I-64 WESTBOUND TO I-264 WESTBOUND RAMP IMPROVEMENTS

JEFFERSON COUNTY
ITEM NO. 5-159.00

PHASE 1A DESIGN

DRAFT FINAL REPORT

PREPARED FOR:

KENTUCKY TRANSPORTATION CABINET

PREPARED BY:

PB 100 YEARS PARSONS BRINCKERHOFF

SEPTEMBER 2006

SHEET NO.	TITLE
FR-1	EXECUTIVE SUMMARY
FR-2	INITIAL CONSTRUCTION - PLAN VIEW - SHEET 1
FR-3	INITIAL CONSTRUCTION - PLAN VIEW - SHEET 2
FR-4	INITIAL CONSTRUCTION - PLAN VIEW - SHEET 3
FR-5	INITIAL CONSTRUCTION - PLAN VIEW - SHEET 4
FR-6	INITIAL CONSTRUCTION - PLAN VIEW - SHEET 5
FR-7	ULTIMATE CONSTRUCTION - PLAN VIEW - SHEET 1
FR-8	ULTIMATE CONSTRUCTION - PLAN VIEW - SHEET 2
FR-9	ULTIMATE CONSTRUCTION - PLAN VIEW - SHEET 3
FR-10	ULTIMATE CONSTRUCTION - CONCEPTUAL PROFILES
FR-11	ULTIMATE CONSTRUCTION - PLAN VIEW - SHEET 4
FR-12	ULTIMATE CONSTRUCTION - PLAN VIEW - SHEET 5
FR-13	ULTIMATE CONSTRUCTION - PLAN VIEW - SHEET 6
FR-14	CONCEPTUAL TYPICAL SECTIONS
FR-15	CRITICAL CROSS SECTIONS
FR-16	VISSIM ANALYSIS - I-64 & I-264 WESTBOUND
FR-17	VISSIM ANALYSIS - I-264 WESTBOUND
FR-18	VISSIM ANALYSIS - I-264 WESTBOUND COLLECTOR-DISTRIBUTOR ROAD
FR-19	HCS ANALYSIS
APPENDIX A - PRELIMINARY RIGHT OF WAY TAKINGS	
APPENDIX B - MINUTES OF PROJECT TEAM MEETINGS	
APPENDIX C - EXISTING & FUTURE CONDITIONS REPORT	
APPENDIX D - CONCEPTUAL ALTERNATES REPORT	
APPENDIX E - TRAFFIC FORECAST	

SHEET NO.	TITLE

INDEX OF SHEETS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-00

EXECUTIVE SUMMARY

PURPOSE OF PROJECT – The purpose of this project is to improve traffic operations, reduce congestion, and improve safety on I-64 Westbound and I-264 Westbound and on the I-64 Westbound to I-264 Westbound ramp in the vicinity of the I-64 / I-264 Interchange. Heavy daily traffic volumes commonly result in traffic delays and traffic backups on I-64 Westbound and poor weaving conditions for motorists between the convergence of the I-64 Westbound ramp and I-264 Westbound and the I-264 / Breckenridge Lane interchange.

APPROACH TO PROJECT DEVELOPMENT – Parsons Brinckerhoff (PB) has developed preliminary conceptual alternatives that could be implemented as short-term (low cost), mid-term, or long-term (high cost) options that serve the needs of the project. Options that were considered have ranged from pavement removal, re-striping, and additional signing to widening the I-64 WB to I-264 WB Ramp to two (2) lanes or construction of a new interchange to provide alternate access to the Dupont Area, relieving congestion at the I-264 / Breckenridge Lane Interchange. Conceptual design work has been used to determine the feasibility of the options considered. At the onset of the project, it was difficult for the Project Team to identify a defined scope of work since multiple short-range (low cost) and long-range (high cost) options were to be considered. Therefore, the Project Team decided that the project would best be served by dividing the Phase 1 engineering services into Phase 1A and Phase 1B Design. Phase 1A has involved the study of a broad range of conceptual level alternates, and Phase 1B and Phase 2 will involve the preliminary and final design of the recommended alternate or alternates. This report is a summary of the Phase 1A Design process. See the Minutes of Project Team Meetings in Appendix A for a more detailed description of the development of this project to date.

EXISTING AND FUTURE CONDITIONS – The study began with development of the Existing and Future Conditions. The development of the Existing and Future Conditions Report included the study of the existing roadway geometrics and existing typical sections to determine any deficiencies with respect to current design standards. Existing right of way and parcel ownership was established according to information acquired with the LOJIC mapping. The utility companies were contacted and major existing utilities were identified. Field surveys of anticipated critical cross sections and existing bridges were completed. Existing major drainage structures were identified. Crash rate analysis was completed and was also included in the Existing and Future Conditions Report. The Existing and Future Conditions Report is included as Appendix C in this Final Report.

STUDY OF CONCEPTUAL ALTERNATES – Twelve conceptual alternates were developed and analyzed using the established VISSIM model and HCS. Each conceptual alternate was incorporated into the VISSIM model to measure individual performance against the existing and future no-build conditions. Preliminary construction cost estimates were established and an evaluation matrix was developed identifying anticipated impacts and improvements. See Appendix D for the Conceptual Alternates Report.

RECOMMENDED ALTERNATE – The Project Team has chosen to proceed with Alternates 3, 6, part of 7, and 10. Alternate 3 provides an additional lane along I-64 Westbound and two dedicated lanes for the I-64 Westbound to I-264 Ramp, instead of the interior lane being shared. The additional lane would likely be added just west of the Oxmoor Farm Road Overpass and would drop with the ramp to I-264. The configuration of the I-64 Westbound to I-264 Ramp would remain as it exists today. The exact layout will be established during Phase 1B Design.

Alternate 6 allows the I-264 Westbound Collector-Distributor road to tie with I-264 Westbound as soon as possible beyond the exits to I-64 Eastbound and Westbound. The I-264 Westbound to I-64 Eastbound ramp is changed to a lane drop to allow the merge to occur sooner. This alternate improves safety by increasing the available weave distance for I-264 Westbound vehicles going to Breckenridge Lane and reducing conflicts between vehicles merging on I-264 from I-64.

The portion of Alternate 7 that will be carried forward involves lengthening of the left-turn storage lanes for northbound Breckenridge Lane to westbound Dutchmans Parkway.

Alternate 10 provides for construction of an additional ramp from the existing I-64 Westbound to I-264 Westbound ramp for northbound Breckenridge Lane traffic. I-264 Westbound traffic going to northbound Breckenridge Lane would be signed to use the I-264 Westbound Collector-Distributor road and would exit to Breckenridge Lane prior to merging onto I-264. The alternate essentially provides a braid of traffic bound for Breckenridge Lane across I-64 to I-264 Westbound traffic, removing the conflicting weave and merge movements of those two traffic flows between the existing interchanges. A slip ramp from I-64 Eastbound to Southbound Breckenridge Lane would be required since this movement would not be allowed with the new configuration. Two new structures would be required: an additional flyover approximately 500 feet in length and a single-span bridge approximately 110 feet in length. Partial reconstruction of the Browns Lane bridge over I-264 is likely required. Impacts to utilities along I-264 would likely include the necessary relocation of multiple electrical transmission towers.

It was noted that during the study of Conceptual Alternates, Alternate 10 as shown would need to be modified to maintain two lanes from the I-264 Westbound collector-distributor road and the impacts of doing this were yet to be established. During the combination of the recommended alternates, this has been completed. Impacts include: the I-64 Westbound to I-264 Westbound can not be carried onto I-264 Westbound as a through lane without significant right of way impacts, possible realignment of a portion of the I-264 Westbound to I-64 Eastbound ramp due to the increased width, and possible reconfiguration of the I-264 Westbound to I-64 exit ramps to provide adequate distances between gores. Additional studies during Phase 1B Design will need to be completed in order to minimize impacts and establish exact geometrics.

Alternates 3, 6, and the portion of 7 (Initial Construction) will be pursued in the short-term with construction dollars already allocated to this project in the current Six Year Highway Plan. Alternate 10 (Ultimate Construction) will be pursued in the long-term when funding becomes available.

The Ultimate Construction (Alternates 3, 6, the portion of 7, and 10) has been combined into a single alternative for the purposes of traffic analysis and development of this final report. For the purposes of traffic analysis in the years 2005 and 2010, only the Initial Construction (Alternates 3, 6, and the portion of 7) has been utilized. The Ultimate Construction has been assumed to be in place by 2015 for the purposes of the traffic analysis presented in this report.

SUMMARY – While the recommended alternate does not provide significant additions to capacity, the Project Team agrees that safety will be improved, especially between the I-64 / I-264 and I-264 / Breckenridge Lane Interchanges. Additional improvements between these interchanges that result in necessary right of way acquisition in addition to that of the recommended alternate would have severe right of way impacts to the businesses that are adjacent to the existing I-264 right of way.

It was noted during the Conceptual Alternate Report Review Meeting that the slip ramp from I-64 Eastbound to Southbound Breckenridge Lane required as part of Alternate 10 may be considered undesirable by FHWA. At this level of design, it is also very difficult to determine the exact impacts of the slip ramp to right of way and to the existing Breckenridge Lane bridge over I-64. A significant quantity of retaining wall may be required to avoid adverse impacts to Parcel No. 53. As a result, estimated costs and right of way impacts of this slip ramp could vary substantially when more detailed design studies are completed. As an alternate to this slip ramp, it may be possible to provide a connection within the existing I-64 / I-264 Interchange as exists now that would eliminate the need for the slip ramp. The alternate would require fairly detailed design to determine its feasibility and could be studied during Phase 1B Design.

The Initial Construction Costs are estimated to be $2,900,000. The Ultimate Construction Costs are estimated to be $15,600,000. These costs represent estimated construction costs only and do not include costs for right of way acquisition or utility relocation and are in 2006 dollars.

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DUTCHMANS PARKWAY
DUTCHMANS LANE
240'
530'
LENGTHEN LEFT-TURN STORAGE
WEICHER CREEK
DUPONT CIRCLE
BRECKENRIDGE SUBSTATION
I-264 WB TO BRECKENRIDGE LANE NB RAMP
BRECKENRIDGE LANE TO I-264 WB RAMP
BRECKENRIDGE LANE SB RAMP
EX. 2-SPAN BRIDGE
BRECKENRIDGE LANE
I-264 WB
I-264 EB
BRECKENRIDGE LANE SB TO I-264 EB RAMP
I-264 EB TO BRECKENRIDGE LANE NB RAMP
BRECKENRIDGE LANE NB TO I-264 EB RAMP
48" STORM
8' X 3' RCBC
14' X 8' RCBC
24'
12'
30'
8'

100 0 100 200 300
GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE
INITIAL CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-2

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DUTCHMANS LANE
EX. 4-SPAN BRIDGE
I-64 EB
I-64 WB
I-64 TO I-264 WB RAMP
I-264 WB TO I-64 EB RAMP
I-264 WB C-D ROAD
48" STORM
EX. 4-SPAN BRIDGE
I-264 WB
I-264 EB
I-264 EB C-D ROAD
I-264 EB TO I-64 WB RAMP
I-64 EB TO I-264 EB RAMP
BROWNS LANE
GRAPHIC SCALE IN FEET
100 0 100 200 300

RECOMMENDED ALTERNATE
INITIAL CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-3

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

P 19
P 18
P 17
P 16
P 15
P 14
P 13
P 12
P 11

I-264 WB TO I-64 WB RAMP
I-264 WB TO I-64 EB RAMP
I-264 WB C-D ROAD
I-264 WB
I-264 EB
I-264 EB C-D ROAD
EX. 4-SPAN BRIDGE
EX. I-SPAN BRIDGE
I-264 EB TO I-64 WB RAMP
I-64 WB TO I-264 WB RAMP
I-64 WB TO I-264 EB RAMP
BEARGRASS CREEK

36" STORM
66" STORM
54" STORM
42"
30"
24"
27"
16'
60'

100 0 100 200 300
GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE
INITIAL CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-4

BEARGRASS CREEK

P 12

P 10

P 11

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

I-64 WB TO I-264 EB RAMP

I-64 WB TO I-264 WB RAMP

54" STORM

16'

I-64 WB

I-64 EB

I-264 EB TO I-64 EB RAMP

72" x 44"

36"

8"

NOTES:

(1) SEE SHEET FR-14 FOR CONCEPTUAL TYPICAL SECTIONS.

100 0 100 200 300

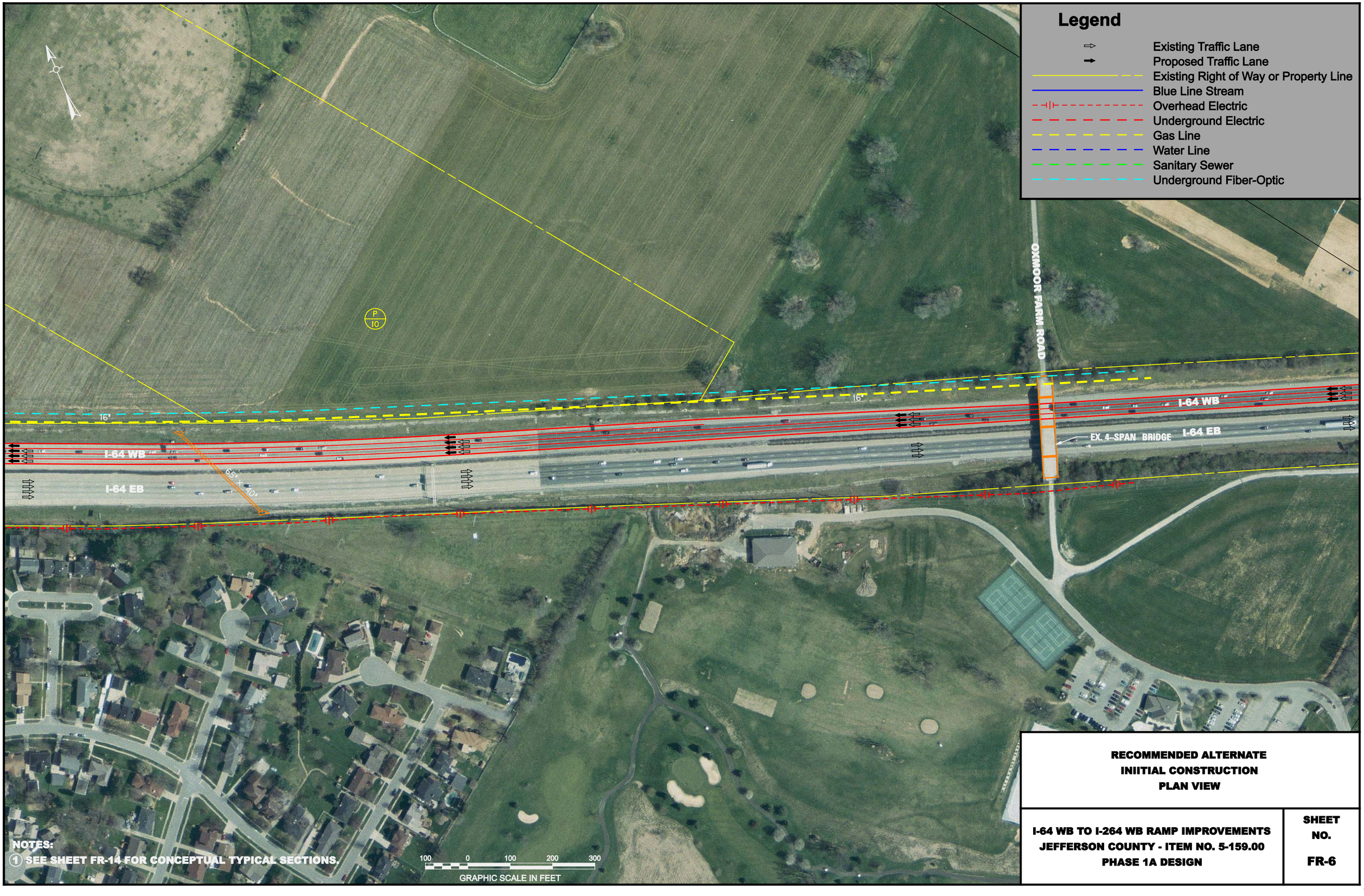
GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE
INITIAL CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

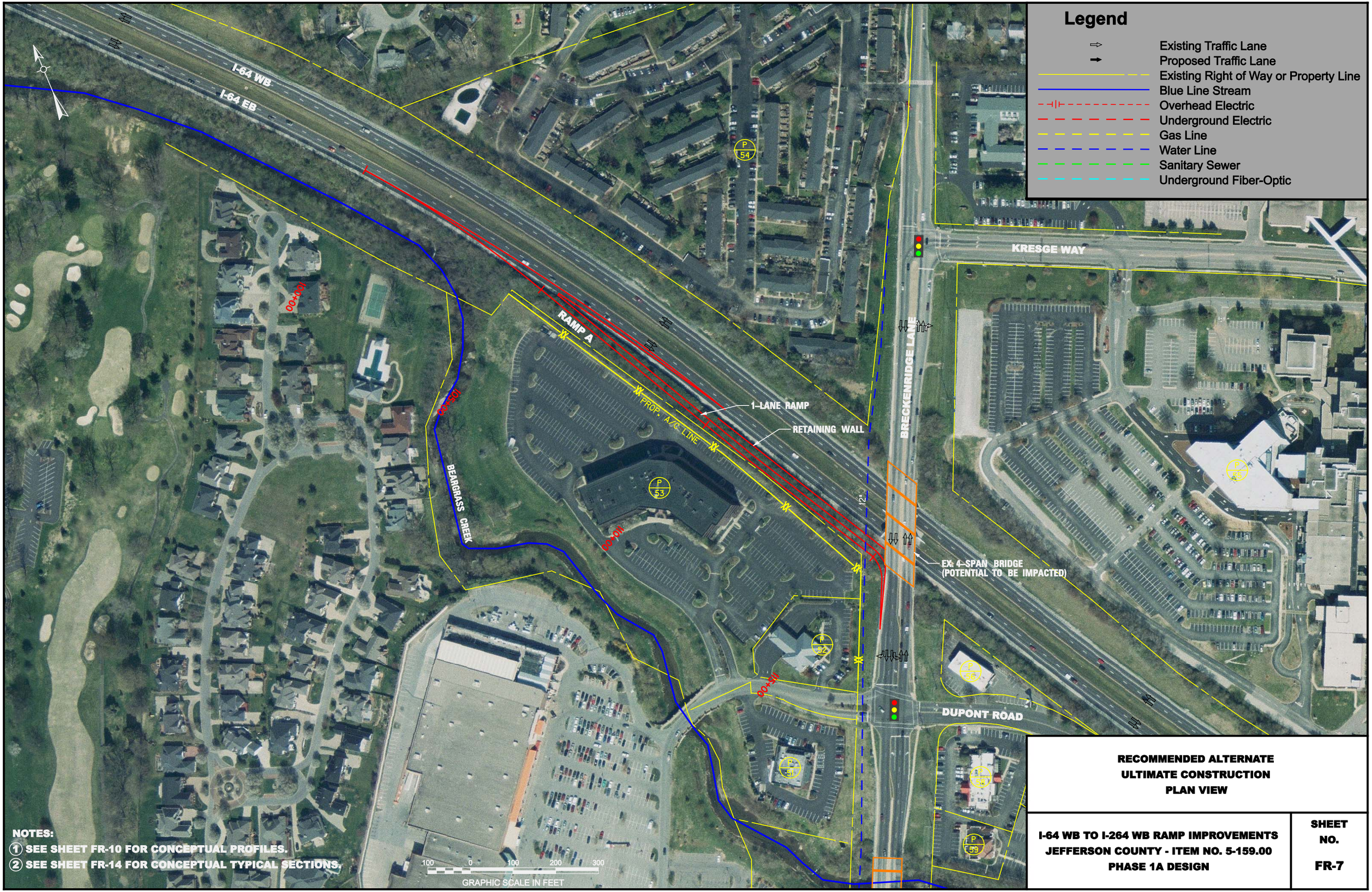
FR-5



RECOMMENDED ALTERNATE
INIITIAL CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-6



Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

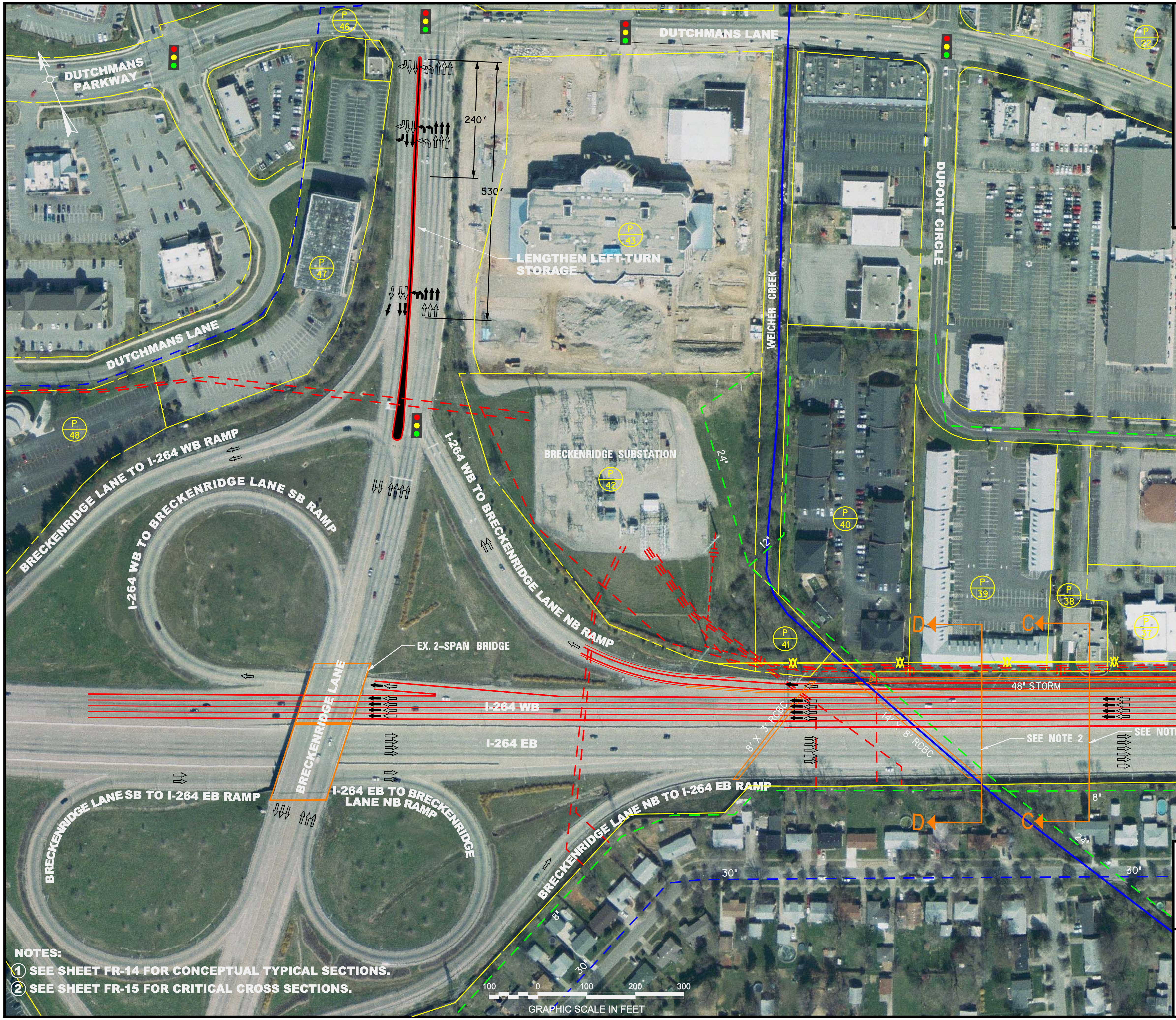
NOTES:

1. SEE SHEET FR-10 FOR CONCEPTUAL PROFILES.
2. SEE SHEET FR-14 FOR CONCEPTUAL TYPICAL SECTIONS.

RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-7



DUTCHMANS LANE
DUTCHMANS PARKWAY
DUTCHMANS LANE
DUPONT CIRCLE
WEICHER CREEK
240'
530'
LENGTHEN LEFT-TURN STORAGE
BRECKENRIDGE SUBSTATION
24'
12'
BRECKENRIDGE LANE TO I-264 WB RAMP
I-264 WB TO BRECKENRIDGE LANE SB RAMP
I-264 WB TO BRECKENRIDGE LANE NB RAMP
EX. 2-SPAN BRIDGE
BRECKENRIDGE LANE
I-264 WB
I-264 EB
48" STORM
PROP. A/C LINE
8' X 3' RCBC
14' X 8' RCBC
SEE NOTE 2
SEE NOTE 2
8'
30'
30'
BRECKENRIDGE LANE SB TO I-264 EB RAMP
I-264 EB TO BRECKENRIDGE LANE NB RAMP
BRECKENRIDGE LANE NB TO I-264 EB RAMP
BRECKENRIDGE LANE
D
C
100 0 100 200 300
GRAPHIC SCALE IN FEET

Legend

⇨	Existing Traffic Lane
➡	Proposed Traffic Lane
	Existing Right of Way or Property Line
	Blue Line Stream
	Overhead Electric
	Underground Electric
	Gas Line
	Water Line
	Sanitary Sewer
	Underground Fiber-Optic

NOTES:

1. SEE SHEET FR-14 FOR CONCEPTUAL TYPICAL SECTIONS.
2. SEE SHEET FR-15 FOR CRITICAL CROSS SECTIONS.

RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO. FR-8

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

PROP. 4–SPAN BRIDGE
NOTE 1
EXTEND EXISTING RETAINING WALL
EX. 4–SPAN BRIDGE
FLYOVER 1
FLYOVER 2
1–LANE RAMP
PROP. A/C LINE
SEE NOTE 3
I-64 TO I-264 WB RAMP
I-264 WB TO I-64 EB RAMP
I-64 EB
I-64 WB
I-264 WB C-D ROAD
NOTE 1
PROP. 1–SPAN BRIDGE
1–LANE RAMP
EX. 4–SPAN BRIDGE
EX. 4–SPAN BRIDGE (PARTIAL RECONSTRUCTION LIKELY REQUIRED)
I-264 WB
I-264 EB
I-264 EB C-D ROAD
I-264 EB TO I-64 WB RAMP
I-64 EB TO I-264 EB RAMP
BROWNS LANE
28" STORM
00+00
10+00
15+00
20+00
25+00
30+00
35+00
38+50
45+00
50+00

NOTES:
1. SEE SHEET FR-10 FOR CONCEPTUAL PROFILES.
2. SEE SHEET FR-14 FOR CONCEPTUAL TYPICAL SECTIONS.
3. SEE SHEET FR-15 FOR CRITICAL CROSS SECTIONS.

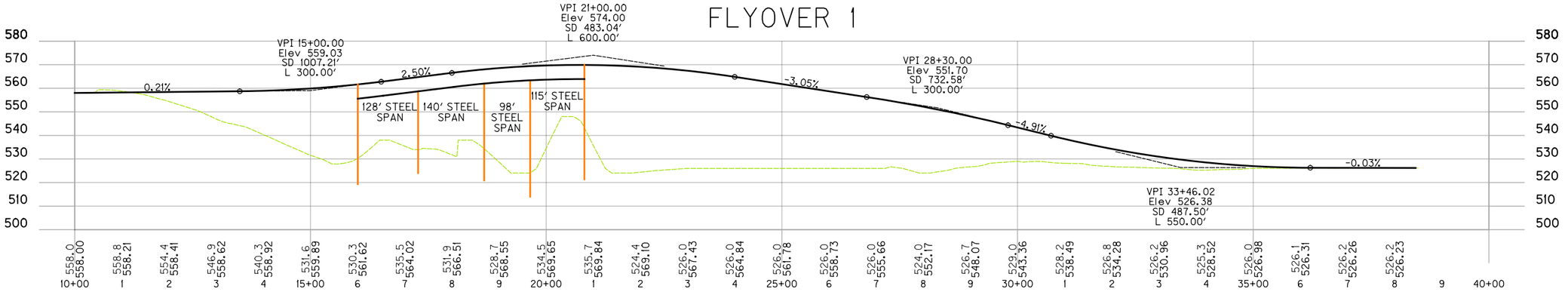
100 0 100 200 300
GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PLAN VIEW

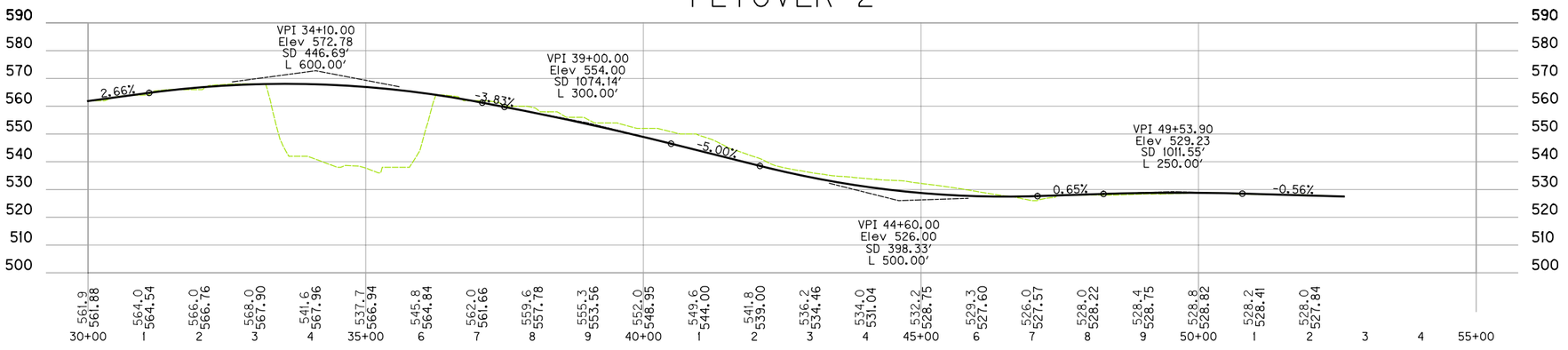
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-9

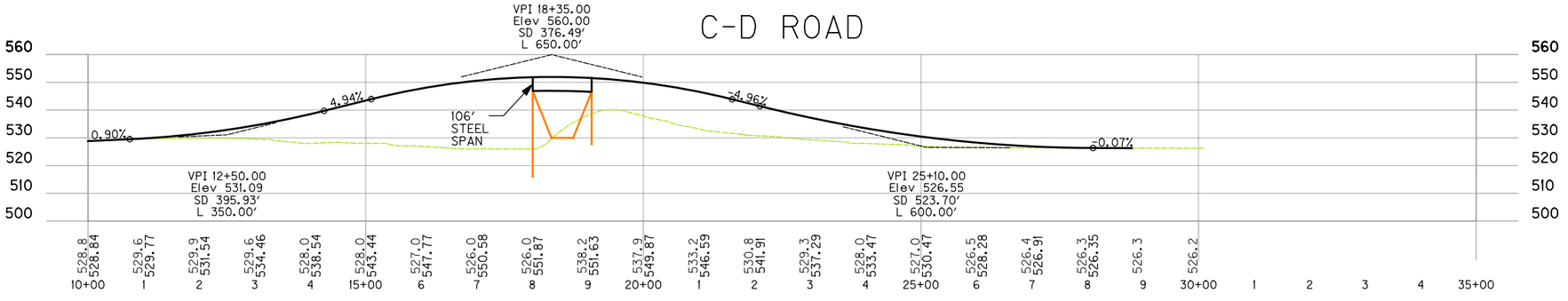
FLYOVER 1



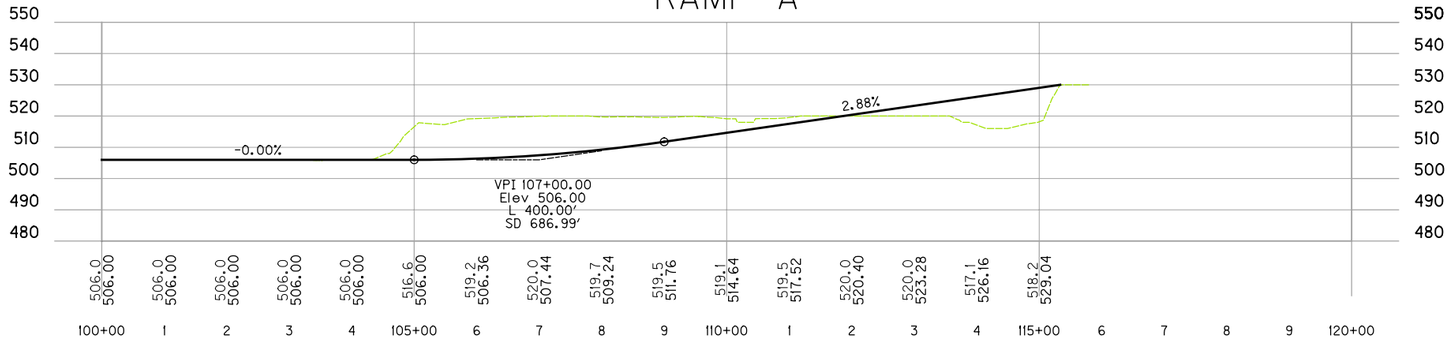
FLYOVER 2



C-D ROAD



RAMP A



GRAPHIC SCALE IN FEET
125 0 125 250 325

NOTES:

1. **CONCEPTUAL PROFILES ARE PRELIMINARY AND SUBJECT TO CHANGE.**
2. **FURTHER STRUCTURE STUDIES WILL BE REQUIRED DURING PHASE 1 DESIGN TO ESTABLISH ACTUAL STRUCTURE LAYOUTS.**

RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PRELIMINARY PROFILES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-10

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

I-264 WB TO I-64 WB RAMP
I-264 WB C-D ROAD
I-264 WB
I-264 EB
EX. 4-SPAN BRIDGE
I-264 EB TO I-64 WB RAMP
I-64 WB TO I-264 WB RAMP
I-64 WB TO I-264 EB RAMP
I-264 EB C-D ROAD
EX. 1-SPAN BRIDGE
BEARGRASS CREEK
66" STORM
54" STORM
36'
30"
24"
27"
42"
16'
P 11
P 12
P 13
P 15
P 16
P 17
P 18
P 19

100 0 100 200 300
GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-11

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

BEARGRASS CREEK

P 12

P 10

P 11

I-64 WB TO I-264 EB RAMP

I-64 WB TO I-264 WB RAMP

54" STORM

16'

I-64 WB

I-64 EB

72" x 44"

36"

8"

I-264 EB TO I-64 EB RAMP

NOTES:

(1) SEE SHEET FR-14 FOR CONCEPTUAL TYPICAL SECTIONS.

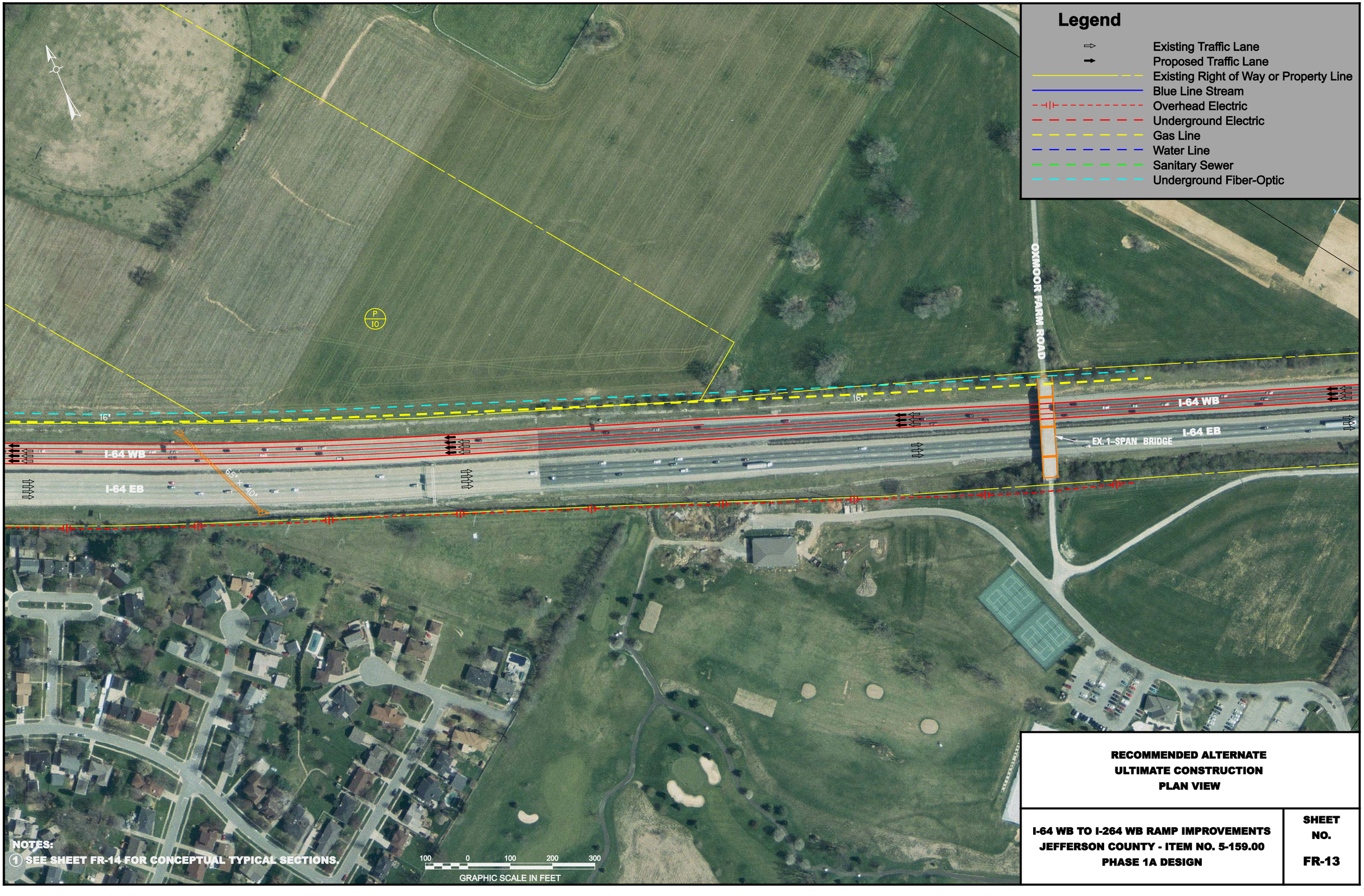
100 0 100 200 300

GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-12

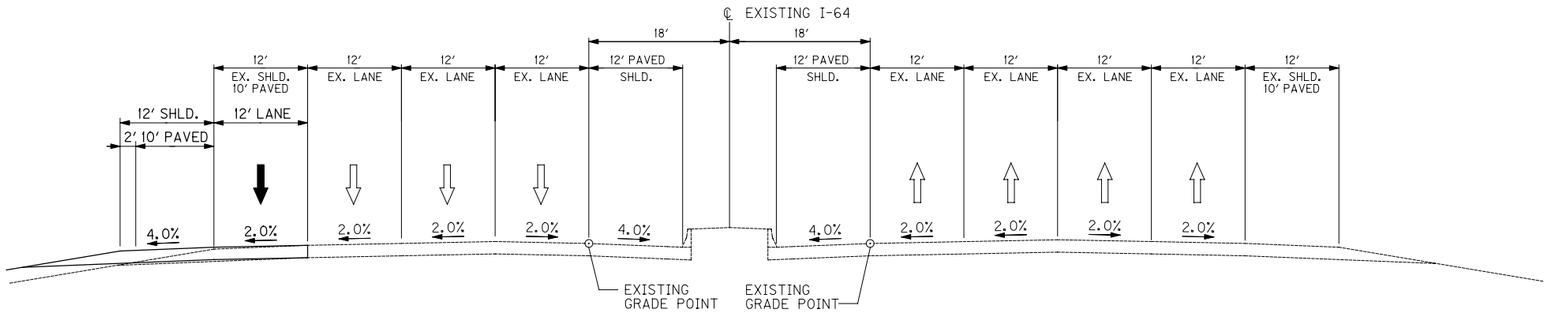


RECOMMENDED ALTERNATE
ULTIMATE CONSTRUCTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

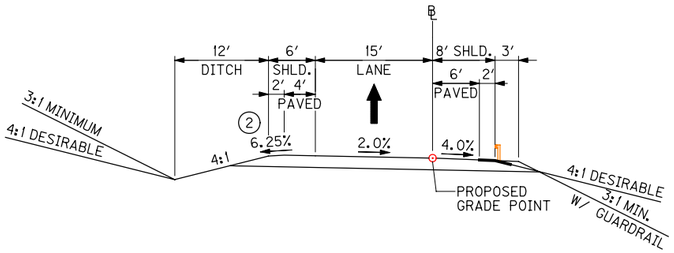
SHEET NO.
FR-13

TYPICAL SECTIONS



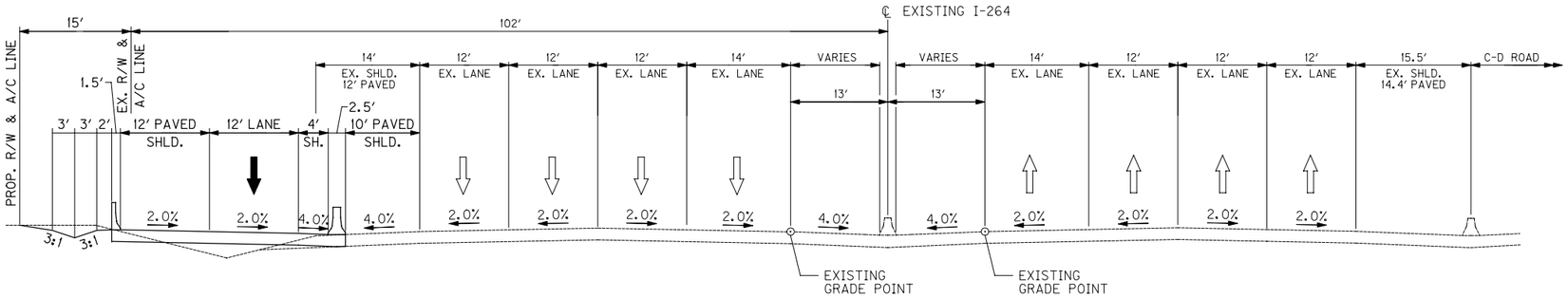
NORMAL CUT/FILL SECTION

I–64 WIDENING



NORMAL CUT/FILL SECTION

1–LANE RAMP



NORMAL CUT/FILL SECTION

I–264 WIDENING

NOTES:

① CONCEPTUAL TYPICAL SECTIONS ARE PRELIMINARY AND SUBJECT TO CHANGE. FURTHER STUDIES WILL BE REQUIRED DURING PHASE 1B DESIGN TO ESTABLISH ACTUAL TYPICAL SECTIONS THAT MEET CURRENT DESIGN CRITERIA WHILE MINIMIZING IMPACTS.

100 0 100 200 300

GRAPHIC SCALE IN FEET

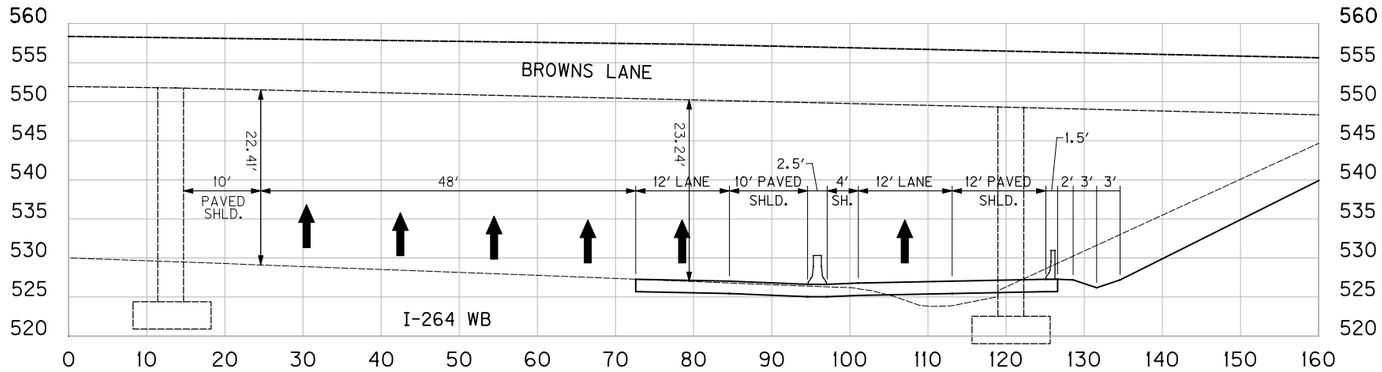
RECOMMENDED ALTERNATE CONCEPTUAL TYPICAL SECTIONS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

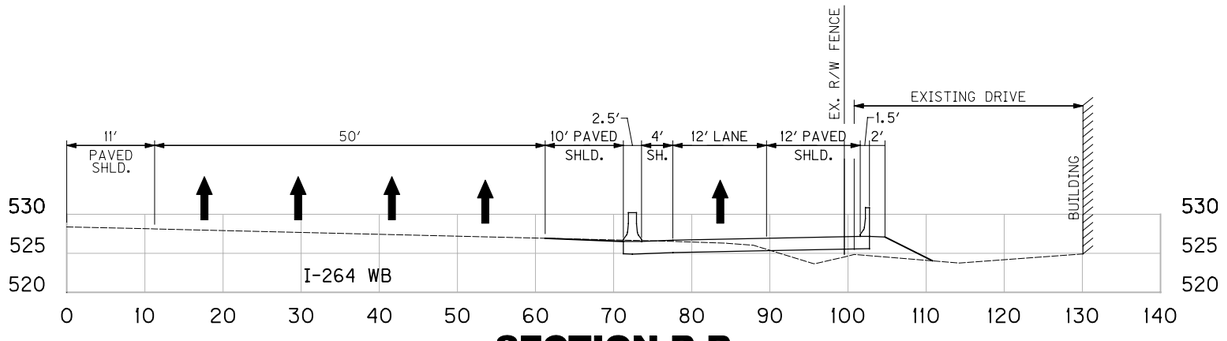
SHEET NO.

FR-14

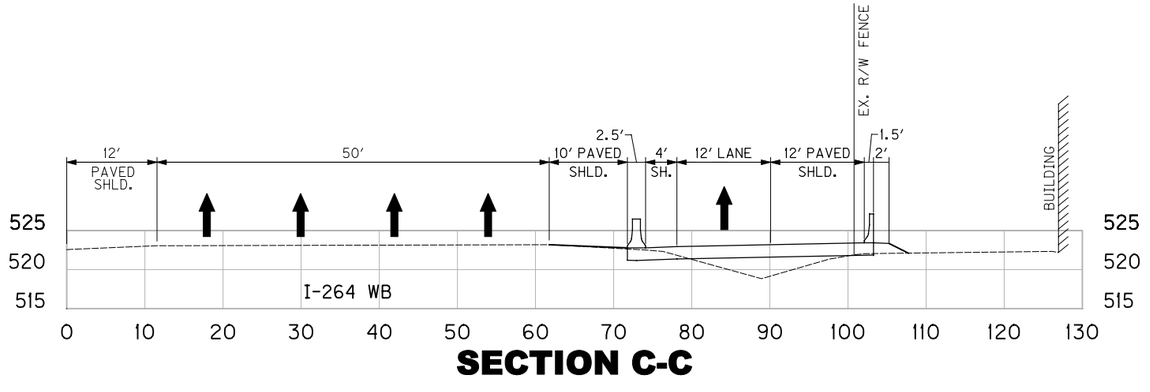
CRITICAL CROSS SECTIONS



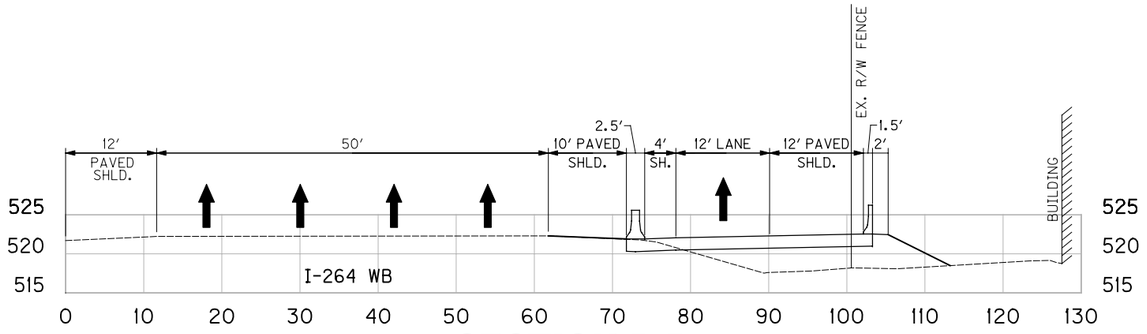
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTES:

1. **CRITICAL CROSS SECTIONS ARE BASED UPON CONCEPTUAL TYPICAL SECTIONS WHICH ARE PRELIMINARY IN NATURE. ACTUAL IMPACTS COULD VARY FOLLOWING FURTHER STUDIES DURING PHASE 1B DESIGN.**

10 0 10 20 30

GRAPHIC SCALE IN FEET

RECOMMENDED ALTERNATE CRITICAL CROSS SECTIONS

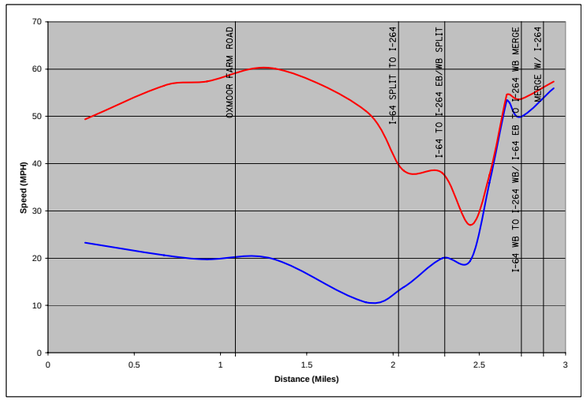
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

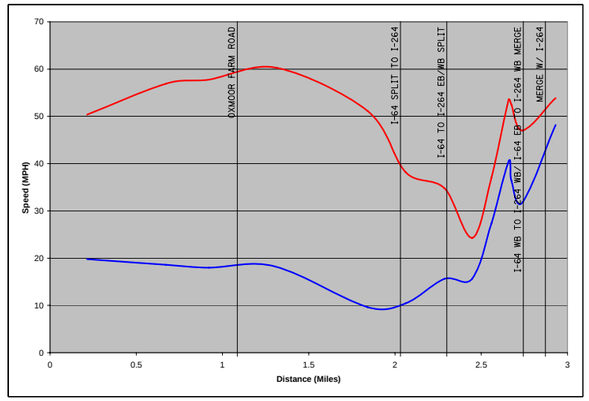
FR-15

VISSIM TRAFFIC ANALYSIS
I-64 AND I-264 WB - HURSTBOURNE LANE TO BRECKENRIDGE LANE

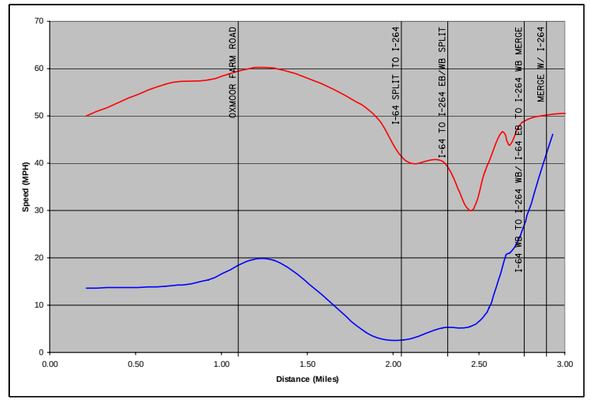
2005 AM



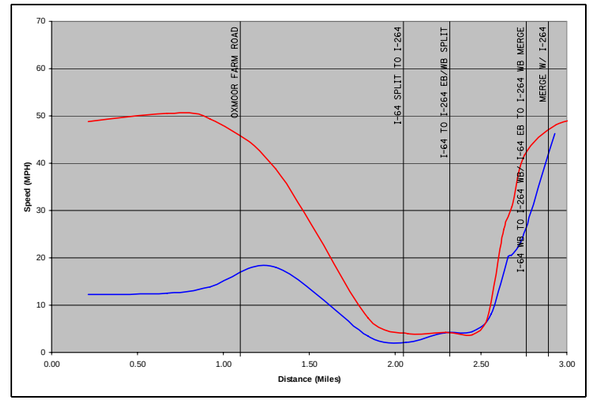
2010 AM



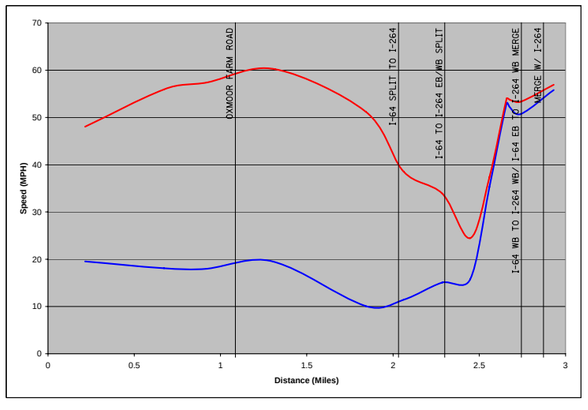
2015 AM



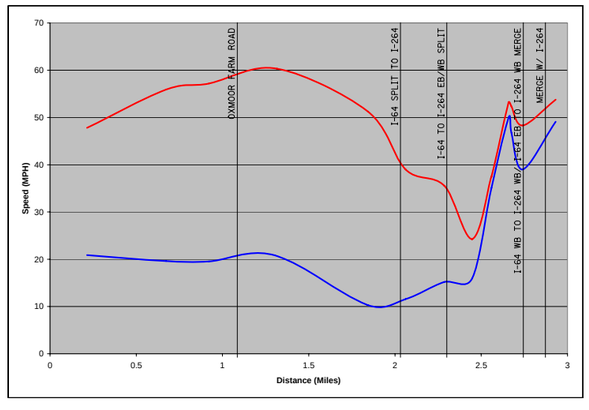
2025 AM



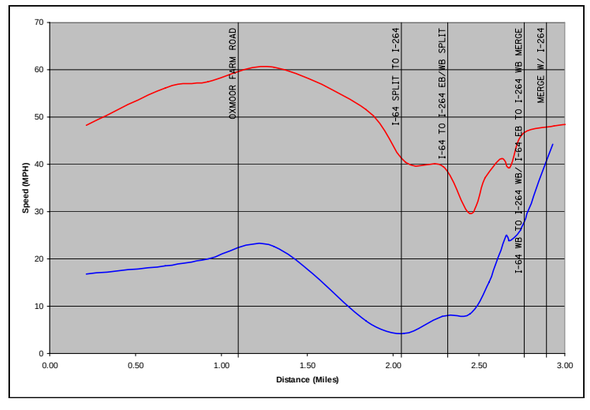
2005 PM



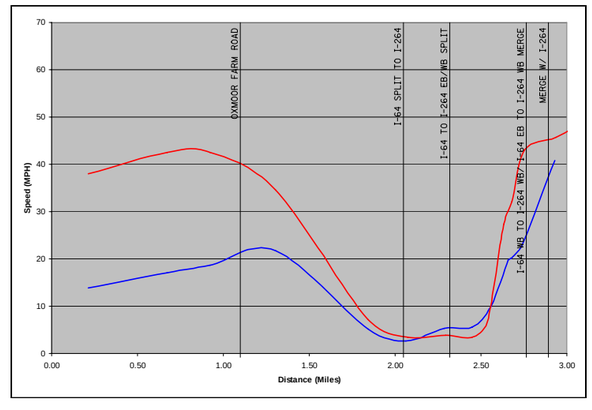
2010 PM



2015 PM



2025 PM



NOTES:

1. **AVERAGE TRAVEL SPEEDS FOR 2005 AND 2010 ARE BASED ON INCORPORATION OF INITIAL CONSTRUCTION. ULTIMATE CONSTRUCTION IS TAKEN INTO CONSIDERATION FOR 2015 AND 2025.**

Legend

- No-Build
- Build

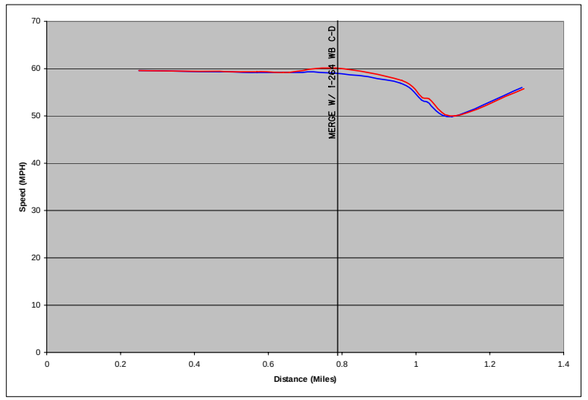
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

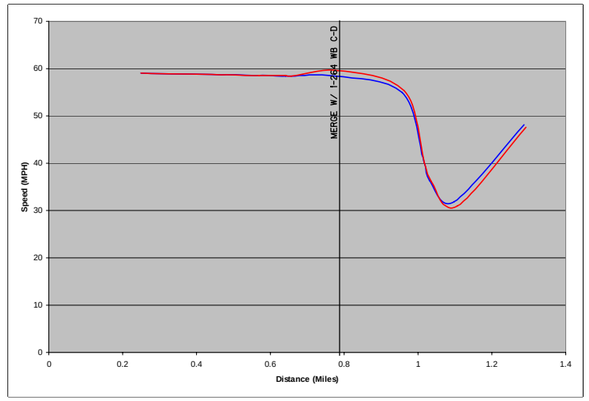
FR-16

VISSIM TRAFFIC ANALYSIS
I-264 WB - SHELBYVILLE ROAD TO BRECKENRIDGE LANE

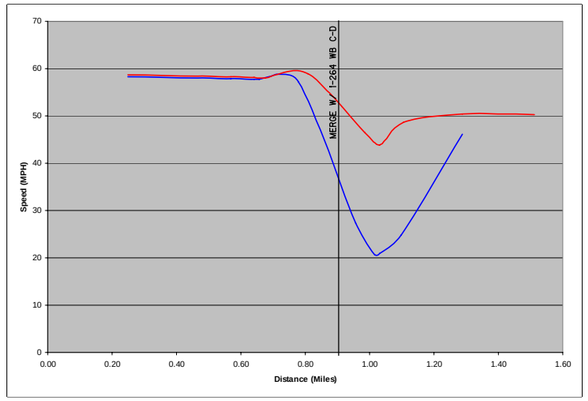
2005 AM



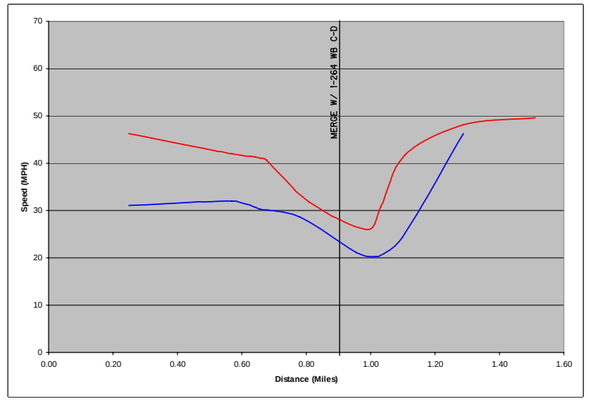
2010 AM



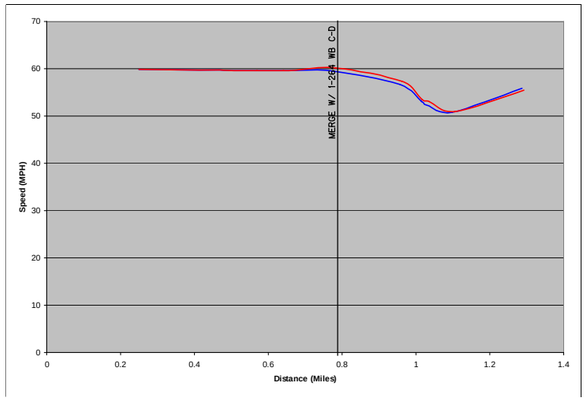
2015 AM



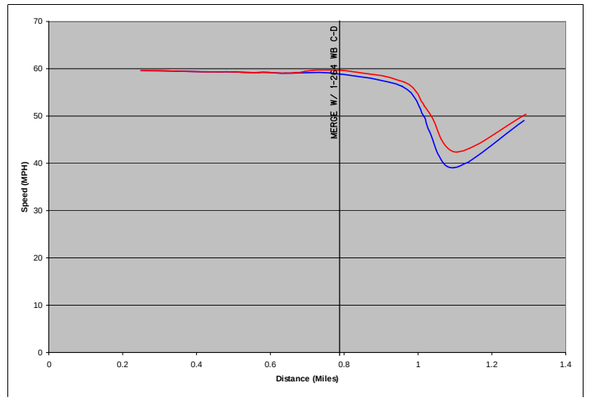
2025 AM



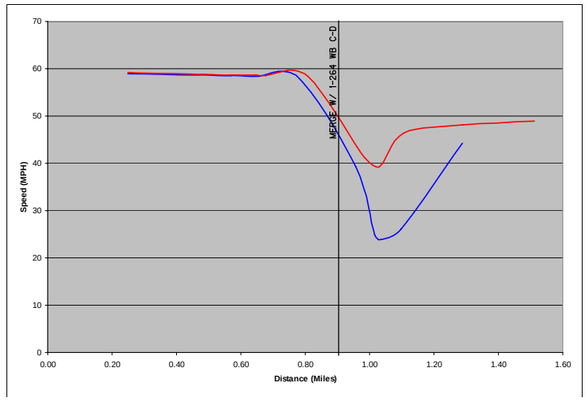
2005 PM



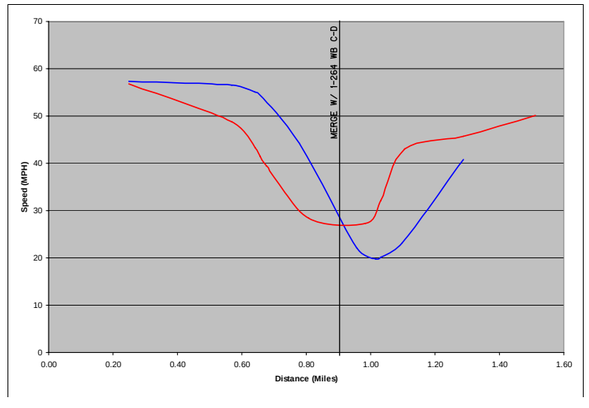
2010 PM



2015 PM



2025 PM



NOTES:

1. **AVERAGE TRAVEL SPEEDS FOR 2005 AND 2010 ARE BASED ON INCORPORATION OF INITIAL CONSTRUCTION. ULTIMATE CONSTRUCTION IS TAKEN INTO CONSIDERATION FOR 2015 AND 2025.**

Legend

- No-Build
- Build

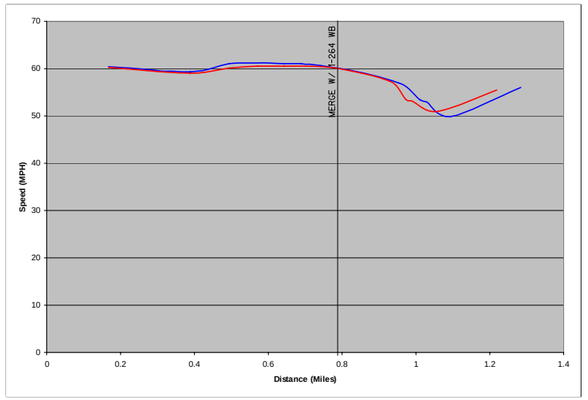
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

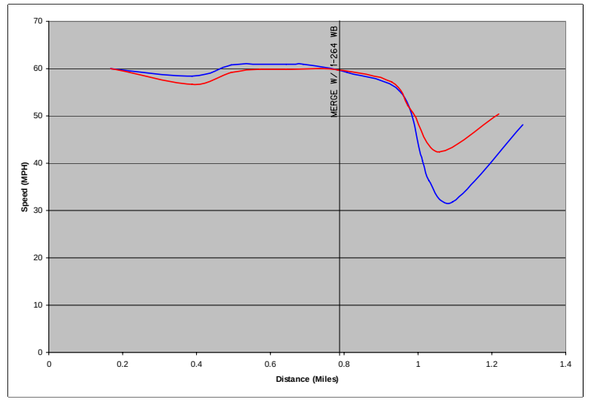
FR-17

VISSIM TRAFFIC ANALYSIS
I-264 WB C-D ROAD - SHELBYVILLE ROAD TO BRECKENRIDGE LANE

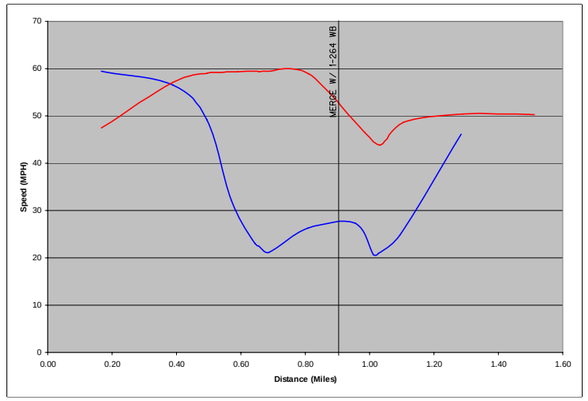
2005 AM



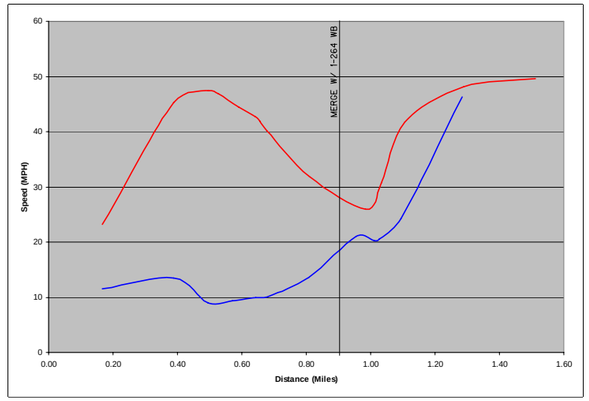
2010 AM



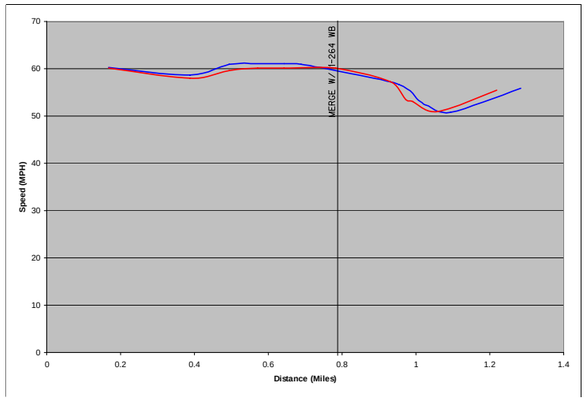
2015 AM



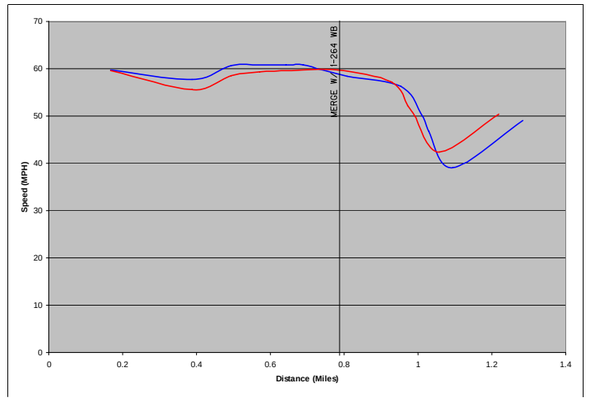
2025 AM



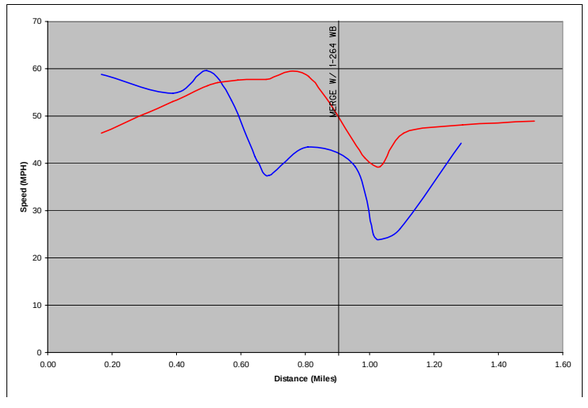
2005 PM



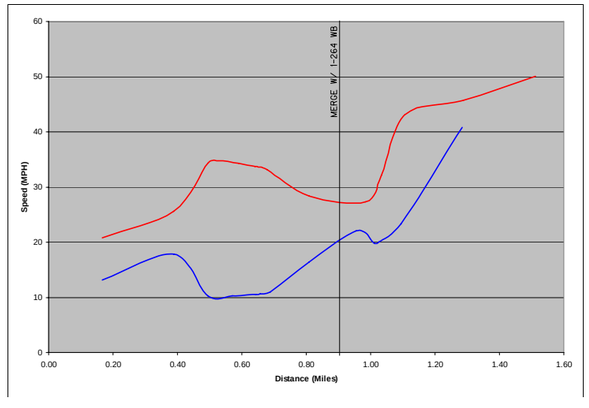
2010 PM



2015 PM



2025 PM



NOTES:

1. **AVERAGE TRAVEL SPEEDS FOR 2005 AND 2010 ARE BASED ON INCORPORATION OF INITIAL CONSTRUCTION. ULTIMATE CONSTRUCTION IS TAKEN INTO CONSIDERATION FOR 2015 AND 2025.**

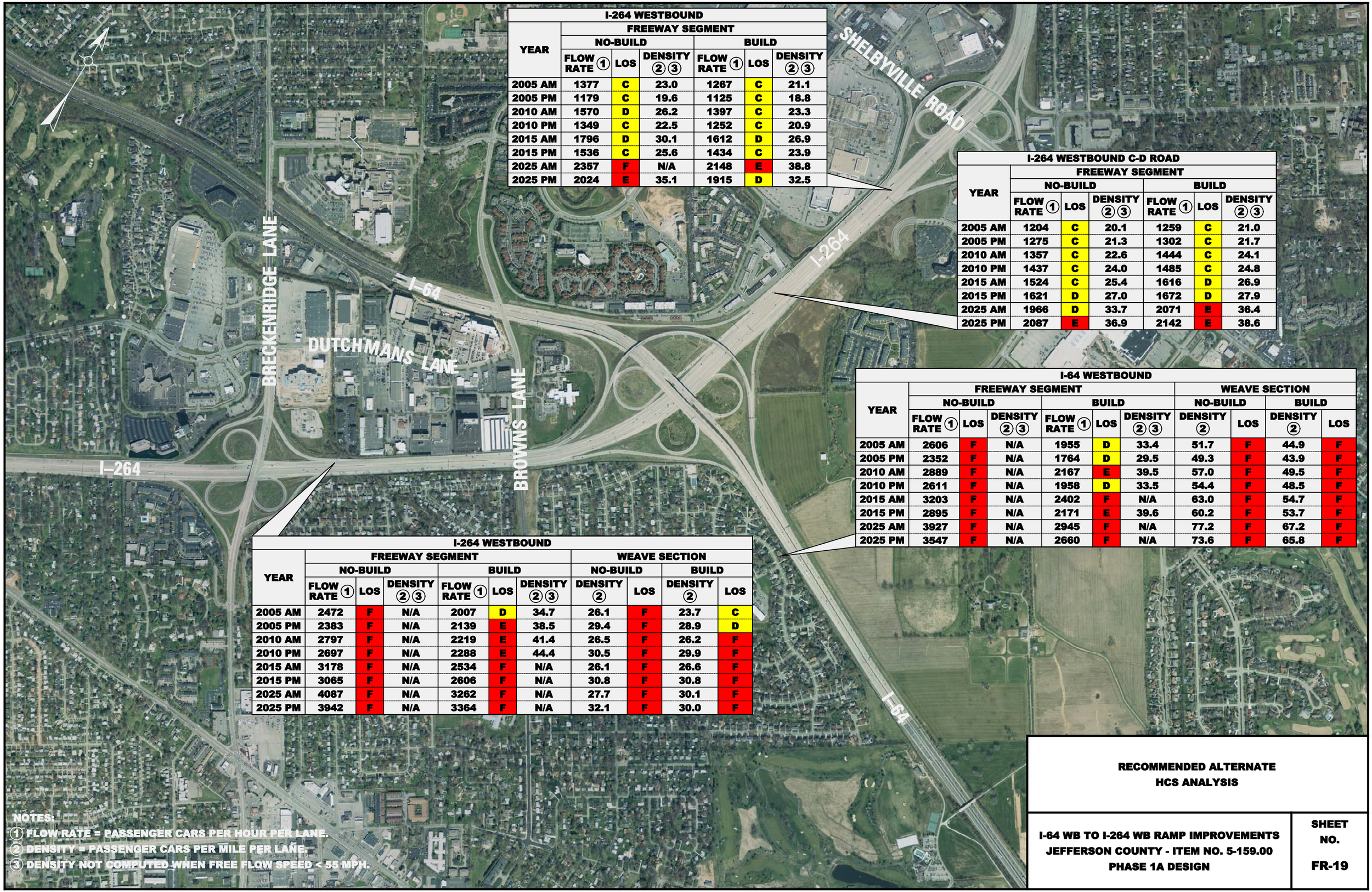
Legend

- No-Build
- Build

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

FR-18



I-264 WESTBOUND

YEAR	FREEWAY SEGMENT					
	NO-BUILD			BUILD		
	FLOW RATE ①	LOS	DENSITY ②③	FLOW RATE ①	LOS	DENSITY ②③
2005 AM	1377	C	23.0	1267	C	21.1
2005 PM	1179	C	19.6	1125	C	18.8
2010 AM	1570	D	26.2	1397	C	23.3
2010 PM	1349	C	22.5	1252	C	20.9
2015 AM	1796	D	30.1	1612	D	26.9
2015 PM	1536	C	25.6	1434	C	23.9
2025 AM	2357	F	N/A	2148	E	38.8
2025 PM	2024	E	35.1	1915	D	32.5

I-264 WESTBOUND C-D ROAD

YEAR	FREEWAY SEGMENT					
	NO-BUILD			BUILD		
	FLOW RATE ①	LOS	DENSITY ②③	FLOW RATE ①	LOS	DENSITY ②③
2005 AM	1204	C	20.1	1259	C	21.0
2005 PM	1275	C	21.3	1302	C	21.7
2010 AM	1357	C	22.6	1444	C	24.1
2010 PM	1437	C	24.0	1485	C	24.8
2015 AM	1524	C	25.4	1616	D	26.9
2015 PM	1621	D	27.0	1672	D	27.9
2025 AM	1966	D	33.7	2071	E	36.4
2025 PM	2087	E	36.9	2142	E	38.6

I-64 WESTBOUND

YEAR	FREEWAY SEGMENT						WEAVE SECTION			
	NO-BUILD			BUILD			NO-BUILD		BUILD	
	FLOW RATE ①	LOS	DENSITY ②③	FLOW RATE ①	LOS	DENSITY ②③	DENSITY ②	LOS	DENSITY ②	LOS
2005 AM	2606	F	N/A	1955	D	33.4	51.7	F	44.9	F
2005 PM	2352	F	N/A	1764	D	29.5	49.3	F	43.9	F
2010 AM	2889	F	N/A	2167	E	39.5	57.0	F	49.5	F
2010 PM	2611	F	N/A	1958	D	33.5	54.4	F	48.5	F
2015 AM	3203	F	N/A	2402	F	N/A	63.0	F	54.7	F
2015 PM	2895	F	N/A	2171	E	39.6	60.2	F	53.7	F
2025 AM	3927	F	N/A	2945	F	N/A	77.2	F	67.2	F
2025 PM	3547	F	N/A	2660	F	N/A	73.6	F	65.8	F

I-264 WESTBOUND

YEAR	FREEWAY SEGMENT						WEAVE SECTION			
	NO-BUILD			BUILD			NO-BUILD		BUILD	
	FLOW RATE ①	LOS	DENSITY ②③	FLOW RATE ①	LOS	DENSITY ②③	DENSITY ②	LOS	DENSITY ②	LOS
2005 AM	2472	F	N/A	2007	D	34.7	26.1	F	23.7	C
2005 PM	2383	F	N/A	2139	E	38.5	29.4	F	28.9	D
2010 AM	2797	F	N/A	2219	E	41.4	26.5	F	26.2	F
2010 PM	2697	F	N/A	2288	E	44.4	30.5	F	29.9	F
2015 AM	3178	F	N/A	2534	F	N/A	26.1	F	26.6	F
2015 PM	3065	F	N/A	2606	F	N/A	30.8	F	30.8	F
2025 AM	4087	F	N/A	3262	F	N/A	27.7	F	30.1	F
2025 PM	3942	F	N/A	3364	F	N/A	32.1	F	30.0	F

NOTES:
① FLOW RATE = PASSENGER CARS PER HOUR PER LANE.
② DENSITY = PASSENGER CARS PER MILE PER LANE.
③ DENSITY NOT COMPUTED WHEN FREE FLOW SPEED < 55 MPH.

RECOMMENDED ALTERNATE
HCS ANALYSIS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
FR-19

APPENDIX A

Preliminary Right of Way Takings Recommended Alternate

I-64 WESTBOUND TO I-264 WESTBOUND RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PRELIMINARY RIGHT OF WAY TAKINGS
RECOMMENDED ALTERNATE

PARCEL NO.	OWNER	BUSINESS NAME	TOTAL AREA OF TRACT (acres)	PERMANENT R/W ACQUIRED (acres)	PORTION REMAINING (acres)	REMARKS
20	UMC Dupont Inc.	Ten Broeck Hospital	13.87	1.83	12.04	
31	Browns Lane Ministorage Ltd.	Lock N Key	3.60	0.22	3.38	Storage Facility. Likely requires removal of rear vehicular access. Could result in loss of end units to reconstruct vehicular access.
32	PT Co. LLC	Professional Tower	4.07	0.19	3.88	Office Tower. Likely requires removal of approximately 35 parking spaces.
33	Dupont Medical Ctr. LLC	Dupont Medical Center	1.10	0.05	1.05	Office Tower. Likely requires removal of approximately 25 parking spaces.
34	Dupont Medical Ctr. LLC	Dupont Medical Center	0.91	0.05	0.86	
35	Dupont Medical Ctr. LLC	Dupont Medical Center	1.52	0.03	1.49	
36	4000 Associates	Vogt Power International	2.48	0.13	2.35	Office Building. Likely requires removal of approximately 25 parking spaces.
37	Augustine LLC	Partners in Womens Health	1.06	0.09	0.97	Office Building. Likely requires removal of approximately 6 parking spaces.
38	Kentuckiana Allergy Properties LLC	Kentuckians Allergy Asthma and Immunology	1.00	0.06	0.94	
39	Hubbard Properties LLC	Dupont Square South	3.10	0.13	2.97	
40	Shenandoah Condominium Inc.	Shenandoah Condominiums	4.08	0.05	4.03	
41	Shenandoah Condominium Inc.		0.46	0.07	0.39	
42	LG&E	Breckenridge Substation	6.16	0.02	6.14	
53	NTS Realty Holdings Limited Partnership	Springs Office Center	12.18	0.47	11.71	

Note: Information shown is preliminary and is based on conceptual design. Right of way taking areas and impacts noted are subject to change.

APPENDIX B

Minutes of Project Team Meetings

Parsons Brinckerhoff Quade & Douglas, Inc.

Memorandum

TO: Jason Richardson
Project Manager, KYTC – District 5

FROM: Arlen C. Sandlin, PE
Project Manager, Parsons Brinckerhoff, Inc. (PB)

DATE: August 29, 2005

SUBJECT: I-64 WB to I-264 WB Ramp Improvements
Jefferson County - Item No. 5-159.00
Final Minutes of Pre-Design Conference

The Pre-Design Conference for the subject project was held Friday, August 12, 2005, at the District 5 office in Louisville, Kentucky. The following people were in attendance:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Greg Groves	KYTC – District 5 – Preconstruction	gregory.groves@ky.gov
Jason Richardson	KYTC – District 5 – Design	jasonr.richardson@ky.gov
Kevin Dant	KYTC – District 5 – Environmental	kevin.dant@ky.gov
Mohamad Abdol	KYTC – District 5 – Design	mohamad.abdol@ky.gov
Ananias Calvin	KYTC – Central Office – Highway	ananias.calviniii@ky.gov
Robert Frazier	Parsons Brinckerhoff	frazierr@pbworld.com
Mike Baron	Parsons Brinckerhoff	baron@pbworld.com
Steve Slade	Parsons Brinckerhoff	slade@pbworld.com
Arlen Sandlin	Parsons Brinckerhoff	sandlin@pbworld.com

The following items were discussed:

PROJECT DESCRIPTION

The purpose of this project is to improve traffic operations, reduce congestion, and improve safety on I-64 Westbound and I-264 Westbound and on the I-64 Westbound to I-264 Westbound ramp in the vicinity of the I-64 / I-264 Interchange. Heavy daily traffic volumes commonly result in traffic delays and traffic backups on I-64 Westbound and poor weaving conditions for motorists between the convergence of the I-64 Westbound ramp and I-264 Westbound and the I-264 / Breckinridge Lane interchange.

The project will include the study of short-term and long-term options that could be implemented to improve traffic operations along the ramp, I-64 Westbound, and I-264 Westbound. This phase of the project, Phase 1A, will include a "Planning Level" study of proposed options to determine their feasibility and development of a CORSIM model to analyze each option's impacts to existing traffic operations.

2333 Alumni Park Plaza, Suite 330
Lexington, Kentucky 40517
(859) 272-5400
FAX: (859) 272-6556

PROJECT FUNDING AND SCHEDULE

The schedule and funding of this project as shown in the current Recommended Six Year Highway Plan is as follows:

PHASE	FUNDING	GA YEAR	AMOUNT
Design	IM	2004	$600,000
Right of Way	IM	2006	$500,000
Utility Relocations	IM	2006	$500,000
Construction	IM	2007	$4,000,000
		TOTAL:	**$5,600,000**

Parsons Brinckerhoff (PB), the consultant, is to provide engineering and related services for this project for the following items (check all that applies):

[ ] Pre-design scoping study
[X] Phase 1A Design
[ ] Phase 1B and Phase 2 Design (Future Contract Modification)

DESIGN RELATED SERVICES

The following design related services shall be performed for Phase 1A Design as checked below:

	N/A	Department	Consultant
Photogrammetry:	X		
Surveying:			X
Environmental:		X	
Geotechnical:	X		
R/W & Utility Estimates:		X	
Traffic Analysis:			X
Pavement Design:	X		
Structure Plans:	X		
Signing Plans:	X		
Signal Plans	X		
Lighting Plans:	X		
Landscaping Plans:	X		
Utility Design:	X		

Unless otherwise specified in the Pre-design Conference Minutes, the Department shall provide:

(1) All existing and projected traffic counts, including intersection turning movements.

The Department will determine whether these services have been completed yet. If they have not, PB may be asked to complete this work through PB's current Statewide contract for traffic forecasting. District 5 will advise. It was noted at the Pre-Design Conference that it may be desirable for PB to complete this work to simplify coordination. A follow-up meeting may be required with District 5 Traffic staff to determine the best way to do this work.

District 5 has advised that the traffic counts have been completed and traffic forecasts should be complete by September 15, 2005.

(2) LOJIC mapping will be provided to PB through District 5 in LOJIC Standard Format. PB shall provide District 5 a request for LOJIC mapping identifying the area needed at the onset of the project.

(3) Copies of any available record plans of existing roads and construction plans of any proposed road projects as details are finalized and become available.

(4) Copies of any previous pertinent studies, reports or project documentation.

It was noted that a traffic study of the Breckinridge Lane / Dutchman's Lane area has been done by BTM. District 5 will obtain a copy and provide to PB.

SCOPE OF WORK

This is Phase 1A Design. PB is to develop preliminary options that may be implemented as short-range (low cost) or long-range (high cost) projects that serve the needs of the project. Options to be considered could range from pavement removal, re-striping, and additional signing to widening the I-64 WB to I-264 WB Ramp to two (2) lanes. Conceptual design work will be used to determine the feasibility of the options considered. Recommended feasible options will be carried forward to the Preliminary Line and Grade level of effort in Phase 1B Design. At this point, it is difficult for the Project Team to identify a defined scope of work since multiple short-range (low cost) and long-range (high cost) options will be considered. Therefore, the Project Team decided that the project will best be served by dividing the Phase 1 engineering services into Phase 1A and Phase 1B Design. This is Phase 1A Design.

PB will develop preliminary options that serve the needs of the project utilizing a conceptual level of design effort. Identified options will be studied to determine their feasibility and level of improvement of traffic operations in the project area for each option. PB will provide "Planning level" line drawings of options and CORSIM will be used to model the effects each option has on existing traffic operations. At the completion of Phase 1A Design, the Project Team will make recommendations of options to be carried forward to Preliminary Line and Grade via a Contract Modification for Phase 1B and Phase 2 Design.

SURVEYING

The consultant's responsibility for surveys shall include:

(1) Location of horizontal and vertical control reference points (monuments) for field-tying LOJIC mapping in such locations that they may be usable for future project phases, including construction.
(2) Critical cross sections as needed including Brown's Lane bridge over I-264 and the existing retaining wall between the I-64 WB to I-264 WB ramp and the I-264WB to I-64 EB loop ramp.

(3) PB will obtain record plans for existing utility features within the project area for purposes of estimating utility relocation costs to be completed by District 5. Field tying of existing utilities will be completed as needed in Phase 1B Design.

It is anticipated that all field surveying required for Phase 1A Design will be completed within the existing right of way.

Additional field surveys will be necessary during Phase 1B and Phase 2 Design.

PRELIMINARY DESIGN (PHASE 1A)

PB shall be responsible for all studies and construction cost estimates necessary to make a determination of the feasibility of all options considered for Phase 1A Design. Said studies should generally include the following items:

(1) Planning level development of options to be considered. Options shall be evaluated to determine their feasibility. PB will estimate the number of options to be considered for the purpose of producing the production-hour estimate.

(2) PB will establish a CORSIM model of the existing conditions of the project area including I-64 westbound, I-264 westbound including the Collector-Distributor approaching the project area from the north, and the Breckinridge Lane interchange. This model will be used to assess existing conditions and analyze the improvements to traffic operations each option has during this phase. After recommended options have been selected during Phase 1A, Highway Capacity Manual software will be utilized to analyze traffic operation improvements. The traffic analysis will be based on current, 5-year, 10-year, and 20-year design volumes.

(3) All pertinent topography shall be shown on the Phase 1A plans. This will require supplementing the LOJIC mapping with information obtained from field surveys.

(4) Existing right of way and property lines shall be shown as depicted by the LOJIC mapping.

(5) Recommendation of typical section(s) for each option.

(6) Planning level construction cost estimates and estimates of right of way takings for the purpose of estimating right of way acquisition costs to be completed by District 5.

(7) PB will submit a report with a description of all options considered including the results of traffic analysis, "planning level" cost estimates, and estimated right of way takings.

ENVIRONMENTAL

KYTC will accomplish the environmental services for this project. PB will provide District 5 with all information needed for them to complete the necessary assessments. It is anticipated that the majority of this work will be completed during Phase 1B Design.

A preliminary "Purpose and Need Statement" of the project is to be defined by KYTC early in the initial design and environmental review stages of the project and developed more extensively during the public involvement process. The Purpose and Need statement shall be continuously evaluated during the development process and modified as needed based on information gained through the public involvement process. PB will provide District 5 with information needed to complete the "Purpose and Need Statement".

PUBLIC INVOLVEMENT

PB and KYTC will attend a meeting with local public officials to advise them of the project. No other public involvement is anticipated to be needed during this phase of the project.

PHASE 1B AND PHASE 2 DESIGN

This work shall be completed with a future contract modification upon completion of Phase 1A Design.

GENERAL

(1) The consultant shall be represented at all inspections and meetings. Any plans or exhibits required shall be the responsibility of the consultant.

(2) Any subconsultants utilized must have approval of the Department prior to their performance of any work.

(3) The consultant is responsible for having obtained and being knowledgeable of all Department Manuals including, but not limited to, Design, Drainage, Standard Drawings and Bridges. All work shall be performed in accordance with those manuals or other memos issued subsequent to the publication of those manuals unless otherwise explicitly stated.

(4) The Consultant shall submit the Production-Hour Worksheet, listing only the involved units of work, including supporting documentation of units obtained to the Project Manager to be reviewed. Upon agreement of the Production-Hour units, the Consultant shall submit his fee proposal with detailed production-hours on the Department's standard Production-Hour Worksheet to the Director of Professional Services. The Department's Project Manager shall also submit the Department's detailed Production-Hours.

(5) Contract modifications to this project will not be permitted except in such cases that:
- the project limits have been substantially revised from those initially indicated in the Pre-design Minutes.
- a change of scope has occurred.
- the Consultant is requested to revise the plans as a result of a direction change by the Department.

(6) The consultant is responsible, at all times, for correction of any errors or omissions that he may have made in the preparation of the plans. The consultant shall immediately notify the Project Manager of any item that he feels requires extra work. He shall not proceed with that item of work until such time that the matter of extra work has been resolved.

(7) All original submissions, including pay estimates and consultant monthly reports, shall be sent to the Project Manager. The pay estimate and monthly report may be electronically submitted to the Project Manager. The consultant monthly report shall be submitted even if

a pay estimate is not being submitted. All correspondences pertinent to this project shall have the County, Item No. and Project Description noted.

(8) Sets of plans shall be provided for inspections and meetings, as requested by the Project Manager.

(9) The Consultant will be responsible for preparation of all minutes of meetings, including this Pre-design Conference.

(10) Periodic progress meetings will be held with the District as discussed during the Pre-design Conference. It is anticipated that six (6) progress meetings will be held during Phase 1A Design.

(11) All design work and development of plans, preliminary and final shall be prepared in MicroStation DGN format in accordance with current KYTC CADD Standards

(12) The Department's Project Manager assigned to this project is Jason Richardson.

MILESTONES

The project's schedule and milestone target dates are shown below. Estimated date of Notice to Proceed is October 1, 2005.

Phase 1A Design

Notice to Proceed	0 days
Receive LOJIC Mapping	0 days
Receive Traffic Forecasts	45 days
Submit Existing & Future Conditions Report	75 days
Hold Project Team Meeting No. 1	85 days
Hold Public Officials Meeting	90 days
Submit Conceptual Alternates Report	115 days
Hold Project Team Meeting No. 2	125 days
Submit Draft Final Report	150 days
Hold Project Team Meeting No. 3	160 days
Submit Final Report	170 days
Hold Project Team Meeting No. 4	180 days

Phase 1B and Phase II Design

To be determined after completion of Phase 1A.

cc: Attendees
Robert Farley - FHWA

Parsons Brinckerhoff Quade & Douglas, Inc.

Memorandum

TO: Jason Richardson
Project Manager, KYTC – District 5

FROM: Arlen C. Sandlin, PE
Project Manager, Parsons Brinckerhoff, Inc. (PB)

DATE: June 9, 2006

SUBJECT: I-64 WB to I-264 WB Ramp Improvements
Jefferson County - Item No. 5-159.00
Final Minutes of Existing & Future Conditions Report Review Meeting

The Existing & Future Conditions Report Review Meeting for the subject project was held Thursday, May 25, 2006, at the District 5 office in Louisville, Kentucky. The following people were in attendance:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Greg Groves	KYTC – District 5 – Preconstruction	gregory.groves@ky.gov
Jason Richardson	KYTC – District 5 – Design	jasonr.richardson@ky.gov
Kevin Dant	KYTC – District 5 – Environmental	kevin.dant@ky.gov
Mohamad Abdol	KYTC – District 5 – Design	mohamad.abdol@ky.gov
Chuck Berger	KYTC – District 5 – Design	chuck.berger@ky.gov
John Callihan	KYTC – District 5 – Planning	johne.callihan@ky.gov
Jeff Wolfe	KYTC – Central Office – Traffic Operations	jeff.wolfe@ky.gov
Brian Meade	KYTC – District 5 – Traffic	brian.meade@ky.gov
Paul Davis	KYTC – District 5 – Design	paul.davis@ky.gov
Ananias Calvin	KYTC – Central Office – Highway Design	ananias.calviniii@ky.gov
Mike Baron	Parsons Brinckerhoff	baron@pbworld.com
Scott Walker	Parsons Brinckerhoff	walkersc@pbworld.com
Arlen Sandlin	Parsons Brinckerhoff	sandlin@pbworld.com

The purpose of the meeting was to serve as a kickoff meeting and a review of the Existing & Future Conditions Report that was submitted by Parsons Brinckerhoff (PB) on May 19, 2006. The meeting began with introductions of the project team members followed by a presentation of the Existing & Future Conditions Report by PB. The following items were discussed and agreed upon:

1. The purpose of this project is to improve traffic operations, reduce congestion, and improve safety on I-64 Westbound and I-264 Westbound and on the I-64 Westbound to I-264 Westbound ramp in the vicinity of the I-64 / I-264 Interchange. Heavy daily traffic volumes commonly result in traffic delays and traffic backups on I-64 Westbound and poor weaving

2333 Alumni Park Plaza, Suite 330
Lexington, Kentucky 40517
(859) 272-5400
FAX: (859) 272-6556

conditions for motorists between the convergence of the I-64 Westbound ramp and I-264 Westbound and the I-264 / Breckinridge Lane interchange.

The project will include the study of short-term, mid-term, and long-term options that could be implemented to improve traffic operations along the ramp, I-64 Westbound, and I-264 Westbound. This phase of the project, Phase 1A, will include a "Planning Level" study of proposed options to determine their feasibility and development of a VISSIM model to analyze each option's impacts to existing traffic operations.

2. The schedule and funding of this project as shown in the current Recommended Six Year Highway Plan is as follows:

PHASE	FUNDING	GA YEAR	AMOUNT
Right of Way	IM	2006	$500,000
Utility Relocations	IM	2006	$500,000
Construction	IM	2008	$4,000,000
		TOTAL:	**$5,000,000**

3. At the Pre-Design Conference, it was decided that CORSIM would be used to model the transportation network within the study area and screen alternatives. Following that meeting, it was discussed with District 5 that since CORSIM is no longer supported by FHWA, the use of VISSIM as a traffic simulation tool may be desirable. VISSIM is widely accepted and is known for its ability to portray complex networks and provide a graphical display of the simulation enabling users to easily view traffic conditions. VISSIM has been used to model the transportation network on this project and the project team agreed that it is suitable for the project. It was noted that KYTC – Traffic Operations is currently evaluating software packages and will likely select VISSIM as their in-house software package.

4. This is Phase 1A Design. PB is to develop preliminary options that may be implemented as short-term, mid-term, or long-term projects that serve the needs of the project. Options to be considered could range from pavement removal, re-striping, ITS solutions, and additional signing to widening the I-64 WB to I-264 WB Ramp to two (2) lanes, or construction of a new full or partial interchange at I-64 and Breckinridge Lane or I-64 and Browns Lane. Conceptual design work will be used to determine the feasibility of the options considered. Recommended feasible options will be carried forward to the Preliminary Line and Grade level of effort in Phase 1B Design. Since it was difficult for the Project Team to identify a defined scope of work since multiple options will be considered, the Project Team decided at the Pre-Design Conference that the project would best be served by dividing the Phase 1 engineering services into Phase 1A and Phase 1B Design. This is Phase 1A Design.

   PB will develop preliminary options that serve the needs of the project utilizing a conceptual level of design effort. Identified options will be studied to determine their feasibility and level of improvement of traffic operations in the project area for each option. PB will provide "Planning level" line drawings of options and VISSIM will be used to model the effects each option has on existing traffic operations. At the completion of Phase 1A Design, the Project Team will make recommendations of options to be carried forward to Preliminary Line and

Grade via a Contract Modification for Phase 1B and Phase 2 Design. The remainder of the Phase 1A design schedule is as follows:

Hold Public Officials Meeting ..... To Be Determined
Submit Conceptual Alternates Report..... June 29, 2006
Hold Project Team Meeting No. 2 ..... July 10, 2006
Submit Draft Final Report..... August 3, 2006
Hold Project Team Meeting No. 3 ..... August 14, 2006
Submit Final Report ..... August 23, 2006
Hold Project Team Meeting No. 4 ..... September 1, 2006

5. The project study area includes I-64 from just west of Breckinridge Lane to near Oxmoor Farm Road and I-264 from just west of Breckinridge Lane to just west of Shelbyville Road. The study area also includes the intersection of the I-264 WB ramps and Breckinridge Lane and Breckinridge Lane and Dutchmans Lane. It was noted that the Project Study Area may be extended along I-264 on the east end to include the entire westbound collector-distributor road system.

6. PB provided a discussion of the following:

   a. Existing Property Owners – Existing right of way and property lines were taken from LOJIC mapping. Property owners were established according to Jefferson County PVA information.
   b. Existing Utilities – Significant utilities within the study area include a 69kV transmission line running just behind the right of way fence along I-264 between the I-64/I-264 and I-264/Breckinridge Lane interchanges, a fiber optic line running along the westbound right of way fence of I-64, and several water and sanitary sewer line crossings of I-264.
   c. Existing Geometrics – The existing geometrics within the study area were discussed. Minor deficiencies in ramp radii as shown on the plans were noted as well as deficiencies in ramp gore-to-gore distances.
   d. Existing Typical Sections – The existing typical sections of I-64, I-264, and the ramps were presented.
   e. Critical Cross Sections – Field survey work was completed to define critical cross sections as shown on the plans.
   f. Existing Structures – Existing layouts of structures that could be impacted by a proposed project were shown.
   g. Existing Drainage – Existing major drainage structures as shown on the plans were discussed.

7. Crash Analysis – PB received crash data from KYTC for 2003-2005. Both I-64 and I-264 did not exceed the statewide average for the type of route. Breckinridge Lane between the I-264 WB ramps and Dutchmans Lane does exceed the statewide average. As expected, rear end crashes were the predominant crash type. It was noted that the summary data provided did not include detailed information as to the direction of traffic for each accident.

8. Traffic Forecasts – Traffic forecasts were provided by KYTC for the existing year (2005) and for design years 2010, 2015, and 2025. Multiple design years were requested so that various short-term, mid-term, and long-term improvement options could be matched to their respective design years when measuring improvements to traffic flow.

9. PB presented the VISSIM traffic simulation model for the existing conditions and future no-build conditions, which considered both AM peak and PM peak periods. This included viewing the movie files of the model that were included in the Existing & Future Conditions Report and the actual model. Also, output related to each model run including travel time, average speed, and calculated delay was summarized in both tabular and graphical format. Discussion ensued regarding the model and software.

   One area of particular interest was the I-264 WB ramp to Breckinridge Lane. The model as shown does not generate significant queues that extend back to I-264 often resulting from the right-turn traffic onto Dutchman's Lane. It was noted that, during the initial setup, the model did reflect backups on the ramp all the way onto I-264 which resulted in a shutdown of the entire network. Since this does not necessarily reflect reality and due to the sensitivity of the model, the model was adjusted so that the queues were reduced, resulting in an overall model more reflective of current conditions. PB will look at the assumptions made in reducing the queues on the ramp and adjust as necessary to more accurately reflect the operating conditions of the ramp while not shutting down the entire network.

   Other questions involved the increasing travel times from I-64 WB at Hurstbourne Lane to I-264 WB at Breckinridge Lane for each of the design years. In Year 2025, travel times along the segment may reach approximately 30 minutes according to the model. It was noted that the capacity of the flyover ramp could not meet the demand which resulted in the slow travel times.

   There was a question related to the left turn volumes onto I-264 Westbound from Breckinridge Lane Northbound. The model indicated that there are impacts on through Northbound traffic as a result of the high left turn volumes.

   After several questions and discussion regarding the VISSIM model and the analysis of the existing conditions, the Project Team agreed that the model will serve well as a tool in the evaluation of proposed improvements to the existing transportation system.

10. Discussion followed regarding potential alternatives that would be studied in the next steps of the project. Short-term options will include changes in signing, striping, ITS improvements, reduction of the number of lanes for the flyover, etc. Other options that will be explored and were discussed included the following:
    a. new partial or full interchange at I-64 and Breckinridge Lane,
    b. new partial or full interchange at I-64 and Browns Lane,
    c. widening of the existing I-64 WB to I-264 WB ramp to two lanes,
    d. addition of a ramp from the I-64 WB to I-264 WB ramp to the Browns Lane/Dutchmans Lane intersection,
    e. modifications to the I-264/Breckinridge Lane interchange,
    f. modifications to the I-64 WB to I-264 WB ramp at its I-64 diverge.

11. Some of the alternatives mentioned above will require PB to incorporate five additional intersections along Dutchmans Lane from Breckinridge Lane to Browns Lane into the VISSIM simulation model in order to properly measure the improvements made by the alternative. A recent study completed by Louisville Metro for Dutchmans Lane will be investigated to determine if traffic counts were completed for some of these intersections in that study. If not, traffic counts for the intersections will need to be done and additional forecasts completed. Upon receipt of the study, PB will review to determine the amount of

additional work to be completed to incorporate the additional area into the traffic simulation model.

12. PB will also investigate the abovementioned study for proposed improvements to the Breckinridge Lane/Dutchmans Lane intersection area that may be incorporated into this project.

13. District 5 will schedule a meeting with Local Public Officials to introduce the project and receive their comments. The planned date for this meeting was June 5, 2006. The meeting will be scheduled at a later date yet to be determined.

14. The next step of the project is to study conceptual alternatives, analyze the improvements of each alternative, and submit a report of the study by June 29, 2006.

cc: Mary Murray - FHWA

Parsons Brinckerhoff Quade & Douglas, Inc.

Memorandum

TO: Jason Richardson
Project Manager, KYTC – District 5

FROM: Arlen C. Sandlin, PE
Project Manager, Parsons Brinckerhoff, Inc. (PB)

DATE: August 11, 2006

SUBJECT: I-64 WB to I-264 WB Ramp Improvements
Jefferson County - Item No. 5-159.00
Final Minutes of Local Public Officials Meeting

The Local Public Officials Meeting for the subject project was held Tuesday, July 25, 2006, at the Church of the Ascension in St. Regis in Louisville, Kentucky. The following people were in attendance:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Jason Richardson	KYTC – District 5 – Traffic	Jasonr.richardson@ky.gov
John Callihan	KYTC – District 5 – Preconstruction	Johne.callihan@ky.gov
Andrea Clifford	KYTC – District 5 – Public Information	Andrea.clifford@ky.gov
Barry Sanders	KYTC – District 5 – Chief District Engineer	Barry.sanders@ky.gov
Harold Tull	KIPDA	Harold.tull@ky.gov
Pat Plamp	St. Regis Park	patp@cardinalcarryor.com
Rusty Wells	City of Hurstbourne	Rusty@hurstbourne.org
Rick Storm	Louisville Metro	Richard.storm@louisvilleky.gov
Larry Osborne	City of St. Regis Park	
Ed Dahlem	City of Hurstbourne	edahlem@bellsouth.com
Bob English	City of Hurstbourne	mail@english-morris.com
Jennifer Osborne	Metro Council District 7	Jennifer.osborne@louisvilleky.gov
Leah Pepper	Metro Council District 26	Leah.pepper@louisvilleky.gov
Ellen Reitmeyer	Metro Council District 18	Ellen.reitmeyer@louisvilleky.gov
Steve Slade	Parsons Brinckerhoff	slade@pbworld.com
Arlen Sandlin	Parsons Brinckerhoff	Sandlin@pbworld.com

1. The purpose of the meeting was to inform local public officials of the project and receive any comments or suggestions they may have for future guidance in the development of the project.

2333 Alumni Park Plaza, Suite 330
Lexington, Kentucky 40517
(859) 272-5400
FAX: (859) 272-6556

2. The schedule and funding of this project as shown in the current Enacted Six Year Highway Plan is as follows:

PHASE	FUNDING	GA YEAR	AMOUNT
Right of Way	IM	2006	$500,000
Utility Relocations	IM	2006	$500,000
Construction	IM	2008	$4,000,000
		TOTAL:	**$5,000,000**

Parsons Brinckerhoff (PB) gave a overview of the project's goals and the Project Team's approach to the development of the project. Primary items of discussion included the following:

3. The purpose of the project is to improve traffic operations, reduce congestion, and improve safety along I-64 Westbound and I-264 Westbound in the vicinity of the I-64/I-264 Interchange. The Project Study Area includes I-64 Westbound from the Oxmoor Farm Road Overpass to just west of Breckenridge Lane, I-264 Westbound from Shelbyville Road to just west of Breckenridge Lane, and the Dupont Area east of Breckenridge Lane.

4. Due to the number and complexity of issues associated with the westbound traffic operations within the Project Study Area, the Project Team early on decided that widening of the I-64 Westbound to I-264 Westbound ramp may not completely solve the congestion and safety issues within the Project Study Area. As a result, the Project Team decided to split Phase 1 Design into Phase 1A and Phase 1B Design. This is Phase 1A Design. PB is to develop and evaluate conceptual options that may be implemented as short-term, mid-term, or long-term projects that serve the needs of the project. Options to be considered could range from pavement removal, re-striping, ITS solutions, and additional signing to widening the I-64 WB to I-264 WB Ramp to two (2) lanes, or construction of a new full or partial interchange at I-64 and Breckenridge Lane or I-64 and Browns Lane. Conceptual design work will be used to determine the feasibility of the options considered. Recommended feasible options will be carried forward to the Preliminary Line and Grade level of effort in Phase 1B Design. The Project Team anticipates that the recommended alternative may actually include a combination of multiple short-term, mid-term, and long-term options that will be implemented.

5. After the presentation by PB, several questions were received and general comments made by the attendees. Some of the concerns expressed by the attendees included:

   a. Elimination of chokepoints along the I-64 Westbound to I-264 Westbound ramp where ramps split or join merging traffic together. These locations have a negative impact on upstream traffic, causing backups and delays on I-64 Westbound approaching the ramp.

   b. Solutions that only move the problem to another location. The Project Team anticipates recommendation of a set of recommended alternates that address different locations and issues within the study area. One of the primary goals of the project is to provide solutions that improve safety and operations and reduce congestion within the entire study area, not just move the problem to another location.

6. The Project Team provided a discussion of potential alternates that may be studied. The attendees also provided general recommendations of potential alternates and each was discussed. Input received will be utilized in the development of conceptual alternates.

7. The study of conceptual alternates should be complete by October 1, 2006. At that time, the Project Team anticipates having a recommended alternate or set of alternates. In the next phase of the project, the Project Team will meet again with local public officials to present recommendations prior to meeting with the general public. This will likely occur sometime in the first quarter of 2007.

Parsons Brinckerhoff Quade & Douglas, Inc.

Memorandum

TO: Jason Richardson
Project Manager, KYTC – District 5

FROM: Arlen C. Sandlin, PE
Project Manager, Parsons Brinckerhoff, Inc. (PB)

DATE: September 13, 2006

SUBJECT: I-64 WB to I-264 WB Ramp Improvements
Jefferson County - Item No. 5-159.00
Final Minutes of Conceptual Alternates Report Review Meeting

The Conceptual Alternates Report Review Meeting for the subject project was held Monday, August 21, 2006, at the District 5 Office in Louisville, Kentucky. The following people were in attendance:

NAME	AGENCY/COMPANY	E-MAIL ADDRESS
Jason Richardson	KYTC – District 5 – Traffic	jasonr.richardson@ky.gov
John Callihan	KYTC – District 5 – Preconstruction	johne.callihan@ky.gov
Carl Jenkins III	KYTC – District 5 – Design	carl.jenkins@ky.gov
Kevin Dant	KYTC – District 5 – Environmental	kevin.dant@ky.gov
Mohamad Abdol	KYTC - District 5 – Design	mohamad.abdol@ky.gov
Chuck Berger	KYTC - District 5 - Design	chuck.berger@ky.gov
Ananias Calvin III	KYTC – Central Office – Highway Design	ananias.calviniii@ky.gov
Ken Sperry	KYTC – Central Office – Assistant SHE	ken.sperry@ky.gov
Scott Walker	Parsons Brinckerhoff	walkersc@pbworld.com
Steve Slade	Parsons Brinckerhoff	slade@pbworld.com
Arlen Sandlin	Parsons Brinckerhoff	sandlin@pbworld.com

1. The purpose of the meeting was to review and discuss the Conceptual Alternates Report submitted by Parsons Brinckerhoff (PB) on July 17, 2006. The goal for the meeting was to discuss the alternatives and recommend an alternative or set of alternatives to be carried forward.

2. The schedule and funding of this project as shown in the current Enacted Six Year Highway Plan is as follows:

2333 Alumni Park Plaza, Suite 330
Lexington, Kentucky 40517
(859) 272-5400
FAX: (859) 272-6556

PHASE	FUNDING	GA YEAR	AMOUNT
Right of Way	IM	2006	$500,000
Utility Relocations	IM	2006	$500,000
Construction	IM	2008	$4,000,000
		TOTAL:	**$5,000,000**

PB gave an overview of the project's goals and the Project Team's approach to the development of the project followed by a presentation and discussion of the conceptual alternates. Primary items of discussion included the following:

3. The Project Study Area includes I-64 Westbound from the Oxmoor Farm Road Overpass to just west of Breckenridge Lane, I-264 Westbound from Shelbyville Road to just west of Breckenridge Lane, and the Dupont Area east of Breckenridge Lane. This includes the additional areas that were incorporated into the VISSIM model in order to adequately allow study of additional interchange alternatives at I-64 and Breckenridge Lane as discussed during the Existing & Future Conditions Report Review meeting.

4. Several primary issues exist within the Project Study Area that the Project Team feels need to be addressed. They include:

   a. Vehicle queues on I-64 Westbound going to I-264,
   b. Merging from two lanes to one lane of the I-64 Westbound to I-264 Westbound ramp,
   c. Weaving conflicts on I-264 Westbound between the I-64/I-264 and I-264/Breckenridge Lane interchanges, and,
   d. Vehicle queues on the I-264 Westbound ramp to Northbound Breckenridge Lane.

5. The study of conceptual alternates has involved development of short-term, mid-term, and long-term alternatives that serve the needs of one or more of the project segments. The report groups alternates based on the segment and issue each alternate serves. As a result, it is anticipated that the recommended alternate will likely be a set of alternates that could include short-term, mid-term, and long-term alternates that, when combined, provide improvement for the entire study area.

6. PB's presentation included an overview of the conceptual alternates. A brief description of each alternate and summary of the traffic analysis for each follows:

   a. **Alternate No. 1 –** This alternate involves reduction of the I-64 Westbound to I-264 Westbound ramp from two lanes to one lane. Two lanes would diverge from I-64, one for I-264 Eastbound and one for I-264 Westbound. Construction involved would be limited to re-striping of the existing ramp with changes to the existing signing. Estimated construction cost for this alternate is $50,000.

      Traffic Analysis Results – Average travel speeds along I-64 Westbound and I-264 Westbound between Hurstbourne Lane and Breckenridge Lane were analyzed to determine the level of improvement the alternate provides. Analysis of this alternate indicates only minimal improvement in 2005 compared to the existing conditions. As a result, this alternate was not analyzed for future design years.

b. **Alternate No. 2 –** This alternate involves the addition of an I-64 Westbound lane between the Oxmoor Farm Road Overpass and the I-64 Westbound ramp to I-264. Two lanes would exit to I-264, one lane to I-264 Eastbound, and one lane to I-264 Westbound. The interior lane shared by through and ramp traffic would be removed. The I-64 Westbound to I-264 Westbound ramp would be reduced to one lane. Estimated construction cost for this alternate is $2,400,000.

Traffic Analysis Results – Average travel speeds along I-64 Westbound and I-264 Westbound between Hurstbourne Lane and Breckenridge Lane were analyzed to determine the level of improvement the alternate provides. Average travel speeds for I-64 Westbound traffic is increased as a result of the additional lane. The increase is attributed to a freer flow of mainline through traffic due to the additional lane on the outside approaching the ramp and the fact that no downstream capacity on the ramp to I-264 has been added. Elimination of the shared interior lane forces exiting vehicles to make decisions further east, minimizing weave movements near the interchange. Over time, the benefits are reduced. In 2015, volumes have increased enough that travel speeds begin to drop back to existing levels. This alternate is considered a short-term improvement without additional downstream capacity improvements.

c. **Alternate No. 3 –** This alternate is similar to Alternate No. 2 except that two lanes would continue along the I-64 Westbound to I-264 Westbound ramp as currently exists. Estimated construction cost for this alternate is $2,300,000.

Traffic Analysis Results – The results of the traffic analysis for this alternate are similar to Alternate No. 2. Maintaining two lanes on the I-64 Westbound to I-264 Westbound ramp provides no additional improvement due to the remaining downstream constraint.

d. **Alternate No. 4 –** This alternate is similar to Alternate Nos. 2 and 3 except that a lane shared by I-64 Westbound and the ramp to I-264 is maintained as currently exists. Three lanes would exit I-64 Westbound to I-264, two lanes to I-264 Westbound, and one lane to I-264 Eastbound. Estimated construction cost for this alternate is $3,100,000.

Traffic Analysis Results – Average travel speeds approaching the ramp to I-264 are not improved in 2005 compared to the existing conditions with this alternate. The alternate maintains a shared lane. As a result, aggressive vehicles going to I-264 Westbound use the left-most lane of I-64 Westbound to pass as many vehicles as possible before merging into the shared lane just prior to the ramp. This has a negative impact on the travel speeds of I-64 Westbound through traffic, reducing the overall average travel speed along this section of I-64 Westbound. As a result, this alternate was not analyzed for future design years.

e. **Alternate No. 5 –** This alternate involves reduction of the I-264 Westbound Collector-Distributor Road from two lanes to one lane at the merge with I-264 Westbound. This reduction could allow the I-64 Westbound to I-264 Westbound ramp lane to continue through the I-264 / Breckenridge Lane Interchange without significant construction. Estimated construction cost for this alternate is $300,000.

Traffic Analysis Results – Average travel speeds along the I-264 Westbound Collector-Distributor Road between Shelbyville Road and Breckenridge Lane were analyzed to determine the level of improvement the alternate provides. The analysis indicates a significant reduction in speed along the collector-distributor road, indicating that volumes

are too high for a reduction to one lane. Therefore, this alternate could not be implemented.

f. **Alternate No. 6 –** This alternate involves merging the I-264 Westbound Collector-Distributor Road with I-264 Westbound as soon as possible to increase the length of weave between the merge and the exit to Breckenridge Lane. This allows greater distance for I-264 Westbound vehicles going to Breckenridge Lane to merge to the outside lane, reducing conflicting merging movements with I-64 Westbound to I-264 Westbound ramp traffic coming onto I-264 Westbound. Estimated construction cost for this alternate is $300,000.

Traffic Analysis Results – Average travel speeds along the I-264 Westbound Collector-Distributor Road between Shelbyville Road and Breckenridge Lane were analyzed to determine the impacts to traffic flow. As expected, the alternate has no direct impacts to traffic flow along the collector-distributor road, making this a feasible option.

g. **Alternate No. 7 –** This alternate splits the I-264 Westbound exit to Northbound Breckenridge Lane into two ramps, one for traffic going to Eastbound Dutchmans Parkway, and the other for Westbound Dutchmans Lane and Breckenridge Lane. The alternate would reduce queues on the existing ramp that sometimes backup nearly to I-264. In addition, the storage length would be increased for Northbound Breckenridge Lane traffic turning left onto Westbound Dutchmans Parkway. Estimated construction cost for this alternate is $700,000.

Analysis – Signal operations at the I-264 Westbound Ramps / Breckenridge Lane intersection would be negatively impacted due to the increased clearance time required as a result of relocation of the northbound stop bar.

h. **Alternate No. 8 –** This alternate involves construction of a flyover ramp from the existing I-64 Westbound to I-264 Westbound ramp to the intersection of Dutchmans Lane and Browns Lane. The ramp would provide direct access to Dutchmans Lane from I-64 Westbound without requiring vehicles to use I-264 and Breckenridge Lane. The alternate would require construction of a flyover structure approximately 850 feet in length and the purchase and removal of an Extended Stay America (Parcel No. 21). Estimated construction cost for this alternate is $6,100,000.

Results of Traffic Analysis – Analysis of average travel speeds along I-64 and I-264 Westbound indicate little improvement in travel speed as a result of the reduction of traffic along I-264 Westbound. Level of service analysis of the I-264 Westbound ramps and Breckenridge Lane intersection with Alternate No. 8 incorporated indicates an approximate 10% reduction in delay for the 2025 AM period and 20% reduction for the 2025 PM period compared to the same periods for the no-build option. Even though the average delay is reduced, the intersection operates at LOS F in 2025 for both the no-build option and with Alternate No. 8 incorporated.

i. **Alternate No. 9 –** This alternate provides two lanes for the entire length of the I-64 Westbound to I-264 Westbound ramp. The additional lane would extend beyond Breckenridge Lane on I-264 before being dropped. The alternate would remove the 2-lane to 1-lane merge along the flyover ramp. Partial reconstruction of the Browns Lane bridge over I-264 may be required. Impacts to utilities along I-264 would likely include the necessary relocation of multiple electrical transmission towers. Right of way impacts

could include parking removal and removal of the rear access of Parcel No. 31, the Lock N Key storage facility. These impacts could be minimized with the use of guardrail and/or barrier wall on the outside with storm sewers to minimize ditch width requirements. Estimated construction cost for this alternate is $6,900,000.

Results of Traffic Analysis – As a result of the removal of the 2-lane to 1-lane merge, travel speeds along I-64 Westbound and the I-64 Westbound to I-264 Westbound ramp are increased prior to merging onto I-264. Beyond the merge, travel speeds are similar to the existing conditions. The existing weave issues between the I-64 Westbound to I-264 Westbound ramp and Breckenridge Lane remain, but have been pushed an additional lane to the right.

j. **Alternate No. 10 –** This alternate provides for construction of an additional ramp from the existing I-64 Westbound to I-264 Westbound ramp for northbound Breckenridge Lane traffic. I-264 Westbound traffic going to northbound Breckenridge Lane would be signed to use the I-264 Westbound Collector-Distributor road and would exit to Breckenridge Lane prior to merging onto I-264. The alternate essentially provides a braid of traffic bound for Breckenridge Lane across I-64 to I-264 Westbound traffic, removing the weave between the existing interchanges. A slip ramp from I-64 Eastbound to Southbound Breckenridge Lane would be required since this movement would not be allowed with the new configuration.

Two new structures would be required: an additional flyover approximately 500 feet in length and a single-span bridge approximately 110 feet in length. Partial reconstruction of the Browns Lane bridge over I-264 may be required. Impacts to utilities along I-264 would likely include the necessary relocation of multiple electrical transmission towers. Right of way impacts could include parking removal and removal of the rear access of Parcel No. 31, the Lock N Key storage facility. Estimated construction cost for this alternate is $13,900,000.

Results of Traffic Analysis – Increased travel speeds along I-64 and I-264 Westbound are observed as a result of the reduction in volume of traffic merging onto I-264. Beyond the merge onto I-264, travel speeds improve to free-flow conditions as a result of the elimination of the weave to Breckenridge Lane. The alternate depicts the I-264 Westbound Collector-Distributor road being reduced to one lane, however, it has been shown that two lanes must remain for this road. Inclusion of a second lane would have negative impacts with respect to traffic operations of this alternate since the I-64 Westbound ramp coming onto I-264 Westbound could not be continuous and would likely need to be merged with the mainline in order to avoid major right of way impacts.

k. **Alternate No. 11 –** This alternate provides for the construction of a partial interchange at I-64 and Breckenridge Lane, providing a westbound exit to Breckenridge Lane and an eastbound entrance to I-64. The alternate would likely require the reconstruction of the existing bridge over I-64. At least one new signalized intersection would be included on Breckenridge Lane. Estimated construction cost for this alternate is $14,600,000.

Results of Traffic Analysis – Analysis of average travel speeds along I-64 and I-264 Westbound indicate little improvement in travel speed as a result of the reduction of traffic along I-264 Westbound. Level of service analysis of the I-264 Westbound ramps and Breckenridge Lane intersection with Alternate No. 11 incorporated indicates an approximate 10% reduction in delay for the 2025 AM period and 20% reduction for the 2025 PM period compared to the same periods for the no-build option. Even though the

average delay is reduced, the intersection operates at LOS F in 2025 for both the no-build option and with Alternate No. 11 incorporated.

l. **Alternate No. 12 –** This alternate provides for the construction of a single-point urban interchange (SPUI) at I-64 and Breckenridge Lane. The alternate would require the reconstruction of the existing bridge over I-64. One new signalized intersection would be included on Breckenridge Lane. Estimated construction cost for this alternate is $25,100,000.

Results of Traffic Analysis – Analysis of average travel speeds along I-64 and I-264 Westbound indicate little improvement in travel speed as a result of the reduction of traffic along I-264 Westbound. Level of service analysis of the I-264 Westbound ramps and Breckenridge Lane intersection with Alternate No. 12 incorporated indicates an approximate 10% reduction in delay for the 2025 AM period and 30% reduction for the 2025 PM period compared to the same periods for the no-build option. Even though the average delay is reduced, the intersection operates at LOS F in 2025 for both the no-build option and with Alternate No. 12 incorporated.

The following items were discussed and agreed upon by the Project Team:

7. PB noted that traffic data used to analyze Alternates 11 and 12, in particular, did not take into account the amount of traffic that may be diverted to the new partial or full interchange. It was noted that if either of these alternates were recommended, it may be prudent to ask KIPDA to provide forecasts based on their regional travel demand model.

8. Alternate No. 1 does not provide any traffic flow improvements and will not be considered further.

9. Alternate Nos. 2, 3, and 4 were discussed with respect to whether or not an interior lane should be shared between I-64 Westbound and the I-64 Westbound ramp to I-264. Alternate Nos. 2 and 3 seem to conflict with the current Green Book criteria for Lane Balance and Basic Number of Lanes. The added lane is an auxiliary lane, not a basic lane. Therefore, these alternates do comply with the lane balance concept. The question resulted from the way the VISSIM analysis differs for the alternates that have a shared lane versus those that do not. Normally, in this situation, a shared lane would be utilized. However, as volumes approach and exceed capacity, aggressive drivers using the through lane and merging over just prior to the interchange cause delays for the entire approach, resulting in lesser travel speeds for alternates with a shared lane. Alternate Nos. 2 and 3 do not utilize a shared lane.

10. Either Alternate No. 2 or No. 3 provides short-term benefits and one of them should be implemented. Alternate No. 3 maintains two lanes along the initial portion of the I-64 Westbound to I-264 Westbound ramp. Alternate No. 3 will be carried forward as a short-term alternate. I-264 Westbound traffic going to northbound Breckenridge Lane will be signed to use the I-264 Westbound collector-distributor road. This should provide an improvement for the weave between the I-64 / I-264 and I-264 / Breckenridge Lane Interchanges.

11. Alternate No. 5 can not be constructed due to its failure to accommodate existing and future traffic volumes. Alternate No. 6 increases the length of weave for I-264 Westbound traffic

going to Breckenridge Lane, improving safety along the route. Alternate No. 6 will be carried forward as a short-term alternate.

12. It was discussed and agreed that lengthening the storage lanes for vehicles turning left from Breckenridge Lane onto westbound Dutchmans Parkway is proper and is recommended. This portion of Alternate No. 7 will be carried forward as a short-term alternate. The remainder of Alternate No. 7 will no longer be considered.

13. Discussion ensued regarding the longer-term direction that should be taken with respect to the remainder of the alternatives. The primary issue with respect to safety within the project area is the close proximity of the I-64 / I-264 and the I-264 / Breckenridge Lane interchanges. As a result, the Project Team considers the conflicting movement between I-64 Westbound vehicles merging onto I-264 Westbound and I-264 Westbound vehicles weaving to the outside to exit at Breckenridge Lane to be the most critical factor affecting the Project Study Area. If this project were to be newly constructed, the ramp to northbound Breckenridge Lane from I-264 would likely be braided with the I-64 Westbound ramp onto I-264 Westbound to remove the weaving section between the two interchanges. Therefore, the Project Team concluded that Alternate No. 10 should be pursued. Alternate No. 10 will be carried forward as the longer-term alternate.

14. While the Project Team agrees that queuing of the I-264 Westbound exit ramp to northbound Breckenridge Lane is an important issue, it was determined that the alternate access alternatives (Alternate Nos. 11 and 12) do not directly serve the needs of this project and will not be carried forward. The Project Team recognizes that either of these alternates could be justified with a future project to provide alternate interstate access to Breckenridge Lane, reducing congestion at the I-264 / Breckenridge Lane Interchange.

15. Alternate Nos. 3, 6, a portion of 7, and 10 will be recommended for this project. PB will complete a final report based upon this recommendation. The three alternatives will be combined into a single alternative for analysis using the VISSIM traffic simulation model that has been developed as part of this project. Additional traffic analysis will be completed including LOS analysis of the freeway segments to document the improvements made by the recommended alternates.

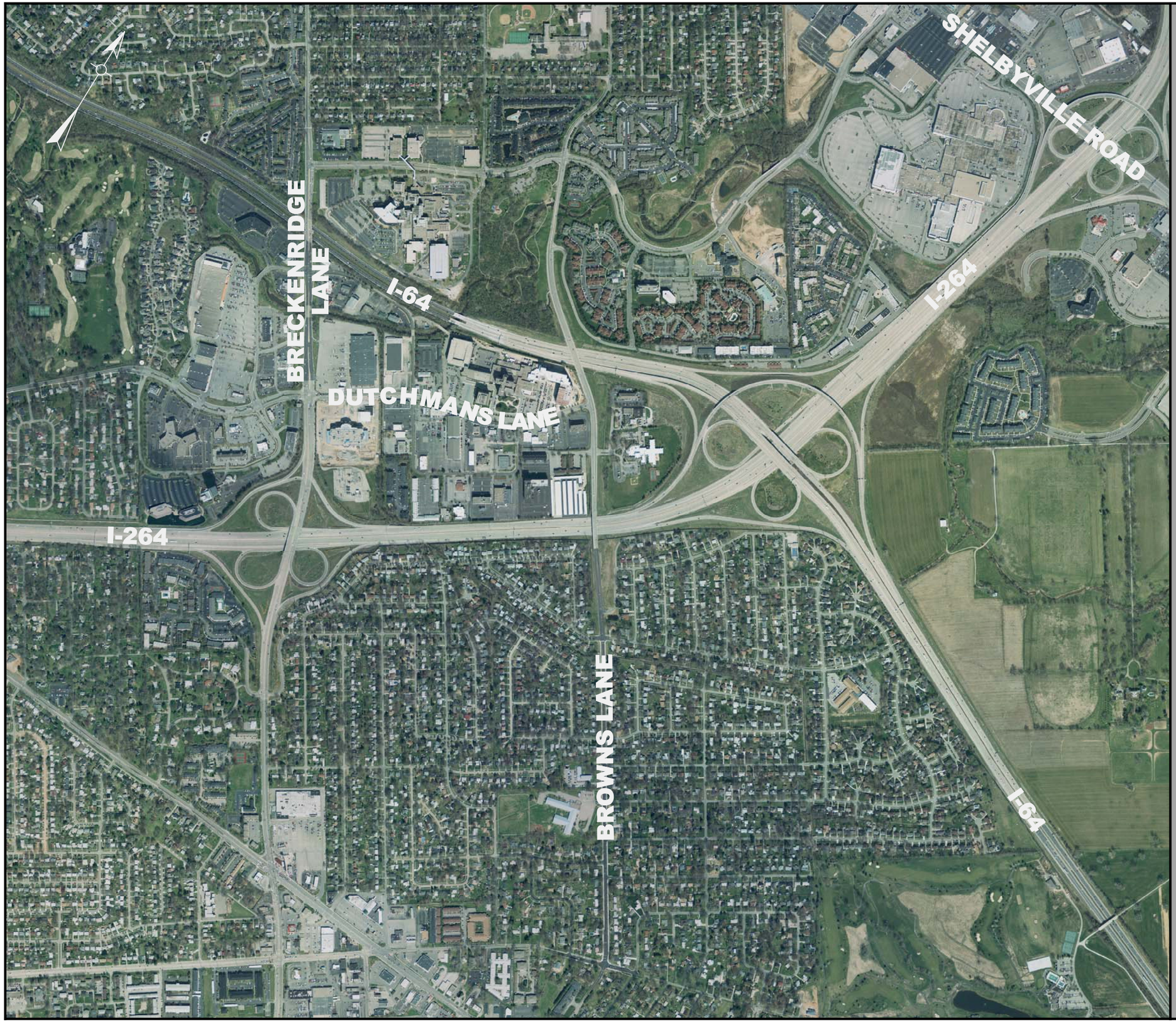
16. PB will provide Phase 1B and Phase 2 Design services for Alternate Nos. 3, 6, and a portion of 7 with a contract modification (CM #1) to be developed upon completion of Phase 1A Design. CM #1 will also include Phase 1B Design for Alternate No. 10 if it is determined that that work can be completed within the current amount of design funding for this project.

    Alternate No. 10 falls within the scope of work that was advertised for the original project and PB can complete the Phase 2 Design once additional funding in the Six Year Highway Plan is added for this project.

cc: Steve Slade – PB
Scott Walker - PB
Mary Murray - FHWA

APPENDIX C

Existing & Future Conditions Report



I-64 WESTBOUND TO I-264 WESTBOUND RAMP IMPROVEMENTS

JEFFERSON COUNTY
ITEM NO. 5-159.00

PHASE 1A DESIGN

EXISTING & FUTURE CONDITIONS

PREPARED FOR:

KENTUCKY TRANSPORTATION CABINET

PREPARED BY:

PB 100 YEARS PARSONS BRINCKERHOFF

MAY 2006

SHEET NO.	TITLE
E-1	PROJECT STUDY AREA
E-2	PROPERTY OWNERS
E-3	LIST OF PROPERTY OWNERS
E-4	EXISTING UTILITIES
E-5	EXISTING ROADWAY GEOMETRICS
E-6	EXISTING TYPICAL SECTIONS
E-7	CRITICAL CROSS SECTIONS
E-8	CRITICAL CROSS SECTIONS
E-9	EXISTING STRUCTURES
E-10	EXISTING STRUCTURES
E-11	EXISTING DRAINAGE
E-12	EXISTING LANE CONFIGURATION
E-13	PROJECT AREA PHOTOGRAPHS
E-14	PROJECT AREA PHOTOGRAPHS
E-15	CRASH RATE ANALYSIS
E-16	CRASH DATA ANALYSIS
E-17	TRAFFIC FORECAST
E-18	I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION 2005 TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-19	I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION 2010 NO-BUILD TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-20	I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION 2015 NO-BUILD TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-21	I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION 2025 NO-BUILD TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-22	BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION 2005 TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-23	BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION 2010 NO-BUILD TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-24	BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION 2015 NO-BUILD TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-25	BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION 2025 NO-BUILD TURNING MOVEMENTS AND LEVEL OF SERVICE ANALYSIS
E-26	LEVEL OF SERVICE ANALYSIS SUMMARY
E-27	2005 VISSIM TRAFFIC SIMULATION ANALYSIS
E-28	2010 VISSIM TRAFFIC SIMULATION ANALYSIS
E-29	2015 VISSIM TRAFFIC SIMULATION ANALYSIS
E-30	2025 VISSIM TRAFFIC SIMULATION ANALYSIS
E-31	VISSIM TRAFFIC SIMULATION SUMMARY

INDEX OF SHEETS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-0

PROJECT STUDY AREA

The study area for this project extends along I-64 from west of the Breckenridge Lane overpass to near the Oxmoor Farm Road overpass and along I-264 from just west of the Breckenridge Lane Interchange to just west of the Shelbyville Road Interchange. The project area also encompasses the intersections of Breckenridge Lane and I-264 Westbound ramps and Breckenridge Lane and Dutchmans Lane.

PURPOSE OF PROJECT

The purpose of the project is to improve traffic operations, reduce congestion, and improve safety on I-64 Westbound and I-264 Westbound in the vicinity of the I-64 / I-264 Interchange. Heavy daily traffic volumes commonly result in traffic delays and traffic backups on I-64 Westbound and I-264 Westbound and poor weaving conditions for motorists between the convergence of the I-64 Westbound ramp and I-264 Westbound and the I-264 / Breckenridge Lane interchange. Therefore, the focus of this project resides entirely on study of the westbound vehicle. No analysis and study of eastbound traffic is necessary.

PHASE 1A DESIGN

The project will include the study of short-term and long-term options that could be implemented to improve traffic operations along the ramp, I-64 Westbound, and I-264 Westbound. This phase of the project, Phase 1A, includes a "Planning Level" study of proposed options to determine their feasibility and development of a VISSIM model to analyze each option's impacts to existing traffic operations. This submittal includes the Existing and Future Conditions Report.

ABOUT VISSIM

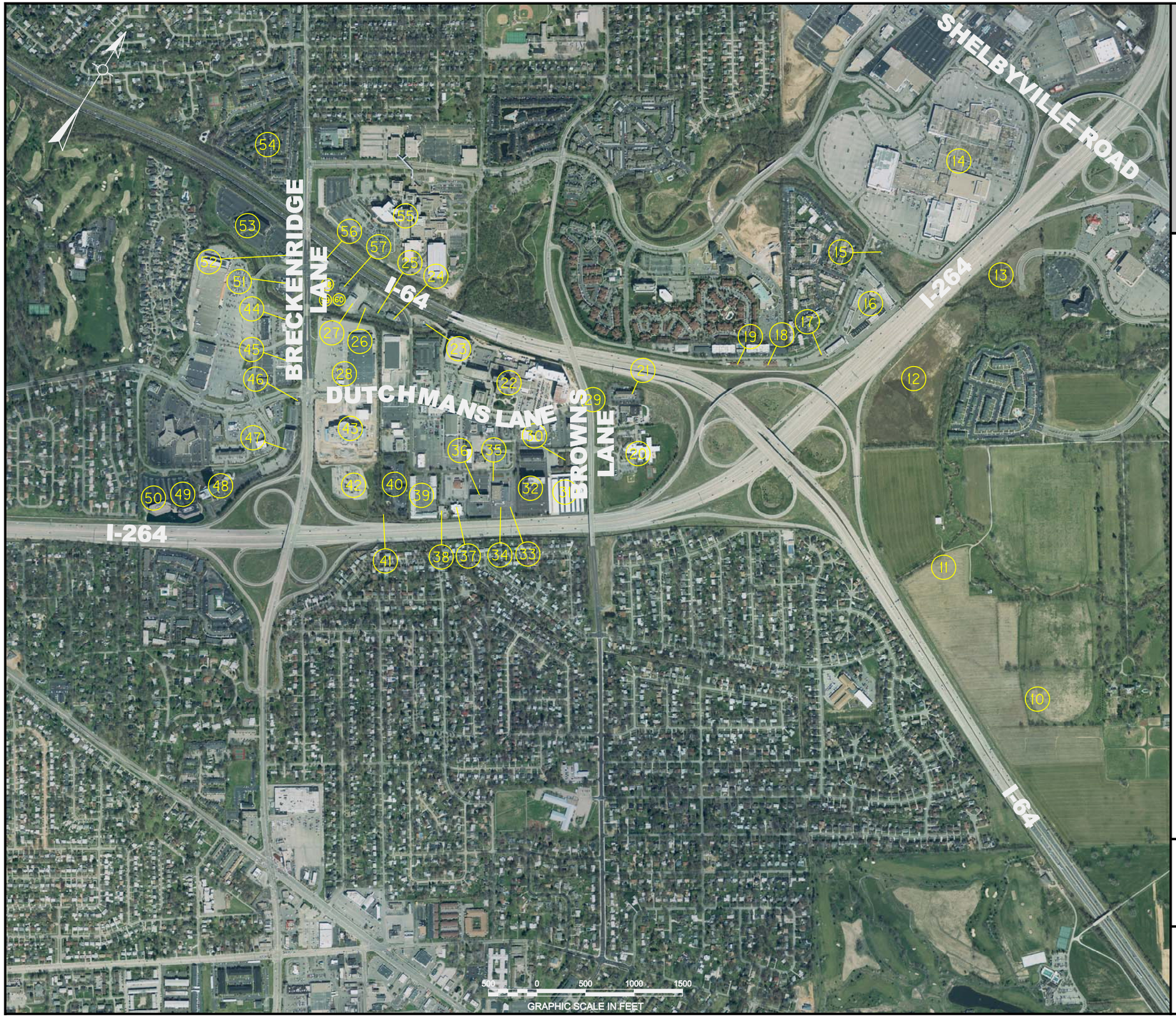
VISSIM is a micro-simulation software package that serves as a tool to analyze complex traffic engineering conditions. The software utilizes a behavior-based model which considers typical driver characteristics and routing decisions that can be customized to approximate conditions. The software provides a visual representation of a given traffic scenario and can be used to measure improvements provided by various alternative solutions to traffic engineering.

PROJECT STUDY AREA

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

E-1



Legend

- Property Line
- 1 Property Tie
- (14) Property Owner (See Sheet E-3 for List of Property Owners)

Property Lines and Owners were obtained from the Jefferson County PVA office and LOJIC mapping.

PROPERTY OWNERS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-2

PARCEL NO.	OWNER'S NAME
10	THOMAS W. BULLITT
11	WILLIAM M. BULLITT
12	ALICE A. BODEN NANCY BRANCH PHILIP ARTERBURN
13	ALICE A. BODEN NANCY BRANCH PHILIP ARTERBURN
14	SHELTON ARTERBURN MARY COPELAND COVINGTON
15	ALICE A. BODEN NANCY BRANCH PHILIP ARTERBURN
16	IPC OFFICE PROPERTIES LLC
17	IPC OFFICE PROPERTIES LLC
18	MITCHCO CAPITAL GROUP LLC
19	MITCHCO CAPITAL GROUP LLC
20	UMC DUPONT INC.
21	BRE ESA PROPERTIES LLC
22	NORTON HOSPITALS INC.
23	NORTON HOSPITALS INC.
24	BORDERS FAMILY LTD. PTR.
25	PFM LLC
26	BEARGRASS INVESTORS
27	MIRGEAUX PROPERTIES LLC
28	KEGES REALTY CO. ET. AL.
29	GREGORY A. HOECK
30	DUTCHMAN LANE PROJECT
31	BROWNS LANE MINISTORAGE LTD.
32	PT CO. LLC
33	DUPONT MEDICAL CTR. LLC

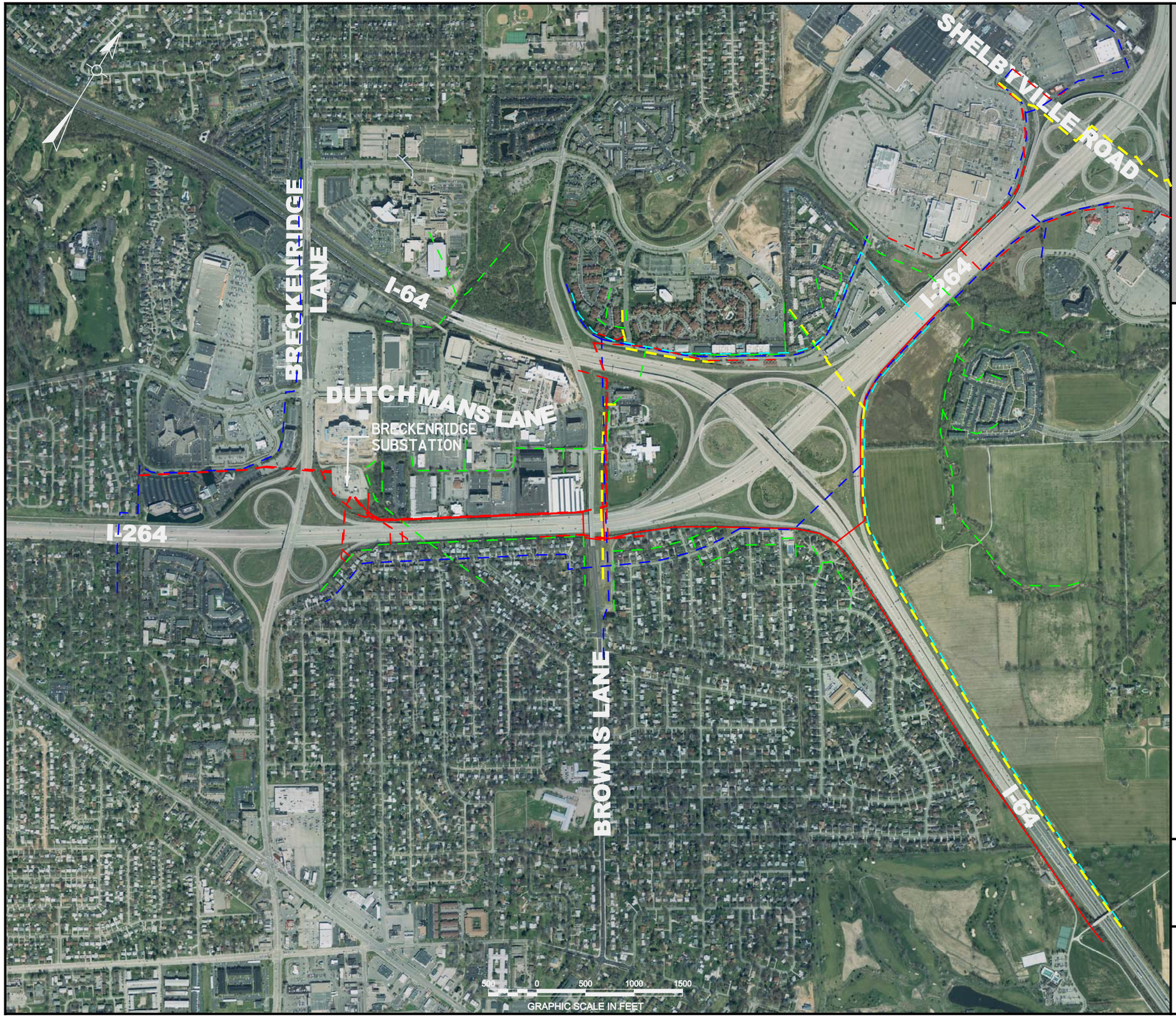
PARCEL NO.	OWNER'S NAME
34	DUPONT MEDICAL CTR. LLC
35	DUPONT MEDICAL CTR. LLC
36	4000 ASSOCIATES
37	AUGUSTINE LLC
38	KENTUCKIANA ALLERGY PROPERTIES LLC
39	HUBBARD PROPERTIES LLC
40	SHENANDOAH CONDOMINIUM INC.
41	SHENANDOAH CONDOMINIUM INC.
42	LG&E
43	JH PROPERTIES INC.
44	UB LTD.
45	GENERAL MILLS RESTAURANT INC.
46	LOU. & JEFF. CO. MET. SEWER DISTRICT
47	DAHLEM ENTERPRISES INC.
48	KADEN T. LIMITED PTRSHP.
49	PARAGON CENTRE HOLDINGS LLC
50	PARAGON CENTRE HOLDINGS LLC

Property Lines and Owners were obtained from the Jefferson County PVA office and LOJIC mapping.

LIST OF PROPERTY OWNERS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-3



Legend

- Overhead Telephone
- Underground Telephone
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

UTILITY OWNERS AND CONTACTS

LOUISVILLE GAS & ELECTRIC COMPANY
(Electric & Gas)
Mr. Greg Geiser
820 West Broadway
P.O. Box 32020
Louisville, KY 40202
(502) 333-1949

LOUISVILLE WATER COMPANY
Mr. Keith Coombs
550 South Third Street
Louisville, KY 40202
(502) 569-3600 Ext. 3682

BELLSOUTH TELECOMMUNICATIONS
Mr. Clark Sanders, Resource Manager
3719 Bardstown Road - 2nd Floor
Louisville, KY 40218
(502) 452-8844

METROPOLITAN SEWER DISTRICT
(Sanitary Sewer)
Ms. Vickie Coombs, Area Leader
700 West Liberty Street
Louisville, KY 40202
(502) 540-6131

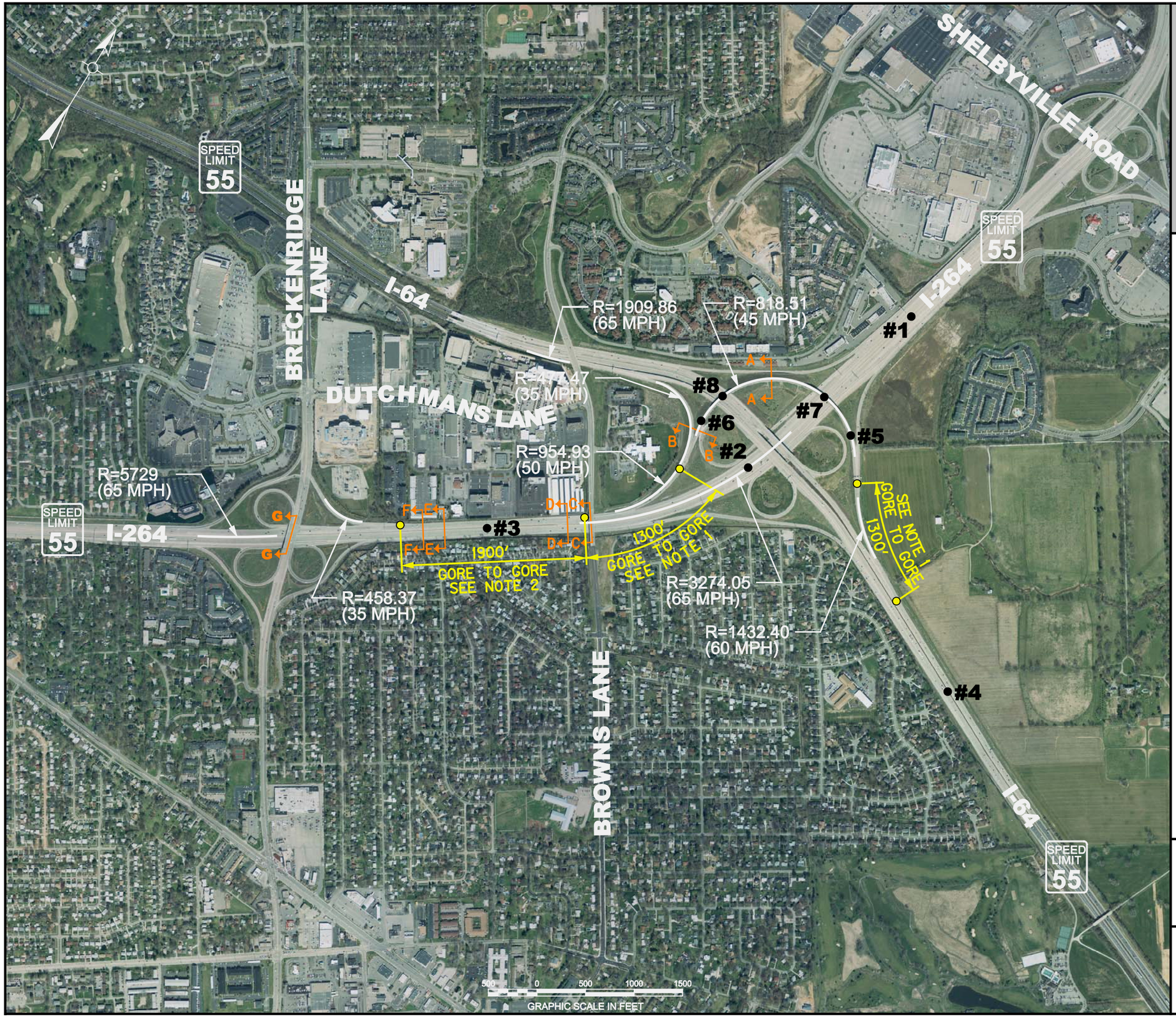
INSIGHT COMMUNICATIONS
(C.A.T.V.)
Mr. Deno Barbour
4701 Commerce Crossings Drive
Louisville, KY 40229
Attention: Engineering / Construction
(502) 448-7336

AT&T
(Fiber Optic)
Tony Lyle - PEA of Ohio
5980-I Wilcox Place
Dublin, Ohio 43016
(614) 760-8320

EXISTING UTILITIES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-4



Legend

A — A — Critical Cross Section Location (See Sheet E-7 and Sheet E-8)

#1 • Typical Section No. 1 (See Sheet E-6)

NOTES

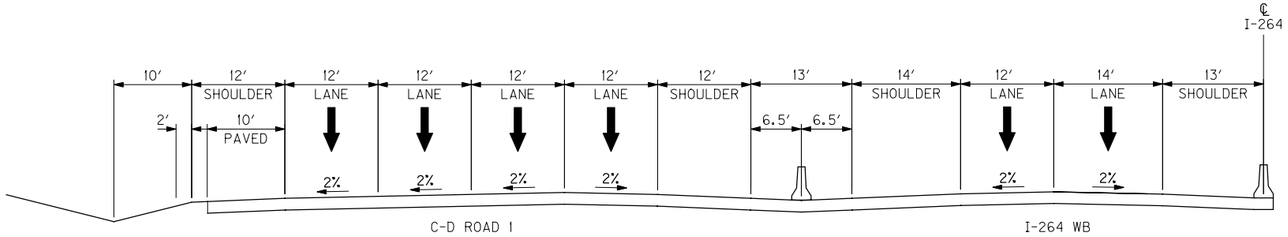
MINIMUM AASHTO RECOMMENDED LENGTH FOR SUCCESSIVE RAMP TERMINALS:

1. TURNING ROADWAYS: 800'
2. ENTRANCE TO EXIT RAMP TERMINALS: 2000'

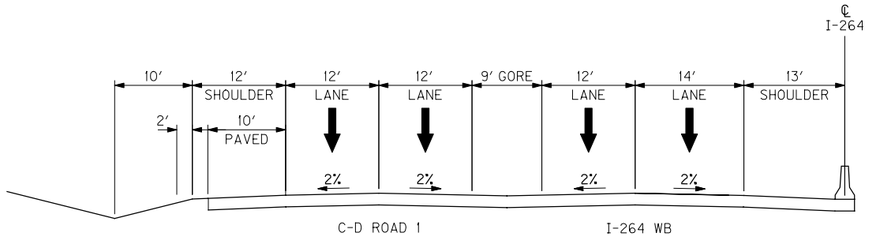
EXISTING ROADWAY GEOMETRICS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

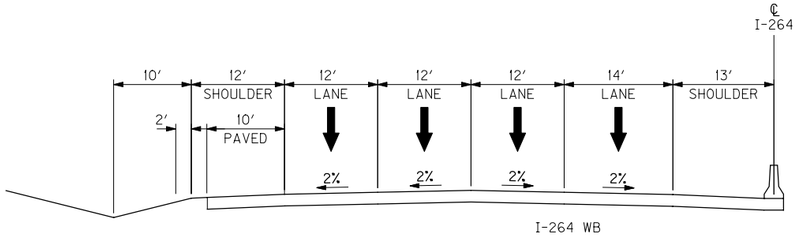
SHEET NO.
E-5



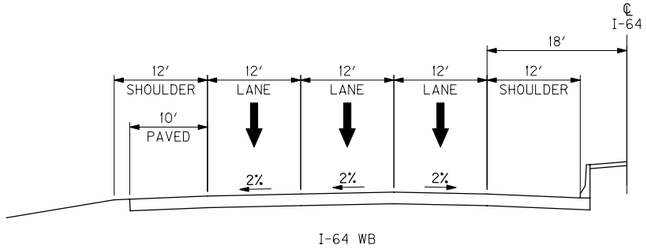
(#1) I–264 EAST OF I–64 /I–264 INTERCHANGE



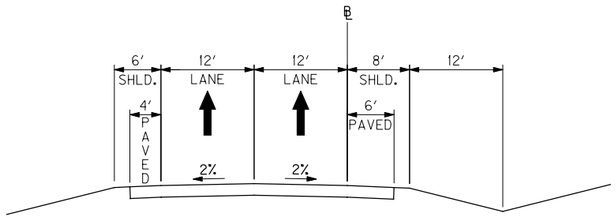
(#2) I–264 JUST WEST OF I–64 OVERPASS



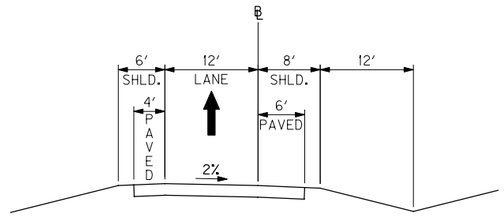
(#3) I–264 WEST OF I–64 /I–264 INTERCHANGE



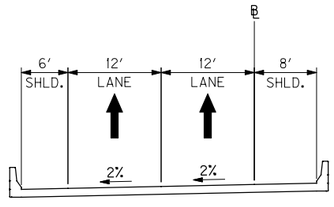
(#4) I–64



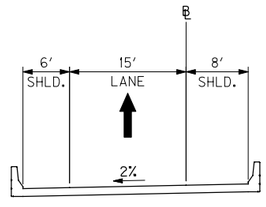
(#5) I–64 WB TO I–264 WB RAMP 2–LANE RAMP



(#6) I–64 WB TO I–264 WB RAMP 1–LANE RAMP



(#7) I–64 WB TO I–264 WB RAMP 2–LANE BRIDGE OVER I–264



(#8) I–64 WB TO I–264 WB RAMP 1–LANE BRIDGE OVER I–64

Note: See Sheet E-5 For Typical Section Locations.

10 0 10 20 30

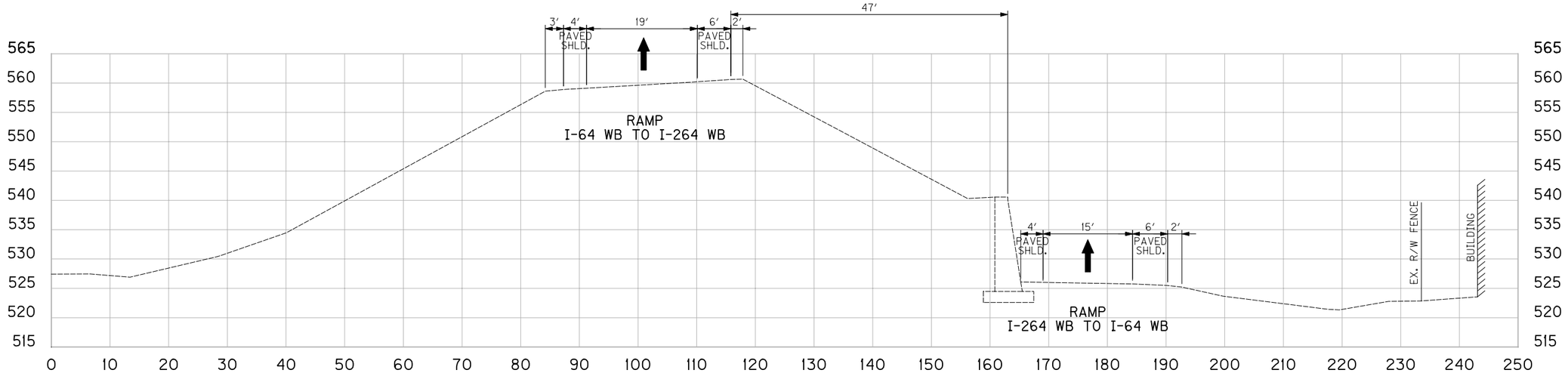
GRAPHIC SCALE IN FEET

EXISTING TYPICAL SECTIONS

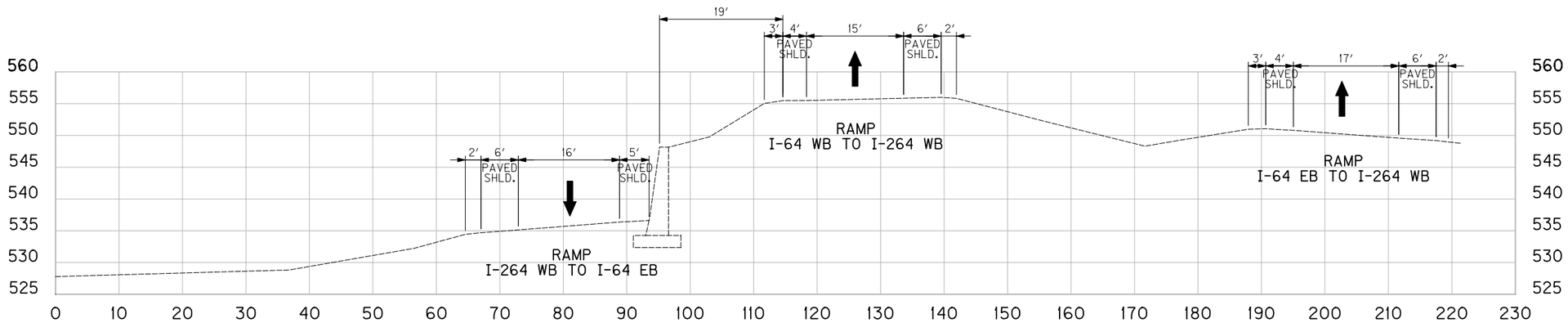
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

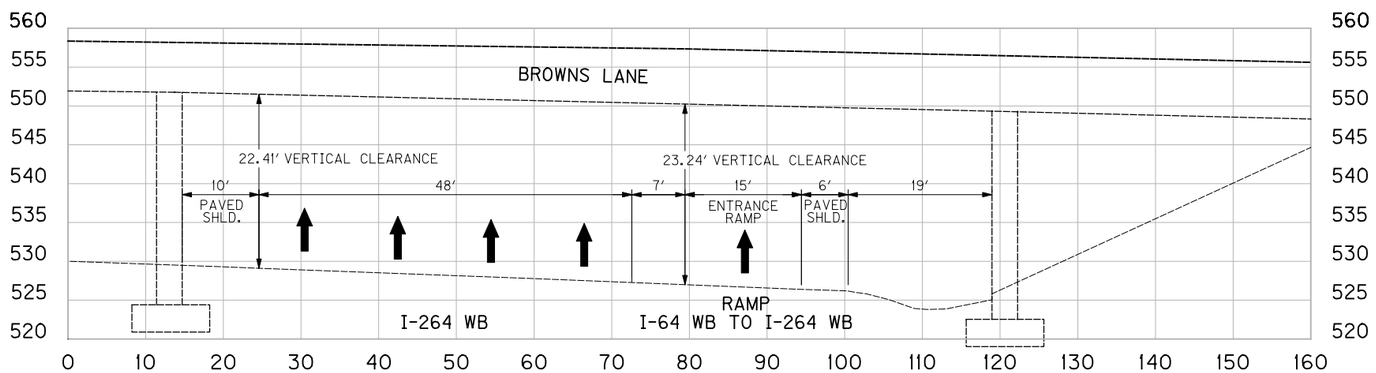
E-6



SECTION A-A



SECTION B-B



SECTION C-C

10 0 10 20 30

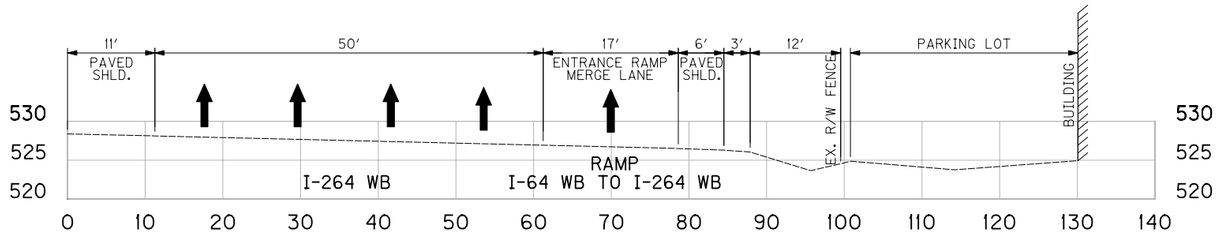
GRAPHIC SCALE IN FEET

CRITICAL CROSS SECTIONS

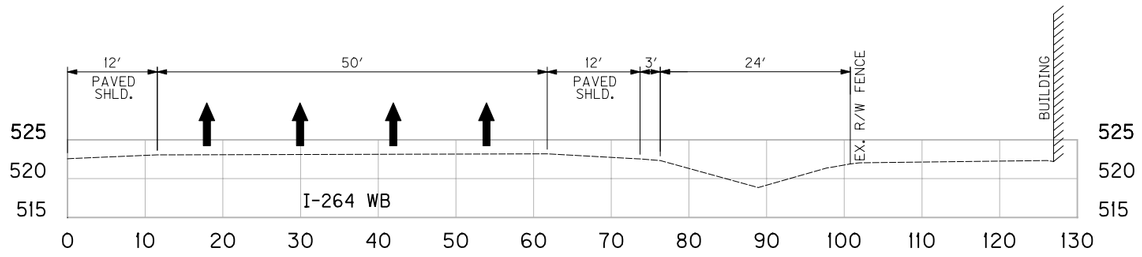
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

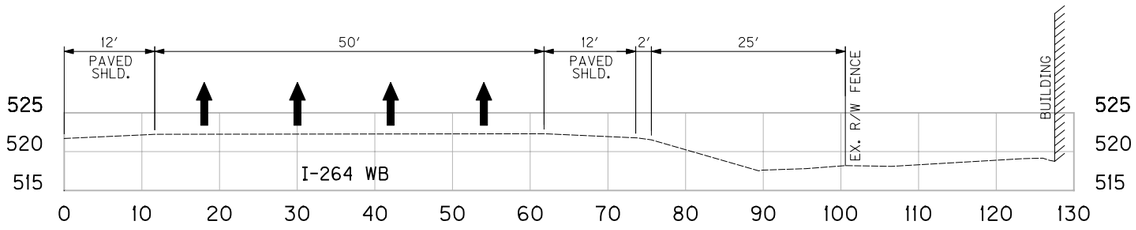
E-7



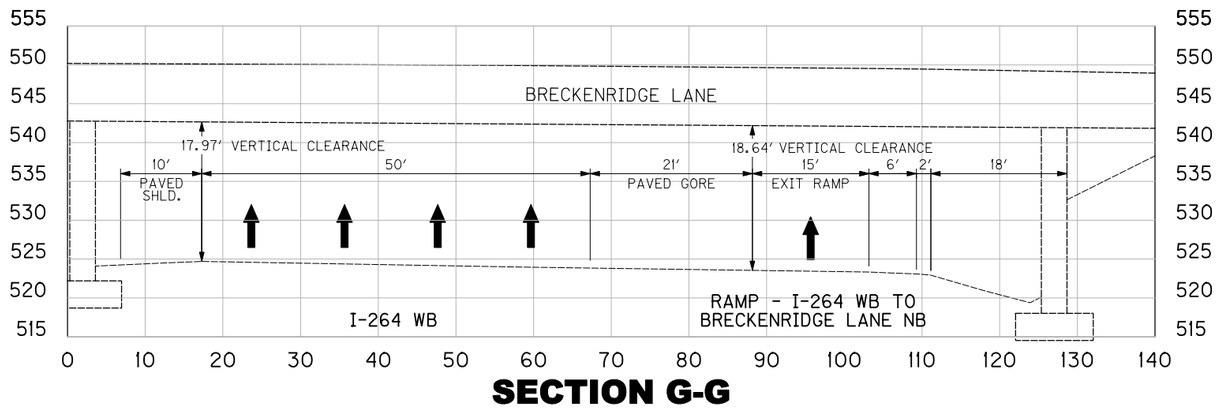
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

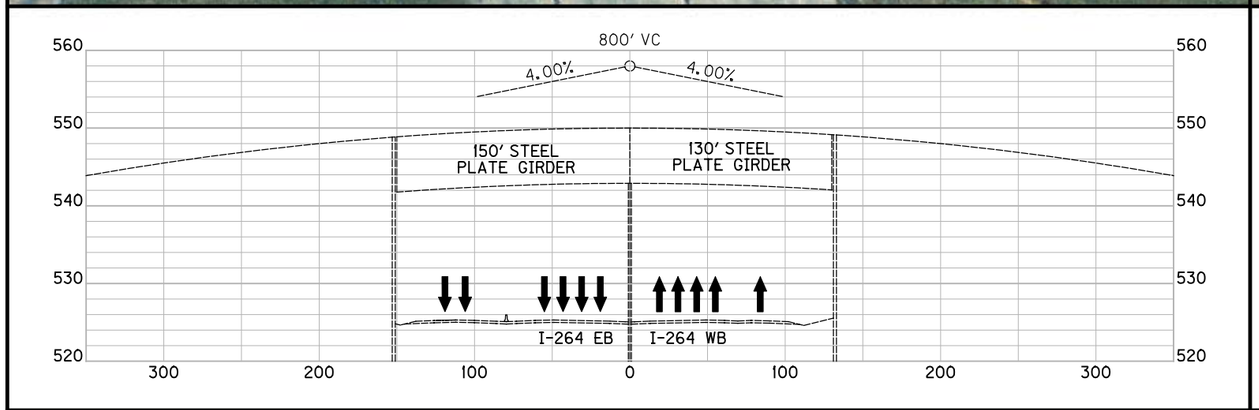
10 0 10 20 30

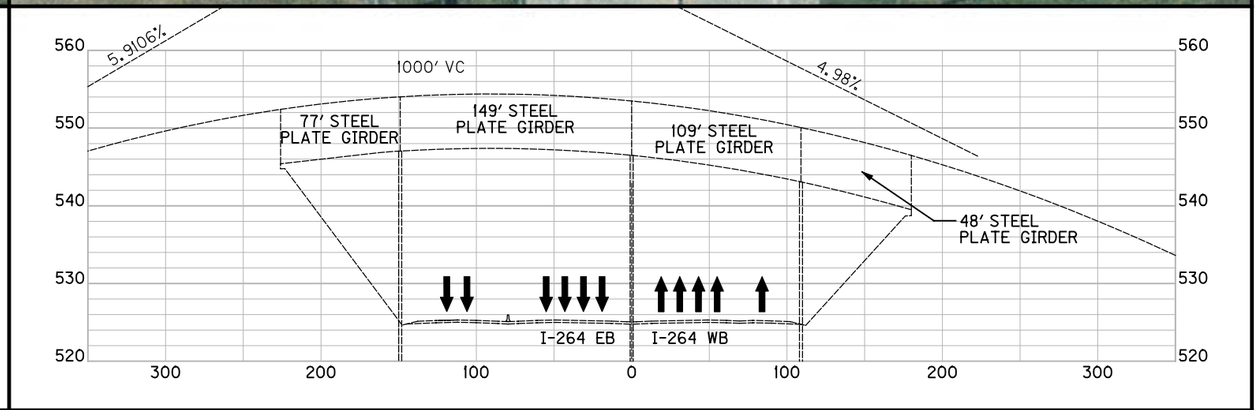
GRAPHIC SCALE IN FEET

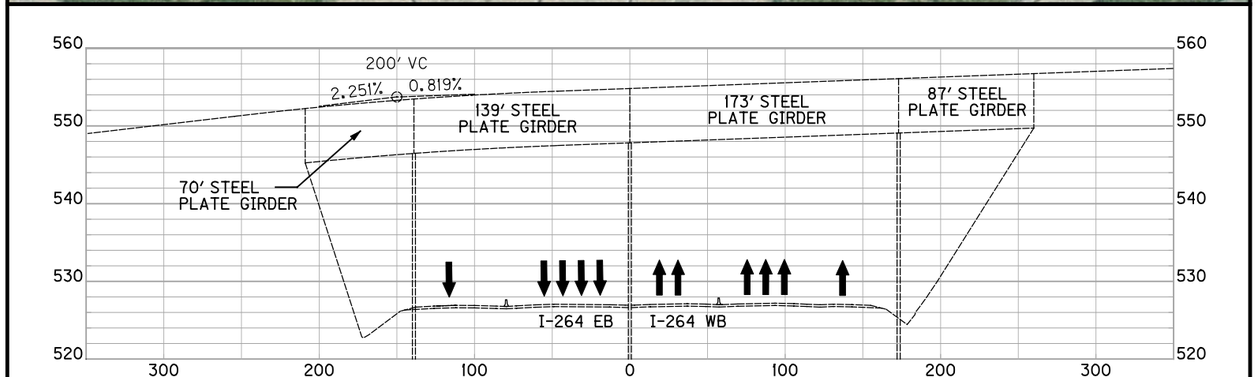
CRITICAL CROSS SECTIONS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-8







50 0 50 100 150

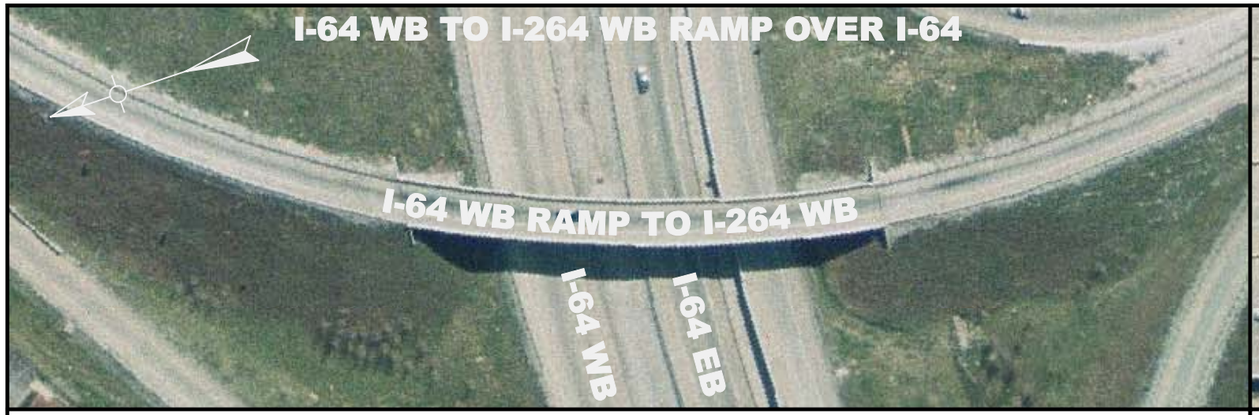
GRAPHIC SCALE IN FEET

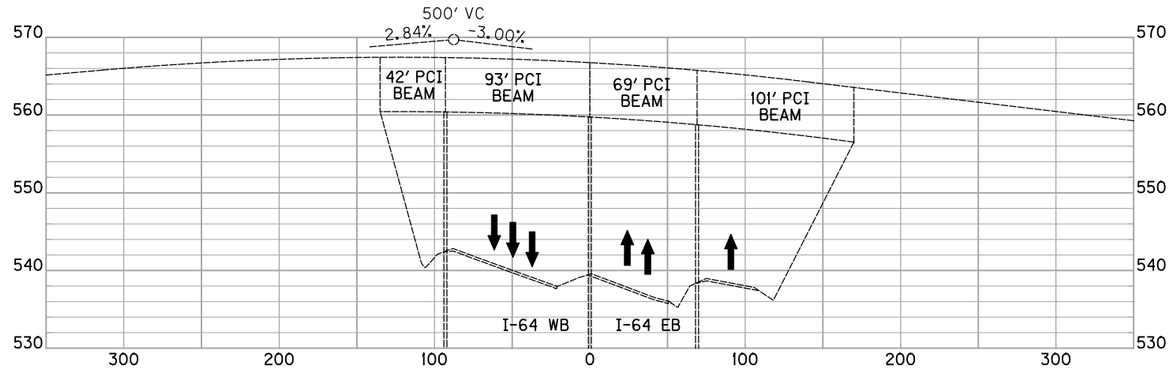
EXISTING STRUCTURES

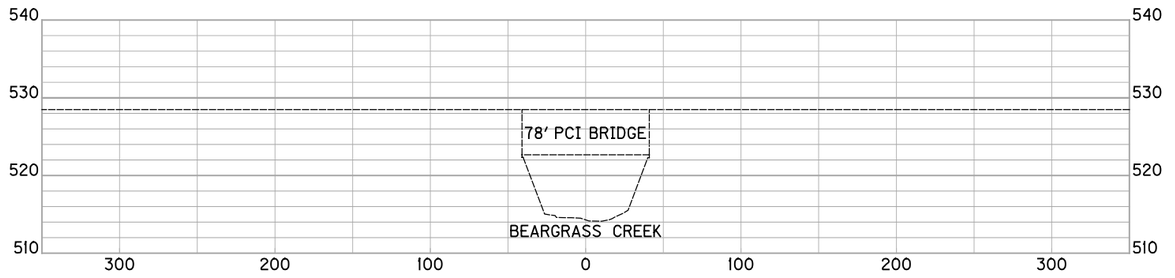
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

E-9







50 0 50 100 150

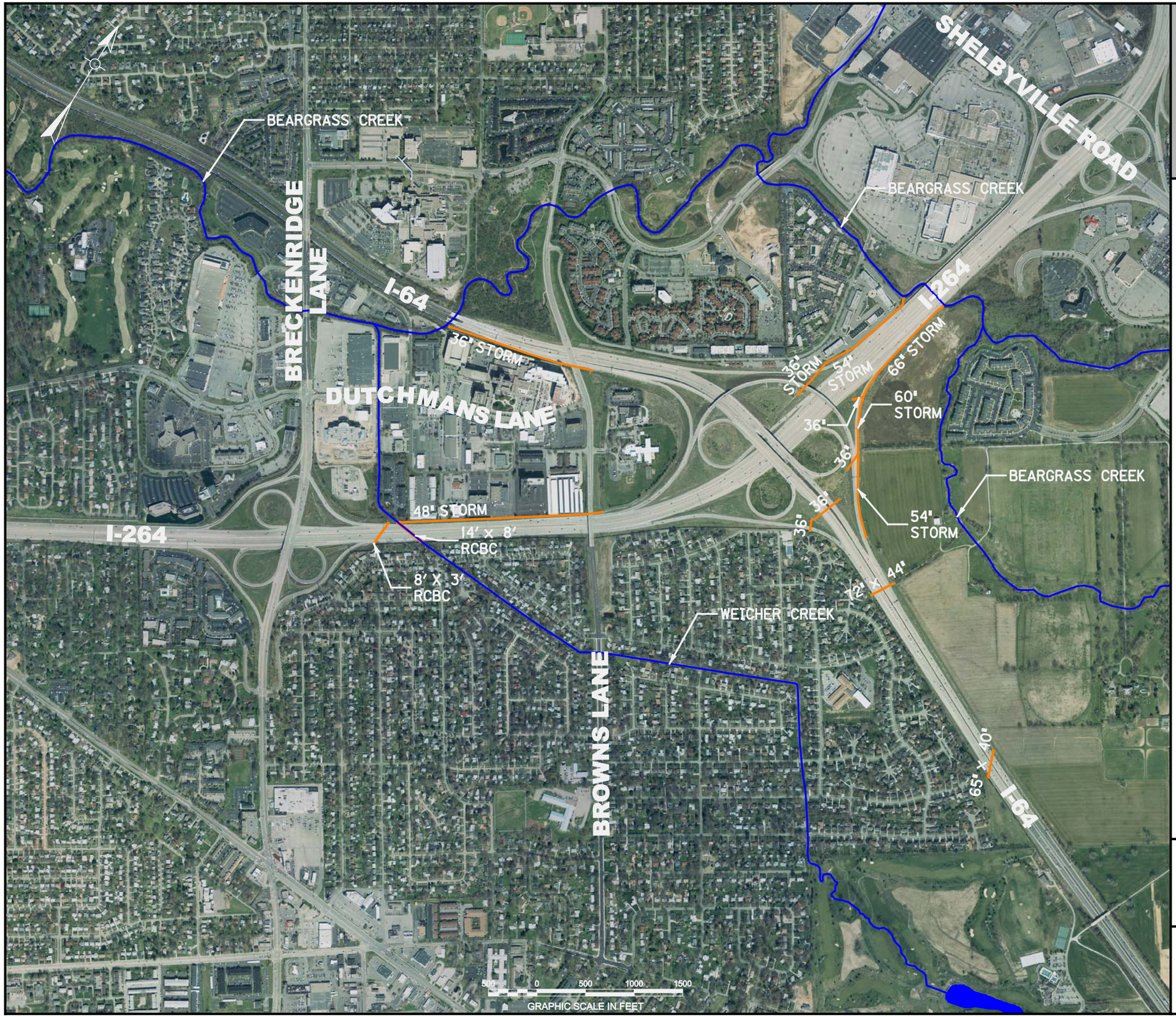
GRAPHIC SCALE IN FEET

EXISTING STRUCTURES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

E-10



Legend

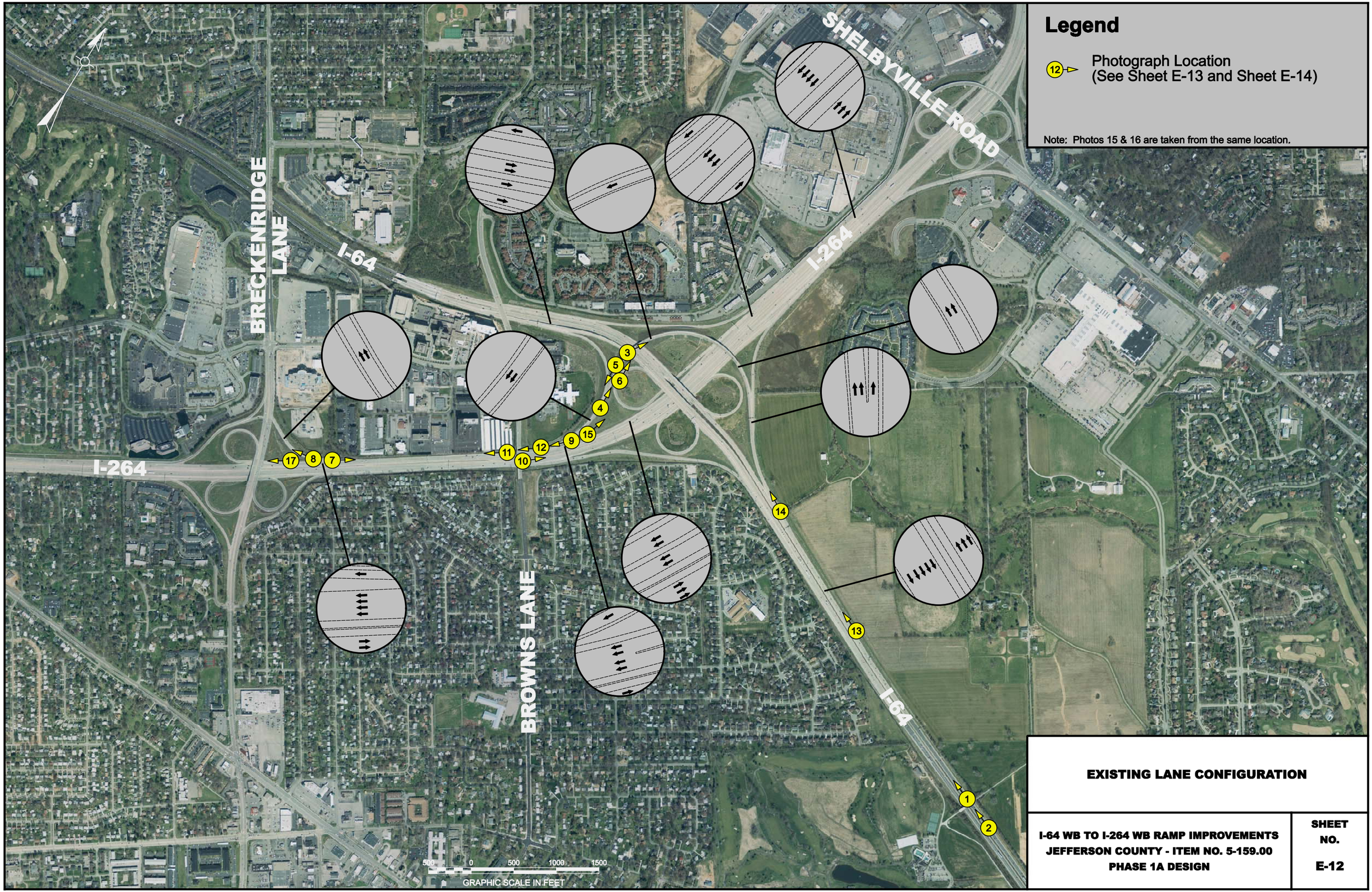
- Blue Line Streams
- Ponds
- Culverts
- RCBC Reinforced Concrete Box Culvert

Drainage structures shown are limited to situation size structures. Small diameter (<36") pipes are not shown.

EXISTING DRAINAGE

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-11



EXISTING LANE CONFIGURATION

I-64 WB TO I-264 WB RAMP IMPROVEMENTS **JEFFERSON COUNTY - ITEM NO. 5-159.00** **PHASE 1A DESIGN**	**SHEET NO.** **E-12**

1 – Oxmoor Farm Road Bridge over I-64 Looking West

2 – I-64 WB facing Oxmoor Farm Road Bridge

3 – I-64 WB to I-264 WB Ramp Looking at Bridge over I-64

4 – Looking North Towards I-64 WB to I-264 WB Ramp over I-64

5 – I-64 WB to I-264 WB Ramp

6 – Retaining Wall on I-264 WB to I-64 EB Ramp

7 – I-264 WB Exit Ramp to Breckenridge Lane Facing East

8 – I-264 WB Exit Ramp to Breckenridge Lane Facing West

9 – I-264 WB Facing Browns Lane Bridge

10 – Browns Lane Bridge over I-264 Facing East

11 – Browns Lane Bridge over I-264 Facing West

Note: See Sheet E-12 for photograph locations.

PROJECT AREA PHOTOGRAPHS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY – ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-13

12 – Looking West at Browns Lane Bridge from I-264 WB

13 – I-64 WB Shoulder West of Oxmoor Farm Road Overpass

14 – I-64 WB Exit Ramp @ I-264

15 – Sinkhole Between I-264 WB and I-64 EB Exit Ramp To I-264 WB

16 – Sinkhole between I-264 WB and I-64 EB Exit Ramp to I-264 WB

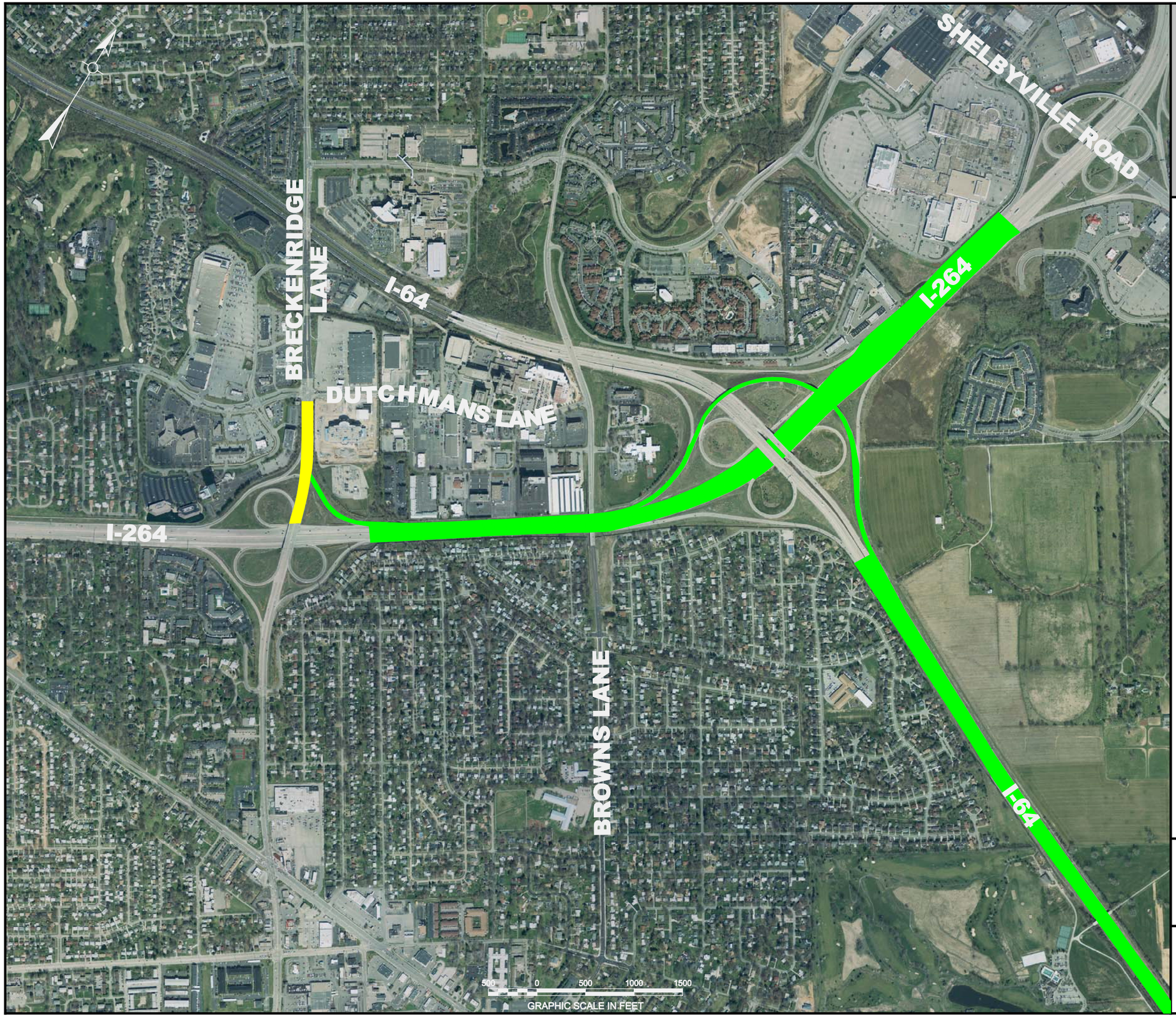
17 – Looking West at Breckenridge Lane Bridge over I-264

Note: See Sheet E-12 for photograph locations.

PROJECT AREA PHOTOGRAPHS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY – ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-14



Legend

- Crash rate exceeds critical crash rate for road type
- Crash rate exceeds average for road type
- Crash rate below average for road type

Crash data for I-64 and I-264 mainlines received from KYTC does not provide information regarding direction of travel. Therefore, crash rate analysis for I-64 and I-264 is inclusive of both directions of travel.

See Sheet E-16 for Crash Data Analysis

CRASH RATE ANALYSIS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-15

I-64 WB to I-264 WB Ramp Improvements

CRASH RATE ANALYSIS FOR 2003 - 2005

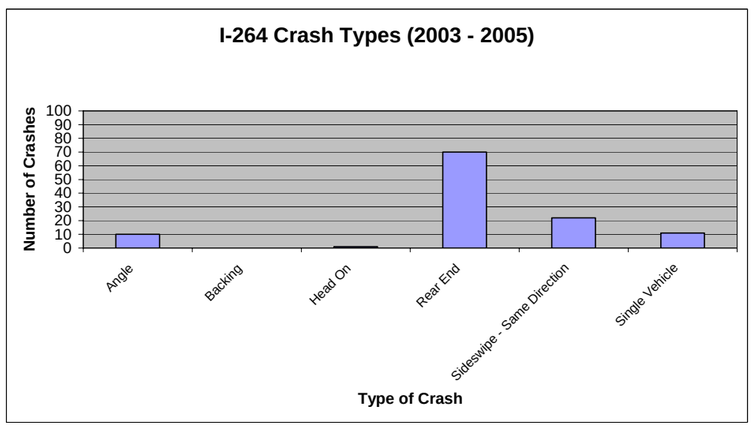
Route	Section	Begin Milepoint	End Milepoint	Total Crashes	Average Daily Traffic	Section Length* (miles)	Exposure "M" (100 or 1 MVM)	Statewide Average Crash Rate	Section Crash Rate	Statewide Critical Crash Rate	Critical Crash Rate Factor
I-64	1	14.894 (Hurstbourne Pky)	12.275 (Off Ramp from I-64)	158	133,907	2.619	3.840	92	41	105	0.39
Flyover	2	Off-Ramp from I-64	On-Ramp to I-264	20	29,437	1.02	0.329	92	61	127	0.48
I-264	3	19.939 (Shelbyville Rd)	19.07 (I-64 Ramp Merge)	38	124,917	0.869	1.189	92	32	114	0.28
	4	19.07 (I-64 Ramp Merge)	18.049 (Breckenridge Ln)	76	162,330	1.021	1.815	92	42	112	0.37
Off-Ramp	5	I-264 Off-Ramp to Breckenridge Ln	Off-Ramp Merge with Breckenridge Ln	5	9,200	0.250	10.074	0.69	0.50	0.66	0.75
KY 1932	6	3.519 (I-264)	3.8 (Dutchmans Ln)	65	67,372	0.281	73.772	0.69	0.88	1.06	0.84

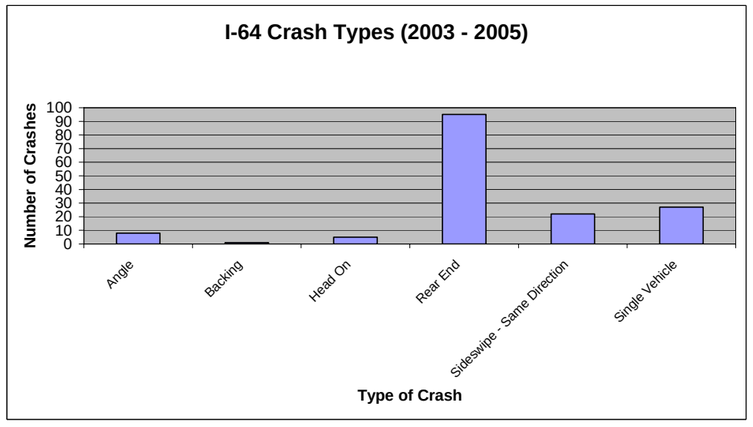
Critical Crash Rate Factor >1, Section Crash Rate Exceeds Statewide Critical Rate (High Crash Rate Section)
Critical Crash Rate Factor <1, Section Crash Rate Exceeds Statewide Average Rate
Critical Crash Rate Factor <1, Section Crash Rate Lower Than Statewide Average Rate

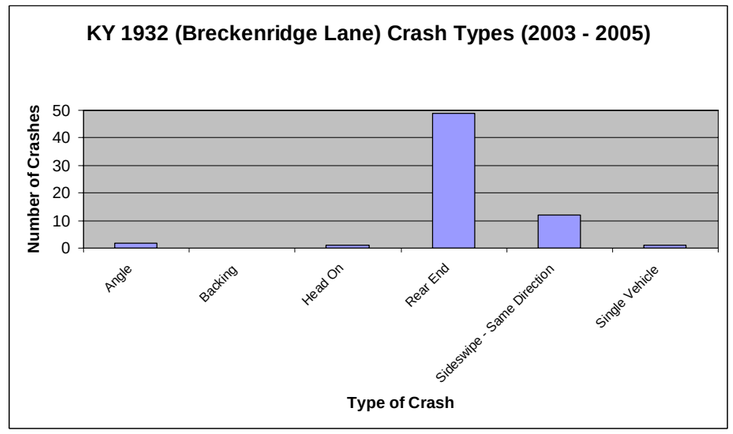
*Sections with a length of less than 0.3 miles were treated as "spots" and analyzed using the spot crash rate method.

Notes:
Analysis Period: 3 Years (1/1/2003 to 12/31/2005)
Crash rates are expressed in crashes per 100 MVM (100 million vehicle miles traveled) and in terms of 1 MVM (1 million vehicle miles traveled) for spots
Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years)) x (Section Length)] / 100,000,000 or Exposure (M) = [(ADT) x (365) x (Time Frame of Analysis (Years))] / 1,000,000 for spots
Section Crash Rate = Total Crashes / Exposure
Critical Crash Rate Factor = Section Crash Rate / Statewide Critical Crash Rate
ADT = Average Daily Traffic, MVM = Million Vehicle Miles

Sources:
Crash data for 1/1/2003 to 12/31/2005 from KYTC Data
Statewide Rates from KTC Research Report KTC-05-19/KSP2-05-1F, Analysis of Traffic Crash Data in Kentucky (2000 - 2004)



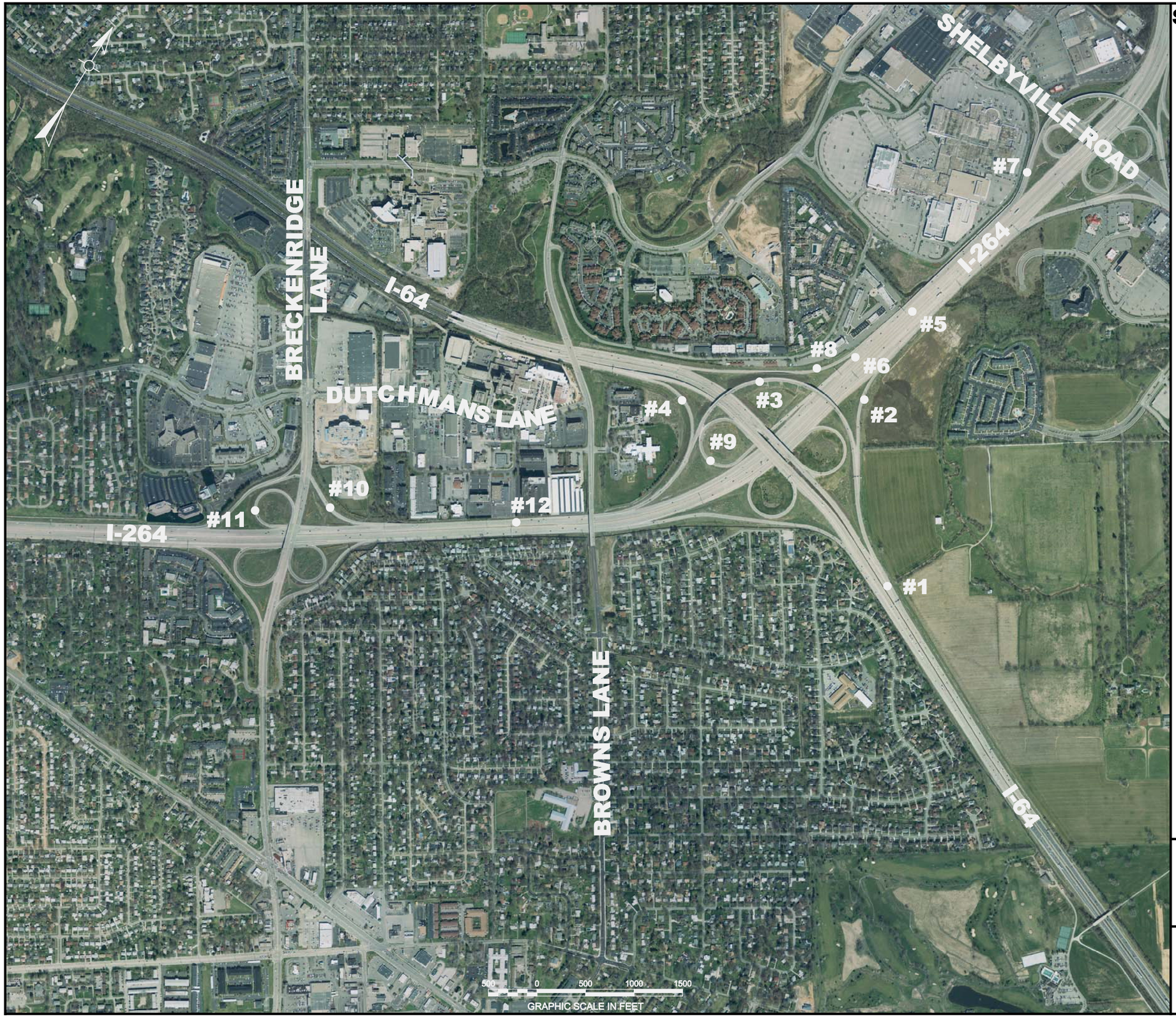




CRASH DATA ANALYSIS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY – ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-16



SEGMENT TRAFFIC PROJECTIONS

ADT PROJECTIONS

SEGMENT NO. *	2005	GR	2010	2015	2025
1	65,500	2.00%	72,300	79,800	97,300
2	8,400	2.25%	9,400	10,500	13,100
3	26,400	2.25%	29,500	33,000	41,200
4	3,800	2.25%	4,200	4,700	5,900
5	63,800	2.50%	72,200	81,700	104,500
6	26,400	2.50%	29,900	33,800	43,300
7	32,600	2.00%	36,000	39,700	48,400
8	7,000	2.25%	7,800	8,700	10,900
9	8,700	2.25%	9,700	10,900	13,600
10	9,200	1.75%	10,000	10,900	13,000
11	6,700	1.75%	7,300	8,000	9,500
12	81,500	2.50%	92,200	104,300	133,500

* SEE BELOW FOR SEGMENT DESCRIPTIONS.

TRUCK % PROJECTIONS

SEGMENT NO. *	2005	GR	2010	2015	2025
1	16.5%	1.50%	17.8%	19.1%	22.2%
2	4.8%	1.50%	5.2%	5.6%	6.5%
3	12.0%	1.50%	12.9%	13.9%	16.2%
4	4.7%	1.50%	5.1%	5.5%	6.3%
5	10.0%	1.50%	10.8%	11.6%	13.5%
6	5.3%	1.50%	5.7%	6.2%	7.1%
7	3.6%	1.50%	3.9%	4.2%	4.8%
8	2.8%	1.50%	3.0%	3.2%	3.8%
9	4.7%	1.50%	5.1%	5.5%	6.3%
10	4.3%	1.50%	4.6%	5.0%	5.8%
11	2.8%	1.50%	3.0%	3.2%	3.8%
12	10.0%	1.50%	10.8%	11.6%	13.5%

* SEE BELOW FOR SEGMENT DESCRIPTIONS.

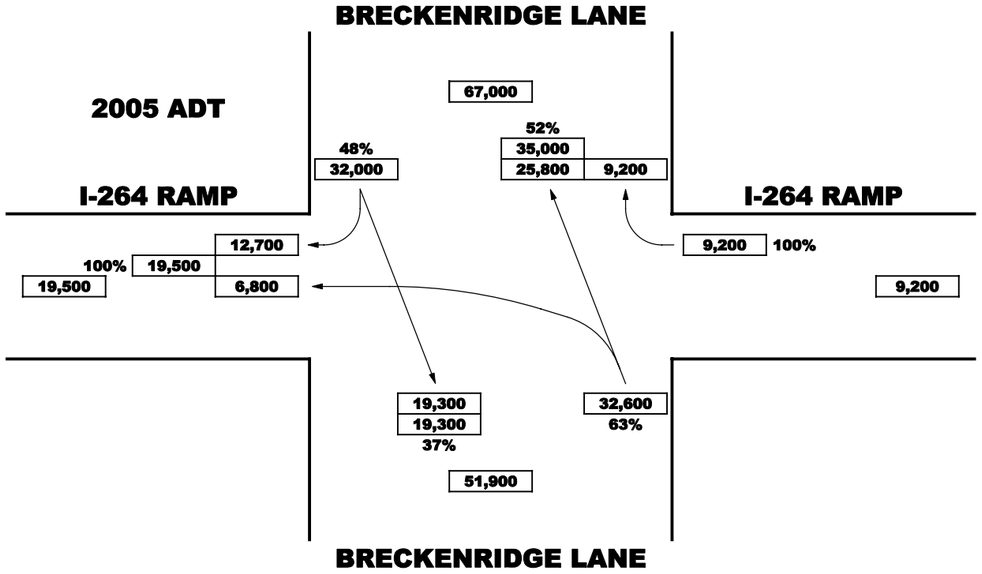
SEGMENT DESCRIPTIONS

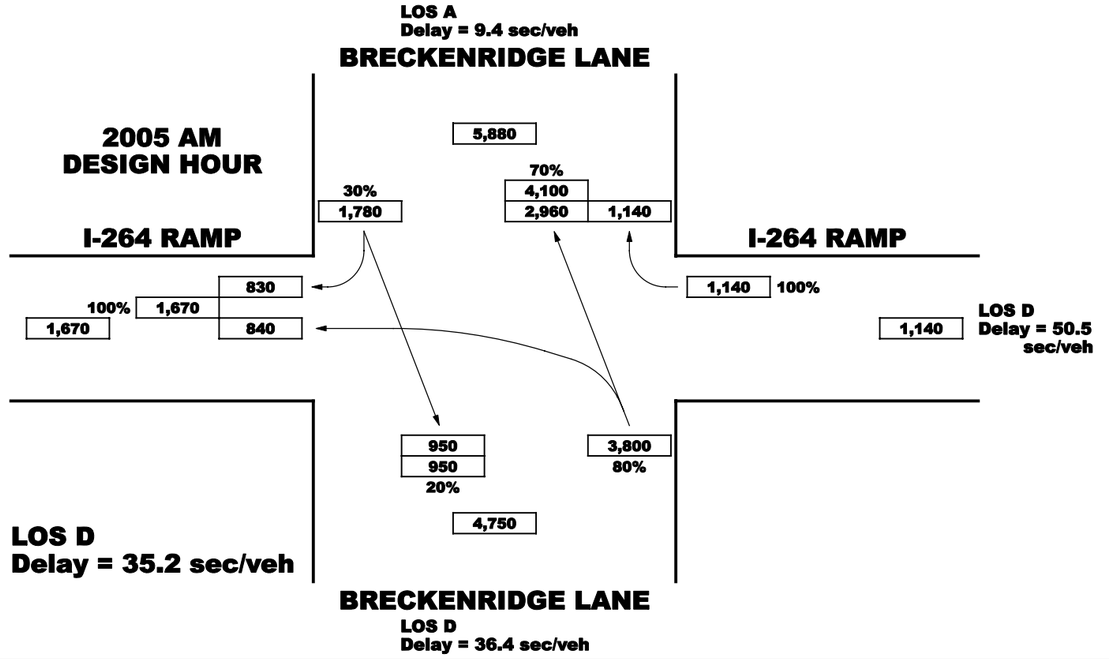
SEGMENT NO.	DESCRIPTION
1	I-64 Westbound
2	I-64 Westbound Exit Ramp to I-264 Eastbound
3	I-64 Westbound Exit Ramp to I-264 Westbound
4	I-64 Eastbound Exit Ramp to I-264 Westbound
5	I-264 Westbound
6	I-264 Westbound Collector-Distributor Road
7	Shelbyville Road (US 60) On-Ramp to I-264 Westbound Collector-Distributor Road
8	I-264 Westbound Collector-Distributor Road Exit Ramp To I-64 Westbound
9	I-264 Westbound Collector-Distributor Road Exit Ramp To I-64 Eastbound
10	I-264 Westbound Exit Ramp to Northbound Breckenridge Lane
11	I-264 Westbound Exit Ramp to Southbound Breckenridge Lane
12	I-264 Westbound

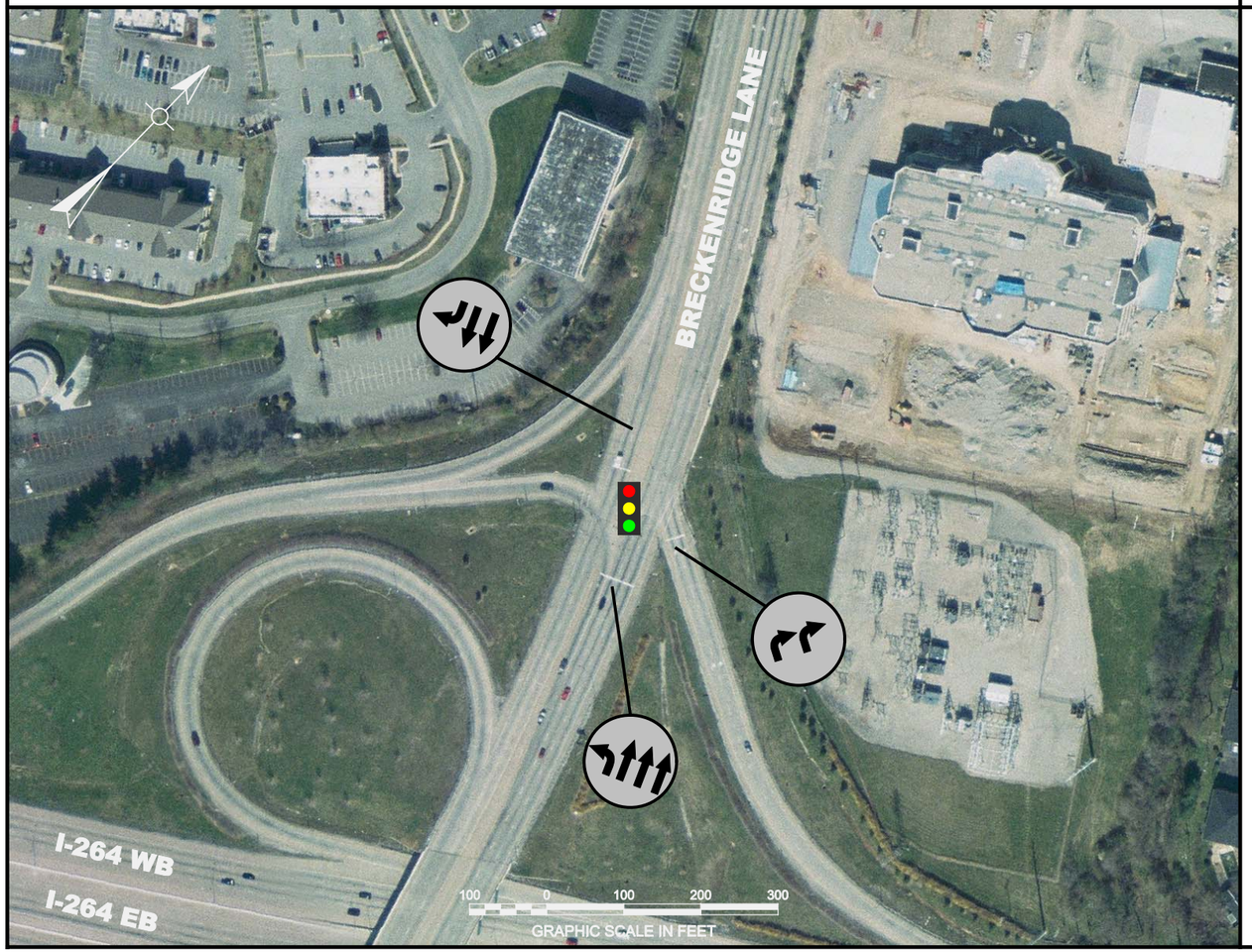
TRAFFIC FORECAST

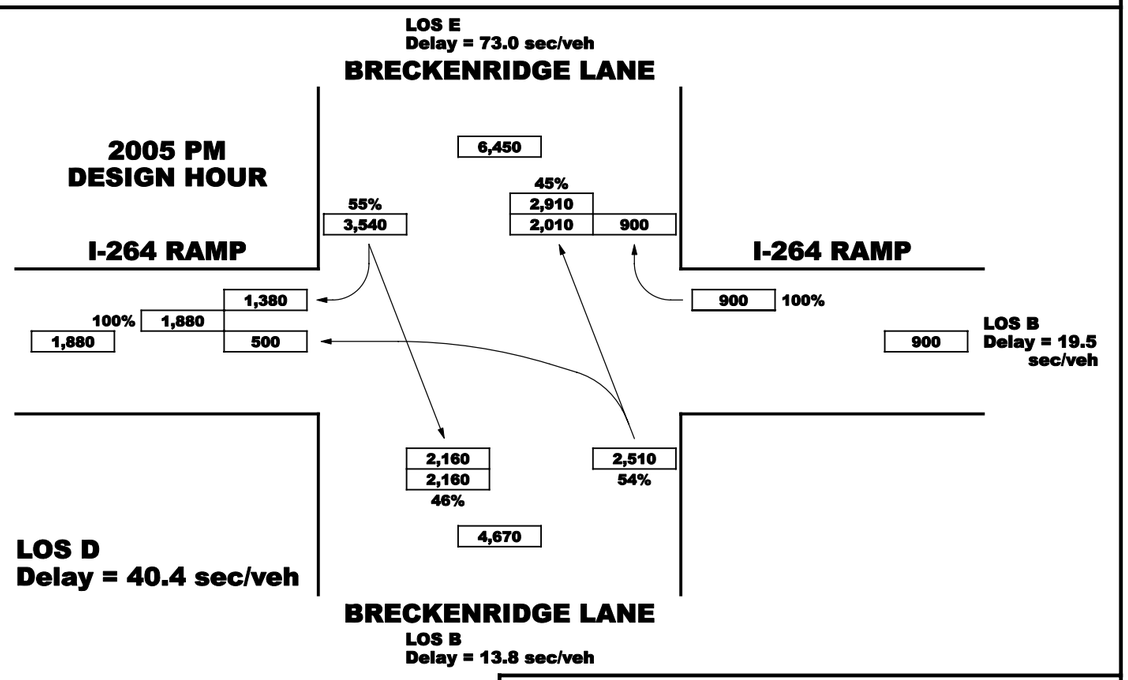
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-17





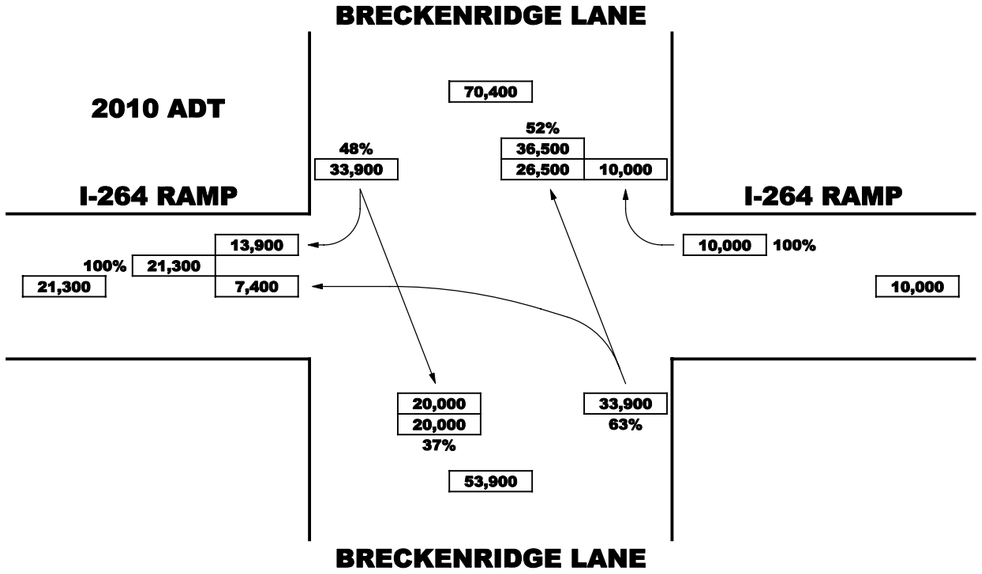


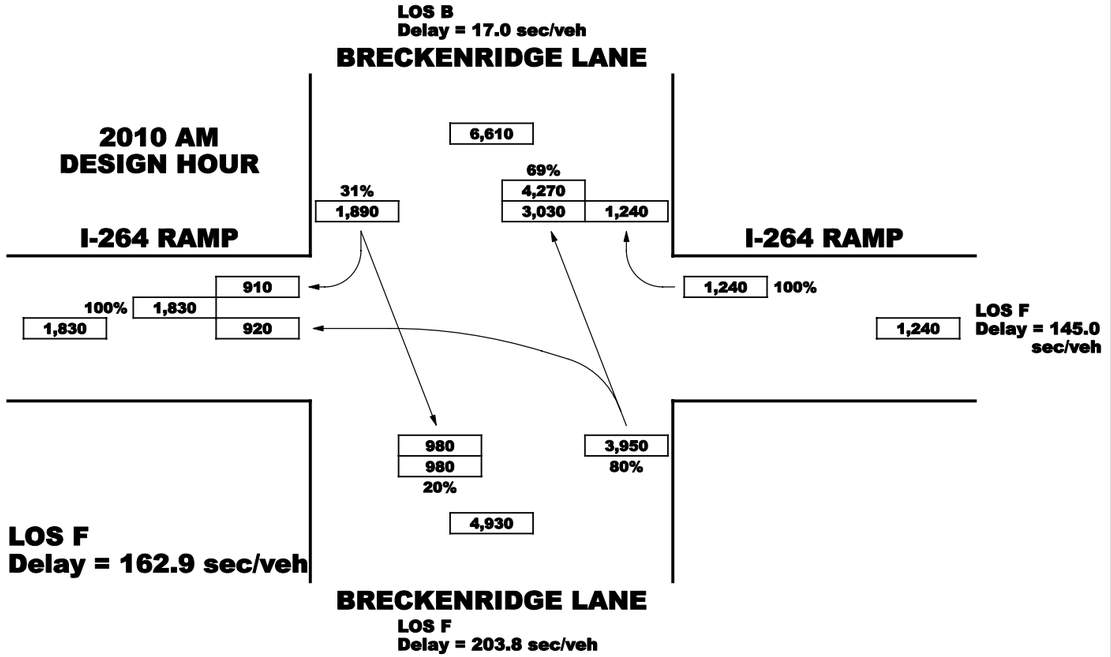


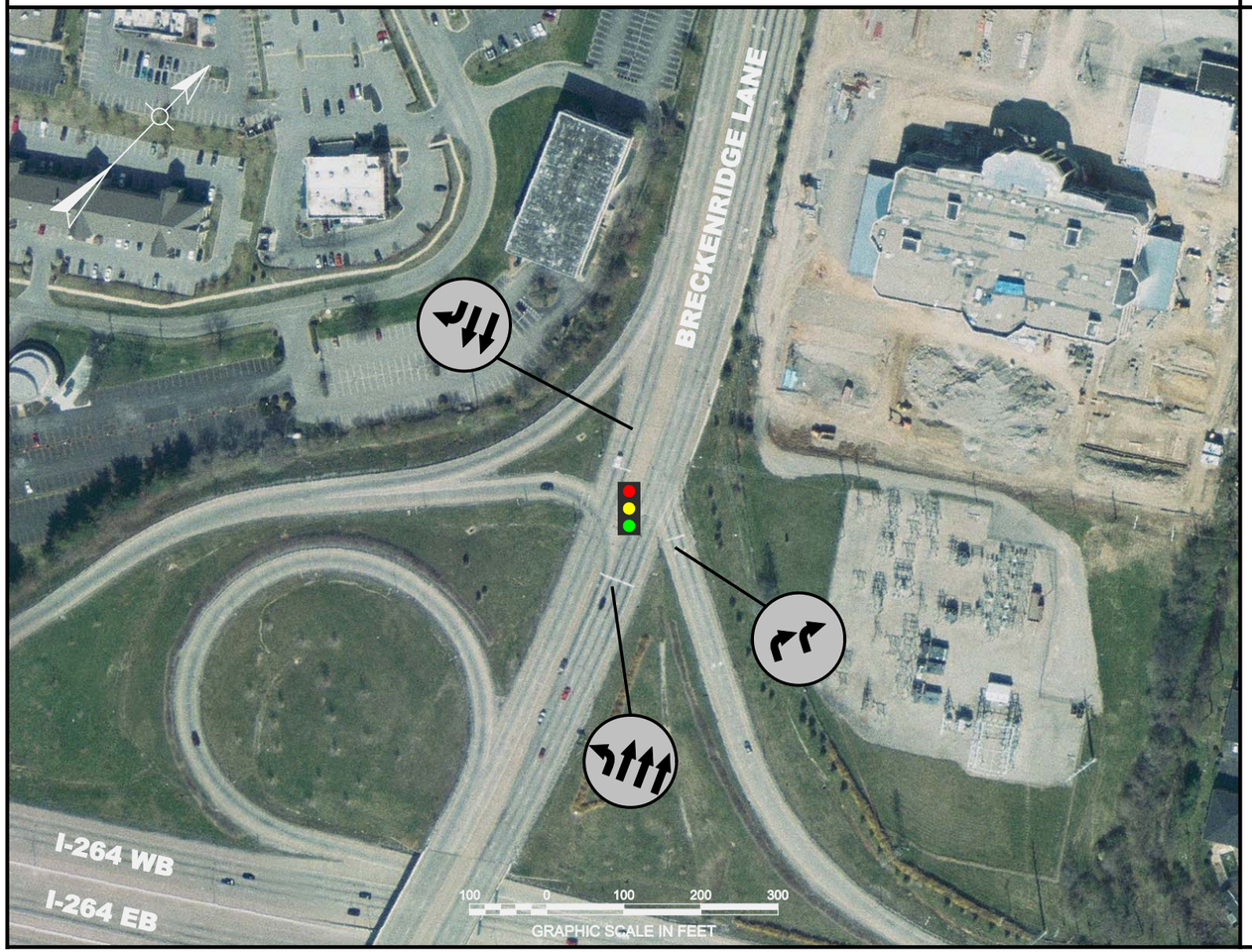
I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION
2005 TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

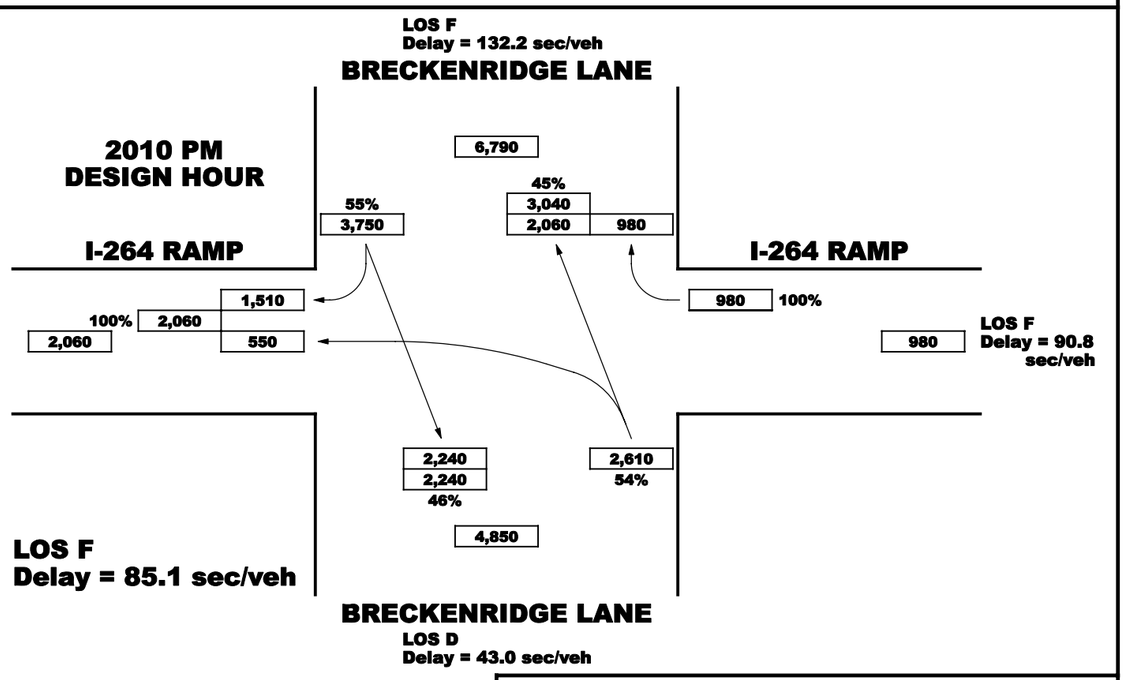
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-18





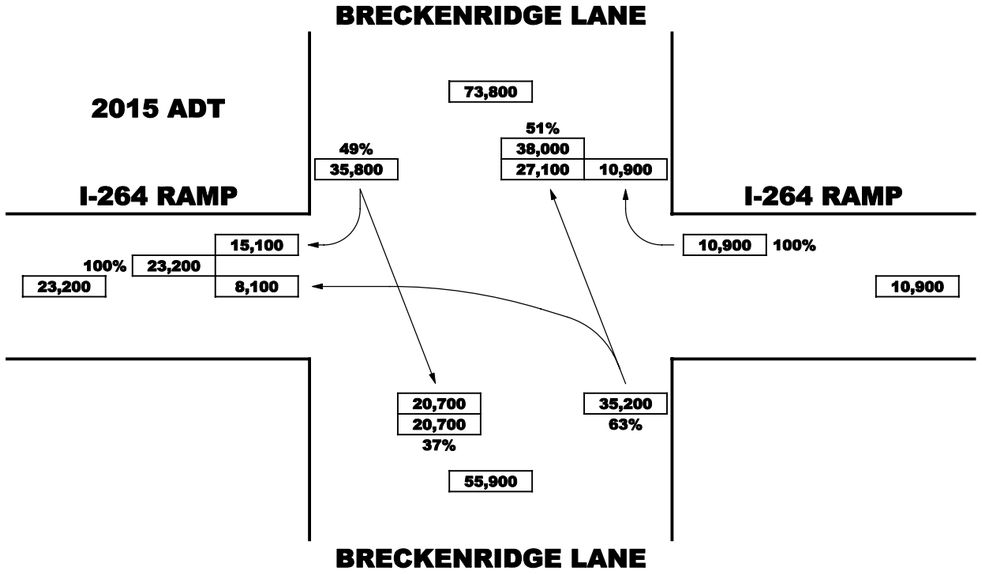


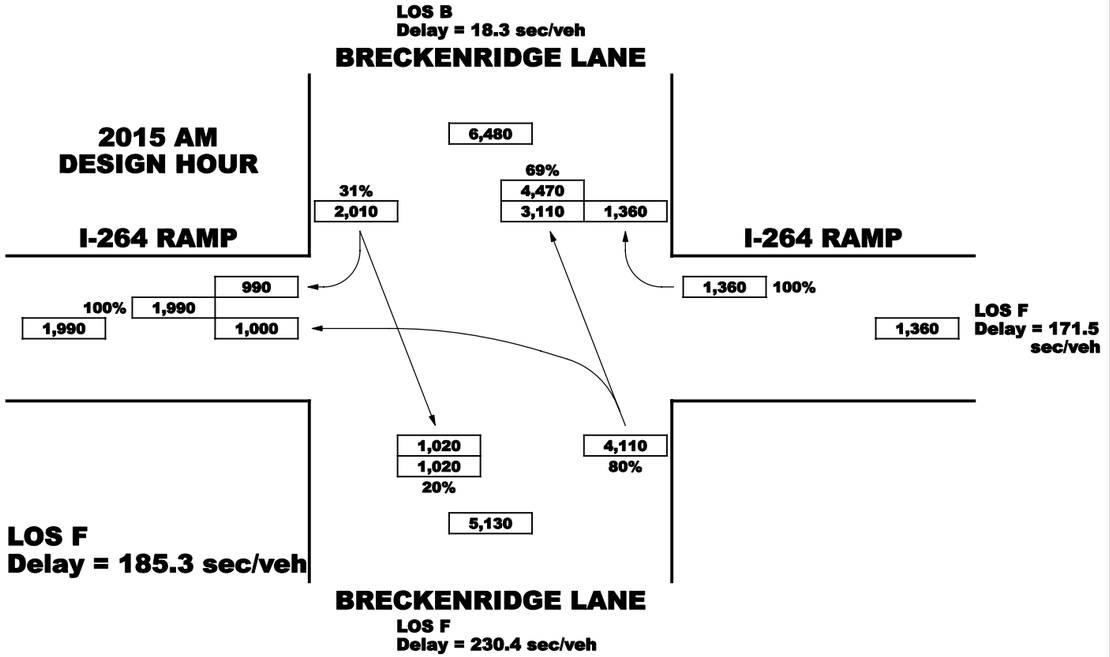


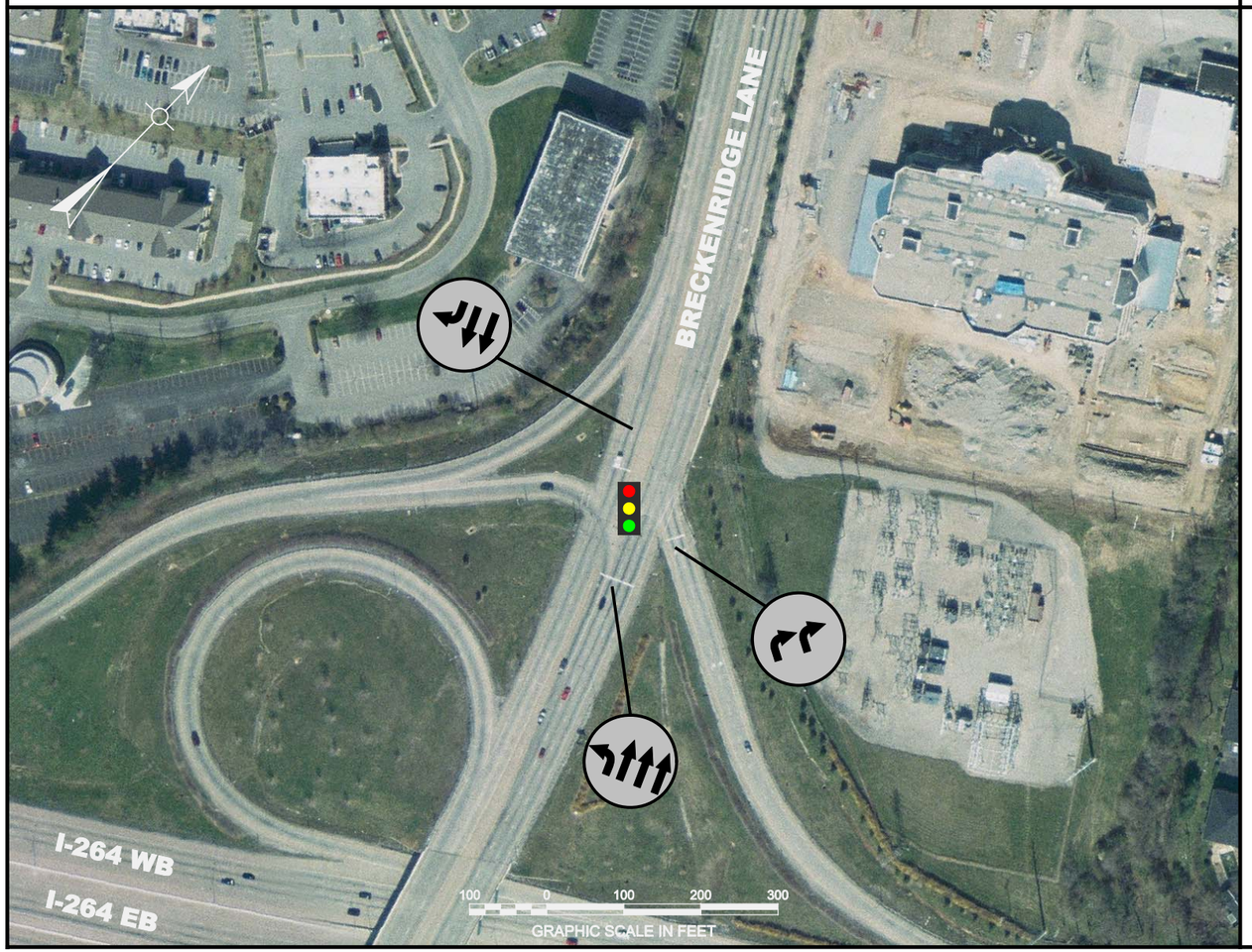
I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION
2010 NO-BUILD TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

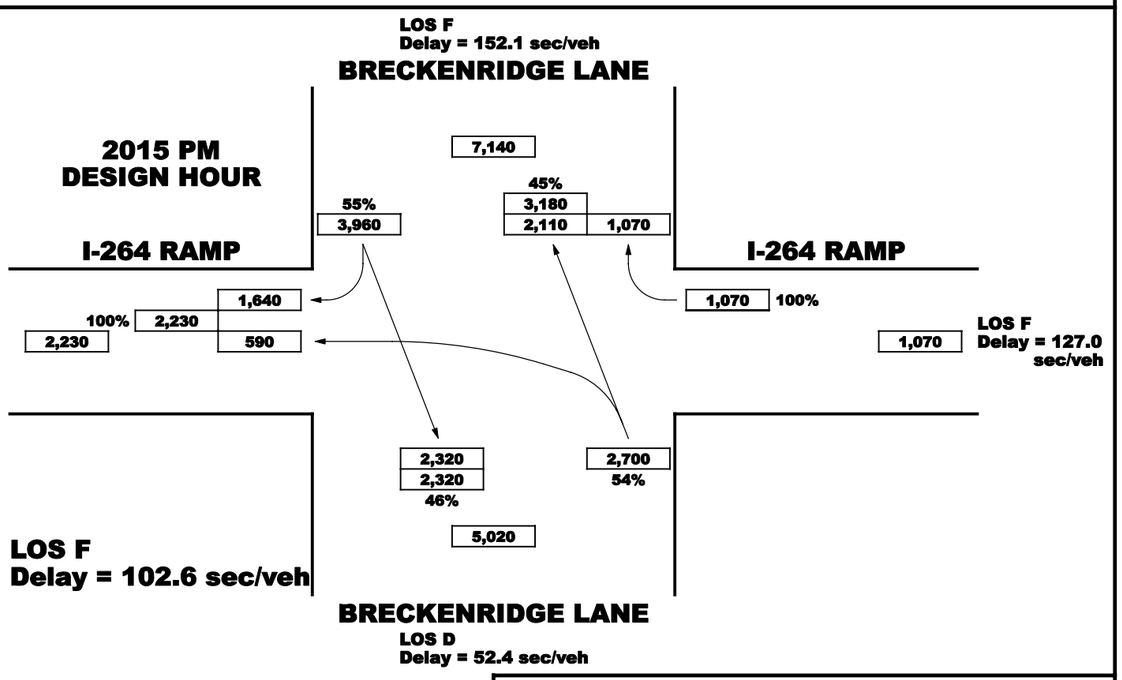
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-19





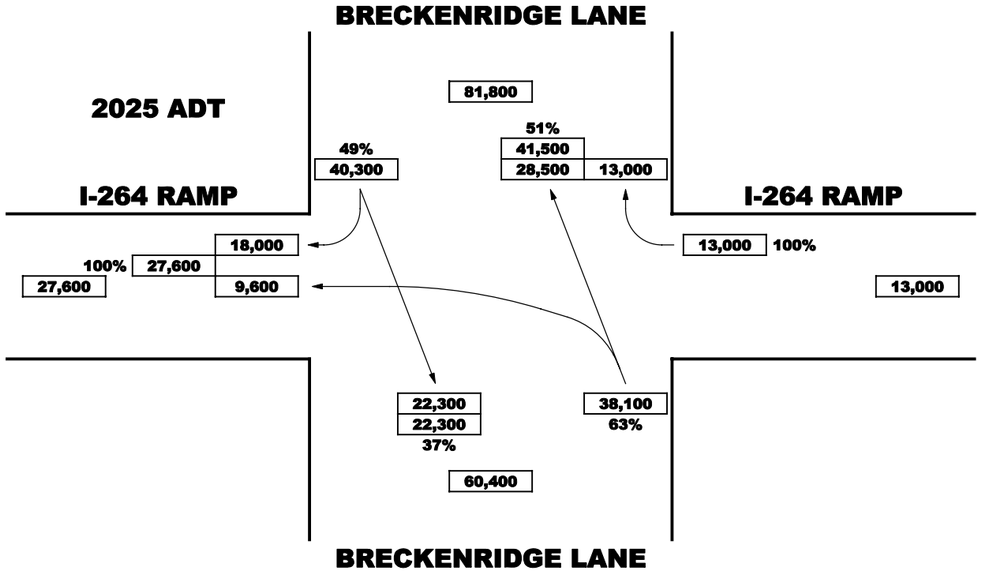


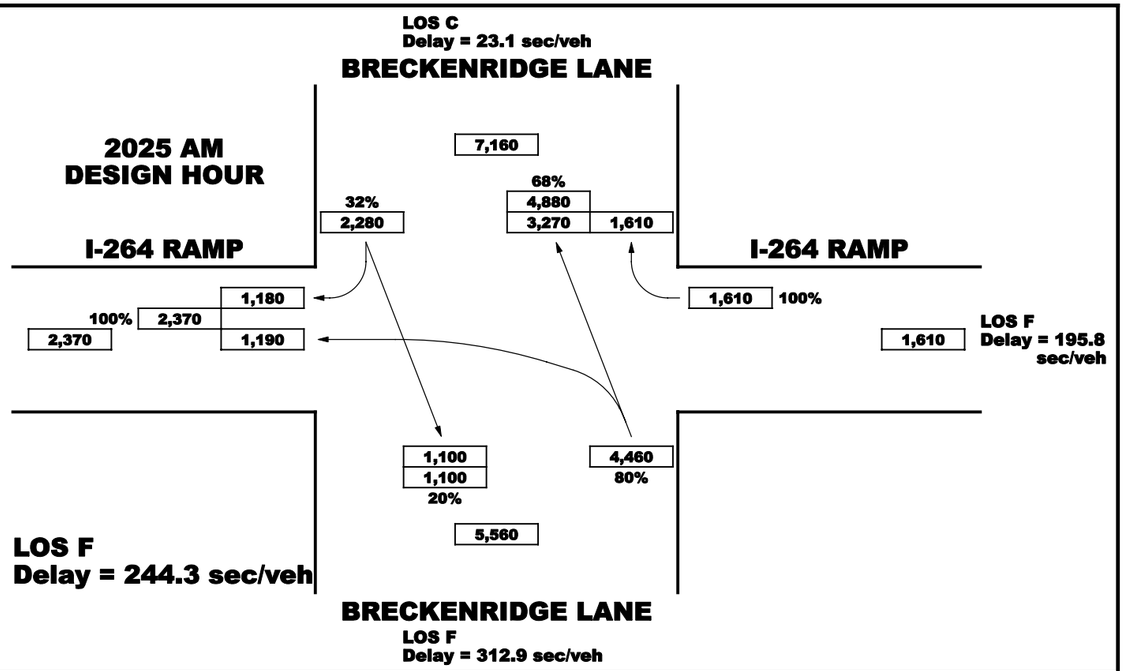


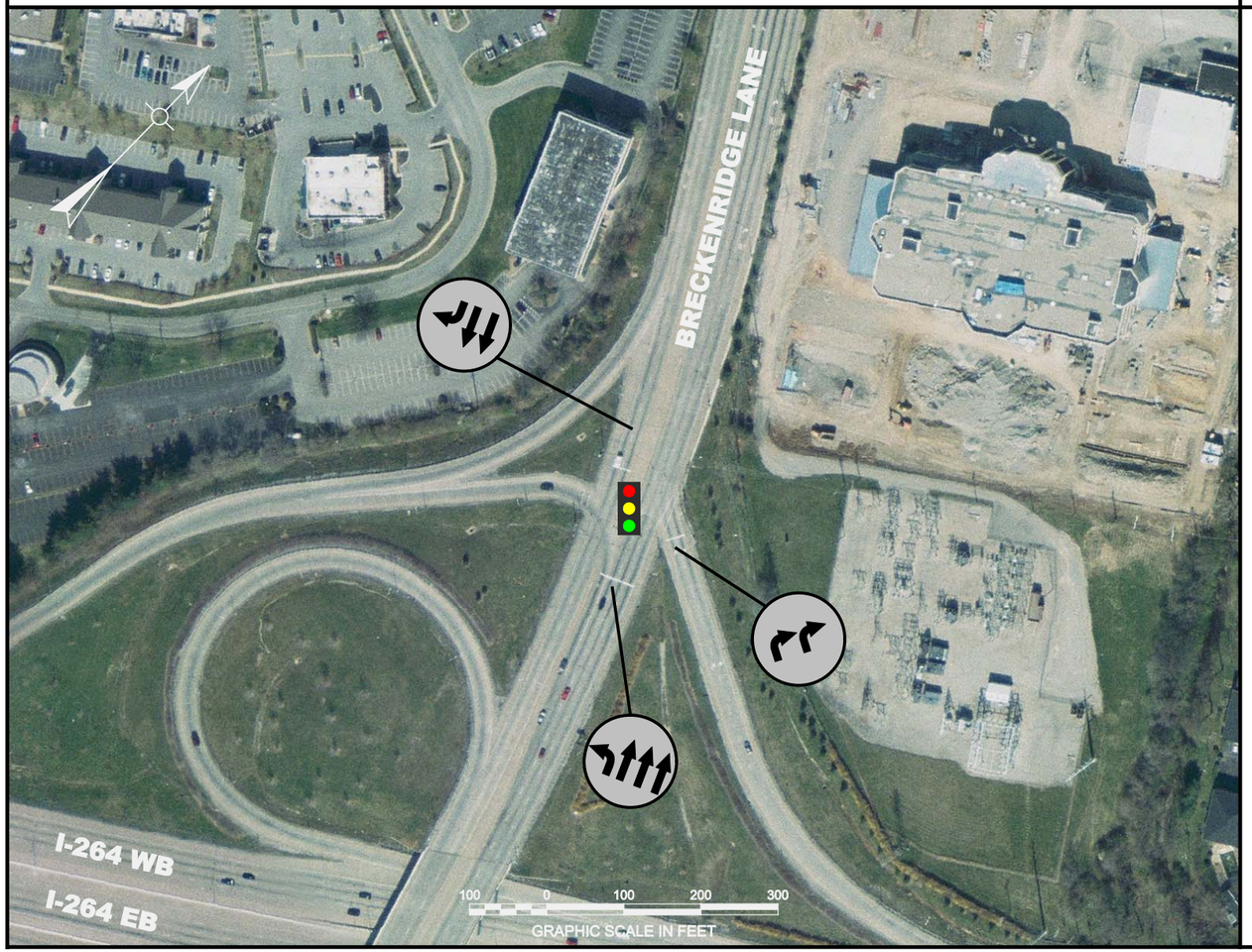
I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION
2015 NO-BUILD TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

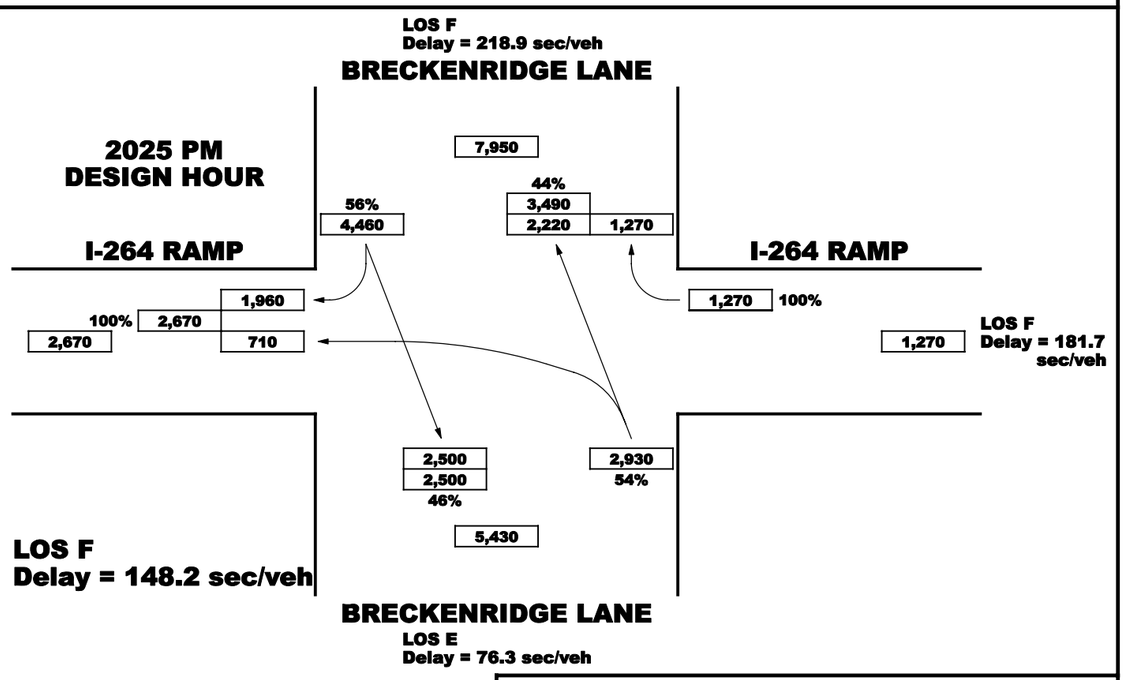
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-20





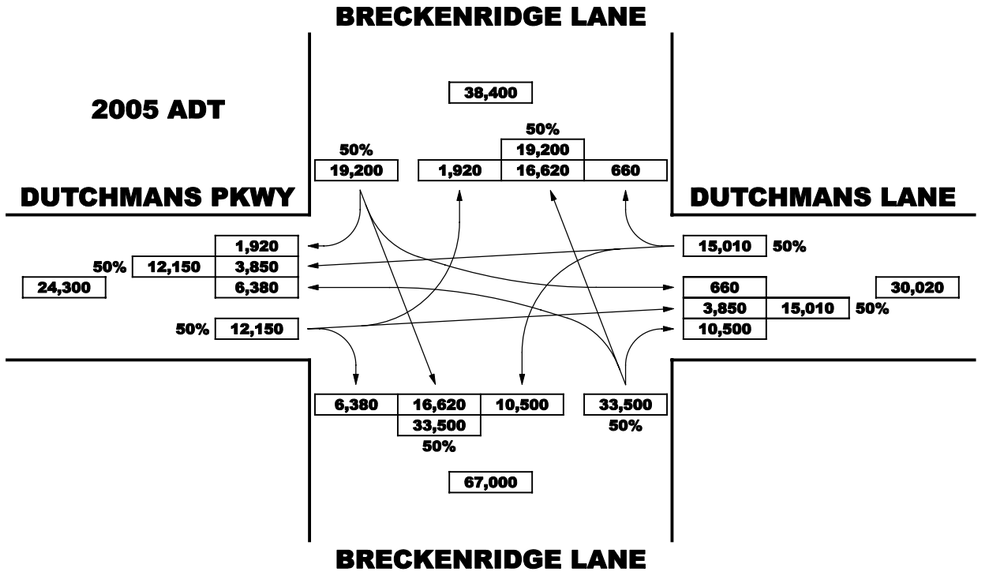


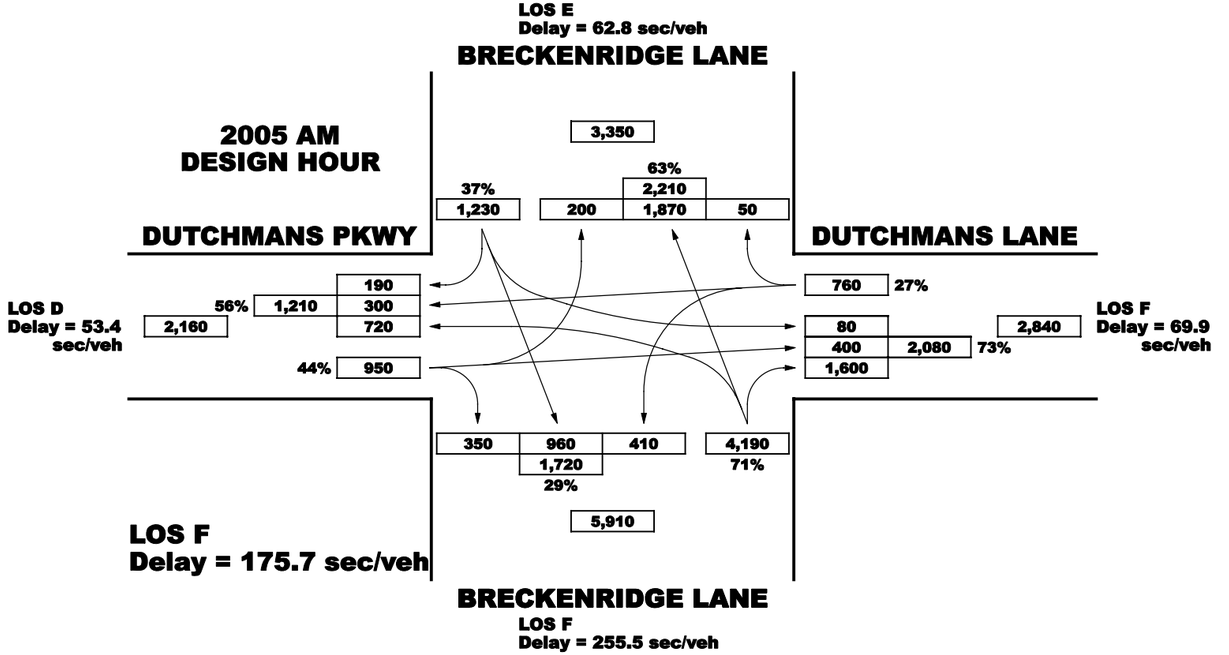


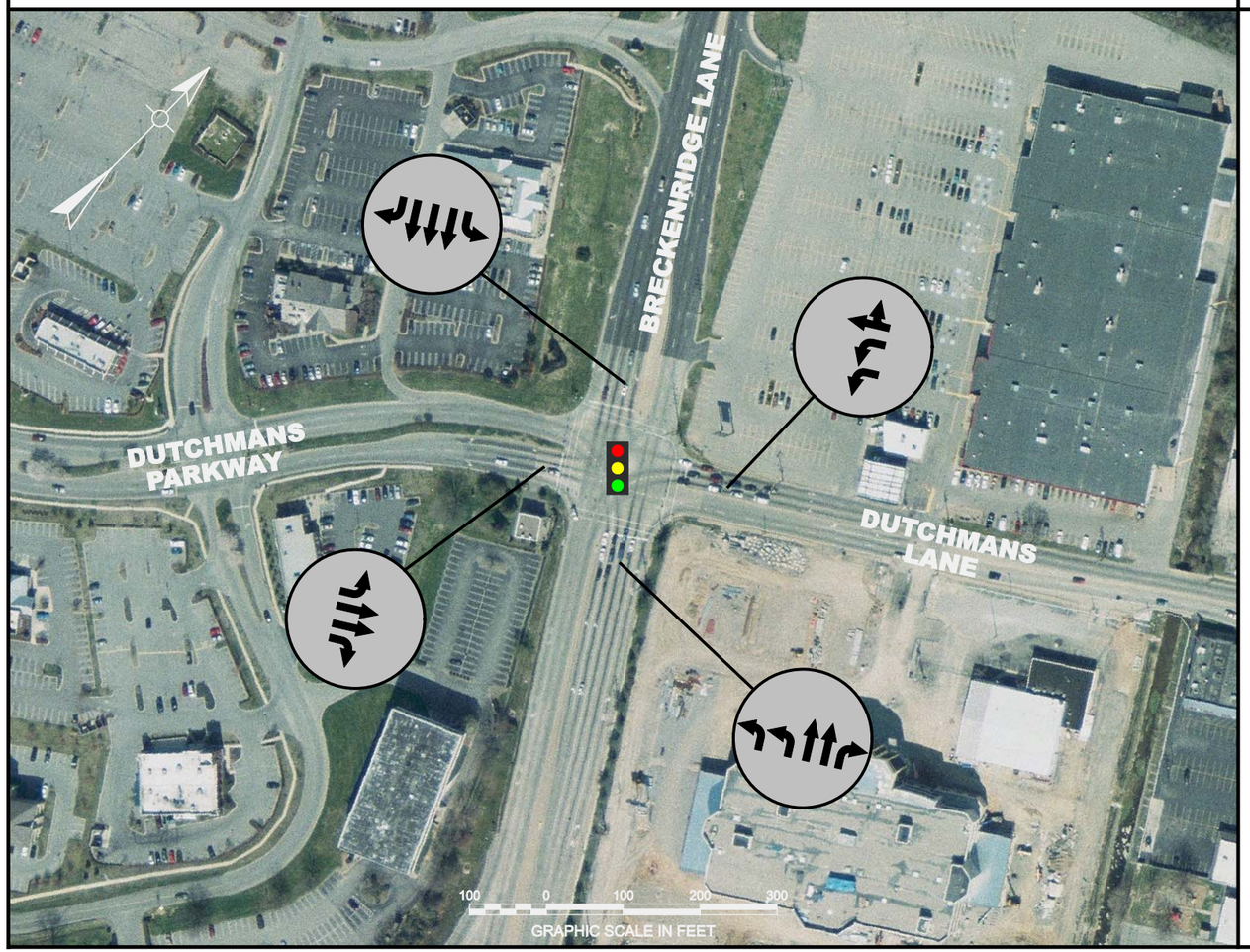
I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION
2025 NO-BUILD TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

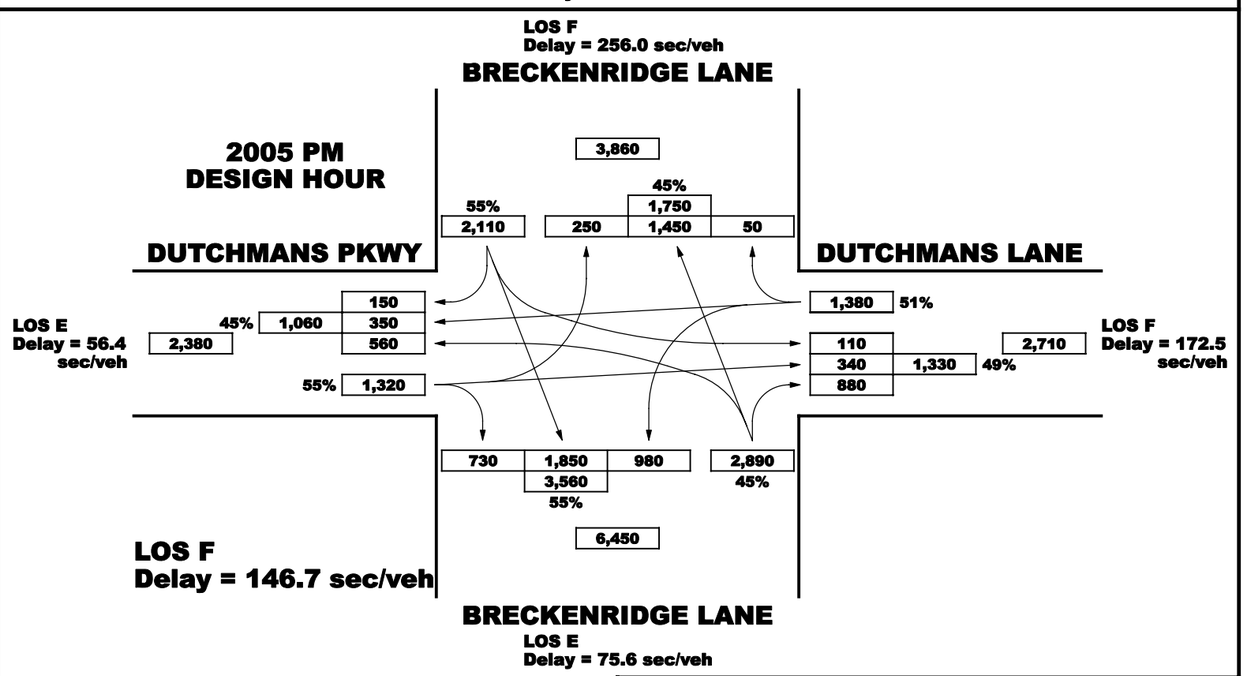
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-21





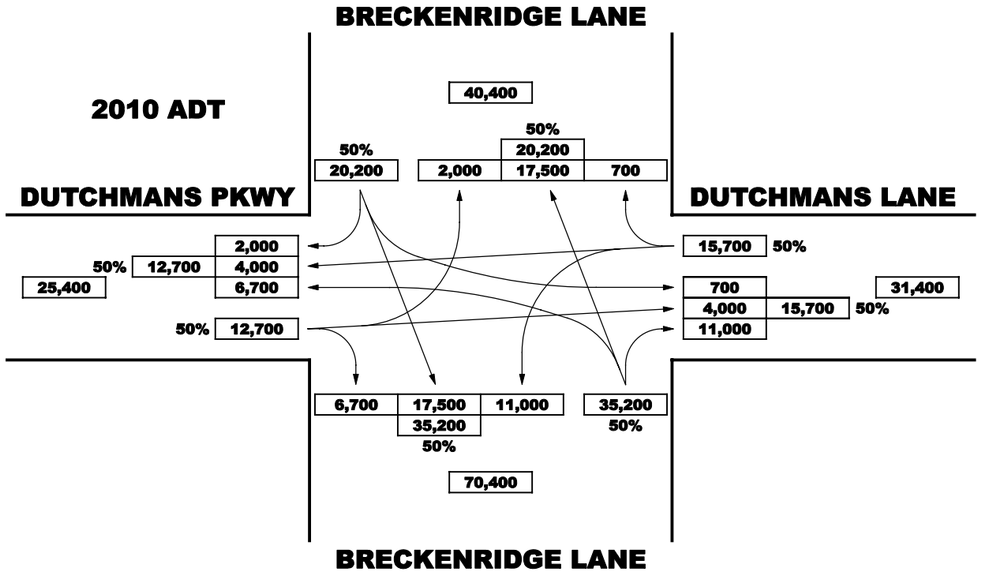


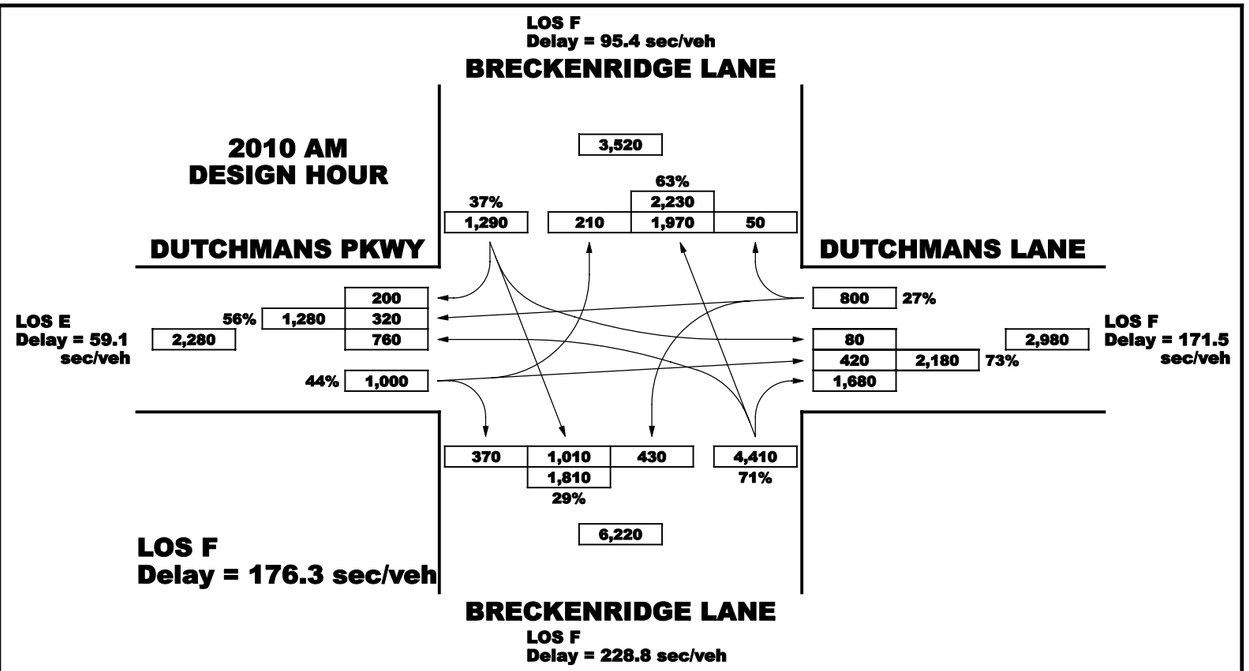


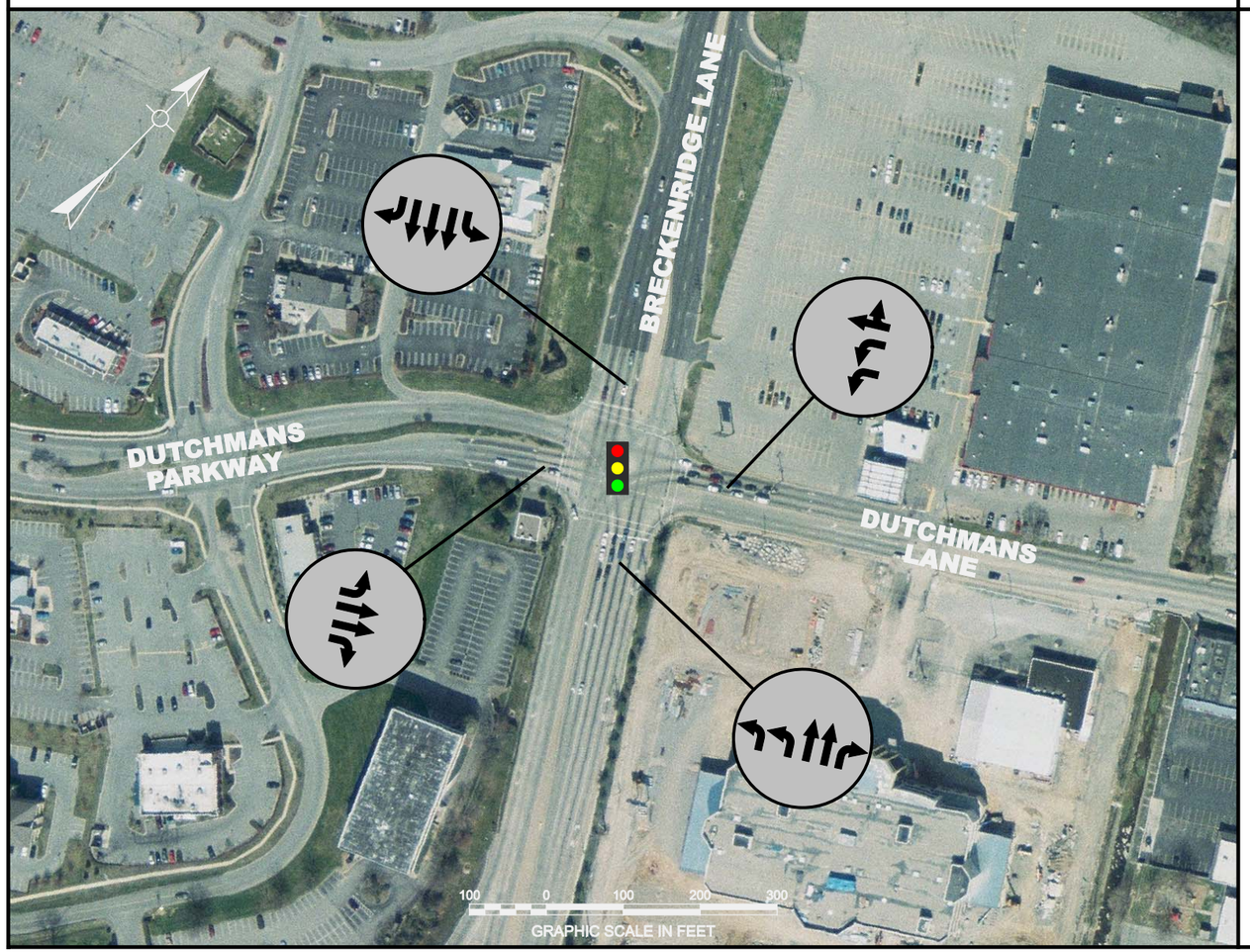
BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION
2005 TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

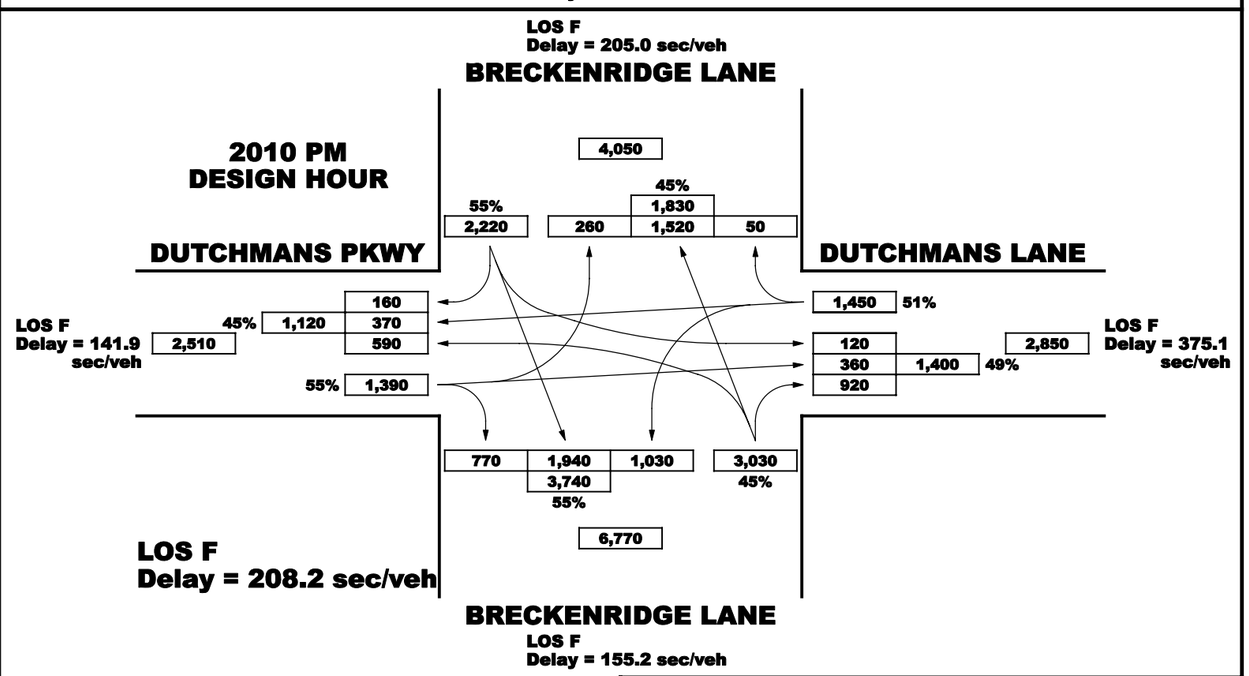
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-22





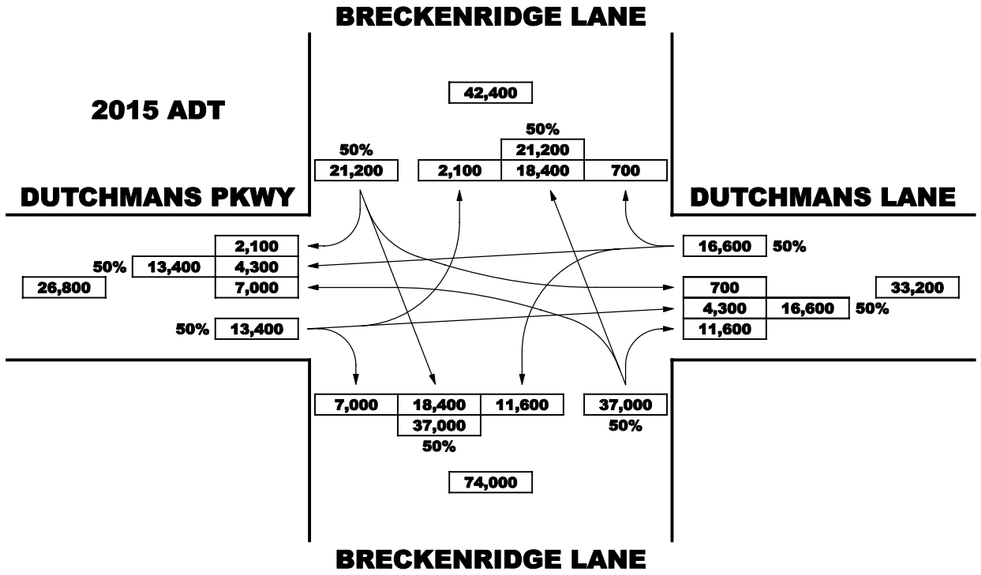


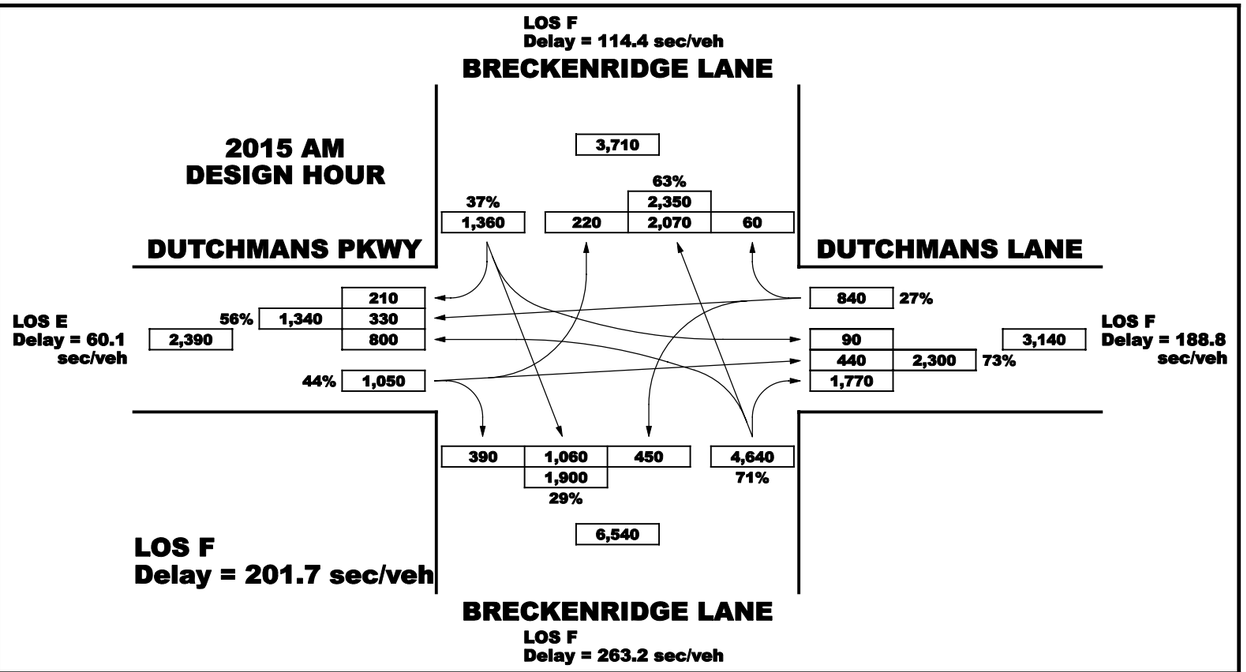


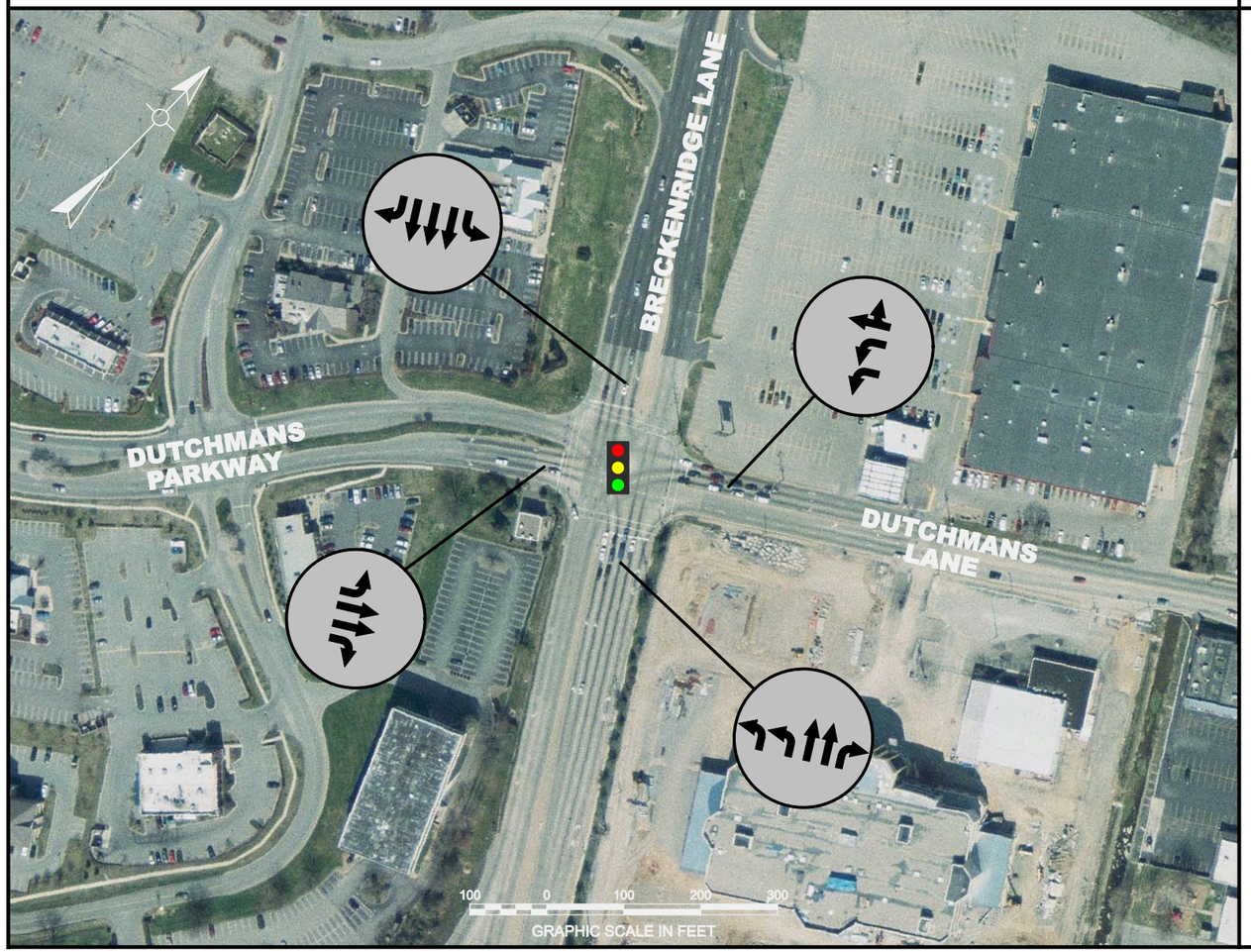
BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION
2010 NO-BUILD TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

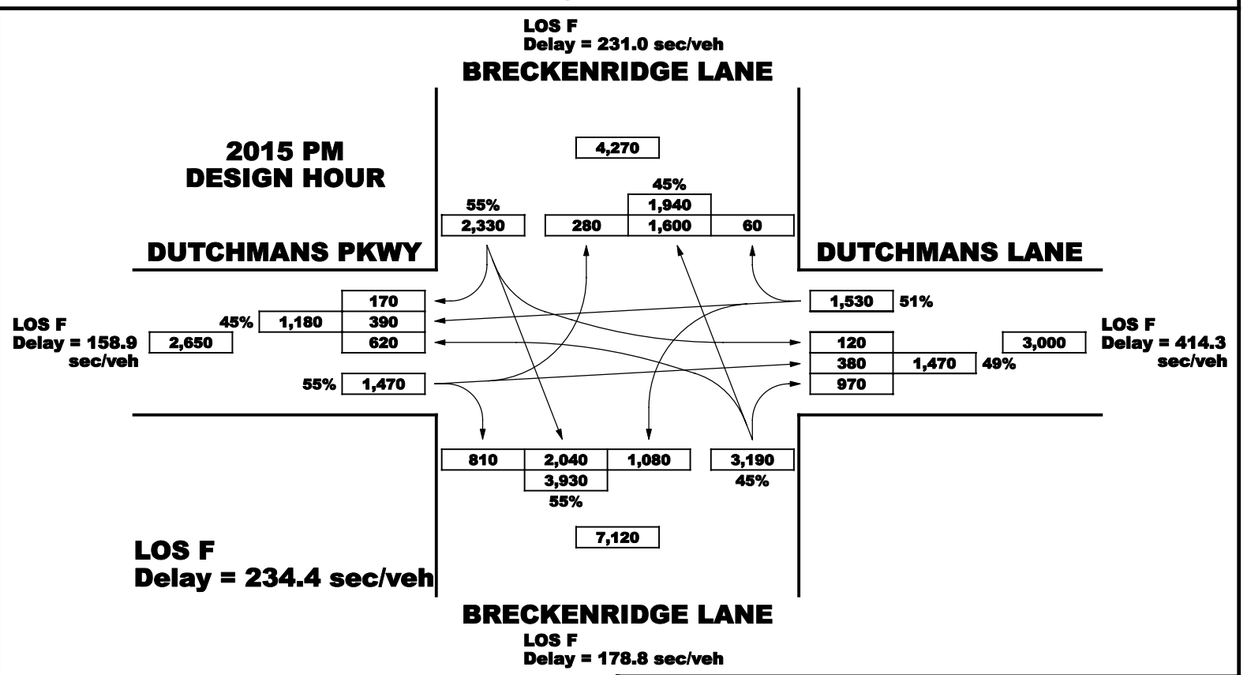
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-23







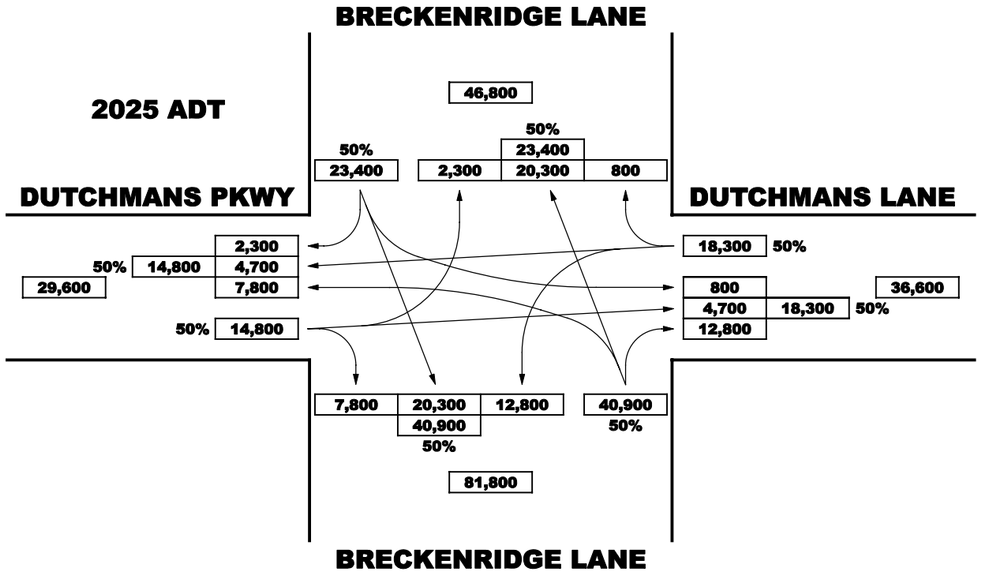


BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION
2015 NO-BUILD TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

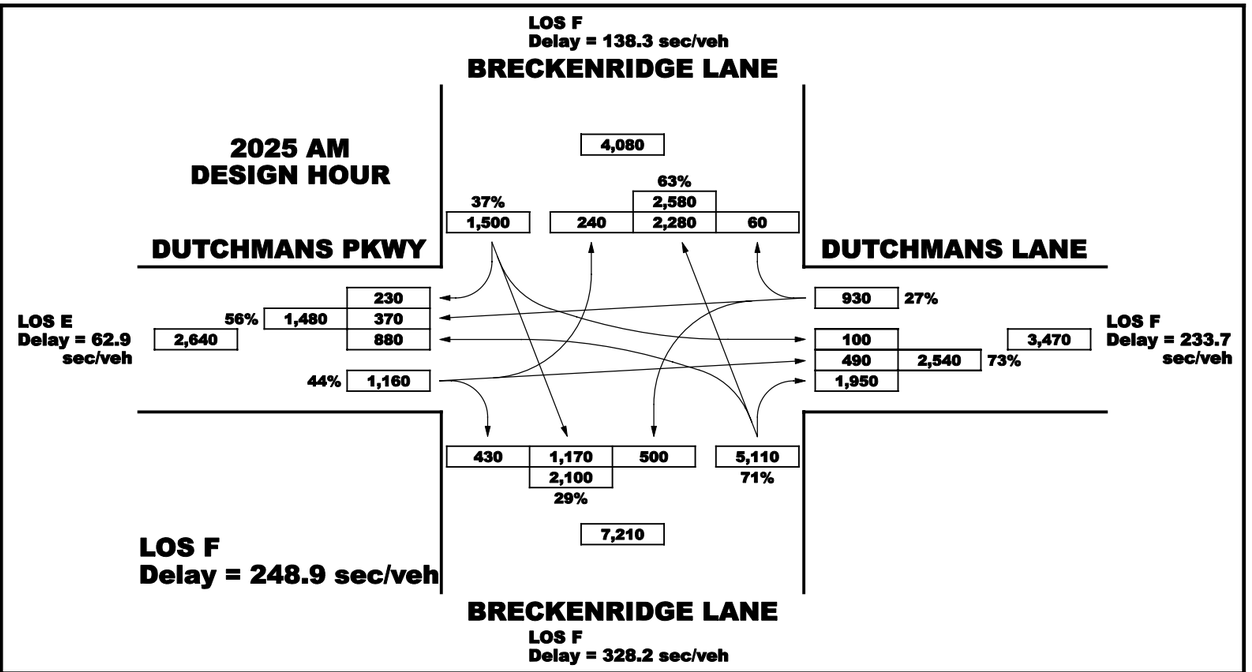
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

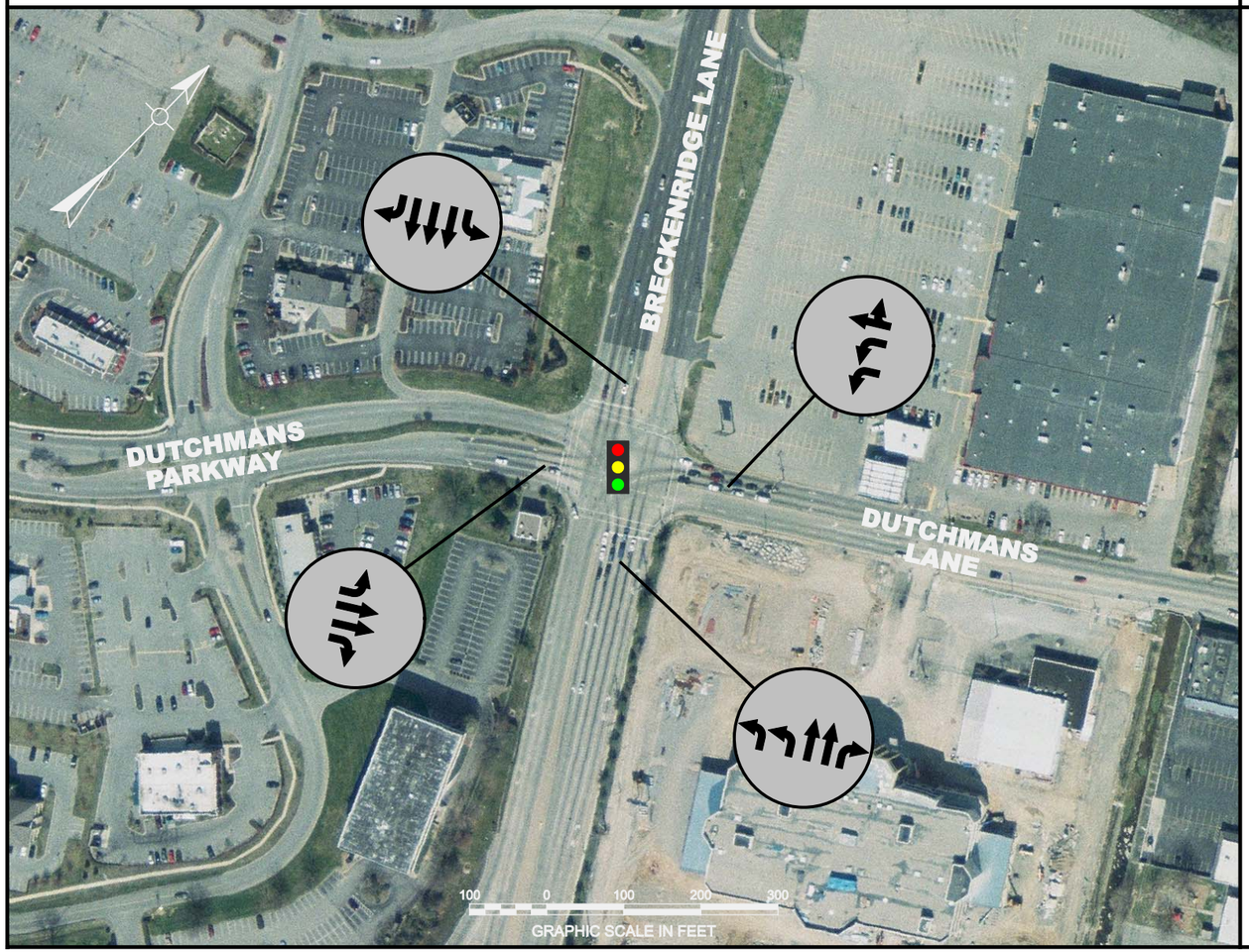
SHEET NO.
E-24

2025 ADT

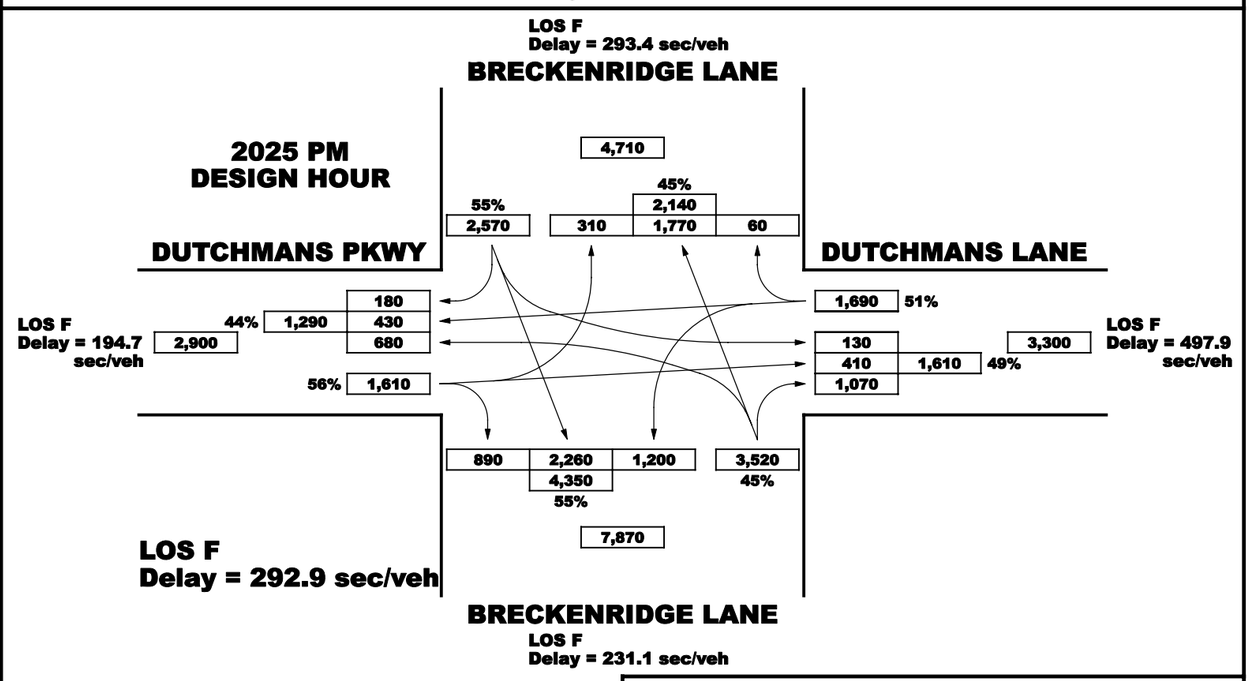


2025 AM DESIGN HOUR





2025 PM DESIGN HOUR



BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION
2025 NO-BUILD TURNING MOVEMENTS AND
LEVEL OF SERVICE ANALYSIS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-25

FREEWAY SEGMENT LEVEL OF SERVICE ANALYSIS

I-64 WESTBOUND (OXMOOR FARM ROAD TO I-264 EXIT RAMP)

YEAR	PERIOD	LEVEL OF SERVICE	FLOW RATE (pcphpl)
2005	AM	F	2606
	PM	F	2352
2010	AM	F	2889
	PM	F	2611
2015	AM	F	3203
	PM	F	2895
2025	AM	F	3927
	PM	F	3547

Note: Flow Rate in terms of pcphpl (passenger cars per hour per lane)

I-264 WESTBOUND (I-64 WESTBOUND MERGE TO BRECKENRIDGE LANE EXIT RAMP)

YEAR	PERIOD	LEVEL OF SERVICE	FLOW RATE (pcphpl)
2005	AM	F	2472
	PM	F	2383
2010	AM	F	2797
	PM	F	2697
2015	AM	F	3178
	PM	F	3065
2025	AM	F	4087
	PM	F	3942

Note: Flow Rate in terms of pcphpl (passenger cars per hour per lane)

I-264 WB RAMPS & BRECKENRIDGE LANE INTERSECTION

YEAR	PERIOD	LEVEL OF SERVICE	AVERAGE DELAY (sec)
2005	AM	D	35.2
	PM	D	40.4
2010	AM	F	162.9
	PM	F	85.1
2015	AM	F	185.3
	PM	F	102.6
2025	AM	F	244.3
	PM	F	148.2

Note: The traffic signal timings for 2010, 2015, and 2025 were optimized.

BRECKENRIDGE LANE & DUTCHMANS LANE INTERSECTION

YEAR	PERIOD	LEVEL OF SERVICE	AVERAGE DELAY (sec)
2005	AM	F	175.7
	PM	F	146.7
2010	AM	F	176.3
	PM	F	208.2
2015	AM	F	201.7
	PM	F	234.4
2025	AM	F	248.9
	PM	F	292.9

LEVEL OF SERVICE ANALYSIS SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-26

2005 AM - I-264 from I-64 to Breckenridge Lane:
Steady volumes along the mainline and some backups from the ramp from I-264 WB to Breckenridge Lane NB.

2005 AM - I-64 from Hurstbourne Lane to I-264:
Very heavy traffic volumes with some small gaps available for lane change.

2005 PM - I-264 from I-64 to Breckenridge Lane:
Similar to 2005 AM scenario with more vehicles on the mainline but fewer on the ramp.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-264 WB FROM I-64 WB/EB ON-RAMPS TO BRECKENRIDGE LANE NB OFF-RAMP	25.8	49.0
PM		25.2	50.2

2005 PM - I-64 from Hurstbourne Lane to I-264:
More congestion than AM scenario with fewer gaps for lane change.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-64 WB FROM HURSTBOURNE ON-RAMPS TO I-64 EB/WB OFF-RAMPS	258.0	27.2
PM		343.8	20.4

SYSTEMWIDE MEASURES

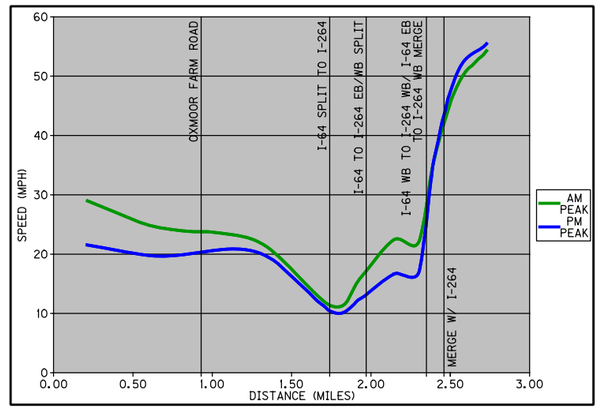
SEGMENT *	PERIOD	DISTANCE (feet)	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)	AVG. DELAY (sec)
1	AM	16,200	544.9	20.3	347.7
	PM	16,200	745.3	14.9	548.0
2	AM	8,950	258.0	27.2	156.3
	PM	8,950	343.8	20.4	242.1
3	AM	5,050	221.0	16.6	144.4
	PM	5,050	270.1	13.6	193.6
4	AM	7,130	249.8	19.8	152.6
	PM	7,130	297.8	16.6	200.6
5	AM	7,247	85.2	58.8	2.8
	PM	7,247	84.2	59.5	1.8
6	AM	7,247	89.7	55.8	7.3
	PM	7,247	88.1	56.8	5.7
7	AM	2,085	25.8	49.0	2.1
	PM	2,085	25.2	50.2	1.5

*** SEE BELOW FOR SEGMENT DESCRIPTIONS.**

SEG. NO.	DESCRIPTION
1	I-64 WB at Hurstbourne Lane to I-264 WB at Breckenridge Lane
2	I-64 WB at Hurstbourne Lane to I-264 EB / WB Exit
3	I-64 Exit toward I-264 EB / WB to merge with I-264 WB
4	I-64 Exit toward I-264 EB / WB to I-264 WB at Breckenridge Lane
5	I-264 WB at Shelbyville Road to I-264 WB at Breckenridge Lane
6	I-264 Collector-Distributor WB at Shelbyville Road to I-264 WB at Breckenridge Lane
7	I-64 EB / WB merge with I-264 WB to I-264 WB at Breckenridge Lane

AVERAGE TRAVEL SPEEDS

I-64 & I-264 - HURSTBOURNE LANE TO BRECKENRIDGE LANE



VISSIM TRAFFIC SIMULATION ANALYSIS
2005 SCENARIO

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-27

2010 AM - I-264 from I-64 to Breckenridge Lane:
Longer queues on exit ramps when compared to 2005 AM scenario.

2010 AM - I-64 from Hurstbourne Lane to I-264:
When compared to the 2005 AM scenario, there are fewer gaps for possible lane change and vehicles speeds are lower.

2010 PM - I-264 from I-64 to Breckenridge Lane:
Similarly, longer queues on exit ramp when compared to the 2005 PM scenario with heavier mainline volumes.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-264 WB FROM I-64 WB/EB ON-RAMPS TO BRECKENRIDGE LANE NB OFF-RAMP	40.7	31.5
PM		33.6	37.9

2010 PM - I-64 from Hurstbourne Lane to I-264:
Very congested section and backup extends further than 2005 PM scenario.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-64 WB FROM HURSTBOURNE ON-RAMPS TO I-64 EB/WB OFF-RAMPS	332.0	21.3
PM		390.3	18.0

SYSTEMWIDE MEASURES

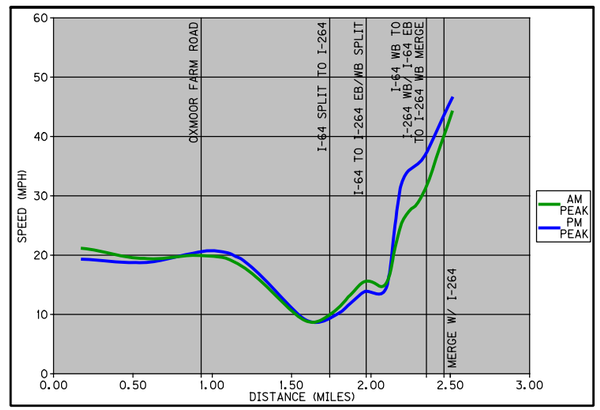
SEGMENT *	PERIOD	DISTANCE (feet)	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)	AVG. DELAY (sec)
1	AM	16,200	813.8	14.2	616.5
	PM	16,200	938.1	11.8	740.9
2	AM	8,950	332.0	21.3	230.3
	PM	8,950	390.3	18.0	288.6
3	AM	5,050	333.0	12.1	256.5
	PM	5,050	326.8	11.3	250.2
4	AM	7,130	397.6	13.5	300.4
	PM	7,130	370.0	13.4	272.8
5	AM	7,247	93.6	53.6	11.2
	PM	7,247	89.3	56.1	6.9
6	AM	7,247	185.8	28.4	103.4
	PM	7,247	154.9	34.1	72.5
7	AM	2,085	40.7	31.5	17.0
	PM	2,085	33.6	37.9	9.9

*** SEE BELOW FOR SEGMENT DESCRIPTIONS.**

SEG. NO.	DESCRIPTION
1	I-64 WB at Hurstbourne Lane to I-264 WB at Breckenridge Lane
2	I-64 WB at Hurstbourne Lane to I-264 EB / WB Exit
3	I-64 Exit toward I-264 EB / WB to merge with I-264 WB
4	I-64 Exit toward I-264 EB / WB to I-264 WB at Breckenridge Lane
5	I-264 WB at Shelbyville Road to I-264 WB at Breckenridge Lane
6	I-264 Collector-Distributor WB at Shelbyville Road to I-264 WB at Breckenridge Lane
7	I-64 EB / WB merge with I-264 WB to I-264 WB at Breckenridge Lane

AVERAGE TRAVEL SPEEDS

I-64 & I-264 - HURSTBOURNE LANE TO BRECKENRIDGE LANE



VISSIM TRAFFIC SIMULATION ANALYSIS
2010 SCENARIO

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-28

2015 AM - I-264 from I-64 to Breckenridge Lane:
Queues on exit ramp are similar to 2010, which may be a result of constraints upstream.

2015 AM - I-64 from Hursbourne Lane to I-264:
Heavier traffic volumes worsen congestion, resulting in decreased travel speeds.

2015 PM - I-264 from I-64 to Breckenridge Lane:
Similar to 2015 AM scenario.

2015 PM - I-64 from Hursbourne Lane to I-264:
Very heavy congestion consisting of slow-moving traffic volumes.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-264 WB MERGE FROM I-64 WB/EB ON-RAMPS TO BRECKENRIDGE LANE NB OFF-RAMPS	42.7	29.8
PM		39.7	31.9

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-64 WB FROM HURSTBOURNE ON-RAMPS TO I-64 EB/WB OFF-RAMPS	398.6	17.6
PM		432.2	16.3

SYSTEMWIDE MEASURES

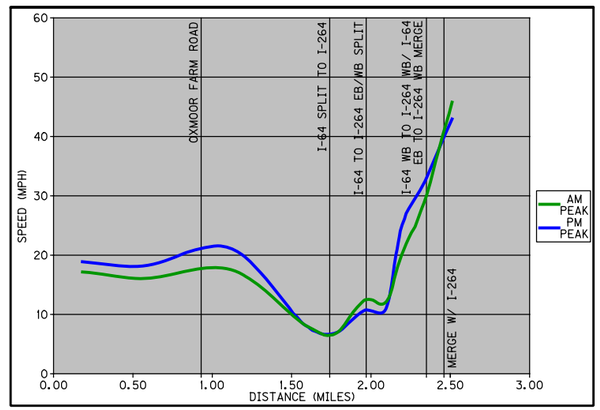
SEGMENT *	PERIOD	DISTANCE (feet)	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)	AVG. DELAY (sec)
1	AM	16,200	967.6	11.5	770.4
	PM	16,200	1118.7	10.0	921.5
2	AM	8,950	398.6	17.6	296.8
	PM	8,950	432.2	16.3	330.5
3	AM	5,050	397.0	9.3	320.5
	PM	5,050	411.8	9.0	335.3
4	AM	7,130	465.2	10.7	368.0
	PM	7,130	470.8	10.6	373.6
5	AM	7,247	95.3	52.6	12.9
	PM	7,247	93.3	53.7	10.9
6	AM	7,247	233.0	21.5	150.6
	PM	7,247	213.1	23.5	130.8
7	AM	2,085	42.7	29.8	19.0
	PM	2,085	39.7	31.9	16.0

*** SEE BELOW FOR SEGMENT DESCRIPTIONS.**

SEG. NO.	DESCRIPTION
1	I-64 WB at Hurstbourne Lane to I-264 WB at Breckenridge Lane
2	I-64 WB at Hurstbourne Lane to I-264 EB / WB Exit
3	I-64 Exit toward I-264 EB / WB to merge with I-264 WB
4	I-64 Exit toward I-264 EB / WB to I-264 WB at Breckenridge Lane
5	I-264 WB at Shelbyville Road to I-264 WB at Breckenridge Lane
6	I-264 Collector-Distributor WB at Shelbyville Road to I-264 WB at Breckenridge Lane
7	I-64 EB / WB merge with I-264 WB to I-264 WB at Breckenridge Lane

AVERAGE TRAVEL SPEEDS

I-64 & I-264 - HURSTBOURNE LANE TO BRECKENRIDGE LANE



VISSIM TRAFFIC SIMULATION ANALYSIS
2015 SCENARIO

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-29

2025 AM - I-264 from I-64 to Breckenridge Lane:
Long queues on ramp to Breckenridge Lane NB but affect of upstream congestion is noticed.

2025 AM - I-64 from Hurstbourne Lane to I-264:
Increased traffic volumes results in very low travel speeds.

2025 PM - I-264 from I-64 to Breckenridge Lane:
Queues not as long as expected as a result of congestion upstream.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-264 WB FROM I-64 WB/EB ON-RAMPS TO BRECKENRIDGE LANE NB OFF-RAMP	52.0	24.3
PM		51.8	24.4

2025 PM - I-64 from Hurstbourne Lane to I-264:
Traffic is virtually at a standstill approaching the I-264 exit ramps.

PERIOD	SEGMENT	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)
AM	I-64 WB FROM HURSTBOURNE ON-RAMPS TO I-64 EB/WB OFF-RAMPS	472.1	14.9
PM		537.9	13.1

SYSTEMWIDE MEASURES

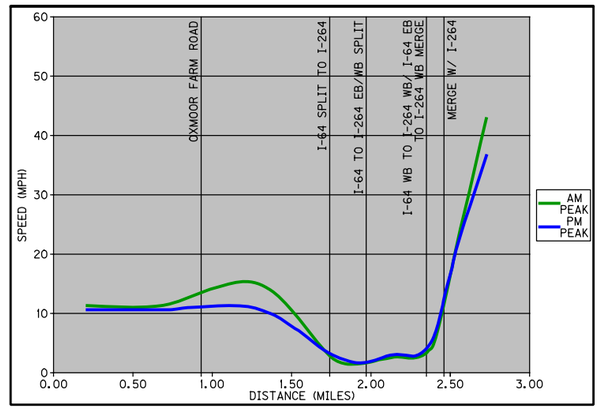
SEGMENT *	PERIOD	DISTANCE (feet)	AVG. TRAVEL TIME (sec)	AVG. TRAVEL SPEED (mph)	AVG. DELAY (sec)
1	AM	16,200	1816.3	6.1	1619.1
	PM	16,200	1807.2	6.2	1610.0
2	AM	8,950	472.1	14.9	370.3
	PM	8,950	537.9	13.1	436.2
3	AM	5,050	1266.5	2.9	1190.0
	PM	5,050	1108.0	3.3	1031.5
4	AM	7,130	1378.6	3.6	1281.4
	PM	7,130	1212.2	4.1	1115.0
5	AM	7,247	153.7	32.7	71.3
	PM	7,247	111.5	45.0	29.1
6	AM	7,247	324.5	15.5	242.1
	PM	7,247	330.1	15.4	247.7
7	AM	2,085	52.0	24.3	28.3
	PM	2,085	51.8	24.4	28.1

*** SEE BELOW FOR SEGMENT DESCRIPTIONS.**

SEG. NO.	DESCRIPTION
1	I-64 WB at Hurstbourne Lane to I-264 WB at Breckenridge Lane
2	I-64 WB at Hurstbourne Lane to I-264 EB / WB Exit
3	I-64 Exit toward I-264 EB / WB to merge with I-264 WB
4	I-64 Exit toward I-264 EB / WB to I-264 WB at Breckenridge Lane
5	I-264 WB at Shelbyville Road to I-264 WB at Breckenridge Lane
6	I-264 Collector-Distributor WB at Shelbyville Road to I-264 WB at Breckenridge Lane
7	I-64 EB / WB merge with I-264 WB to I-264 WB at Breckenridge Lane

AVERAGE TRAVEL SPEEDS

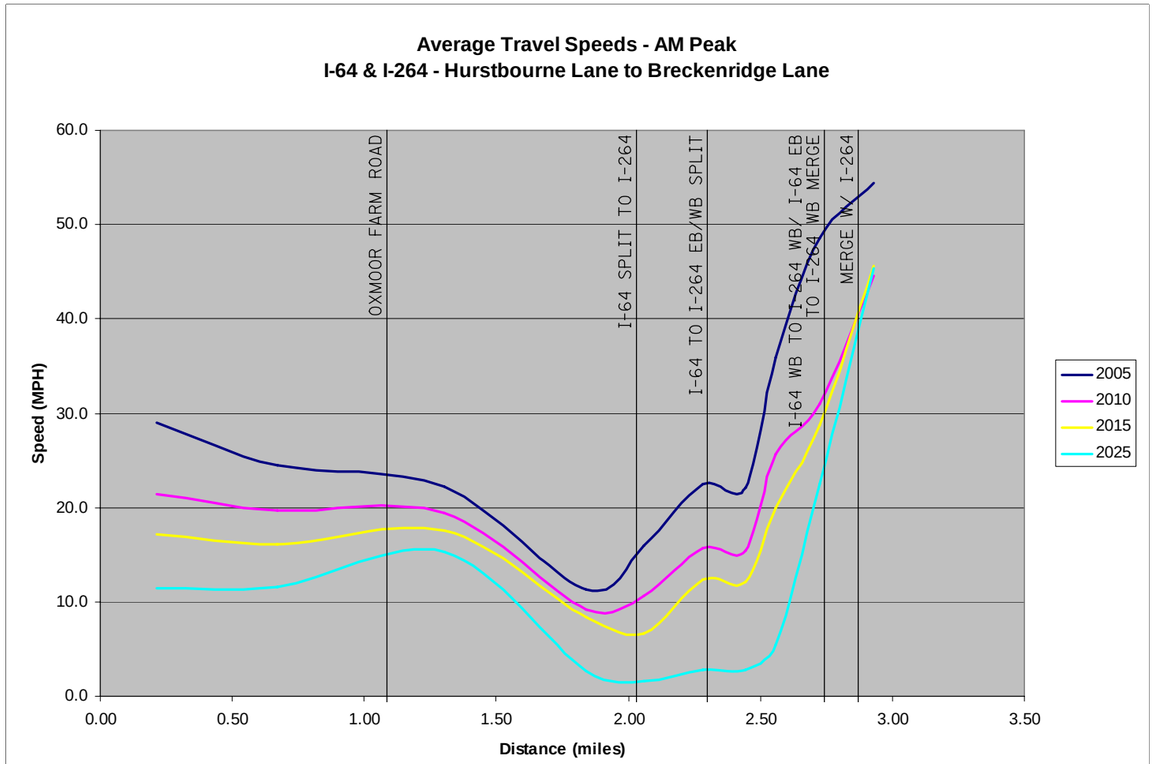
I-64 & I-264 - HURSTBOURNE LANE TO BRECKENRIDGE LANE

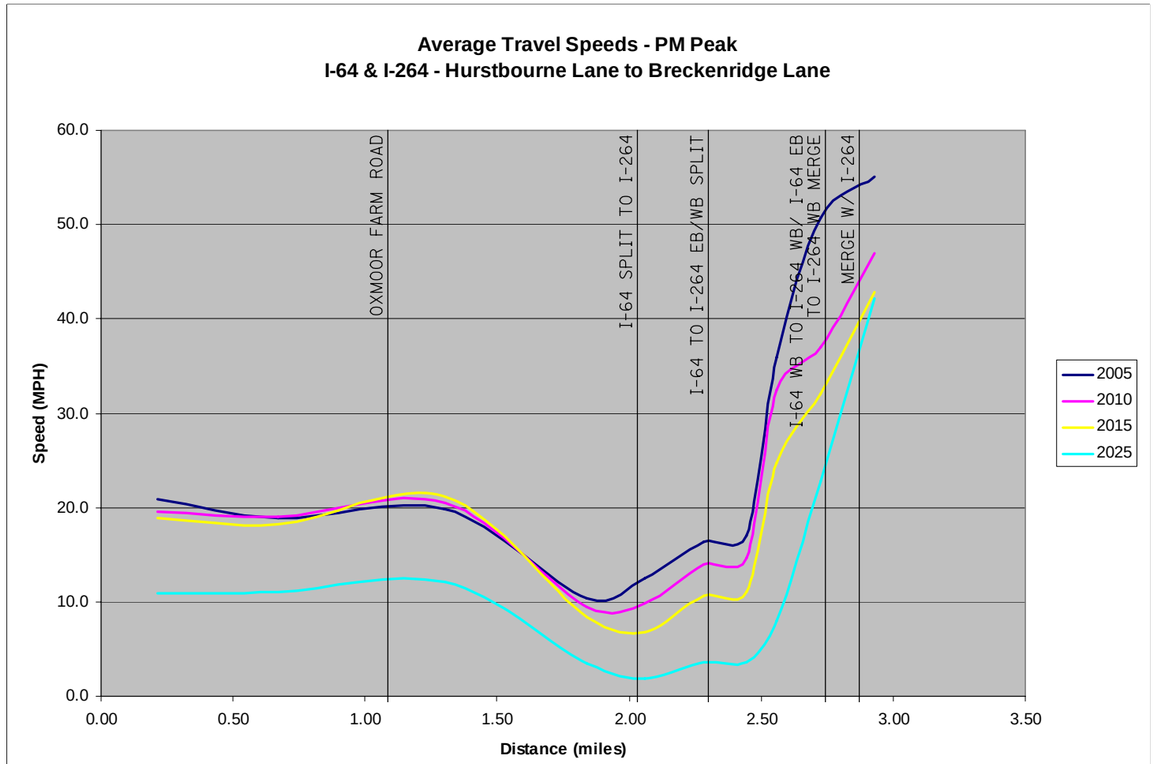


VISSIM TRAFFIC SIMULATION ANALYSIS
2025 SCENARIO

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-30





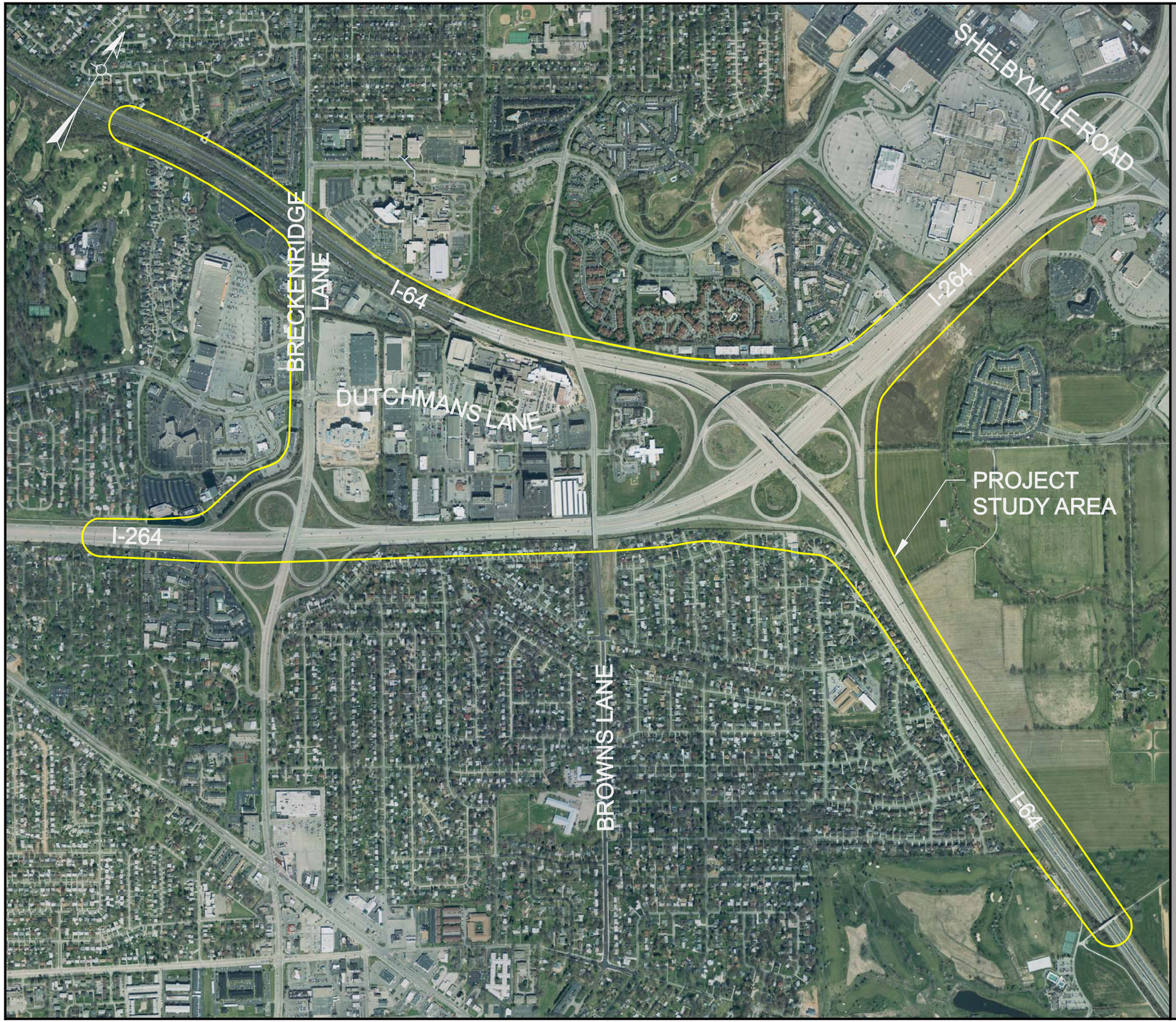
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
E-31

APPENDIX D

Conceptual Alternates Report



I-64 WESTBOUND TO I-264 WESTBOUND RAMP IMPROVEMENTS

JEFFERSON COUNTY
ITEM NO. 5-159.00

PHASE 1A DESIGN

CONCEPTUAL ALTERNATES REPORT

PREPARED FOR:

KENTUCKY TRANSPORTATION CABINET

PREPARED BY:

PARSONS BRINCKERHOFF

JULY 2006

APPROACH TO STUDY OF CONCEPTUAL ALTERNATES

PROJECT STUDY AREA

During this phase of the study, Parsons Brinckerhoff (PB) has developed conceptual planning level alternates to improve traffic operations, reduce congestion, and improve safety on I-64 Westbound and I-264 Westbound and on the I-64 Westbound to I-264 Westbound Ramp in the vicinity of the I-64 / I-264 Interchange. The original limits of this project extended along I-64 from near the Oxmoor Farm Road Overpass to just west of the I-64 Westbound to I-264 Westbound Ramp, along I-264 from just west of the Shelbyville Road Interchange to just west of the Breckenridge Lane Interchange, and along Breckenridge Lane from the bridge over I-264 to the Breckenridge Lane / Dutchmans Parkway / Dutchmans Lane Intersection, encompassing the focus area of the study. The Project Team determined that a VISSIM traffic simulation model would be utilized to analyze the improvements made by conceptual alternates and the model was developed for the original project study area.

As the project has evolved, some of the safety issues that exist along I-264 between I-64 and Breckenridge Lane are a direct result of traffic queues on the I-264 Westbound Ramp to Breckenridge Lane Northbound due to downstream congestion at signalized intersections on Breckenridge Lane and Dutchmans Lane. These queues sometimes extend close enough to I-264 that mainline westbound I-264 traffic operations are affected. Based on forecasted traffic volumes, it is expected to worsen in the future. Therefore, it was determined that alternates that provide an additional access point to and from the Dupont Area from I-64 would need to be studied. These alternates will draw traffic away from and reduce congestion at the I-264 / Breckenridge Lane Interchange.

As a result, the project limits have been extended to include all of Dutchmans Lane east of Breckenridge Lane, Browns Lane between I-64 and I-264, and Breckenridge Lane to just north of I-64. In addition, the study limits of I-64 have been extended westward to approximately 2000 feet west of the Breckenridge Lane Overpass. The VISSIM traffic model was also expanded accordingly to allow for adequate traffic analysis of conceptual alternates that provide an additional access point.

STUDY OF CONCEPTUAL ALTERNATES

PB has developed various conceptual alternates that range from low cost (short-term solutions) to high cost (long-term solutions). The alternates vary in scope from changes in striping and lane configuration with signage improvements to construction of a single-point urban interchange (SPUI) at I-64 and Breckenridge Lane with the use of dynamic variable message signs. Multiple design years have been utilized to determine the benefits of shorter-term solutions as time progresses. In addition to the existing year (2005), traffic volumes and forecasts have been established and conceptual alternates have been evaluated for 2010, 2015, and 2025.

Each conceptual alternate has been incorporated into the VISSIM traffic simulation model individually to measure performance against existing and future design-year conditions. A summary of the results of each alternate's performance is included in this report. Short-term alternates that were shown to provide no immediate improvement have not been analyzed for future design years. At this point, conceptual alternates have only been incorporated into the VISSIM model and analyzed individually. No combinations of conceptual alternates have been studied.

Three (3) alternates have direct impacts to several of the signalized intersection within the study area along Breckenridge Lane and Dutchmans Lane. For these alternates, detailed level of service analysis for each intersection for each design year has been completed to determine the impacts of each alternate on the arterial network within the Dupont Area. A summary of the results of each alternate's impacts at the intersection level is included in this report.

Two (2) alternates (Alts. 11 and 12) provide alternate access into and out of the Dupont Area at I-64 and Breckenridge Lane. At this time, known traffic counts and forecasts have been used to evaluate the performance of the new signalized intersections at this location. The volume of traffic going to St. Matthews that could be diverted from other existing interchanges to the new interchange location at I-64 and Breckenridge Lane is unknown. PB recommends that if either of these alternatives is recommended to be carried forward, the Project Team should request KIPDA to forecast the travel demand associated with the new interchange using their regional travel demand model.

At this point in the study, localized improvements to local routes within the Dupont Area have not been identified. It is possible that some of the alternatives that change existing traffic flow patterns could require changes to the local street network, such as addition of turn lanes along Browns Lane and / or Dutchmans Lane. Such improvements have not been identified and are not included in the estimated construction cost estimates. These issues will need to be addressed by the Project Team at the next team meeting.

NEXT PHASE OF WORK

The final phase of the study will include the submittal of a Draft Final Report followed by the completion of the Final Report. Following the next Project Team Meeting, conceptual alternates recommended to be carried forward by the Project Team will be further refined. Short-term, mid-term, and long-term recommended alternatives can be logically grouped together and incorporated into a single VISSIM model of the network. This will allow the Project Team to evaluate the combined improvements of a set of recommended alternatives. The Final Report will include the Project Team's final recommendations, in essence creating a Master Plan for the Project Study Area.

APPROACH TO STUDY OF CONCEPTUAL ALTERNATES	
I-64 WB TO I-264 WB RAMP IMPROVEMENTS JEFFERSON COUNTY - ITEM NO. 5-159.00 PHASE 1A DESIGN	SHEET NO. CA-0A

INDEX OF SHEETS

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-0B

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate would reduce the I-64 Westbound to I-264 Westbound ramp to a 1-Lane ramp. Work involved would include restriping of the ramp from the I-64 gore area shown to the current 2-Lane to 1-Lane merge area, some restriping of I-64 since the interior westbound lane would no longer have the option of using the ramp or remaining on I-64, and changes in signing to reflect the new exit configuration.

ANTICIPATED BENEFITS

The current ramp configuration allows the interior westbound lane the option of remaining on I-64 or taking the I-264 ramp. As a result, aggressive drivers going to I-264 pass as many vehicles as possible in the left-most lane of I-64 Westbound before merging to the right just prior to the decision point, creating an unnecessary weave pattern and inhibiting I-64 Westbound through traffic. Also, due to heavy traffic volumes and the I-64 Westbound to I-264 Westbound ramp merge from 2-Lanes to 1-Lane, the right lane of the ramp receives little use. Reduction of the exit ramp to 1-Lane should concentrate exiting vehicles in the right lane of I-64 Westbound, clearing the mainline for through vehicles. In addition, removal of the I-64 Westbound to I-264 Westbound merge from 2-Lanes to 1-Lane may allow smoother traffic flow along the ramp.

RESULTS OF TRAFFIC ANALYSIS

Removal of 1 lane from the I-64 Westbound to I-264 Westbound ramp without the addition of capacity to I-64 just prior to the ramp results in a lower average travel speed along I-64 between Hurstbourne Lane and I-264. The decrease in speed also occurs further east along I-64. Since the alternate provides only minor improvement over the existing conditions in 2005, analysis of future design years was not completed. See sheet CA-2 for a summary of the VISSIM traffic analysis for this alternate.

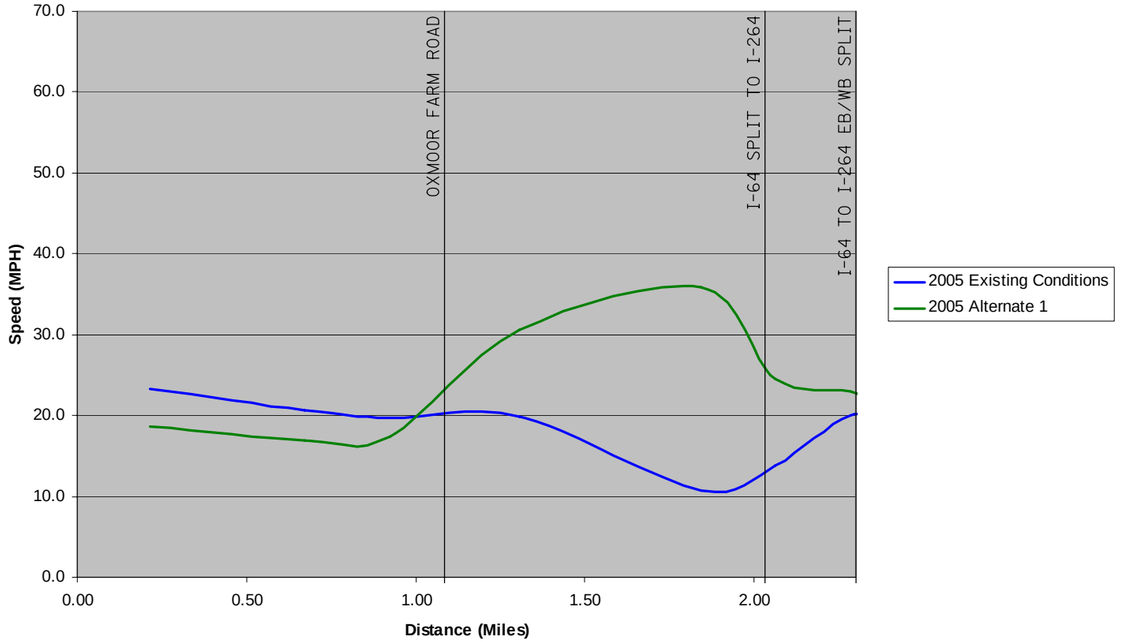
ALTERNATE 1 -
REDUCE I-64 WB TO I-264 WB RAMP TO A SINGLE-LANE EXIT RAMP
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

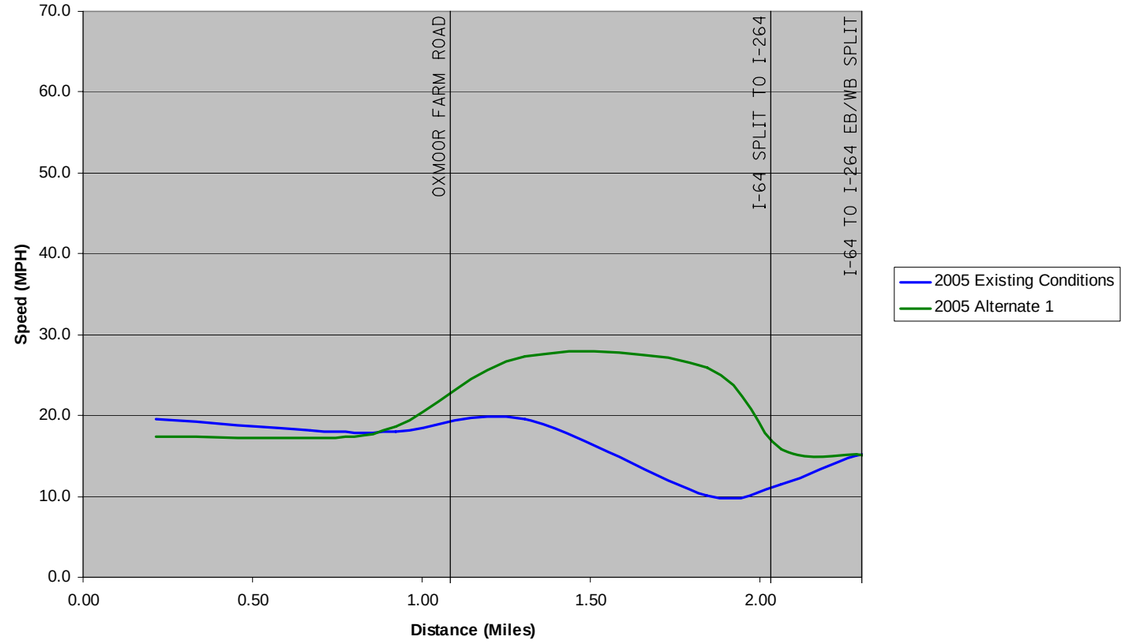
SHEET NO.

CA-1

Average Travel Speeds - AM Peak
I-64 & I-264 - Hurstbourne Lane to Breckenridge Lane



Average Travel Speeds - PM Peak
I-64 & I-264 - Hurstbourne Lane to Breckenridge Lane



NOTES:

1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 1 -
REDUCE I-64 WB TO I-264 WB RAMP TO A SINGLE-LANE EXIT RAMP
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-2

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate would provide an additional lane along I-64 Westbound and 2 dedicated lanes for the I-64 Westbound to I-264 ramp. The additional lane could be added just west of the Oxmoor Farm Road Overpass or could tie to an additional Westbound lane that would be provided as part of the proposed I-64 / Hurstbourne Lane Interchange Reconstruction Project - 2 lanes on the ramp would split, one to I-264 Eastbound and the other to I-264 Westbound. Work involved would include ~4000 feet of grade and drain and asphalt surfacing, restriping, and changes in signing to reflect the new exit configuration.

ANTICIPATED BENEFITS

Provision of 2 dedicated lanes to the I-64 Westbound to I-264 ramp and removal of the shared interior lane should concentrate I-264 bound vehicles in the 2 right-most lanes of I-64 Westbound and clear the mainline for through traffic. Clear signage would be required to ensure vehicles are in the proper lanes prior to the interchange.

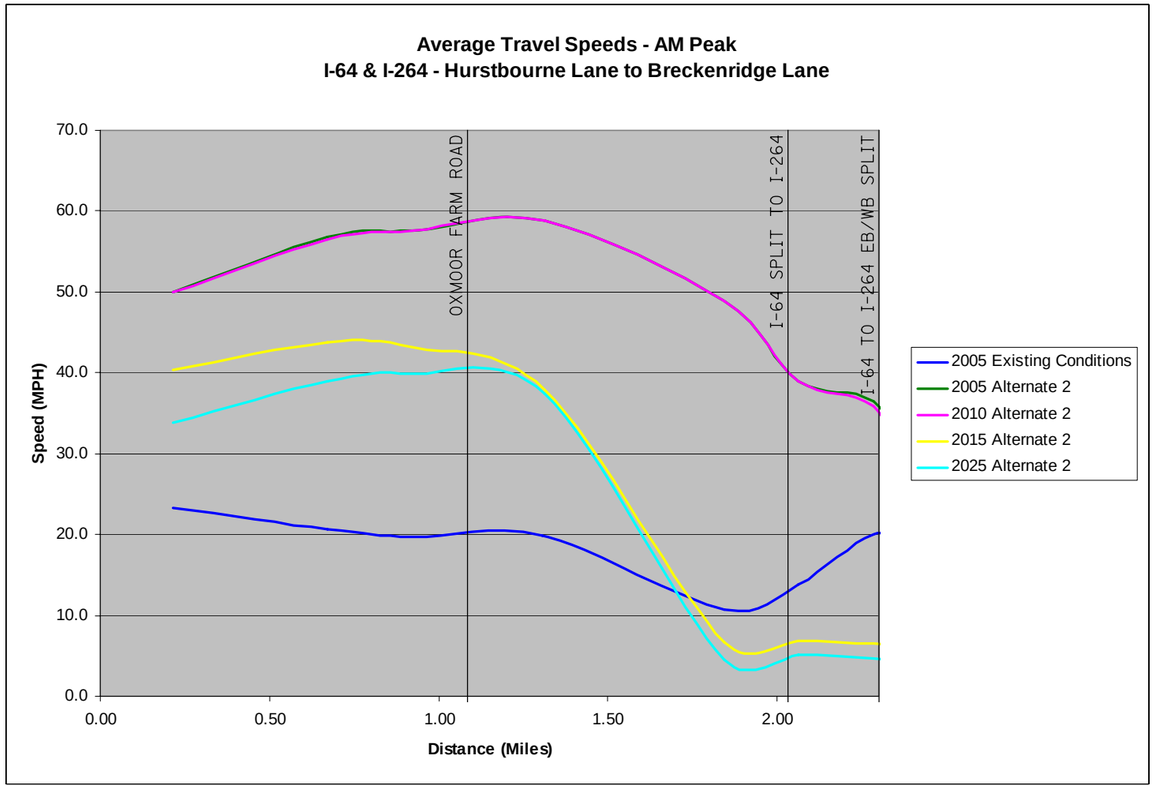
RESULTS OF TRAFFIC ANALYSIS

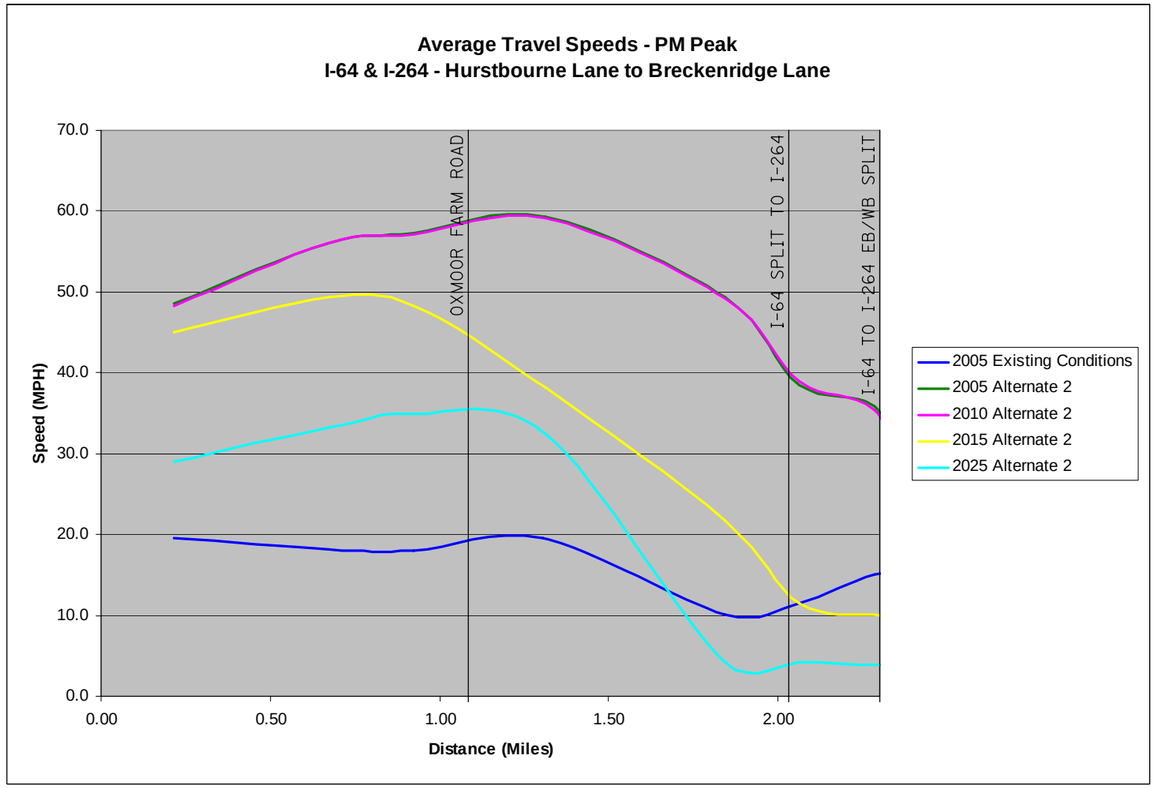
The VISSIM traffic analysis for this alternate validates the anticipated benefits as described above. Average travel speeds for I-64 Westbound are significantly increased as a result of the additional capacity. The increase is primarily attributed to a freer flow of I-64 Westbound through traffic. However, the elimination of a lane on the I-64 Westbound to I-264 Westbound ramp contributes to the speed increase as vehicles are forced to make decisions further east, minimizing weaving movements near the interchange. Over time, the benefits are reduced. In 2015, volumes have increased enough that travel speeds begin to drop back to current levels. Without downstream capacity improvements, this alternate only provides short-term improvements. See sheet CA-4 for a summary of the VISSIM traffic analysis for this alternate.

ALTERNATE 2 -
PROVIDE 2 DEDICATED LANES FOR THE I-64 WB TO I-264 RAMP, 1 LANE FOR I-264 EB AND 1 LANE FOR I-264 WB
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-3





NOTES:

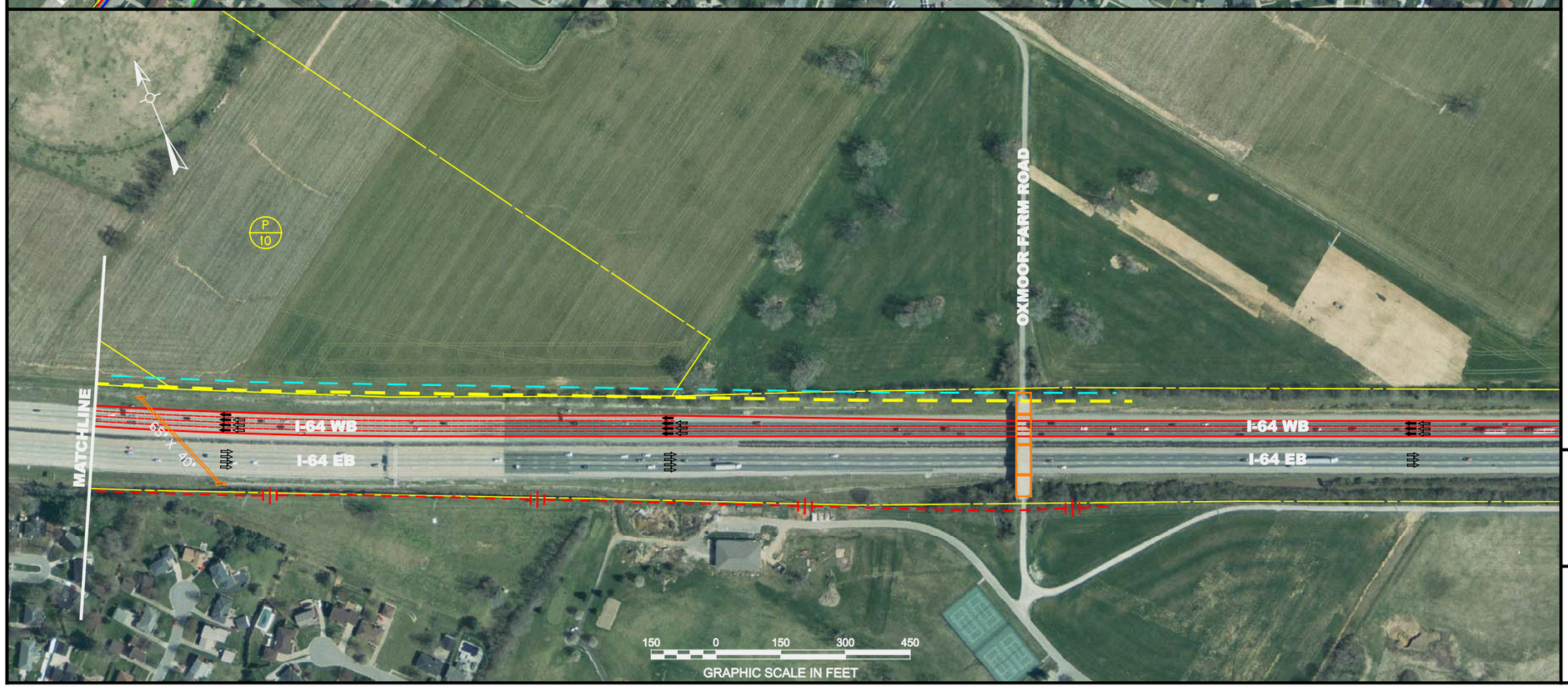
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 2 -
PROVIDE 2 DEDICATED LANES FOR THE I-64 WB TO I-264 RAMP, 1 LANE FOR I-264 EB AND 1 LANE FOR I-264 WB
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-4



Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate would provide an additional lane along I-64 Westbound and 2 dedicated lanes for the I-64 Westbound to I-264 ramp. The additional lane could be added just west of the Oxmoor Farm Road Overpass or could tie to an additional Westbound lane that would be provided as part of the proposed I-64 / Hurstbourne Lane Interchange Reconstruction Project. Beyond the diverge from I-64 Westbound, the ramps to I-264 would remain as they exist today. Work involved would include ~4000 feet of grade and drain and asphalt surfacing, restriping, and changes in signing to reflect the new exit configuration.

ANTICIPATED BENEFITS

Provision of 2 dedicated lanes to the I-64 Westbound to I-264 ramp and removal of the shared interior lane should concentrate I-264 bound vehicles in the 2 right-most lanes of I-64 Westbound and clear the mainline for through traffic. Clear signage would be required to ensure vehicles are in the proper lanes prior to the interchange.

RESULTS OF TRAFFIC ANALYSIS

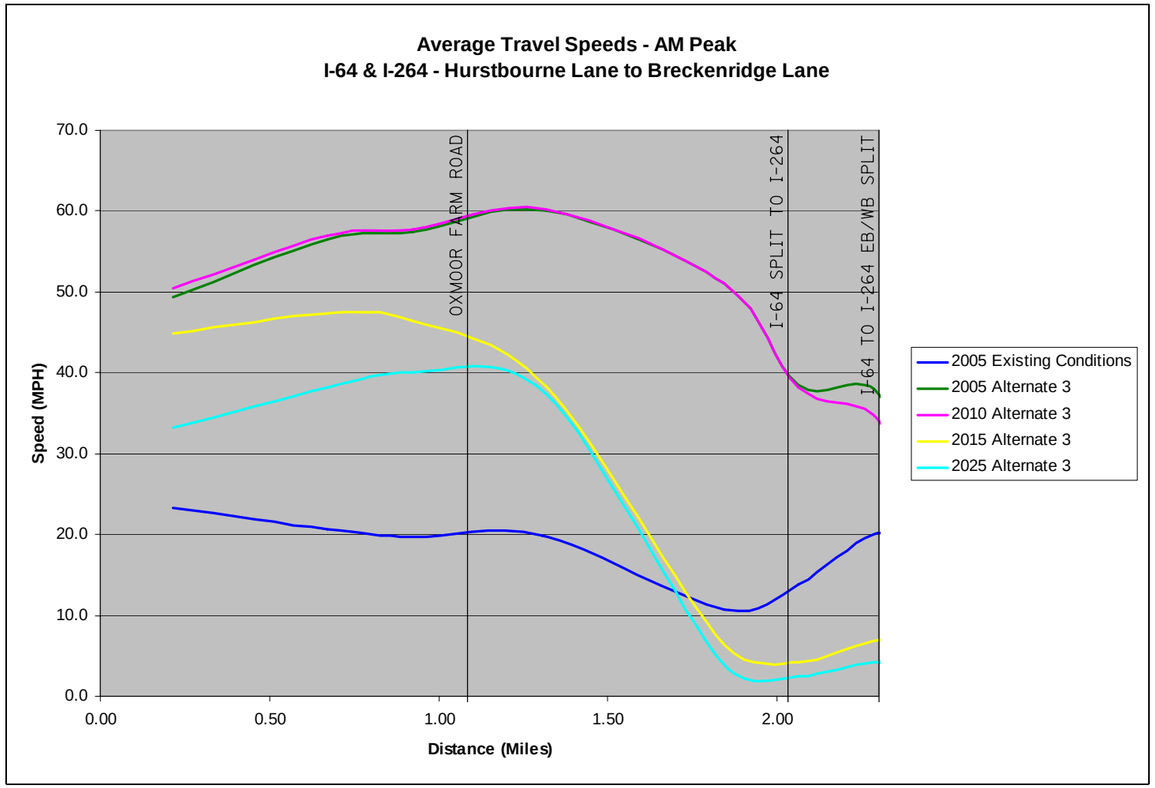
This alternate provides additional minor improvement over the previous alternate due to the 2 lanes remaining on the I-64 Westbound to I-264 Westbound ramp as they currently exist. Average travel speeds for I-64 Westbound are significantly increased as a result of the additional capacity, primarily due to a freer flow of I-64 Westbound through traffic. 2 lanes remaining on the I-64 Westbound to I-264 Westbound ramp provides no additional improvement due to the remaining downstream constraint. Over time, the benefits are reduced. In 2015, volumes have increased enough that travel speeds begin to drop back to current levels. Without downstream capacity improvements, this alternate only provides short-term improvements. See sheet CA-6 for a summary of the VISSIM traffic analysis for this alternate.

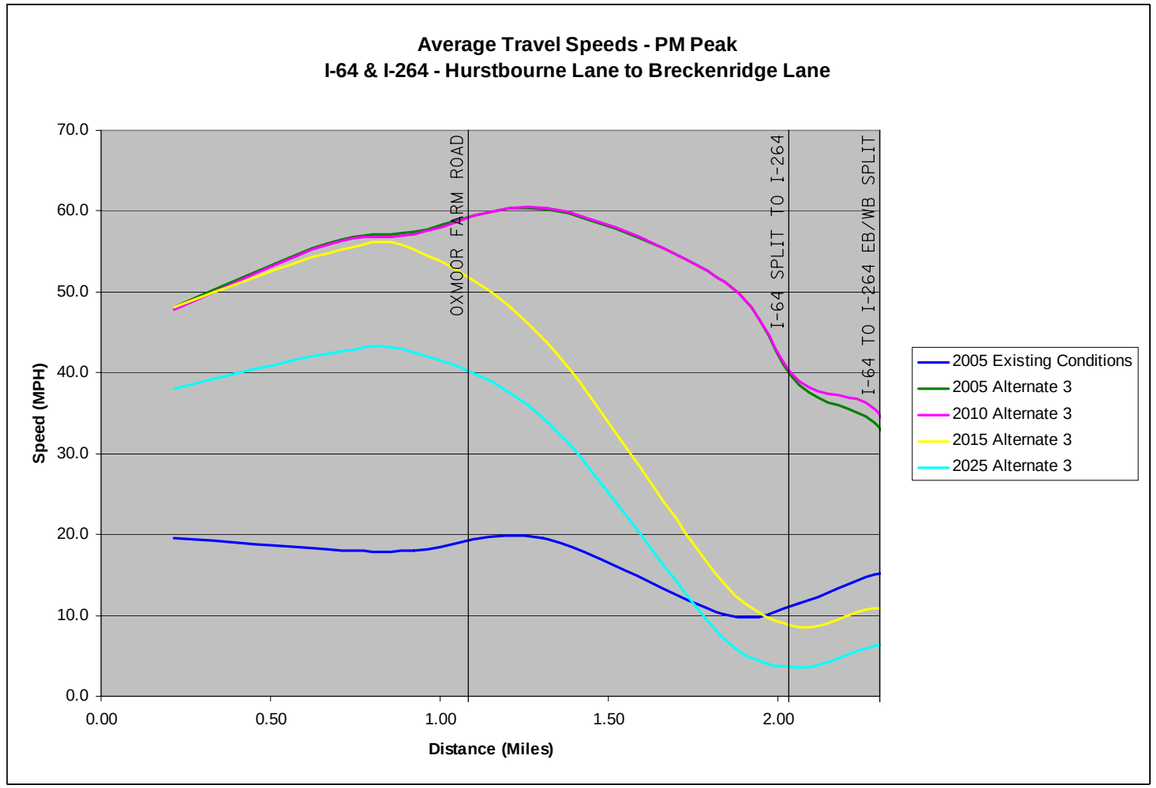
ALTERNATE 3 -
PROVIDE 2 DEDICATED LANES FOR THE I-64 WB TO I-264 RAMP, NO CHANGES TO THE RAMP CONFIGURATION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-5





NOTES:

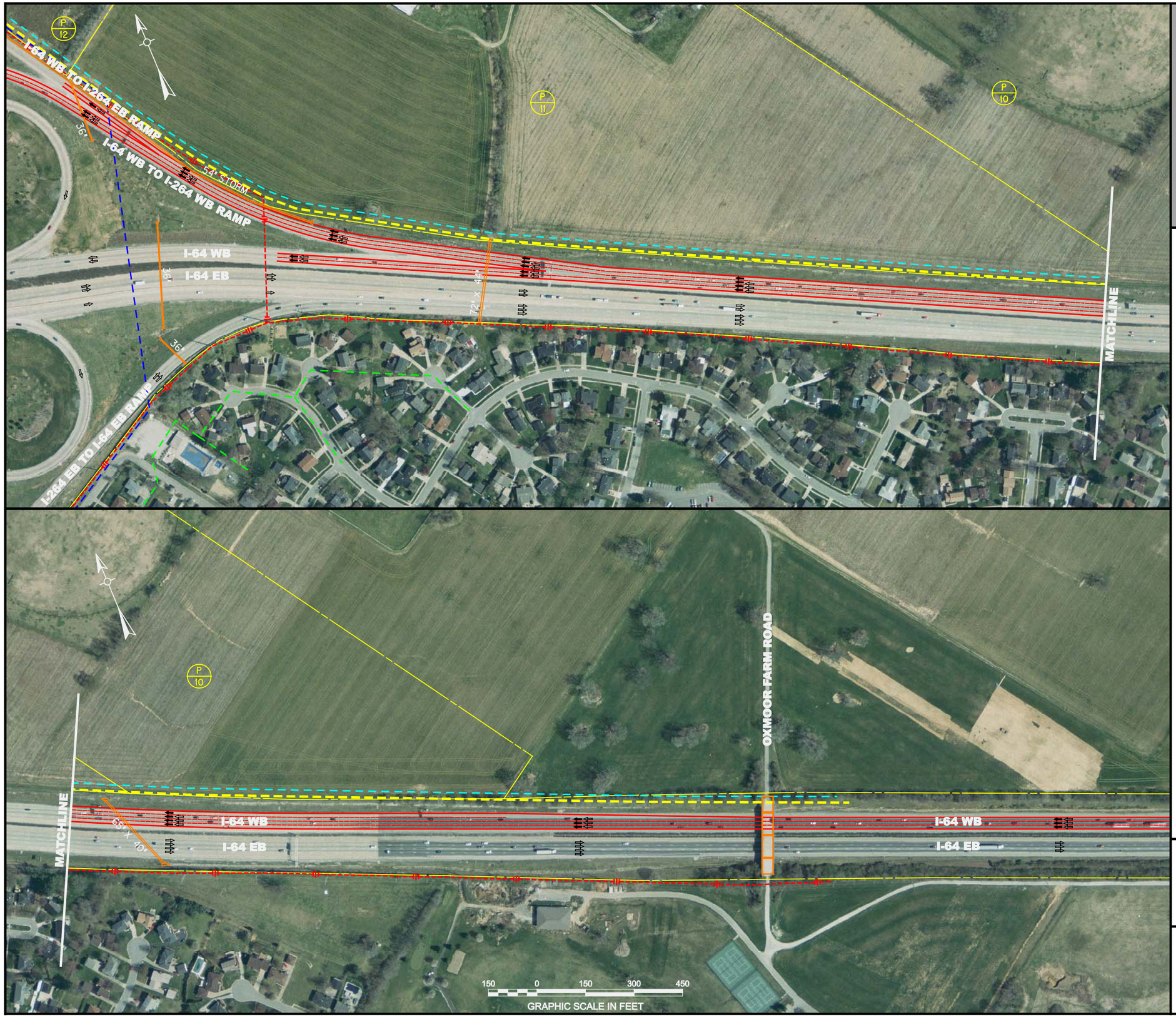
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 3 -
PROVIDE 2 DEDICATED LANES FOR THE I-64 WB TO I-264 RAMP, NO CHANGES TO THE RAMP CONFIGURATION
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-6



Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate would provide an additional lane along I-64 Westbound and 3 lanes for the I-64 Westbound to I-264 ramp. The additional lane could be added just west of the Oxmoor Farm Road Overpass or could tie to an additional Westbound lane that would be provided as part of the proposed I-64 / Hurstbourne Lane Interchange Reconstruction Project. 3 lanes on the ramp would split, one to I-264 Eastbound and the others to I-264 Westbound. Work involved would include ~5000 feet of grade and drain and asphalt surfacing, restriping, and changes in signing to reflect the new exit configuration.

ANTICIPATED BENEFITS

Provision of 3 dedicated lanes to the I-64 Westbound to I-264 ramp should concentrate I-264 bound vehicles in the 3 right-most lanes of I-64 Westbound and clear the mainline for through traffic. Clear signage would be required to ensure vehicles are in the proper lanes prior to the interchange.

RESULTS OF TRAFFIC ANALYSIS

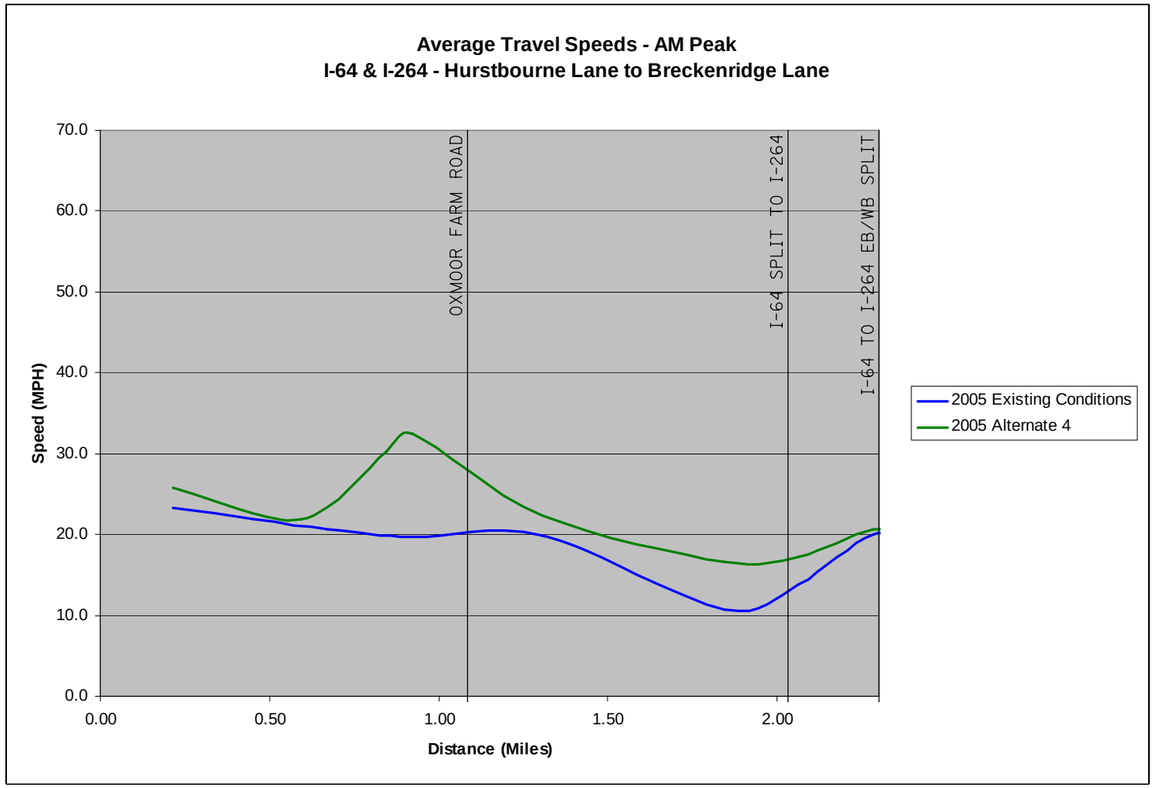
While this alternate provides an additional lane just west of the Oxmoor Farm Road Overpass and 3 lanes exiting to I-264, it maintains an interior lane that is shared between I-64 Westbound through traffic and I-264 Westbound ramp traffic. As a result, a sharp decline in speed occurs in the area of the ramp diverge as aggressive vehicles jockey for position at the last minute before taking the exit ramp to I-264. Since this sharp decline in speed occurs in 2005, analysis of future design years was not completed. See sheet CA-8 for summary of the VISSIM traffic analysis for this alternate.

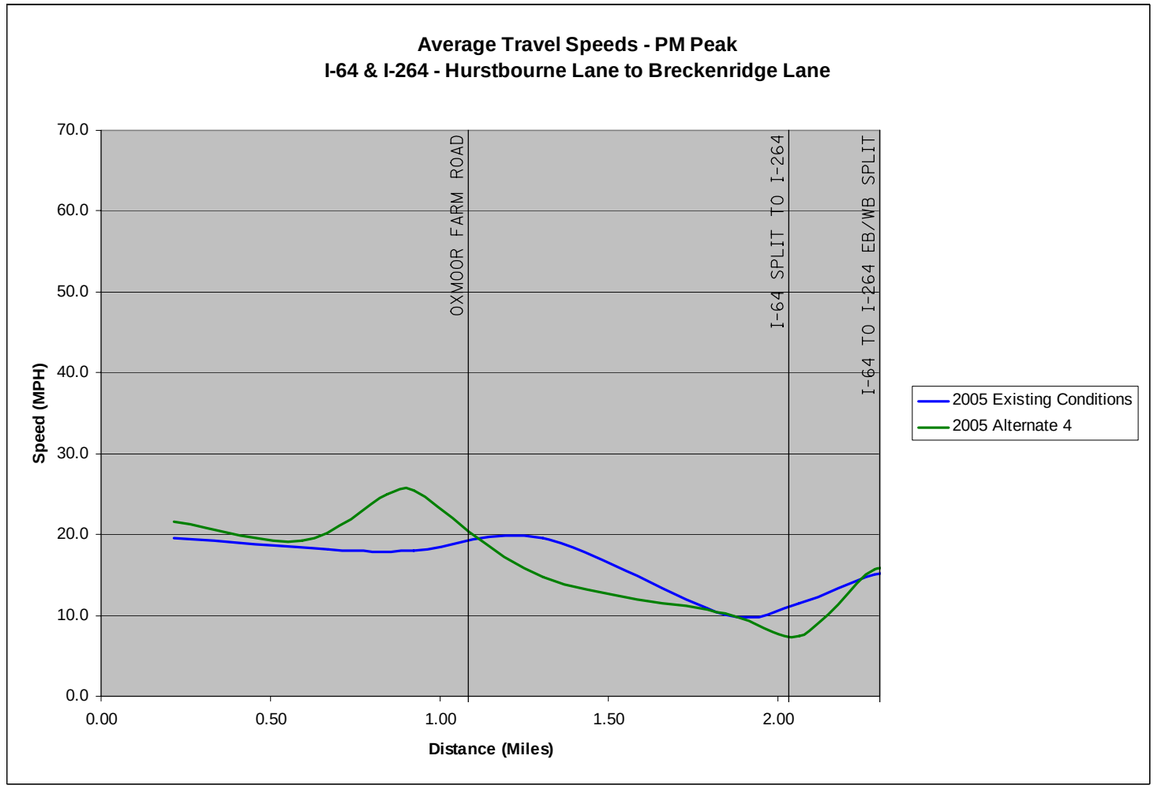
ALTERNATE 4 -
PROVIDE 3 LANES FOR THE I-64 WB TO I-264 RAMP, 1 LANE FOR I-64 EB AND 2 LANES FOR I-264 WB
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-7





NOTES:

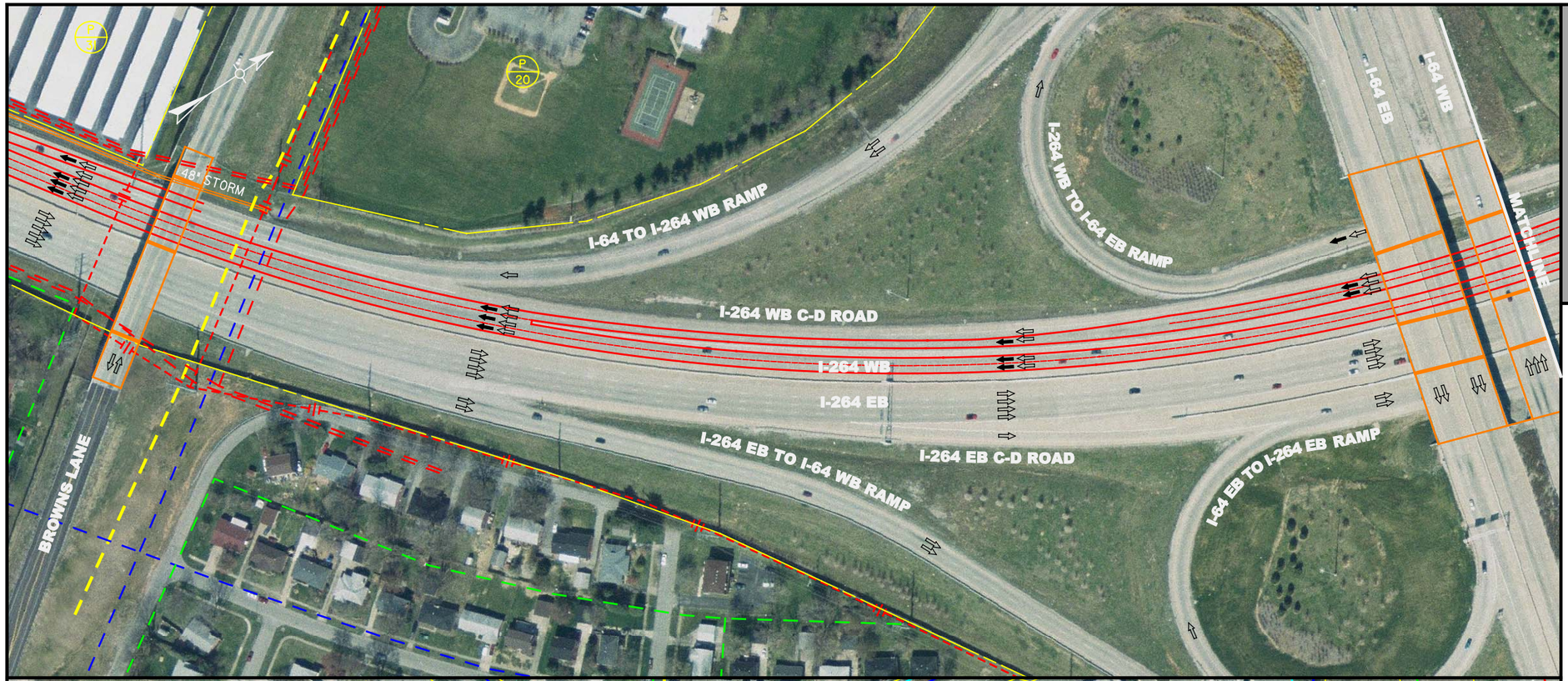
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

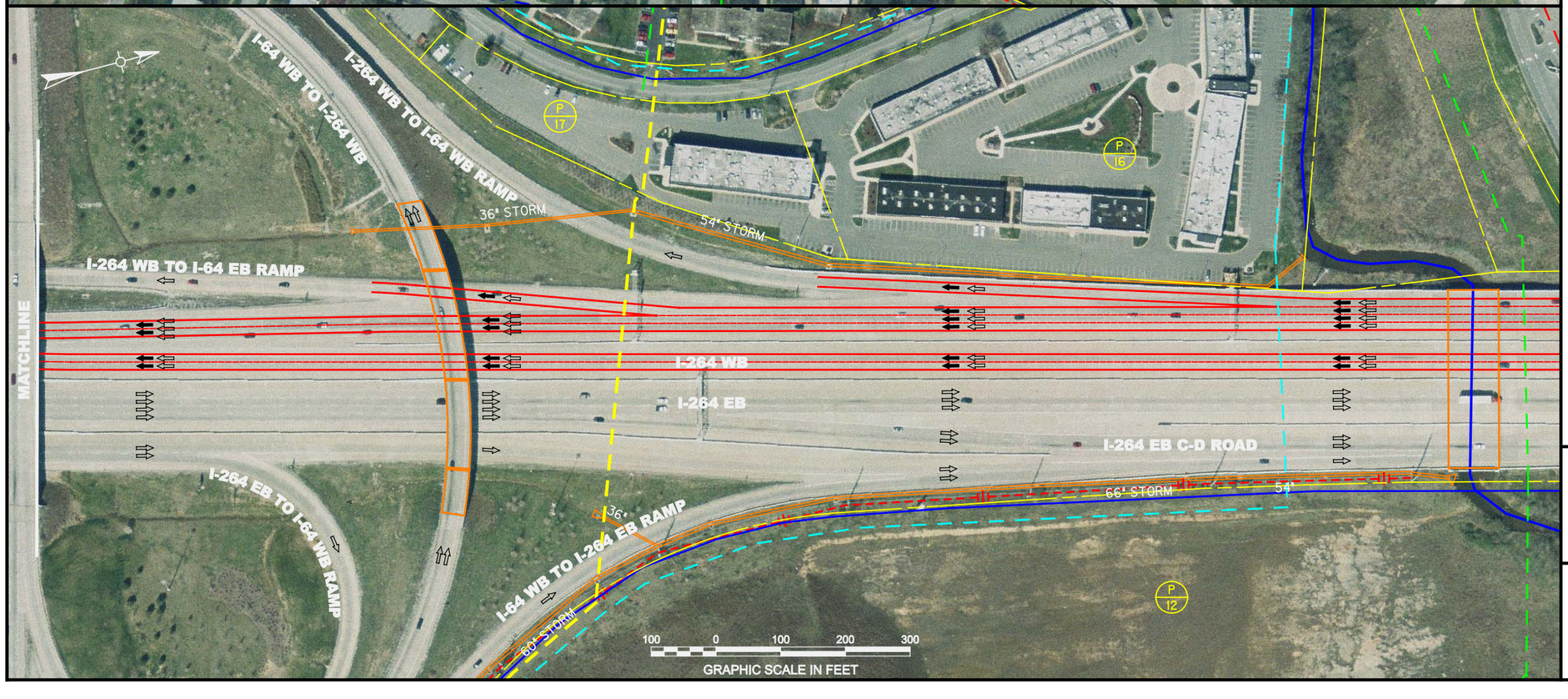
ALTERNATE 4 -
PROVIDE 3 LANES FOR THE I-64 WB TO I-264 RAMP,
1 LANE FOR I-64 EB AND 2 LANES FOR I-264 WB
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-8





Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate reduces the I-264 Westbound Collector-Distributor road to 1-Lane at its merge with I-264 Westbound. The lane reduction occurs by dropping an additional lane with the I-264 Westbound to I-64 Eastbound Ramp.

ANTICIPATED BENEFITS

The reduction to 1-Lane of the I-264 Wesbound Collector-Distributor road reduces by 1-Lane the number of lanes that I-264 Westbound traffic going to Breckenridge Lane must weave across to get to the exit. This alternate also allows the I-64 to I-264 Westbound Ramp lane to continue through the I-264 / Breckenridge Lane Interchange. Cross-weave traffic between the I-64 to I-264 Westbound Ramp and Breckenridge Lane should be reduced.

RESULTS OF TRAFFIC ANALYSIS

Average travel speeds along the I-264 Westbound Collector-Distributor road are reduced prior to the merge with I-264 Westbound. Traffic volumes are too high to allow the I-264 Westbound Collector-Distributor road to be reduced to 1 Lane. See sheets CA-10 through CA-12 for a summary of the VISSIM traffic analysis for this alternate.

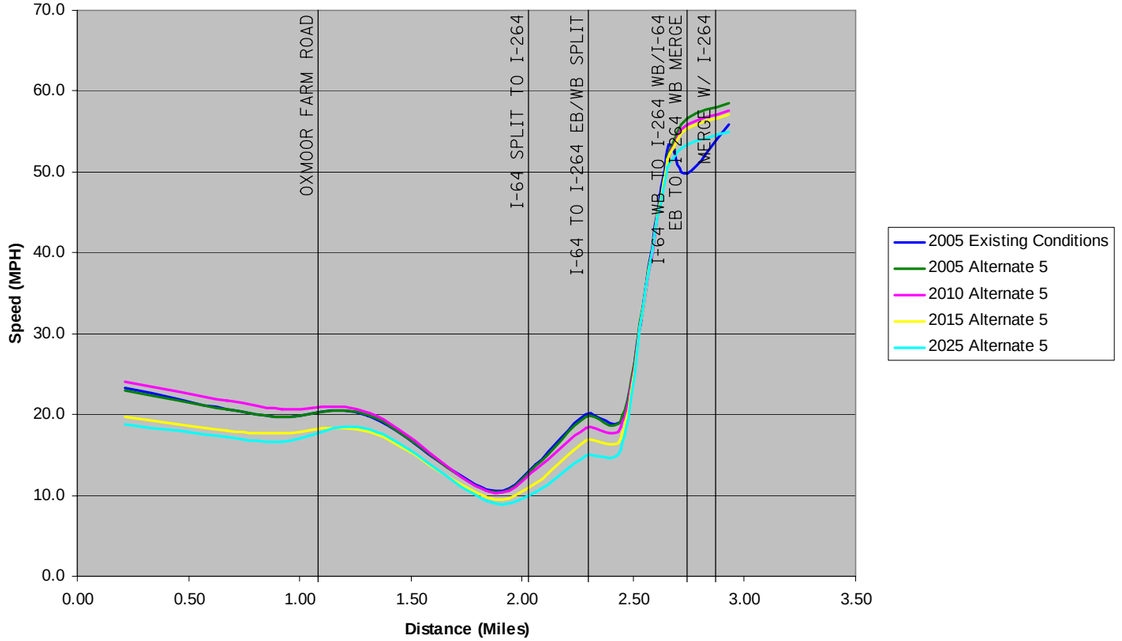
ALTERNATE 5 -
REDUCE I-264 WB C-D ROAD TO 1-LANE
AT MERGE WITH I-264 WB
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

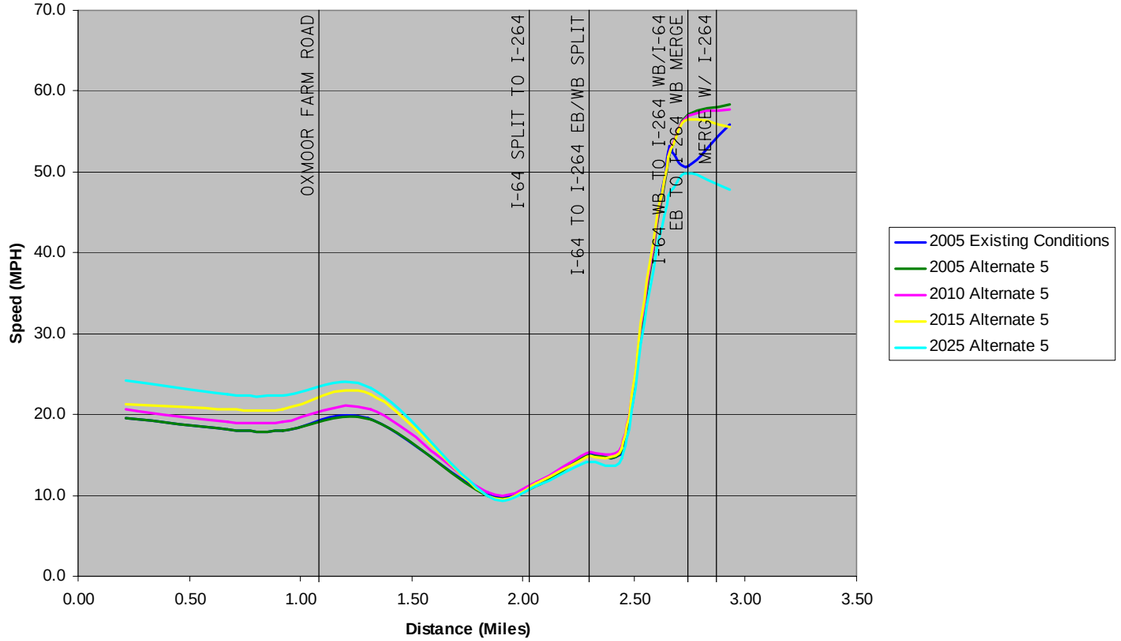
SHEET NO.

CA-9

Average Travel Speeds - AM Peak
I-64 & I-264 - Hurstbourne Lane to Breckenridge Lane



Average Travel Speeds - PM Peak
I-64 & I-264 - Hurstbourne Lane to Breckenridge Lane



NOTES:

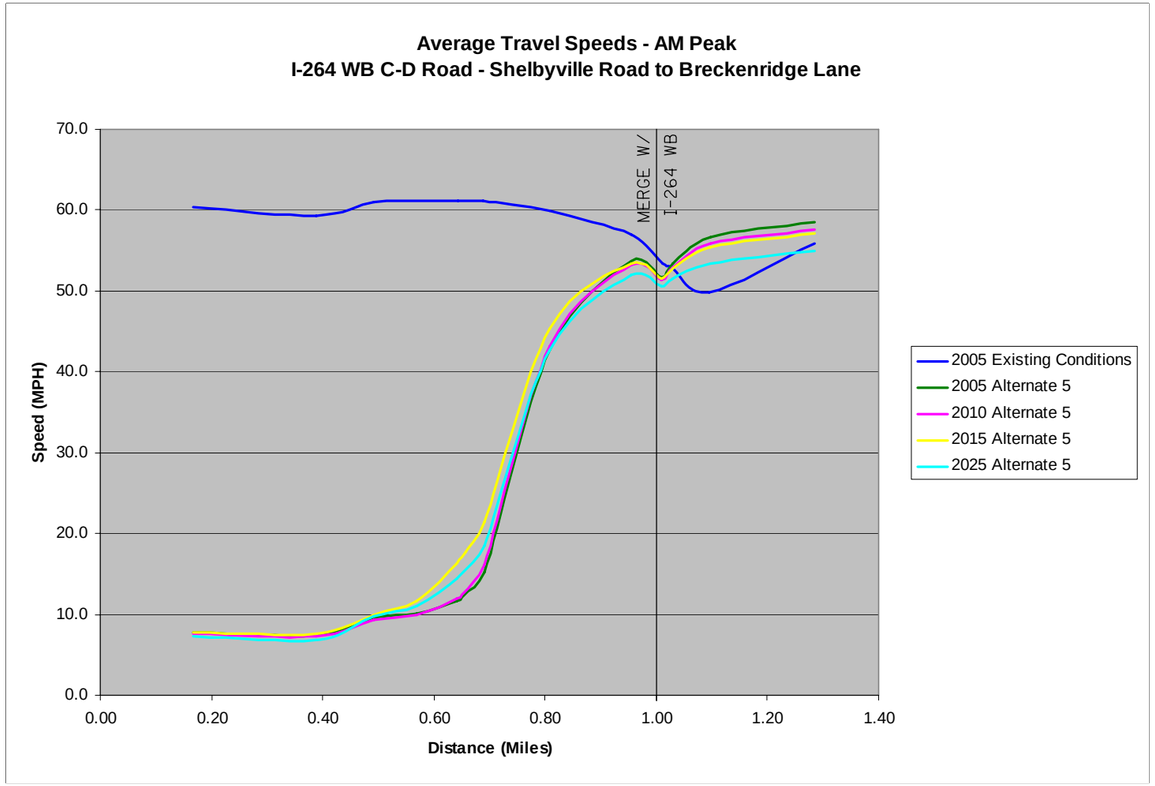
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

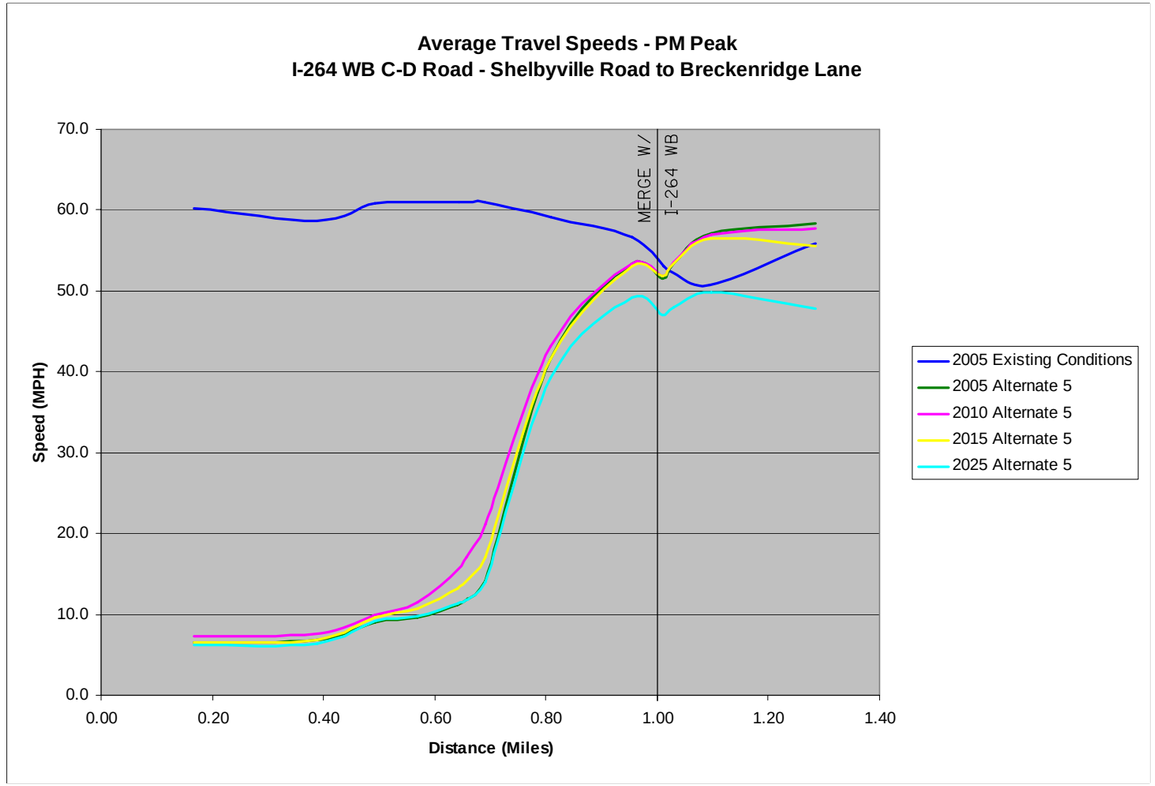
ALTERNATE 5 -
REDUCE I-264 WB C-D ROAD TO 1 LANE
AT MERGE WITH I-264 WB
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-10



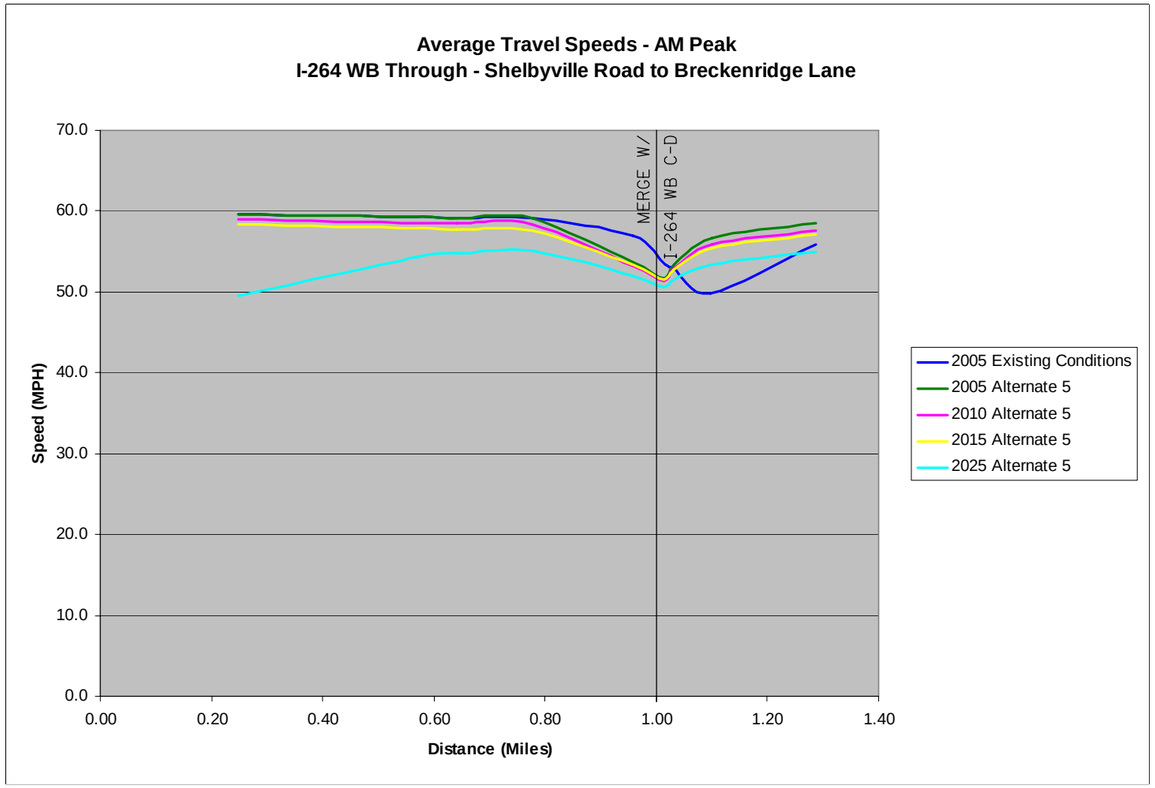


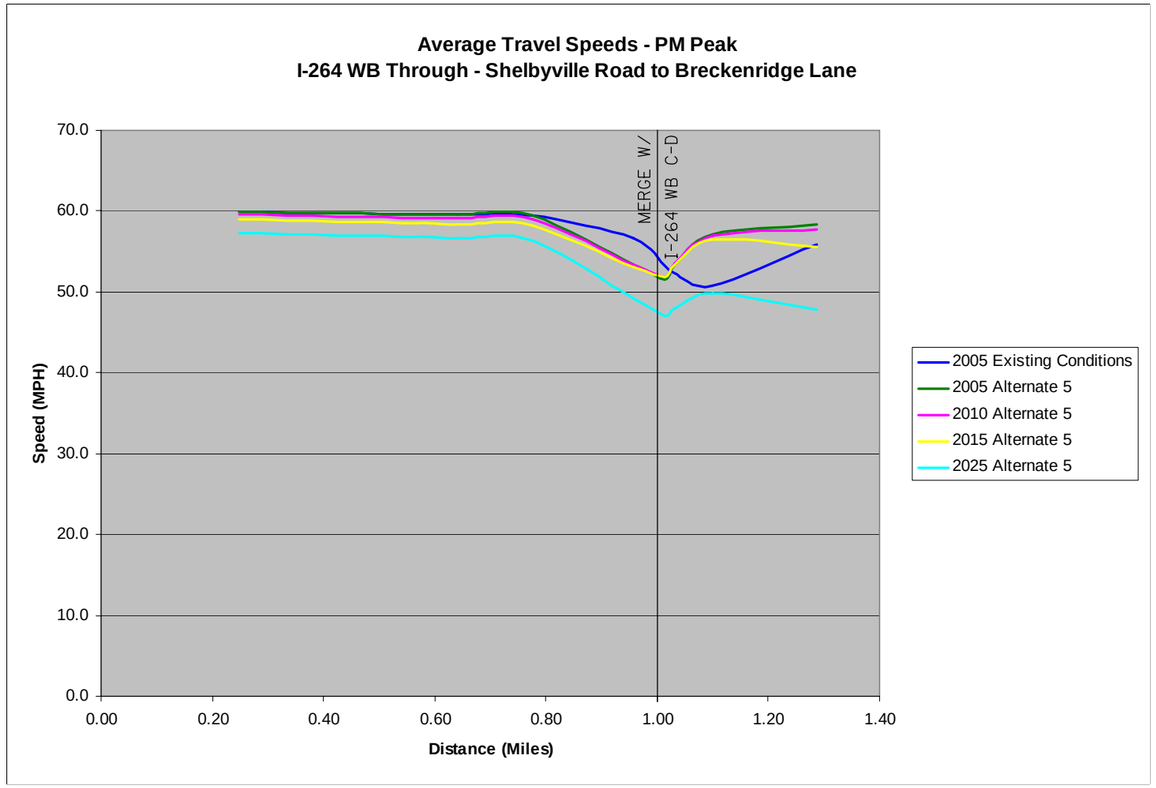
ALTERNATE 5 -
REDUCE I-264 WB C-D ROAD TO 1 LANE
AT MERGE WITH I-264 WB
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-11



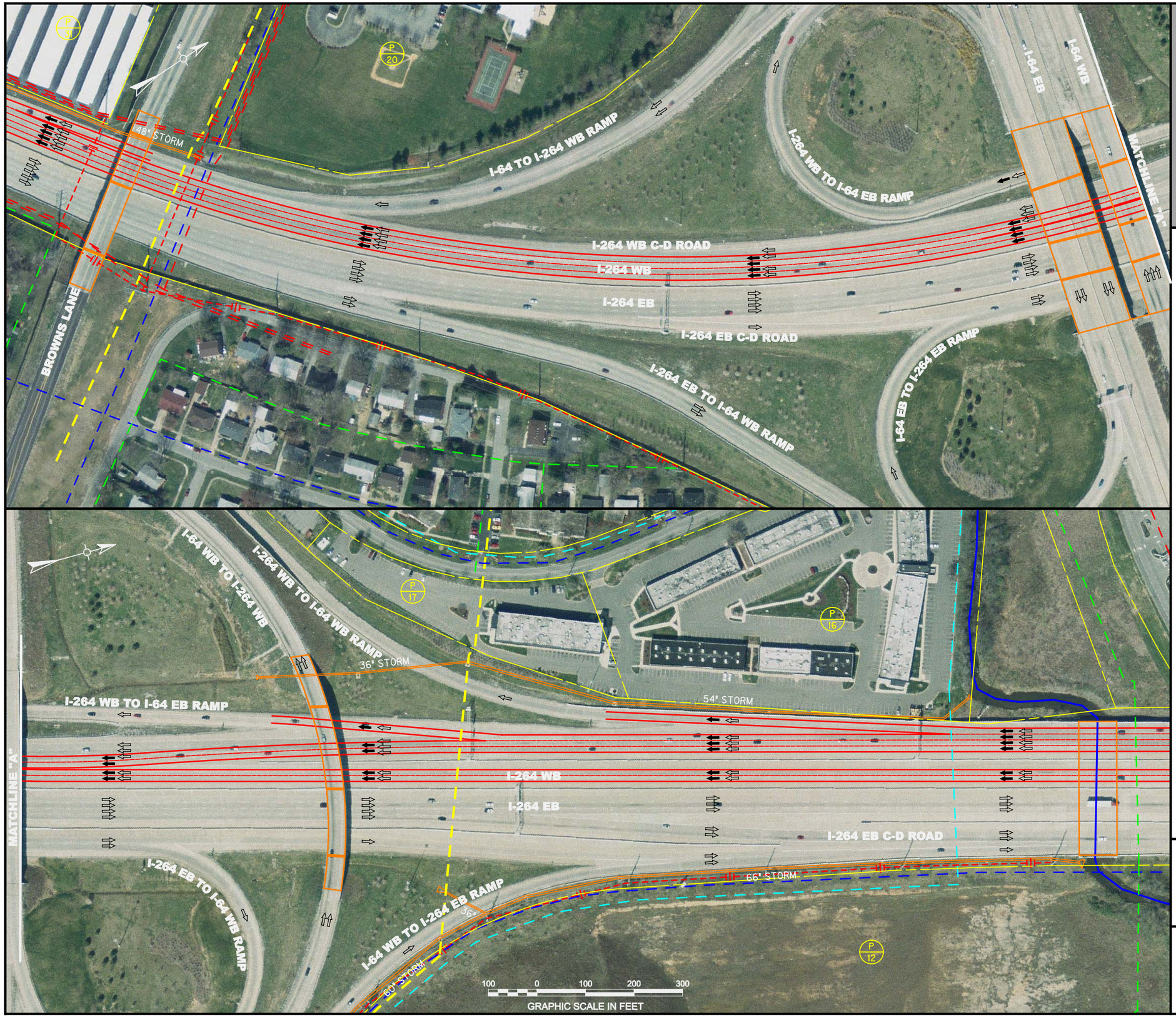


ALTERNATE 5 -
REDUCE I-264 WB C-D ROAD TO 1 LANE
AT MERGE WITH I-264 WB
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-12



Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate allows the I-264 Westbound Collector-Distributor road to tie with I-264 Westbound as soon as possible beyond the exits to I-64 Eastbound and Westbound. The I-264 Westbound to I-64 Eastbound ramp is changed to a lane drop to allow the merge to occur sooner.

ANTICIPATED BENEFITS

This alternate increases the available length of weave for I-264 Westbound traffic going to Breckenridge Lane by ~1200 feet. This should reduce the cross-weave traffic between the I-64 to I-264 Westbound ramp and Breckenridge Lane along I-264 Westbound.

RESULTS OF TRAFFIC ANALYSIS

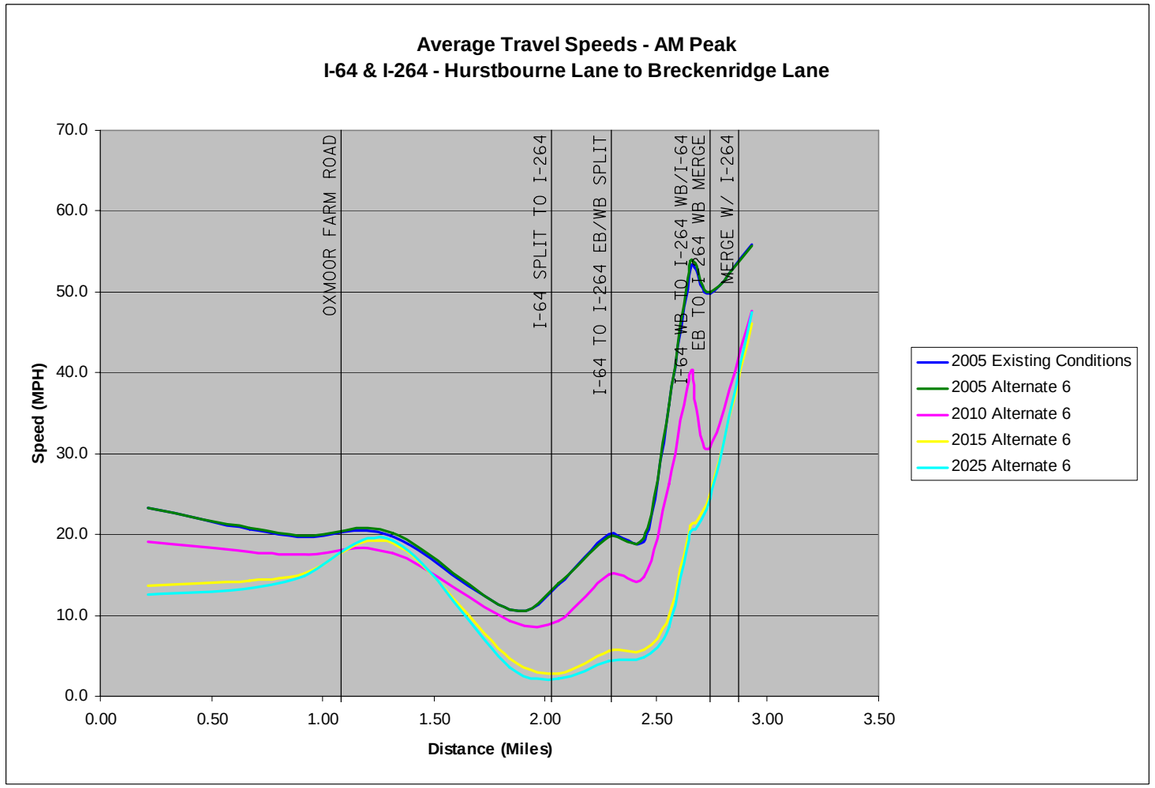
The average travel speeds along I-264 Westbound and the I-264 Westbound Collector-Distributor road are similar for the 2005 scenario. The alternate does not have an impact on traffic flow, which is to be expected since capacity has not been removed. Over time, travel speeds are reduced due to increasing traffic volumes. This would take place regardless of the implementation of this alternate. The alternate provides increased weave length to Breckenridge Lane without disrupting traffic flow. See sheets CA-14 through CA-16 for a summary of the VISSIM traffic analysis for this alternate.

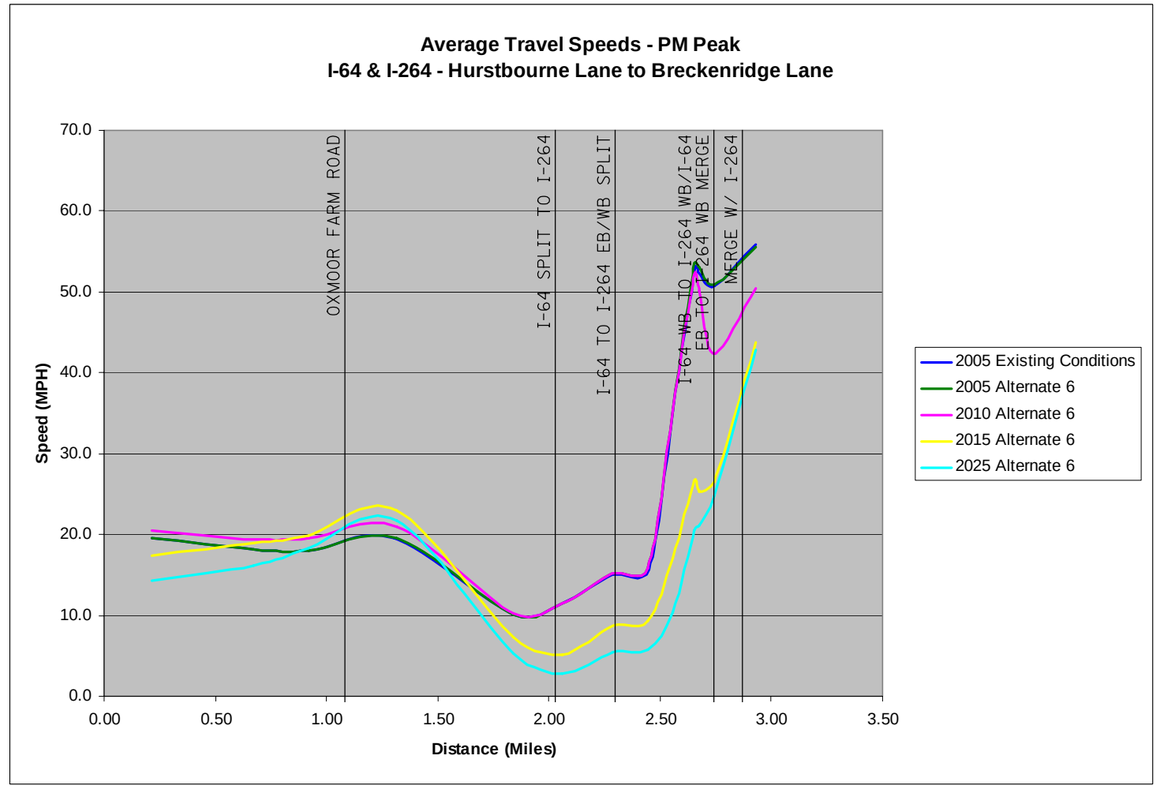
ALTERNATE 6 - MERGE I-264 WB AND I-264 WB C-D ROAD SOONER TO INCREASE LENGTH OF WEAVE TO BRECKENRIDGE LANE
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-13





NOTES:

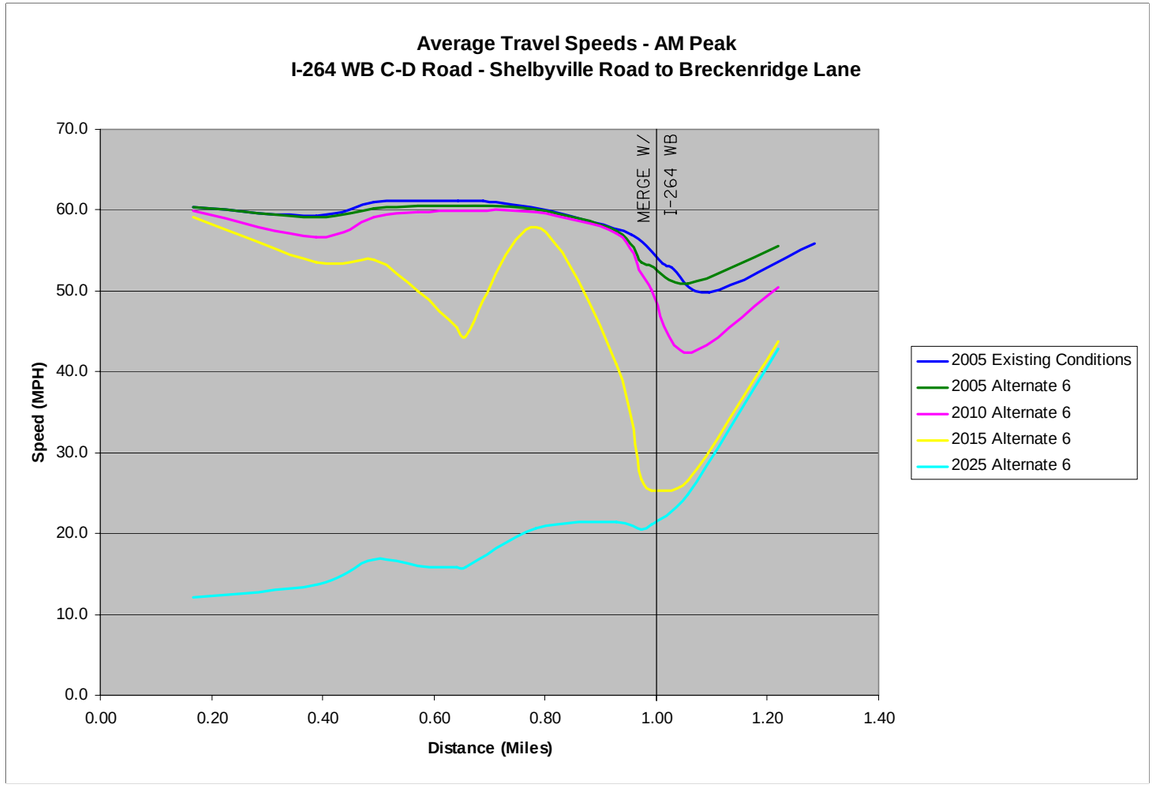
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

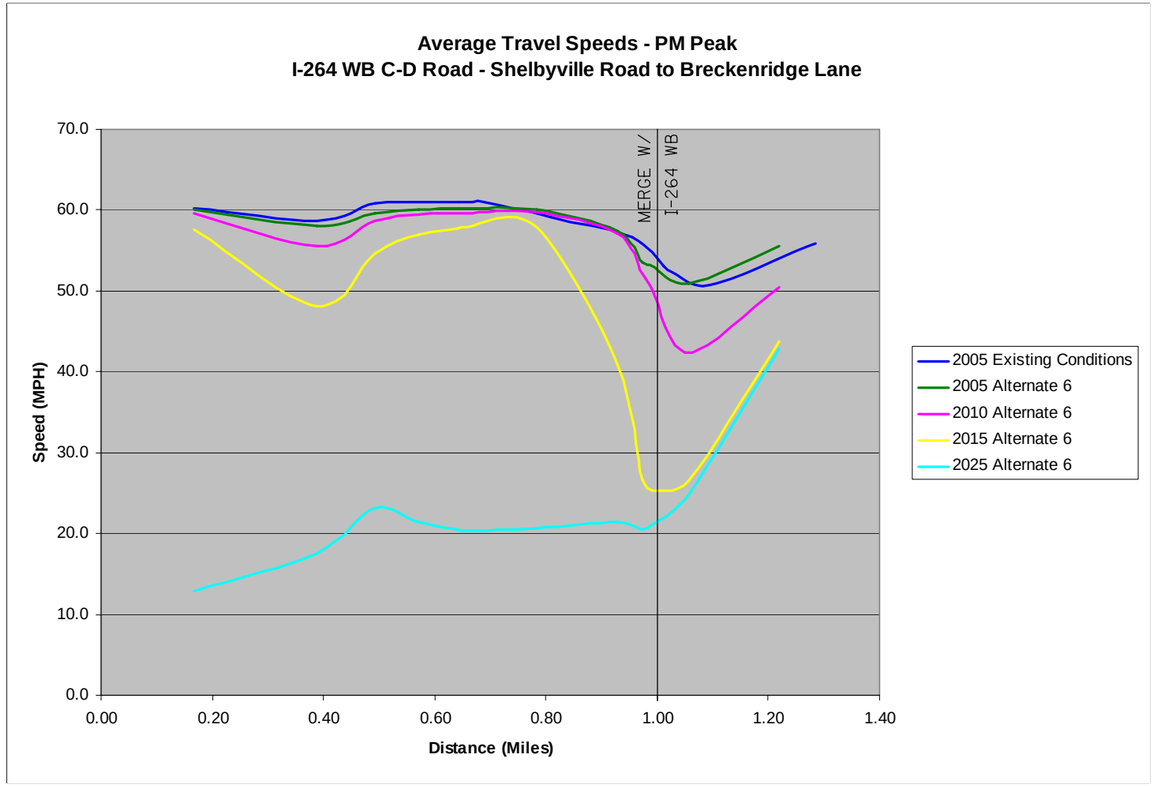
ALTERNATE 6 - MERGE I-264 WB AND I-264 C-D ROAD SOONER TO INCREASE LENGTH OF WEAVE TO BRECKENRIDGE LANE
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-14

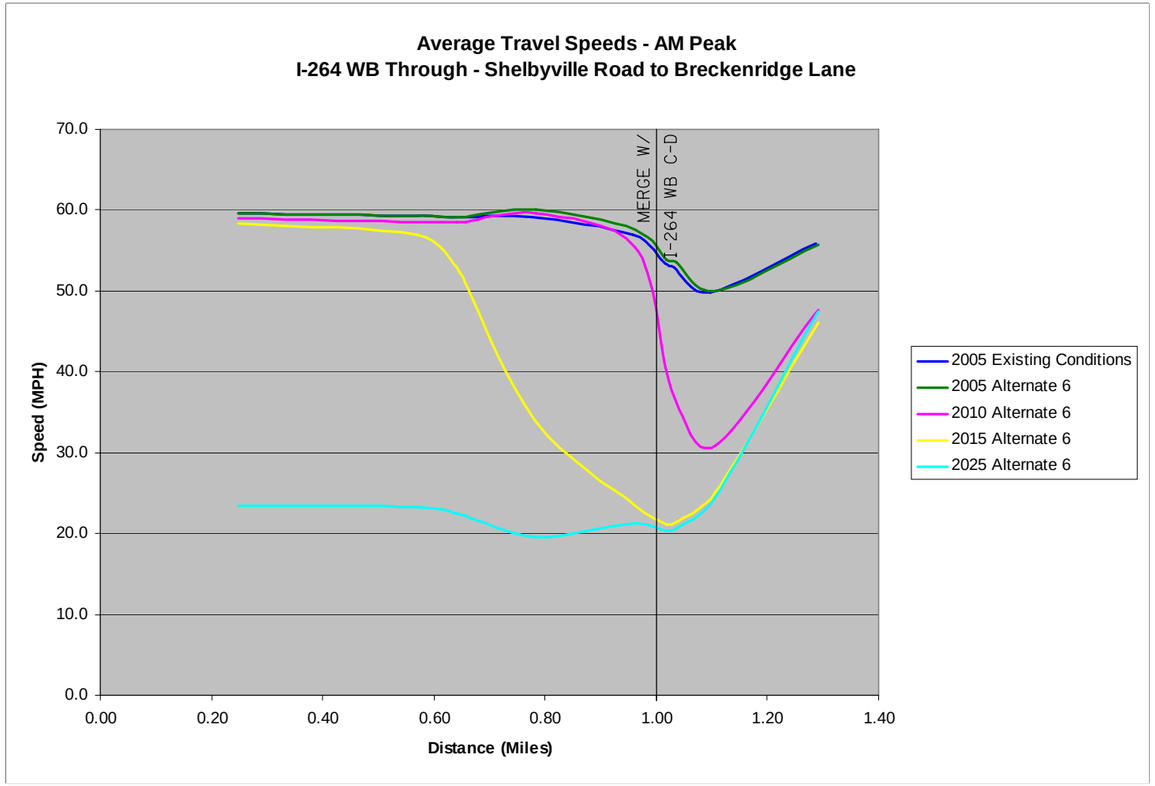


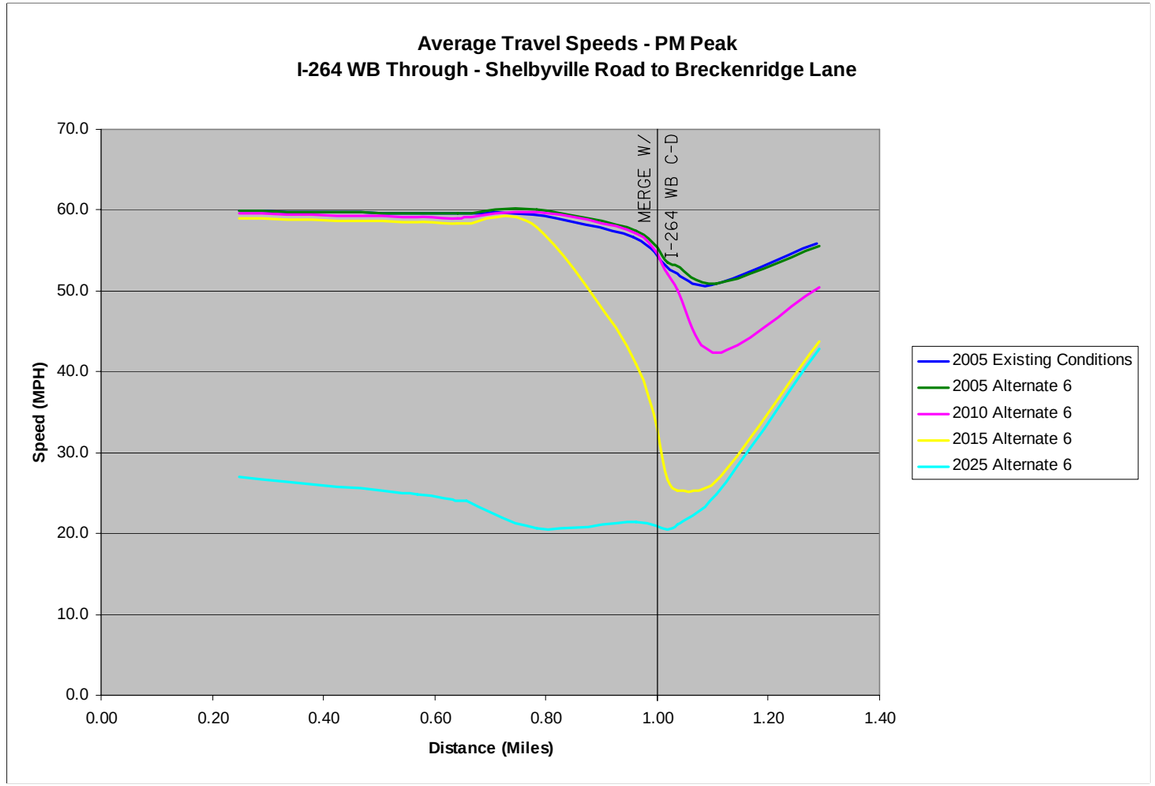


ALTERNATE 6 - MERGE I-264 WB AND I-264 C-D ROAD SOONER TO INCREASE LENGTH OF WEAVE TO BRECKENRIDGE LANE
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-15

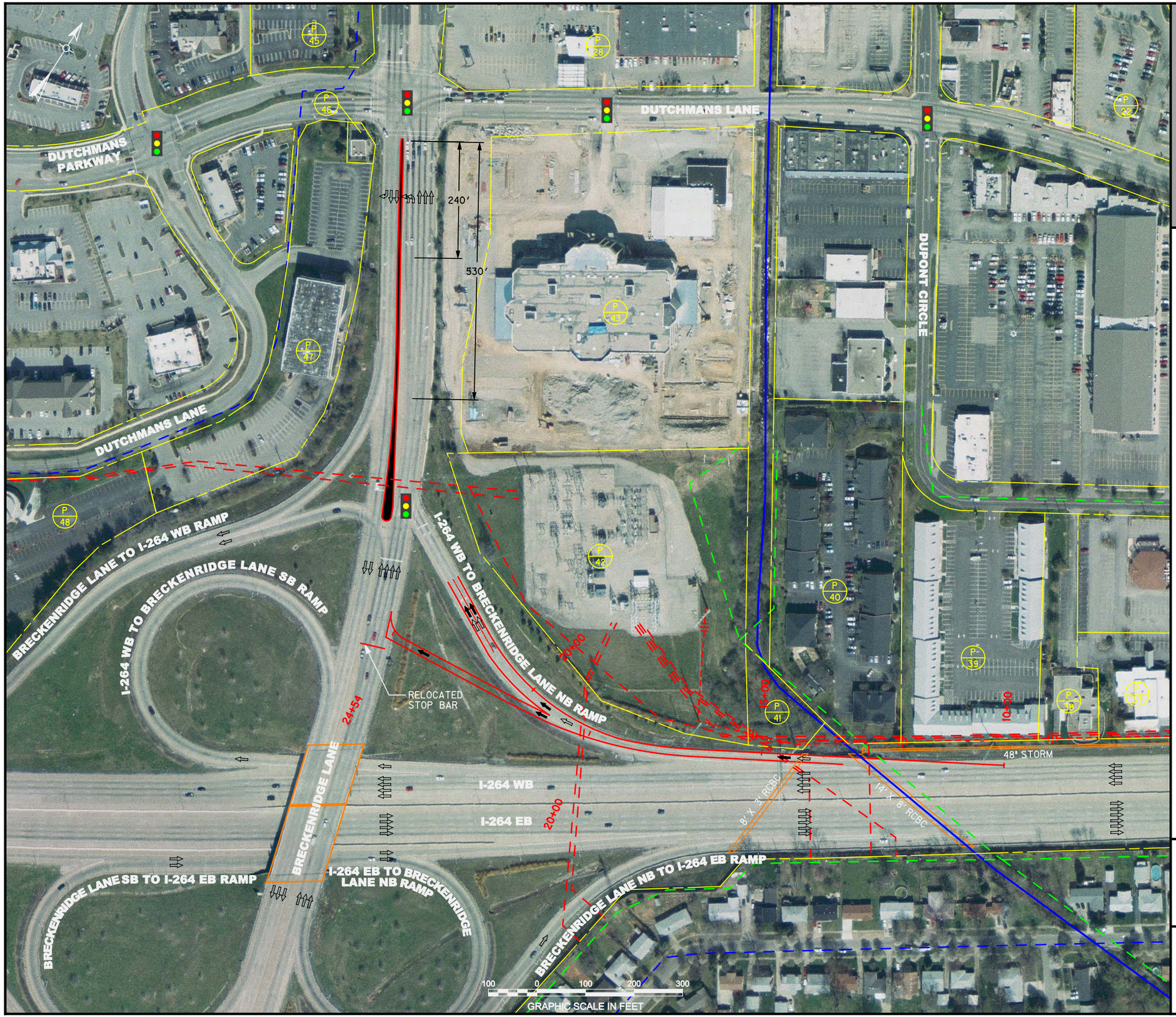




ALTERNATE 6 - MERGE I-264 WB AND I-264 C-D ROAD SOONER TO INCREASE LENGTH OF WEAVE TO BRECKENRIDGE LANE
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-16



Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate splits the I-264 Westbound ramp to northbound Breckenridge Lane into 2 ramps. The existing ramp would be utilized by eastbound Dutchmans Lane traffic while the new ramp would be utilized by westbound Dutchmans Parkway. The alternate also provides for removal of a portion of the concrete median along Breckenridge Lane to lengthen the left-turn storage of the south leg of the Breckenridge Lane / Dutchmans Lane / Dutchmans Parkway Interchange. The northbound Breckenridge Lane stop bar at the I-264 Westbound ramps and Breckenridge Lane Intersection would be relocated approximately 175 feet south and would require signal timing changes to allow northbound left-turning vehicles additional time to clear the intersection before southbound vehicles receive the green phase.

ANTICIPATED BENEFITS

Separation of traffic turning left onto Dutchmans Parkway from through and right-turning traffic should reduce the queues on the existing I-264 Westbound ramp to northbound Breckenridge Lane. Conflict between left and right-turning vehicles should also be reduced since left-turning vehicles would have a greater distance to weave across through lanes and more storage length at the Breckenridge Lane / Dutchmans Lane Intersection.

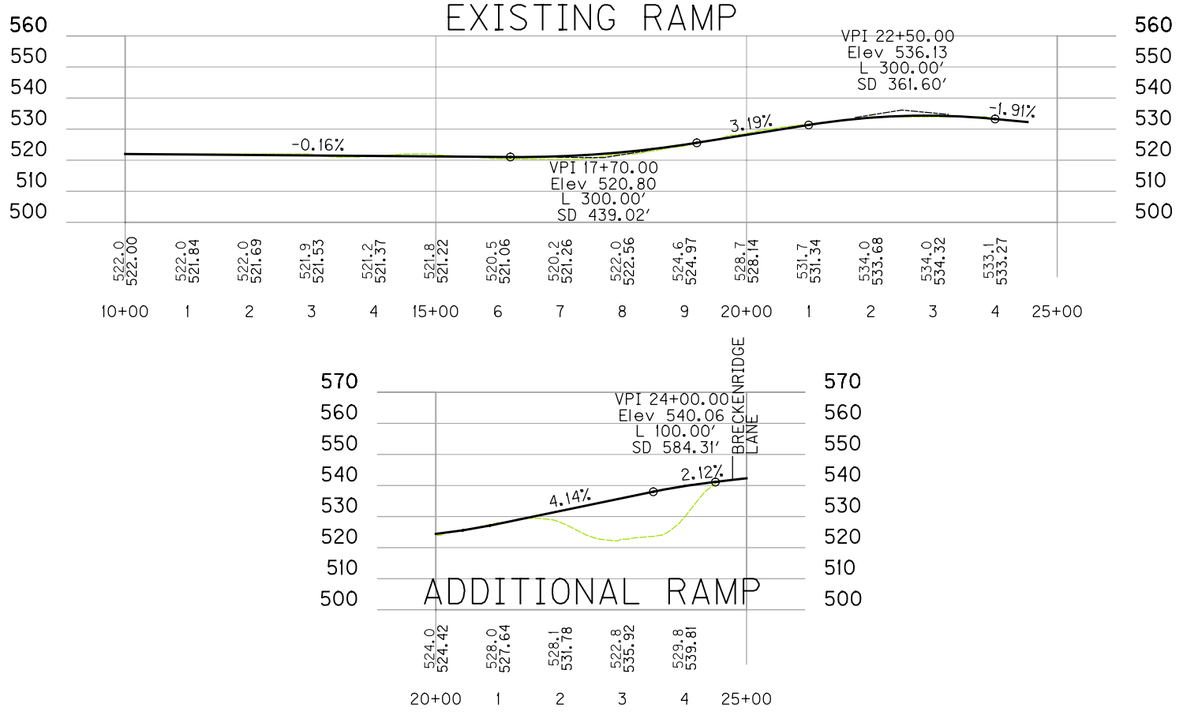
RESULTS OF TRAFFIC ANALYSIS

Signal operations are impacted due to the increased clearance times required. Conflicts between Eastbound and Westbound Dutchmans Lane traffic are reduced north of the I-264 Westbound and Breckenridge Lane Intersection.

ALTERNATE 7 -
SPLIT I-264 WB EXIT TO NORTHBOUND BRECKENRIDGE LANE TRAFFIC
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-17



125 0 125 250 325

GRAPHIC SCALE IN FEET

ALTERNATE 7 -
SPLIT I-64 WB EXIT TO NORTHBOUND BRECKENRIDGE LANE TRAFFIC
PRELIMINARY PROFILES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-18

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate provides for construction of an additional ramp from the existing I-64 Westbound to I-264 Westbound ramp to the Browns Lane / Dutchmans Lane Intersection. The ramp would provide direct access to the Dupont area from I-64 Westbound.

ANTICIPATED BENEFITS

The proposed ramp would provide an additional access point for I-64 Westbound traffic to the Dupont area. This traffic would be removed from the I-264 Westbound Breckenridge Lane exit ramp and the south leg of the Breckenridge Lane / Dutchmans Lane Intersection, reducing congestion in those areas.

IMPACTS

Construction of the ramp would require purchase and removal of the Extended Stay America on Parcel No. 21. The existing retaining wall along the I-264 Westbound to I-64 Westbound ramp would need to be extended to accommodate construction of the ramp.

RESULTS OF TRAFFIC ANALYSIS

The traffic analysis shows no direct major impacts to the operations of the I-64 Westbound to I-264 Westbound ramp. Level of service analysis of the intersections within the Dupont Area indicates no major impacts to the intersections along Dutchmans Lane east of Breckenridge Lane. Delay is decreased at the I-264 Westbound / Breckenridge Lane and Breckenridge Lane / Dutchmans Lane Intersections as a result of reduced volumes, but remains LOS F. See sheets CA-21 and CA-22 for a summary of the traffic analysis for this alternate.

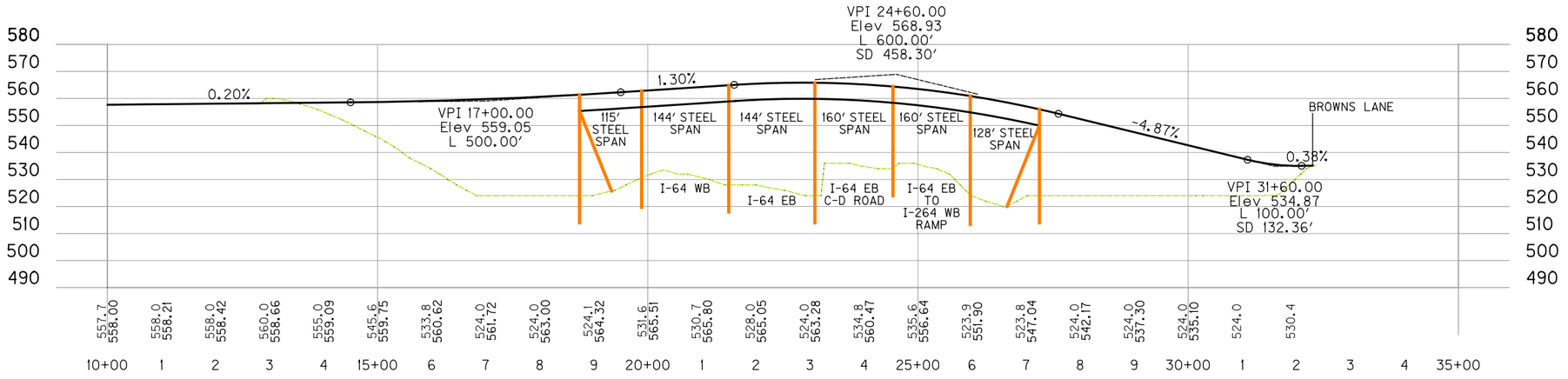
PARCEL NUMBER	BUSINESS
20	TEN BROECK HOSPITALS
21	EXTENDED STAY AMERICA

ALTERNATE 8 -
I-64 WB EXIT RAMP TO BROWNS LANE/
DUTCHMANS LANE INTERSECTION
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-19



125 0 125 250 325

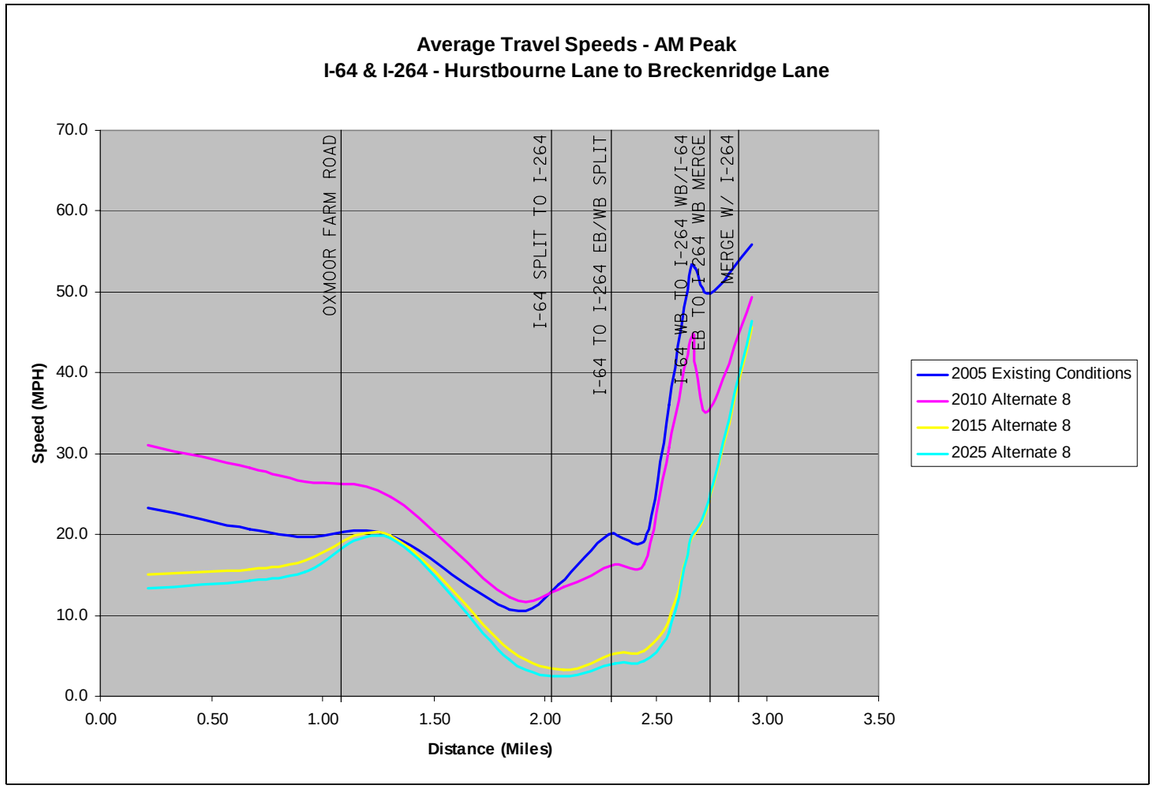
GRAPHIC SCALE IN FEET

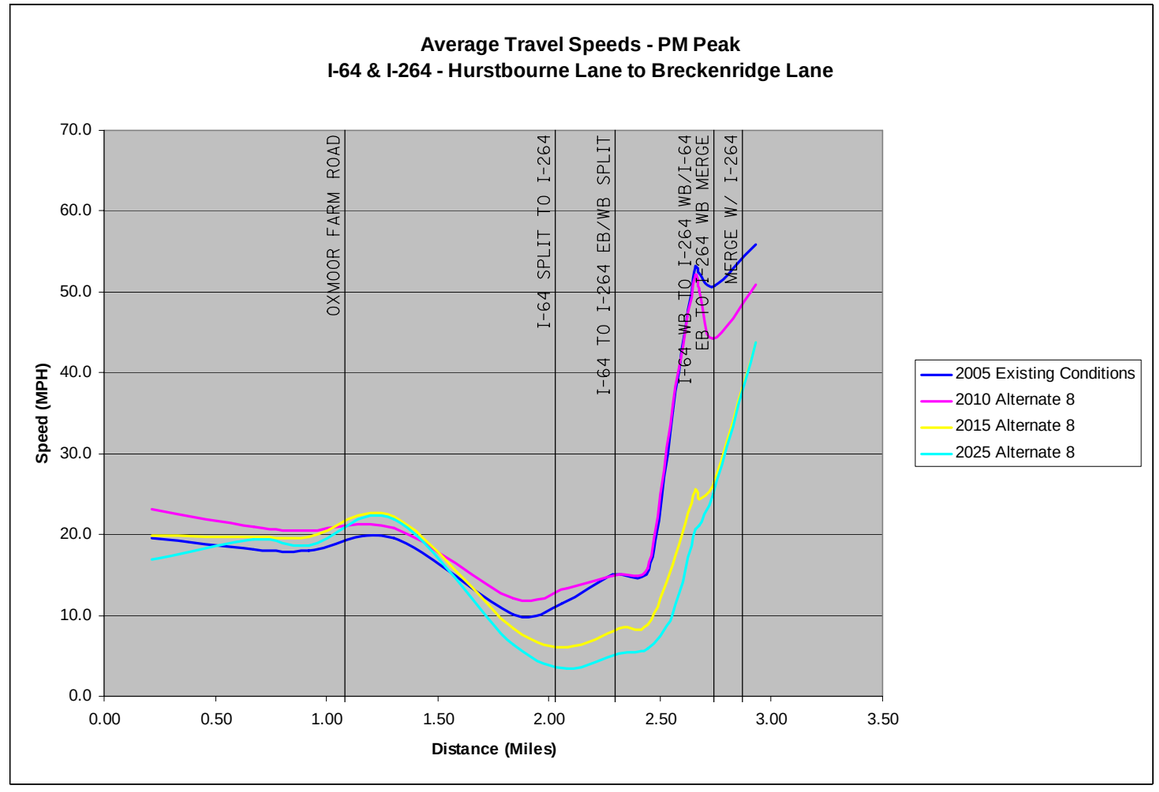
ALTERNATE 8 -
I-64 WB EXIT RAMP TO BROWNS LANE/
DUTCHMANS LANE INTERSECTION
PRELIMINARY PROFILES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-20





NOTES:

1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 8 -
I-64 WB EXIT RAMP TO BROWNS LANE/
DUTCHMANS LANE INTERSECTION
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-21

YEAR	AM				PM			
	NO-BUILD		ALT. 8		NO-BUILD		ALT. 8	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
2005	175.7	F	175.7	F	146.7	F	146.7	F
2010	176.3	F	122.7	F	208.2	F	219.1	F
2015	201.7	F	145.9	F	234.4	F	240.5	F
2025	248.9	F	237.1	F	292.9	F	307.8	F

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	13.4	B	24.6	C
2010	10.1	B	20.5	C
2015	10.1	B	21.5	C
2025	10.5	B	27.2	C

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	24.3	C	41.0	D
2010	29.5	C	63.8	E
2015	38.1	D	78.8	E
2025	69.2	E	117.2	F

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	20.6	C	21.6	C
2010	21.6	C	21.4	C
2015	22.3	C	22.6	C
2025	25.2	C	24.5	C

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	17.3	B	16.8	B
2010	7.6	A	21.7	C
2015	8.7	A	28.4	C
2025	10.9	B	48.1	D

YEAR	AM				PM			
	NO-BUILD		ALT. 8		NO-BUILD		ALT. 8	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
2005	35.2	D	35.2	D	40.4	D	40.4	D
2010	162.9	F	145.1	F	85.1	F	69.9	E
2015	185.3	F	168.2	F	102.6	F	84.5	F
2025	244.3	F	221.3	F	148.2	F	122.9	F

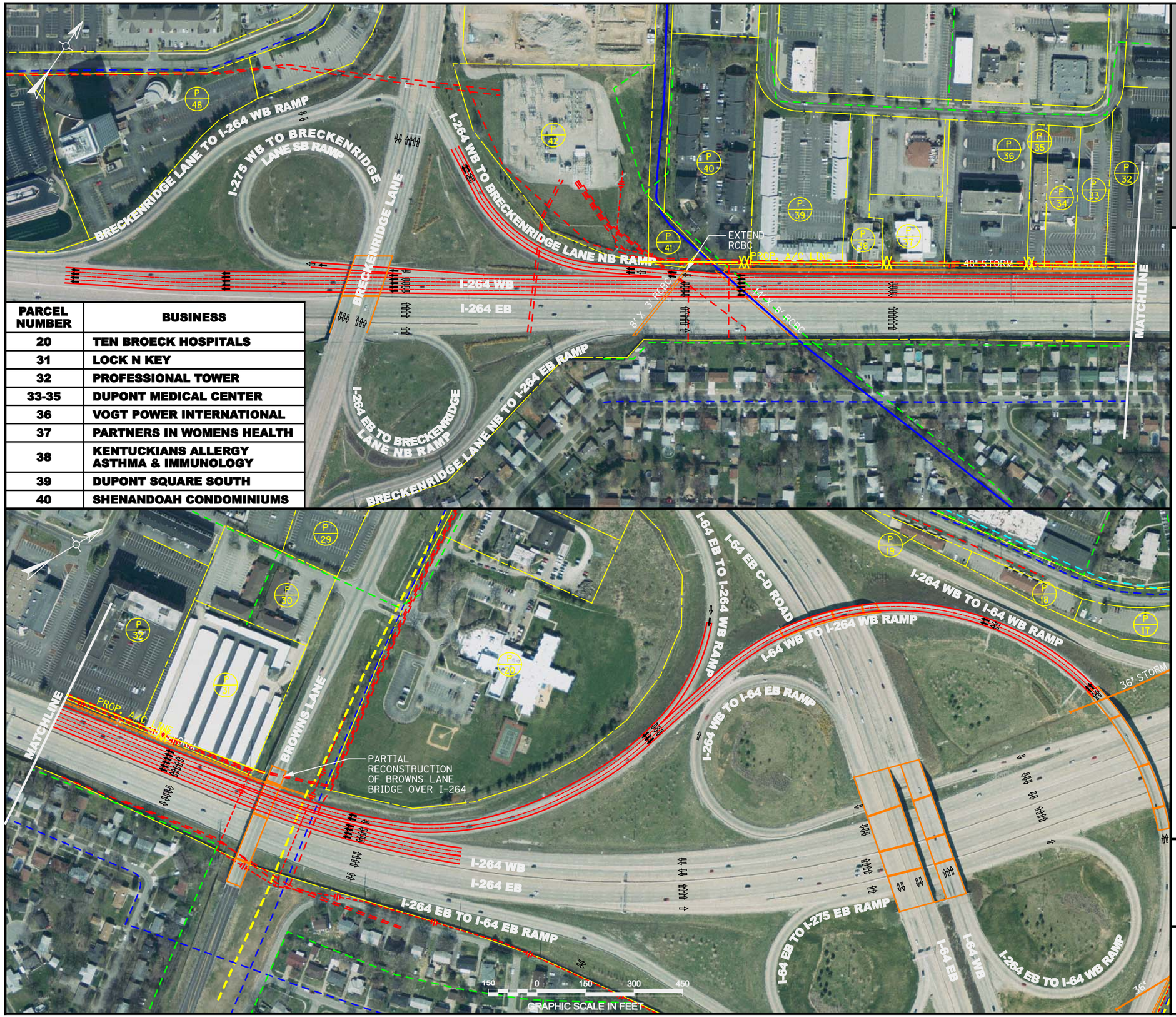
DUTCHMANS LANE
DUPONT ROAD
BRECKENRIDGE LANE
BROWNS LANE
DUPONT CIRCLE
I-264 WB
I-264 EB

ALTERNATE 8 -
I-64 WB EXIT RAMP TO BROWNS LANE/
DUTCHMANS LANE INTERSECTION
LEVEL OF SERVICE ANALYSIS SUMMARY

NOTES:
1. 2005 LOS analysis information shown is for the existing conditions with no proposed improvements.

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-22



PARCEL NUMBER	BUSINESS
20	TEN BROECK HOSPITALS
31	LOCK N KEY
32	PROFESSIONAL TOWER
33-35	DUPONT MEDICAL CENTER
36	VOGT POWER INTERNATIONAL
37	PARTNERS IN WOMENS HEALTH
38	KENTUCKIANS ALLERGY ASTHMA & IMMUNOLOGY
39	DUPONT SQUARE SOUTH
40	SHENANDOAH CONDOMINIUMS

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate provides a 2-lane ramp for I-64 Westbound to I-264 Westbound along its entire length. The additional lane required along I-264 Westbound would extend just beyond the Breckenridge Lane overpass before being dropped.

ANTICIPATED BENEFITS

Construction of a 2-lane ramp for the I-64 Westbound to I-264 Westbound movement would eliminate the current 2-lane to 1-lane merge. This chokepoint causes traffic backups that routinely extend on to I-64 Westbound. The significant problem that results is how to treat the additional lane that is required along I-264 Westbound and its impact to I-264 Westbound traffic going to Breckenridge Lane.

IMPACTS

Major right of way and utility impacts are observed along I-264 Westbound between I-64 and Breckenridge Lane. Major impacts include parking removal, removal of the rear access on Parcel No. 31, potential relocation of several steel electrical transmission poles, and possible reconstruction of a portion of the Browns Lane Bridge over I-264. See sheet CA-24 for a summary of the VISSIM traffic analysis for this alternate.

RESULTS OF TRAFFIC ANALYSIS

Widening of the I-64 Westbound to I-264 Westbound ramp to 2 lanes across its entire length removes the chokepoint, increasing upstream travel speeds. Along I-264 Westbound between I-64 and Breckenridge Lane, travel speeds continue to decrease over time. In this area, the existing weave issues remain, but have been moved another lane further to the right.

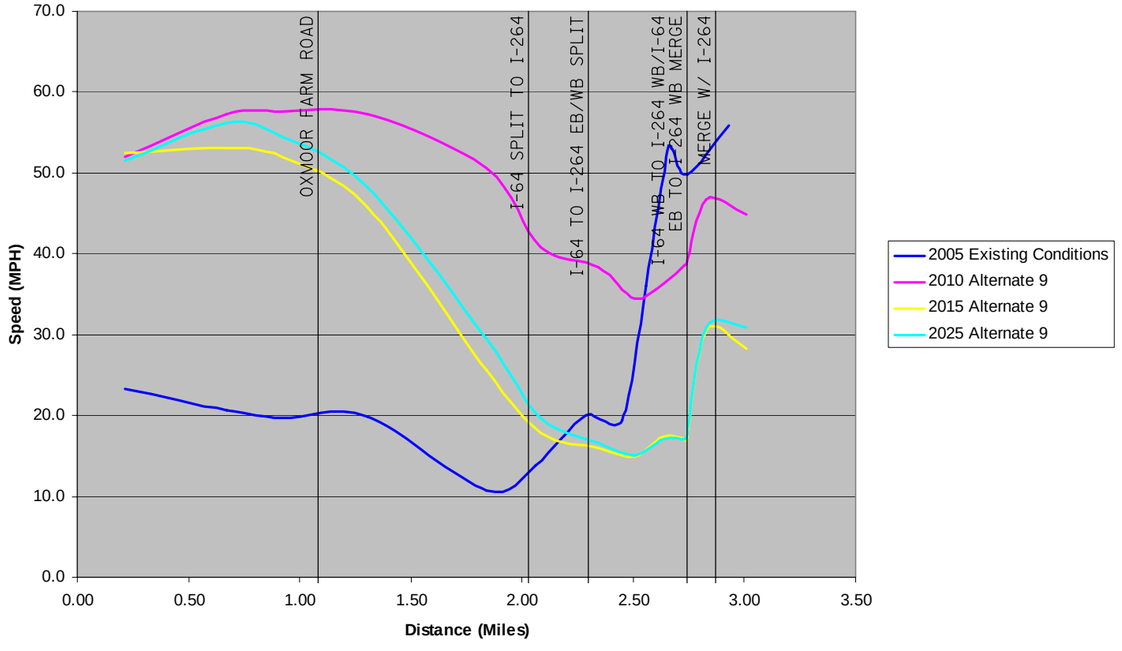
ALTERNATE 9 -
WIDEN I-64 WB TO I-264 WB RAMP TO 2 LANES
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

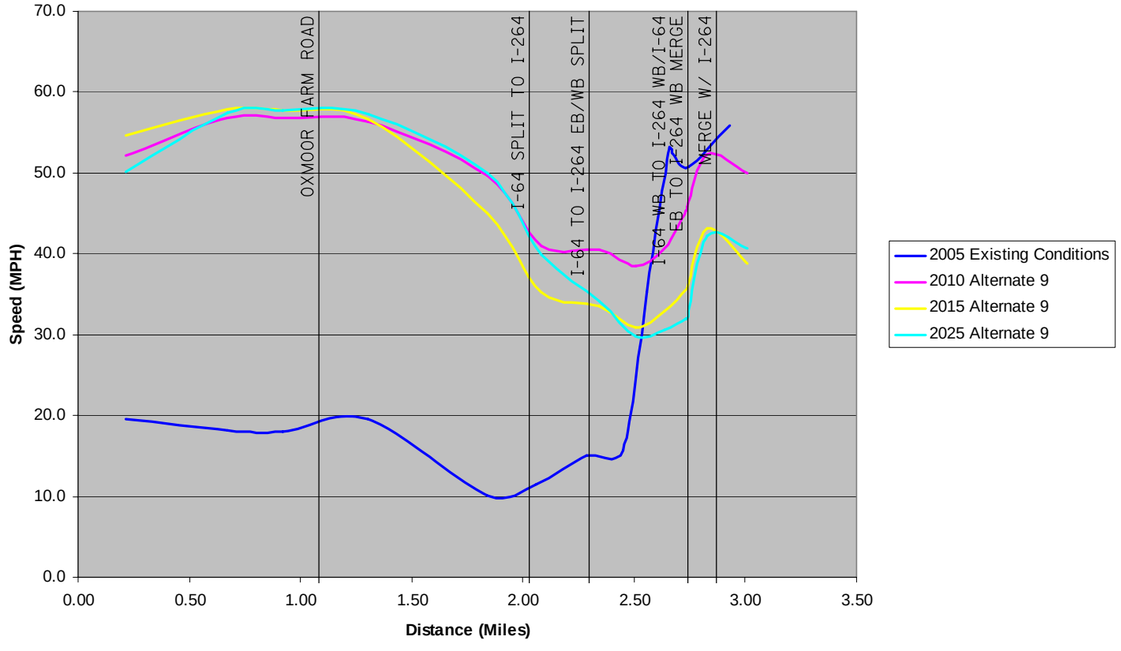
SHEET NO.

CA-23

Average Travel Speeds - AM Peak
I-64 & I-264 - Hurstbourne Lane to Breckenridge Lane



Average Travel Speeds - PM Peak
I-64 & I-264 - Hurstbourne Lane to Breckenridge Lane



NOTES:

1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 9 -
WIDEN I-64 WB TO I-264 WB RAMP TO 2 LANES
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-24

PARCEL NUMBER	BUSINESS
20	TEN BROECK HOSPITALS
31	LOCK N KEY
32	PROFESSIONAL TOWER
33-35	DUPONT MEDICAL CENTER
36	VOGT POWER INTERNATIONAL
37	PARTNERS IN WOMENS HEALTH
38	KENTUCKIANS ALLERGY ASTHMA & IMMUNOLOGY
39	DUPONT SQUARE SOUTH
40	SHENANDOAH CONDOMINIUMS

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate provides for construction of an additional ramp from the existing I-64 Westbound to I-264 Westbound ramp for northbound Breckenridge Lane traffic. I-264 Westbound traffic going to northbound Breckenridge Lane would be signed to use the I-264 Westbound Collector-Distributor road and would exit to Breckenridge Lane prior to merging onto I-264. From Browns Lane to the northbound Breckenridge Lane exit ramp, mainline I-264 Westbound would be separated from the northbound Breckenridge Lane traffic by barrier wall. A slip ramp at I-64 Eastbound and Breckenridge Lane is required since I-64 Eastbound no longer has access to northbound Breckenridge Lane.

ANTICIPATED BENEFITS

Traffic going to northbound Breckenridge Lane would be separated from mainline traffic, eliminating the weave between the exiting and mainline vehicles. Southbound Breckenridge Lane vehicles from I-264 Westbound would already be in the correct lane as the I-264 Westbound Collector - Distributor road merges with I-264 Westbound. Construction of a slip ramp for I-64 Eastbound traffic onto Breckenridge Lane reduces traffic on the I-264 Westbound Exit Ramp to Northbound Breckenridge Lane and on the south leg of the Breckenridge Lane / Dutchmans Lane intersection, reducing congestion in the area.

RESULTS OF TRAFFIC ANALYSIS

Increases in travel speed are observed along I-64 Westbound upstream of the improvement area as a result of the removal of some volume prior to the merge of the I-64 Westbound to I-264 Westbound ramp and I-264 Westbound. Beyond this merge, travel speeds along I-264 Westbound improve to free-flow conditions as a result of the elimination of the weave to Breckenridge Lane. Travel speeds along the I-264 Westbound Collector-Distributor are reduced as a result of the reduction in capacity. See sheets CA-27 through CA-29 for a summary of the VISSIM traffic analysis for this alternate.

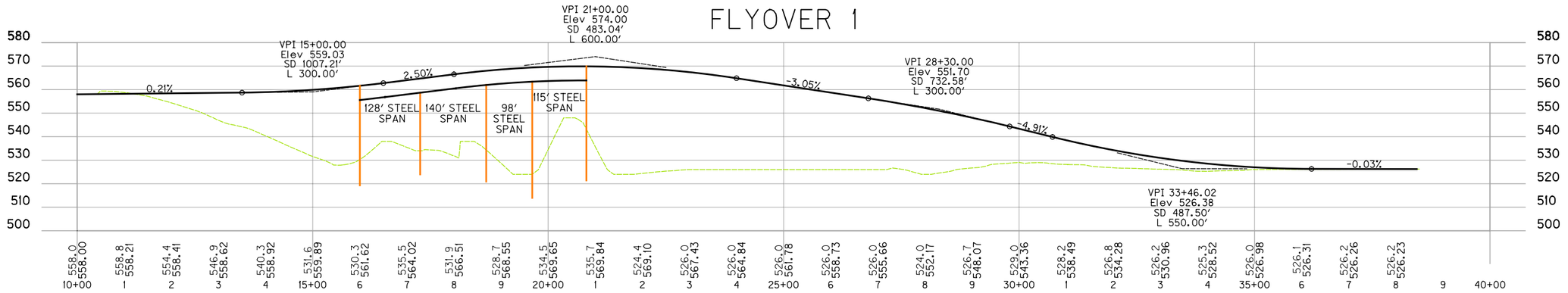
ALTERNATE 10 -
SEPARATE NORTHBOUND BRECKENRIDGE LANE TRAFFIC FROM MAINLINE I-264 WB TRAFFIC
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

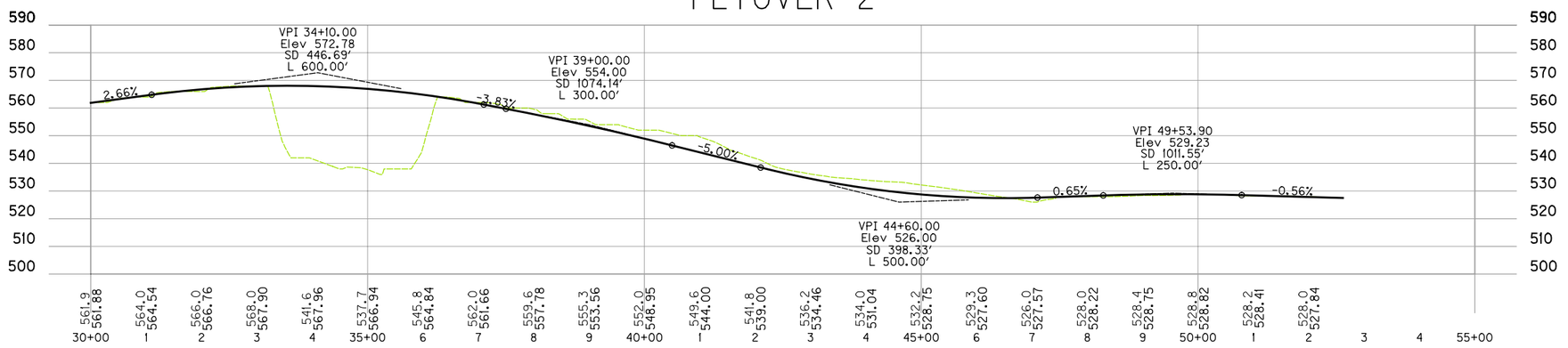
SHEET NO.
CA-25

GRAPHIC SCALE IN FEET
250 0 250 500 750

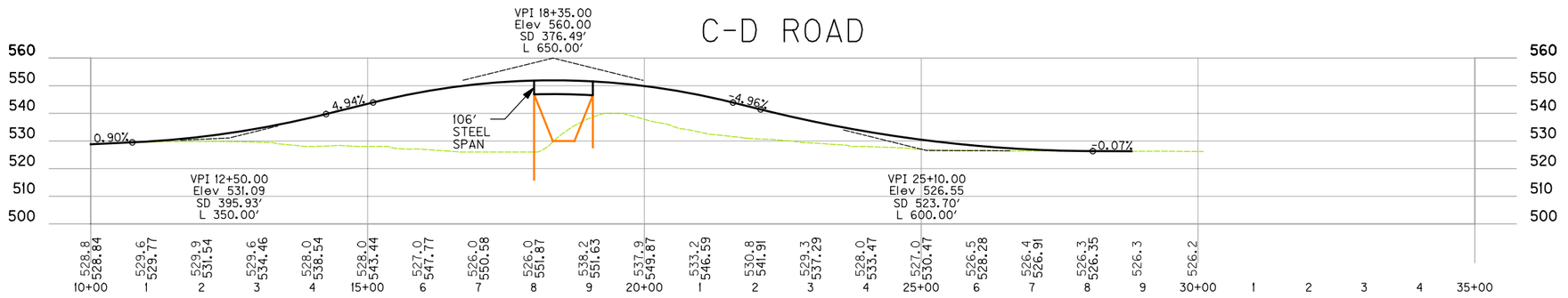
FLYOVER 1



FLYOVER 2



C-D ROAD



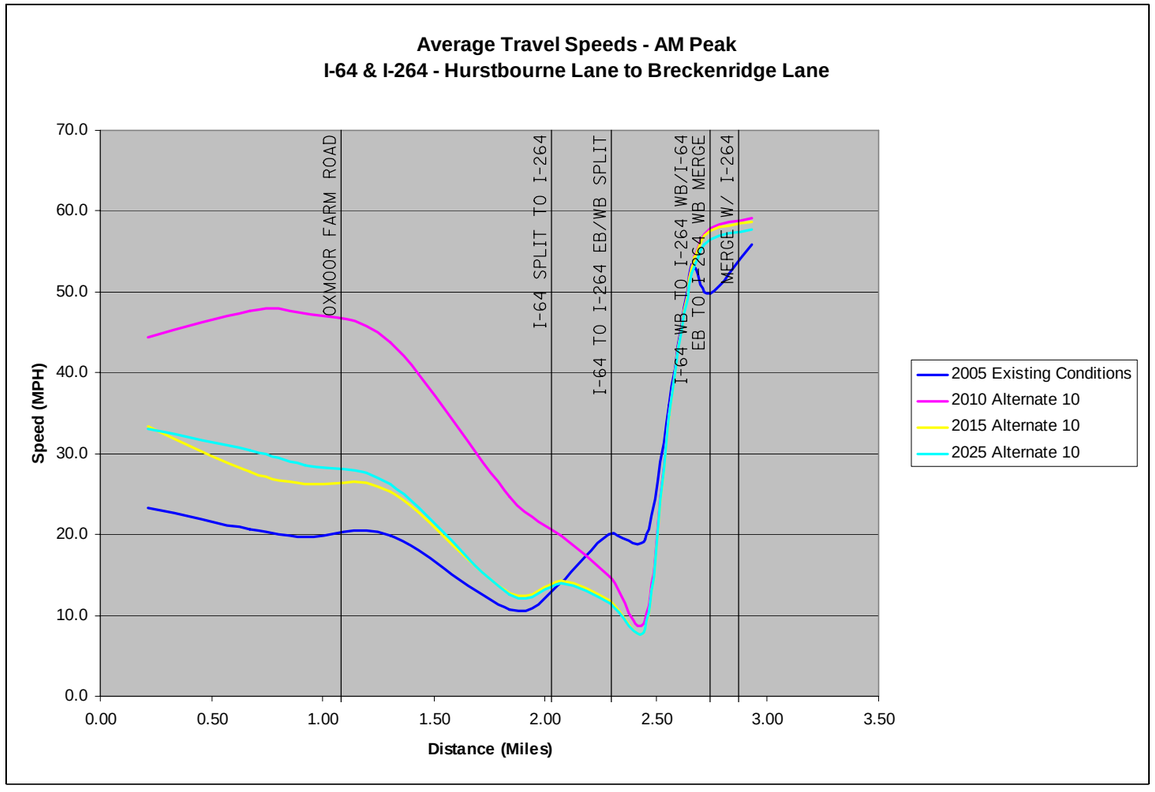
125 0 125 250 325

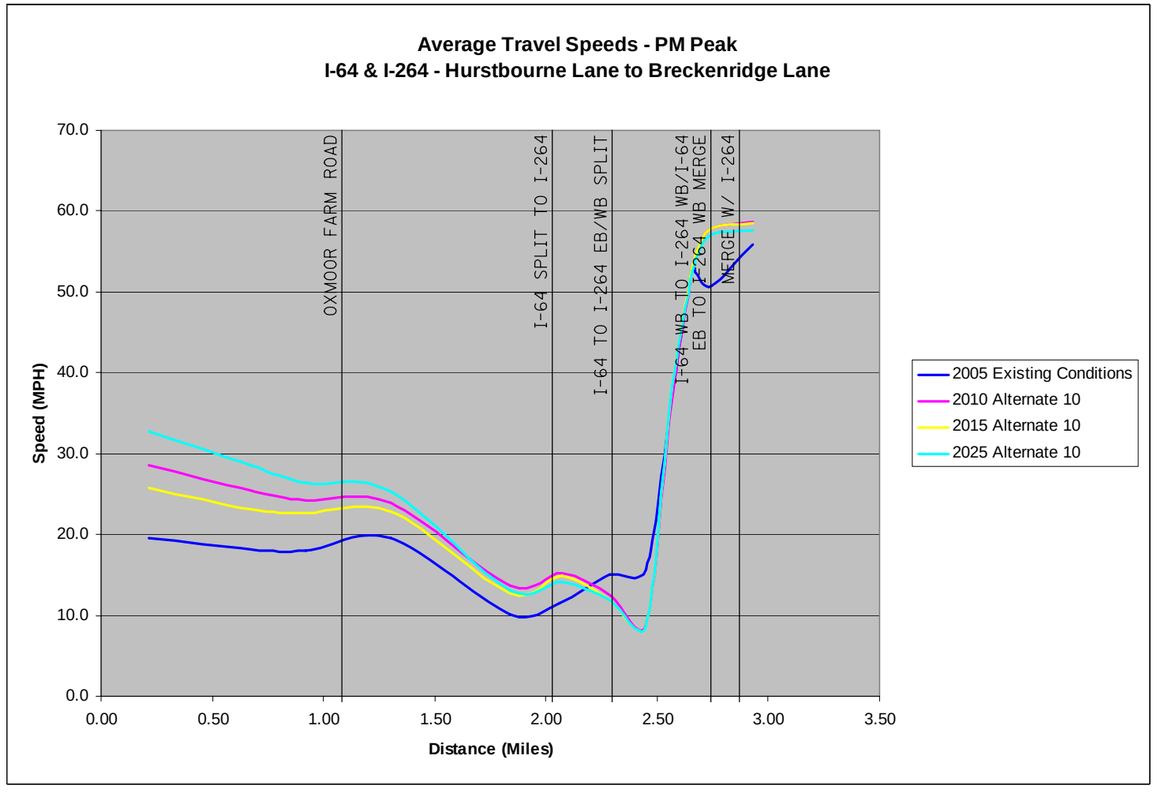
GRAPHIC SCALE IN FEET

ALTERNATE 10 -
SEPARATE NORTHBOUND BRECKENRIDGE LANE TRAFFIC FROM MAINLINE I-264 WB TRAFFIC
PRELIMINARY PROFILE

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-26





NOTES:

1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

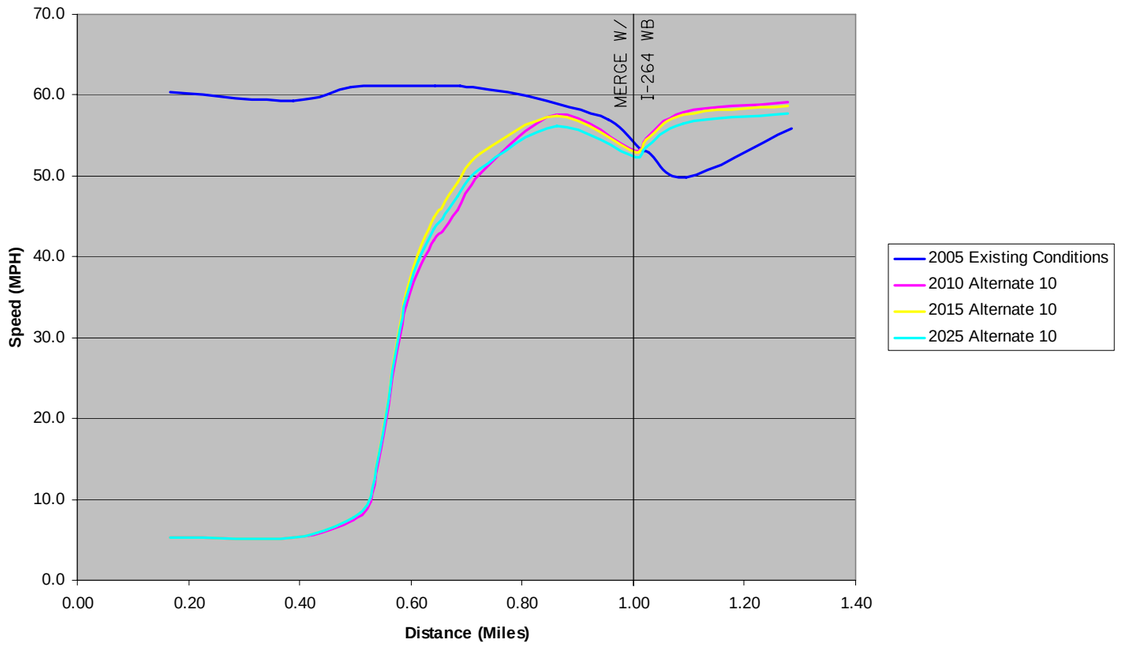
ALTERNATE 10 -
SEPARATE NORTHBOUND BRECKENRIDGE LANE TRAFFIC FROM MAINLINE I-264 WB TRAFFIC
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

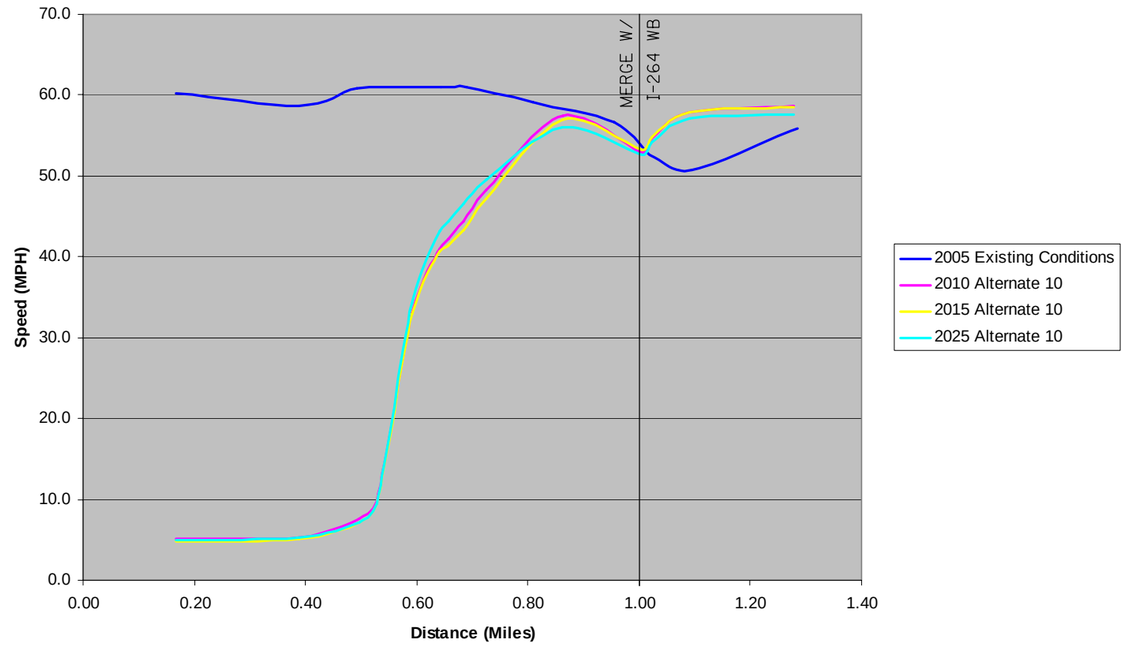
SHEET NO.

CA-27

Average Travel Speeds - AM Peak
I-264 WB C-D Road - Shelbyville Road to Breckenridge Lane



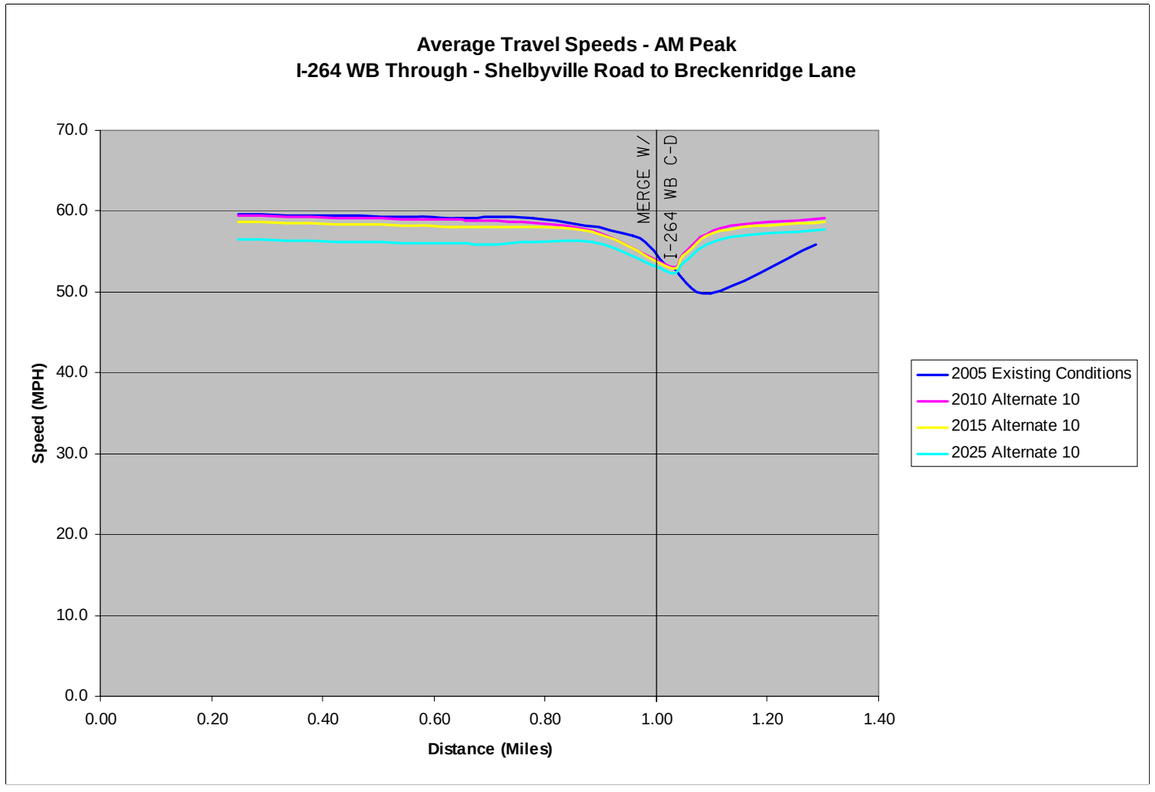
Average Travel Speeds - PM Peak
I-264 WB C-D Road - Shelbyville Road to Breckenridge Lane

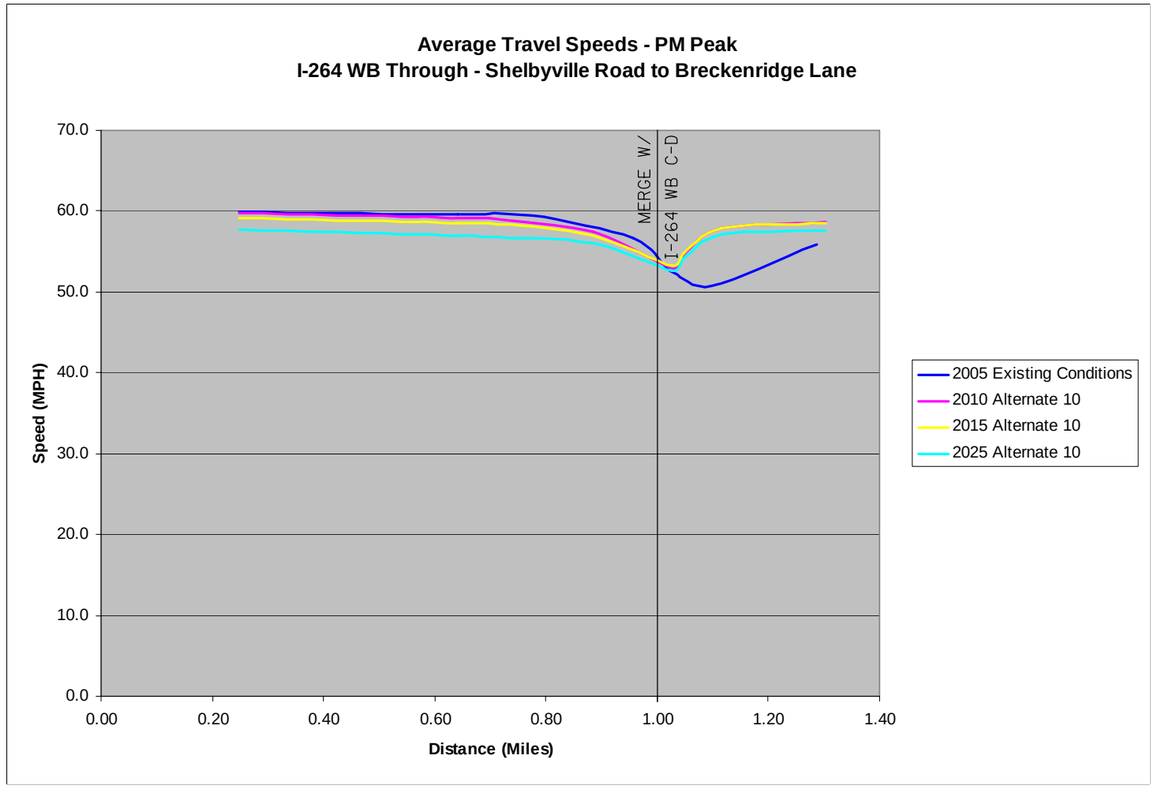


ALTERNATE 10 -
SEPARATE NORTHBOUND BRECKENRIDGE LANE TRAFFIC FROM MAINLINE I-264 WB TRAFFIC
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-28





ALTERNATE 10 -
SEPARATE NORTHBOUND BRECKENRIDGE LANE TRAFFIC FROM MAINLINE I-264 WB TRAFFIC
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-29

PARCEL NUMBER	BUSINESS
55	BAPTIST HOSPITAL EAST
56	ADVANCED IMPLANT CENTER, KORT DUPONT PHYSICAL THERAPY

KRESGE WAY
I-64 WB
I-64 EB
REMOVE EXISTING BRIDGE & CONSTRUCT NEW 2-SPAN BRIDGE OVER I-64
NEW SIGNALIZED INTERSECTION
NEW SIGNALIZED INTERSECTION (OPTIONAL)
RETAINING WALL
RETAINING WALL
PROP. A/C LINE
RAMP C
PROP. A/C LINE
RAMP B
DUPONT RD.
BRECKENRIDGE LANE
WIDEN 3-SPAN BRIDGE OVER BEARGRASS CREEK
36" STORM
310+00
305+00
300+00
295+00
290+00
285+00
280+00
275+00
270+00
GRAPHIC SCALE IN FEET
100 0 100 200 300

Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate provides for the construction of a partial interchange at I-64 and Breckenridge Lane. A ramp to eastbound I-64 and a ramp from westbound I-64 to Breckenridge Lane would be provided. The alternate could also include the use of dynamic message signs for I-64 Westbound and I-264 Westbound east of the project. The dynamic message signs would be linked to loops on Ramp C of the new partial interchange and the existing I-264 Westbound exit ramp to northbound Breckenridge Lane. The signs would direct traffic bound for the Dupont Area to the alternate access when the queue on one of the ramps extends across the loop.

ANTICIPATED BENEFITS

This alternate would provide an alternate access point for I-264 and I-64 westbound traffic to the Dupont area and an additional access point for Dupont area traffic going to eastbound I-64 or I-264. The alternate access should relieve congestion at the I-264 / Breckenridge Lane Interchange.

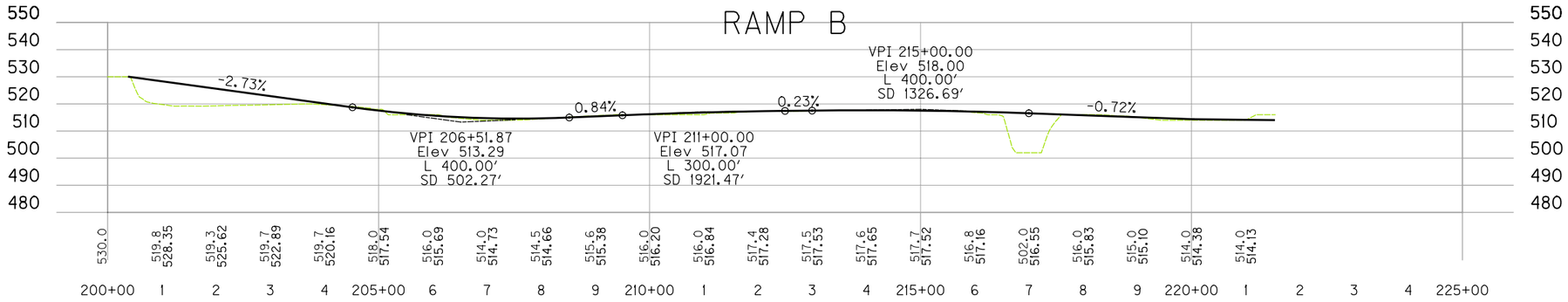
RESULTS OF TRAFFIC ANALYSIS

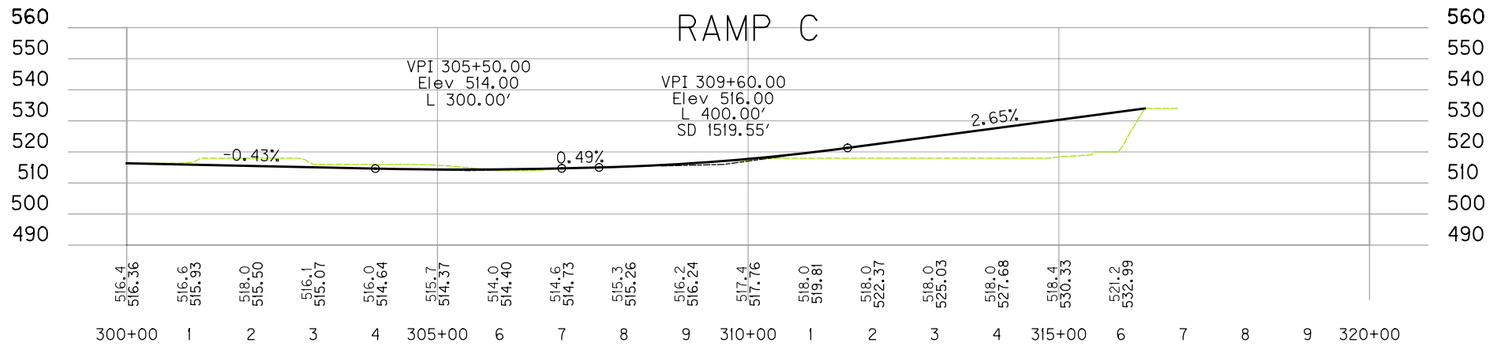
The traffic analysis shows no direct major impacts to the operations of the I-64 Westbound to I-264 Westbound ramp and I-64 and I-264 Westbound, even though volumes would be diverted to the new access. Level of service analysis indicates delay is decreased at the I-264 Westbound / Breckenridge Lane and Breckenridge Lane / Dutchmans Lane Intersections as a result of reduced volumes, but remains LOS F. No major impacts to the Breckenridge Lane / Kresge Way or Breckenridge Lane / Dupont Road Intersections are observed, other than those associated with traffic growth over time. See sheets CA-32 and CA-33 for a summary of the traffic analysis for this alternate.

ALTERNATE 11 -
PARTIAL INTERCHANGE AT I-64 & BRECKENRIDGE LANE
PLAN VIEW

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-30





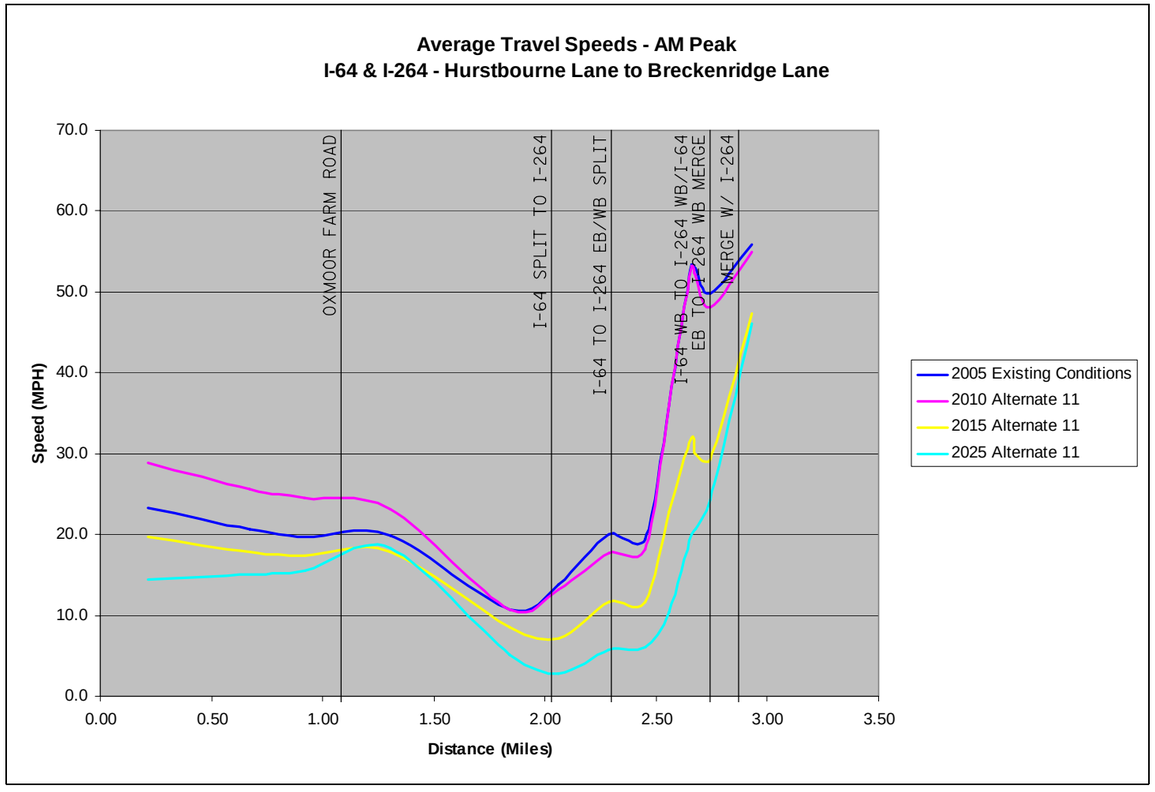
125 0 125 250 325

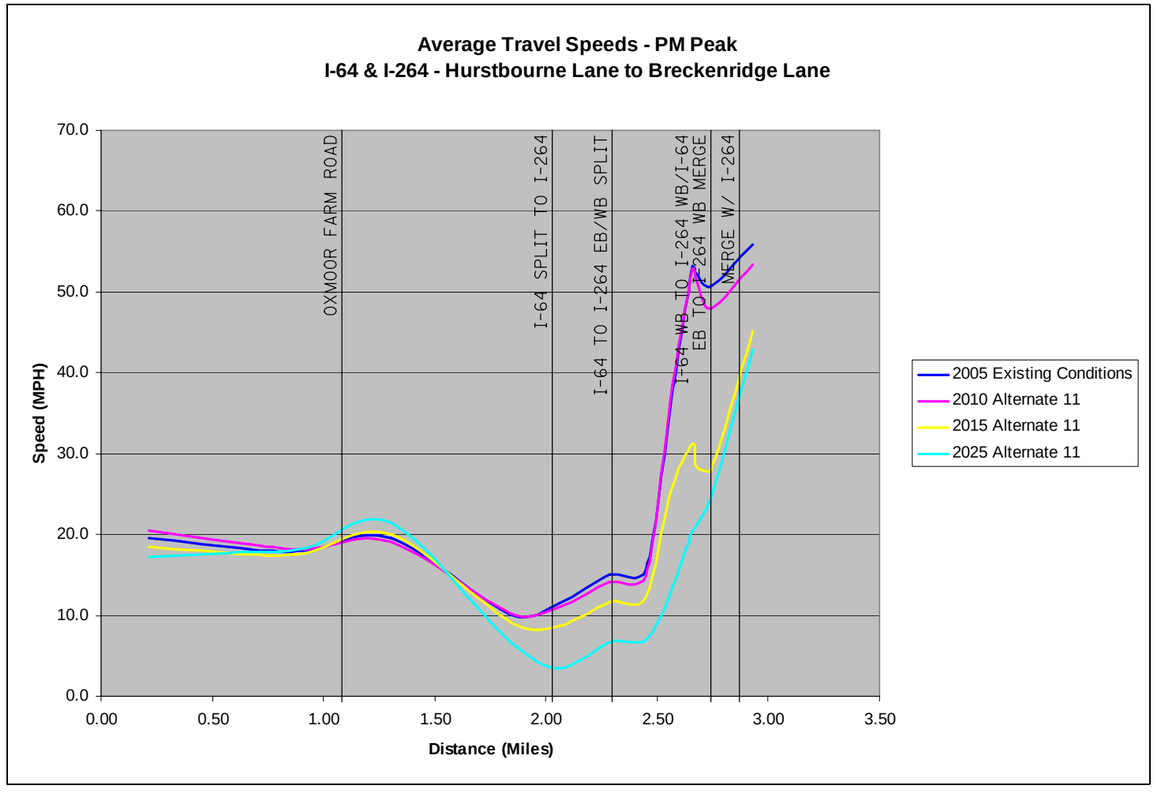
GRAPHIC SCALE IN FEET

ALTERNATE 11 -
PARTIAL INTERCHANGE AT I-64 & BRECKENRIDGE LANE
PRELIMINARY PROFILES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-31





NOTES:

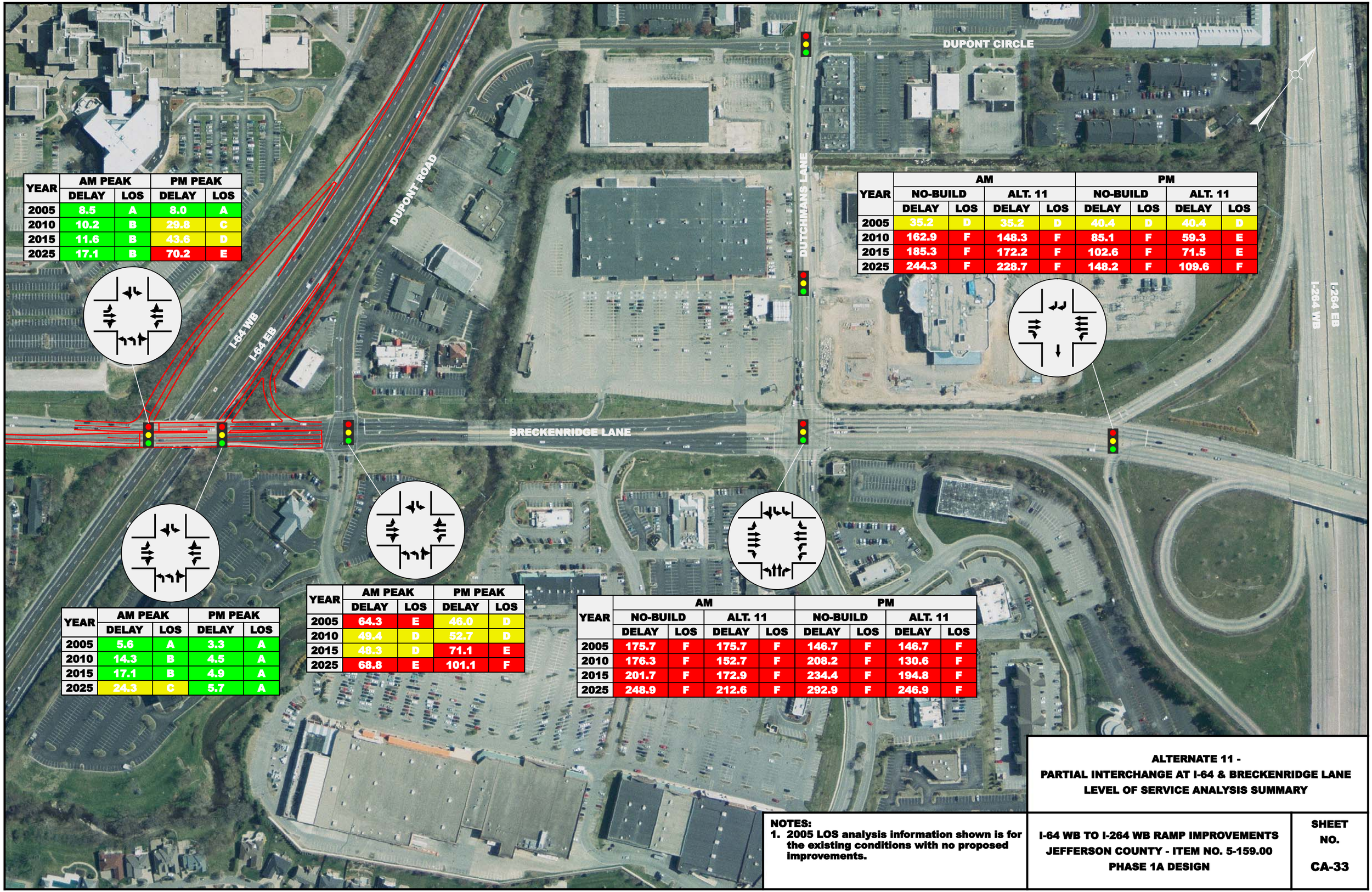
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 11 -
PARTIAL INTERCHANGE AT I-64 & BRECKENRIDGE LANE
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-32



YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	8.5	A	8.0	A
2010	10.2	B	29.8	C
2015	11.6	B	43.6	D
2025	17.1	B	70.2	E

YEAR	AM				PM			
	NO-BUILD		ALT. 11		NO-BUILD		ALT. 11	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
2005	35.2	D	35.2	D	40.4	D	40.4	D
2010	162.9	F	148.3	F	85.1	F	59.3	E
2015	185.3	F	172.2	F	102.6	F	71.5	E
2025	244.3	F	228.7	F	148.2	F	109.6	F

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	5.6	A	3.3	A
2010	14.3	B	4.5	A
2015	17.1	B	4.9	A
2025	24.3	C	5.7	A

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	64.3	E	46.0	D
2010	49.4	D	52.7	D
2015	48.3	D	71.1	E
2025	68.8	E	101.1	F

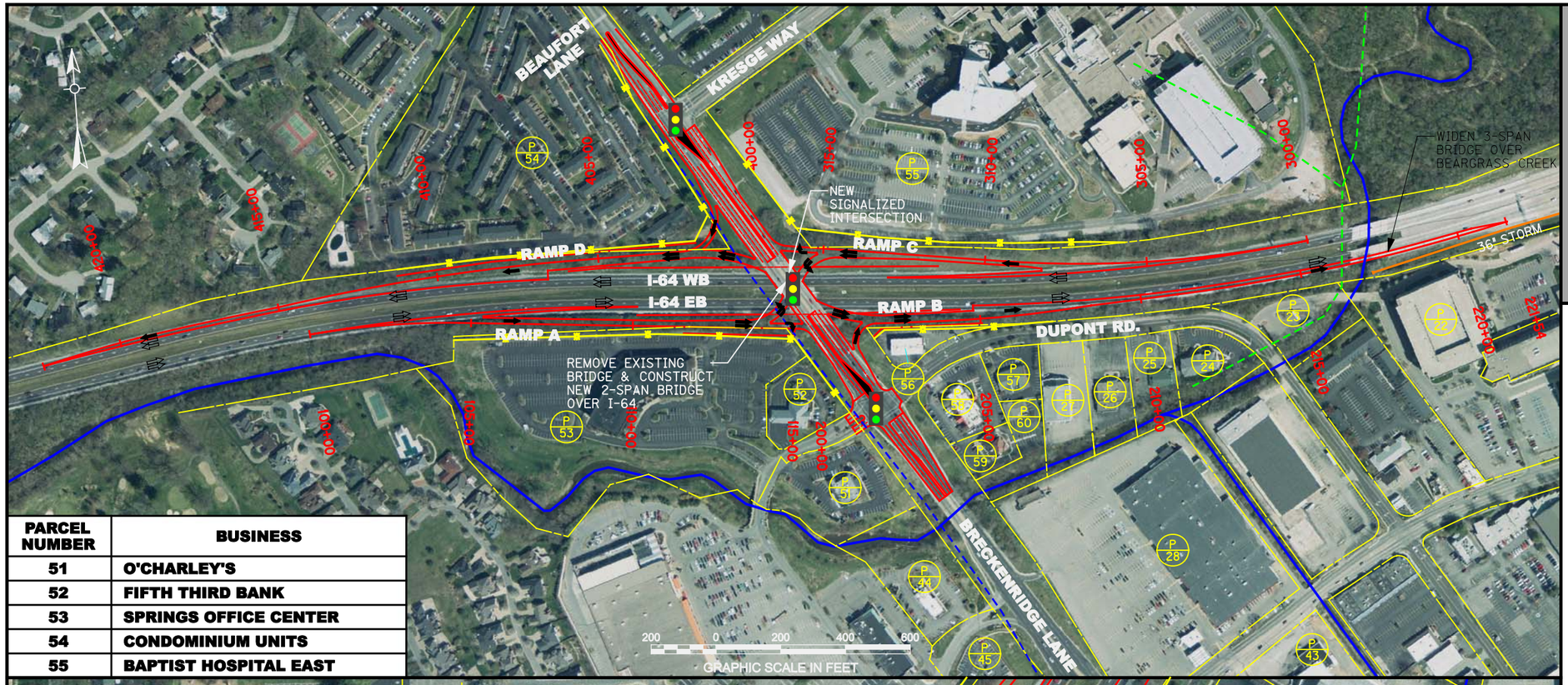
YEAR	AM				PM			
	NO-BUILD		ALT. 11		NO-BUILD		ALT. 11	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
2005	175.7	F	175.7	F	146.7	F	146.7	F
2010	176.3	F	152.7	F	208.2	F	130.6	F
2015	201.7	F	172.9	F	234.4	F	194.8	F
2025	248.9	F	212.6	F	292.9	F	246.9	F

ALTERNATE 11 -
PARTIAL INTERCHANGE AT I-64 & BRECKENRIDGE LANE
LEVEL OF SERVICE ANALYSIS SUMMARY

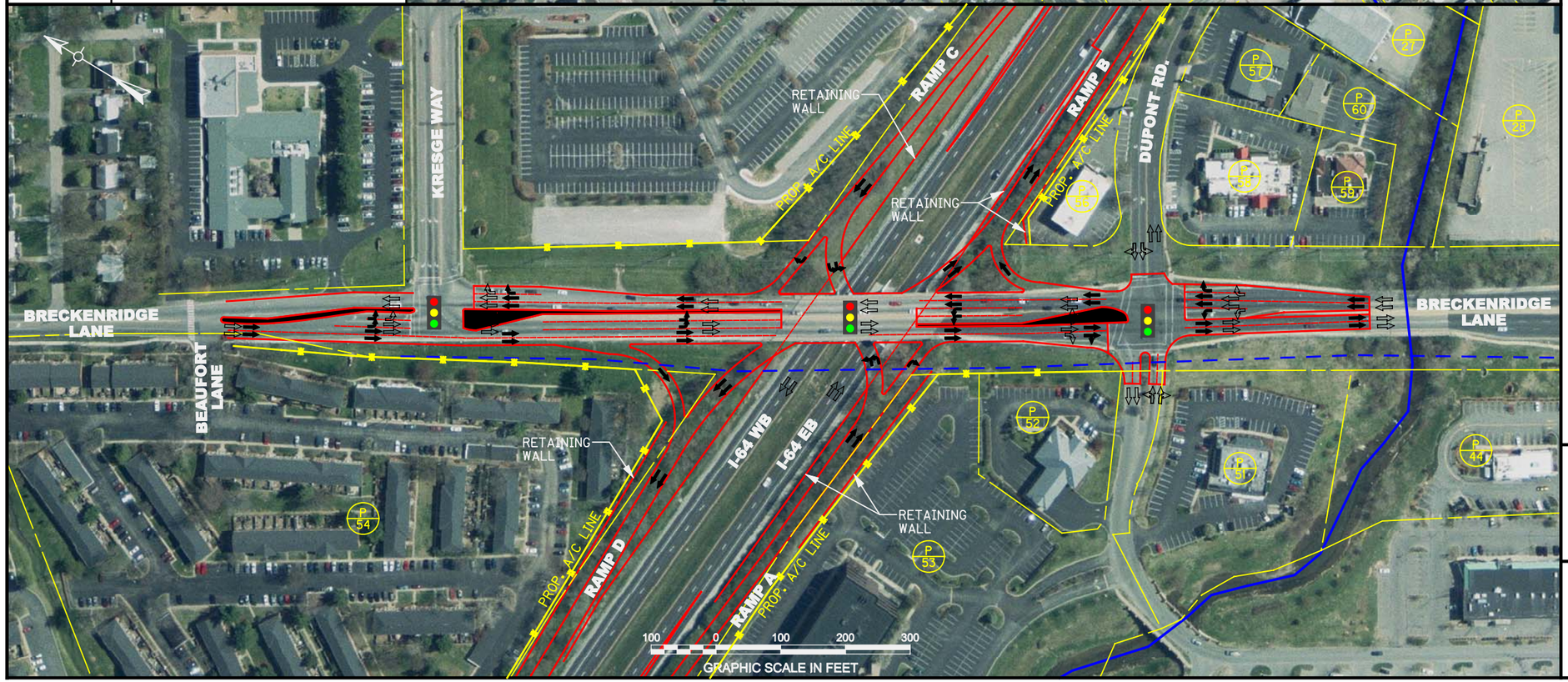
NOTES:
1. 2005 LOS analysis information shown is for the existing conditions with no proposed improvements.

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-33



PARCEL NUMBER	BUSINESS
51	O'CHARLEY'S
52	FIFTH THIRD BANK
53	SPRINGS OFFICE CENTER
54	CONDOMINIUM UNITS
55	BAPTIST HOSPITAL EAST



Legend

- Existing Traffic Lane
- Proposed Traffic Lane
- Existing Right of Way or Property Line
- Blue Line Stream
- Overhead Electric
- Underground Electric
- Gas Line
- Water Line
- Sanitary Sewer
- Underground Fiber-Optic

DESCRIPTION OF ALTERNATE

This alternate provides for the construction of a single-point urban interchange (SPUI) at I-64 and Breckenridge Lane. The alternate could also include the use of dynamic message signs for I-64 Westbound and I-264 Westbound east of the project. The dynamic message signs would be linked to loops on Ramp C of the new interchange and the existing I-264 Westbound exit ramp to northbound Breckenridge Lane. The signs would direct traffic bound for the Dupont Area to the alternate access when the queue on one of the ramps extends across the loop. Dual left-turn lanes on the northbound leg of the new interchange require removal of the southbound left-turn lane from Breckenridge Lane to Dupont Road.

ANTICIPATED BENEFITS

Construction of a full movement interchange at I-64 and Breckenridge Lane should relieve congestion at the I-264 / Breckenridge Lane Interchange. The new access point should draw traffic going into and out of the Dupont area away from the I-264 / Breckenridge Lane Interchange.

RESULTS OF TRAFFIC ANALYSIS

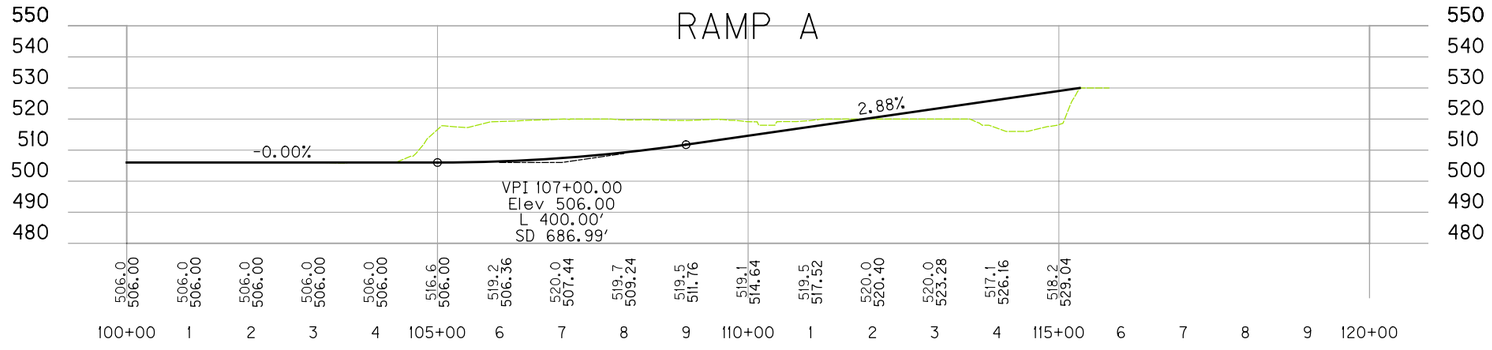
The traffic analysis shows no direct major impacts to the operations of the I-64 Westbound to I-264 Westbound ramp and I-64 and I-264 Westbound, even though volumes would be diverted to the new access. Level of service analysis indicates delay is decreased at the I-264 Westbound/ Breckenridge Lane and Breckenridge Lane / Dutchmans Lane Intersections as a result of reduced volumes, but remains LOS F. No major impacts to the Breckenridge Lane / Kresge Way or Breckenridge Lane / Dupont Road Intersections are observed, other than those associated with traffic growth over time. See sheets CA-36 and CA-37 for a summary of the traffic analysis for this alternate.

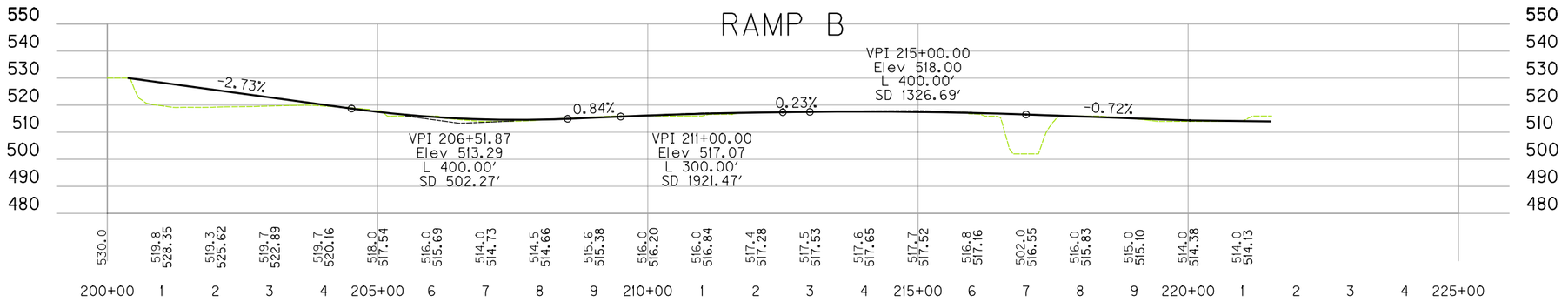
ALTERNATE 12 -
SINGLE POINT URBAN INTERCHANGE (SPUI)
AT I-64 AND BRECKENRIDGE LANE
PLAN VIEW

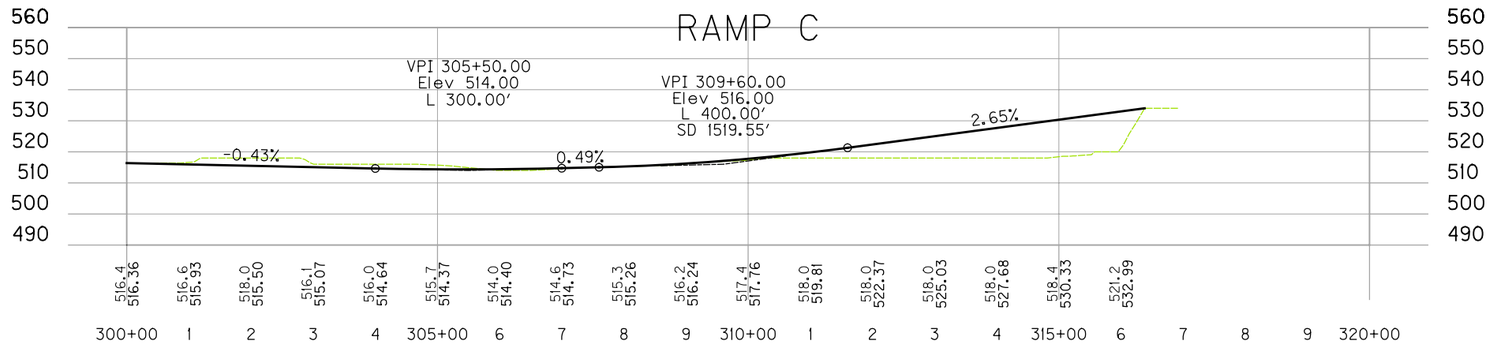
I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

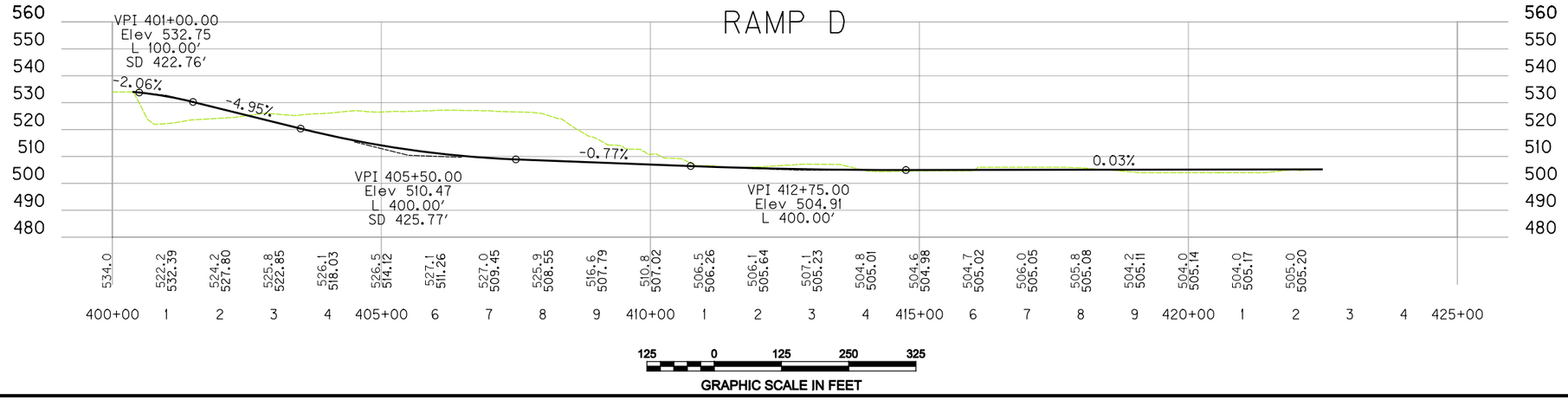
SHEET NO.

CA-34









125 0 125 250 325

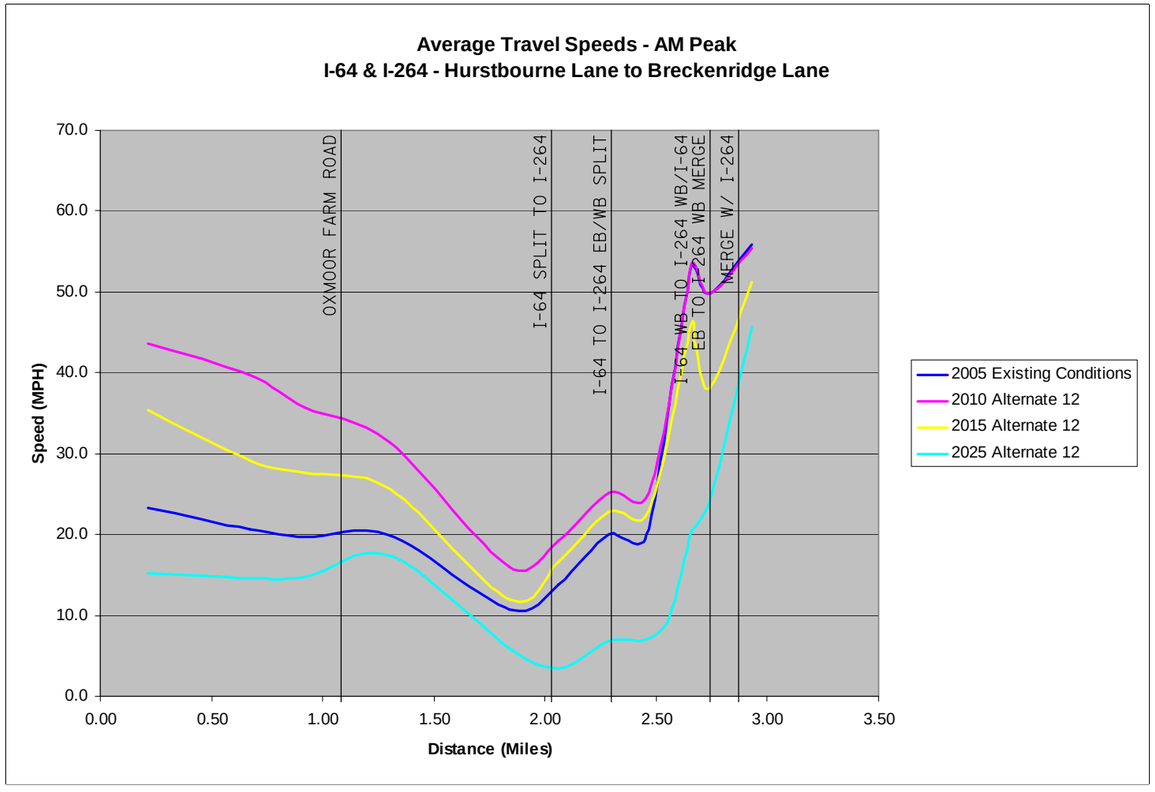
GRAPHIC SCALE IN FEET

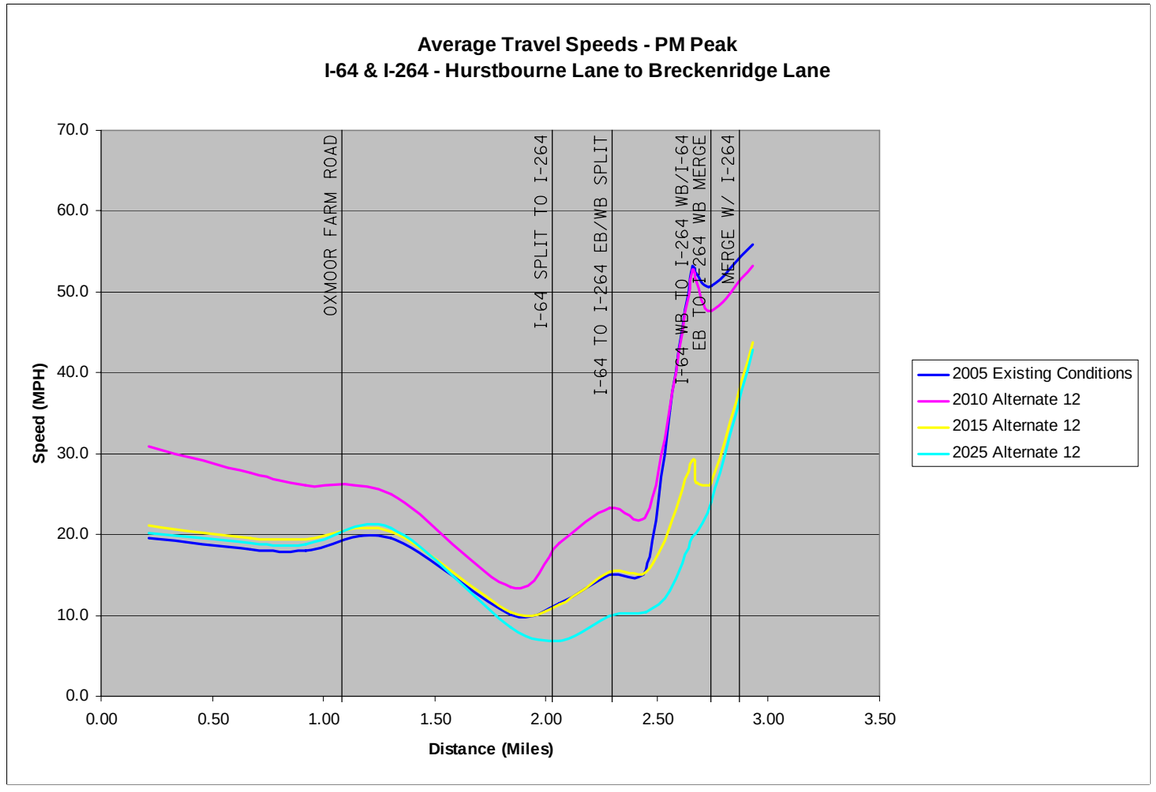
ALTERNATE 12 -
SINGLE-POINT URBAN INTERCHANGE (SPUI)
AT I-64 & BRECKENRIDGE LANE
PRELIMINARY PROFILES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-35





NOTES:

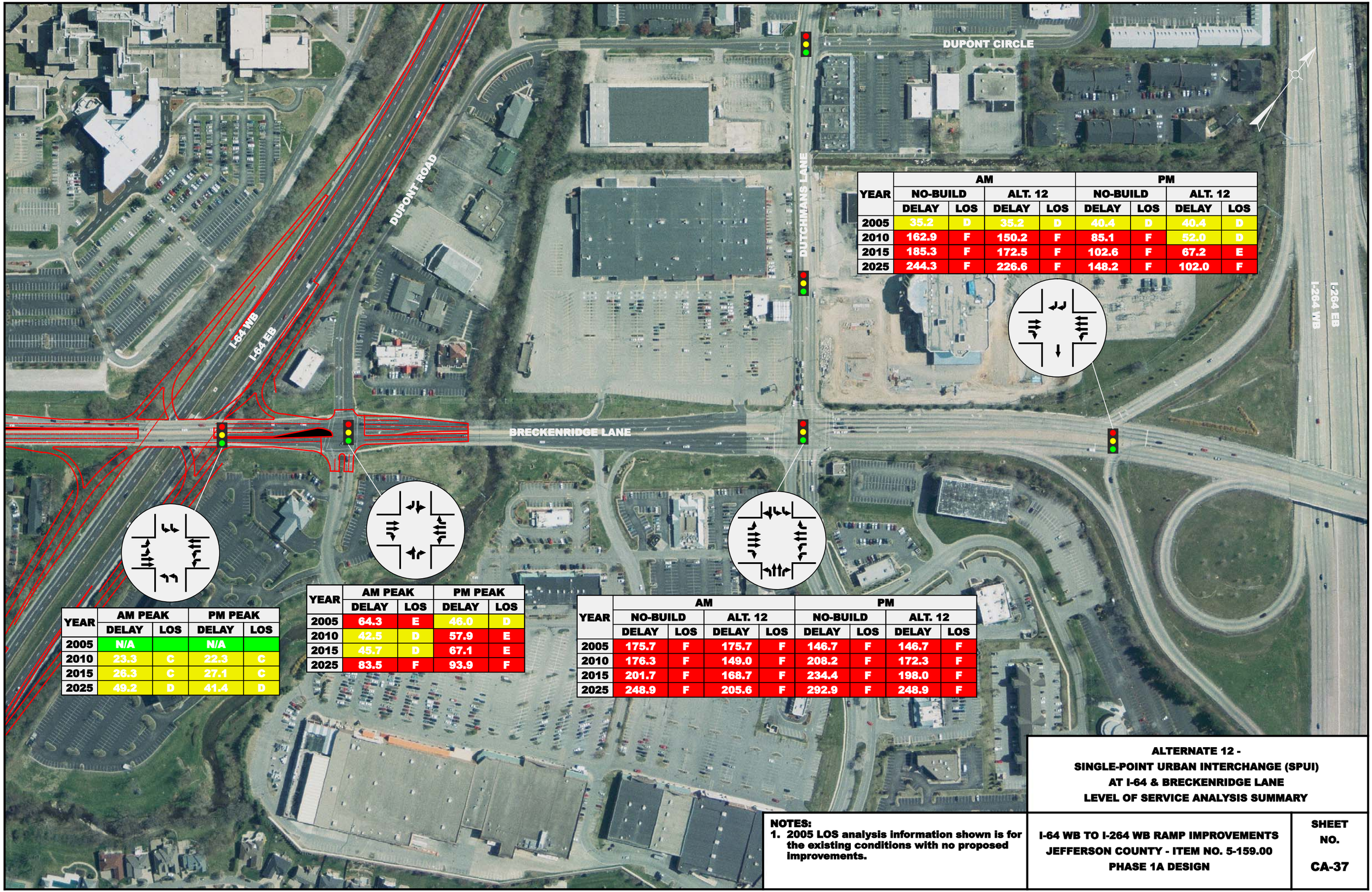
1. **Average travel speed along I-64 and I-264 in the westbound direction between Hurstbourne Lane and Breckenridge Lane shown varies slightly from that shown in Existing and Future Conditions Report. This is due to the incorporation into the VISSIM model of several signalized intersections along Dutchmans Lane. These downstream intersections impact upstream traffic flow, resulting in the varied average travel speeds.**

ALTERNATE 12 -
SINGLE-POINT URBAN INTERCHANGE (SPUI)
AT I-64 & BRECKENRIDGE LANE
VISSIM TRAFFIC SIMULATION SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.

CA-36



YEAR	AM				PM			
	NO-BUILD		ALT. 12		NO-BUILD		ALT. 12	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
2005	35.2	D	35.2	D	40.4	D	40.4	D
2010	162.9	F	150.2	F	85.1	F	52.0	D
2015	185.3	F	172.5	F	102.6	F	67.2	E
2025	244.3	F	226.6	F	148.2	F	102.0	F

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	N/A		N/A	
2010	23.3	C	22.3	C
2015	26.3	C	27.1	C
2025	49.2	D	41.4	D

YEAR	AM PEAK		PM PEAK	
	DELAY	LOS	DELAY	LOS
2005	64.3	E	46.0	D
2010	42.5	D	57.9	E
2015	45.7	D	67.1	E
2025	83.5	F	93.9	F

YEAR	AM				PM			
	NO-BUILD		ALT. 12		NO-BUILD		ALT. 12	
	DELAY	LOS	DELAY	LOS	DELAY	LOS	DELAY	LOS
2005	175.7	F	175.7	F	146.7	F	146.7	F
2010	176.3	F	149.0	F	208.2	F	172.3	F
2015	201.7	F	168.7	F	234.4	F	198.0	F
2025	248.9	F	205.6	F	292.9	F	248.9	F

NOTES:
1. 2005 LOS analysis information shown is for the existing conditions with no proposed improvements.

ALTERNATE 12 -
SINGLE-POINT URBAN INTERCHANGE (SPUI)
AT I-64 & BRECKENRIDGE LANE
LEVEL OF SERVICE ANALYSIS SUMMARY

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-37

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
CONCEPTUAL ALTERNATES EVALUATION MATRIX

ALTERNATE NO.	DESCRIPTION OF ALTERNATE	RIGHT OF WAY / UTILITIES						ENVIRONMENTAL			CONGESTION MITIGATION (1=no improvements, 5=best)				TRAFFIC		Estimated Construction Cost
		Acres Acquired	Parcels Affected	Residential Relocations	Business Displacements	Right of Way Costs	Utility Relocation Costs	Business Impacts	Residential Impacts	Blue Line Stream Impacts	I-64 Westbound	I-264 Westbound	Breckenridge Lane	Dutchmans Lane	Dupont Area Access Improvement	Maintenance of Traffic Impacts / Constructibility	
1	Reduce I-64 WB to I-264 WB Ramp to a 1-Lane Ramp	None	None	None	None	None	None	None	None	None	1	1	1	1	None	Low	$50,000
2	Provide 2 Dedicated Lanes for the I-64 WB to I-264 Ramp, 1 Lane for I-264 EB and 1 Lane for I-264 WB	None	None	None	None	None	Low	None	None	None	4	1	1	1	None	Medium	$2,400,000
3	Provide 2 Dedicated Lanes for the I-64 WB to I-264 Ramp, No Changes to the Ramp Configuration	None	None	None	None	None	Low	None	None	None	5	1	1	1	None	Medium	$2,300,000
4	Provide 3 Lanes for the I-64 WB to I-264 Ramp, 1 Lane for I-264 EB and 2 Lanes for I-264 WB	None	None	None	None	None	Low	None	None	None	1	1	1	1	None	Medium	$3,100,000
5	Reduce I-264 WB C-D Road to 1-Lane at Merge with I-264 WB	None	None	None	None	None	None	None	None	None	1	3	1	1	Low	Low	$300,000
6	Merge I-264 WB and I-264 WB C-D Road Sooner to Increase Length of Weave to Breckenridge Lane Ramp	None	None	None	None	None	None	None	None	None	1	4	1	1	Low	Low	$300,000
7	Split I-264 WB Exit to Northbound Breckenridge Lane Traffic	None	None	None	None	None	None	None	None	None	1	3	3	2	Low	Low	$700,000
8	I-64 WB Exit off Flyover to Browns Lane / Dutchmans Lane Intersection	1.7	2	None	1	High	Low	1	None	None	1	3	3	1	Medium	Medium	$6,100,000
9	Widen I-64 WB to I-264 WB Ramp to 2 Lanes	0.5	12	None	None	High	High	7	None	1	3	1	1	1	Low	High	$6,900,000
10	Separate Northbound Breckenridge Lane Traffic from Mainline I-264 WB Traffic	3.3	12	None	2	High	High	7	None	1	1	3	1	1	Medium	High	$13,900,000
11	Partial Interchange at I-64 & Breckenridge Lane	0.5	2	None	None	Medium	Medium	1	None	1	4	4	4	2	High	High	$14,600,000
12	Single Point Urban Interchange (SPUI) at I-64 & Breckenridge Lane	1.4	4	None	None	Medium	Medium	1	1	1	5	5	5	2	High	High	$25,100,000

NOTES:
1. Project costs are planning level estimates and include a 25% contingency.
2. Qualitative ratings are comparative to the other alternates.

EVALUATION MATRIX OF CONCEPTUAL ALTERNATES

I-64 WB TO I-264 WB RAMP IMPROVEMENTS
JEFFERSON COUNTY - ITEM NO. 5-159.00
PHASE 1A DESIGN

SHEET NO.
CA-38

APPENDIX E

Traffic Forecast

Rcd. 12-19-05

Arlen Sandlin

TRANSPORTATION CABINET
Frankfort, Kentucky 40622
www.kentucky.gov

Ernie Fletcher
Governor

Bill Nighbert
Acting Secretary

Marc Williams
Commissioner of Highways

INTRA-DEPARTMENTAL MEMO

TO: Barry Sanders, P.E.
Chief District Engineer
District 5 – Louisville

ATTN: Jason Richardson

FROM: Daryl J. Greer, P.E.
Director
Division of Planning

DATE: December 15, 2005

SUBJECT: Jefferson County Traffic Forecasts
I-64 Westbound to I-264 Westbound Ramp Improvements
Item # 5 -159.00

This is in response to your August 24, 2005, request for traffic forecasts on the subject project. We are providing ESAL forecasts and turning movements for the subject project. Traffic forecasts are given for the current year (2005) and design year (2025) for the build scenario.

If you have any questions, please call Lynn Soporowski or David Hamilton of this Division at (502) 564-7183.

DJG/DAH/NH

Attachments

c/att: Robert Frazier
Arlen Sandlin
Dan Hite
Ananias Calvin

Jefferson County Traffic Forecast
I-64 WB to I-264 WB Ramp Improvements
Item # 05-159.00

KENTUCKY TRANSPORTATION CABINET

Division of Planning

December 7, 2005

Table of Contents

Traffic Forecast
Executive Summary

PROJECT DESCRIPTION
The purpose of this project is to analyze traffic for the I-64 westbound to I-264 westbound ramp improvements project. PB (Parsons Brinckerhoff Quade & Douglas) was contracted to develop a complete CORSIM model for the purpose of analyzing the existing westbound interchange operations and evaluating various improvement alternatives. PB requested traffic projections on various segments around the project area to develop the CORSIM model.

TYPE of FORECASTS
The following types of forecasts were developed:

- Average daily traffic (ADT) projections were developed for 13 segments (ramps, etc.) in the project area for the analysis years 2005, 2010, 2015, and 2025.
- Analysis years 2005, 2010, 2015, and 2025 ADT and DHV turning movement forecasts were provided for the Breckenridge Lane & I-264 Ramps and the Breckenridge Lane & Dutchman's Lane intersections.
- Truck percentage forecasts were provided for the aforementioned 13 segments for the analysis years 2005, 2010, 2015, and 2025. In addition 5, 10, 15, and 20 year ESALs were forecasted for six of the 13 segments.

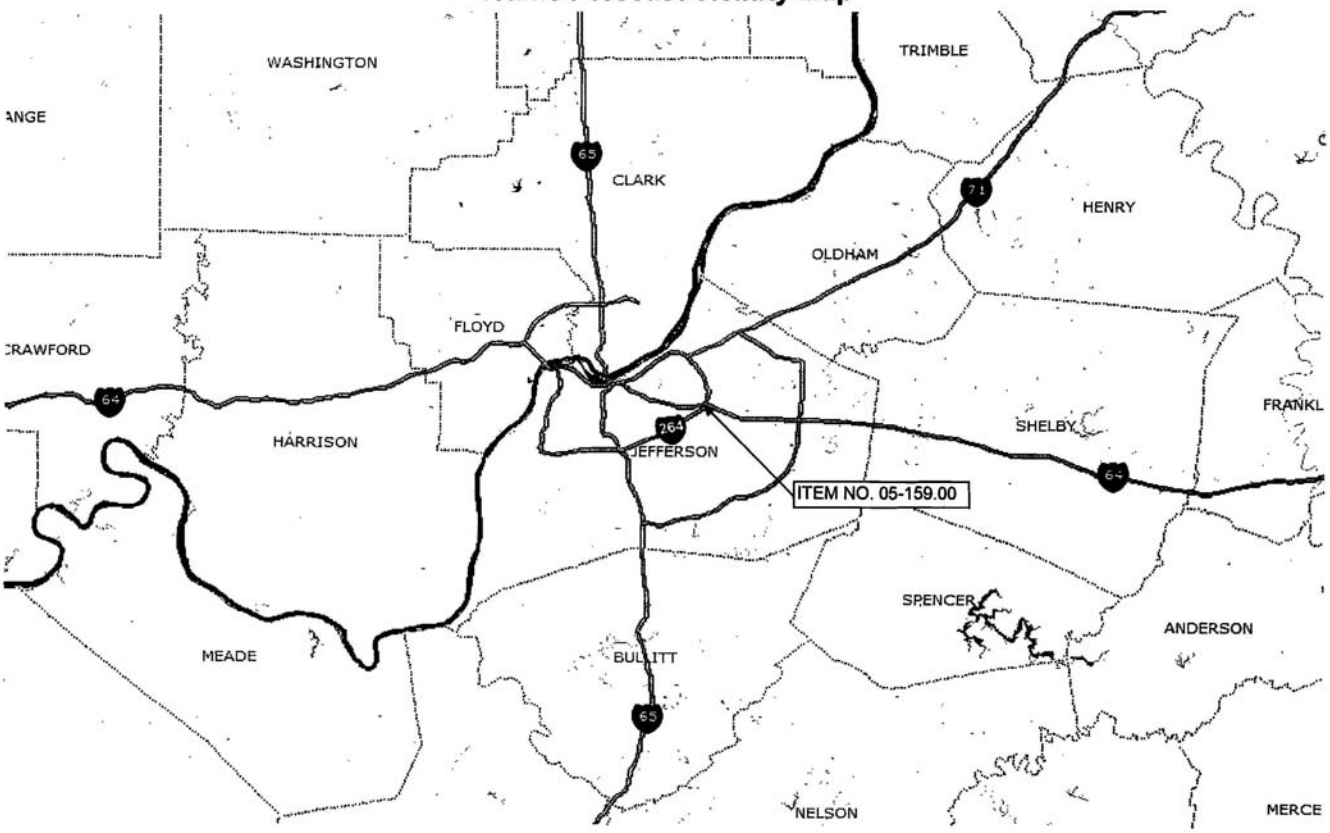
TRAFFIC VOLUMES / GROWTH RATES
Current year 2005 volumes were based on historical counts in Jefferson County as well as special counts performed in September and October 2005. Extensive trend line analysis was conducted along I-64, I-264, KY 1932 (Breckenridge Lane), and US 60 in the project area. A growth rate of 2.0% was determined from this analysis for I-64 and US 60 and 2.5% was forecasted for I-264. From talks with KIPDA it was determined that the Breckenridge Lane area for the forecast was built out and thus a 1.0% growth rate was used for it. Therefore, ramps connecting I-64 and I-264 were given a 2.25% growth rate, ramps connecting I-264 and KY 1932 were given a 1.75% growth rate, and the ramp connecting US 60 and I-264 was given a 2.0% growth rate.

DESIGN HOUR VOLUMES
Design Hour Volumes for the turning movements were determined by analyzing the most recent hourly counts performed. The high AM count and PM count were used to develop a daily K-factor. 2% was added to this number to get a yearly DHV. The peak hour special turning movement counts were also analyzed to tweak the K-factor. AM and PM DHV directional factors were determined directly from the peak hour special turning movement counts.

TURNING MOVEMENTS
Turning movements were developed from the volume and DHV methods mentioned above. Also special turning movements were made and grown to reflect ADT turning movements. Some intersection segments' ADT were factored directly from the special turning movement count.

TRUCK PERCENTAGES
Special counts performed in September and October and historical classification counts were used to obtain truck percentages for the project. The truck percentages for the ramps came directly from the 2005 special counts. Research from across the state for this functional class indicates a 1.5% growth rate be used for truck percentages. This factor was applied to forecast future truck percentages for the analysis years.

Division of Planning
Jefferson County: I-64 WB to I-264 WB Ramp Improvements
Traffic Forecast Vicinity Map



Segment Description Map

#1 I-64 Westbound
#2 I-64 Westbound Exit To I-264 Eastbound
#3 I-64 Westbound Exit To I-264 Westbound
#4 I-64 Eastbound Exit To I-264 Westbound
#5 I-264 Westbound
#6 I-264 Westbound Collector-Distributor Road
#7 Shelbyville Road (US 60) On-Ramp To I-264 Westbound Collector-Distributor Road
#8 I-264 Westbound Collector-Distributor Road Exit To I-64 Westbound
#9 I-264 Westbound Collector-Distributor Road Exit To I-64 Eastbound
#10 I-264 Westbound Exit Ramp to Northbound Breckenridge Lane
#11 I-264 Westbound Exit Ramp to Southbound Breckenridge Lane
#12 I-264 Westbound

SEGMENT TRAFFIC PROJECTIONS

ADT PROJECTIONS

Segment	Description	2005	GR	2010	2015	2025	Source Station
1	I-64 Westbound	65,500	2.00%	72,300	79,800	97,300	220
2	I-64 Westbound Exit To I-264 Eastbound	8,400	2.25%	9,400	10,500	13,100	X20
3	I-64 Westbound Exit To I-264 Westbound	26,400	2.25%	29,500	33,000	41,200	X21
4	I-64 Eastbound Exit To I-264 Westbound	3,800	2.25%	4,200	4,700	5,900	X22
3 and 4	Merged I-64 Eastbound and Westbound Exit To I-264 Westbound	30,200	2.25%	33,800	37,700	47,100	X21 + X22
5	I-264 Westbound	63,800	2.50%	72,200	81,700	104,500	I83, P94
6	I-264 Westbound Collector-Distributor Road	26,400	2.50%	29,900	33,800	43,300	X25W
7	Shelbyville Road (US 60) On-Ramp To I-264 Westbound Collector-Distributor Road	32,600	2.00%	36,000	39,700	48,400	X26
8	I-264 Westbound Collector-Distributor Road Exit To I-64 Westbound	7,000	2.25%	7,800	8,700	10,900	X24
9	I-264 Westbound Collector-Distributor Road Exit To I-64 Eastbound	8,700	2.25%	9,700	10,900	13,600	X23
10	I-264 Westbound Exit Ramp to Northbound Breckenridge Lane	9,200	1.75%	10,000	10,900	13,000	X27
11	I-264 Westbound Exit Ramp to Southbound Breckenridge Lane	6,700	1.75%	7,300	8,000	9,500	X28
12	I-264 Westbound	81,500	2.50%	92,200	104,300	133,500	I83, P95

TRUCK PERCENTAGE PROJECTIONS

Segment	Description	2005	GR	2010	2015	2025	Source Station
1	I-64 Westbound	16.5%	1.500%	17.8%	19.1%	22.2%	220
2	I-64 Westbound Exit To I-264 Eastbound	4.8%	1.500%	5.2%	5.6%	6.5%	X20
3	I-64 Westbound Exit To I-264 Westbound	12.0%	1.500%	12.9%	13.9%	16.2%	X21
4	I-64 Eastbound Exit To I-264 Westbound	4.7%	1.500%	5.1%	5.5%	6.3%	X22
3 and 4	Merged I-64 Eastbound and Westbound Exit To I-264 Westbound	11.1%	1.500%	11.9%	12.9%	14.9%	X21 + X22
5	I-264 Westbound	10.0%	1.500%	10.8%	11.6%	13.5%	I83, P94
6	I-264 Westbound Collector-Distributor Road	5.3%	1.500%	5.7%	6.2%	7.1%	X25W
7	Shelbyville Road (US 60) On-Ramp To I-264 Westbound Collector-Distributor Road	3.6%	1.500%	3.9%	4.2%	4.8%	X26
8	I-264 Westbound Collector-Distributor Road Exit To I-64 Westbound	2.8%	1.500%	3.0%	3.2%	3.8%	X24
9	I-264 Westbound Collector-Distributor Road Exit To I-64 Eastbound	4.7%	1.500%	5.1%	5.5%	6.3%	X23
10	I-264 Westbound Exit Ramp to Northbound Breckenridge Lane	4.3%	1.500%	4.6%	5.0%	5.8%	X27
11	I-264 Westbound Exit Ramp to Southbound Breckenridge Lane	2.8%	1.500%	3.0%	3.2%	3.8%	X28
12	I-264 Westbound	10.0%	1.500%	10.8%	11.6%	13.5%	I83, P95

ESAL PROJECTIONS

5, 10, 15, and 20 year ESAL projections for;

Segment 3: I-64 Westbound Exit to I-264 Westbound

Segment 4: I-64 Eastbound Exit to I-264 Westbound

Segment 3 and 4 Merged: Merged I-64 Eastbound and Westbound Exit to I-264 Westbound

Segment 10: I-264 Westbound Exit Ramp to Northbound Breckenridge Lane

Segment 11: I-264 Westbound Exit Ramp to Southbound Breckenridge Lane

Segment 12: I-264 Westbound (MP 18.7)

Segment 3: I-64 Westbour Exit To I-264 Westbound

Year	ADT	Car %	Truck %	Cars	Trucks	CT%	AX/T	ESAL/AX	AX/CT	ESAL/CA	LDF	ESALs	
2005	26,400	88.0%	12.0%	23232	3168	0.03%	3.6	0.233	4.5	2.5	1.000	1,010,919	
2006	26,994	87.8%	12.2%	23706	3288	0.03%	3.6	0.236	4.5	2.5	1.000	1,073,288	
2007	27,601	87.6%	12.4%	24189	3412	0.03%	3.7	0.240	4.5	2.5	1.000	1,139,580	
2008	28,222	87.5%	12.5%	24681	3541	0.03%	3.7	0.244	4.5	2.5	1.000	1,210,045	
2009	28,857	87.3%	12.7%	25182	3675	0.03%	3.7	0.247	4.5	2.5	1.000	1,284,947	5 yr ESALs
2010	29,507	87.1%	12.9%	25692	3814	0.03%	3.8	0.251	4.5	2.5	1.000	1,364,567	6,072,000
2011	30,171	86.9%	13.1%	26212	3959	0.03%	3.8	0.255	4.5	2.5	1.000	1,449,204	
2012	30,849	86.7%	13.3%	26741	4109	0.03%	3.8	0.259	4.5	2.5	1.000	1,539,176	
2013	31,544	86.5%	13.5%	27280	4264	0.03%	3.9	0.262	4.5	2.5	1.000	1,634,821	
2014	32,253	86.3%	13.7%	27828	4425	0.03%	3.9	0.266	4.5	2.5	1.000	1,736,499	10 yr ESALs
2015	32,979	86.1%	13.9%	28386	4593	0.03%	4.0	0.270	4.5	2.5	1.000	1,844,593	14,277,000
2016	33,721	85.9%	14.1%	28954	4767	0.03%	4.0	0.274	4.5	2.5	1.000	1,959,509	
2017	34,480	85.7%	14.3%	29533	4947	0.03%	4.0	0.279	4.5	2.5	1.000	2,081,680	
2018	35,256	85.4%	14.6%	30121	5134	0.03%	4.1	0.283	4.5	2.5	1.000	2,211,566	
2019	36,049	85.2%	14.8%	30720	5328	0.03%	4.1	0.287	4.5	2.5	1.000	2,349,657	15 yr ESALs
2020	36,860	85.0%	15.0%	31330	5530	0.03%	4.1	0.291	4.5	2.5	1.000	2,496,473	25,376,000
2021	37,689	84.8%	15.2%	31950	5739	0.03%	4.2	0.296	4.5	2.5	1.000	2,652,568	
2022	38,537	84.5%	15.5%	32581	5956	0.03%	4.2	0.300	4.5	2.5	1.000	2,818,530	
2023	39,404	84.3%	15.7%	33223	6182	0.03%	4.3	0.305	4.5	2.5	1.000	2,994,987	
2024	40,291	84.1%	15.9%	33875	6416	0.03%	4.3	0.309	4.5	2.5	1.000	3,182,603	20 yr ESALs
2025	41,197	83.8%	16.2%	34539	6658	0.03%	4.3	0.314	4.5	2.5	1.000	3,382,086	40,406,000

Segment 4: I-64 Eastboun Exit To I-264 Westbound

Yea.	ADT	Car %	Truck %	Cars	Trucks	CT%	AX/T	ESAL/AX	AX/CT	ESAL/CA	LDF	ESALs	
2005	3,800	95.3%	4.7%	3621	179	0.05%	3.0	0.233	4.5	2.5	1.000	51,333	
2006	3,886	95.2%	4.8%	3700	185	0.05%	3.0	0.236	4.5	2.5	1.000	54,318	
2007	3,973	95.2%	4.8%	3781	192	0.05%	3.0	0.240	4.5	2.5	1.000	57,487	
2008	4,062	95.1%	4.9%	3863	200	0.05%	3.0	0.244	4.5	2.5	1.000	60,851	
2009	4,154	95.0%	5.0%	3947	207	0.05%	3.1	0.247	4.5	2.5	1.000	64,422	5 yr ESALs
2010	4,247	94.9%	5.1%	4032	215	0.05%	3.1	0.251	4.5	2.5	1.000	68,213	305,000
2011	4,343	94.9%	5.1%	4120	223	0.05%	3.1	0.255	4.5	2.5	1.000	72,240	
2012	4,440	94.8%	5.2%	4209	232	0.05%	3.2	0.259	4.5	2.5	1.000	76,515	
2013	4,540	94.7%	5.3%	4300	240	0.05%	3.2	0.262	4.5	2.5	1.000	81,055	
2014	4,643	94.6%	5.4%	4393	249	0.05%	3.2	0.266	4.5	2.5	1.000	85,877	10 yr ESALs
2015	4,747	94.5%	5.5%	4488	259	0.05%	3.2	0.270	4.5	2.5	1.000	90,998	712,000
2016	4,854	94.5%	5.5%	4585	269	0.05%	3.3	0.274	4.5	2.5	1.000	96,438	
2017	4,963	94.4%	5.6%	4684	279	0.05%	3.3	0.279	4.5	2.5	1.000	102,215	
2018	5,075	94.3%	5.7%	4785	289	0.05%	3.3	0.283	4.5	2.5	1.000	108,353	
2019	5,189	94.2%	5.8%	4888	300	0.05%	3.4	0.287	4.5	2.5	1.000	114,872	15 yr ESALs
2020	5,306	94.1%	5.9%	4994	312	0.05%	3.4	0.291	4.5	2.5	1.000	121,799	1,256,000
2021	5,425	94.0%	6.0%	5101	324	0.05%	3.4	0.296	4.5	2.5	1.000	129,157	
2022	5,547	93.9%	6.1%	5211	336	0.05%	3.5	0.300	4.5	2.5	1.000	136,975	
2023	5,672	93.9%	6.1%	5323	349	0.05%	3.5	0.305	4.5	2.5	1.000	145,281	
2024	5,799	93.8%	6.2%	5438	362	0.05%	3.5	0.309	4.5	2.5	1.000	154,107	20 yr ESALs
2025	5,930	93.7%	6.3%	5555	375	0.05%	3.6	0.314	4.5	2.5	1.000	163,485	1,985,000

Segments 3 and 4 Combined: Merged I-64 Eastbound and Westbound Exit To I-264 Westbound

Year	ADT	Car %	Truck %	Cars	Trucks	CT%	AX/T	ESAL/AX	AX/CT	ESAL/CA	LDF	ESALs	
2005	30,200	88.9%	11.1%	26854	3346	0.03%	3.5	0.233	4.5	2.5	1.000	1,049,090	
2006	30,880	88.8%	11.2%	27407	3473	0.03%	3.5	0.236	4.5	2.5	1.000	1,113,605	
2007	31,574	88.6%	11.4%	27970	3604	0.03%	3.6	0.240	4.5	2.5	1.000	1,182,174	
2008	32,285	88.4%	11.6%	28544	3741	0.03%	3.6	0.244	4.5	2.5	1.000	1,255,054	
2009	33,011	88.2%	11.8%	29129	3882	0.03%	3.6	0.247	4.5	2.5	1.000	1,332,518	5 yr ESALs
2010	33,754	88.1%	11.9%	29725	4029	0.03%	3.7	0.251	4.5	2.5	1.000	1,414,856	6,298,000
2011	34,513	87.9%	12.1%	30332	4181	0.03%	3.7	0.255	4.5	2.5	1.000	1,502,377	
2012	35,290	87.7%	12.3%	30950	4340	0.03%	3.8	0.259	4.5	2.5	1.000	1,595,409	
2013	36,084	87.5%	12.5%	31580	4504	0.03%	3.8	0.262	4.5	2.5	1.000	1,694,303	
2014	36,896	87.3%	12.7%	32222	4674	0.03%	3.8	0.266	4.5	2.5	1.000	1,799,428	10 yr ESALs
2015	37,726	87.1%	12.9%	32875	4851	0.03%	3.9	0.270	4.5	2.5	1.000	1,911,182	14,801,000
2016	38,575	86.9%	13.1%	33540	5035	0.03%	3.9	0.274	4.5	2.5	1.000	2,029,982	
2017	39,443	86.8%	13.2%	34218	5225	0.03%	3.9	0.279	4.5	2.5	1.000	2,156,277	
2018	40,330	86.6%	13.4%	34907	5423	0.03%	4.0	0.283	4.5	2.5	1.000	2,290,542	
2019	41,238	86.4%	13.6%	35610	5628	0.03%	4.0	0.287	4.5	2.5	1.000	2,433,281	15 yr ESALs
2020	42,165	86.1%	13.9%	36324	5841	0.03%	4.1	0.291	4.5	2.5	1.000	2,585,033	26,296,000
2021	43,114	85.9%	14.1%	37052	6062	0.03%	4.1	0.296	4.5	2.5	1.000	2,746,370	
2022	44,084	85.7%	14.3%	37793	6291	0.03%	4.1	0.300	4.5	2.5	1.000	2,917,899	
2023	45,076	85.5%	14.5%	38547	6529	0.03%	4.2	0.305	4.5	2.5	1.000	3,100,266	
2024	46,090	85.3%	14.7%	39314	6776	0.03%	4.2	0.309	4.5	2.5	1.000	3,294,161	20 yr ESALs
2025	47,127	85.1%	14.9%	40094	7033	0.03%	4.3	0.314	4.5	2.5	1.000	3,500,314	41,855,000

Segment 10: I-264 Westbound Exit F np to Northbound Breckenridge Lane

Year	ADT	Car %	Truck %	Cars	Trucks	CT%	AX/T	ESAL/AX	AX/CT	ESAL/CA	LDF	ESALs	
2005	9,200	95.7%	4.3%	8804	396	0.00%	2.9	0.233	4.5	2.5	1.000	112,727	
2006	9,361	95.6%	4.4%	8952	409	0.00%	2.9	0.236	4.5	2.5	1.000	118,639	
2007	9,525	95.6%	4.4%	9103	422	0.00%	2.9	0.240	4.5	2.5	1.000	124,885	
2008	9,692	95.5%	4.5%	9256	436	0.00%	3.0	0.244	4.5	2.5	1.000	131,483	
2009	9,861	95.4%	4.6%	9411	450	0.00%	3.0	0.247	4.5	2.5	1.000	138,455	5 yr ESALs
2010	10,034	95.4%	4.6%	9569	465	0.00%	3.0	0.251	4.5	2.5	1.000	145,823	659,000
2011	10,209	95.3%	4.7%	9729	480	0.00%	3.0	0.255	4.5	2.5	1.000	153,607	
2012	10,388	95.2%	4.8%	9892	496	0.00%	3.1	0.259	4.5	2.5	1.000	161,834	
2013	10,570	95.2%	4.8%	10058	512	0.00%	3.1	0.262	4.5	2.5	1.000	170,529	
2014	10,755	95.1%	4.9%	10226	529	0.00%	3.1	0.266	4.5	2.5	1.000	179,718	10 yr ESALs
2015	10,943	95.0%	5.0%	10397	546	0.00%	3.2	0.270	4.5	2.5	1.000	189,431	1,514,000
2016	11,134	94.9%	5.1%	10570	564	0.00%	3.2	0.274	4.5	2.5	1.000	199,697	
2017	11,329	94.9%	5.1%	10747	582	0.00%	3.2	0.279	4.5	2.5	1.000	210,549	
2018	11,528	94.8%	5.2%	10926	602	0.00%	3.3	0.283	4.5	2.5	1.000	222,021	
2019	11,729	94.7%	5.3%	11108	621	0.00%	3.3	0.287	4.5	2.5	1.000	234,149	15 yr ESALs
2020	11,934	94.6%	5.4%	11293	642	0.00%	3.3	0.291	4.5	2.5	1.000	246,970	2,628,000
2021	12,143	94.5%	5.5%	11481	663	0.00%	3.4	0.296	4.5	2.5	1.000	260,526	
2022	12,356	94.5%	5.5%	11672	684	0.00%	3.4	0.300	4.5	2.5	1.000	274,858	
2023	12,572	94.4%	5.6%	11865	707	0.00%	3.4	0.305	4.5	2.5	1.000	290,011	
2024	12,792	94.3%	5.7%	12062	730	0.00%	3.4	0.309	4.5	2.5	1.000	306,034	20 yr ESALs
2025	13,016	94.2%	5.8%	12262	754	0.00%	3.5	0.314	4.5	2.5	1.000	322,978	4,082,000

Segment 11: I-264 Westbound Exit Ramp to Southbound Breckenridge Lane

Year	ADT	Car %	Truck %	Cars	Trucks	CT%	AX/T	ESAL/AX	AX/CT	ESAL/CA	LDF	ESALs	
2005	6,700	97.2%	2.8%	6512	188	0.00%	2.6	0.233	4.5	2.5	1.000	53,606	
2006	6,817	97.2%	2.8%	6624	194	0.00%	2.6	0.236	4.5	2.5	1.000	56,244	
2007	6,937	97.1%	2.9%	6736	200	0.00%	2.7	0.240	4.5	2.5	1.000	59,028	
2008	7,058	97.1%	2.9%	6851	207	0.00%	2.7	0.244	4.5	2.5	1.000	61,965	
2009	7,181	97.0%	3.0%	6968	213	0.00%	2.7	0.247	4.5	2.5	1.000	65,065	5 yr ESALs
2010	7,307	97.0%	3.0%	7087	220	0.00%	2.7	0.251	4.5	2.5	1.000	68,337	311,000
2011	7,435	96.9%	3.1%	7207	228	0.00%	2.8	0.255	4.5	2.5	1.000	71,791	
2012	7,565	96.9%	3.1%	7330	235	0.00%	2.8	0.259	4.5	2.5	1.000	75,438	
2013	7,698	96.8%	3.2%	7455	243	0.00%	2.8	0.262	4.5	2.5	1.000	79,288	
2014	7,832	96.8%	3.2%	7581	251	0.00%	2.9	0.266	4.5	2.5	1.000	83,353	10 yr ESALs
2015	7,969	96.8%	3.2%	7710	259	0.00%	2.9	0.270	4.5	2.5	1.000	87,646	708,000
2016	8,109	96.7%	3.3%	7841	267	0.00%	2.9	0.274	4.5	2.5	1.000	92,179	
2017	8,251	96.7%	3.3%	7974	276	0.00%	2.9	0.279	4.5	2.5	1.000	96,967	
2018	8,395	96.6%	3.4%	8110	285	0.00%	3.0	0.283	4.5	2.5	1.000	102,025	
2019	8,542	96.6%	3.4%	8247	295	0.00%	3.0	0.287	4.5	2.5	1.000	107,367	15 yr ESALs
2020	8,691	96.5%	3.5%	8387	304	0.00%	3.0	0.291	4.5	2.5	1.000	113,011	1,220,000
2021	8,844	96.4%	3.6%	8529	314	0.00%	3.0	0.296	4.5	2.5	1.000	118,973	
2022	8,998	96.4%	3.6%	8674	325	0.00%	3.1	0.300	4.5	2.5	1.000	125,273	
2023	9,156	96.3%	3.7%	8821	335	0.00%	3.1	0.305	4.5	2.5	1.000	131,929	
2024	9,316	96.3%	3.7%	8970	346	0.00%	3.1	0.309	4.5	2.5	1.000	138,962	20 yr ESALs
2025	9,479	96.2%	3.8%	9122	357	0.00%	3.2	0.314	4.5	2.5	1.000	146,395	1,881,000

Segment 12: I-264 Westbound (MP 18.7)

Year	ADT	Car %	Truck %	Cars	Trucks	CT%	AX/T	ESAL/AX	AX/CT	ESAL/CA	LDF	ESALs	
2005	81,500	90.0%	10.0%	73350	8150	0.06%	4.2	0.233	4.5	2.5	0.500	1,527,257	
2006	83,538	89.9%	10.2%	75058	8479	0.06%	4.3	0.236	4.5	2.5	0.500	1,625,323	
2007	85,626	89.7%	10.3%	76805	8821	0.06%	4.3	0.240	4.5	2.5	0.500	1,729,806	
2008	87,767	89.5%	10.5%	78589	9178	0.06%	4.3	0.244	4.5	2.5	0.500	1,841,129	
2009	89,961	89.4%	10.6%	80413	9548	0.06%	4.4	0.247	4.5	2.5	0.500	1,959,742	5 yr ESALs
2010	92,210	89.2%	10.8%	82276	9934	0.06%	4.4	0.251	4.5	2.5	0.500	2,086,126	9,242,000
2011	94,515	89.1%	10.9%	84180	10335	0.06%	4.5	0.255	4.5	2.5	0.500	2,220,794	
2012	96,878	88.9%	11.1%	86126	10752	0.06%	4.5	0.259	4.5	2.5	0.500	2,364,292	
2013	99,300	88.7%	11.3%	88114	11186	0.06%	4.5	0.262	4.5	2.5	0.500	2,517,202	
2014	101,782	88.6%	11.4%	90145	11638	0.06%	4.6	0.266	4.5	2.5	0.500	2,680,146	10 yr ESALs
2015	104,327	88.4%	11.6%	92219	12108	0.06%	4.6	0.270	4.5	2.5	0.500	2,853,785	21,878,000
2016	106,935	88.2%	11.8%	94339	12596	0.06%	4.7	0.274	4.5	2.5	0.500	3,038,825	
2017	109,608	88.0%	12.0%	96503	13105	0.06%	4.7	0.279	4.5	2.5	0.500	3,236,019	
2018	112,349	87.9%	12.1%	98715	13634	0.06%	4.8	0.283	4.5	2.5	0.500	3,446,169	
2019	115,157	87.7%	12.3%	100973	14185	0.06%	4.8	0.287	4.5	2.5	0.500	3,670,129	15 yr ESALs
2020	118,036	87.5%	12.5%	103279	14757	0.06%	4.9	0.291	4.5	2.5	0.500	3,908,812	39,178,000
2021	120,987	87.3%	12.7%	105634	15353	0.06%	4.9	0.296	4.5	2.5	0.500	4,163,190	
2022	124,012	87.1%	12.9%	108039	15973	0.06%	5.0	0.300	4.5	2.5	0.500	4,434,299	
2023	127,112	86.9%	13.1%	110494	16618	0.06%	5.0	0.305	4.5	2.5	0.500	4,723,243	
2024	130,290	86.7%	13.3%	113001	17289	0.06%	5.1	0.309	4.5	2.5	0.500	5,031,202	20 yr ESALs
2025	133,547	86.5%	13.5%	115560	17987	0.06%	5.1	0.314	4.5	2.5	0.500	5,359,430	62,890,000

TURNING MOVEMENTS

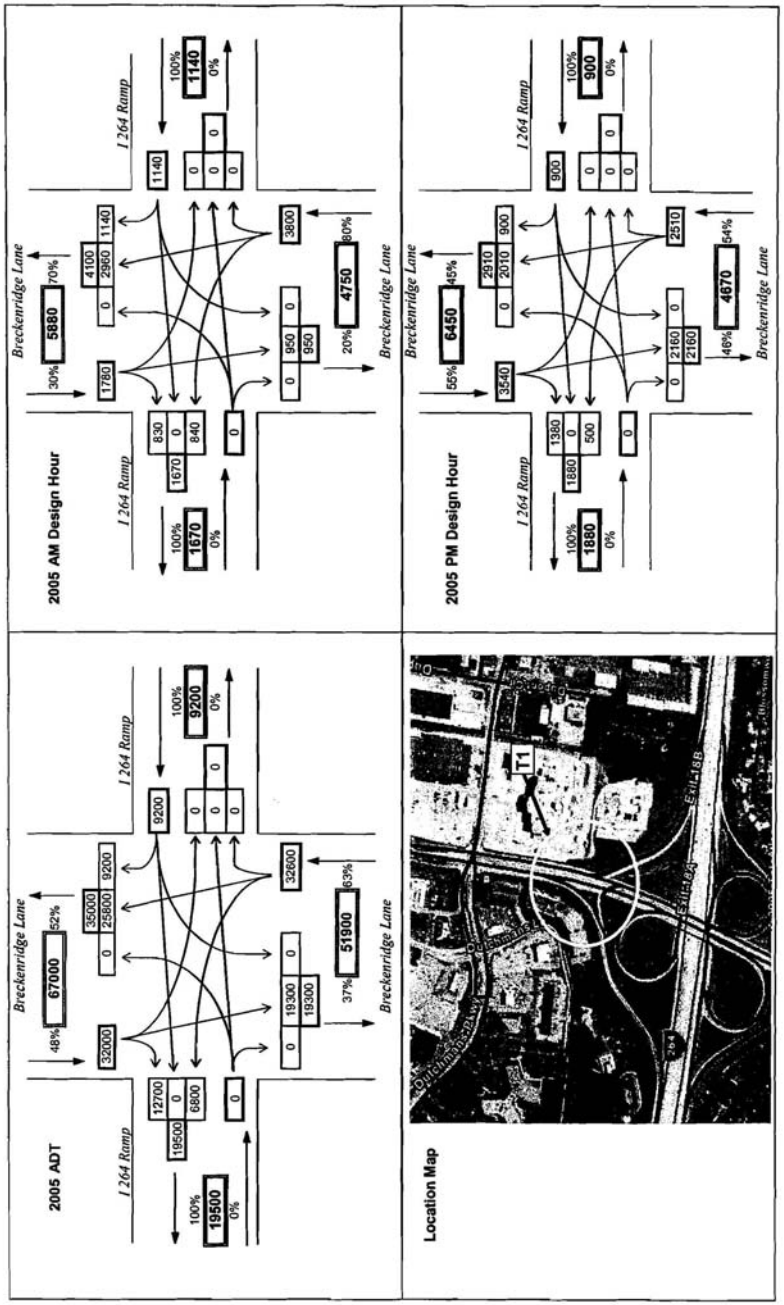
2005 and 2025 ADT and DHVs

T1: Breckenridge Lane & I-264 Ramps

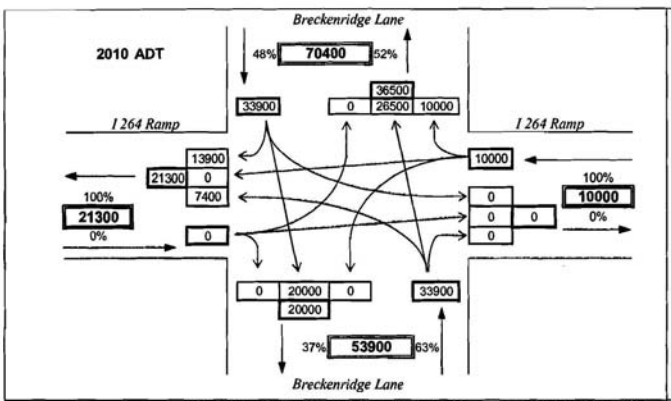
T2: Breckenridge Lane & Dutchman's Lane

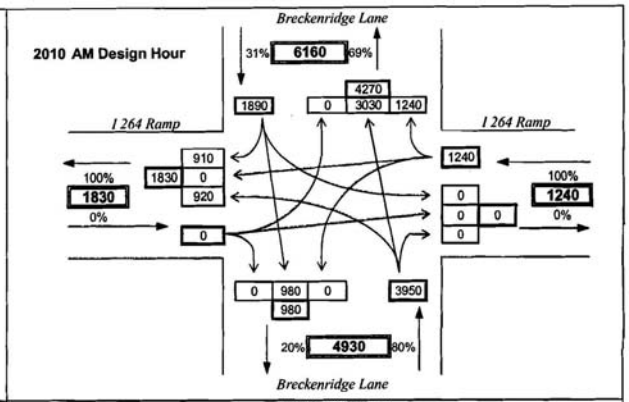
PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE:
ANALYST: D. Hamilton
SCENARIO: **2005 No Build ADT and Design Hour Volumes**
INTERSECTION: I 264 ramps @ Breckenridge Lane

NOTE: ...tors and Directional Distributions were determined from 2005 traffic counts

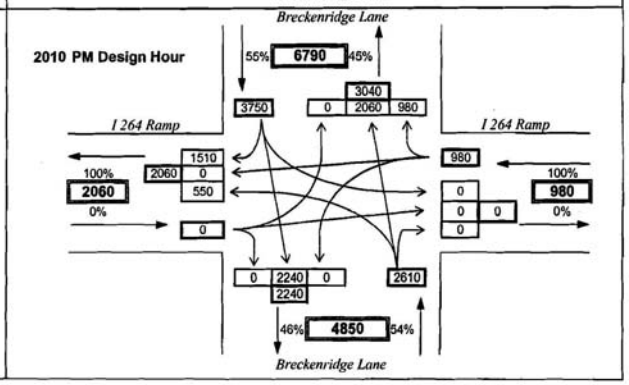


PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements NOTE: K-Factors and Directional Distributions were determined from 2005 traffic counts
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE: 0
ANALYST: D. Hamilton
SCENARIO: **2010 No Build ADT and Design Hour Volumes**
INTERSECTION: I 264 ramps @ Breckenridge Lane

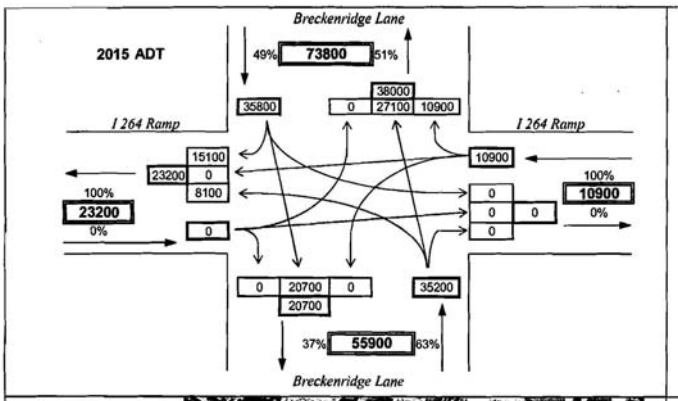


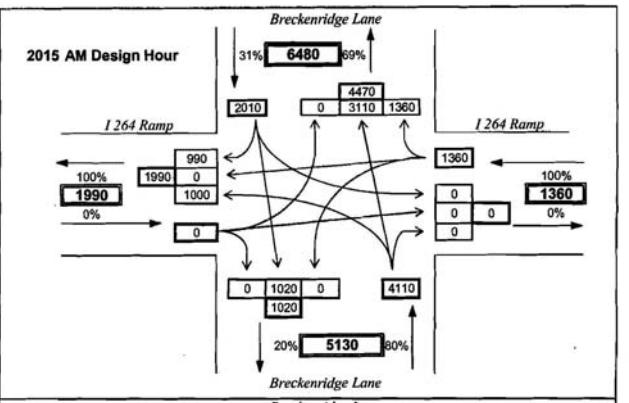


Location Map

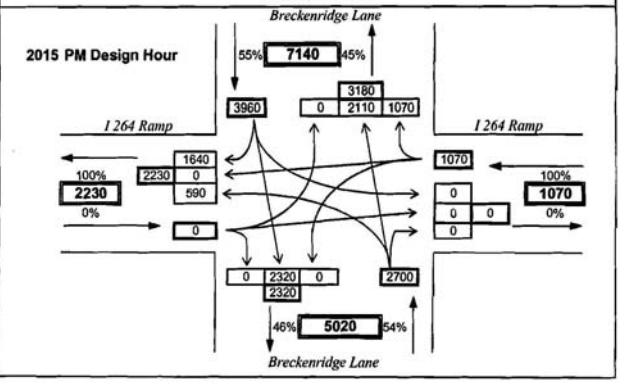


PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements NOTE: K-Factors and Directional Distributions were determined from 2005 traffic counts
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE: 0
ANALYST: D. Hamilton
SCENARIO: **2015 No Build ADT and Design Hour Volumes**
INTERSECTION: I 264 ramps @ Breckenridge Lane



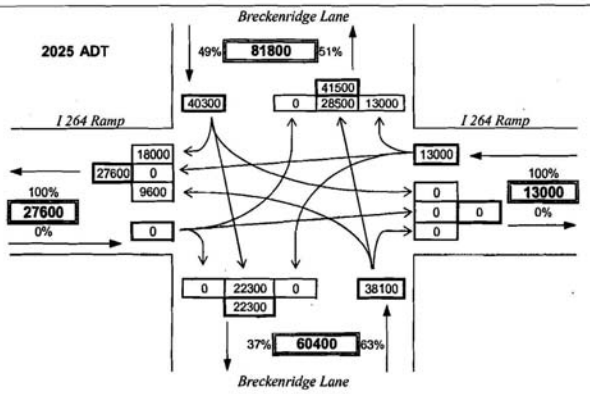


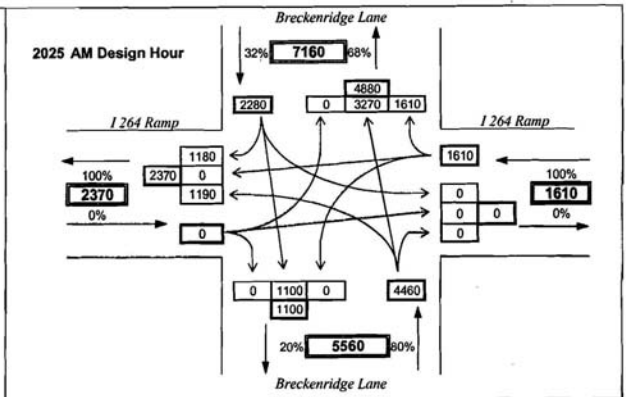
Location Map



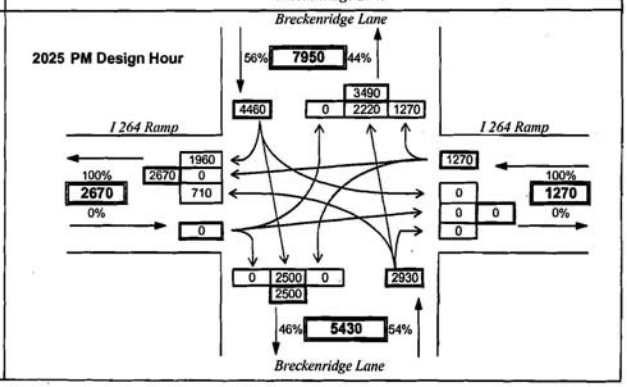
PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE: 0
ANALYST: D. Hamilton
SCENARIO: **2025 No Build ADT and Design Hour Volumes**
INTERSECTION: I 264 ramps @ Breckenridge Lane

NOTE: K-Factors and Directional Distributions were determined from 2005 traffic counts



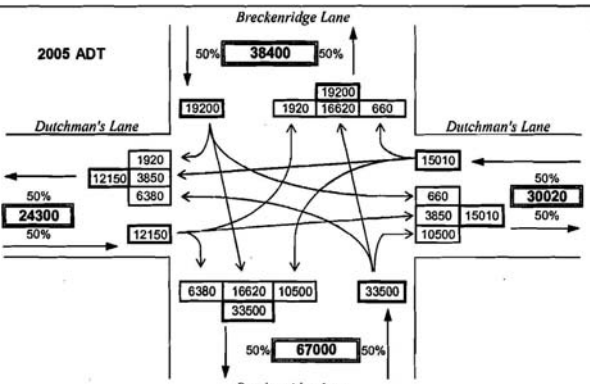


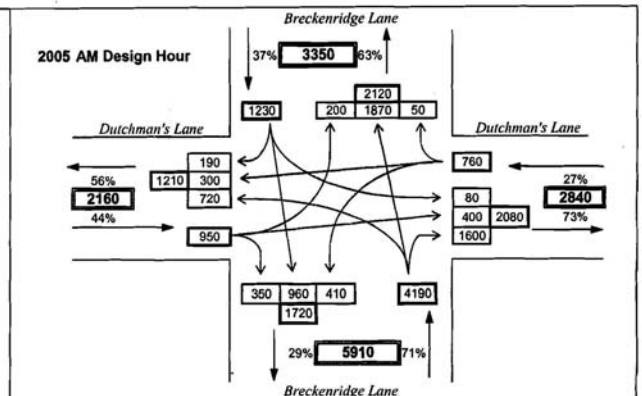
Location Map



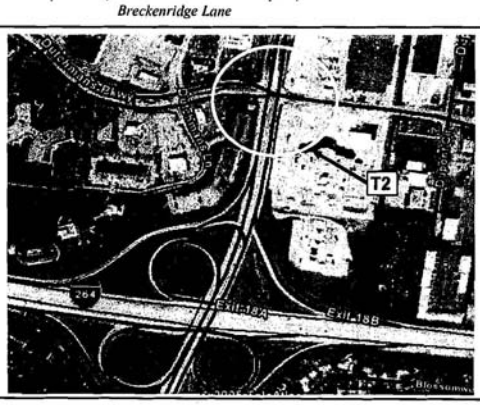
PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE:
ANALYST: D. Hamilton
SCENARIO: **2005 No Build ADT and Design Hour Volumes**
INTERSECTION: Dutchman's Lane @ Breckenridge Lane

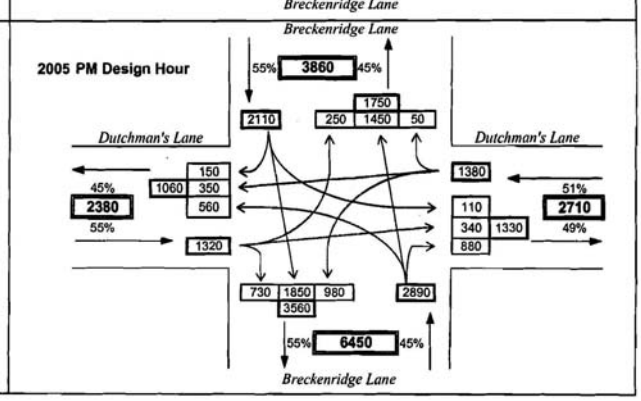
NOTE: K Factors and Directional Distributions were determined from 2005 traffic counts





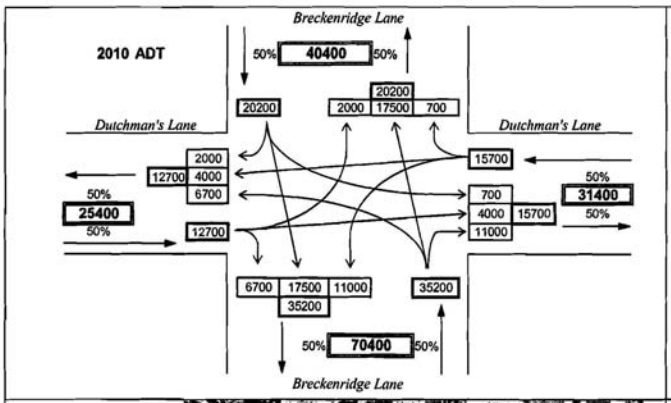
Location Map

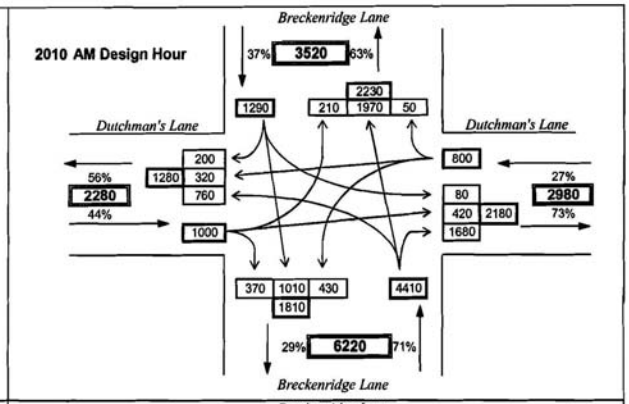


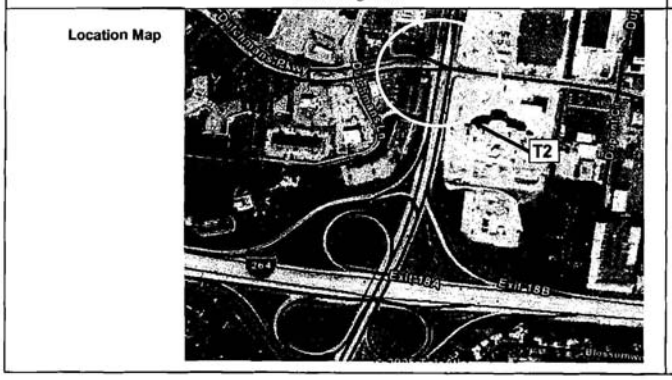


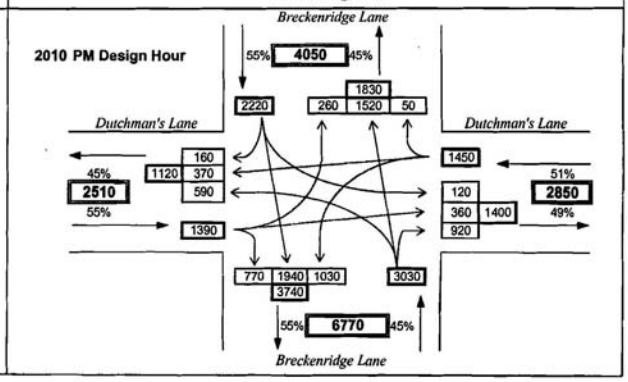
PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE: 0
ANALYST: D. Hamilton
SCENARIO: **2010 No Build ADT and Design Hour Volumes**
INTERSECTION: Dutchman's Lane @ Breckenridge Lane

NOTE: K-factors and Directional Distributions were determined from 2005 traffic counts



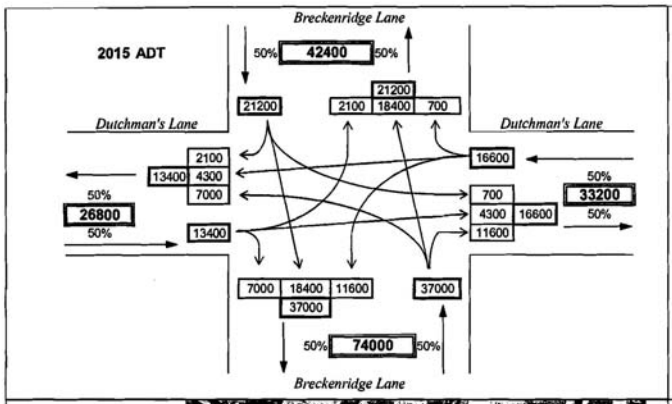


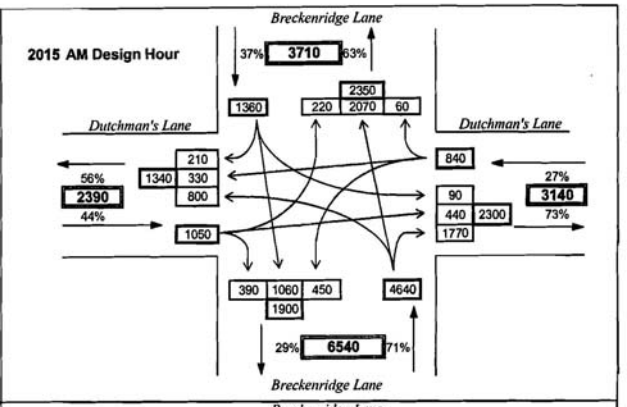


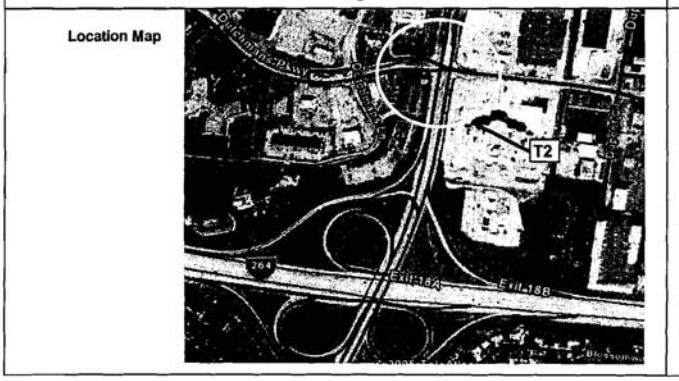


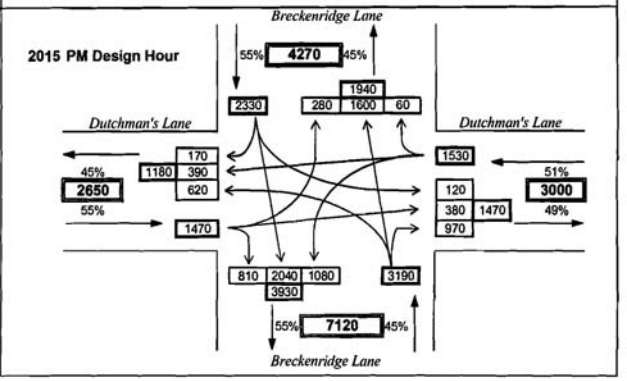
PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE: 0
ANALYST: D. Hamilton
SCENARIO: **2015 No Build ADT and Design Hour Volumes**
INTERSECTION: Dutchman's Lane @ Breckenridge Lane

NOTE: K-factors and Directional Distributions were determined from 2005 traffic counts









PROJECT: Jefferson County, I 64 WB To I 264 WB Ramp Improvements
ITEM NUMBER: 05-159.00
MARS NUMBER: 761731 D
REQUEST DATE: 0
ANALYST: D. Hamilton
SCENARIO: **2025 No Build ADT and Design Hour Volumes**
INTERSECTION: Dutchman's Lane @ Breckenridge Lane

NOTE: K-Factors and Directional Distributions were determined from 2005 traffic counts