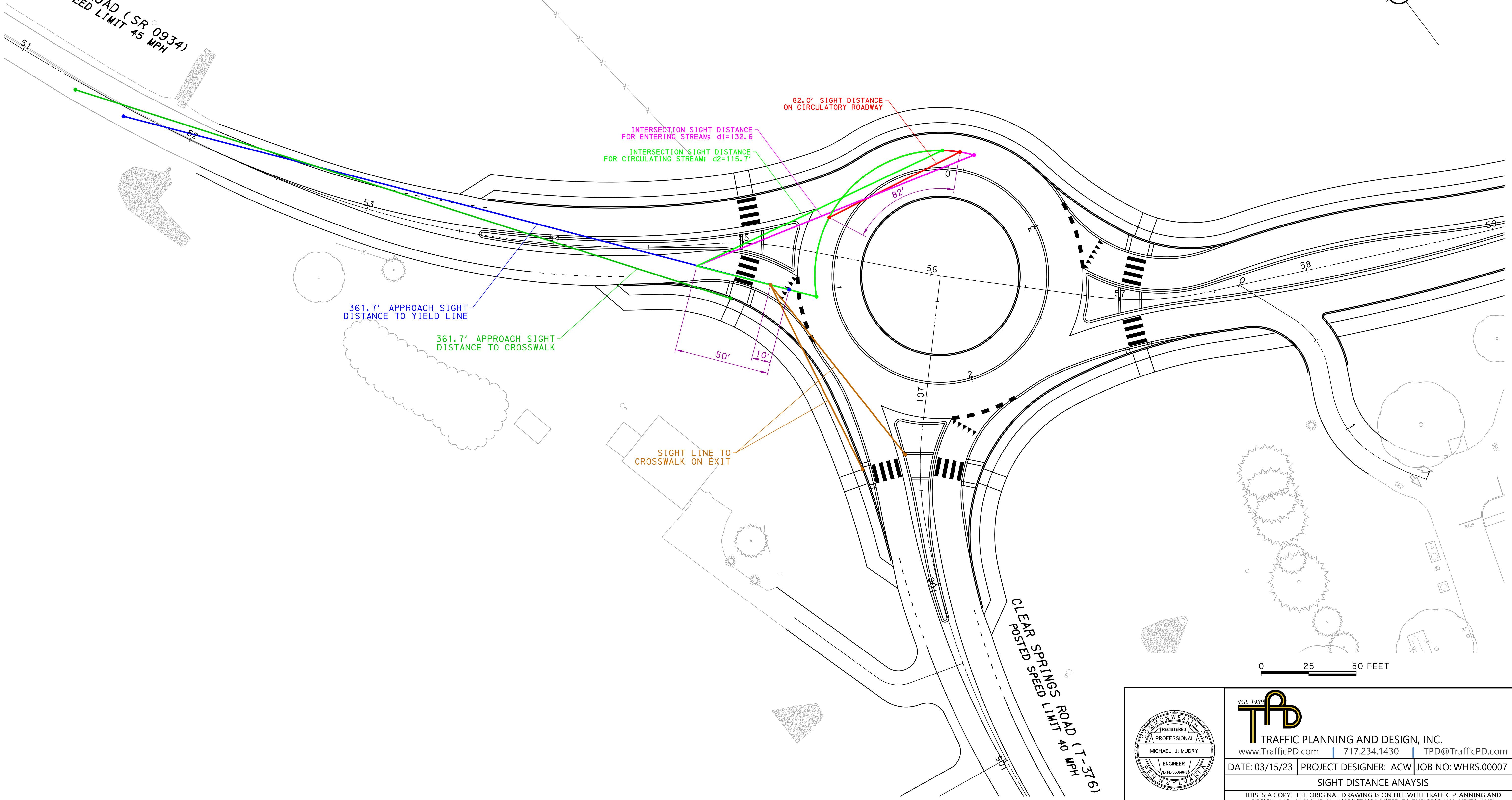
DATE: 03/15/23	PROJECT DESIGNER: ACW	JOB NO: WHRS.00007
SIGHT DISTANCE ANALYSIS		
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8-0	LEBANON	0011	--	2 OF 3
NORTH ANNVILLE TOWNSHIP				
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BELLS GROVE ROAD (SR 0934)
POSTED SPEED LIMIT 45 MPH



82.0' SIGHT DISTANCE ON CIRCULATORY ROADWAY

INTERSECTION SIGHT DISTANCE FOR ENTERING STREAM; d1=132.6'

INTERSECTION SIGHT DISTANCE FOR CIRCULATING STREAM; d2=115.7'

361.7' APPROACH SIGHT DISTANCE TO YIELD LINE

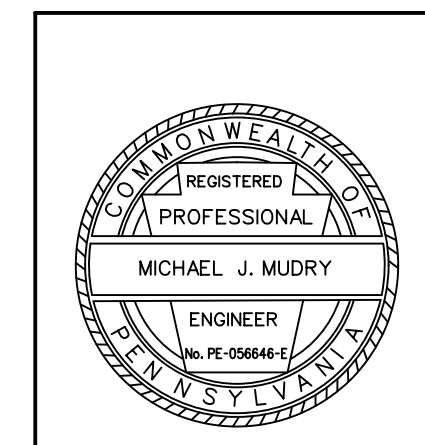
361.7' APPROACH SIGHT DISTANCE TO CROSSWALK

SIGHT LINE TO CROSSWALK ON EXIT

CLEAR SPRINGS ROAD (T-376)
CLEAR POSTED SPEED LIMIT 40 MPH

0 25 50 FEET

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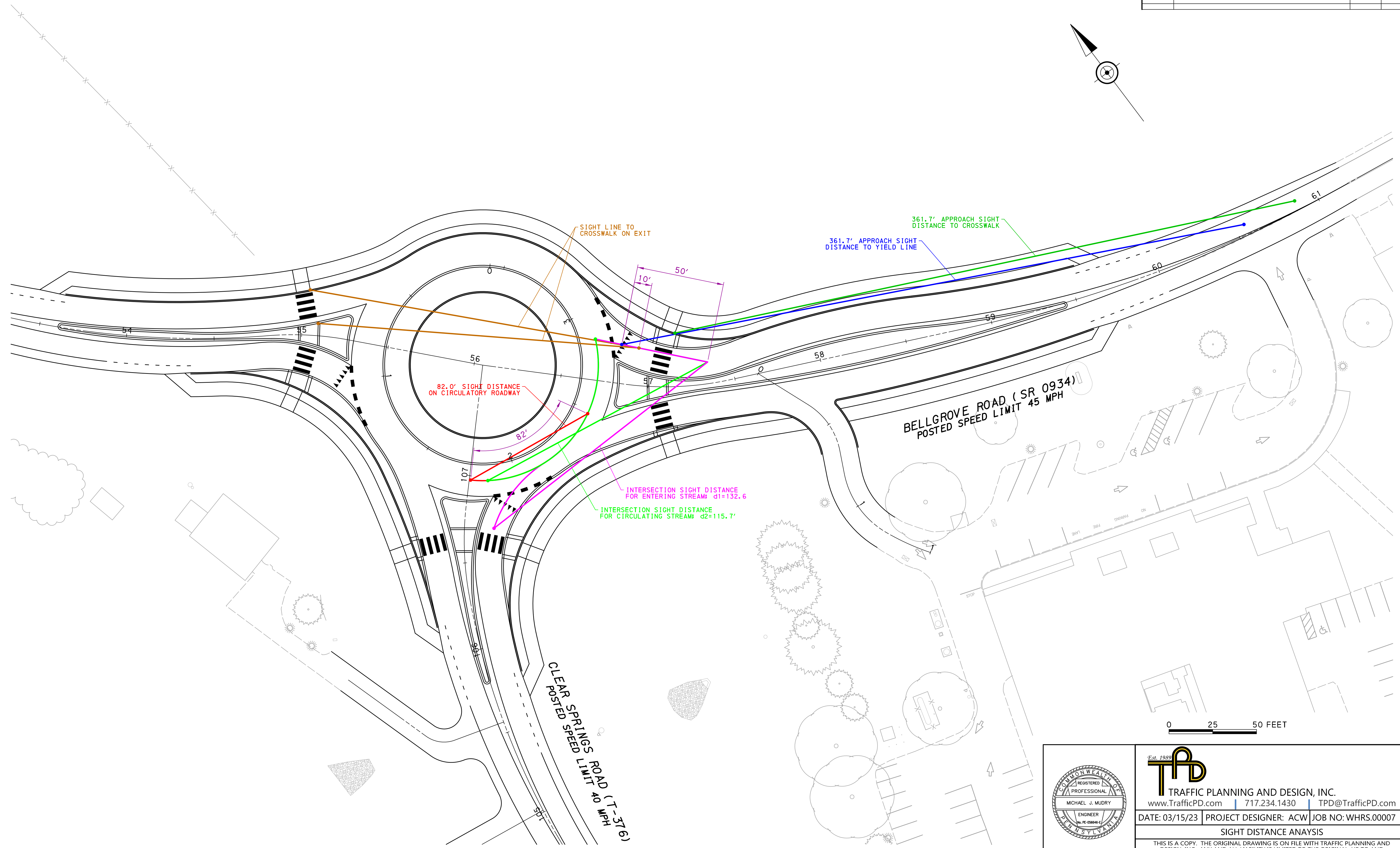
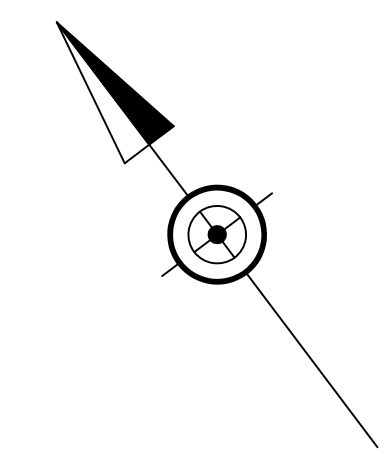
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SIGHT DISTANCE ANALYSIS

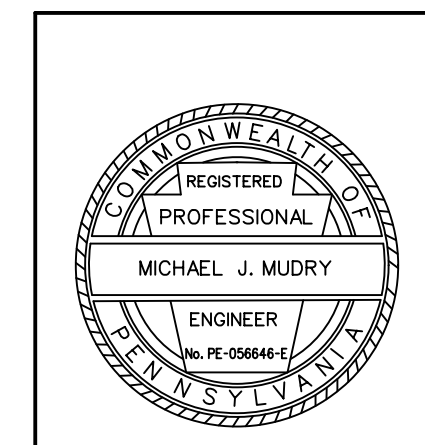
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NORTH ANNVILLE TOWNSHIP				
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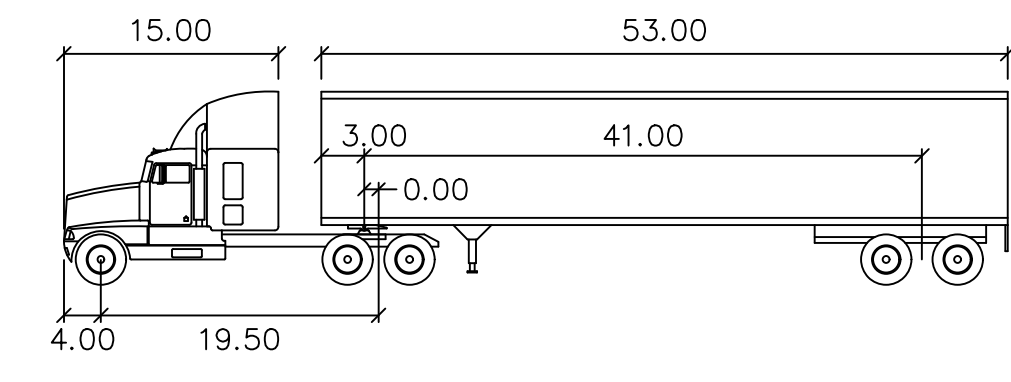
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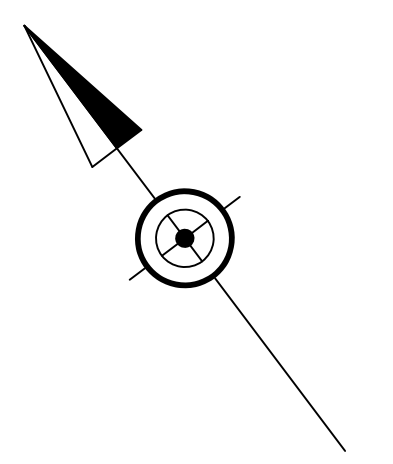
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NORTH ANNVILLE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	
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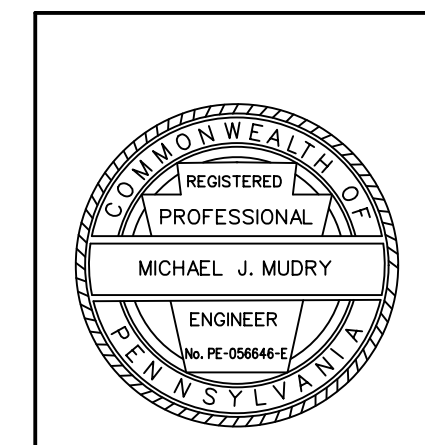
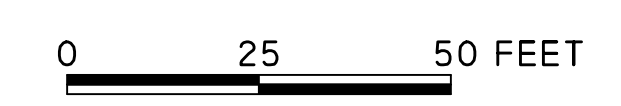
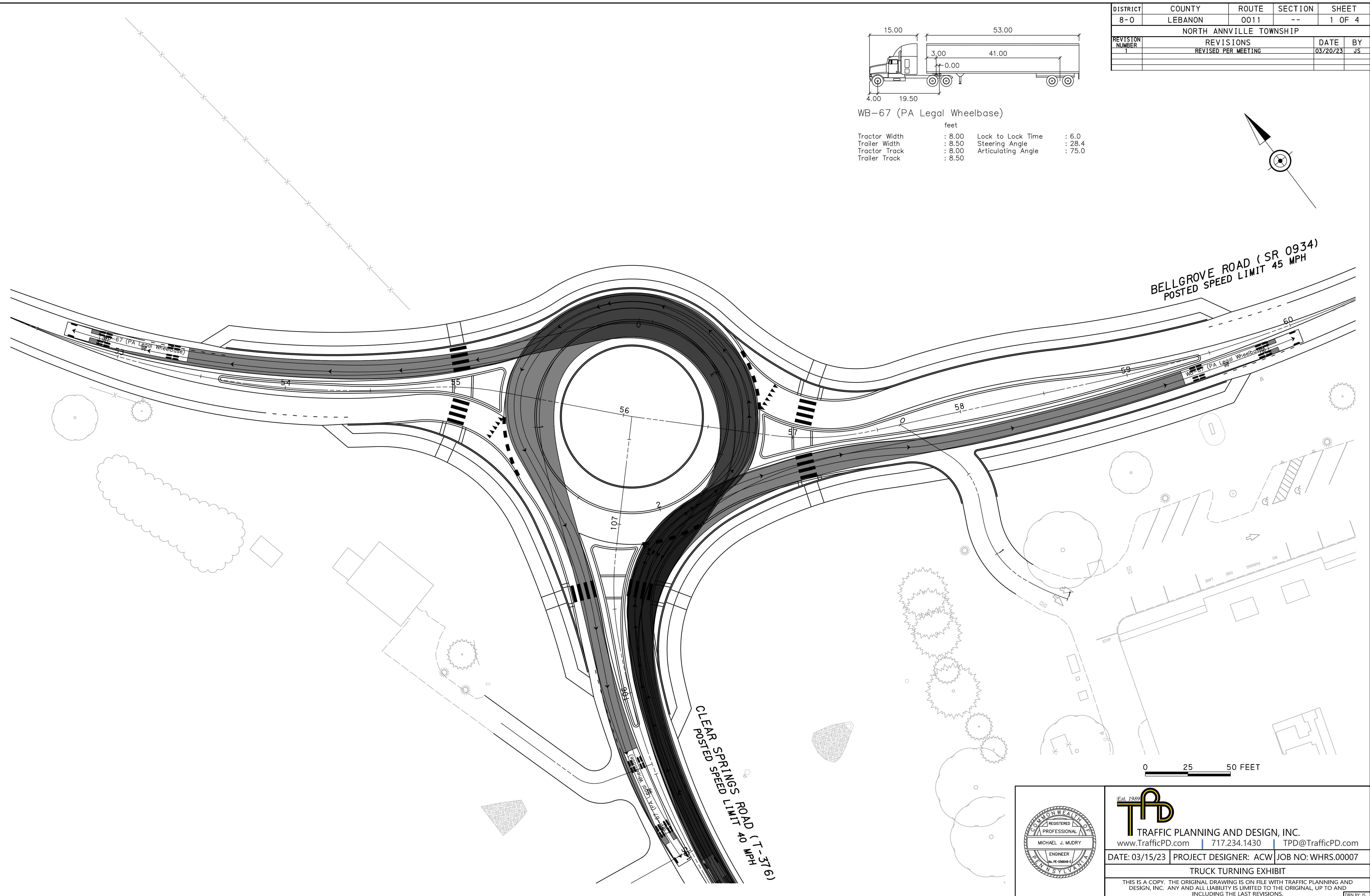


WB-67 (PA Legal Wheelbase)

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		



BELMGROVE ROAD (SR 0934)
POSTED SPEED LIMIT 45 MPH



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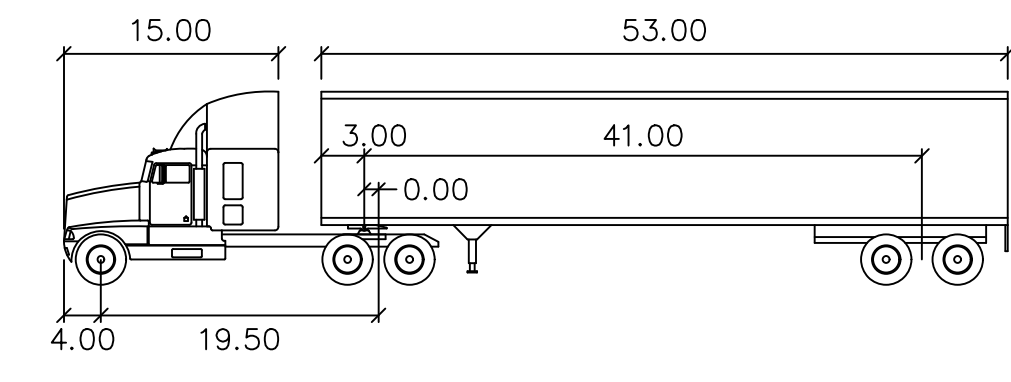
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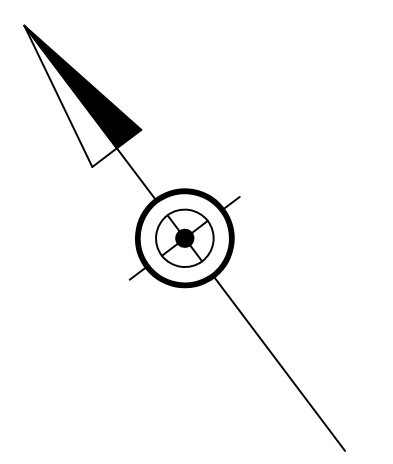
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
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NORTH ANNVILLE TOWNSHIP				
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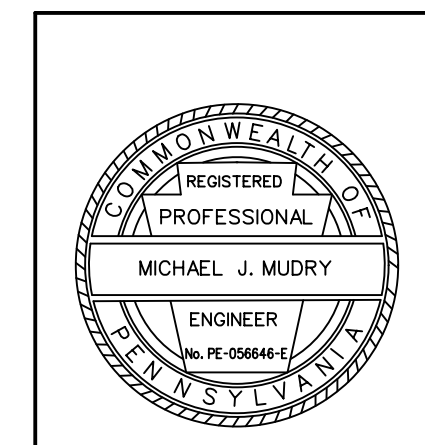
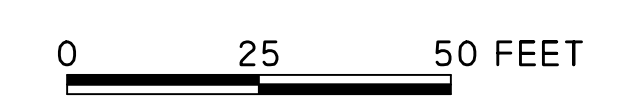
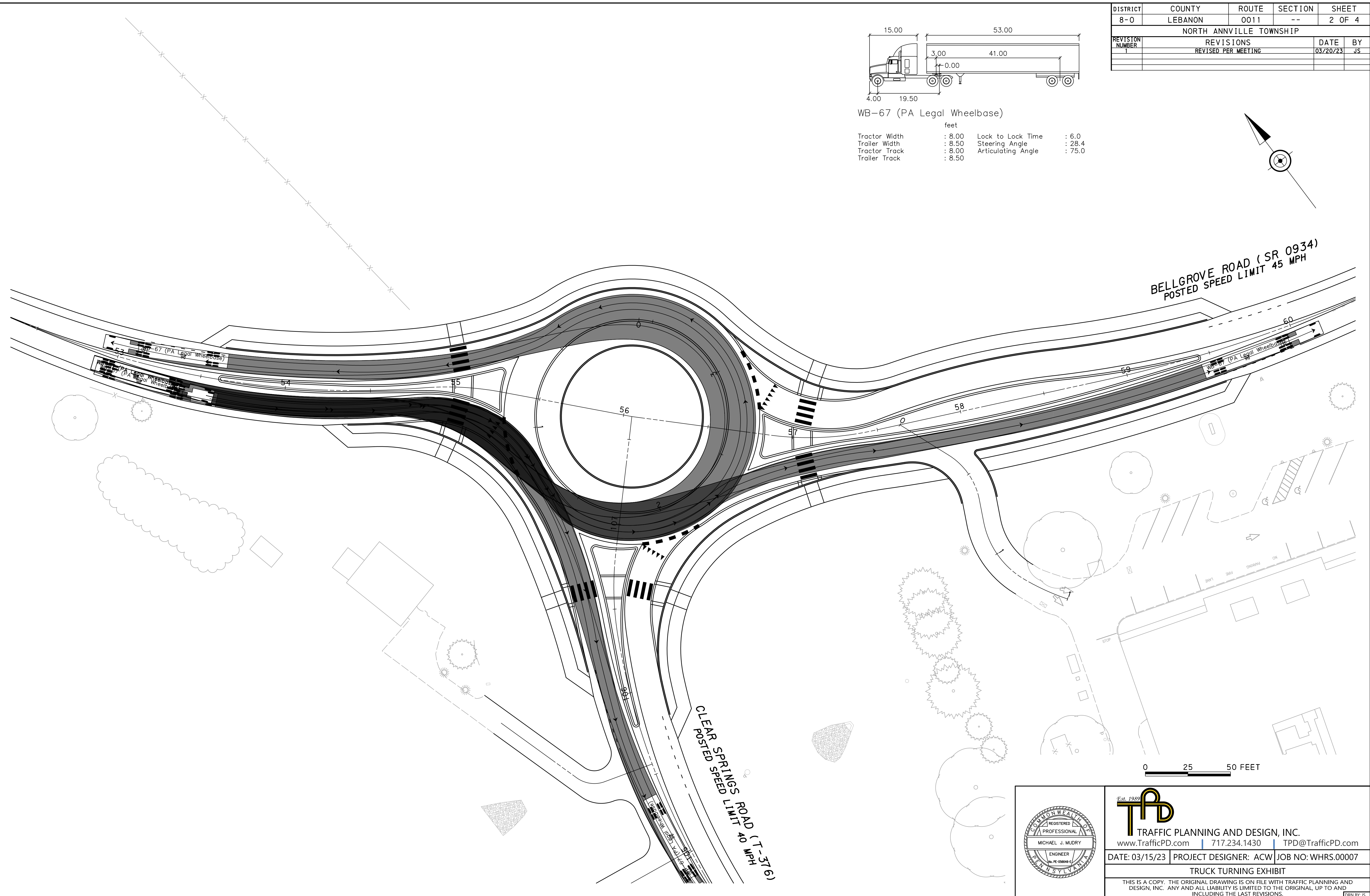


WB-67 (PA Legal Wheelbase)

feet			
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Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		



BELMGROVE ROAD (SR 0934)
POSTED SPEED LIMIT 45 MPH



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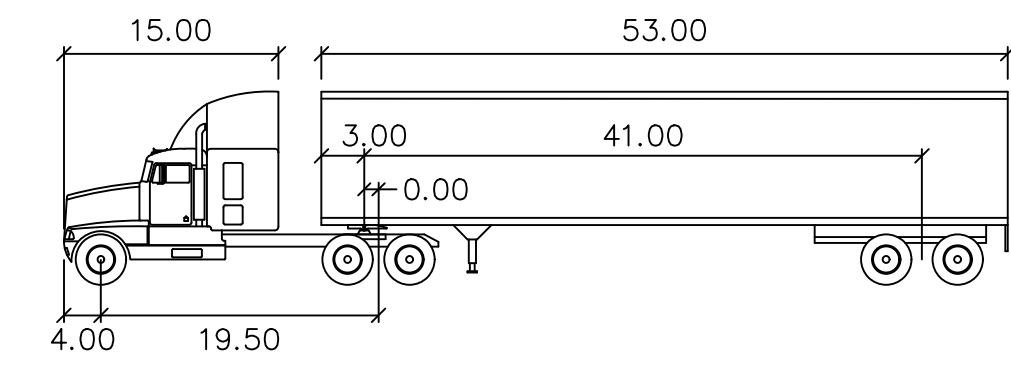
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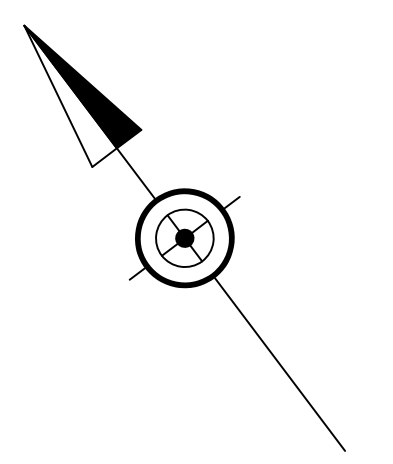
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NORTH ANNVILLE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	
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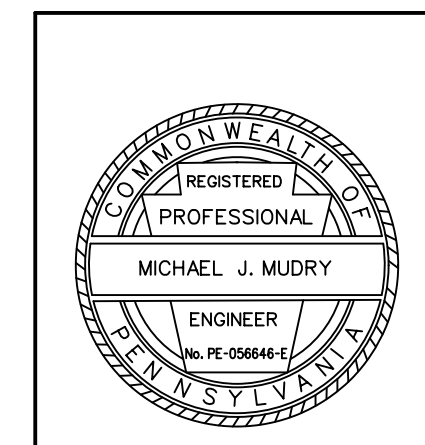
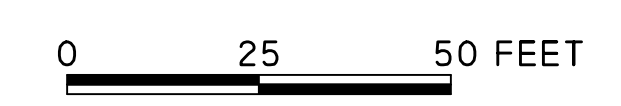
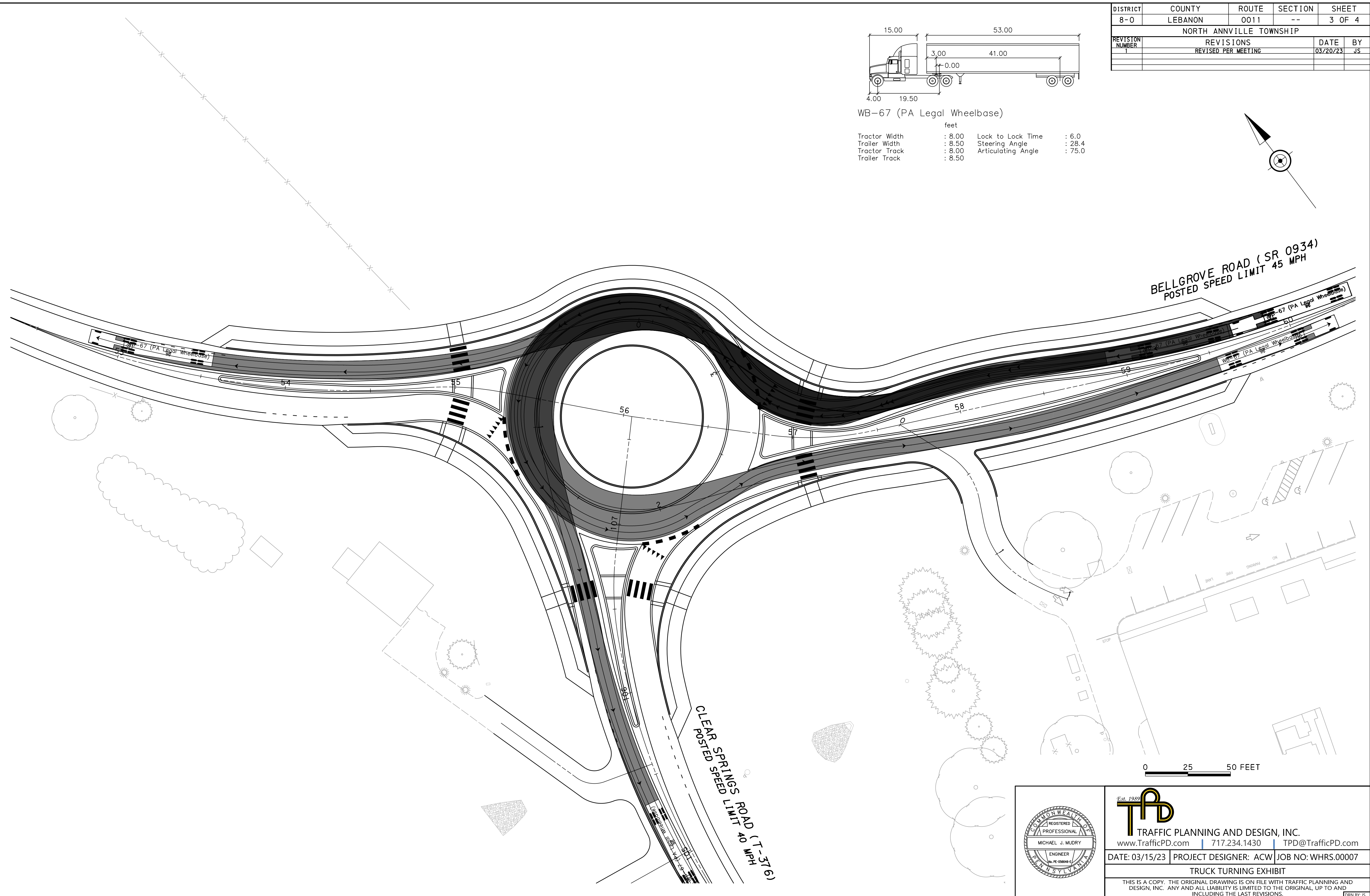


WB-67 (PA Legal Wheelbase)

feet			
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		



BELMGROVE ROAD (SR 0934)
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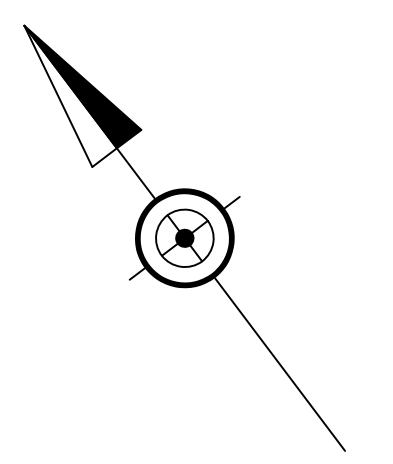
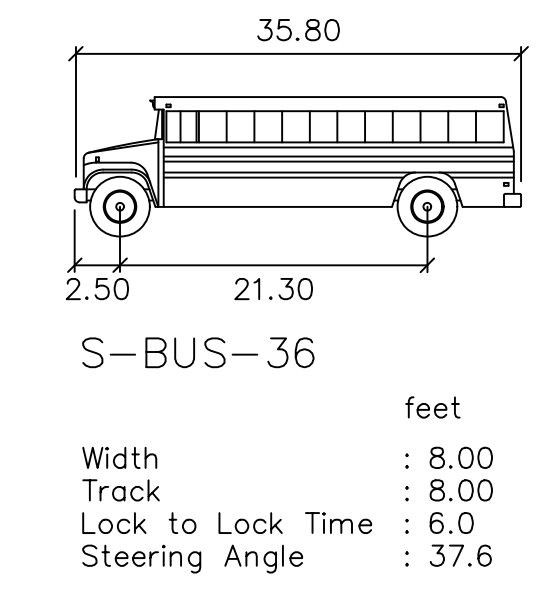
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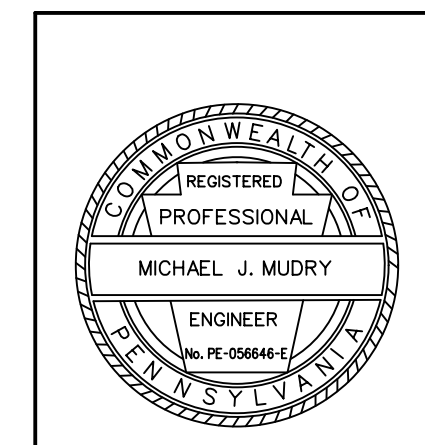
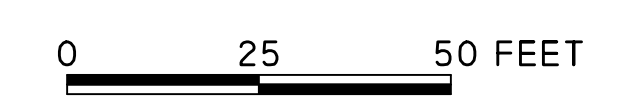
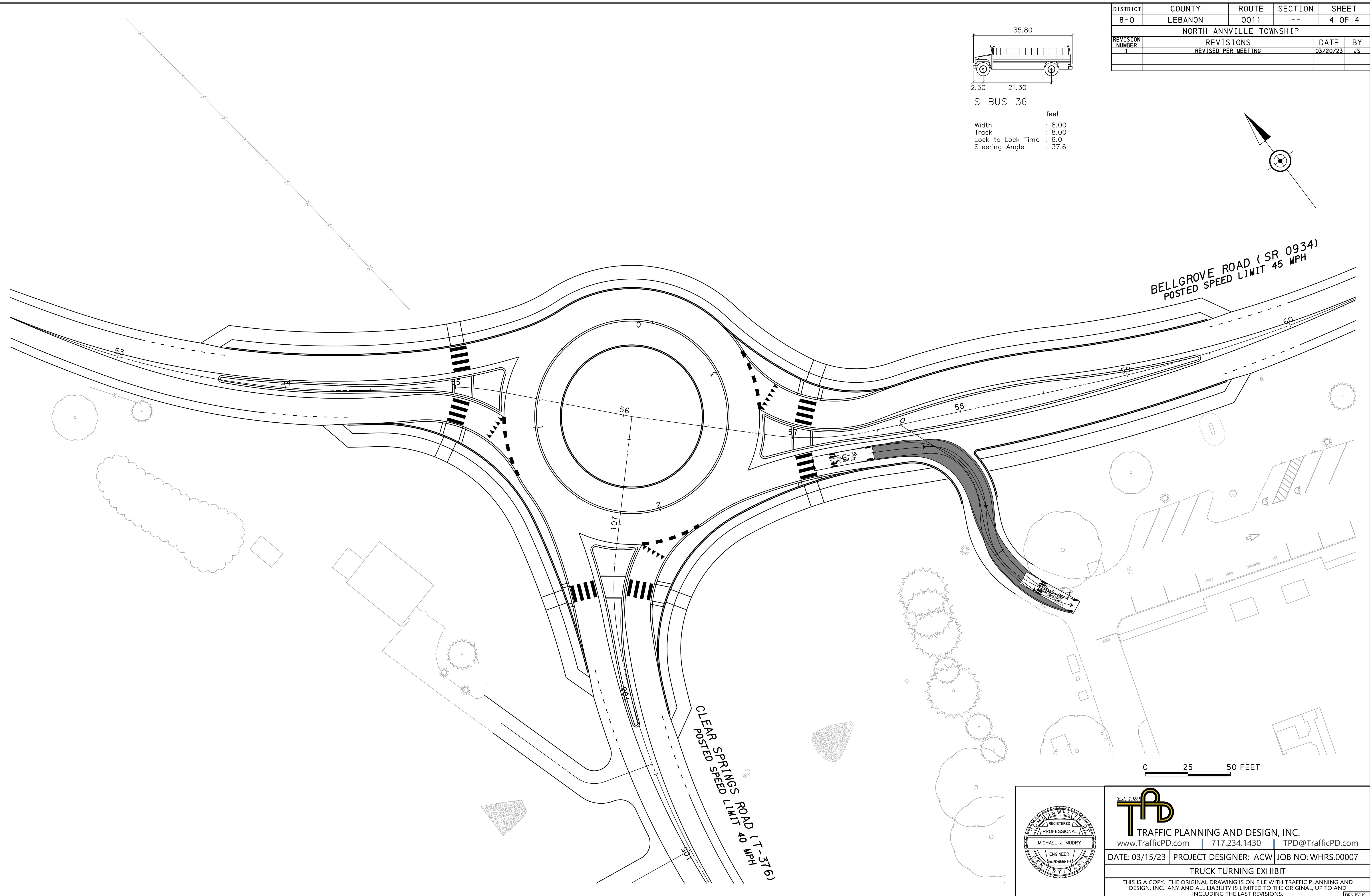
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	4 OF 4
NORTH ANNVILLE TOWNSHIP				
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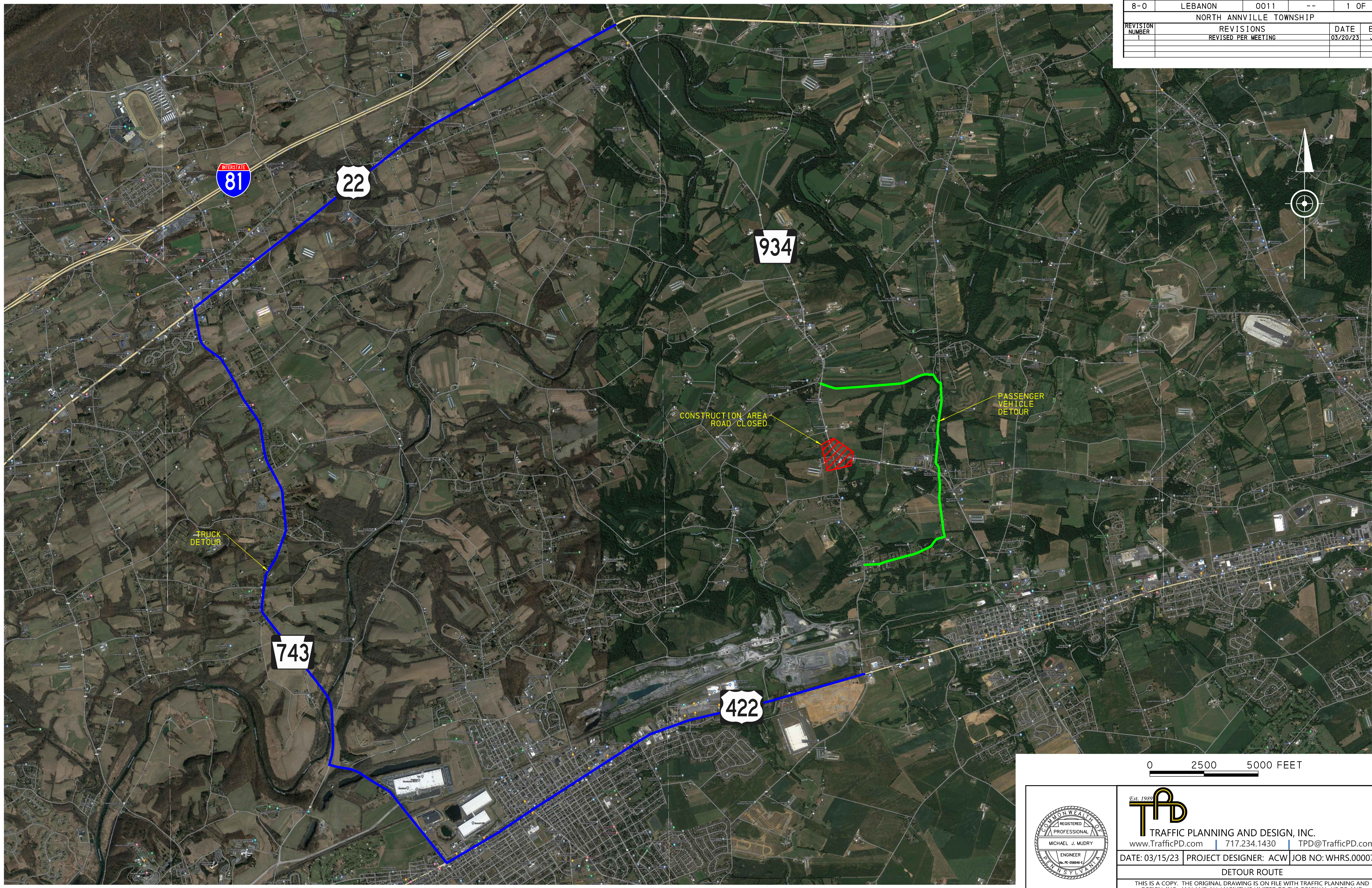
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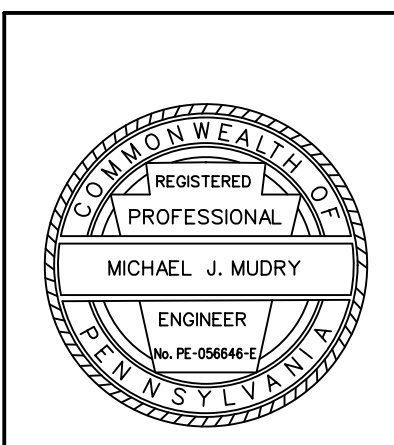
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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
8-0	LEBANON	0011	--	1 OF 1
NORTH ANNVILLE TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	
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