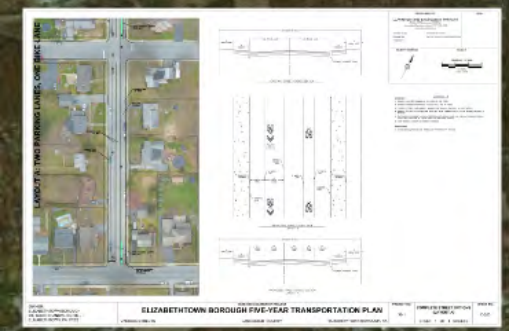
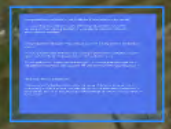


ACHIEVING COMPLETE STREETS IN ELIZABETHTOWN BOROUGH



Complete Streets embrace the concept of streets as space that is safe and convenient for users of all **ages and abilities** including pedestrians, bicyclists, public transportation riders, ADA accessibility, and vehicle drivers.

Elizabethtown Borough Complete Streets Policy (2014)

- achieve active and alternative transportation modes
- reduce traffic congestion and improve air quality
- improve health & recreation
- public safety
- community connectivity
- economic strategy
- quality of life

Elizabethtown Borough Planning Supports Complete Streets

Downtown Master Plan (2005)
Regional Strategic Plan (2010)
Official Map (2010)
Complete Streets Policy (2014)
Guiding Incentive for a Refocus on the Downtown and Community (2015)
PA Walkworks Transportation Plan (2013)

ACHIEVING COMPLETE STREETS IN ELIZABETHTOWN BOROUGH

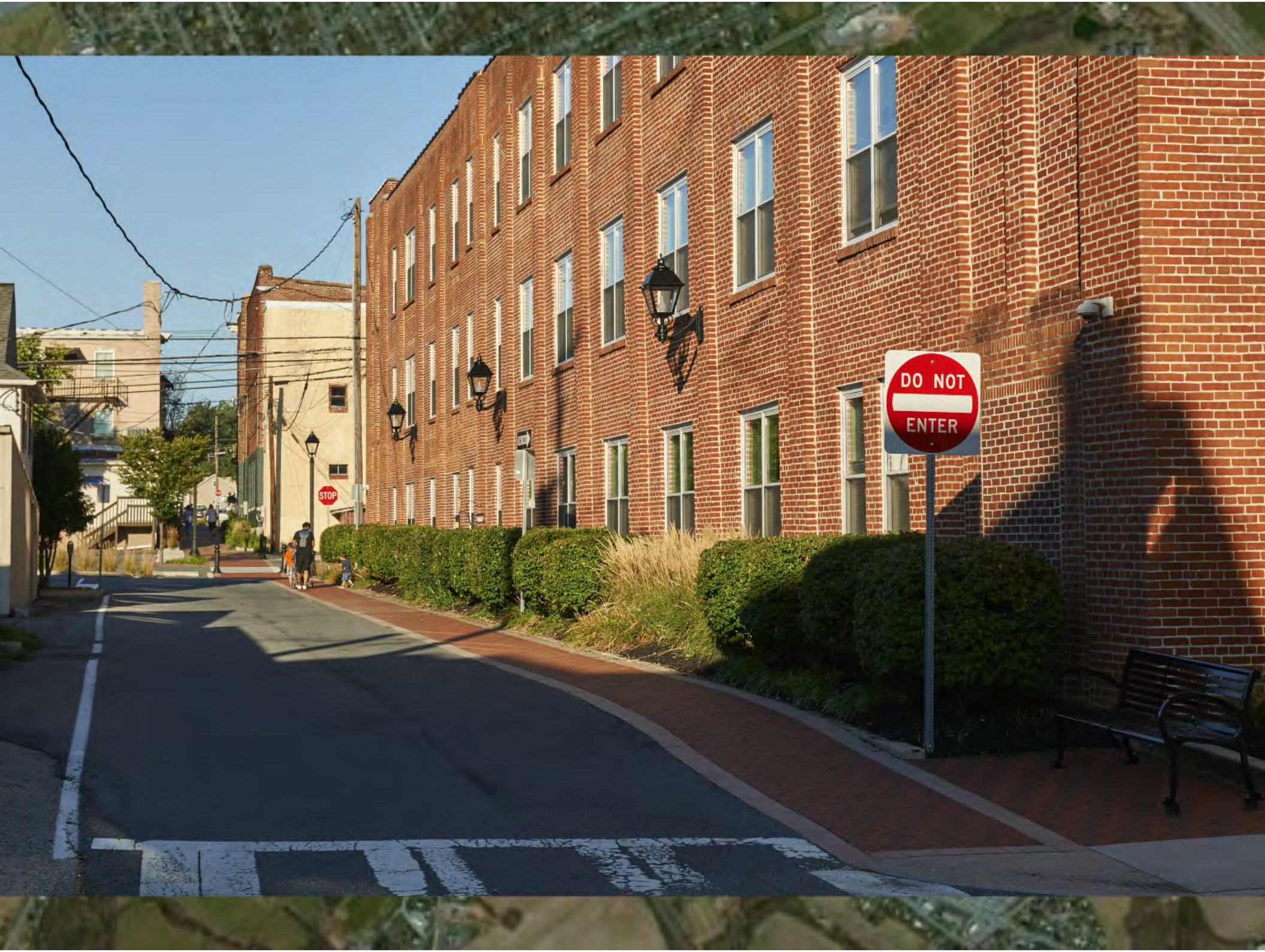
Complete Streets embrace the concept of streets as space that is safe and convenient for users of **all ages and abilities** including pedestrians, bicyclists, public transportation riders, ADA accessibility, and vehicle drivers.

Elizabethtown Borough
Complete Streets Policy (2014)

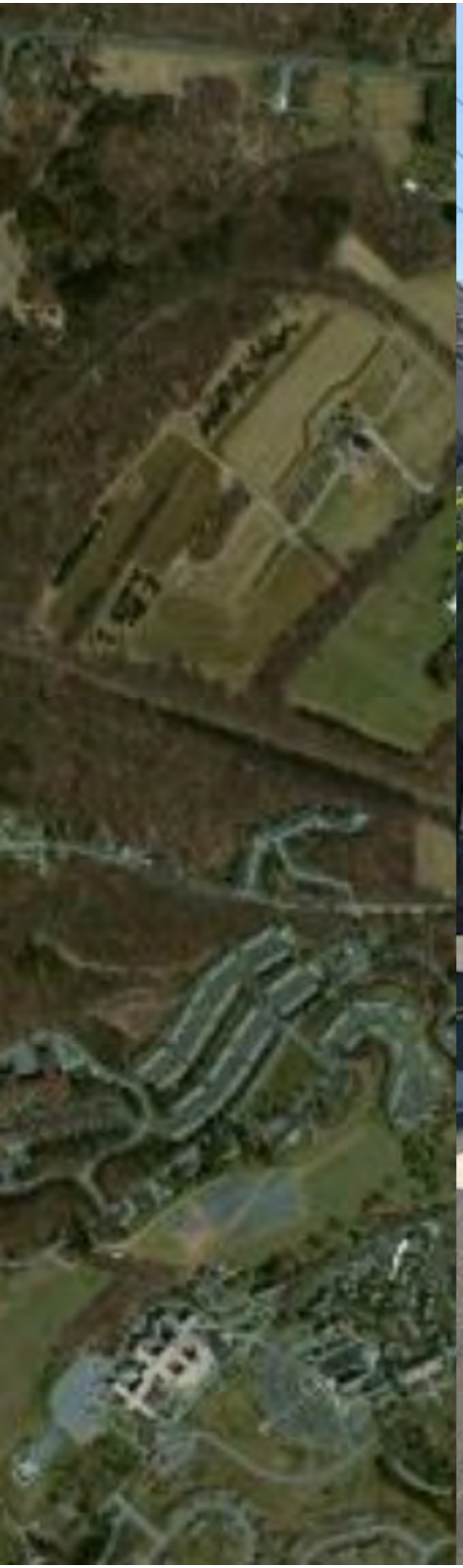
~ achieve active and alternative transportation modes
~ reduce traffic congestion and improve air quality
~ improve health & recreation
~ public safety
~ community connectivity
~ economic strategy
~ quality of life

Elizabethtown Borough Planning Supports Complete Streets

Downtown Master Plan (2005)
Regional Strategic Plan (2010)
Official Maps (2010)
Complete Streets Policy (2014)
Guiding Priorities for a Refocus on the Downtown and Community (2015)
PA Walkworks Transportation Plan (2018)


DO NOT
ENTER
STOP

40



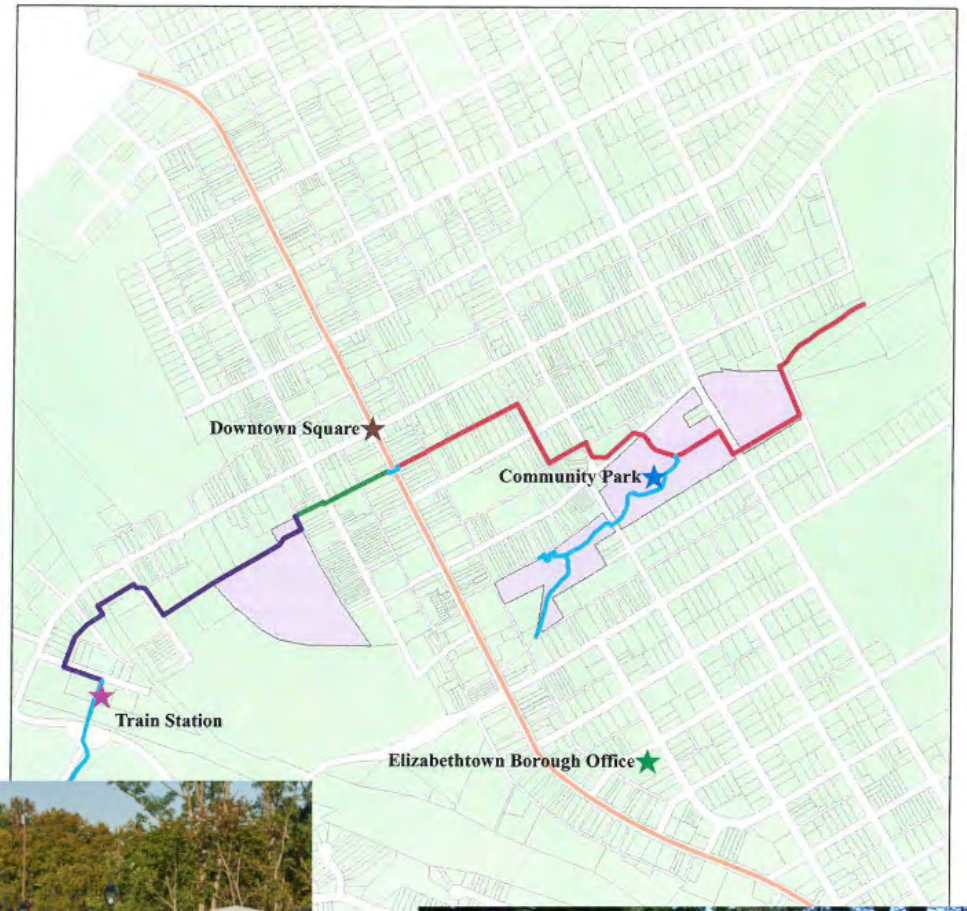
VINE
P
ARK

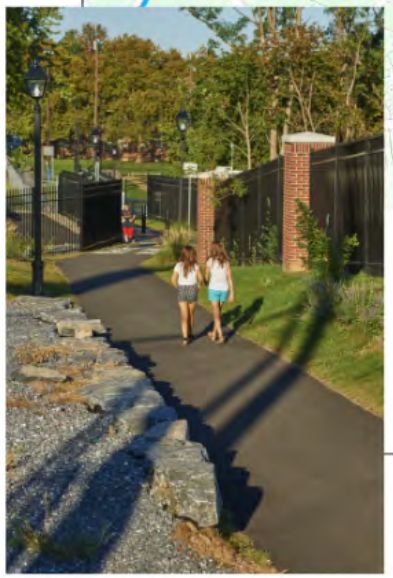
Bicycle
Parking

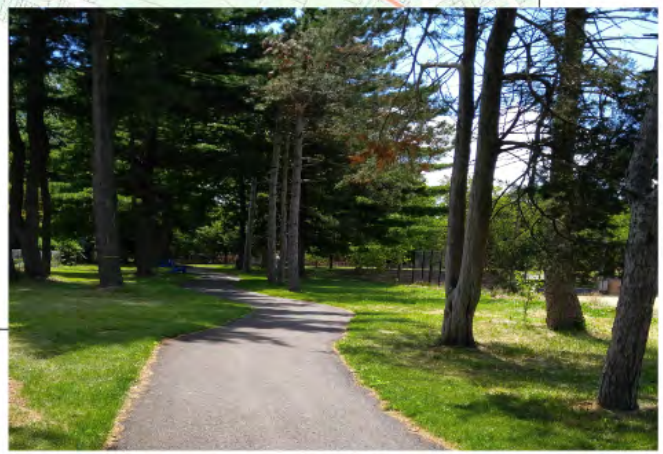
NORTH
743
BUS STOP
BB&T
READY FOR RETIREMENT?

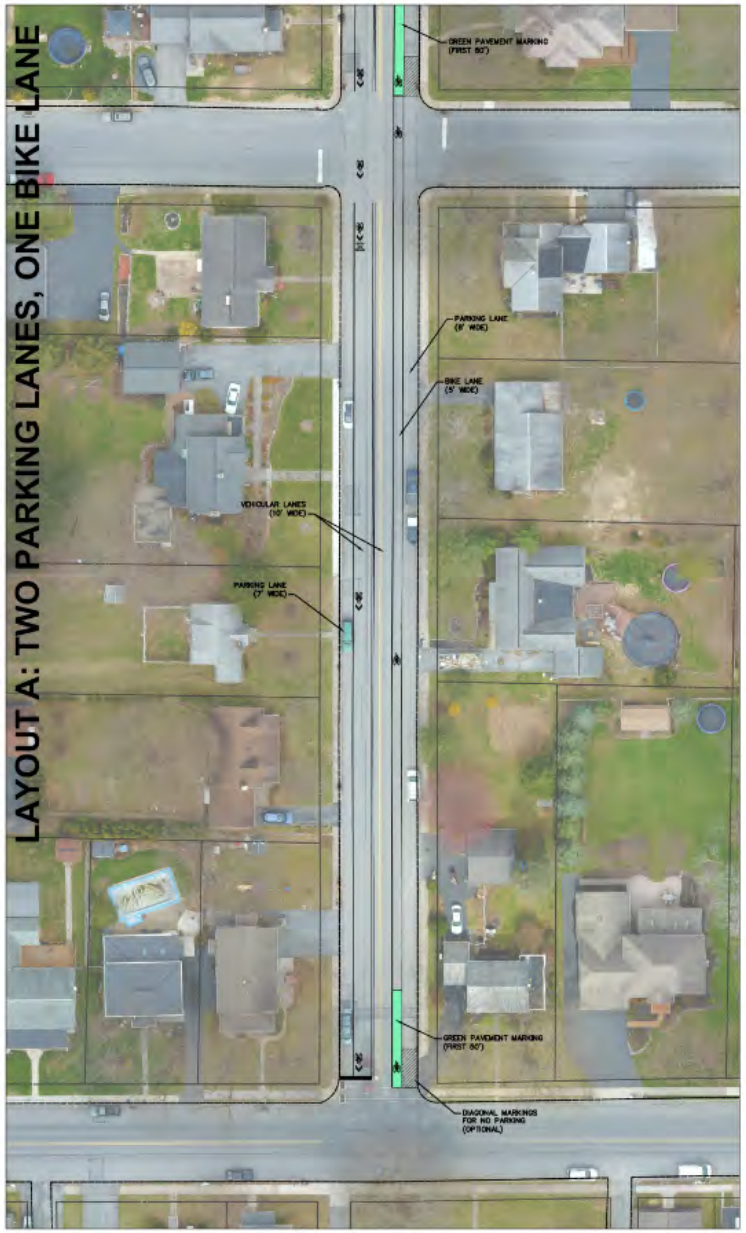
Elizabethtown Borough

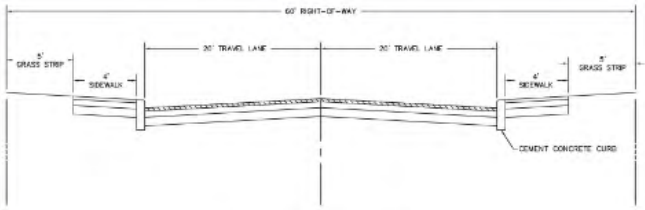
Pathways and Parks



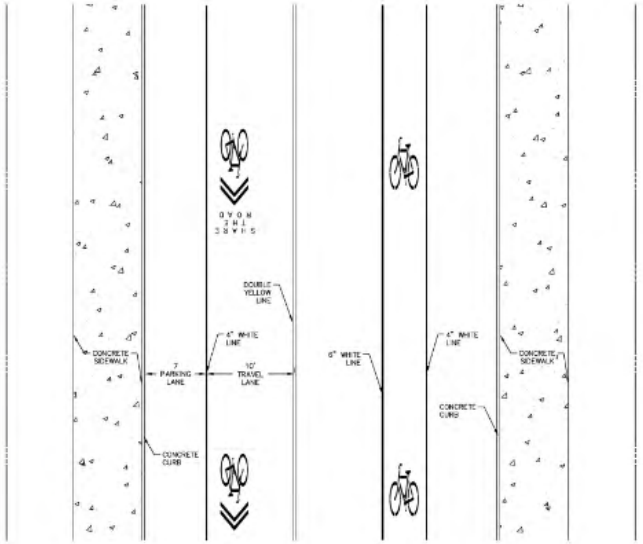




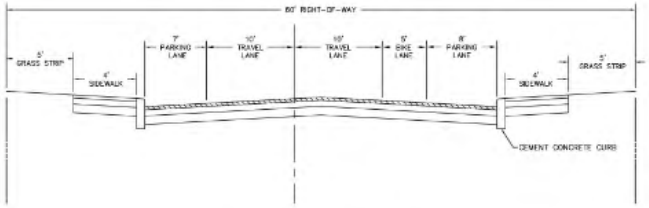

LAYOUT A: TWO PARKING LANES, ONE BIKE LANE



EXISTING STREET CROSS SECTION



PROPOSED STREET PLAN VIEW
LAYOUT A



PROPOSED STREET CROSS SECTION
LAYOUT A

PREPARED BY:

LANCASTER CIVIL ENGINEERING COMPANY
PO Box 8972, Lancaster, PA 17604
kencraddock@lancastercivil.com | 717-799-8599
www.lancastercivil.com

DESIGNED BY: BBC
DRAWN BY: BBC
CHECKED BY:
PLAN DATE: MAY 13, 2018
DWG FILE: 2018-05-13 - ETOWN CONCEPT.DWG

SEAL

NORTH ARROW

SCALE

GRAPHIC SCALE
30 0 30 60
(IN FEET)
1 INCH = 50 FT.

LAYOUT A

ADVANTAGES

1. PROVIDES ON-STREET PARKING ON BOTH SIDES OF THE STREET.
2. PROVIDES COMBINED BIKE/PARKING LANE ON UPHILL SIDE OF STREET.
3. PROVIDES 10' WIDE TRAVEL LANES – ADEQUATE FOR VEHICLES AND LIKELY TO LOWER SPEEDS.
4. PAINTING THE FIRST 50' OF BIKE LANE GREEN WILL ALERT TURNING VEHICLES TO THE POSSIBLE PRESENCE OF BICYCLES.
5. BIKE LANES ARE CARRIED THROUGH INTERSECTIONS WITH DASHED LINES AND A BICYCLE PAVEMENT MARKING. THESE THRU LANES CAN BE PAINTED GREEN FOR ADDITIONAL VISIBILITY.
6. SNOW REMOVAL IS SIMILAR TO CURRENT CONDITIONS.

DISADVANTAGES

1. SHARED BICYCLE/VEHICLE LANE OFFERS LESS PROTECTION FOR CYCLISTS.

OWNER:
ELIZABETHTOWN BOROUGH
600 SOUTH HANOVER STREET
ELIZABETHTOWN, PA 17022

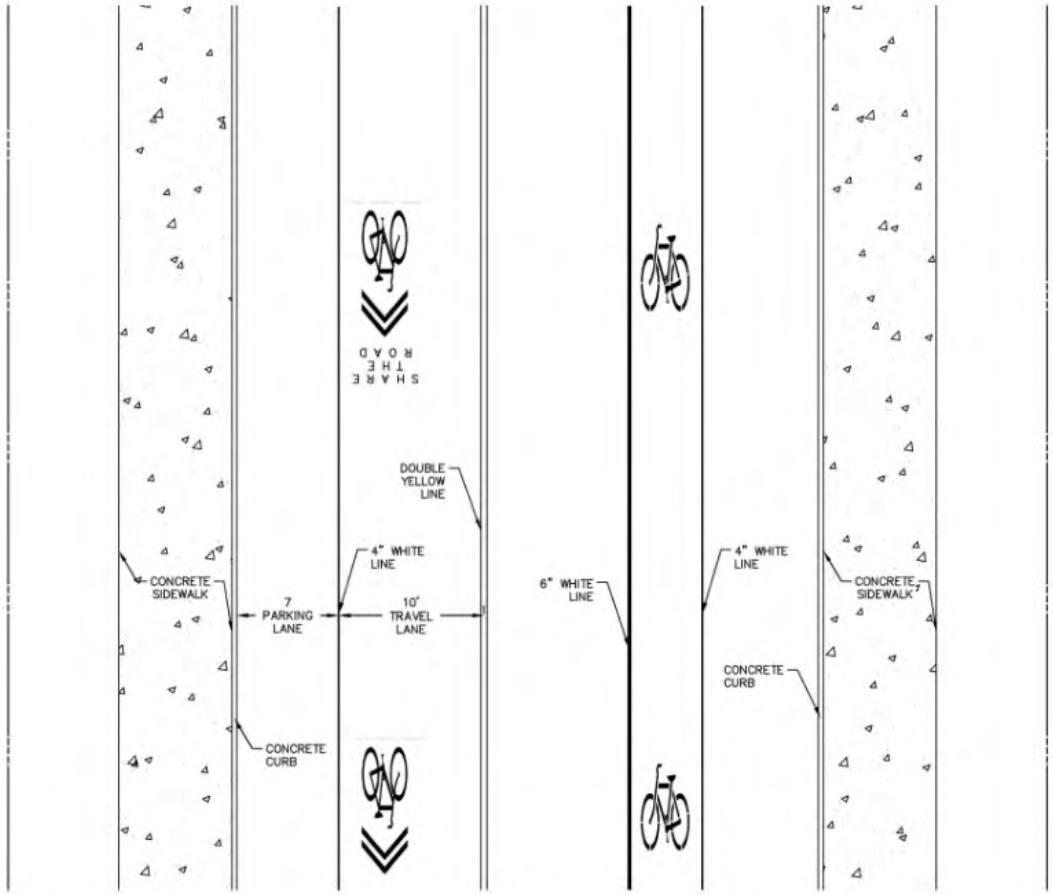
NAME AND LOCATION OF PROJECT

ELIZABETHTOWN BOROUGH FIVE-YEAR TRANSPORTATION PLAN

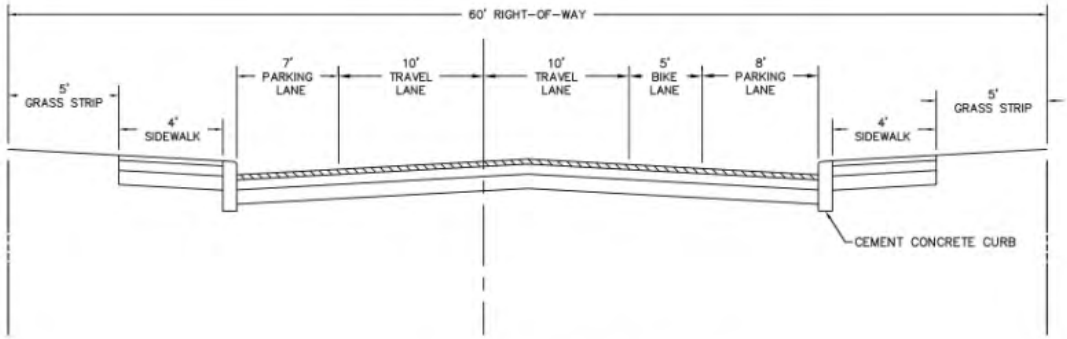
VARIOUS STREETS | LANCASTER COUNTY | ELIZABETHTOWN BOROUGH, PA

PROJECT NO.		SHEET NO.
38-1	COMPLETE STREET OPTIONS (LAYOUT A)	C-200
	SHEET 1 OF 4 SHEETS	

EXISTING STREET CROSS SECTION



PROPOSED STREET PLAN VIEW
LAYOUT A



PROPOSED STREET CROSS SECTION
LAYOUT A

L

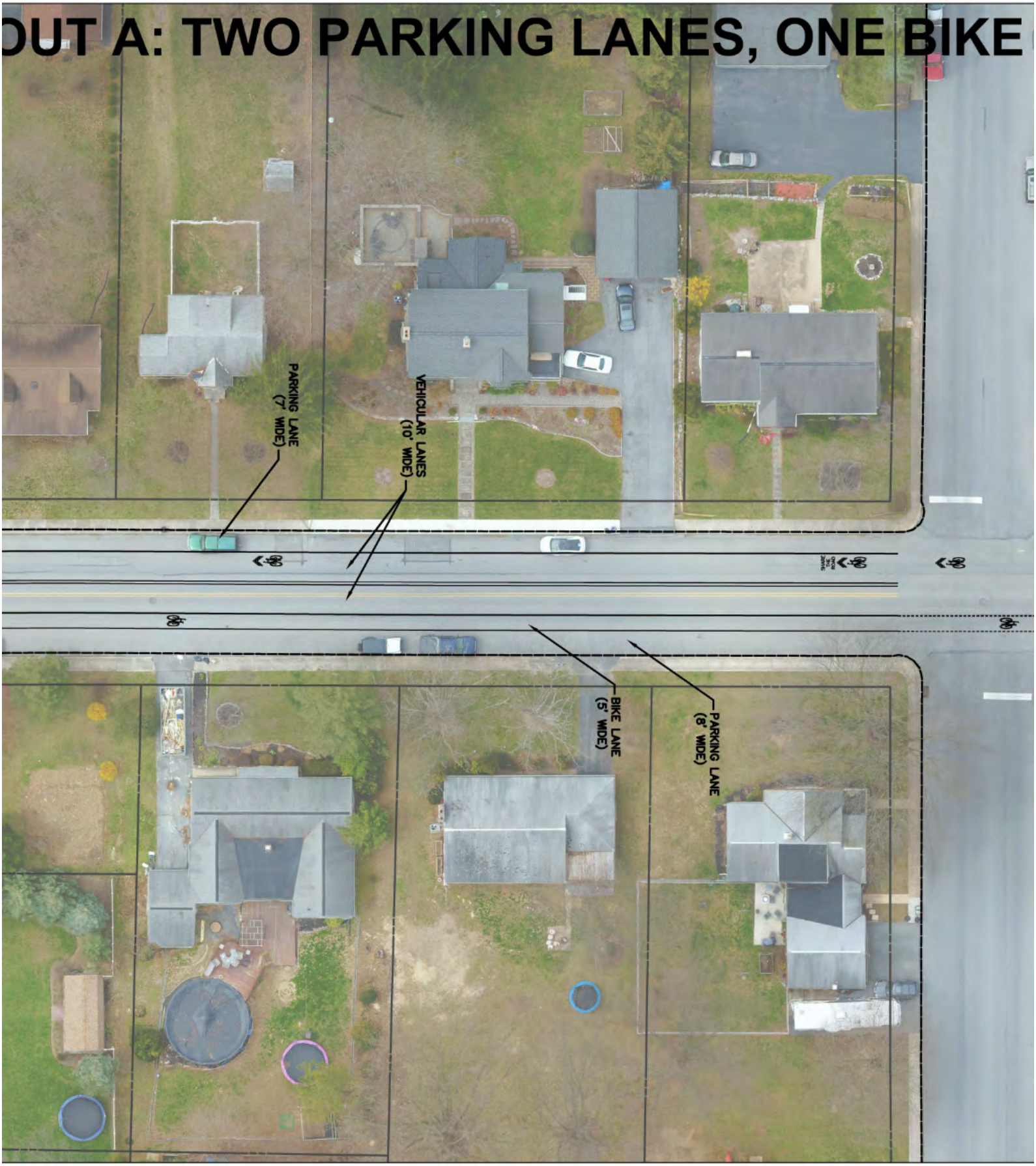
ADVANTAGES

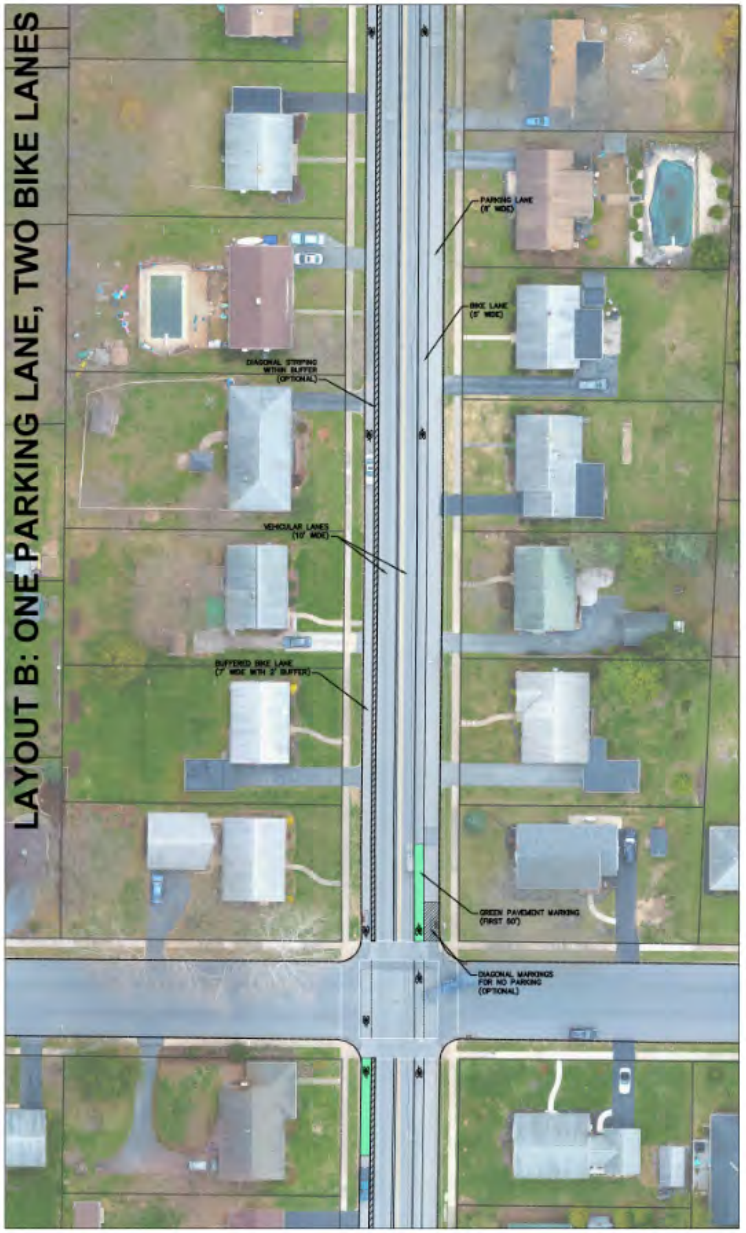
1. PROVIDES ON-STREET PARKING ON BOTH SIDES
2. PROVIDES COMBINED BIKE/PARKING LANE ON UP
3. PROVIDES 10' WIDE TRAVEL LANES – ADEQUATE
4. PAINTING THE FIRST 50' OF BIKE LANE GREEN W BICYCLES.
5. BIKE LANES ARE CARRIED THROUGH INTERSECTIO THESE THRU LANES CAN BE PAINTED GREEN FO
6. SNOW REMOVAL IS SIMILAR TO CURRENT CONDIT

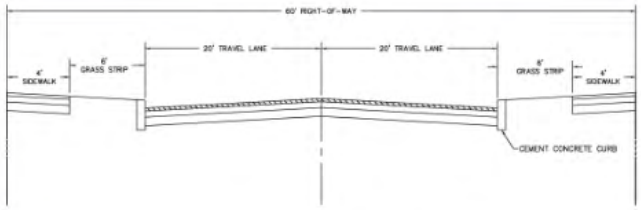
DISADVANTAGES

1. SHARED BICYCLE/VEHICLE LANE OFFERS LESS P

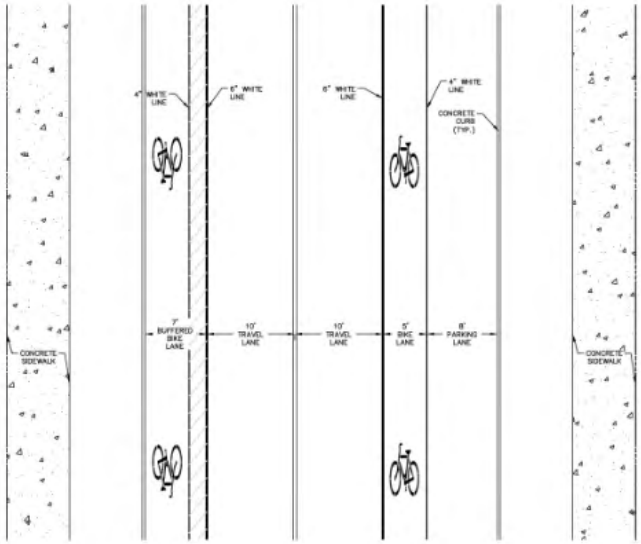
OUT A: TWO PARKING LANES, ONE BIKE



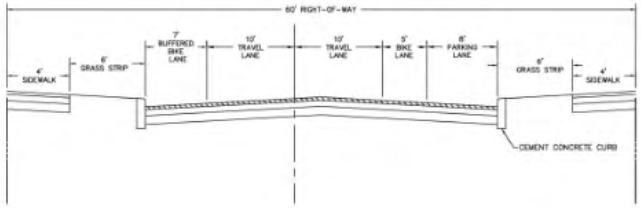




EXISTING STREET CROSS SECTION



PROPOSED STREET PLAN VIEW
LAYOUT B



PROPOSED STREET CROSS SECTION
LAYOUT B

PREPARED BY:

LANCASTER CIVIL ENGINEERING COMPANY
PO Box 8972, Lancaster, PA 17604
bencraddock@lancastercivil.com | 717-799-8599
www.lancastercivil.com

DESIGNED BY: BBC
DRAWN BY: BBC
CHECKED BY:
PLAN DATE: MAY 13, 2016
DWG FILE: 2016-05-13 - ETOWN CONCEPT.DWG

SEAL

NORTH ARROW

SCALE

GRAPHIC SCALE
(IN FEET)
1 INCH = 30 FT.

LAYOUT B

ADVANTAGES

1. PROVIDES ON-STREET PARKING ON UPHILL SIDE OF STREET WITH A STANDARD 5' BIKE LANE.
2. PROVIDES BUFFERED BIKE LANE ON DOWNHILL SIDE OF STREET. NO PARKED CARS AVOIDS CONFLICTS WITH OPEN DOORS.
3. PROVIDES 10' WIDE TRAVEL LANES – ADEQUATE FOR VEHICLES AND LIKELY TO LOWER SPEEDS.
4. PAINTING THE FIRST 50' OF BIKE LANE GREEN WILL ALERT TURNING VEHICLES TO THE POSSIBLE PRESENCE OF BICYCLES.
5. BIKE LANES ARE CARRIED THROUGH INTERSECTIONS WITH DASHED LINES AND A BICYCLE PAVEMENT MARKING. THESE THRU LANES CAN BE PAINTED GREEN FOR ADDITIONAL VISIBILITY.
6. SNOW REMOVAL IS SIMILAR TO CURRENT CONDITIONS, EXCEPT THAT THE PARKING RESTRICTION ON THE WEST SIDE WILL ALLOW FOR LESS CONFLICTS WITH PARKED CARS.

DISADVANTAGES

1. ON-STREET PARKING IS RESTRICTED ON THE DOWNHILL SIDE.
2. THE UPHILL BIKE LANE IS SUSCEPTIBLE TO CONFLICTS FROM OPENING VEHICLE DOORS.

OWNER:
ELIZABETHTOWN BOROUGH
600 SOUTH HANOVER STREET
ELIZABETHTOWN, PA 17022

NAME AND LOCATION OF PROJECT

ELIZABETHTOWN BOROUGH FIVE-YEAR TRANSPORTATION PLAN

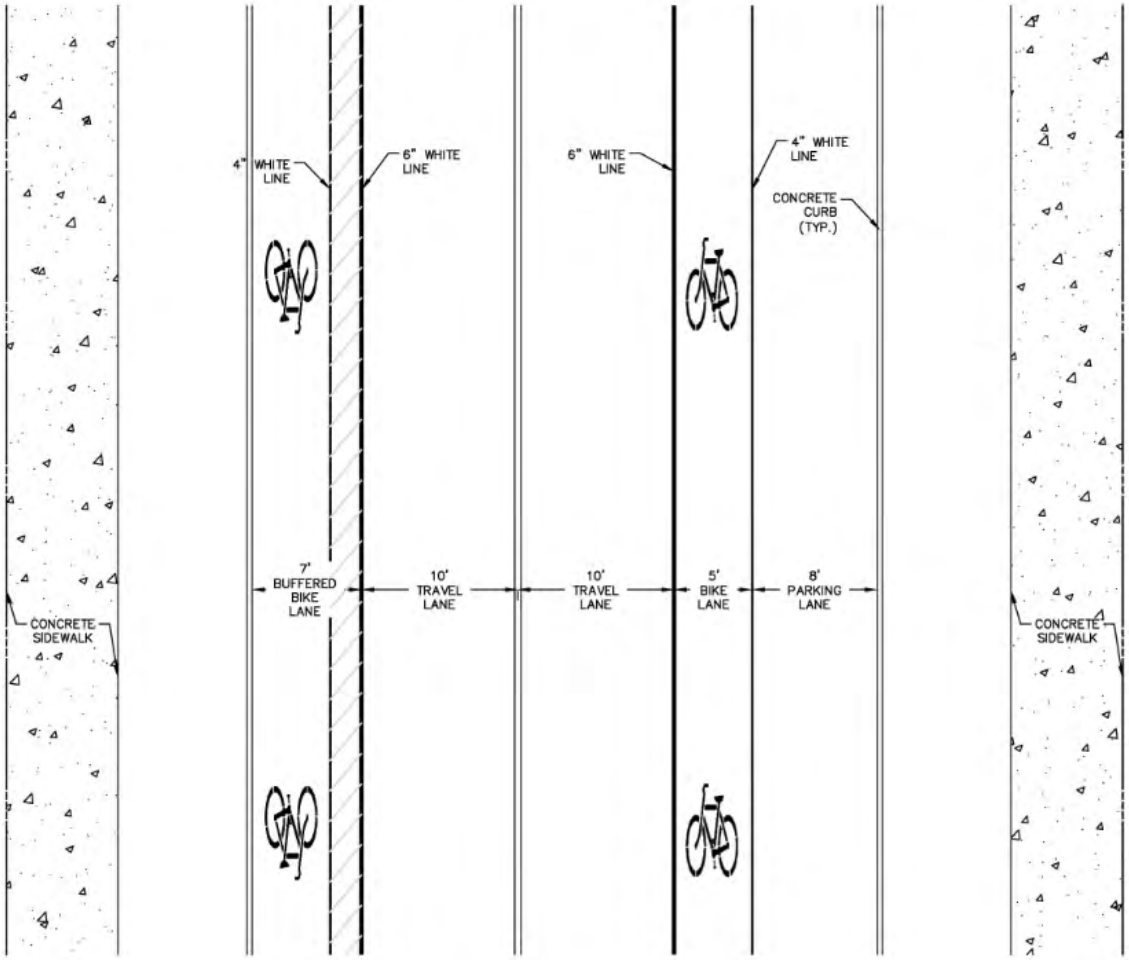
VARIOUS STREETS | LANCASTER COUNTY | ELIZABETHTOWN BOROUGH, PA

PROJECT NO. 38-1

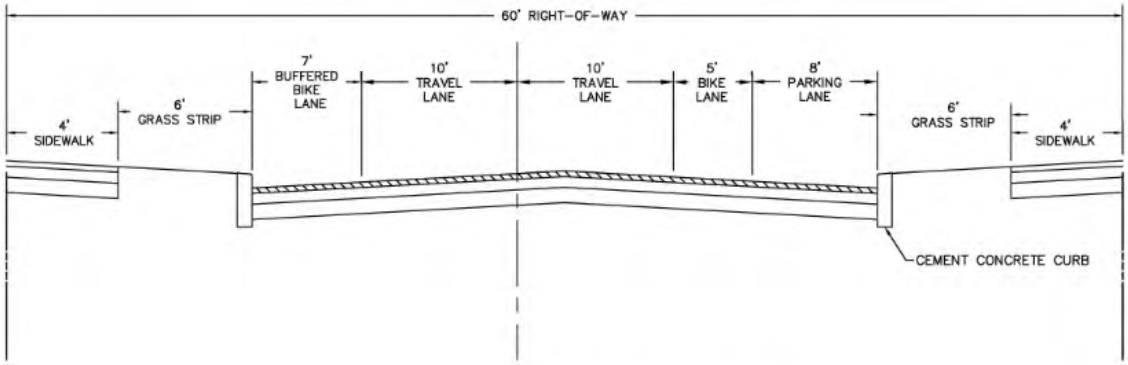
COMPLETE STREET OPTIONS (LAYOUT B)

SHEET 2 OF 4 SHEETS

SHEET NO. C-201



PROPOSED STREET PLAN VIEW
LAYOUT B



PROPOSED STREET CROSS SECTION
LAYOUT B

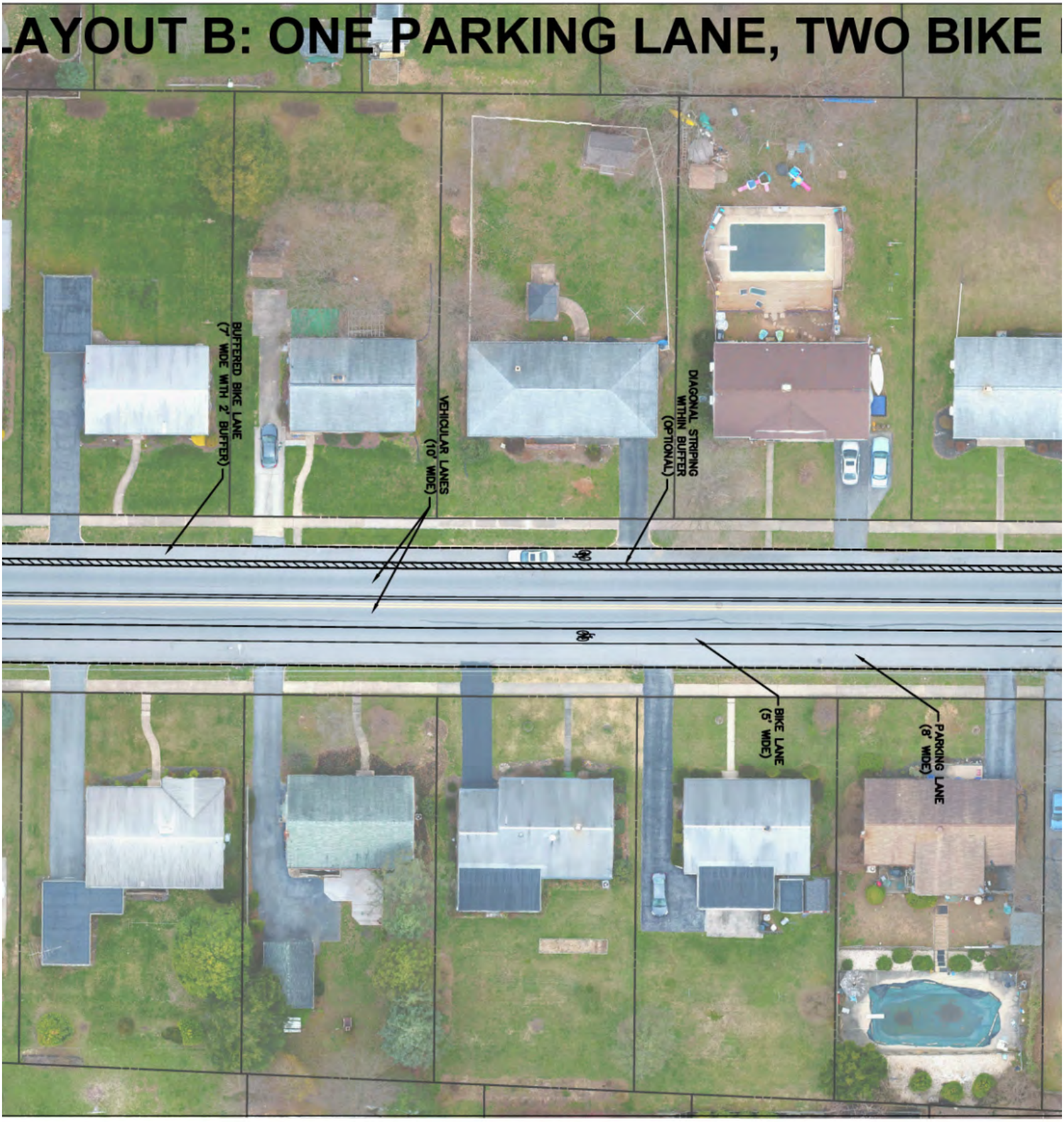
ADVANTAGES

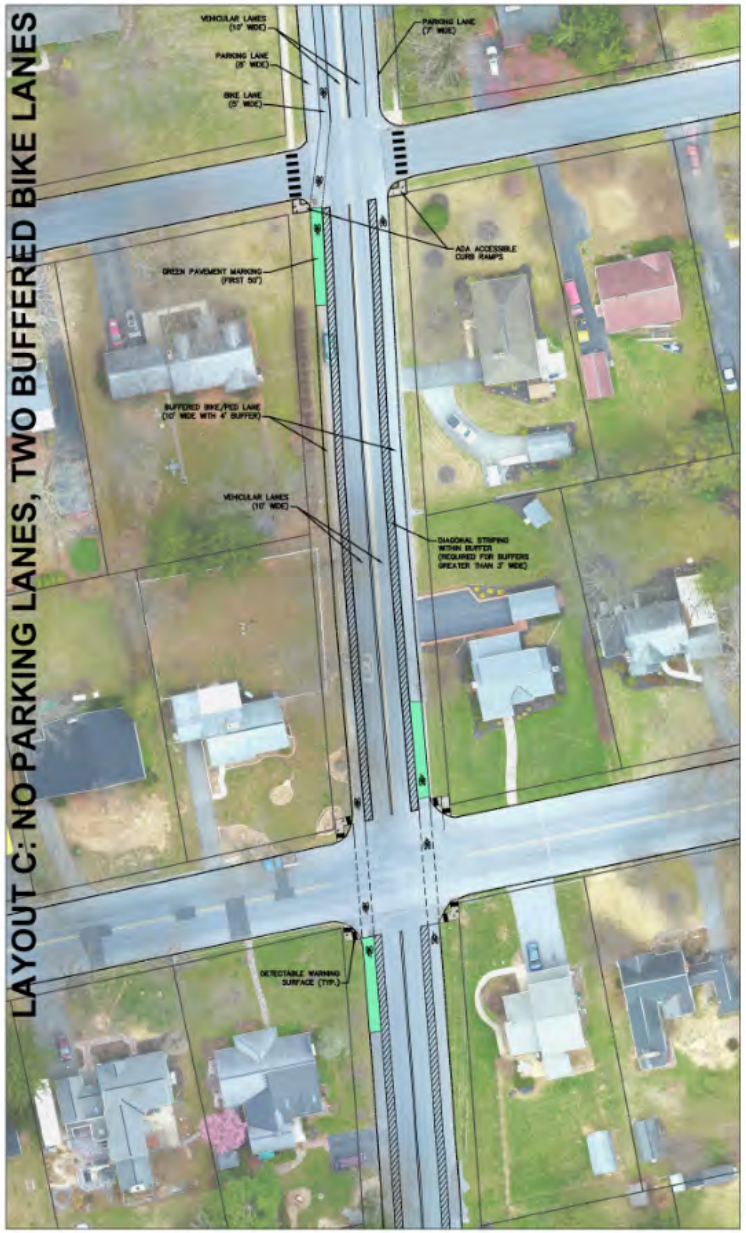
1. PROVIDES ON-STREET PARKING ON UPH
2. PROVIDES BUFFERED BIKE LANE ON DO DOORS.
3. PROVIDES 10' WIDE TRAVEL LANES – A
4. PAINTING THE FIRST 50' OF BIKE LANE BICYCLES.
5. BIKE LANES ARE CARRIED THROUGH IN THESE THRU LANES CAN BE PAINTED C
6. SNOW REMOVAL IS SIMILAR TO CURREN SIDE WILL ALLOW FOR LESS CONFLICTS

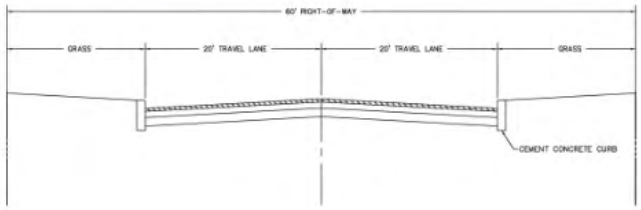
DISADVANTAGES

1. ON-STREET PARKING IS RESTRICTED ON
2. THE UPHILL BIKE LANE IS SUSCEPTIBLE

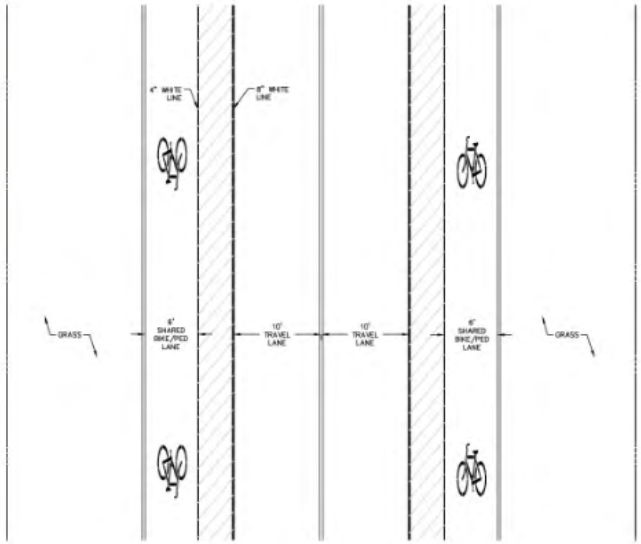
LAYOUT B: ONE PARKING LANE, TWO BIKE



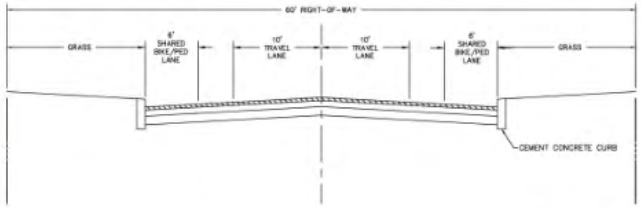




EXISTING STREET CROSS SECTION



PROPOSED STREET PLAN VIEW
LAYOUT C



PROPOSED STREET CROSS SECTION
LAYOUT C

PREPARED BY:
LANCASTER CIVIL ENGINEERING COMPANY
PO Box 8972, Lancaster, PA 17604
bencraddock@lancastercivil.com | 717-799-8599
www.lancastercivil.com

SEAL

DESIGNED BY: BSC
DRAWN BY: BSC
CHECKED BY:
PLAN DATE: MAY 13, 2018
DWG FILE: 2018-05-13 - ETOWN CONCEPT.DWG

NORTH ARROW

SCALE

GRAPHIC SCALE
(IN FEET)
1 INCH = 30 FT

LAYOUT C

ADVANTAGES

1. PROVIDES A BUFFERED BIKE LANE ON THE BOTH SIDES OF STREET.
2. PEDESTRIANS MAY USE BIKE LANE (A GENEROUS BUFFER LANE IS PROVIDED).
3. PROVIDES 10' WIDE TRAVEL LANES – ADEQUATE FOR VEHICLES AND LIKELY TO LOWER SPEEDS.
4. PAINTING THE FIRST 50' OF BIKE LANE GREEN WILL ALERT TURNING VEHICLES TO THE POSSIBLE PRESENCE OF BICYCLES.
5. BIKE LANES ARE CARRIED THROUGH INTERSECTIONS WITH DASHED LINES AND A BICYCLE PAVEMENT MARKING. THESE THRU LANES CAN BE PAINTED GREEN FOR ADDITIONAL VISIBILITY.
6. SNOW REMOVAL IS SIMILAR TO CURRENT CONDITIONS.
7. PEDESTRIAN ACCESS IS PROVIDED WITHIN EXISTING RIGHT-OF-WAY.

DISADVANTAGES

1. NO ON-STREET PARKING IS PROVIDED ON EITHER SIDE OF THE STREET.
2. NO DEDICATED PEDESTRIAN WALKWAYS ARE PROVIDED.

OWNER:
ELIZABETHTOWN BOROUGH
600 SOUTH HANOVER STREET
ELIZABETHTOWN, PA 17022

NAME AND LOCATION OF PROJECT

ELIZABETHTOWN BOROUGH FIVE-YEAR TRANSPORTATION PLAN

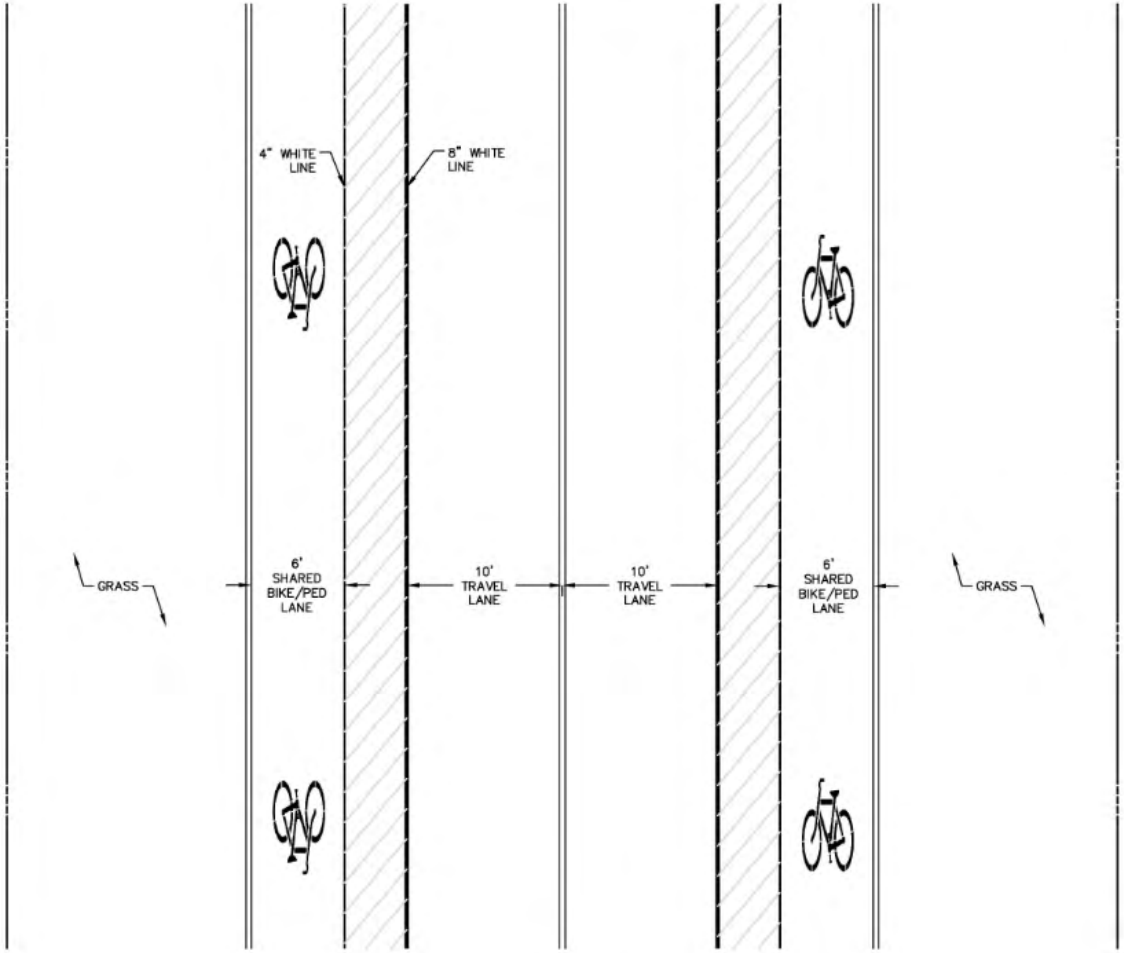
VARIOUS STREETS | LANCASTER COUNTY | ELIZABETHTOWN BOROUGH, PA

PROJECT NO. 38-1

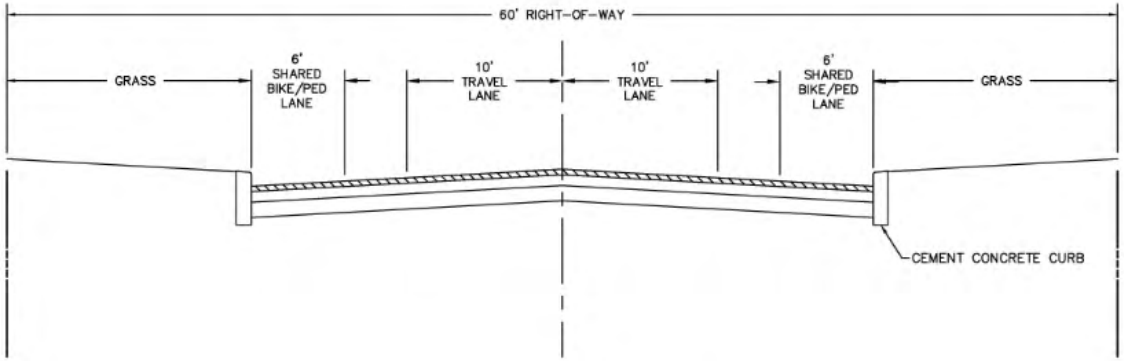
COMPLETE STREET OPTIONS (LAYOUT C)

SHEET 3 OF 4 SHEETS

SHEET NO. C-203



PROPOSED STREET PLAN VIEW
LAYOUT C



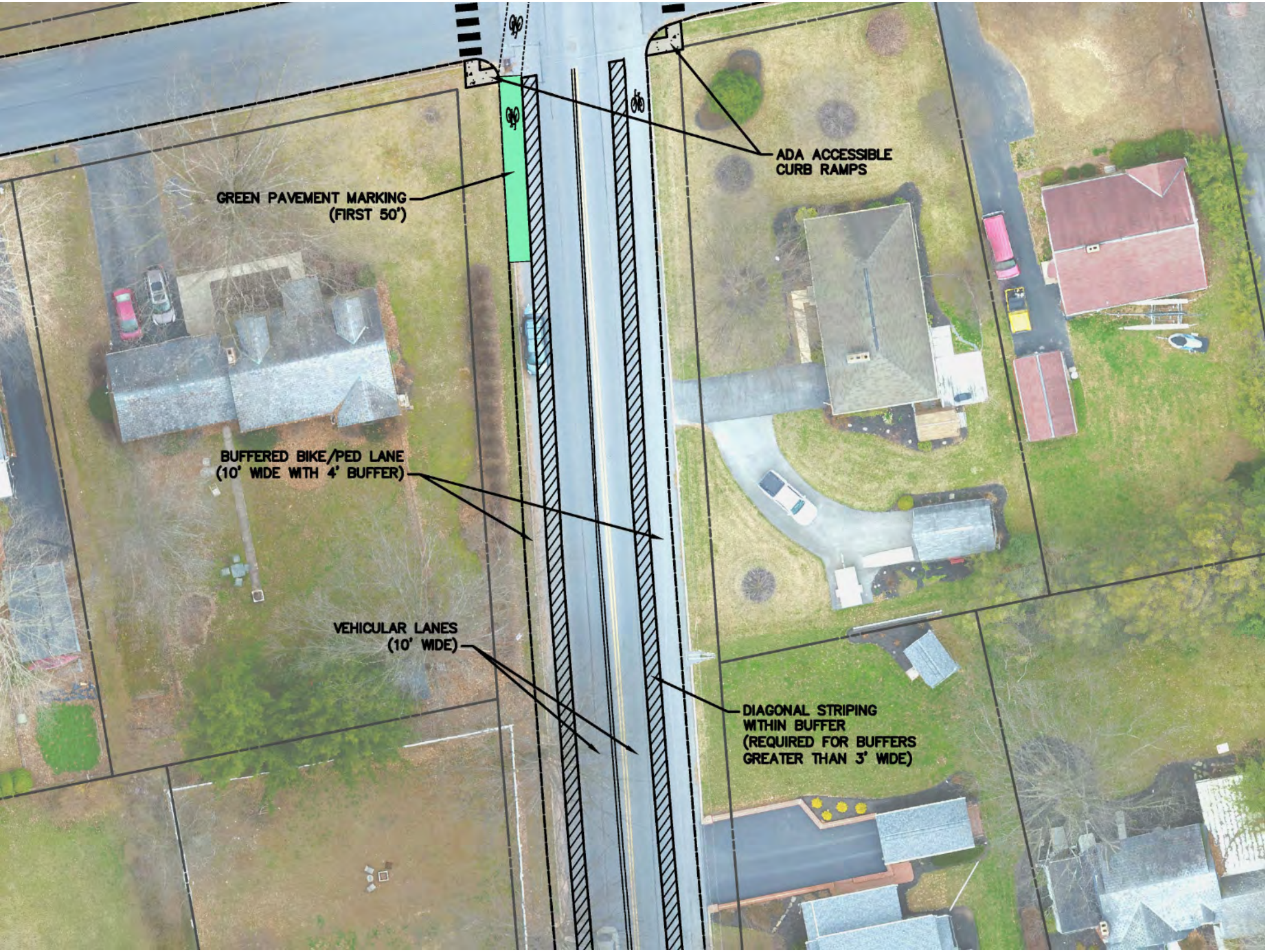
PROPOSED STREET CROSS SECTION
LAYOUT C

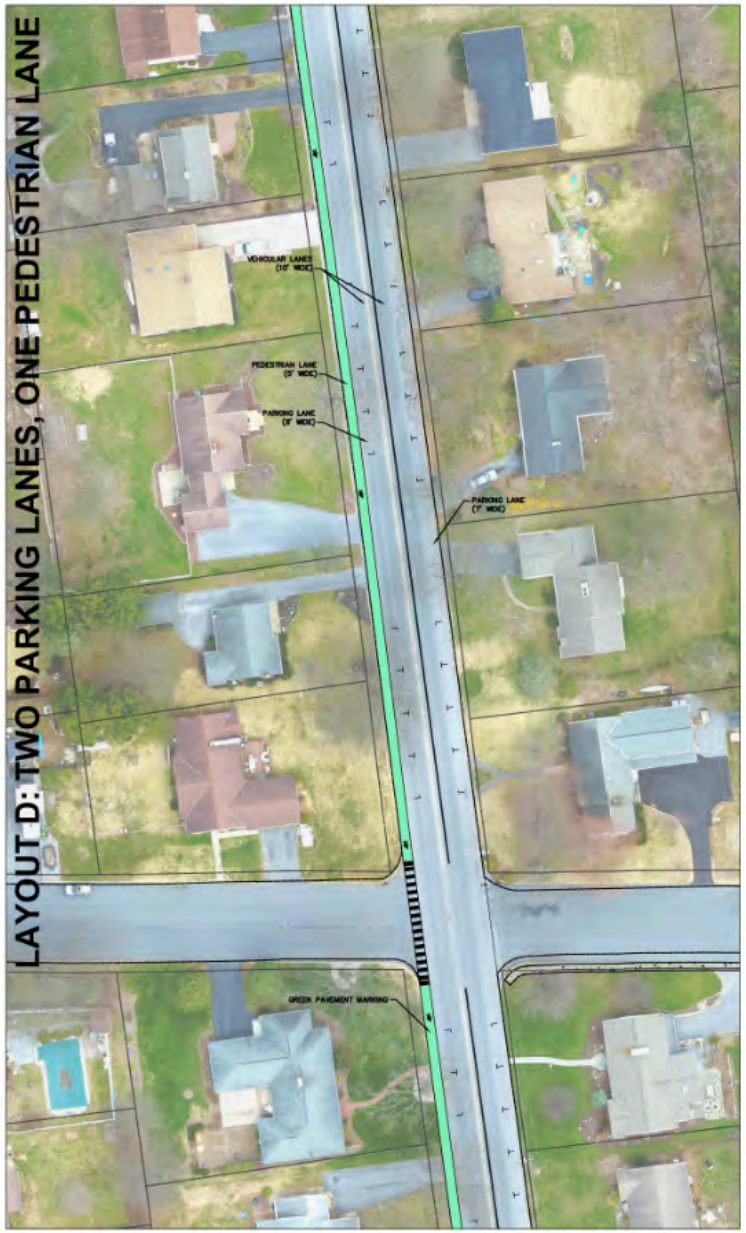
ADVANTAGES

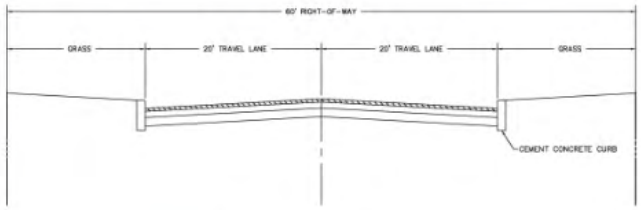
1. PROVIDES A BUFFERED BIKE LANE
2. PEDESTRIANS MAY USE BIKE LANE
3. PROVIDES 10' WIDE TRAVEL LANES
4. PAINTING THE FIRST 50' OF BIKE L BICYCLES.
5. BIKE LANES ARE CARRIED THROUG THESE THRU LANES CAN BE PAINT
6. SNOW REMOVAL IS SIMILAR TO CUR
7. PEDESTRIAN ACCESS IS PROVIDED

DISADVANTAGES

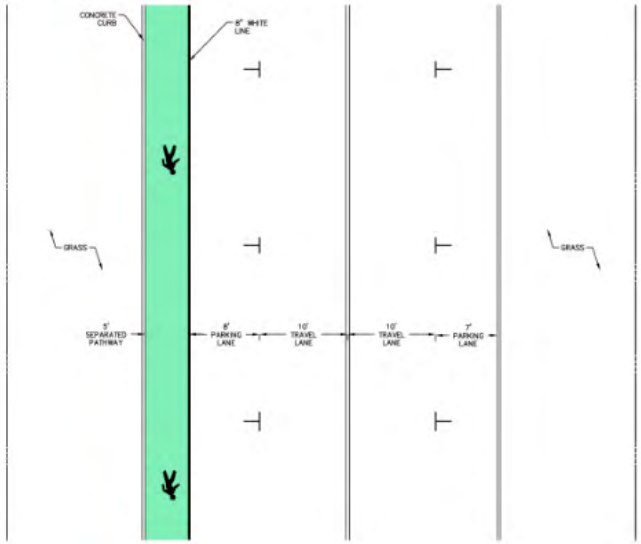
1. NO ON-STREET PARKING IS PROVI
2. NO DEDICATED PEDESTRIAN WALKW


ADA ACCESSIBLE
CURB RAMPS
GREEN PAVEMENT MARKING
(FIRST 50')
BUFFERED BIKE/PED LANE
(10' WIDE WITH 4' BUFFER)
VEHICULAR LANES
(10' WIDE)
DIAGONAL STRIPING
WITHIN BUFFER
(REQUIRED FOR BUFFERS
GREATER THAN 3' WIDE)

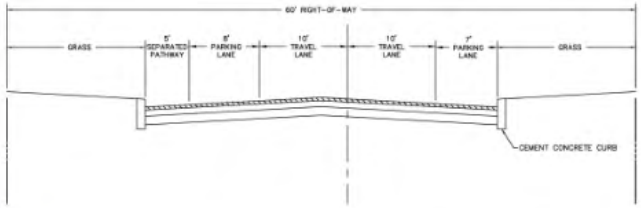




EXISTING STREET CROSS SECTION



PROPOSED STREET PLAN VIEW
LAYOUT D



PROPOSED STREET CROSS SECTION
LAYOUT D

PREPARED BY:

LANCASTER CIVIL ENGINEERING COMPANY
PO Box 8972, Lancaster, PA 17604
bencraddock@lancastercivil.com | 717-799-8599
www.lancastercivil.com

DESIGNED BY: BSC
DRAWN BY: BSC
CHECKED BY:
PLAN DATE: MAY 13, 2018
DWG FILE: 2018-05-13 - ETOWN CONCEPT.DWG

SEAL

NORTH ARROW

SCALE

GRAPHIC SCALE
30 0 30 60
(IN FEET)
1 INCH = 30 FT

LAYOUT D

ADVANTAGES

1. PROVIDES ON-STREET PARKING ON BOTH SIDES OF THE STREET.
2. PROVIDES A 5' WIDE PROTECTED PEDESTRIAN LANE..
3. PAINTING THE PEDESTRIAN LANE GREEN WILL ALERT PARKED VEHICLES TO THE PRESENCE OF THE PEDESTRIAN LANE.
4. SNOW REMOVAL IS SIMILAR TO CURRENT CONDITIONS.
5. PEDESTRIAN ACCESS IS PROVIDED WITHIN EXISTING RIGHT-OF-WAY.

DISADVANTAGES

1. NO DEDICATED BICYCLE FACILITIES ARE PROVIDED.

OWNER:
ELIZABETHTOWN BOROUGH
600 SOUTH HANOVER STREET
ELIZABETHTOWN, PA 17022

NAME AND LOCATION OF PROJECT

ELIZABETHTOWN BOROUGH FIVE-YEAR TRANSPORTATION PLAN

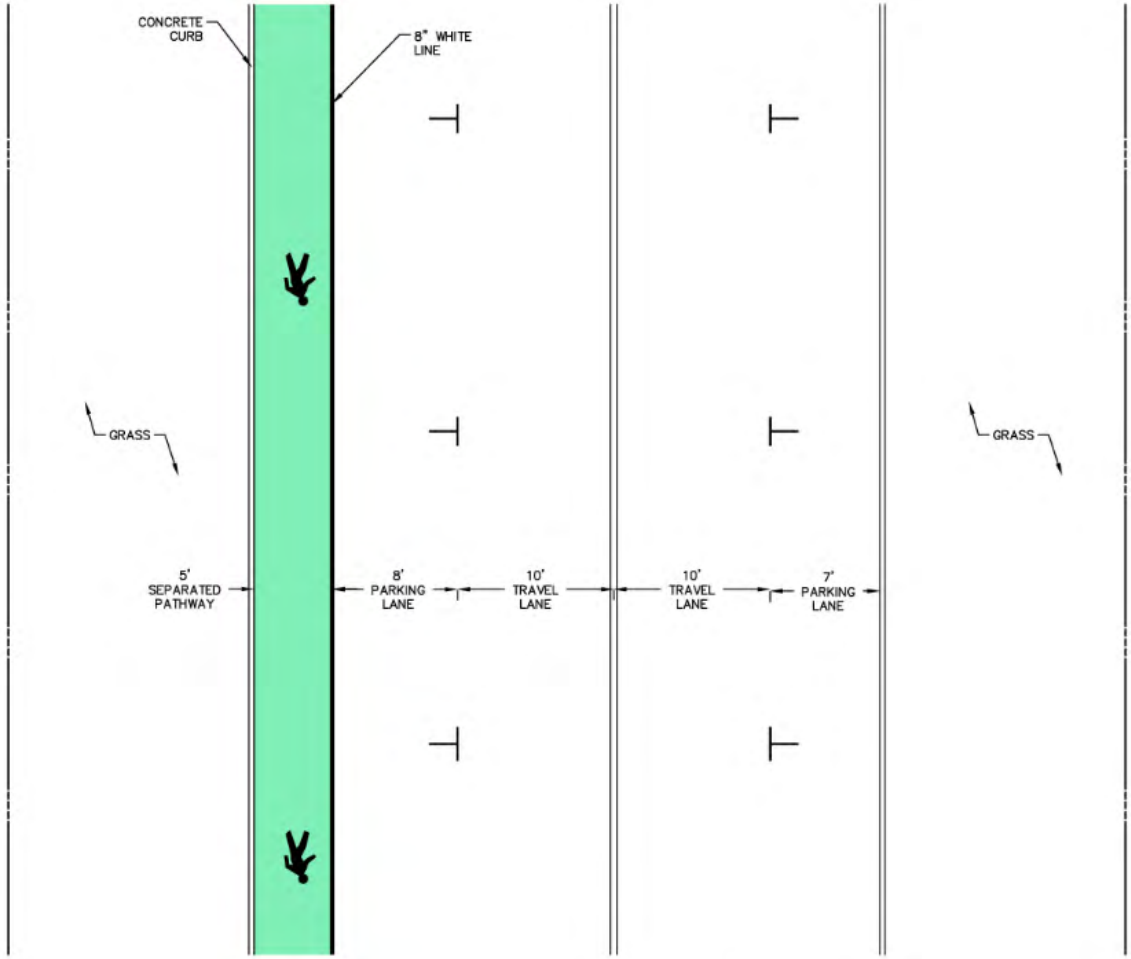
VARIOUS STREETS | LANCASTER COUNTY | ELIZABETHTOWN BOROUGH, PA

PROJECT NO. 38-1

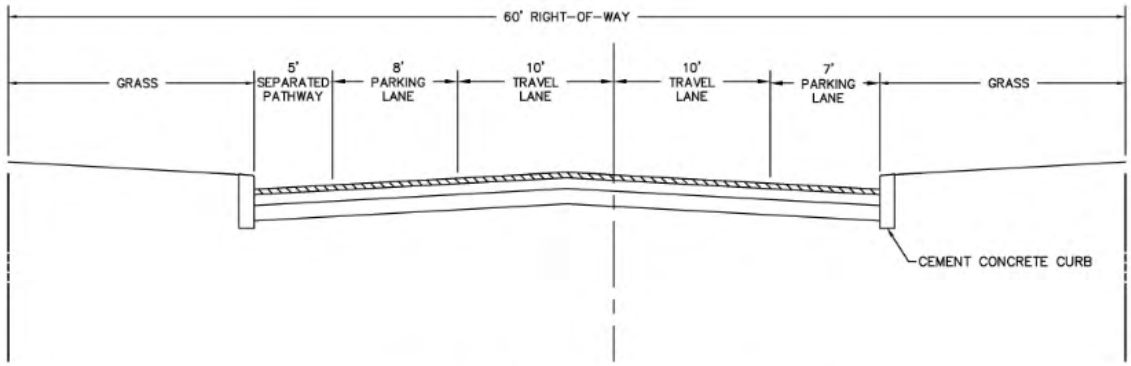
COMPLETE STREET OPTIONS (LAYOUT D)

SHEET 4 OF 4 SHEETS

SHEET NO. C-204



PROPOSED STREET PLAN VIEW
LAYOUT D



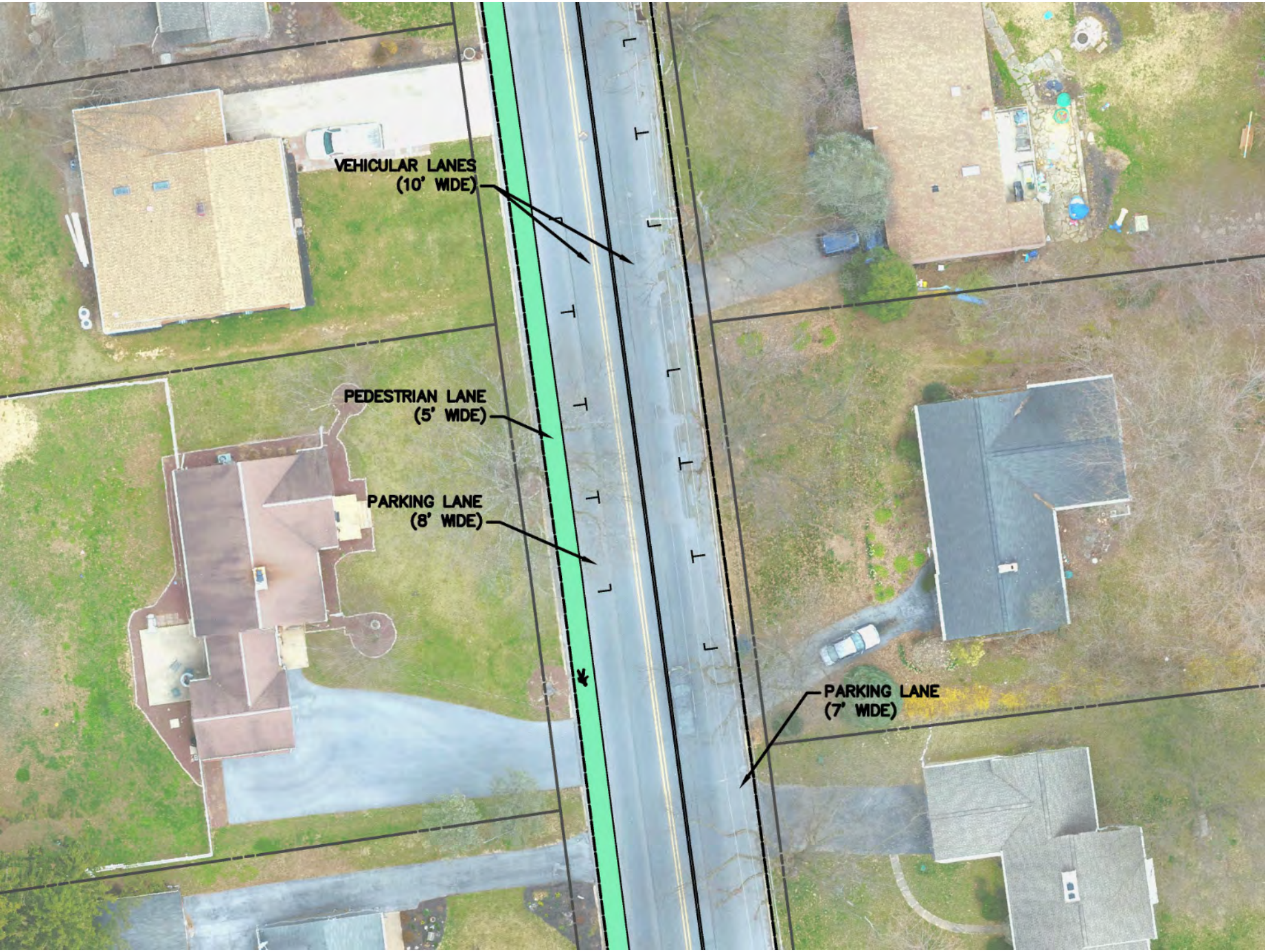
PROPOSED STREET CROSS SECTION
LAYOUT D

ADVANTAGES

1. PROVIDES ON-STREET PARKING ON
2. PROVIDES A 5' WIDE PROTECTED P
3. PAINTING THE PEDESTRIAN LANE G LANE.
4. SNOW REMOVAL IS SIMILAR TO CUR
5. PEDESTRIAN ACCESS IS PROVIDED

DISADVANTAGES

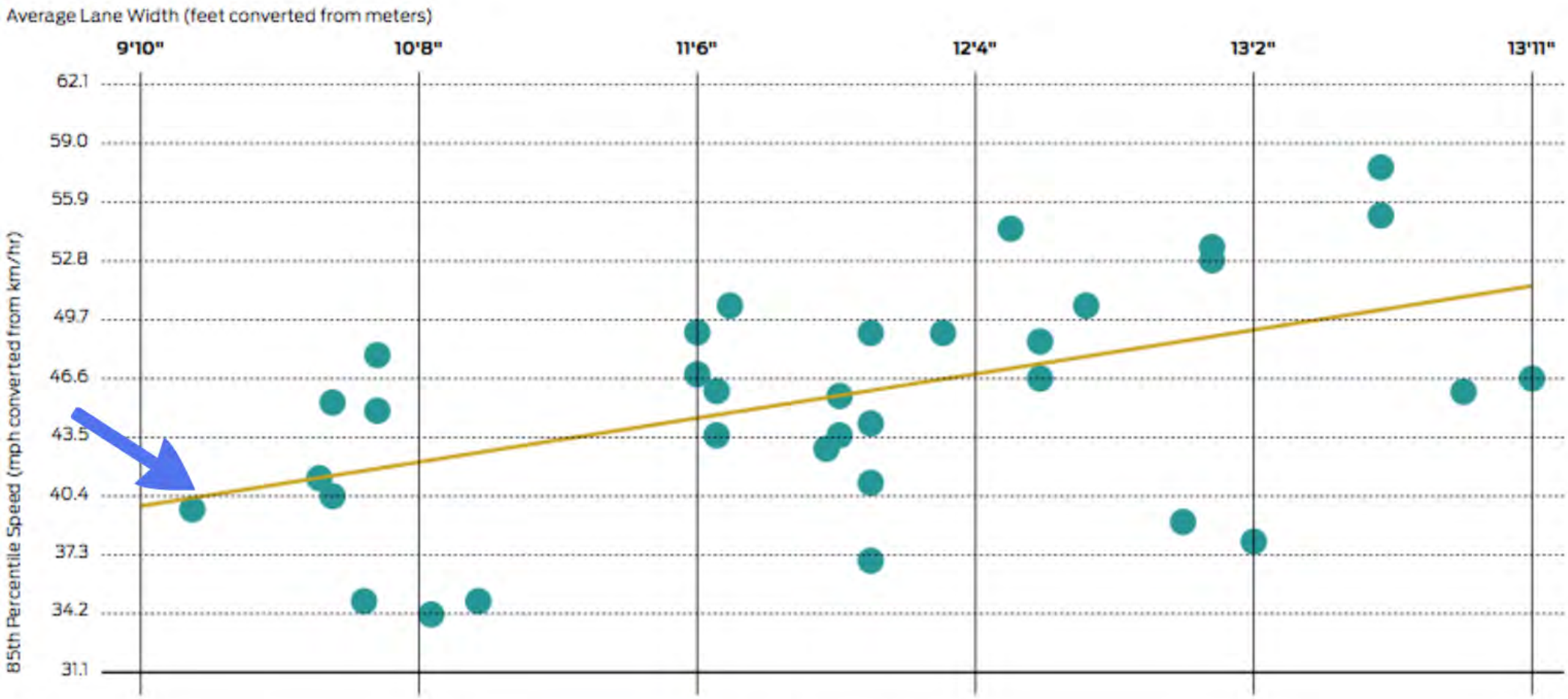
1. NO DEDICATED BICYCLE FACILITIES


VEHICULAR LANES
(10' WIDE)
PEDESTRIAN LANE
(5' WIDE)
PARKING LANE
(8' WIDE)
PARKING LANE
(7' WIDE)

GREEN PAVEMENT MARKING

ACHIEVING COMPLETE STREETS IN ELIZABETHTOWN BOROUGH

Wider travel lanes are correlated with higher vehicle speeds.



"As the width of the lane increased, the speed on the roadway increased... When lane widths are 1 m (3.3 ft) greater, speeds are predicted to be 15 km/h (9.4 mph) faster."

Chart source: Fitzpatrick, Kay, Paul Carlson, Marcus Brewer, and Mark Wooldridge. 2000. "Design Factors That Affect Driver Speed on Suburban Streets." *Transportation Research Record* 1751: 18–25.

Regression Line

85th Percentile Speed of Traffic

TABLE 3

Ranges for Lane Width

Type of Roadway	Rural		Urban	
	US (feet)	Metric (meters)	US (feet)	Metric (meters)
Freeway	12	3.6	12	3.6
Ramps (1-lane)	12-30	3.6-9.2	12-30	3.6-9.2
Arterial	11-12	3.3-3.6	10-12	3.0-3.6
Collector	10-12	3.0-3.6	10-12	3.0-3.6
Local	9-12	2.7-3.6	9-12	2.7-3.6

(Source: A Policy on Geometric Design of Highways and Streets, AASHTO)

Transporation Research Board's "Effective Utilization of Street Width on Urban Arterials"

"… all projects evaluated during the course of the study that consisted of lane widths exclusively of 10 feet or more [rather than 12 feet] resulted in *accident rates that were either reduced or unchanged*."

Transporation Research Board's "Relationship of Lane Width to Safety for Urban and Suberban Arterials"

"A safety evaluation of lane widths for arterial roadway segments found no indication, except in limited cases, that the use of narrower lanes increases crash frequencies.

The lane widths in the analyses conducted were generally either not statistically significant or indicated that *narrower lanes were associated with lower rather than higher crash frequencies."*

Florida Department of Transportation

"The measured saturation flow rates are similar for lane widths between 10 feet and 12 feet. … Thus, so long as all other geometric and traffic signalization conditions remain constant, there is no measurable decrease in urban street capacity when through lane widths are narrowed from 12 feet to 10 feet."