MEMORANDUM

Missouri Department of Transportation

DATE: September 16, 2024

TO: Missouri Department of Transportation

FROM: Warner "Bud" Sherman, PE, MoDOT Transportation Project Manager
Jonathan Peitz, PE, Olsson Project Manager

SUBJECT: Southwest District - Design
Route MM, Greene County
Access Management
Job No. J8S0836B
Conceptual Study Report

REMARKS

The City of Republic in conjunction with Missouri Department of Transportation (MoDOT) selected Olsson to conduct a conceptual study outlining access management along Route MM, from Interstate 44 (I-44) and James River Freeway (JRF). In recent years the City of Republic has seen tremendous growth, the Route MM corridor. This report provides information regarding existing traffic and geometric conditions, outlines conceptual improvements, and proposes future access management. Conceptual improvements include widening of Route MM to 5-lanes with curb and gutter from I-44 to JRF and the installation of one traffic signal. Signal location has been identified at Farm Road 144. Future access management for the corridor is outlined in this report and recommends the installation of median islands as future development continues along the corridor.

Exhibits for conceptual improvements can be found in Appendix B. Future Access Management exhibit can be found in Appendix C.

FUNCTIONAL CLASSIFICATION

Route MM – Minor Route
I-44 EB Ramps – Interstate
Farm Road 140 – Major Collector/Local Road
Farm Road 144 – Local Road
Kings Street – Local Road
Farm Road 148 – Local Road
Carnahan Street – Local Road
JRF WB Ramps – Other Freeway and Expressway

DESIGN TRAFFIC

	Route MM
ADT (Const. – 2024)	11,240
ADT (Design - 2045)	31,330
DHV	13%
D	50%
% Trucks	6%
Operational (Posted) Speed	45

EXISTING FACILITIES

Roadway	Lanes Each Direction and Width	Shoulder Width & Type	Speed Limit (mph)
Route MM	2-11’ (N of Carnahan) 3-11’ (S of Carnahan)	2’-Asphalt 8’-Concrete	55
Farm Road 140	2-11’	2’-Asphalt	45
Farm Road 144	2-10’	0’-Asphalt	45
Kings Street	3-12’	0’-Concrete C&G	30
Farm Road 148	2-10’	0’-Asphalt	45
Carnahan Street	3-11’	0-Concrete C&G	40

PROPOSED DESIGN

Route MM interim design includes 5-lanes with a two-way center left turn lane and 1-traffic signal at Farm Road 144. Route MM future design includes access management practices that balance the needs of transportation and needs of development. These access management practices are outlined in the study.

Roadway Capacity

Roadway	Design Year Volume	Future Year Volume
Route MM	11,240	31,330

Route MM estimated volumes indicate the two-way left turn lane will function adequately until future development occurs. This study assumes that available property will be full developed by future year 2045. At which time all segments of roadway should consider raised medians. Although not proposed as part of the initial roadway improvements, raised medians shall be considered as development occurs.

UTILITIES

The presence of utilities exists within the extents of the project. Most notably, overhead power lines run parallel with the west side of Route MM. Gas suns north and south along Route MM under the proposed pavement along with various fiber optic and telecommunication lines. Sanitary sewer manhole adjustments and various water line adjustments may be needed. A more detailed utility impact evaluation should be conducted at a later stage of the design process.

ENVIRONMENTAL SUMMARY

Since this project is located near an MS4 jurisdictional district, special consideration will be given during the design to ensure that overall stormwater quality is maintained, and applicable permitting processes (as required) will be followed. As the design process progresses, additional information will be provided to the Environmental Department to address any potential environmental impacts. Potential and known issues that will need to be addressed include:

- Mitigation of additional runoff including storm system outlet protection;
- Area sinkholes,
- Overall disturbed areas.

An initial public Meeting for the overall Route MM corridor was held on February 28, 2022 at the Republic Community Center to introduce the overall project concepts. Additional public hearing for this project specific improvements will be scheduled at a later date.

PROPOSED DESIGN RECOMMENDATION

Widening of Route MM to 5-lanes with curb and gutter from Interstate 44 to James River Freeway is recommended. These improvements include one traffic signal to be installed at Farm Road 144. The proposed improvements will enhance the operations and safety of the corridor, reducing delay and improving travel times. As development occurs the safety and access management elements of this study should be implemented as necessitated by development. Future developments should account for offsite drainage and to provide adequate storm infrastructure to match pre-construction conditions.

Construction phasing for the project is recommended to include various closures and detours. While also maintaining access to adjacent property owners and businesses. Maintaining access to industrial businesses will be critical to the project.

Signature Attestation for Conceptual Reports

Prepared by: _____
Jonathan Peitz, PE
Project Engineer / Transportation

Submitted by: _____
Warner "Bud" Sherman, PE
Transportation Project Manager

Design Liaison Engineer's Comments & Recommendation: _____

Attachments:

- Appendix A – Design Interim Concept Exhibits
- Appendix B – Design Future Concept Exhibits
- Appendix C – Access Management Report
- Appendix D – Design Criteria
- Appendix E – Public Meeting Exhibits

Approved by: _____
Stacy Reese, PE
District Engineer

cc: Construction and Materials Division
Traffic Division

ROUTE I-44
EB ON RAMP
RAMP D

SW1/4 SW 1/4
23-29N-23W

28

M&S PROPERTIES OF
SPFD, LLC
35,812 SF NEW R/W
2,622 SF PERM. UTILITY ESM'T
7.5 ACRES REMAINING

PROPOSED UTILITY ESM'T PURCHASED UNDER PROJECT J8S3239

PROPOSED R/W PURCHASED UNDER PROJECT J8S3239

+93.96
80.00'

+00.00
70.00'

+25.00
80.00'

+25.00
70.00'

SAWCUT

U.I.P.

+58.54
83.79'

+66.96
87.97'

50' 10' EXIST. UTILITY ESM'T

SL

EXISTING R/W

R 90'

R 70'

+47.57
35.00'

+47.57
38.00'

(U.I.P.)

(R)

TAPER END OF C&G

END COLDMILLING DEPTH TRANSITION
BEGIN 2" OVERLAY
STA. 51+09.01 ℄ RTE_MM

EOP
C&G

(D.N.D.)

+91.83
35.00'

+99.20
35.00'

PI STA 51+99.20
Δ = 0°27'0" RT.

BEGINS AT A POINT APPROX. 19.20'
EAST & 567.31' NORTH OF THE 1/4
CORNER OF SECTIONS 26 & 27, T29N R23W.

1/4 CORNER OF SECTIONS 26 & 27,
T29N R23W 567.63', N01°56'16"E
TO BEGINNING OF PROJECT.

EX. EOS

8" CONC.
MEDIAN

STA. 544+07.60 CL (RTEI-44) =
STA. 46+86.90 CL (RTEMM)

RTEMM
SECTION LINE ℄ ROUTE MM

74°

℄ RTEI-44

BEGIN PROJECT
STA 48+58.54

2" MILL/FILL

BEGIN COLDMILLING
DEPTH TRANSITION
STA. 49+09.01

SAWCUT

S01°49'27"W

S02°16'27"W

8" CONC.
MEDIAN

SAWCUT

MATCHLINE STA. 52+45.00

EX. EOS

+58.54
18.02'

U.I.P.

+09.01
19.49'

CP #117

(R)

EOP
C&G

(R)

8" CONC.
MEDIAN

TAPER END OF C&G

(R)

EXISTING R/W

+64.09
35.00'

+64.09
38.00'

+02.57
46.86'

+98.93
35.00'

SL

R 65'

R 74'

APPROXIMATE
SINKHOLE
LOCATION

(R)

+19.16
129.76'

SAWCUT

+25.00
75.00'

PROPOSED R/W

+00.00
115.00'

GENERAL NOTE:
THE APPROXIMATE LOCATION OF PROPERTY LINES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE.

RIGHT OF WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 54+23.16 TO STA. 20+26.86, ROUTE MM, A DISTANCE OF 1.322 MILES. PERMANENT EASEMENT LIMITS FOR THIS PROJECT EXTEND FROM STA. 54+85.00 TO STA. 107+32.30, ROUTE MM, A DISTANCE OF 0.994 MILES. TEMPORARY EASEMENT LIMITS FOR THIS PROJECT EXTEND FROM STA. 63+80.00 TO STA. 20+26.61, ROUTE MM, A DISTANCE OF 1.141 MILES.

ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

ALL BEARINGS ARE BASED ON STATE PLANE BEARINGS, CENTRAL ZONE.

ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE MARKED.

ROUTE I-44
EB OFF RAMP
RAMP C

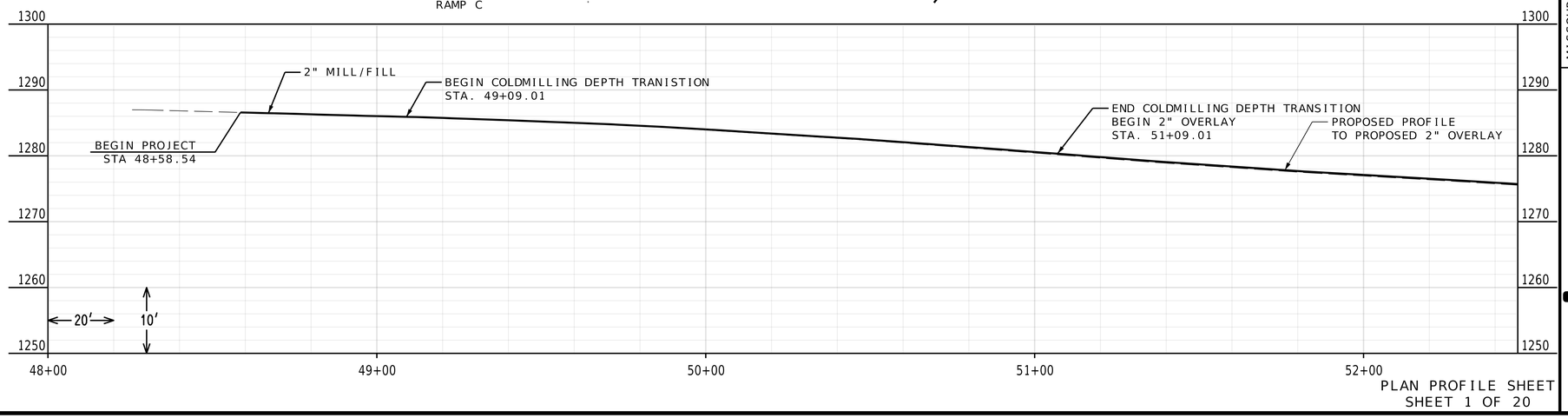
+39.52
127.88'

SE1/4 SE 1/4
22-29N-23W

29

LAND SOLUTIONS LLC
25,140 SF NEW R/W
12.4 ACRES REMAINING

SCALE
0 20 40 60



PLAN PROFILE SHEET
SHEET 1 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	4

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

M&S PROPERTIES OF SPFD, LLC

SEE SHEET 4

PROPOSED UTILITY ESM'T PURCHASED UNDER PROJECT J8S3239

PROPOSED R/W PURCHASED UNDER PROJECT J8S3239

SW1/4 SW 1/4
23-29N-23W

20' EXIST. SAN. SEWER ESM'T

EXISTING COUNTY R/W

SEE SHEET 23 FOR FR 140 PROFILES

NW1/4 NW1/4
26-29N-23W

STA. 5+57.25 FR140E
127' X 18" GROUP A PIPE (18")
2-18" GROUP A FES

01

AUSTIN, KENNETH W TR
43,515 SF NEW R/W
32.9 ACRES REMAINING

W. FARM RD 140

SECTION LINE

MATCHLINE STA. 52+45.00

MATCHLINE STA. 58+05.00

(D.N.D.)

(D.N.D. C&G)

EXISTING ESM'T

EXISTING R/W

SL

C&G

EOP

(R)

ROCK LINING

TYPE A GUTTER

EX. EOS

SAWCUT

OBLITERATE

ROCK LINING

TENTATIVE R/W

4' F.B.D.

4' F.B.D. LT

EOP

C&G

EXISTING R/W

EX. EOS

SECTION LINE

8" CONC. MEDIAN

S02°16'27"W

RTEMM
℄ ROUTE MM

STA. 54+23.16 ℄ (RTEMM)=
STA. 5+00.00 ℄ (FR140E)

STA. 54+25.53 ℄ (RTEMM)=
STA. 5+00.00 ℄ (FR140W)

90°0'0"

SAWCUT

EX. EOS

C&G
EOP

EXISTING R/W

SL

TYPE A GUTTER

ROCK LINING

ROCK
LINING

EOP C&G 15' EXIST. UTILITY ESM'T

EXISTING R/W

SL

4'

4' F.B.D.

TENTATIVE R/W

PROPOSED R/W PURCHASED UNDER PROJECT J8S3239

APPROXIMATE
SINKHOLE
LOCATION

15' PERM. UTILITY ESM'T

OBLITERATE

SEE SHEET 22
FOR DRIVEWAY REPLACEMENT
ALONG FR 140

APPROXIMATE
SINKHOLE
LOCATION

20' EXIST. SAN.
SEWER ESM'T

SAWCUT

EXISTING CITY R/W

02

MCGUIRE, HEATHER B
14,499 SF NEW R/W
5,954 SF PERM. UTILITY ESM'T
9,550 SF TEMP. CONST. ESM'T
4.7 ACRES REMAINING

LAND SOLUTIONS LLC

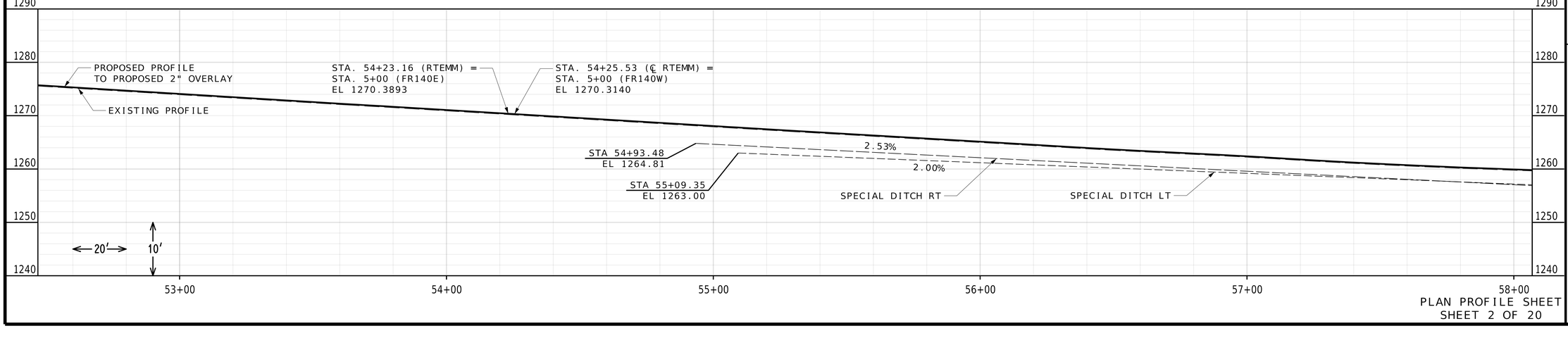
SEE SHEET 4

SE1/4 SE 1/4
22-29N-23W

STA. 4+42.17 FR140W
82' X 18" GROUP A PIPE (18")
2-18" GROUP A FES

NE1/4 NE1/4
27-29N-23W

SCALE
0 20 40 60



PLAN PROFILE SHEET
SHEET 2 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	
9/16/2024	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	5

COUNTY: GREENE
JOB NO.: J8S0836B
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

01

AUSTIN, KENNETH W TR

SEE SHEET 5

APPROXIMATE SINKHOLE LOCATION

NW1/4 NW1/4
26-29N-23W

MATCHLINE STA. 58+05.00

MATCHLINE STA. 63+65.00

60

+04.62
31.00'

TENTATIVE R/W

SL

ROCK LINING

4' F.B.D.

TYPE A GUTTER

EXISTING R/W

EOP
C&G

(R)

+60.89
31.70'

+73.88
31.49'

+56.34
31.00'

SECTION LINE

SAWCUT

S02°16'27"W

RTEMM
℄ ROUTE MM

SAWCUT

8" CONC. MEDIAN

+60.99
31.70'

+73.99
31.49'

+56.43
31.00'

TYPE A GUTTER

EXISTING R/W

C&G
EOP

15' EXIST. UTILITY ESM'T

4' F.B.D.

(R)

(R)

ROCK LINING

+04.62
31.00'

SL

TENTATIVE R/W

15' PERM. UTILITY ESM'T

EXIST. UTILITY ESM'T

02

MCGUIRE, HEATHER B

SEE SHEET 5

NE1/4 NE1/4
27-29N-23W

03

MM FARM LLC

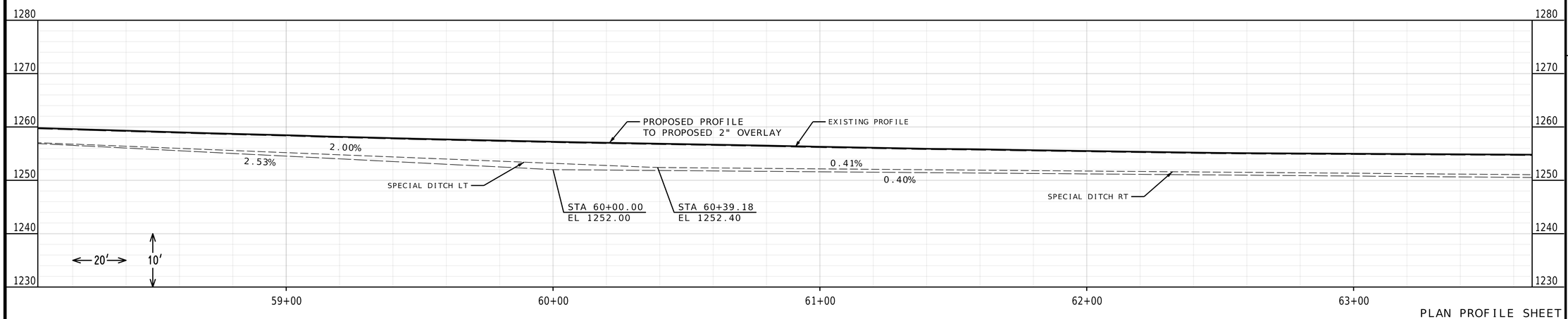
12,820 SF NEW R/W
4,808 SF PERM. UTILITY ESM'T
18.3 ACRES REMAINING

04

PLAZA SOUTHWEST LLC

21,981 SF NEW R/W
8,242 SF PERM. UTILITY ESM'T
15.9 ACRES REMAINING

SCALE
0 20 40 60



PLAN PROFILE SHEET
SHEET 3 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	6

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

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MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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JEFFERSON CITY, MO 65102
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AUTHORITY NO. 001592

01
AUSTIN, KENNETH W TR
SEE SHEET 5

APPROXIMATE SINKHOLE LOCATION

NW1/4 NW1/4
26-29N-23W

05
BEINE, SUSAN
7,521 SF NEW R/W
1,168 SF TEMP. CONST. ESM'T.
3.8 ACRES REMAINING

PAVED APPROACH (7")
STA. 67+30.02 ℄ RTE MM LT.
5.99% GRADE
20.0' WIDTH
18"X29' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

TEMP. CONST. ESM'T
+80.00
70.00'
+80.00
85.00'

T/4 1/4 SECTION LINE

SW1/4 NW1/4
26-29N-23W

07
KDEB PROPERTIES LLC ETAL
SEE SHEET 8

+00.00
85.00'
+00.00
70.00'

TENTATIVE R/W
65
SL
ROCK LINING
4' F.B.D.
TYPE A GUTTER
FES 65FES1
C&G
EOP
R10.5'
(R)
EXISTING R/W
+79.34
31.00'
EXIST. EOS
+96.44
31.00'
+37.44
31.00'
+61.34
31.00'
+74.34
31.00'
SAWCUT
SECTION LINE
S02°16'27"W
Feature With Name.Feature Name
℄ ROUTE MM
8" CONC. MEDIAN
MATCHLINE STA. 63+65.00
MATCHLINE STA. 69+25.00
+79.43
31.00'
EXISTING R/W
FES 65FES2
15' EXIST. UTILITY ESM'T
ROCK LINING
TENTATIVE R/W
15' PERM. UTILITY ESM'T

SCALE
0 20 40 60

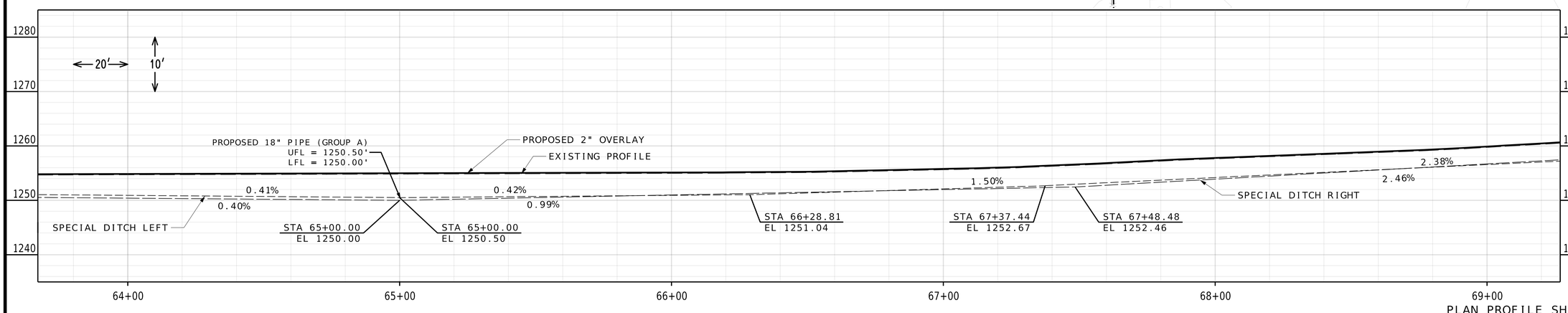
NE1/4 NE1/4
27-29N-23W

FES 65FES1, 65FES2, ℄ RTEMM
STA. 65+00.31
18"X84' GROUP A PIPE (18")
2-18" GROUP A F.E.S.

04
PLAZA SOUTHWEST LLC
SEE SHEET 6

SE1/4 NE1/4
27-29N-23W

06
MONETT APARTMENTS LLC
20,668 SF NEW R/W
7,750 SF PERM. UTILITY ESM'T
2,382 SF TEMP. CONST. ESM'T
1.9 ACRES REMAINING



PLAN PROFILE SHEET
SHEET 4 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	
9/16/2024	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	7

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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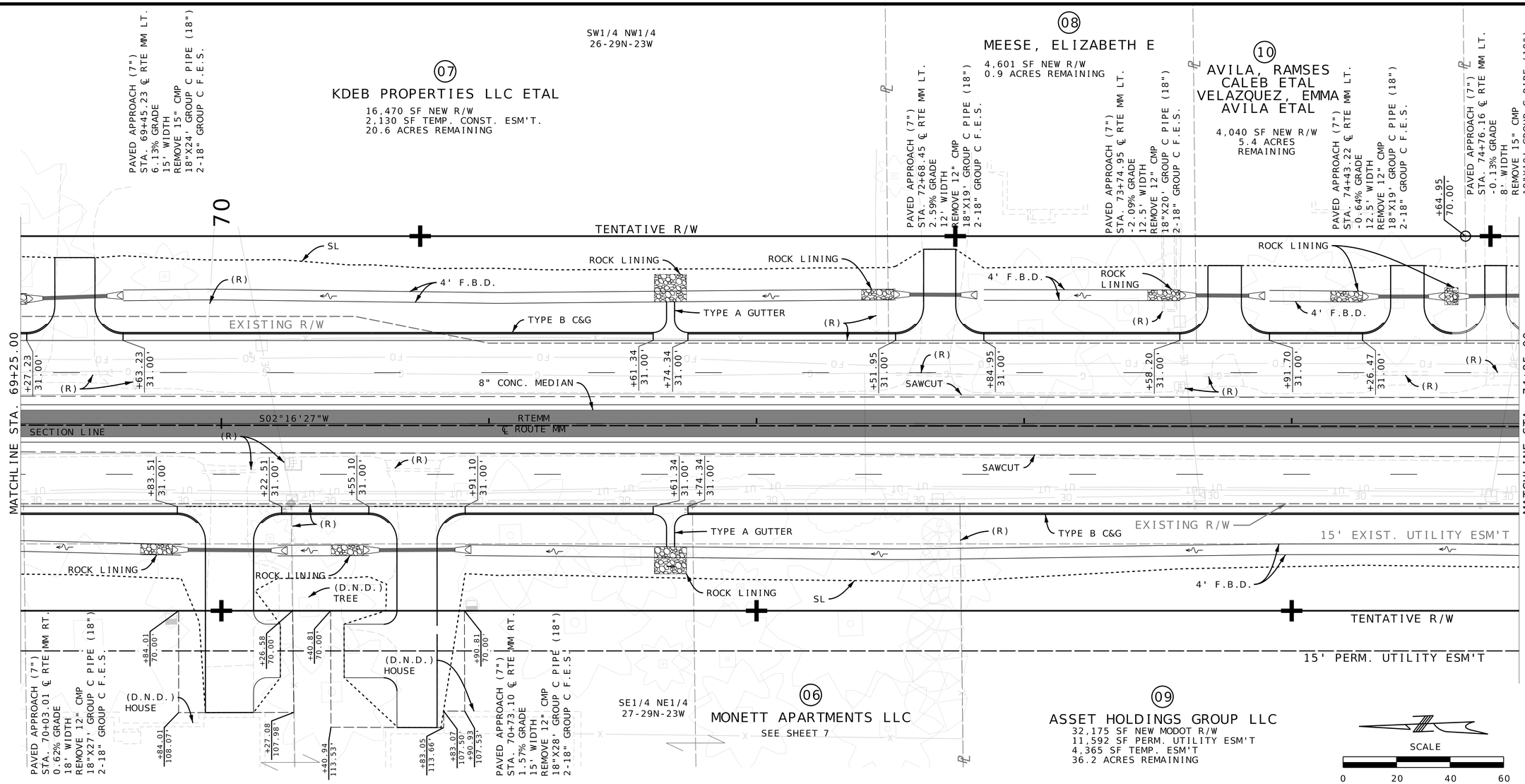

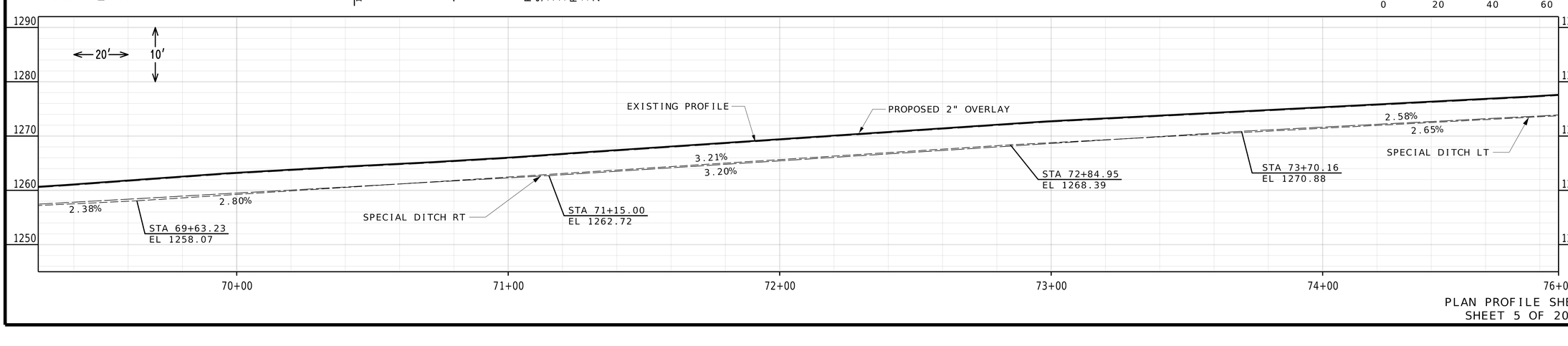

PLAN PROFILE SHEET
SHEET 5 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	8

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE | DESCRIPTION

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TEMP. CONST. ESM'T

+40.00 145.00'

(11)

JENKINS, JAMES W.

7,127 SF NEW R/W
7,704 SF TEMP. CONST. ESM'T.
6.7 ACRES REMAINING

+40.00 70.00'

TEMP. CONST. ESM'T

PAVED APPROACH (7")
STA. 76+12.74 ℄ RTE MM LT.
6.7' WIDTH
-0.41% GRADE
REMOVE EXIST. 18" CMP
18"X21' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

+42.34 145.00'

+42.55 124.93'

SW1/4 NW1/4
26-29N-23W

TEMP. CONST. ESM'T

(12)

WINDHAM, WILLIAM A.

3,596 SF NEW R/W
4,944 SF TEMP.
CONST. ESM'T
0.9 ACRES REMAINING

+32.59 109.99'

+32.43 125.00'

PAVED APPROACH (7")
STA. 77+24.85 ℄ RTE MM LT.
10' WIDTH
2.16% GRADE
REMOVE EXIST. 12" CMP
18"X24' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

PAVED APPROACH (7")
STA. 78+21.83 ℄ RTE MM LT.
23' WIDTH
4.43% GRADE
REMOVE EXIST. 12" CMP
18"X32' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

+20.00 110.00'

(13)

OAK FOREST PROP
1384 S HWY MM LLC

14,300 SF NEW R/W
5,438 SF TEMP. CONST. ESM'T.
10.6 ACRES REMAINING

TEMP. CONST. ESM'T

+20.00 70.00'

PAVED APPROACH (7")
STA. 79+67.64 ℄ RTE MM LT.
12.5' WIDTH
6.56% GRADE
REMOVE EXIST. 12" CMP
18"X22' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

+00.00 100.00'

TEMP. CONST. ESM'T

+00.00 70.00'

75

80

+90.66 31.00'

+99.89 31.00'

+26.59 31.00'

+09.35 31.00'

+40.35 31.00'

+00.08 31.00'

+43.58 31.00'

+50.90 31.00'

+84.37 31.00'

(R)

TENTATIVE R/W

SL

ROCK LINING

4' F.B.D. LT

TYPE A GUTTER

C&G

EOP

EXISTING R/W

EXIST. EOS

SAWCUT

8" CONC. MEDIAN

MATCHLINE STA. 74+85.00

MATCHLINE STA. 80+45.00

S02°16'27"W

SECTION LINE

RTEMM

℄ ROUTE MM

+61.34 31.00'

+74.34 31.00'

15' EXIST. UTILITY ESM'T

4' F.B.D.

+28.19 43.01'

+38.01 43.01'

+28.12 31.00'

R153

+41.87 70.00'

15' PERM. UTILITY ESM'T

SCALE

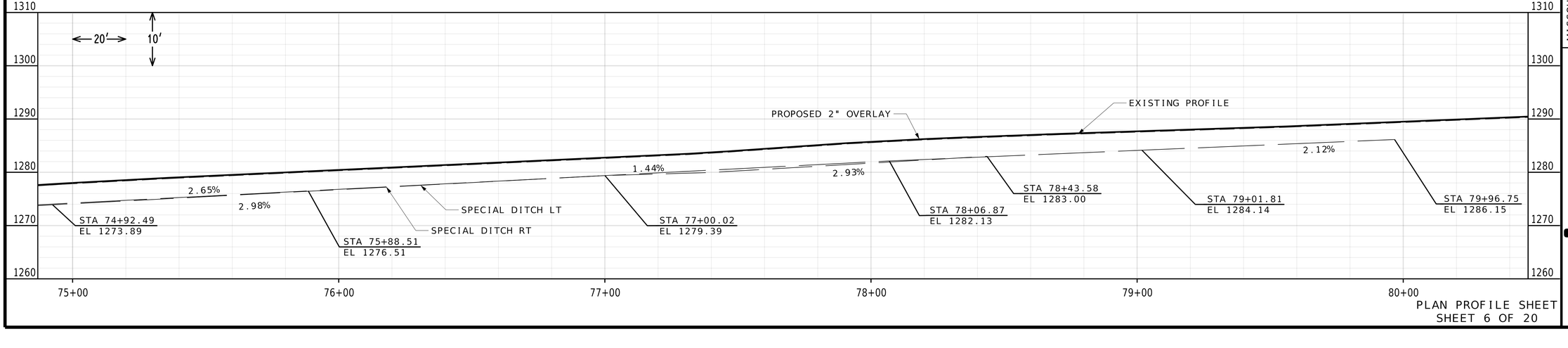
0 20 40 60

(09)

ASSET HOLDINGS GROUP LLC

SEE SHEET 8

SE1/4 NE1/4
27-29N-23W



PLAN PROFILE SHEET
SHEET 6 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE MM | STATE MO
DISTRICT SW | SHEET NO. 9
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DATE | DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

(13)
OAK FOREST PROP-1384 S HWY MM LLC
SEE SHEET 9

TEMP. CONST. ESM'T
+65.00 70.00'
+65.00 100.00'
1/4 SECTION LINE
100' EXIST. UTILITY ESM'T
NW1/4 SW1/4 26-29N-23W

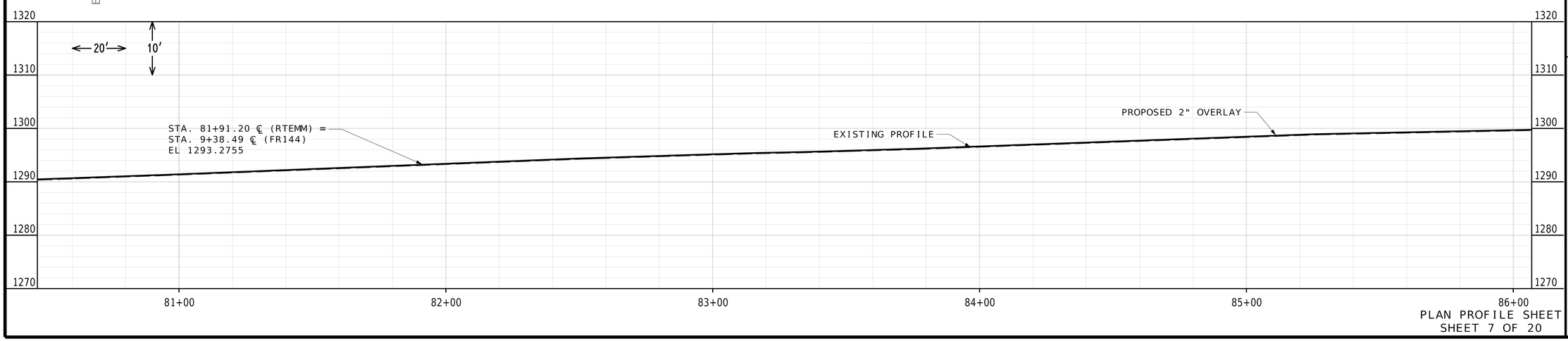
(14)
GARRETT, LEE TR ETAL
30,559 SF NEW R/W
22.0 ACRES REMAINING

SCALE
0 20 40 60

+00.00 70.00'

TENTATIVE R/W
SW1/4 NW1/4 26-29N-23W
SL
4' F.B.D. LT
(R)
INLET 83T1
EOP
C&G
EXISTING R/W
8" CONC. MEDIAN
SAWCUT
EXIST. EOS
S02°16'27"W
RTEMM
℄ ROUTE MM
END STA 19+38.49
SECTION LINE
MATCHLINE STA. 80+45.00
MATCHLINE STA. 86+05.00
90.55°
8" CONC. MEDIAN
STA. 81+91.20 ℄ (RTEMM)=
STA. 19+38.49 ℄ (Farm Road 144 HCL)
+60.30 31.00'
+60.30 34.00'
R 153'
+10.21 56.54'
+13.10 31.00'
INLET 83T2
R 10'
+75.86 47.77'
FES 83FES1
R 78'
EXIST. 15' DRAINAGE, SANITARY SEWER, AND U/E ESM'T
AT&T FACILITIES ESM'T
FR 144 CL
S88°16'31"E
EXISTING CITY R/W
(15)
MURFIN INC
22,102 SF NEW R/W
23,816 SF NEW CITY R/W
49,696 SF TEMP. ESM'T.
8.0 ACRES REMAINING
TEMP. CONST. ESM'T
+75.03 56.57'
+83.88 56.58'
10' EXIST. UTILITY ESM'T
+92.68 52.92'
+39.98 79.09'
+92.68 96.66'
+22.64 96.69'
R 17.5'
+70.30 91.54'
SAWCUT
SL
C&G
EXIST. C&G
TEMP. CONST. ESM'T
+62.00 105.00'
+60.00 105.00'
+02.65 127.37'
+70.06 127.37'
15' EXIST. UTILITY ESM'T
15' PREM. UTILITY ESM'T
+57.01 35.00'
+60.77 88.72'
TEMP. CONST. ESM'T
EXIST. CITY R/W
EXIST. CITY R/W
EXIST. UTILITY ESM'T
NE1/4 SE1/4 27-29N-23W

PAVED APPROACH (8")
STA. 85+87.68 ℄ ROUTE MM RT
33.4' WIDTH
GRADE = 3.84%
REMOVE EXIST. 18" RCP



PLAN PROFILE SHEET
SHEET 7 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	9/16/2024
ROUTE	MM
STATE	MO
DISTRICT	SW
SHEET NO.	10
COUNTY	GREENE
JOB NO.	J8S0836B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

(14)
GARRETT, LEE TR ETAL
SEE SHEET 10

10' EXIST. UTILITY ESM'T

PAVED APPROACH (7")
STA. 87+01.06 ℄ RTE MM LT.
9' WIDTH
-2.36% GRADE

PAVED APPROACH (7")
STA. 88+98.88 ℄ RTE MM LT.
12' WIDTH
-2.44% GRADE

NW1/4 SW1/4
26-29N-23W

(17)
THOMAS, RANDY
22,740 SF NEW R/W
11.8 ACRES REMAINING

PAVED APPROACH (7")
STA. 90+99.10 ℄ RTE MM LT.
12' WIDTH
-5.40% GRADE
REMOVE EXIST. 12" CMP

TENTATIVE R/W
4' F.B.D. LT
SL
EXISTING R/W
EOP
C&G
EXIST. EOP
SAWCUT
8" CONC. MEDIAN
INLET 88T1
INLET 90T1
INLET 90T2
INLET 86T1
P1 STA 86+92.60
Δ = 0°14'14" RT
S02°16'27"W
S02°30'41"W
SECTION LINE
RTEMM
℄ ROUTE MM
MATCHLINE STA. 86+05.00
MATCHLINE STA. 91+65.00
EXISTING CITY R/W
15' EXIST. UTILITY ESM'T
10' PERM. UTILITY ESM'T
10' EXIST. UTILITY ESM'T
15' EXIST. UTILITY ESM'T
10' EXIST. UTILITY ESM'T
TEMP. CONST. ESM'T
10' EXIST. ELECTRIC LINE ESM'T
R 13.5'

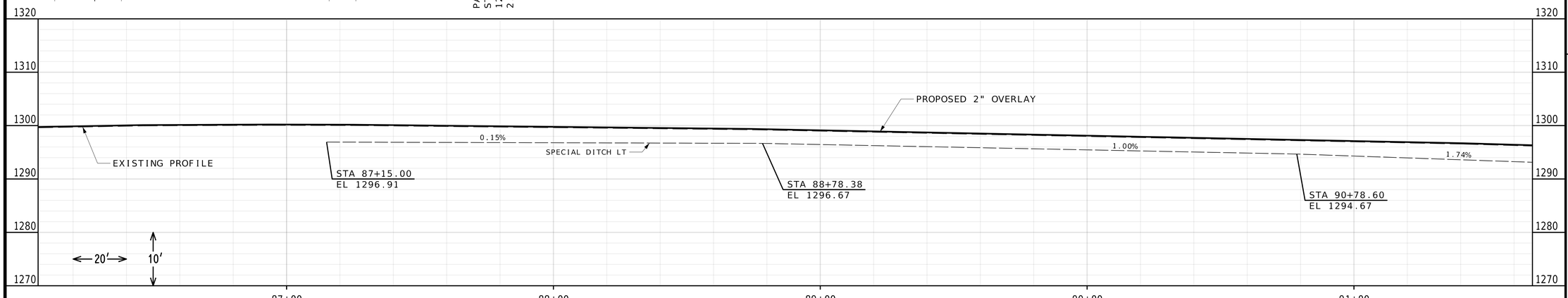
+92.60 70.00'
+86.25 31.00'
+16.06 31.00'
+82.38 31.00'
+15.38 31.00'
+82.60 31.00'
+15.60 31.00'
+24.02 31.00'
+15.07 31.00'
+54.07 31.00'
+44.63 31.00'
+27.54 80.00'
+27.54 70.00'
+27.54 56.81'
+92.60 70.00
+20.00 70.00'
+20.00 80.00'
+50.00 80.00'
+50.00 70.00'
+44.63 43.00'
+54.46 43.00'
+65.00 70.00'

(16)
RED MONKEY FOODS PROP HOLDINGS
12,580 SF NEW R/W
8,254 SF PERM. UTILITY ESM'T
1,198 SF TEMP. CONST. ESM'T.
10.1 ACRES REMAINING

NE1/4 SE1/4
27-29N-23W

PAVED APPROACH (7")
STA. 87+34.57 ℄ RTE MM RT.
12.5' WIDTH
2.66% GRADE

SCALE
0 20 40 60



PLAN PROFILE SHEET
SHEET 8 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	11

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(17)
THOMAS, RANDY
SEE SHEET11

NW1/4 SW1/4
26-29N-23W

SW1/4 SW1/4
26-29N-23W

(19)
MCCALL, VIRGINIA TR ETAL
45,659 SF NEW R/W
325 SF TEMP CONST. ESM'T
78.0 ACRES REMAINING

SCALE
0 20 40 60

TENTATIVE R/W

1/4 1/4 SECTION LINE

95

SL

(R)

4' F.B.D.

INLET 94T1

EOP
C&G

(R)

INLET 97T1

EXISTING R/W

(R)

EXIST. EOS

SAWCUT

+80.67
31.00'

8" CONC. MEDTAN

STA. 93+11.91 ℄ (RTEMM)
STA. 9+89.78 ℄ (KingsSt1)

8" CONC. MEDIAN

SECTION LINE

90.91°

S92°30'41"W

RTEMM
℄ ROUTE MM

MATCHLINE STA. 91+65.00

MATCHLINE STA. 97+25.00

SAWCUT

SAWCUT

EXIST. EOS

SAWCUT

+95.60
31.00'

8" CONCRETE MEDIAN

EXISTING R/W

8" CONCRETE
MEDIAN

(R)

EOP
C&G

INLET 94T2

INLET 97T2

+37.72
31.00'

EXISTING CITY R/W

SL

5' EXIST. UTILITY ESM'T

R 153'

C&G
EOP

R 78'

(R)

INLET 92T1

+91.72
47.61'

+31.34
57.56'

(R)

15' EXIST. UTILITY ESM'T

10' EXIST. UTILITY ESM'T

10' EXIST. UTILITY ESM'T

TENTATIVE R/W

ADJUST
SAN. MH

10' EXIST.
UTILITY
ESM'T

10' EXIST.
UTILITY
ESM'T

+91.65
85.00'

+90.14
128.45'

S88°23'58"E

(R)

R 60'

R 78'

+54.18
123.90'

+62.43
88.81'

+57.87
105.85'

PERM. UTILITY
ESM'T

TENTATIVE R/W

PERM. UTILITY ESM'T

+38.15
90.00'

+60.00
75.00'

25' EXIST. UTILITY ESM'T

R 153'

PERM. BUILDING SETBACK
& UTILITY ESM'T.

PERM. SANITARY
SEWER ESM'T.

TEMP. CONST. ESM'T

KingsSt1
℄ Kings Street

MODOT R/W
CITY R/W

+79.04
134.19'

+73.79
134.19'

+94.55
186.47'

8+15.77

10' EXIST.
UTILITY ESM'T

15' EXIST. BUILDING SETBACK
& EXIST. UTILITY ESM'T

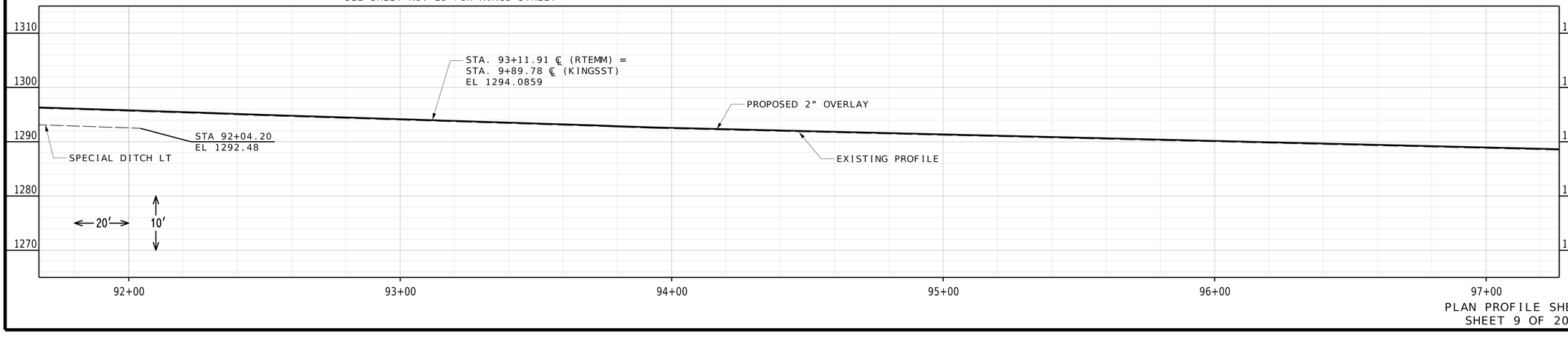
EXISTING CITY R/W

SEE SHEET NO. 25 FOR KINGS STREET

(16)
NE1/4 SE1/4
27-29N-23W
RED MONKEY FOODS
PROP HOLDINGS
SEE SHEET 11

PAVED APPROACH (8")
STA. 8+15.77 ℄ KINGS STREET RT.
26.5' WIDTH
GRADE = 0.85%

(18)
STORE MASTER FUNDING XI LLC
11,220 SF NEW MODOT R/W
1,918 SF NEW CITY R/W
3,768 SF PERM. UTILITY ESM'T
388 SF. TEMP. CONST. ESMT.
3.5 ACRES REMAINING
SE1/4 SE1/4
27-29N-23W



PLAN PROFILE SHEET
SHEET 9 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	12

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(19)
MCCALL, VIRGINIA TR ETAL
SEE SHEET12

(21)
ERWIN, GREGGORY
6,400 SF NEW R/W
0.8 ACRES REMAINING

SW1/4 SW1/4
26-29N-23W

(19)
MCCALL, VIRGINIA TR ETAL
SEE SHEET12

SCALE
0 20 40 60

PAVED APPROACH (7")
STA. 99+38.65 ℄ RT
-3.39% GRADE
10.0' WIDTH

PAVED APPROACH (7")
STA. 100+24.35 ℄ RTE MM LT
-4.45% GRADE
10.0' WIDTH

+82.30
70.00'

100

TENTATIVE R/W

SL

4' F.B.D. LT

EOP
C&G

(R)

INLET 99T1

INLET 100T1

+08.85
31.00'

+39.85
31.00'

INLET 102T1

EXISTING R/W

+22.85
31.00'

+53.85
31.00'

PI STA 99+82.30
Δ = 0°8'18" LT

EXIST. EOS

SAWCUT

SECTION LINE

S02°30'41"W

S02°22'23"W

RTEMM
℄ ROUTE MM

8" CONC. MEDIAN

MATCHLINE STA. 97+25.00

MATCHLINE STA. 102+85.00

+53.29
40.30'

+84.28
40.99'

EXIST. 5' UTILITY ESM'T

EXIST. 10' UTILITY ESM'T

INLET 100T2

INLET 101T1

INLET 102T2

4' F.B.D. RT

SL

+95.56
41.24'

PERM. UTILITY ESM'T

+82.30
75.00'

+82.30
90.00'

+50.00
111.00'

+50.00
75.00'

+85.00
111.00'

+85.00
75.00'

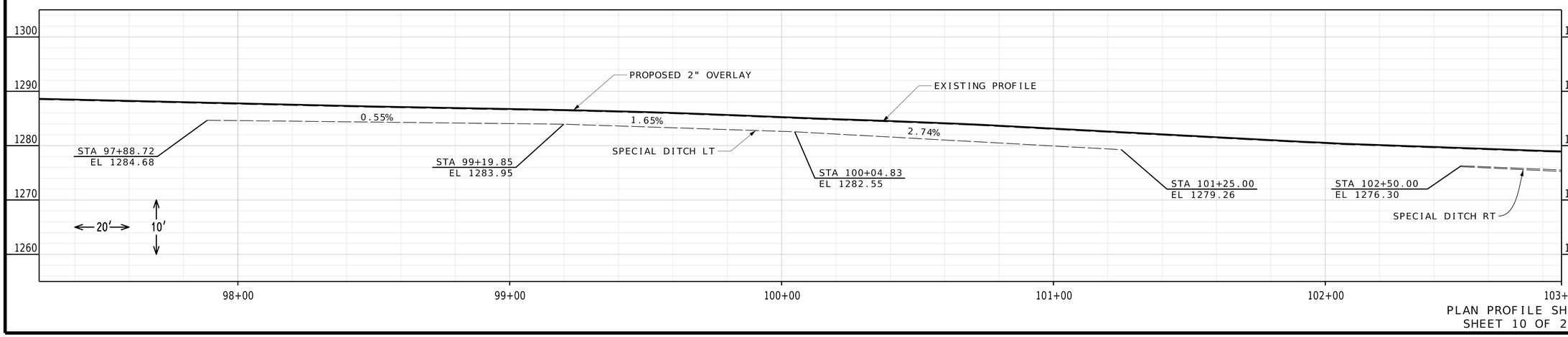
TEMP. CONST. ESM'T

(20)
TCS LAND INVESTMENT LLC
45,326 SF NEW R/W
15,110 SF PERM. UTILITY ESM'T
1,260 SF TEMP. CONST. ESM'T.
18.2 ACRES REMAINING

APPROXIMATE
SINKHOLE
LOCATION

SE1/4 SE1/4
27-29N-23W

PAVED APPROACH (7")
STA. 100+68.03 ℄ RTE MM RT.
4.00% GRADE
9' WIDTH



PLAN PROFILE SHEET
SHEET 10 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	13

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

SCALE
0 20 40 60

(19)
MCCALL, VIRGINIA TR ETAL
SEE SHEET12

SW1/4 SW1/4
26-29N-23W

AGGREGATE DRWY.
STA. 1+09.00 ℄ FR 148 LT.
8' WIDTH

EXISTING CITY R/W

+15.38
125.00'

+30.48
109.00'

+30.38
125.10'

+55.48
109.00'

+15.55
97.72'

TEMP. CONST. ESM'T

PLUG WELL

+78.89
70.00'

+92.90
70.00'

FR 148 CL
℄ FR 148

S87°57'31"E

SECTION LINE

SAWCUT

SL

(D.N.D.)

R75'

FES 4FES1

+62.13
31.00'

NW1/4 NW1/4
35-29N-23W

TENTATIVE R/W

+87.62
31.00'

4" F.B.D. LT

SL

(R)

INLET 105T1

INLET 104T2

INLET 104T3

INLET 105T4

INLET 106T1

EOP
C&G

+68.53
31.00'

EXISTING R/W

PI STA 105+92.90
Δ = 0°19'54" LT

INLET 4T1

STA. 107+52.92 (℄ RTEMM)
STA. 0+00.00 (℄ FR148)

MATCHLINE STA. 102+85.00

EXIST. EOS

SECTION LINE

S02°22'23"W

SAWCUT

INLET 105T2

S02°02'29"W

90°

8" CONC. MEDIAN

RTEMM
℄ ROUTE MM

EQUATION:
STA 107+56.19 BK =
STA 3+80.96 AH

MATCHLINE STA. 4+70.00

INLET 104T1

EXIST. 5' UTILITY ESM'T

EXIST. 10' UTILITY ESM'T

INLET 104T4

INLET 105T3

INLET 105T5

INLET 106T2

+92.90
41.00'

INLET 4T2

SL

ROCK LINING

TENTATIVE R/W

PERM. UTILITY ESM'T

+92.90
75.00'

+92.90
90.00'

+32.26
75.00'

+81.41
75.00'

+32.30
90.00'

EXISTING R/W

EXISTING 10'
UTILITY ESM'T

EXISTING 15'X20'
UTILITY ESM'T

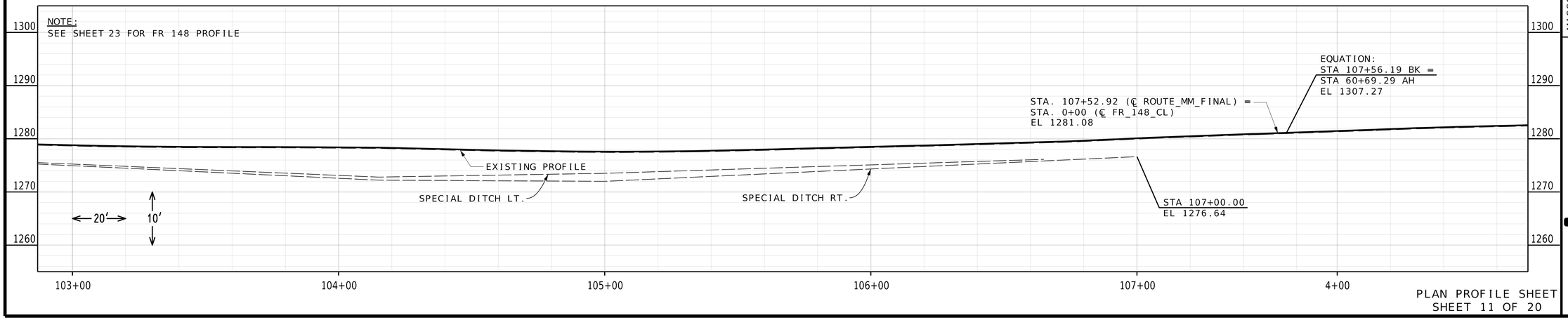
EXIST.
UTILITY
ESM'T

EXISTING 10'
UTILITY ESM'T

(20)
TCS LAND INVESTMENT LLC
SEE SHEET 13

SE1/4 SE1/4
27-29N-23W

NE1/4 NE1/4
34-29N-23W



PLAN PROFILE SHEET
SHEET 11 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	14

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

PSQUAREDSTORAGE LLC
NO ACQUISITION

NW1/4 NW1/4
35-29N-23W

S2J HOLDINGS LLC
NO ACQUISITION

SCALE
0 20 40 60

MATCHLINE STA. 4+70.00

MATCHLINE STA. 10+30.00

EXISTING R/W

SAWCUT

SL

4' F.B.D. LT

C&G
EOP

+64.28
31.00'

PAVED APPROACH (8")
STA. 7+31.33 LT
GRADE = 2.46%
30' WIDTH

+44.42
35.00'

MANHOLE 9M1

+03.66
31.87'

(R)

+60.65
33.14'

EXIST. EOS

SAWCUT

8" CONC. MEDIAN

SECTION LINE

S02°02'22"W

℄ ROUTE MM
RTEMM

SAWCUT

8" CONC. MEDIAN

EXIST. EOS

+07.11
36.89'

(R)

+53.11
35.87'

(R)

(R)

(R)

+22.17
41.00'

SL

EOP
C&G

(R)

+92.31
35.00'

SAWCUT

(D.N.D.) GATE

SAWCUT

EXISTING R/W

+05.00
88.58'

+60.00
88.58'

+05.00
110.00'

TEMP. CONST.
ESM'T

+60.00
110.00'

PAVED APPROACH (8")
STA. 7+32.22 RT
GRADE = -6.28%
25.0' WIDTH

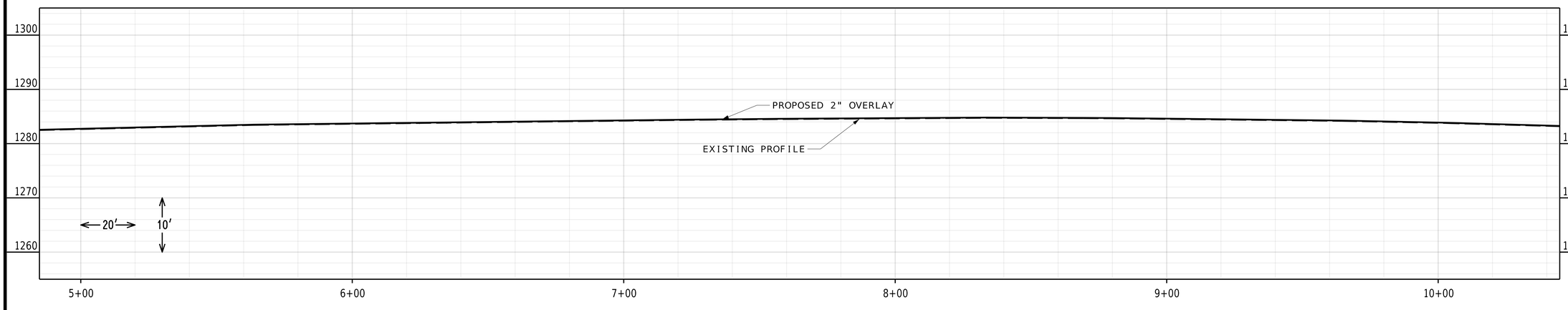
EXIST. 10' UTILITY ESM'T

EXIST. 10' ELECTRIC
LINE ESM'T (UNDERGROUND)

NE1/4 NE1/4
34-29N-23W

22

OLD C-W VENTURES INC ETAL
HAMMIT-EOFF PROPERTIES LLC ETAL
2,119 SF NEW R/W
1,178 SF TEMP. CONST ESM'T.
8.9 ACRES REMAINING



PLAN PROFILE SHEET
SHEET 12 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE MM | STATE MO
DISTRICT SW | SHEET NO. 15
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

NW1/4 NW1/4
35-29N-23W

EXISTING R/W

PAVED APPROACH (8")
STA. 12+30.00 LT
GRADE = 5.62%
36' WIDTH

OBLITERATE

TEMP. CONST. ESM'T

+00.00 98.58'
+00.00 88.54'
+60.00 88.59'
+60.00 98.58'

+99.26 35.00'
+62.26 35.00'

FUTURE SIDEWALK TO BE CONSTRUCTED UNDER PROJECT J8S0836E

END COLDMILLING DEPTH TRANSITION
END 2" OVERLAY
STA. 13+34.91 (℄ RTEMM)

+74.98 35.00'

SCALE
0 20 40 60

15

MATCHLINE STA. 10+30.00

MATCHLINE STA. 15+90.00

EOP
C&G
INLET 11T1
(R)
SL
INLET 13T1
C&G
EOP
INLET 15T1
INLET 15T3

BEGIN COLDMILLING DEPTH TRANSITION
STA. 11+34.91 (℄ RTEMM)

STA. 12+31.01 (℄ RTEMM)
STA. 12+59.10 (℄ Carnahan)

8" CONC. MEDIAN
8" CONC. MEDIAN
SAWCUT

RTEMM
℄ ROUTE MM
SECTION LINE
S02°02'22"W

30.28'
S88°14'35"E

SAWCUT
8" CONC. MEDIAN
SAWCUT
SAWCUT
SAWCUT

(R)
(R)

EOP
C&G
(R)
INLET 11T2
(R)
+19.26 35.00'

Carnahan
℄ CARNAHAN

+66.36 35.00'
INLET 13T2
C&G
EOP
INLET 15T2
INLET 15T4
SL
4' F.B.D

(D.N.D.)
R 98'
R 98'
+26.07 43.06'

EXISTING R/W
EXISTING R/W

EXISTING 10' UTILITY ESM'T
EXISTING 150' ELECTRIC ESM'T
+00.00 88.58'
EXIST. 5.23' X 41.25' UTILITY ESM'T
EXISTING 10' UTILITY ESM'T
+60.00 91.57'

+26.66 14.41'
EXIST. 10' UTILITY ESM'T
S88°14'35"E
(R)
(R)
(R)
(R)
+20.37 15.59'
EXISTING 25' DRAINAGE AND UTILITY ESM'T

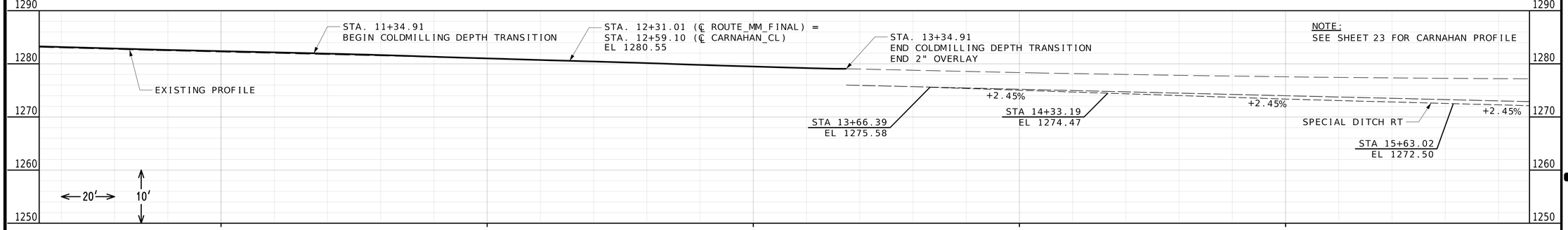
22
OLD C-W VENTURES INC ETAL
HAMMIT-EOFF PROPERTIES LLC ETAL
SEE SHEET $PP12$

TENTATIVE R/W
+19.68 30.00'
+01.70 139.57'
TENTATIVE R/W
+19.39 30.00'
+61.70 139.57'

C&G
C&G
+88.31 17.41'
+88.31 14.41'
+88.31 18.59'
+88.31 15.59'
SAWCUT
EXISTING 25' UTILITY ESM'T
EXISTING CITY R/W

NE1/4 NE1/4
34-29N-23W

23
HERRMAN REALTY CO
2,130 SF NEW R/W
12.0 ACRES REMAINING



NOTE:
SEE SHEET 23 FOR CARNAHAN PROFILE

PLAN PROFILE SHEET
SHEET 13 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	9/16/2024
ROUTE	MM
STATE	MO
DISTRICT	SW
SHEET NO.	16
COUNTY	GREENE
JOB NO.	J8S0836B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

SW1/4 NW1/4
35-29N-23W

(24)

1ST BAPTIST CHURCH OF BROOKLINE

6,300 SF NEW R/W
5,314 SF TEMP. CONST. ESM'T.
12.0 ACRES REMAINING

P S & CO PROPERTY LLC
NO ACQUISITION

NW1/4 NW1/4
35-29N-23W

EXISTING 10' UTILITY ESM'T

EXISTING R/W

SCALE
0 20 40 60

FES 16FES1
FES 16FES3
INLET 16T5
INLET 16T1
INLET 16T3
INLET 17T1
INLET 16T2
INLET 16T4
INLET 16T6
INLET 17T2
FES 16FES4
FES 16FES2
ROCK LINING

+20.88 34.99'
+11.64 65.00'
+11.73 50.00'
+20.57 31.00'
+20.61 31.00'
+20.56 35.00'
+48.81 30.99'
+04.84 30.99'
+26.61 65.00'
+26.71 50.00'
+39.45 31.00'

FUTURE SIDEWALK TO BE CONSTRUCTED UNDER PROJECT J8S0836E

TEMP. CONST. ESM'T
SAWCUT
TYPE S CURB
TENTATIVE R/W
C&G EOP
SL
(R)

PI STA 16+26.03
Δ = 0°07'59" RT

S02°02'22"W
S02°10'21"W

RTEMM
℄ ROUTE MM

SECTION LINE

8" CONC. MEDIAN INLET 19T1

(R) DRIVEWAY

TS STA 20+39.45

FES 20FES1
TYPE A PIPE COLLAR
INLET 20T1
FES 20FES2

4' F.B.D.

MATCHLINE STA. 15+90.00

MATCHLINE STA. 21+50.00

1/4 1/4 SECTION LINE

EXISTING 10' UTILITY ESM'T

EXISTING 25' UTILITY ESM'T

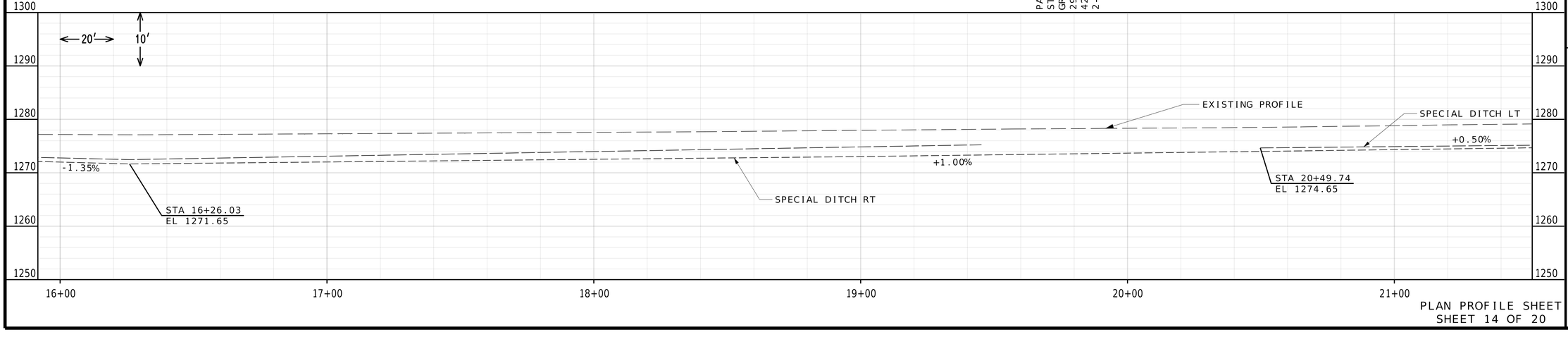
NE1/4 NE1/4
34-29N-23W

SE1/4 NE1/4
34-29N-23W

PAVED APPROACH (8")
STA. 19+77.12 RT
GRADE = 3.98%
29' WIDTH
42"X36" GROUP C PIPE (36")
2-36" GROUP C F.E.S.

MORELOCK FAMILY LIMITED PARTNERSHIP
NO ACQUISITION

APPROXIMATE SINKHOLE LOCATION



PLAN PROFILE SHEET
SHEET 14 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED: 9/16/2024
ROUTE: MM
STATE: MO
DISTRICT: SW
SHEET NO.: 17
COUNTY: GREENE
JOB NO.: J8S0836B
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

P S & CO PROPERTY LLC
SEE SHEET17

EXISTING 20' UTILITY ESM'T
EXISTING 10' UTILITY ESM'T
EXISTING R/W

SW1/4 NW1/4
35-29N-23W

SCALE
0 20 40 60

PAVED APPROACH (7")
STA. 22+22.87 LT
GRADE = 4.19%
20' WIDTH
38"X18" GROUP C PIPE (18")
2-18" GROUP C F.E.S.

ROCK LINING

SC STA A 203.49

+02.26
30.99'

+43.53
31.00'

(R)

FUTURE SIDEWALK TO
BE CONSTRUCTED UNDER
PROJECT J8S0836E

SL

R 2327.58'

4' F.B.D.

CS STA A 199.49

+99.49
31.00'

SECTION LINE

(R)

C&G
EOP

SAWCUT

INLET 24T2

8" CONC. MEDIAN

RTEMM
℄ ROUTE MM

SAWCUT

END FULL DEPTH PAVEMENT
STA. 26+02.26 RT

SAWCUT

SAWCUT

INLET 24T1

(R)

EOP
C&G

(R)

SAWCUT

MATCHLINE STA. 21+50.00

MATCHLINE STA. 27+10.00

SAWCUT

INLET 22T1

SL

R 2265.58'

4' F.B.D.

+03.49
31.00'

+99.33
31.00'

+02.26
31.00'

EXISTING R/W
EXISTING 10' UTILITY ESM'T

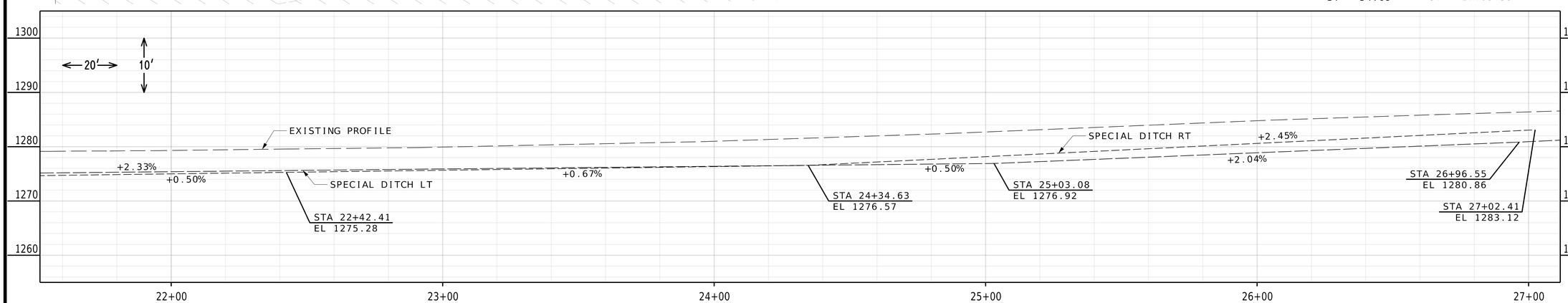
ASPHALT WEDGE

MORELOCK FAMILY LIMITED PARTNERSHIP
SEE SHEET17

APPROXIMATE
SINKHOLE
LOCATION

SE1/4 NE1/4
34-29N-23W

PI	26+54.18	PI	24+01.98
Ls	164.04'	SC	22+03.49
Ys	3.91'	CS	25+99.49
Xs	163.99'	Δ	9°52'46.2" (RT)
LT	109.37'	D	2°29'41.4"
ST	54.69'	L	396.00' (ARC)
		T	198.49'
		R	2,296.58'
		TS	20+39.45
		ST	27+63.53



PLAN PROFILE SHEET
SHEET 15 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE MM | STATE MO
DISTRICT SW | SHEET NO. 18
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

SW1/4 NW1/4
35-29N-23W

EXISTING R/W

SECTION LINE

ROUTE 360
WB OFF RAMP

FUTURE SIDEWALK TO
BE CONSTRUCTED UNDER
PROJECT J8S0836E

END FULL DETPH PAVEMENT
STA. 28+28.54 LT

EXIST. EOS

SL

4' F.B.D.

+28.54
31.00'

ASPHALT WEDGE

EOP

C&G

(R)

ST STA A 27+63.53

MATCHLINE STA. 27+10.00

CP#115

SAWCUT

(D.N.D.)

8" CONC. MEDIAN

S16°08'40"W

RTEMM
℄ ROUTE MM

END PROJECT
STA 28+28.54

8" CONC. MEDIAN

ASPHALT WEDGE

(D.N.D.)

(D.N.D.)

(D.N.D.)

EXISTING R/W

SE1/4 NE1/4
34-29N-23W

ROUTE 360
WB ON RAMP

30

1/4 SECTION LINE

NW1/4 SW1/4
35-29N-23W

STA. 98+79.28 ℄ ROUTE 360 (JAMES RIVER FREEWAY)=
STA. 32+73.11 ℄ (RTEMM)

STA 32+80.83

℄ ROUTE 360

NE1/4 SE1/4
34-29N-23W

SCALE
0 20 40 60

PLAN PROFILE SHEET
SHEET 16 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
9/16/2024

ROUTE MM | STATE MO

DISTRICT SW | SHEET NO. 19

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION

DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

09
ASSET HOLDINGS GROUP LLC
SEE SHEET $PP05$

09
ASSET HOLDINGS GROUP LLC
SEE SHEET $PP05$

26
MARBLE, LARRY L
251 SF NEW CITY R/W
1,316 SF TEMP. ESM'T
0.7 ACRES REMAINING

27
AMPROD LLC
1,002 SF TEMP. ESM'T
12.4 ACRES REMAINING

15
MURFIN INC
SEE SHEET $PP07$

TENTATIVE CITY R/W
EXISTING CITY R/W
TEMP. CONST. ESM'T
EXISTING UTILITY EASEMENT
15' DRAINAGE SANITARY SEWER, AND U/E ESM'T
℄ FR 144
EOP
SAWCUT
PAVED APPROACH (7") STA. 13+68.21 ℄ FR144 LT 17' WIDTH
BEGIN CONSTRUCTION STA 10+00.00
PC STA 11+56.03
PT STA 13+86.73
MATCHLINE STA. 14+30.00
S88°24'05"E
S73°42'53"E
R 912'
R 888'
R 91.5'
R 108.5'
R 10'

PI 12+72.02
PC 11+56.03
PT 13+86.73
Δ 14°41'12.2" (RT)
D 6°21'58.3"
L 230.70' (ARC)
T 115.98'
R 900.00'

SCALE
0 20 40 60

1300
1290
1280
1270
1260
10+00
11+00
12+00
13+00
14+00
BEGIN CONSTRUCTION
STA 10+00.00
EL 1278.45
FR 144 PROPOSED PROFILE
+1.63%
20'
10'

PLAN PROFILE SHEET
SHEET 17 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED 9/16/2024
ROUTE MM | STATE MO
DISTRICT SW | SHEET NO. 20
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
1301 BURLINGTON STREET, STE. 100
NORTH KANSAS CITY, MO 64116
CERTIFICATE OF AUTHORITY NO. 001592

F:\2021\04501-05000\021-04908\40-Design\Microstation\J8S0836B\plan_sheets\4 Plan Profile\020_PP_017_J8S0836B_I20.dgn 1:24:38 PM 9/16/2024

09
ASSET HOLDINGS GROUP LLC
SEE SHEET8

25
WARD, BRYAN
1,497 SF TEMP. ESM'T
0.7 ACRES REMAINING

SE1/4 NE1/4
27-29N-23W

09
ASSET HOLDINGS GROUP LLC
SEE SHEET8

15
MURFIN INC
SEE SHEET10

PAVED APPROACH (7")
STA. 15+86.65 ℄ FR144 LT
21' WIDTH

SAWCUT

PERM. ESM'T

TEMP. CONST. ESM'T

EXISTING CITY R/W

TENTATIVE R/W

¼ SECTION LINE

MATCHLINE STA. 14+30.00

S73°42'53"E

R 30'

R 240'

R 260.97'

R 10'

R 681.62'

R 153'

R 78'

R 310'

TENTATIVE CITY R/W

EOP

C&G

CITY R/W
MODOT R/W

PC STA 15+53.61

PT STA 17+82.32

EXISTING ESM'T

8" CONCRETE MEDIAN

℄ FR 144

S88°16'31"E

STA. 19+38.49 ℄ (FR 144)=
STA. 81+91.20 ℄ (RTEMM)

℄ ROUTE MM

S02°16'27"W

RTEMM

EXISTING UTILITY EASEMENT

MSE WALL

15+35.78

89.45°

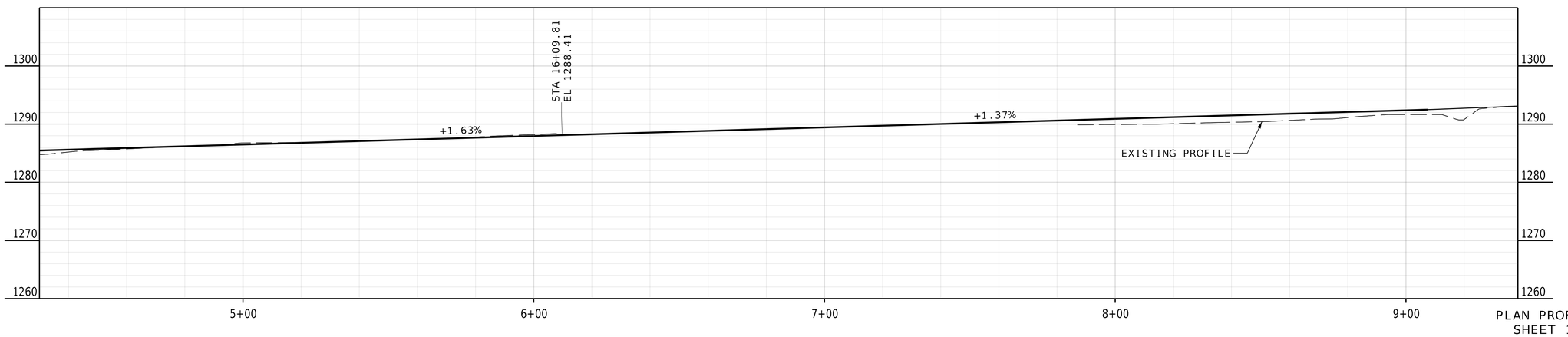
TENTATIVE R/W

PAVED APPROACH (8")
STA. 14+90.96 ℄ FR144 RT.
21' WIDTH

SCALE
0 20 40 60

PI 16+68.58
PC 15+53.61
PT 17+82.32
Δ 14°33'37.9" (LT)
D 6°21'58.3"
L 228.72' (ARC)
T 114.98'
R 900.00'

NE1/4 SE1/4
27-29N-23W



PLAN PROFILE SHEET
SHEET 18 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED 9/16/2024
ROUTE MM | STATE MO
DISTRICT SW | SHEET NO. 21
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

16

RED MONKEY FOODS PROP HOLDINGS

SEE SHEET 11

5

EXISTING ESM'T

EXISTING CITY R/W

(D.N.D.) EXISTING 4'x4' AREA INLETS

(D.N.D.)

BEGIN CONSTRUCTION STA 7+16.77

S88°23'58"E KingsSt1 ℄ KINGS ST

SAWCUT

(D.N.D.) EXISTING 7'x3' AREA INLETS

EOP C&G

TENTATIVE CITY R/W

EXISTING ESM'T

TEMP. CONST. ESM'T

SL

ADJUST MH

(R)

8" CONCRETE MEDIAN

S02°30'41"W

STA. 9+89.78 ℄ KINGS STREET= STA. 93+11.91 ℄ RTEMM

89.09°

CITY R/W

MODOT R/W

CP-16

RTEMM ℄ ROUTE MM

PERM. BUILDING SETBACK & UTILITY ESM'T.

PERM. SANITARY SEWER ESM'T.

TEMP. CONST. ESM'T

R 153'

R 78'

+74.30 35.00'

+46.64 17.77'

+16.77 0.00'

+46.64 0.00'

+16.77 18.16'

+00.00 35.00'

+98.81 50.00'

+98.81 60.13'

+93.00 49.88'

+93.00 55.96'

+54.62 59.74'

+59.13 66.54'

+65.90 76.73'

+73.41 88.06'

+56.13 35.00'

+68.95 56.95'

+61.69 23.81'

+65.22 40.29'

+83.21 44.27'

+00.17 49.10'

PAVED APPROACH (8")
STA. 8+15.77 ℄ KINGS STREET RT.
26.5' WIDTH
GRADE = 0.85%

SCALE

0 20 40 60

18

STORE MASTER FUNDING XI LLC

SEE SHEET12

NE1/4 SE1/4
27-29N-23W

1330 1320 1310 1300 1290 1280 1270 1260 1250

STA 7+15.67
BEGIN CONSTRUCTION

PROPOSED PROFILE

+1.66%

+1.80%

STA. 9+89.78 ℄ (KingsSt1) =
STA. 93+11.91 ℄ (RTEMM)

20' 10'

5+00 6+00 7+00 8+00 9+00

PLAN PROFILE SHEET
SHEET 19 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED 9/16/2024

ROUTE MM | STATE MO

DISTRICT SW | SHEET NO. 22

COUNTY GREENE

JOB NO. J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

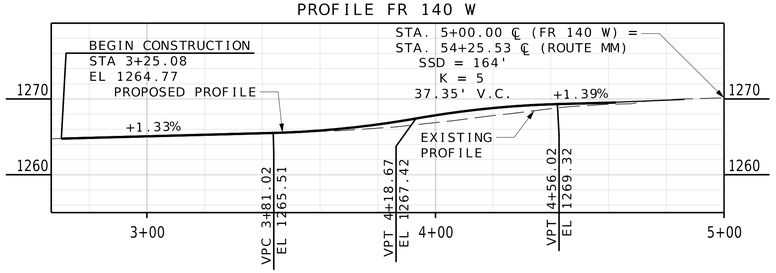
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

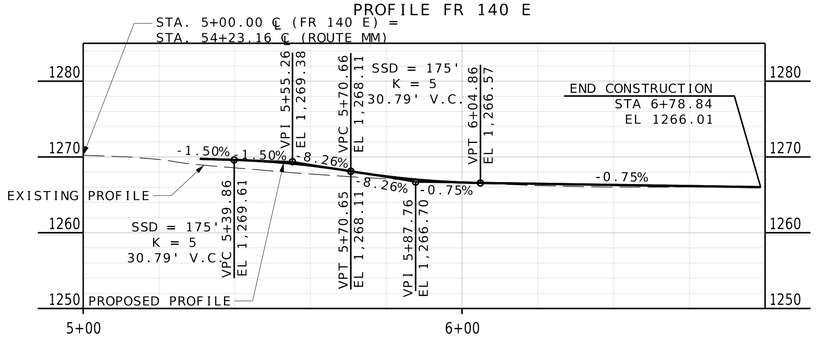
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

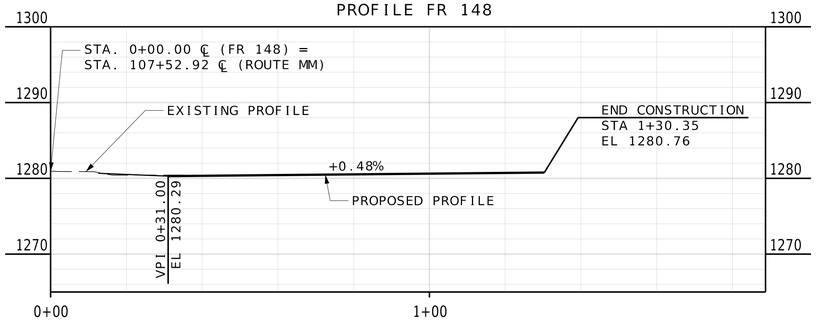
PROFILE FR 140 W



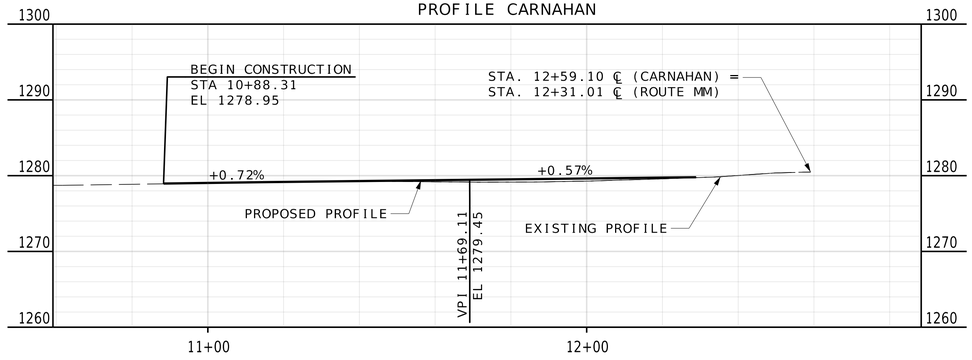
PROFILE FR 140 E

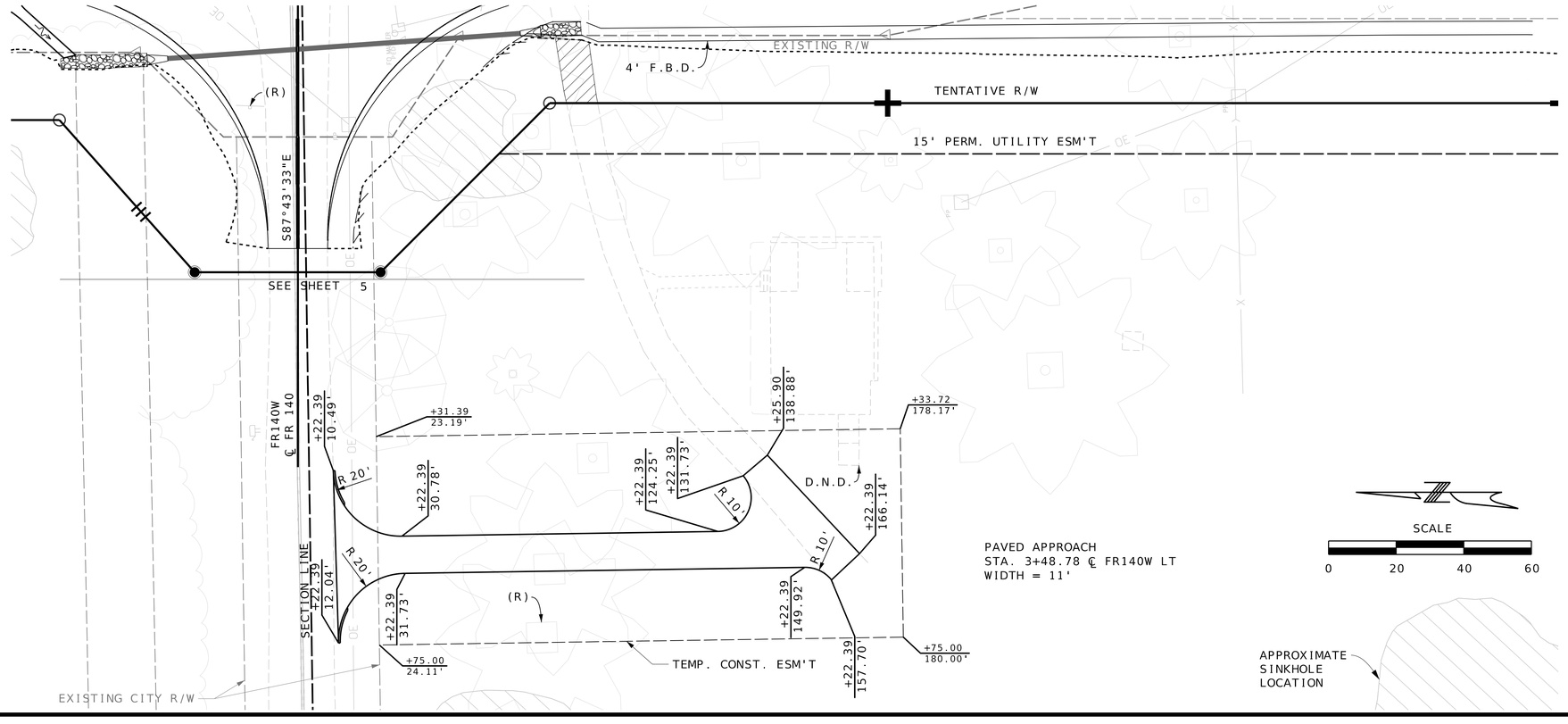


PROFILE FR 148



PROFILE CARNAHAN





PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED: 9/16/2024

ROUTE: MM | STATE: MO

DISTRICT: SW | SHEET NO.: 23

COUNTY: GREENE

JOB NO.: J8S0836B

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DATE	DESCRIPTION

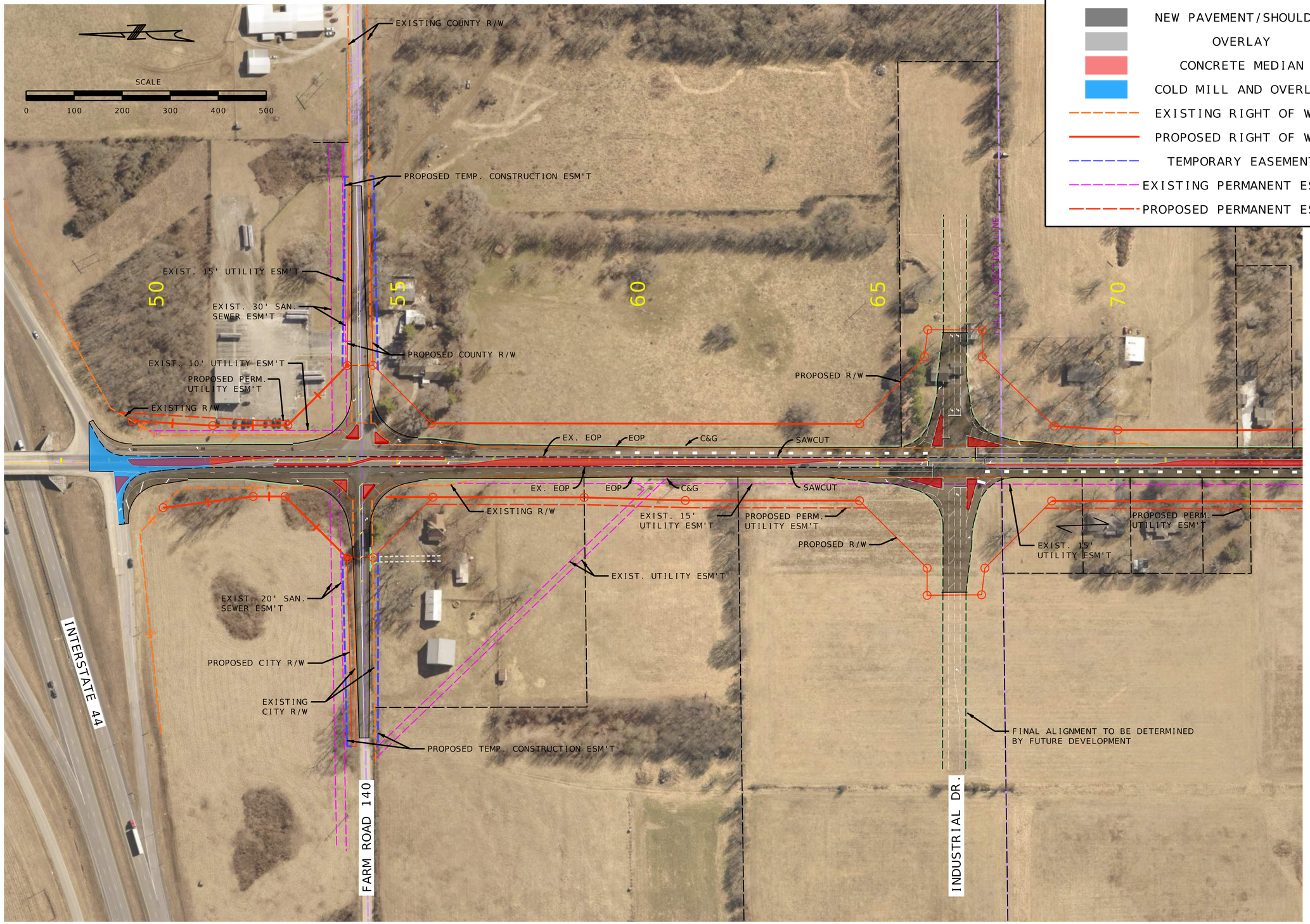
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

PLAN AND PROFILE SHEET
SHEET 20 OF 20



LEGEND

- NEW PAVEMENT/SHOULDER
- OVERLAY
- CONCRETE MEDIAN
- COLD MILL AND OVERLAY
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- EXISTING PERMANENT ESM'T
- PROPOSED PERMANENT ESM'T

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED	3/10/2023
ROUTE	MM
STATE	MO
DISTRICT	SW
SHEET NO.	1
COUNTY	GREENE
JOB NO.	J8S0836B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

DATE

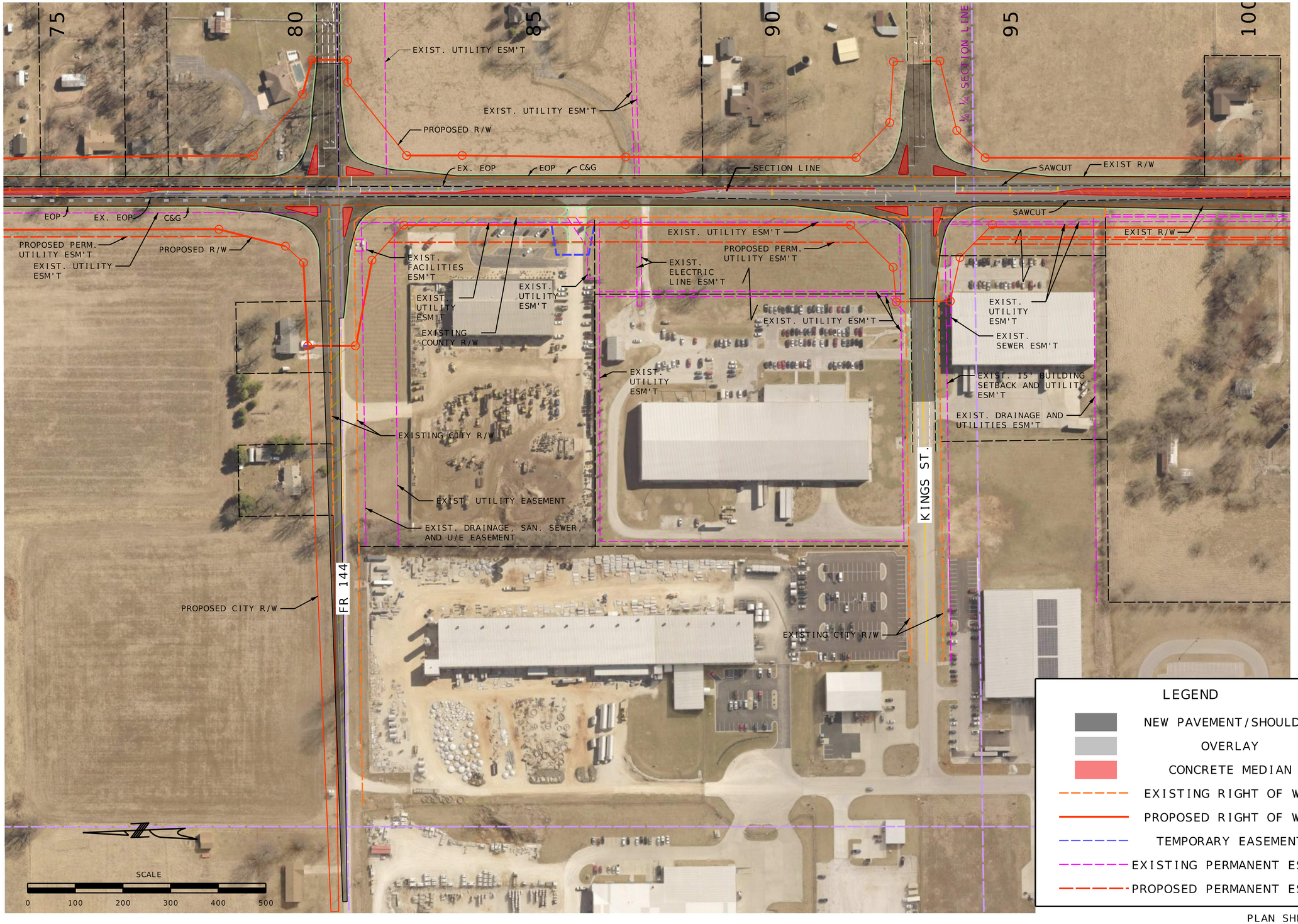
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

PLAN SHEET
SHEET 1 OF 4



LEGEND

- NEW PAVEMENT/SHOULDER
- OVERLAY
- CONCRETE MEDIAN
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- EXISTING PERMANENT ESM'T
- PROPOSED PERMANENT ESM'T

PLAN SHEET
SHEET 2 OF 4

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED	3/10/2023
ROUTE	MM
STATE	MO
DISTRICT	SW
SHEET NO.	2
COUNTY	GREENE
JOB NO.	J8S0836B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

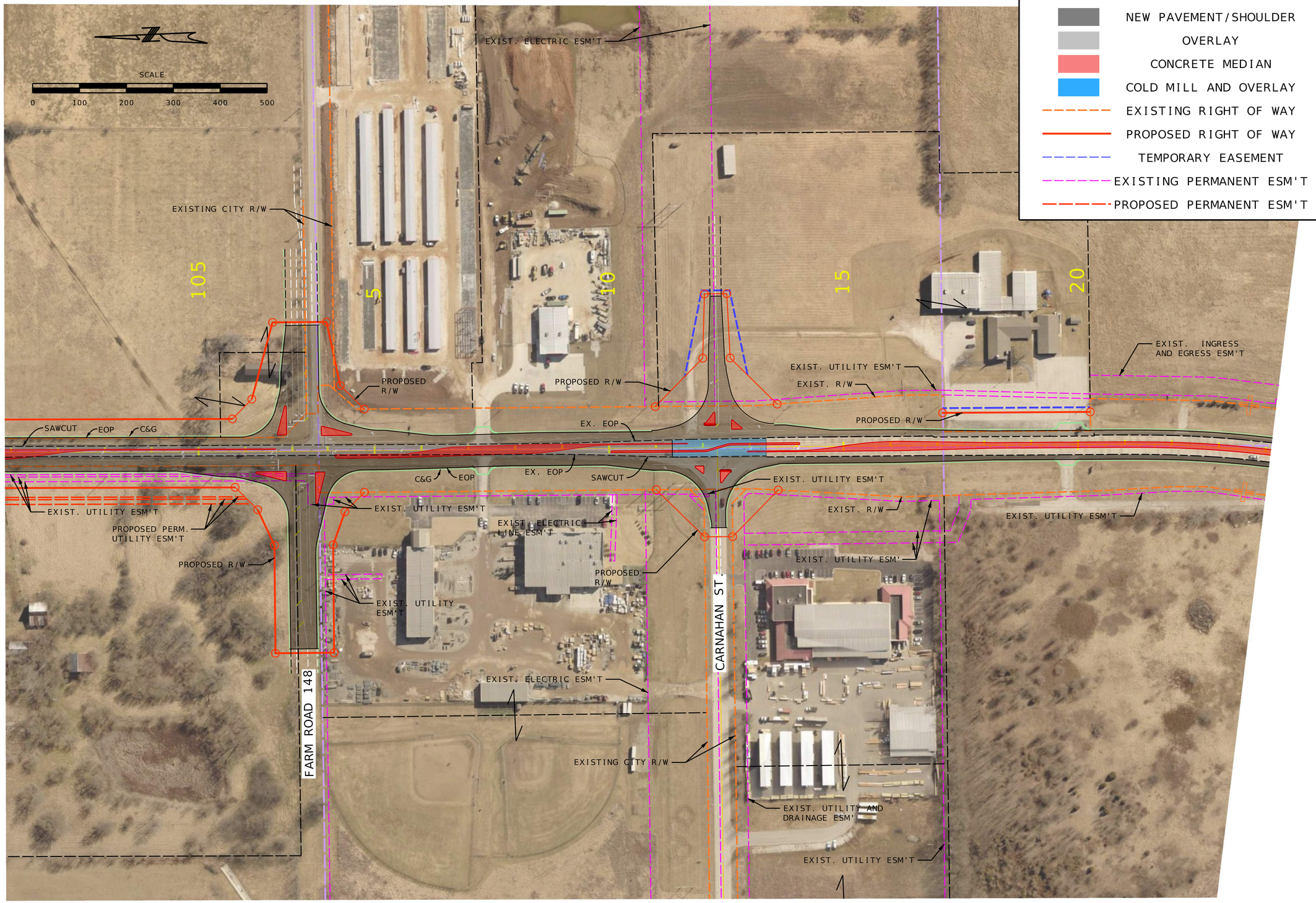
DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592



LEGEND

- NEW PAVEMENT/SHOULDER
- OVERLAY
- CONCRETE MEDIAN
- COLD MILL AND OVERLAY
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- EXISTING PERMANENT ESM'T
- PROPOSED PERMANENT ESM'T

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED: 3/10/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	3

COUNTY: GREENE

JOB NO.: J8S0836B

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

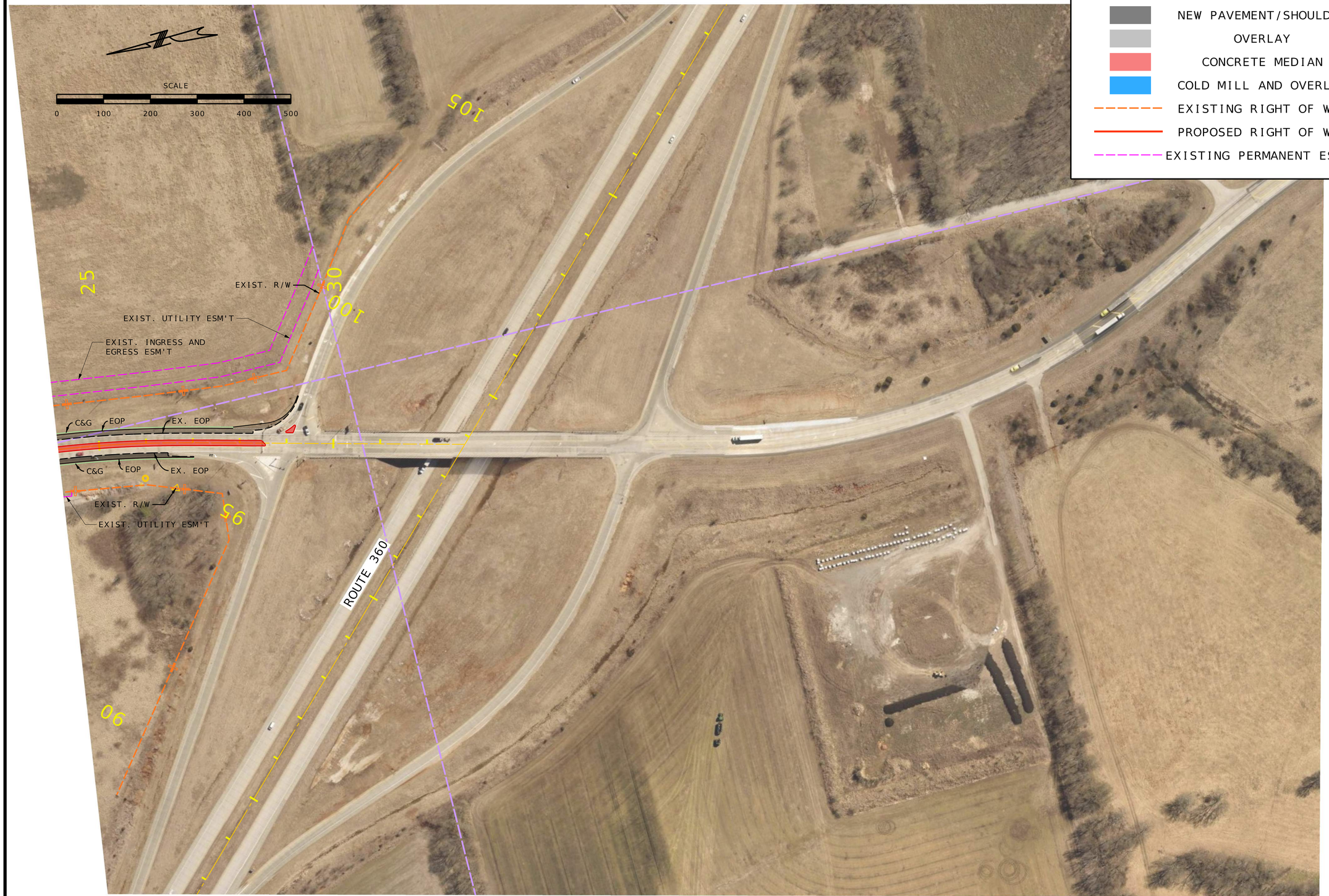
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

PLAN SHEET
SHEET 3 OF 4



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Route MM from I-44 to James River Freeway
J8S0836B
Access Management Study

Final Access Management Report

September 2024

Prepared for:

City of Republic
204 North Main Avenue
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1 Introduction

The purpose of this project, J8S0836B, is to address the safety, operations, and access management improvements along State Route MM between the interchanges of Interstate 44 and James River Freeway in Republic, Greene County, Missouri. This report will identify existing access management conditions, analyze both the existing and future operations, and make recommendations to improve operations and access management along the corridor. The primary goal is to establish recommendations for the future Route MM cross-section, provide access management recommendations, and determine anticipated intersection traffic control and turn lane needs to promote safety and operations to support future development growth patterns along the corridor.

1.1 Project Background

State Route MM carries north-south traffic from US Route 60/State Route 413 on the south, through State Route 360 (James River Freeway), to Interstate 44 (I-44) on the north. Route MM provides access to these major east-west routes between Republic, Springfield, and the surrounding areas. Route MM is currently classified as a minor arterial. The section of the corridor addressed in this study primarily serves as a major access route for industrial development but also acts as a north-south connection for commuters between Republic and Springfield.

Keeping Missouri's roads and bridges in a state of good repair contributes to a robust economy and increased quality of life. Being that this project runs through a developing industrial portion of the City of Republic, it is important to consider improvements that promote safety and operations and allow this important connection to serve the surrounding area into the future. A focus for this project will be to establish preferred access management conditions that maintain acceptable levels of service with the expected increase in future development traffic.

1.2 Study Area

This report reviews Route MM from I-44 to James River Freeway. **Figure 1** displays the extents of the project.

Overall traffic operations were reviewed at a total of eight existing and future intersections within the study area. All major roadways, including their characteristics within the study area, are shown in **Table 1**.

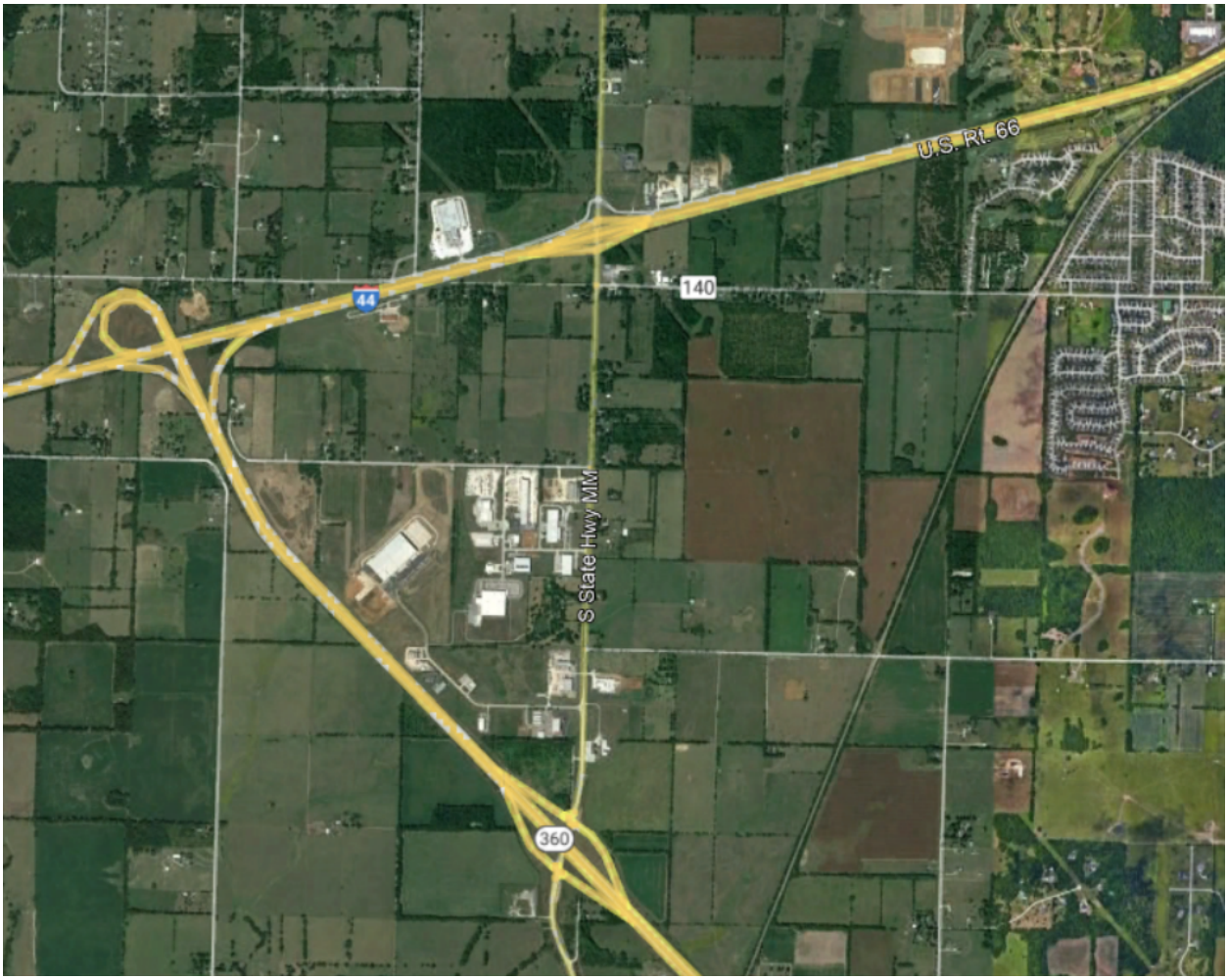


Figure 1: Study Area

Table 1: Existing Network Summary

Roadway	Functional Classification	Section	Median Type	Posted Speed Limit
Route MM	Minor Arterial	2-lane (N of Carnahan) 3-lane (S of Carnahan)	Undivided	55 mph
I-44 EB Ramps	Interstate	2-lane	Undivided	40 mph
Farm Road 140	Major Collector / Local Road	2-lane	Undivided	45 mph
Farm Road 144	Local Road	2-lane	Undivided	45 mph
Kings Street	Local Road	2-lane	Undivided	30 mph
Farm Road 148	Local Road	2-lane	Undivided	45 mph
Carnahan Street	Local Road	2-lane	Undivided	40 mph
James River Freeway WB Ramps	Other Freeway and Expressway	2-lane	Undivided	40 mph

1.3 Problem Definition

Nearly 350 acres of future development is anticipated to occur within the study area that will utilize Route MM as the main corridor for access. To support this expected growth, the City of Republic has planned Route MM to be widened from the existing two-lane section to a proposed five lane section with two through lanes and a continuous two-way left-turn lane, though a median divided four-lane road is also being considered. To balance the needs of transportation users with the needs of development, access management practices are anticipated to be needed along Route MM in the future. Access management practices considered for the study area include:

- Installing non-traversable medians where appropriate,
- Minimizing the number of driveways and promoting service road usage in high density locations,
- Installation of dedicated left and/or right-turn lanes,
- Limiting driveways to 3/4 or right-in/right-out access, and
- Review traffic control/signalization.

1.4 Design Alternatives

The primary alternative that was evaluated for this study is outlined below:

- Four-lane roadway (two northbound lanes, two southbound lanes) either with raised center median and main line left-turn lanes, or undivided with center two-way left-turn lane).
- Traffic signal at Route MM and Farm Road 144

- Traffic signalization in addition to Farm Road 144 is *not* proposed for construction at this time. Additional traffic signals along Route MM are planned to be installed by future, separate developer-driven projects when warranted.

This is the cross-section currently planned by the City of Republic. Future improvements in addition to the proposed widening were also considered and are described below.

Access Management

Planned developments are expected to generate a lot of traffic along Route MM. In general, considerations for improvements to access management as they relate to vehicle traffic along the corridor are summarized in **Table 2.**

Table 2: Access Management General Trends

Access Solution	Operations	Safety
Installation of Non-Traversable Median	Typical free-flow and travel speeds can be expected to decrease depending on the proportion of the roadway with raised medians.	Motor vehicle crash rates decrease and greatly reduce for head-on collisions as the number of vehicle conflict points decrease.
Consolidation of Proposed Driveway Locations / Promotion of Service Roads	Can result in higher free-flow and travel speeds between intersections, though delay may increase at major intersections along the corridor as more traffic is funneled to these locations.	Typically vehicle crash rates decrease while turning movements to and from properties occur in a lower volume/speed environment.
Installation of Turn Lanes	Results in increased free-flow and travel speeds through the corridor, particularly when turning movements are high.	Motor vehicle crash rates typically decrease.
Limiting driveways to ¾ or right-in/right-out access	May result in reduced free-flow and travel speeds at limited-access driveways, delay may increase for side street movements.	Channelizing islands help direct traffic flows entering and exiting driveways and reduce conflict points. Should be paired with median to ensure compliance.
Traffic Control & Signalization	Increases intersection capacity, promotes orderly movement of vehicles at intersections, and improves side street operations.	Reduces frequency and speed of left-turn and angle crashes.

Roadway Reconfiguration

The existing typical section along Route MM consists of either a two-lane (undivided) or three-lane (two-way-left-turn lane undivided) section. A 5-lane with a two-way left-turn lane was initially reviewed for the study area as well as the potential need for 4-lane divided with select median breaks for left-turn lanes.

Signal & Intersection Improvements

Reviewing the level of service at the unsignalized intersections, several potential signal locations are recommended to provide benefits to operations and facilitate safer turning movements from the side streets at select locations.

Overall signalized and unsignalized intersection geometrics were reviewed including:

- Left and right-turn lane improvements including addition of auxiliary lanes and increased turn bay storage length,
- Limiting access at some drives to ¾ or right-in/right-out conditions, and
- Signalization.

2 Future Baseline Traffic Operations

From coordination with City staff, the horizon year of 2045 was considered for the Future scenario. The City's planned widening of Route MM is anticipated to be constructed prior to 2045 and is included in this scenario. Key roadway characteristics of this scenarios include the following:

- Five travel lanes (two northbound lanes, two southbound lanes, and a center two-way left-turn lane)
- Center two-way left-turn lane to be constructed wide enough to install raised median if needed in the future.
- Traffic signal at Route MM and Farm Road 144
    - Due to high north-south through volumes and significant anticipated development, all intersections along Route MM, except Farm Road 140, were evaluated as signalized in the capacity analysis. It should be noted that traffic signalization in addition to Farm Road 144 is *not* proposed for construction at this time but are likely to warrant with future development. These additional signals along Route MM are planned to be installed by future, separate developer-driven projects when warranted.
- Background volume development estimates.

The Future Baseline exhibit is shown in **Appendix B**.

2.1 Background Forecasting

Per guidance from City staff, approximately 422 acres are available to develop in the Route MM study area bounded by Interstate 44 to the north, James River Freeway to the southwest, and the BNSF railroad tracks to the southeast. From this acreage, a floor area ratio (FAR) of 0.4 was applied to determine the potential developable area. This FAR factor was determined in coordination with City staff and is consistent with other previous planning level studies in the area. To estimate the trip generation of this developable area, calculations were conducted assuming the ITE land use of Industrial Park (LUC 150). Trip generation calculations are summarized in **Table 3** below.

Table 3: Future Trip Generation

ITE Code	Land Use	Setting/Location	Density (s.f.)	Daily	AM Peak Hour	PM Peak Hour
130	Industrial Park	General Urban/Suburban	5,607,415	7,620	1,907	1,907

Historical traffic data from MoDOT count stations, 2021 traffic data, and input from City staff was utilized to determine an appropriate growth rate for the study area. Based on this information, a growth rate of 3% was applied to 2021 traffic volumes.

Multiple planned/approved developments are not fully constructed at the time of this report. However, the traffic associated with each of these developments has been incorporated. These developments include:

- Seitz – MM Industrial Park
- Morelock Warehouse
- Convoy of Hope
- Eoff – Industrial Park

A horizon year of 2045 was utilized to review future traffic impacts along the corridor. MoDOT Datazone and historical traffic count maps were used to develop the appropriate growth rates along the corridor. A background growth rate of 3% was used for analysis. Full build volumes for approved developments (Convoy of Hope, MM Industrial Park, Morelock Warehousing, and the Eoff Development) were also factored into the production of background volumes. The full build future trip generation from additional development as described above was added to these background volumes to determine the anticipated horizon year 2045 traffic characteristics.

The planned and approved developments in the study area are shown in **Figure 2**.

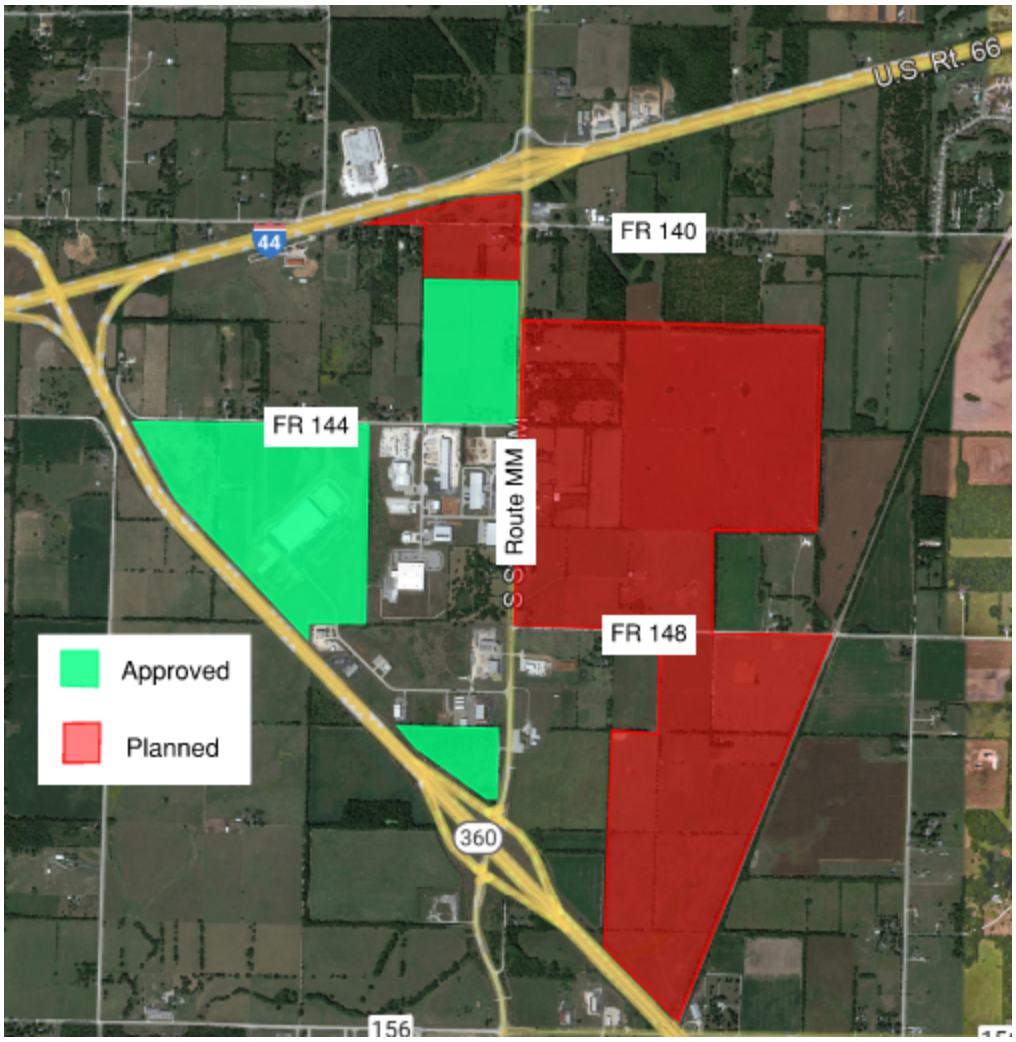


Figure 2: Development Map

2.2 Traffic Operations

The growth rate was applied to existing through traffic volumes along Route MM to develop 2045 traffic volumes. The future (2045) conditions volumes are shown in the **Appendix B.**

2.2.1 Turn Lane Warrants

MoDOT Access Management Guidelines, located in Section 940.9 of MoDOT's Engineering Policy Guide (EPG), were used to determine whether auxiliary turn lanes are currently warranted at the study intersections based on traffic volumes. Following the procedures outlined in the EPG, it was determined that the criteria for a turn lane was met at four locations within the study area during the AM and PM peak periods. The northbound and southbound right-turn movement at Farm Road 144, and the northbound and southbound right-turn lane at Kings Road both met the warrant criteria in both peak periods.

Operations and safety were reviewed to determine if these additional considerations support construction of a turn lane. Turn lane warrant analysis sheets can be found in the **Appendix B**.

2.2.2 Segment AADT

Roadway segment average annual daily traffic estimates for Route MM considering 2021 MoDOT traffic data, background volume growth through future year 2045, and estimated traffic volumes from approved and planned developments were developed. In addition, these segment volumes are compared against the MoDOT EPG recommended AADT threshold of 28,000 vehicles/day for five-lane road with continuous two-way left-turn lane (TWLTL). The estimated segment daily volumes and volume to capacity ratios are summarized in **Table 4** below.

Table 4: Route MM Segment AADT

Segment	Future 2045 AADT	EPG 5-Lane AADT Threshold	V/C
I-44 Westbound to FR 140	31,244	28,000	1.12
FR 140 to Industrial Drive	31,329	28,000	1.12
Industrial Drive to FR 144	31,132	28,000	1.11
FR 144 to Kings Street	31,001	28,000	1.11
Kings Street to FR 148	30,667	28,000	1.10
FR 148 to Carnahan Street	30,879	28,000	1.10
Carnahan Street to James River Freeway Westbound Ramp	31,113	28,000	1.11

The estimated volumes indicate the TWLTL threshold is exceeded for the Future 2045 AADT scenario at all roadway segments and raised medians should be considered along Route MM. Although not proposed as part of the Baseline roadway improvements, raised medians shall be considered along the roadway as the area develops.

2.2.3 Capacity Analysis

Capacity analysis was performed for the Future 2045 conditions using the 5-lane section described in Section 2.0 and making all intersections signalized except Farm Road 140. Signalized intersection analysis was conducted using Synchro, Version 11. The analysis for the intersections was based on the Highway Capacity Manual (HCM) delay methodologies. For simplicity, the amount of control delay is equated to a grade of Level of Service (LOS) based on thresholds of driver acceptance. The amount of delay is assigned a letter grade A through F, LOS A representing little or no delay and LOS F representing very high delay. **Table 5** shows the delays associated with each LOS grade for signalized and unsignalized intersections. Queuing is evaluated considering the 95th percentile queue length. The 95th percentile queue represents the queue length that has a 5 percent probability of being exceeded during the peak hour. Detailed queue results are shown in the **Appendix B**.

Table 5: Intersection LOS Criteria

Level-of-Service	Average Control Delay (sec/veh)	
	Signalized	Unsignalized
A	< 10	< 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50
	Highway Capacity Manual (6th Edition)	

Per EPG section 905.3.5.1, peak hour factors were set to 0.92 for the 2045 analysis. No adjustments to existing signal timings were made for this scenario. **Table 6** represents the future year Level of Service (LOS) for signalized intersections with the study area.

Table 6: Future Conditions - LOS along Route MM

Intersection	Eastbound	Westbound	Northbound	Southbound	Overall
I-44 EB Ramps	F[F]	N/A	A[D]	A[A]	D[C]
Farm Road 140	F[C]	F[F]	A[A]	A[A]	N/A
Industrial Drive	C[D]	C[F]	A[D]	A[C]	A[D]
Farm Road 144	B[D]	C[E]	A[E]	A[A]	A[D]
Kings Street	B[D]	C[E]	A[F]	A[F]	A[F]
Farm Road 148	N/A	C[D]	A[A]	A[A]	A[A]
Carnahan Street	C[D]	C[E]	A[A]	A[C]	A[B]
James River Freeway WB	N/A	D[E]	A[A]	B[F]	A[F]

Note: AM [PM]

Capacity analysis results show most intersections operate at acceptable levels of service during the AM peak hour. Mainline operations are acceptable at most intersections during both the AM and PM peaks. However, 95th percentile queues were shown to extend to upstream intersections with the potential to significantly impact neighboring intersections. Although not reflected in delay calculations, these high queues impact intersection influence areas. Based on capacity results, northbound and southbound right-turn and left-turn lanes are recommended at every signalized intersection. Eastbound and westbound left-turn lanes, including dual left-turn lanes at certain locations, are recommended at all full-access intersections.

In addition, due to high volumes and limited gaps on Route MM, unsignalized full access private driveways along Route MM are not recommended. Private driveways are recommended to function as right-in/right-out and restrict left-turns into or out of the driveways.

2.2.4 Traffic Signal Warrant

Peak hour (Warrant 3) traffic signal warrant analysis was performed using the methodology provided in Chapter 4C of the *Manual on Uniform Traffic Control Devices* (MUTCD), 2009 Edition published by the Federal Highway Administration (FHWA). Warrant 3 is intended for use at locations where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street; a common application of Warrant 3 is at industrial sites such as what is included in the study area.

Warrant 3 was evaluated at the intersection of Route MM and Farm Road 144 for the AM and PM peak hours under the design year 2045. As part of the proposed interim roadway improvements, it will remain as a three-leg intersection (western leg re-constructed) for the approved Seitz Industrial Park and Convoy of Hope developments. Thus, traffic signal warrant calculations were performed only considering the eastbound (minor street) and Route MM (mainline) traffic volumes and are summarized in **Table 7** below.

Table 7: Traffic Signal Warrant Analysis (Warrant 3)

Intersection	Future 2045	
	AM Peak Hour	PM Peak Hour
Route MM at FR 144	Not Warranted	Warranted

Based on these results, Warrant 3 is expected to be satisfied in the interim condition as a three-leg intersection. If the area develops as anticipated, the future eastern leg of this intersection is likely to generate more traffic than the west leg and result in more strongly satisfied signal warrants in the future.

2.2.5 Safety

A general review of potential safety characteristics of the proposed widening and traffic control improvements was conducted for this access management report. The widening of Route MM, implementing access management practices, and improvements to intersection traffic control would be expected to enhance the safety of the corridor. These improvements are expected to provide dedicated deceleration and stacking lanes for turning vehicles, reduce congestion along the mainline, allow for controlled turning movements to/from the side streets. As development occurs along Route MM and traffic increases, these improvements are expected to improve safety and vehicle operations compared to the existing two-lane conditions.

3 Future Improved Design Alternative

The preferred design alternative for this corridor consists of the proposed roadway discussed in Section 2.0, as well as additional traffic control and roadway geometry recommendations that should be considered as the area builds out. This includes the allocation of right-of-way for the ultimate condition. These recommendations are based on capacity analysis, intersection influence area considering anticipated queues, and safety evaluations of the Future 2045 scenario.

3.1.1 Intersection Spacing

Intersection spacing guidelines for MoDOT are provided in the Engineering Policy Guide (EPG). Per the EPG, minimum signalized intersection spacing along Route MM (classified by MoDOT as a minor arterial or a minor/non-freeway facility) is 1,320 feet (0.25 mile). In the interim condition, a traffic signal is planned to be constructed at Farm Road 144, which would provide adequate spacing in the interim condition. Future signals are also planned as development occurs at the intersections of Industrial Drive, Kings Street, and Farm Road 148. If constructed, all planned signals would satisfy minimum signal spacing criteria (1,320 feet) except between Kings Street and Farm Road 144 (potentially spaced at 1,220 feet). The spacing between Kings Street and Farm Road 144 is approximately 100 feet below the desired spacing criteria if a signal is installed at the existing Kings Street alignment. When a traffic signal is being considered at this location in the future, it is recommended to provide signal coordination and ensure that a proposed spacing of 1,220 feet is acceptable with future studies.

The intersections of Carnahan Street and Farm Road 140 along Route MM are less than 1,000 feet away from their neighboring planned signalized intersections (Farm Road 148 and I-44, respectively). Thus, to reduce the impact from intersection influence areas and improve operations along Route MM, these intersections are proposed to be a 3/4 access when warranted (restricted side-street left turns accomplished via raised median.

3.1.2 Future Segment AADT

Roadway segment average annual daily traffic estimates for Route MM considering 2021 MoDOT traffic data, background volume growth through future year 2045, and estimated traffic volumes from all approved and planned developments at the time of this study were developed. These segment volumes were compared against the MoDOT EPG recommended AADT threshold of 28,000 vehicles/day for five-lane road with continuous two-way left-turn lane (TWLTL). The estimated segment daily volumes and volume to capacity ratios are summarized in **Table 8** below.

Table 8: Route MM Segment AADT

Segment	Future 2045 AADT	EPG 5-Lane AADT Threshold	V/C
I-44 Westbound to FR 140	31,244	28,000	1.12
FR 140 to Industrial Drive	31,329	28,000	1.12
Industrial Drive to FR 144	31,132	28,000	1.11
FR 144 to Kings Street	31,001	28,000	1.11
Kings Street to FR 148	30,667	28,000	1.10
FR 148 to Carnahan Street	30,879	28,000	1.10
Carnahan Street to James River Freeway Westbound Ramp	31,113	28,000	1.11

If all the planned development occurs as anticipated, the estimated volumes are expected to exceed the typical TWLTL capacity for the Future 2045 AADT scenario at all roadway segments. Thus, the potential need for raised medians must be considered along Route MM. In the interim, raised medians are planned to be constructed along Route MM. In addition, further access limitations shall be considered at FR 140 and Carnahan Street as the area develops.

3.1.3 Future Improvements

Specific geometric recommendations (turn lane lengths, curb radii, among other improvements) can be visualized in the Strip Map Plan in **Appendix C** and are outlined below:

I-44 EB Ramps

- Add dedicated northbound right-turn lane.

Farm Road 140

- Raised median restricted 3/4 side-street access: right-in, right-out, left-in.
- Stop-controlled side-street approaches.
- Add dedicated northbound and southbound right-turn lanes.

Industrial Drive

- New signalized intersection when warranted.
    - As of the date of this report, the exact location of this intersection could not be confirmed with the City, but it is anticipated that a future intersection on Route MM between Farm Road 140 and Farm Road 144 will be constructed as development occurs in the surrounding area.
- Dedicated westbound right-turn lane and dual left-turn lanes.
- Dedicated northbound right-turn lane.
- Dedicated southbound right-turn lane.
- Dedicated eastbound right-turn lane and left-turn lane.
- Dedicated single northbound left-turn lane.
- Dedicated single southbound left-turn lane.
- Raised median provided adjacent to signalized left-turn bay along Route MM and adjacent to dual westbound left-turn lanes to protect the intersection influence area.

Farm Road 144

- Signalized intersection.
- New east leg with dedicated westbound right-turn lane and dual left-turn lanes.
- Dedicated northbound right-turn lane.
- Dedicated southbound right-turn lane.
- Dedicated eastbound right-turn lane and left-turn lane.
- Raised median provided adjacent to signalized left-turn bay along Route MM and adjacent to dual left-turn lanes to protect the intersection influence area.

Kings Street

- Signalized intersection when warranted.
- New east leg with dedicated westbound right-turn lane and dual left-turn lanes.
- Dedicated northbound right-turn lane.
- Dedicated southbound right-turn lane.
- Dedicated eastbound right-turn lane and left-turn lane.
- Raised median provided adjacent to signalized left-turn bay along Route MM and adjacent to dual left-turn lanes to protect the intersection influence area.

Farm Road 148

- Signalized intersection when warranted.
- New west leg with eastbound left-turn lane.
- Dedicated northbound right-turn lane.
- Dedicated westbound right-turn lane and dual left-turn lanes.
- Dedicated southbound right-turn lane and dual left-turn lanes.
- Dual eastbound receiving lanes to accommodate dual southbound left-turn lanes.
- Raised median provided adjacent to signalized left-turn bay along Route MM and adjacent to dual left-turn lanes to protect the intersection influence area.

Carnahan Street

- New eastern leg
- Raised median restricted 3/4 side-street access: right-in, right-out, left-in.
- Stop-controlled minor approaches.
- Add dedicated northbound and southbound right-turn lanes.

James River Freeway WB Ramps

- Add dedicated southbound right-turn lane.

Route MM

- Install raised median at signalized intersections adjacent to Route MM left-turn bays and adjacent to any dual left-turn lanes.

At all future signalized intersections, a raised median shall be constructed within the influence area of the intersections (at a minimum adjacent to signalized turn bays along Route MM). The "Baseline" improvements of Route MM would be expected to support traffic volumes for the interim conditions, but the full raised median between signals is likely to be needed in the future and should be installed when warranted by safety and capacity operations. The planned improvements to be installed with this project are outlined in Section 4. Additional improvements outlined above should be built as warranted when development occurs within the study area.

Intersection geometrics which reflect the improved design alternative are illustrated in **Appendix C.**

3.2 Traffic Operations

Capacity analysis was performed for the Future 2045 with the recommendations identified in **Section 3.1** using the methodologies described in **Section 2.2.2**. A peak hour factor of 0.92 was used in this scenario. Signal timings were optimized for north-south throughput. **Table 9** represents the future year Level of Service (LOS) for intersections and movements within the study area and **Table 10** shows a comparison of the Future Baseline and Future Improved scenarios intersection LOS.

Table 9: Future Conditions - LOS along Route MM

Intersection	Eastbound	Westbound	Northbound	Southbound	Overall
I-44 EB Ramps	E[F]	N/A	A[D]	A[A]	A[C]
Farm Road 140	D[D]	C[E]	A[A]	A[A]	N/A
Industrial Drive	E[D]	E[E]	A[F]	A[C]	B[E]
Farm Road 144	E[E]	E[E]	A[C]	A[A]	A[C]
Kings Street	E[E]	E[F]	A[B]	A[C]	A[C]
Farm Road 148	E[E]	E[F]	C[D]	B[C]	C[D]
Carnahan Street	C[F]	D[C]	A[A]	A[A]	N/A
James River Freeway WB	N/A	F[F]	A[A]	B[F]	A[F]

Note: AM [PM]

Table 10: Comparison of Intersection LOS by Scenario

Intersection	Future Baseline	Future Improved
I-44 EB Ramps	D[C]	A[C]
Farm Road 140	D[D]	A[A]
Industrial Drive	A[E]	B[E]
Farm Road 144	A[D]	A[C]
Kings Street	A[F]	A[C]
Farm Road 148	A[A]	C[D]
Carnahan Street	A[B]	A[A]
James River Freeway WB	B[F]	A[F]

Note: AM [PM]

Based on capacity analysis results, intersection delays and 95th percentile queues improve for both the AM and PM peak hours. Although high-side street delays were observed during the AM and PM peak hours, they were generally found acceptable in order maintain optimized mainline operations and progression.

The westbound ramp intersection at James River Freeway showed a LOS F for the AM and PM peak hours. Improvements at this intersection were not included in this report as any improvements should consider overall interchange improvements and/or reconfiguration that is beyond the scope of this report.

4 Conclusions

For this project, funds have been allocated to address safety and operational improvements along Route MM within Republic, Missouri to perform the planned widening and the construction of a traffic signal at Farm Road 144. The proposed interim improvements for which funding has been allocated are described below.

Interim Improvements

- Median divided four-lane roadway (two northbound lanes, two southbound lanes, and center median) with main line left-turn lanes installed at public intersections.
- Traffic signal at Route MM and Farm Road 144.

Through the findings of this access management report, the proposed interim improvements and widening of Route MM is expected to improve operations. However, the additional recommendations listed under Section 3.2 must be considered in the future as the area develops. The “Future Improved Design Alternative” improvements are expected to promote safe and efficient travel to the public and provide additional capacity in anticipation of future development. The need for these improvements should be monitored in future developer traffic impact studies (when land uses and intensity have been confirmed) and be constructed when warranted. In addition, as the area develops, right-of-way should be allocated should these additional improvements be needed in the future.

APPENDIX A

Data Collection

Count Data

MM / US-360 WB Ramps Off - ATR

Thu Jul 29, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound			
Time	Lane 1	Lane 2	**App**	**Int**
2021-07-29 12:00AM	6	12	**18**	**18**
12:15AM	3	12	**15**	**15**
12:30AM	5	13	**18**	**18**
12:45AM	4	7	**11**	**11**
Hourly Total	18	44	**62**	**62**
1:00AM	2	7	**9**	**9**
1:15AM	3	13	**16**	**16**
1:30AM	2	15	**17**	**17**
1:45AM	4	10	**14**	**14**
Hourly Total	11	45	**56**	**56**
2:00AM	4	7	**11**	**11**
2:15AM	2	5	**7**	**7**
2:30AM	3	9	**12**	**12**
2:45AM	5	7	**12**	**12**
Hourly Total	14	28	**42**	**42**
3:00AM	6	16	**22**	**22**
3:15AM	10	13	**23**	**23**
3:30AM	11	12	**23**	**23**
3:45AM	15	12	**27**	**27**
Hourly Total	42	53	**95**	**95**
4:00AM	6	10	**16**	**16**
4:15AM	9	13	**22**	**22**
4:30AM	21	15	**36**	**36**
4:45AM	27	25	**52**	**52**
Hourly Total	63	63	**126**	**126**
5:00AM	19	19	**38**	**38**
5:15AM	33	26	**59**	**59**
5:30AM	44	35	**79**	**79**
5:45AM	59	37	**96**	**96**
Hourly Total	155	117	**272**	**272**
6:00AM	41	54	**95**	**95**
6:15AM	88	57	**145**	**145**
6:30AM	65	79	**144**	**144**
6:45AM	84	82	**166**	**166**
Hourly Total	278	272	**550**	**550**
7:00AM	63	89	**152**	**152**
7:15AM	75	110	**185**	**185**
7:30AM	71	95	**166**	**166**
7:45AM	79	97	**176**	**176**
Hourly Total	288	391	**679**	**679**
8:00AM	48	69	**117**	**117**
8:15AM	45	83	**128**	**128**
8:30AM	35	103	**138**	**138**
8:45AM	46	106	**152**	**152**
Hourly Total	174	361	**535**	**535**
9:00AM	44	124	**168**	**168**
9:15AM	45	110	**155**	**155**
9:30AM	46	104	**150**	**150**
9:45AM	47	98	**145**	**145**
Hourly Total	182	436	**618**	**618**
10:00AM	44	113	**157**	**157**
10:15AM	62	105	**167**	**167**
10:30AM	55	137	**192**	**192**
10:45AM	54	114	**168**	**168**

Leg Direction	East Westbound			
Time	Lane 1	Lane 2	**App**	**Int**
Hourly Total	215	469	**684**	**684**
11:00AM	40	121	**161**	**161**
11:15AM	55	131	**186**	**186**
11:30AM	52	116	**168**	**168**
11:45AM	42	131	**173**	**173**
Hourly Total	189	499	**688**	**688**
12:00PM	54	115	**169**	**169**
12:15PM	58	110	**168**	**168**
12:30PM	41	118	**159**	**159**
12:45PM	65	114	**179**	**179**
Hourly Total	218	457	**675**	**675**
1:00PM	44	128	**172**	**172**
1:15PM	52	103	**155**	**155**
1:30PM	48	137	**185**	**185**
1:45PM	56	127	**183**	**183**
Hourly Total	200	495	**695**	**695**
2:00PM	48	142	**190**	**190**
2:15PM	58	106	**164**	**164**
2:30PM	58	128	**186**	**186**
2:45PM	74	140	**214**	**214**
Hourly Total	238	516	**754**	**754**
3:00PM	65	125	**190**	**190**
3:15PM	75	150	**225**	**225**
3:30PM	73	142	**215**	**215**
3:45PM	65	139	**204**	**204**
Hourly Total	278	556	**834**	**834**
4:00PM	76	188	**264**	**264**
4:15PM	81	190	**271**	**271**
4:30PM	79	167	**246**	**246**
4:45PM	85	187	**272**	**272**
Hourly Total	321	732	**1053**	**1053**
5:00PM	81	178	**259**	**259**
5:15PM	101	213	**314**	**314**
5:30PM	83	146	**229**	**229**
5:45PM	66	138	**204**	**204**
Hourly Total	331	675	**1006**	**1006**
6:00PM	65	124	**189**	**189**
6:15PM	51	118	**169**	**169**
6:30PM	49	102	**151**	**151**
6:45PM	35	94	**129**	**129**
Hourly Total	200	438	**638**	**638**
7:00PM	36	87	**123**	**123**
7:15PM	39	85	**124**	**124**
7:30PM	44	91	**135**	**135**
7:45PM	35	70	**105**	**105**
Hourly Total	154	333	**487**	**487**
8:00PM	40	64	**104**	**104**
8:15PM	33	75	**108**	**108**
8:30PM	27	64	**91**	**91**
8:45PM	35	59	**94**	**94**
Hourly Total	135	262	**397**	**397**
9:00PM	23	53	**76**	**76**
9:15PM	30	45	**75**	**75**
9:30PM	28	41	**69**	**69**
9:45PM	29	43	**72**	**72**
Hourly Total	110	182	**292**	**292**
10:00PM	24	25	**49**	**49**
10:15PM	18	36	**54**	**54**
10:30PM	11	32	**43**	**43**
10:45PM	15	32	**47**	**47**

Leg Direction	East Westbound			
Time	Lane 1	Lane 2	**App**	**Int**
Hourly Total	68	125	**193**	**193**
11:00PM	18	15	**33**	**33**
11:15PM	9	29	**38**	**38**
11:30PM	10	16	**26**	**26**
11:45PM	7	13	**20**	**20**
Hourly Total	44	73	**117**	**117**
Total	3926	7622	**11548**	**11548**
% Approach	34.0%	66.0%	**-**	-
% Total	34.0%	66.0%	**100%**	-
Lights	3559	6771	**10330**	10330
% Lights	90.7%	88.8%	**89.5%**	89.5%
Articulated Trucks	139	681	**820**	820
% Articulated Trucks	3.5%	8.9%	**7.1%**	7.1%
Buses and Single-Unit Trucks	228	170	**398**	398
% Buses and Single-Unit Trucks	5.8%	2.2%	**3.4%**	3.4%

MM / US-360 WB Ramps Off - ATR
Thu Jul 29, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps Off - ATR

Thu Jul 29, 2021
AM Peak (Jul 29 2021 10AM - 11 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound			
Time	Lane 1	Lane 2	**App**	**Int**
2021-07-29 10:00AM	44	113	**157**	**157**
10:15AM	62	105	**167**	**167**
10:30AM	55	137	**192**	**192**
10:45AM	54	114	**168**	**168**
Total	215	469	**684**	**684**
% Approach	31.4%	68.6%	**-**	-
% Total	31.4%	68.6%	**100%**	-
PHF	0.867	0.856	**0.891**	0.891
Lights	186	410	**596**	596
% Lights	86.5%	87.4%	**87.1%**	87.1%
Articulated Trucks	8	47	**55**	55
% Articulated Trucks	3.7%	10.0%	**8.0%**	8.0%
Buses and Single-Unit Trucks	21	12	**33**	33
% Buses and Single-Unit Trucks	9.8%	2.6%	**4.8%**	4.8%

MM / US-360 WB Ramps Off - ATR
Thu Jul 29, 2021
AM Peak (Jul 29 2021 10AM - 11 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps Off - ATR

Thu Jul 29, 2021
Midday Peak (Jul 29 2021 11:15AM - 12:15 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound			
Time	Lane 1	Lane 2	**App**	**Int**
2021-07-29 11:15AM	55	131	**186**	**186**
11:30AM	52	116	**168**	**168**
11:45AM	42	131	**173**	**173**
12:00PM	54	115	**169**	**169**
Total	203	493	**696**	**696**
% Approach	29.2%	70.8%	**-**	-
% Total	29.2%	70.8%	**100%**	-
PHF	0.923	0.941	**0.935**	0.935
Lights	170	427	**597**	597
% Lights	83.7%	86.6%	**85.8%**	85.8%
Articulated Trucks	9	50	**59**	59
% Articulated Trucks	4.4%	10.1%	**8.5%**	8.5%
Buses and Single-Unit Trucks	24	16	**40**	40
% Buses and Single-Unit Trucks	11.8%	3.2%	**5.7%**	5.7%

MM / US-360 WB Ramps Off - ATR
Thu Jul 29, 2021
Midday Peak (Jul 29 2021 11:15AM - 12:15 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps Off - ATR

Thu Jul 29, 2021
PM Peak (Jul 29 2021 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound			
Time	Lane 1	Lane 2	**App**	**Int**
2021-07-29 4:30PM	79	167	**246**	**246**
4:45PM	85	187	**272**	**272**
5:00PM	81	178	**259**	**259**
5:15PM	101	213	**314**	**314**
Total	346	745	**1091**	**1091**
% Approach	31.7%	68.3%	**-**	-
% Total	31.7%	68.3%	**100%**	-
PHF	0.856	0.874	**0.869**	0.869
Lights	329	702	**1031**	1031
% Lights	95.1%	94.2%	**94.5%**	94.5%
Articulated Trucks	8	33	**41**	41
% Articulated Trucks	2.3%	4.4%	**3.8%**	3.8%
Buses and Single-Unit Trucks	9	10	**19**	19
% Buses and Single-Unit Trucks	2.6%	1.3%	**1.7%**	1.7%

MM / US-360 WB Ramps Off - ATR

Thu Jul 29, 2021
PM Peak (Jul 29 2021 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858959, Location: 37.174065, -93.421986

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps On - ATR

Thu Jul 29, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound		
Time	T	App	Int
2021-07-29 12:00AM	1	1	1
12:15AM	2	2	2
12:30AM	1	1	1
12:45AM	1	1	1
Hourly Total	5	5	5
1:00AM	0	0	0
1:15AM	0	0	0
1:30AM	0	0	0
1:45AM	0	0	0
Hourly Total	0	0	0
2:00AM	1	1	1
2:15AM	3	3	3
2:30AM	0	0	0
2:45AM	0	0	0
Hourly Total	4	4	4
3:00AM	0	0	0
3:15AM	0	0	0
3:30AM	1	1	1
3:45AM	1	1	1
Hourly Total	2	2	2
4:00AM	0	0	0
4:15AM	1	1	1
4:30AM	2	2	2
4:45AM	2	2	2
Hourly Total	5	5	5
5:00AM	1	1	1
5:15AM	1	1	1
5:30AM	3	3	3
5:45AM	0	0	0
Hourly Total	5	5	5
6:00AM	3	3	3
6:15AM	1	1	1
6:30AM	3	3	3
6:45AM	5	5	5
Hourly Total	12	12	12
7:00AM	1	1	1
7:15AM	3	3	3
7:30AM	7	7	7
7:45AM	4	4	4
Hourly Total	15	15	15
8:00AM	4	4	4
8:15AM	3	3	3
8:30AM	2	2	2
8:45AM	3	3	3
Hourly Total	12	12	12
9:00AM	3	3	3
9:15AM	4	4	4
9:30AM	5	5	5
9:45AM	6	6	6
Hourly Total	18	18	18
10:00AM	5	5	5
10:15AM	4	4	4
10:30AM	2	2	2
10:45AM	5	5	5

Leg Direction	East Westbound		
Time	T	App	Int
Hourly Total	16	**16**	**16**
11:00AM	4	**4**	**4**
11:15AM	3	**3**	**3**
11:30AM	5	**5**	**5**
11:45AM	6	**6**	**6**
Hourly Total	18	**18**	**18**
12:00PM	5	**5**	**5**
12:15PM	3	**3**	**3**
12:30PM	2	**2**	**2**
12:45PM	6	**6**	**6**
Hourly Total	16	**16**	**16**
1:00PM	6	**6**	**6**
1:15PM	7	**7**	**7**
1:30PM	6	**6**	**6**
1:45PM	7	**7**	**7**
Hourly Total	26	**26**	**26**
2:00PM	5	**5**	**5**
2:15PM	4	**4**	**4**
2:30PM	5	**5**	**5**
2:45PM	4	**4**	**4**
Hourly Total	18	**18**	**18**
3:00PM	6	**6**	**6**
3:15PM	3	**3**	**3**
3:30PM	7	**7**	**7**
3:45PM	5	**5**	**5**
Hourly Total	21	**21**	**21**
4:00PM	4	**4**	**4**
4:15PM	3	**3**	**3**
4:30PM	7	**7**	**7**
4:45PM	8	**8**	**8**
Hourly Total	22	**22**	**22**
5:00PM	7	**7**	**7**
5:15PM	5	**5**	**5**
5:30PM	7	**7**	**7**
5:45PM	2	**2**	**2**
Hourly Total	21	**21**	**21**
6:00PM	13	**13**	**13**
6:15PM	1	**1**	**1**
6:30PM	9	**9**	**9**
6:45PM	3	**3**	**3**
Hourly Total	26	**26**	**26**
7:00PM	3	**3**	**3**
7:15PM	2	**2**	**2**
7:30PM	3	**3**	**3**
7:45PM	3	**3**	**3**
Hourly Total	11	**11**	**11**
8:00PM	2	**2**	**2**
8:15PM	3	**3**	**3**
8:30PM	2	**2**	**2**
8:45PM	1	**1**	**1**
Hourly Total	8	**8**	**8**
9:00PM	4	**4**	**4**
9:15PM	4	**4**	**4**
9:30PM	0	**0**	**0**
9:45PM	1	**1**	**1**
Hourly Total	9	**9**	**9**
10:00PM	0	**0**	**0**
10:15PM	1	**1**	**1**
10:30PM	3	**3**	**3**
10:45PM	2	**2**	**2**

Leg Direction	East Westbound		
Time	T	**App**	**Int**
Hourly Total	6	**6**	**6**
11:00PM	3	**3**	**3**
11:15PM	1	**1**	**1**
11:30PM	3	**3**	**3**
11:45PM	2	**2**	**2**
Hourly Total	9	**9**	**9**
Total	305	**305**	**305**
% Approach	100%	**-**	-
% Total	100%	**100%**	-
Lights	196	**196**	196
% Lights	64.3%	**64.3%**	64.3%
Articulated Trucks	91	**91**	91
% Articulated Trucks	29.8%	**29.8%**	29.8%
Buses and Single-Unit Trucks	18	**18**	18
% Buses and Single-Unit Trucks	5.9%	**5.9%**	5.9%

*T: Thru

MM / US-360 WB Ramps On - ATR
Thu Jul 29, 2021
Full Length (12 AM-12 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps On - ATR

Thu Jul 29, 2021
AM Peak (Jul 29 2021 9:15AM - 10:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound		
Time	T	**App**	**Int**
2021-07-29 9:15AM	4	**4**	**4**
9:30AM	5	**5**	**5**
9:45AM	6	**6**	**6**
10:00AM	5	**5**	**5**
Total	20	**20**	**20**
% Approach	100%	**-**	-
% Total	100%	**100%**	-
PHF	0.833	**0.833**	0.833
Lights	15	**15**	15
% Lights	75.0%	**75.0%**	75.0%
Articulated Trucks	2	**2**	2
% Articulated Trucks	10.0%	**10.0%**	10.0%
Buses and Single-Unit Trucks	3	**3**	3
% Buses and Single-Unit Trucks	15.0%	**15.0%**	15.0%

*T: Thru

MM / US-360 WB Ramps On - ATR
Thu Jul 29, 2021
AM Peak (Jul 29 2021 9:15AM - 10:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps On - ATR

Thu Jul 29, 2021
Midday Peak (Jul 29 2021 1PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound		
Time	T	**App**	**Int**
2021-07-29 1:00PM	6	**6**	**6**
1:15PM	7	**7**	**7**
1:30PM	6	**6**	**6**
1:45PM	7	**7**	**7**
Total	26	**26**	**26**
% Approach	100%	**-**	-
% Total	100%	**100%**	-
PHF	0.929	**0.929**	0.929
Lights	19	**19**	19
% Lights	73.1%	**73.1%**	73.1%
Articulated Trucks	6	**6**	6
% Articulated Trucks	23.1%	**23.1%**	23.1%
Buses and Single-Unit Trucks	1	**1**	1
% Buses and Single-Unit Trucks	3.8%	**3.8%**	3.8%

*T: Thru

MM / US-360 WB Ramps On - ATR
Thu Jul 29, 2021
Midday Peak (Jul 29 2021 1PM - 2 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

MM / US-360 WB Ramps On - ATR

Thu Jul 29, 2021
PM Peak (Jul 29 2021 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	East Westbound		
Time	T	**App**	**Int**
2021-07-29 4:30PM	7	**7**	**7**
4:45PM	8	**8**	**8**
5:00PM	7	**7**	**7**
5:15PM	5	**5**	**5**
Total	27	**27**	**27**
% Approach	100%	**-**	-
% Total	100%	**100%**	-
PHF	0.844	**0.844**	0.844
Lights	17	**17**	17
% Lights	63.0%	**63.0%**	63.0%
Articulated Trucks	8	**8**	8
% Articulated Trucks	29.6%	**29.6%**	29.6%
Buses and Single-Unit Trucks	2	**2**	2
% Buses and Single-Unit Trucks	7.4%	**7.4%**	7.4%

*T: Thru

MM / US-360 WB Ramps On - ATR

Thu Jul 29, 2021
PM Peak (Jul 29 2021 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 858962, Location: 37.177611, -93.425452

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

1 - South State Highway MM & West Carnahan S... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010599, Location: 37.181519, -93.423796

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

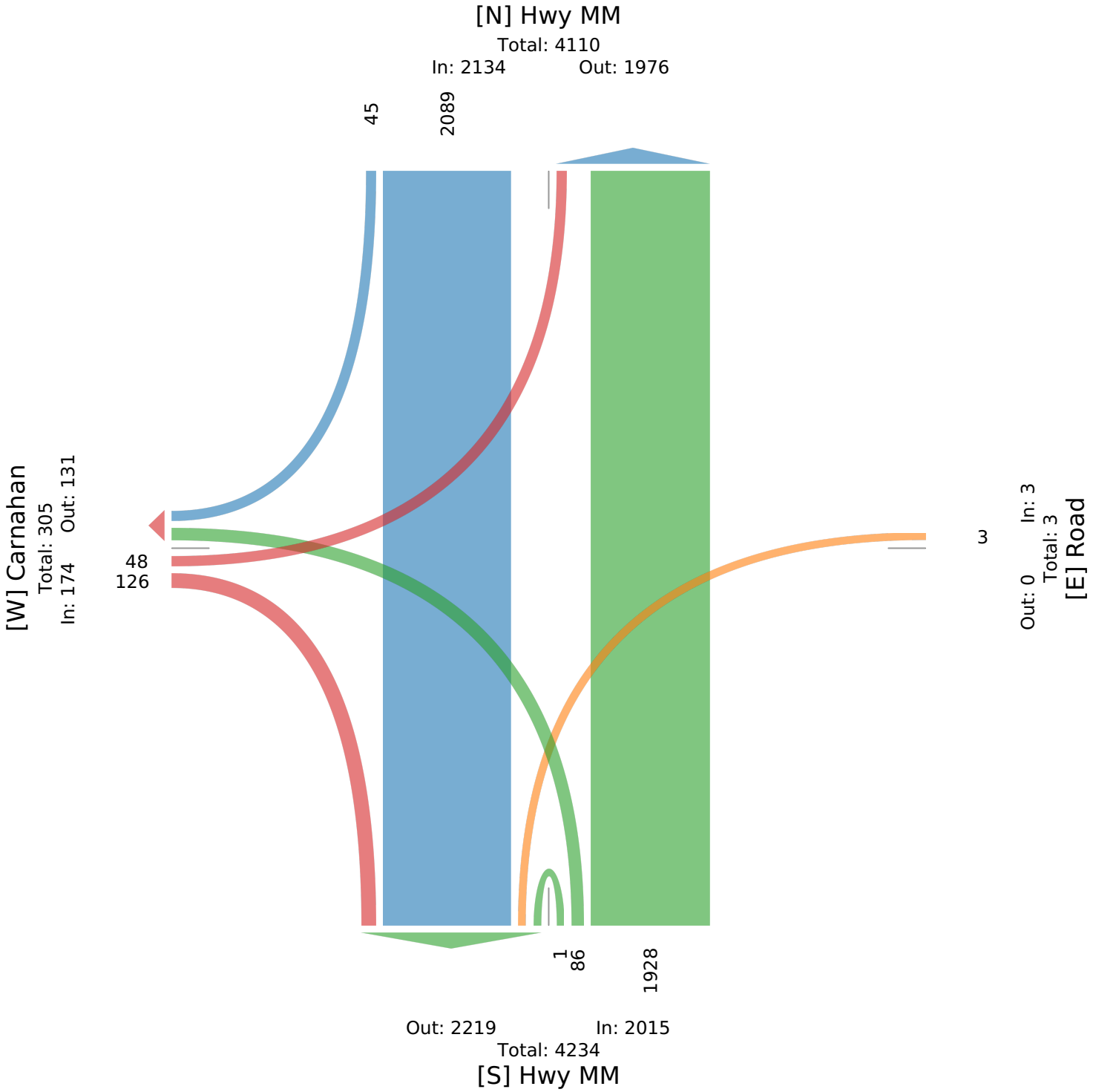
Leg	Hwy MM					Road					Hwy MM					Carnahan					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-07-29 7:00AM	5	111	0	0	**116**	0	0	0	0	**0**	0	117	9	0	**126**	5	0	1	0	**6**	**248**
7:15AM	9	109	0	0	**118**	0	0	0	0	**0**	0	145	8	0	**153**	6	0	1	0	**7**	**278**
7:30AM	4	144	0	0	**148**	0	0	0	0	**0**	0	151	10	0	**161**	4	0	2	0	**6**	**315**
7:45AM	6	124	0	0	**130**	0	0	0	0	**0**	0	124	8	0	**132**	10	0	3	0	**13**	**275**
Hourly Total	24	488	0	0	**512**	0	0	0	0	**0**	0	537	35	0	**572**	25	0	7	0	**32**	**1116**
8:00AM	8	94	0	0	**102**	0	0	0	0	**0**	0	118	11	0	**129**	9	0	1	0	**10**	**241**
8:15AM	3	114	0	0	**117**	0	0	0	0	**0**	0	94	13	0	**107**	7	0	3	0	**10**	**234**
8:30AM	2	95	0	0	**97**	0	0	1	0	**1**	0	79	4	0	**83**	5	0	2	0	**7**	**188**
8:45AM	1	82	0	0	**83**	0	0	0	0	**0**	0	84	3	0	**87**	9	0	4	0	**13**	**183**
Hourly Total	14	385	0	0	**399**	0	0	1	0	**1**	0	375	31	0	**406**	30	0	10	0	**40**	**846**
4:00PM	0	138	0	0	**138**	0	0	0	0	**0**	0	120	3	0	**123**	11	0	5	0	**16**	**277**
4:15PM	1	150	0	0	**151**	0	0	1	0	**1**	0	102	4	0	**106**	7	0	4	0	**11**	**269**
4:30PM	1	150	0	0	**151**	0	0	0	0	**0**	0	146	4	0	**150**	13	0	3	0	**16**	**317**
4:45PM	0	178	0	0	**178**	0	0	1	0	**1**	0	127	2	1	**130**	9	0	5	0	**14**	**323**
Hourly Total	2	616	0	0	**618**	0	0	2	0	**2**	0	495	13	1	**509**	40	0	17	0	**57**	**1186**
5:00PM	0	181	0	0	**181**	0	0	0	0	**0**	0	142	2	0	**144**	18	0	1	0	**19**	**344**
5:15PM	0	159	0	0	**159**	0	0	0	0	**0**	0	157	0	0	**157**	3	0	2	0	**5**	**321**
5:30PM	3	137	0	0	**140**	0	0	0	0	**0**	0	115	3	0	**118**	5	0	9	0	**14**	**272**
5:45PM	2	123	0	0	**125**	0	0	0	0	**0**	0	107	2	0	**109**	5	0	2	0	**7**	**241**
Hourly Total	5	600	0	0	**605**	0	0	0	0	**0**	0	521	7	0	**528**	31	0	14	0	**45**	**1178**
Total	45	2089	0	0	**2134**	0	0	3	0	**3**	0	1928	86	1	**2015**	126	0	48	0	**174**	**4326**
% Approach	2.1%	97.9%	0%	0%	**-**	0%	0%	100%	0%	**-**	0%	95.7%	4.3%	0%	**-**	72.4%	0%	27.6%	0%	**-**	-
% Total	1.0%	48.3%	0%	0%	**49.3%**	0%	0%	0.1%	0%	**0.1%**	0%	44.6%	2.0%	0%	**46.6%**	2.9%	0%	1.1%	0%	**4.0%**	-
Lights	36	1900	0	0	**1936**	0	0	3	0	**3**	0	1729	53	1	**1783**	98	0	40	0	**138**	3860
% Lights	80.0%	91.0%	0%	0%	**90.7%**	0%	0%	100%	0%	**100%**	0%	89.7%	61.6%	100%	**88.5%**	77.8%	0%	83.3%	0%	**79.3%**	89.2%
Articulated Trucks	2	65	0	0	**67**	0	0	0	0	**0**	0	64	5	0	**69**	4	0	1	0	**5**	141
% Articulated Trucks	4.4%	3.1%	0%	0%	**3.1%**	0%	0%	0%	0%	**0%**	0%	3.3%	5.8%	0%	**3.4%**	3.2%	0%	2.1%	0%	**2.9%**	3.3%
Buses and Single-Unit Trucks	7	124	0	0	**131**	0	0	0	0	**0**	0	135	28	0	**163**	24	0	7	0	**31**	325
% Buses and Single-Unit Trucks	15.6%	5.9%	0%	0%	**6.1%**	0%	0%	0%	0%	**0%**	0%	7.0%	32.6%	0%	**8.1%**	19.0%	0%	14.6%	0%	**17.8%**	7.5%

*L: Left, R: Right, T: Thru, U: U-Turn

1 - South State Highway MM & West Carnahan S... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010599, Location: 37.181519, -93.423796

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



1 - South State Highway MM & West Carnahan S... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010599, Location: 37.181519, -93.423796

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

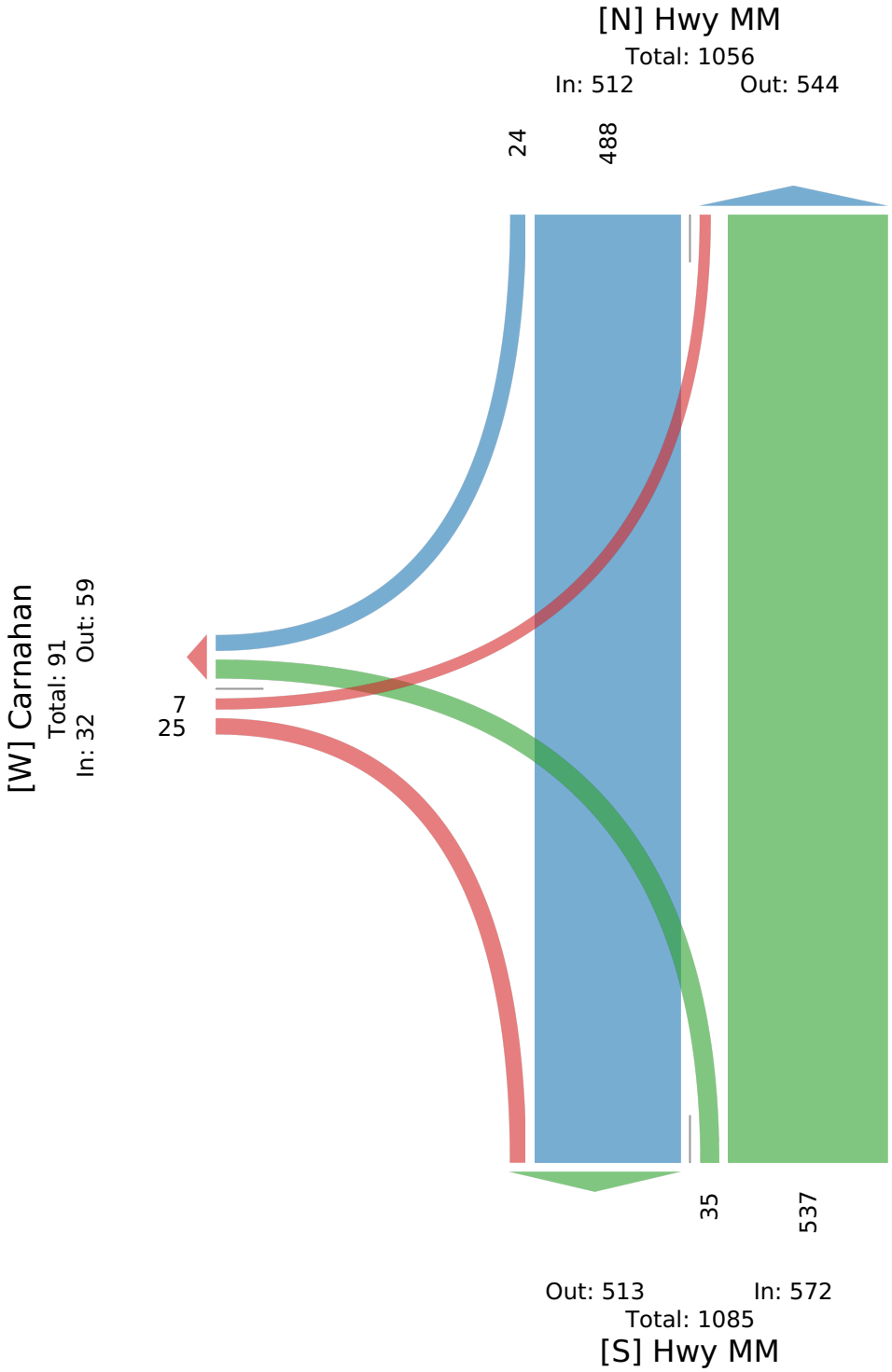
Leg	Hwy MM					Road					Hwy MM					Carnahan					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-07-29 7:00AM	5	111	0	0	**116**	0	0	0	0	**0**	0	117	9	0	**126**	5	0	1	0	**6**	**248**
7:15AM	9	109	0	0	**118**	0	0	0	0	**0**	0	145	8	0	**153**	6	0	1	0	**7**	**278**
7:30AM	4	144	0	0	**148**	0	0	0	0	**0**	0	151	10	0	**161**	4	0	2	0	**6**	**315**
7:45AM	6	124	0	0	**130**	0	0	0	0	**0**	0	124	8	0	**132**	10	0	3	0	**13**	**275**
Total	24	488	0	0	**512**	0	0	0	0	**0**	0	537	35	0	**572**	25	0	7	0	**32**	**1116**
% Approach	4.7%	95.3%	0%	0%	**-**	0%	0%	0%	0%	**-**	0%	93.9%	6.1%	0%	**-**	78.1%	0%	21.9%	0%	**-**	-
% Total	2.2%	43.7%	0%	0%	**45.9%**	0%	0%	0%	0%	**0%**	0%	48.1%	3.1%	0%	**51.3%**	2.2%	0%	0.6%	0%	**2.9%**	-
PHF	0.667	0.847	-	-	**0.865**	-	-	-	-	**-**	-	0.889	0.875	-	**0.888**	0.625	-	0.583	-	**0.615**	0.886
Lights	20	424	0	0	**444**	0	0	0	0	**0**	0	478	29	0	**507**	18	0	4	0	**22**	973
% Lights	83.3%	86.9%	0%	0%	**86.7%**	0%	0%	0%	0%	**-**	0%	89.0%	82.9%	0%	**88.6%**	72.0%	0%	57.1%	0%	**68.8%**	87.2%
Articulated Trucks	2	24	0	0	**26**	0	0	0	0	**0**	0	23	1	0	**24**	2	0	1	0	**3**	53
% Articulated Trucks	8.3%	4.9%	0%	0%	**5.1%**	0%	0%	0%	0%	**-**	0%	4.3%	2.9%	0%	**4.2%**	8.0%	0%	14.3%	0%	**9.4%**	4.7%
Buses and Single-Unit Trucks	2	40	0	0	**42**	0	0	0	0	**0**	0	36	5	0	**41**	5	0	2	0	**7**	90
% Buses and Single-Unit Trucks	8.3%	8.2%	0%	0%	**8.2%**	0%	0%	0%	0%	**-**	0%	6.7%	14.3%	0%	**7.2%**	20.0%	0%	28.6%	0%	**21.9%**	8.1%

*L: Left, R: Right, T: Thru, U: U-Turn

1 - South State Highway MM & West Carnahan S... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010599, Location: 37.181519, -93.423796

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



1 - South State Highway MM & West Carnahan S... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010599, Location: 37.181519, -93.423796

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

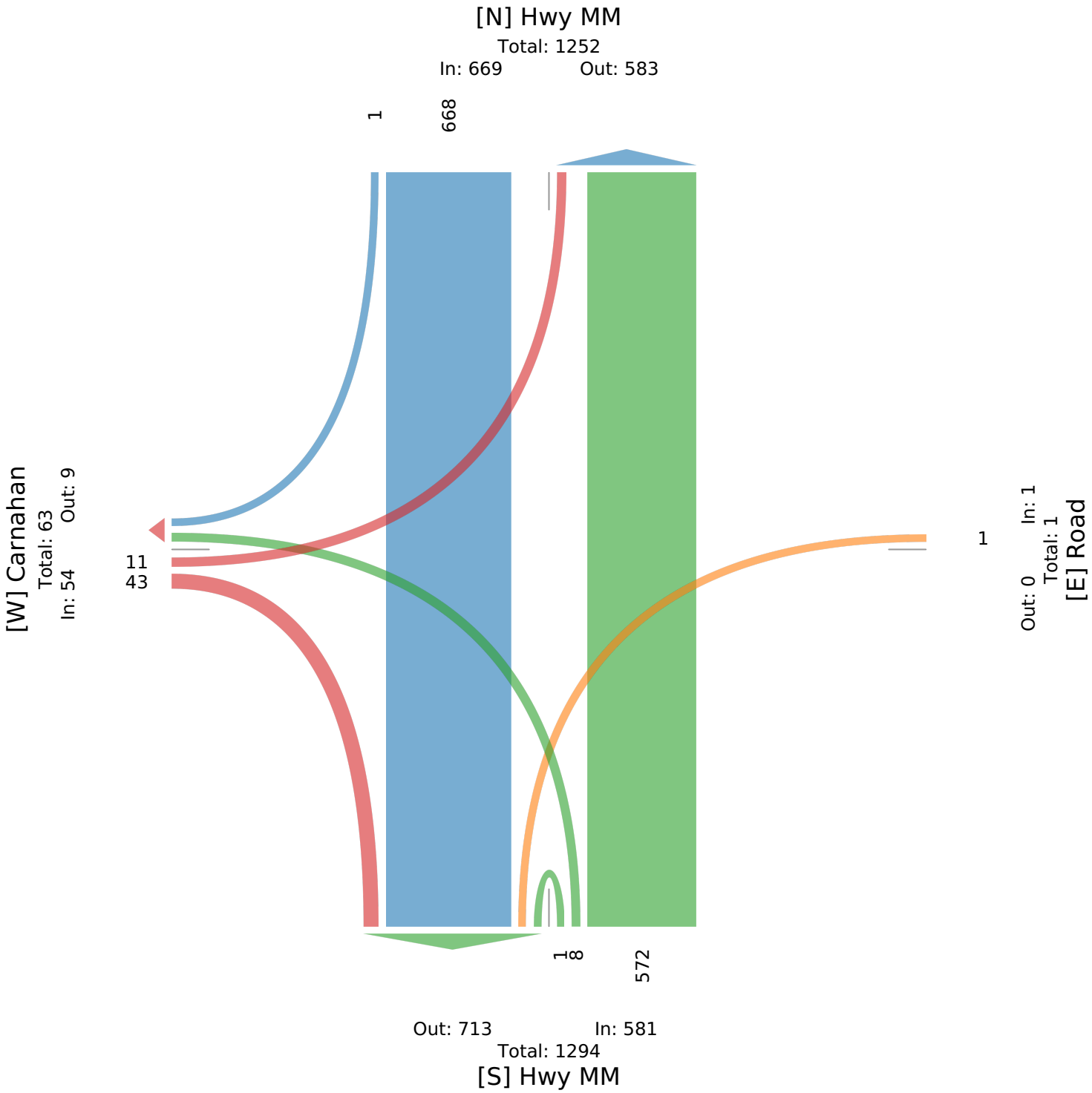
Leg	Hwy MM					Road					Hwy MM					Carnahan					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-07-29 4:30PM	1	150	0	0	**151**	0	0	0	0	**0**	0	146	4	0	**150**	13	0	3	0	**16**	**317**
4:45PM	0	178	0	0	**178**	0	0	1	0	**1**	0	127	2	1	**130**	9	0	5	0	**14**	**323**
5:00PM	0	181	0	0	**181**	0	0	0	0	**0**	0	142	2	0	**144**	18	0	1	0	**19**	**344**
5:15PM	0	159	0	0	**159**	0	0	0	0	**0**	0	157	0	0	**157**	3	0	2	0	**5**	**321**
Total	1	668	0	0	**669**	0	0	1	0	**1**	0	572	8	1	**581**	43	0	11	0	**54**	**1305**
% Approach	0.1%	99.9%	0%	0%	**-**	0%	0%	100%	0%	**-**	0%	98.5%	1.4%	0.2%	**-**	79.6%	0%	20.4%	0%	**-**	-
% Total	0.1%	51.2%	0%	0%	**51.3%**	0%	0%	0.1%	0%	**0.1%**	0%	43.8%	0.6%	0.1%	**44.5%**	3.3%	0%	0.8%	0%	**4.1%**	-
PHF	0.250	0.923	-	-	**0.924**	-	-	0.250	-	**0.250**	-	0.911	0.500	0.250	**0.925**	0.597	-	0.550	-	**0.711**	0.948
Lights	1	634	0	0	**635**	0	0	1	0	**1**	0	529	3	1	**533**	35	0	11	0	**46**	1215
% Lights	100%	94.9%	0%	0%	**94.9%**	0%	0%	100%	0%	**100%**	0%	92.5%	37.5%	100%	**91.7%**	81.4%	0%	100%	0%	**85.2%**	93.1%
Articulated Trucks	0	10	0	0	**10**	0	0	0	0	**0**	0	11	2	0	**13**	1	0	0	0	**1**	24
% Articulated Trucks	0%	1.5%	0%	0%	**1.5%**	0%	0%	0%	0%	**0%**	0%	1.9%	25.0%	0%	**2.2%**	2.3%	0%	0%	0%	**1.9%**	1.8%
Buses and Single-Unit Trucks	0	24	0	0	**24**	0	0	0	0	**0**	0	32	3	0	**35**	7	0	0	0	**7**	66
% Buses and Single-Unit Trucks	0%	3.6%	0%	0%	**3.6%**	0%	0%	0%	0%	**0%**	0%	5.6%	37.5%	0%	**6.0%**	16.3%	0%	0%	0%	**13.0%**	5.1%

*L: Left, R: Right, T: Thru, U: U-Turn

1 - South State Highway MM & West Carnahan S... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010599, Location: 37.181519, -93.423796

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



2 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010600, Location: 37.18389, -93.423639

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

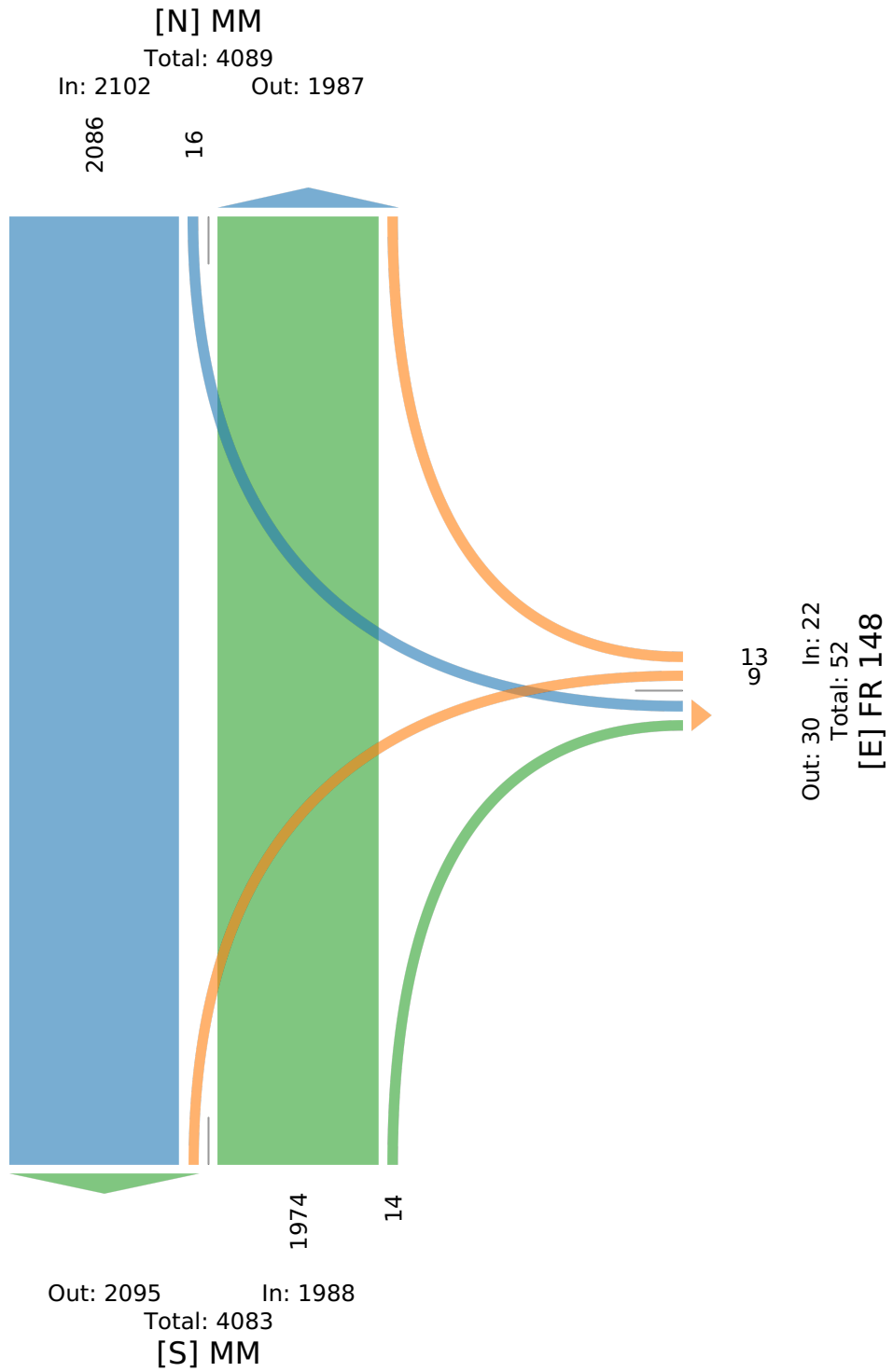
Leg	MM				FR 148				MM				
Direction	Southbound				Westbound				Northbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2021-07-29 7:00AM	109	1	0	**110**	1	0	0	**1**	2	117	0	**119**	**230**
7:15AM	118	0	0	**118**	0	0	0	**0**	1	153	0	**154**	**272**
7:30AM	139	0	0	**139**	2	0	0	**2**	0	157	0	**157**	**298**
7:45AM	132	1	0	**133**	2	1	0	**3**	0	125	0	**125**	**261**
Hourly Total	498	2	0	**500**	5	1	0	**6**	3	552	0	**555**	**1061**
8:00AM	100	0	0	**100**	1	0	0	**1**	0	118	0	**118**	**219**
8:15AM	116	1	0	**117**	1	0	0	**1**	2	93	0	**95**	**213**
8:30AM	92	0	0	**92**	0	0	0	**0**	0	75	0	**75**	**167**
8:45AM	77	0	0	**77**	2	1	0	**3**	1	84	0	**85**	**165**
Hourly Total	385	1	0	**386**	4	1	0	**5**	3	370	0	**373**	**764**
4:00PM	128	1	0	**129**	0	1	0	**1**	1	123	0	**124**	**254**
4:15PM	151	1	0	**152**	1	0	0	**1**	3	107	0	**110**	**263**
4:30PM	151	4	0	**155**	1	0	0	**1**	0	150	0	**150**	**306**
4:45PM	173	1	0	**174**	0	3	0	**3**	0	140	0	**140**	**317**
Hourly Total	603	7	0	**610**	2	4	0	**6**	4	520	0	**524**	**1140**
5:00PM	181	2	0	**183**	1	0	0	**1**	1	144	0	**145**	**329**
5:15PM	155	2	0	**157**	0	1	0	**1**	1	156	0	**157**	**315**
5:30PM	141	2	0	**143**	0	1	0	**1**	2	119	0	**121**	**265**
5:45PM	123	0	0	**123**	1	1	0	**2**	0	113	0	**113**	**238**
Hourly Total	600	6	0	**606**	2	3	0	**5**	4	532	0	**536**	**1147**
Total	2086	16	0	**2102**	13	9	0	**22**	14	1974	0	**1988**	**4112**
% Approach	99.2%	0.8%	0%	**-**	59.1%	40.9%	0%	**-**	0.7%	99.3%	0%	**-**	-
% Total	50.7%	0.4%	0%	**51.1%**	0.3%	0.2%	0%	**0.5%**	0.3%	48.0%	0%	**48.3%**	-
Lights	1903	16	0	**1919**	13	9	0	**22**	10	1780	0	**1790**	3731
% Lights	91.2%	100%	0%	**91.3%**	100%	100%	0%	**100%**	71.4%	90.2%	0%	**90.0%**	90.7%
Articulated Trucks	64	0	0	**64**	0	0	0	**0**	1	64	0	**65**	129
% Articulated Trucks	3.1%	0%	0%	**3.0%**	0%	0%	0%	**0%**	7.1%	3.2%	0%	**3.3%**	3.1%
Buses and Single-Unit Trucks	119	0	0	**119**	0	0	0	**0**	3	130	0	**133**	252
% Buses and Single-Unit Trucks	5.7%	0%	0%	**5.7%**	0%	0%	0%	**0%**	21.4%	6.6%	0%	**6.7%**	6.1%

*L: Left, R: Right, T: Thru, U: U-Turn

2 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010600, Location: 37.18389, -93.423639

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



2 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010600, Location: 37.18389, -93.423639

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

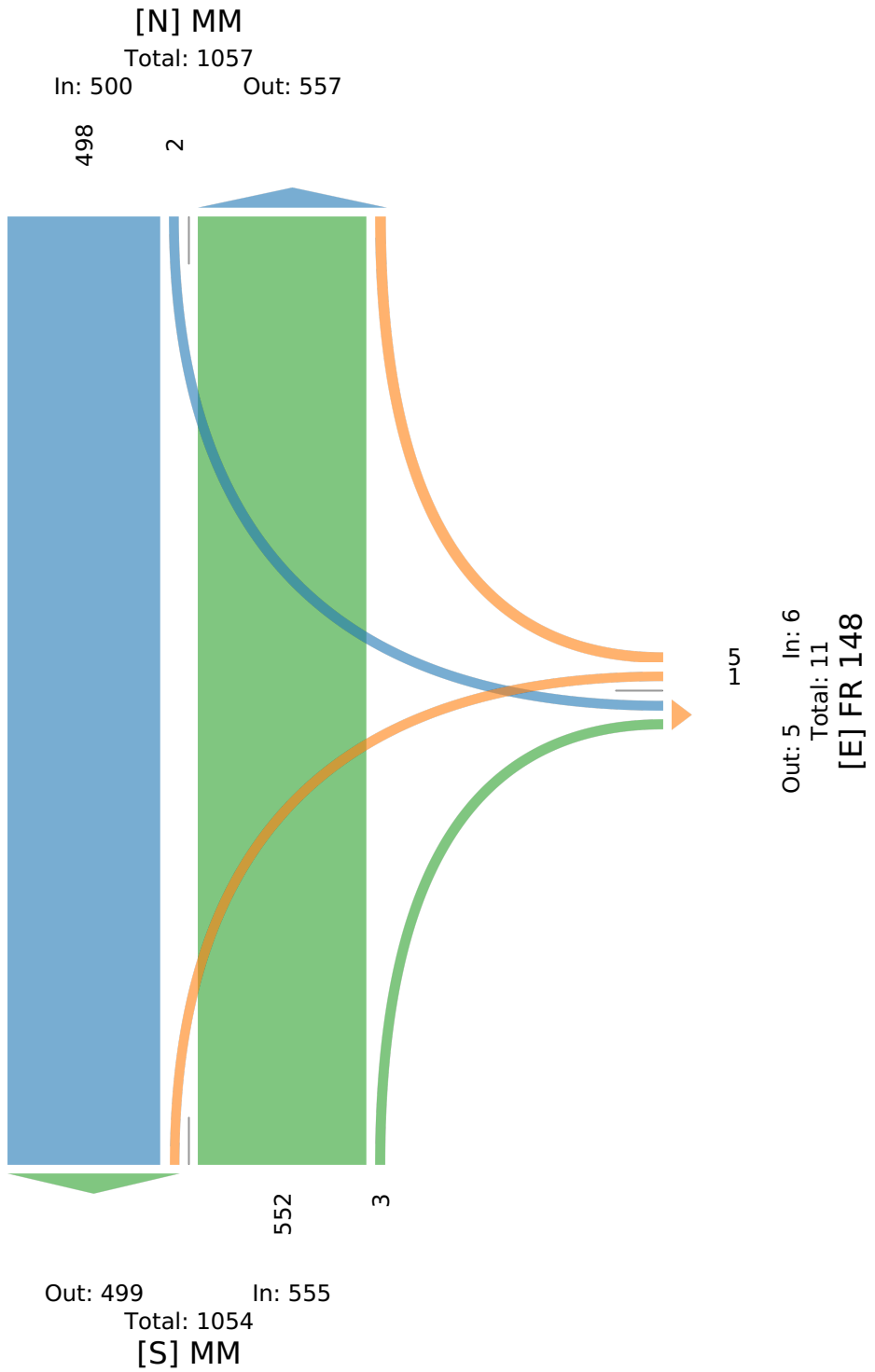
Leg	MM				FR 148				MM				
Direction	Southbound				Westbound				Northbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2021-07-29 7:00AM	109	1	0	**110**	1	0	0	**1**	2	117	0	**119**	**230**
7:15AM	118	0	0	**118**	0	0	0	**0**	1	153	0	**154**	**272**
7:30AM	139	0	0	**139**	2	0	0	**2**	0	157	0	**157**	**298**
7:45AM	132	1	0	**133**	2	1	0	**3**	0	125	0	**125**	**261**
Total	498	2	0	**500**	5	1	0	**6**	3	552	0	**555**	**1061**
% Approach	99.6%	0.4%	0%	**-**	83.3%	16.7%	0%	**-**	0.5%	99.5%	0%	**-**	-
% Total	46.9%	0.2%	0%	**47.1%**	0.5%	0.1%	0%	**0.6%**	0.3%	52.0%	0%	**52.3%**	-
PHF	0.896	0.500	-	**0.899**	0.625	0.250	-	**0.500**	0.375	0.879	-	**0.884**	0.890
Lights	430	2	0	**432**	5	1	0	**6**	2	492	0	**494**	932
% Lights	86.3%	100%	0%	**86.4%**	100%	100%	0%	**100%**	66.7%	89.1%	0%	**89.0%**	87.8%
Articulated Trucks	26	0	0	**26**	0	0	0	**0**	1	24	0	**25**	51
% Articulated Trucks	5.2%	0%	0%	**5.2%**	0%	0%	0%	**0%**	33.3%	4.3%	0%	**4.5%**	4.8%
Buses and Single-Unit Trucks	42	0	0	**42**	0	0	0	**0**	0	36	0	**36**	78
% Buses and Single-Unit Trucks	8.4%	0%	0%	**8.4%**	0%	0%	0%	**0%**	0%	6.5%	0%	**6.5%**	7.4%

*L: Left, R: Right, T: Thru, U: U-Turn

2 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010600, Location: 37.18389, -93.423639

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



2 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010600, Location: 37.18389, -93.423639

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

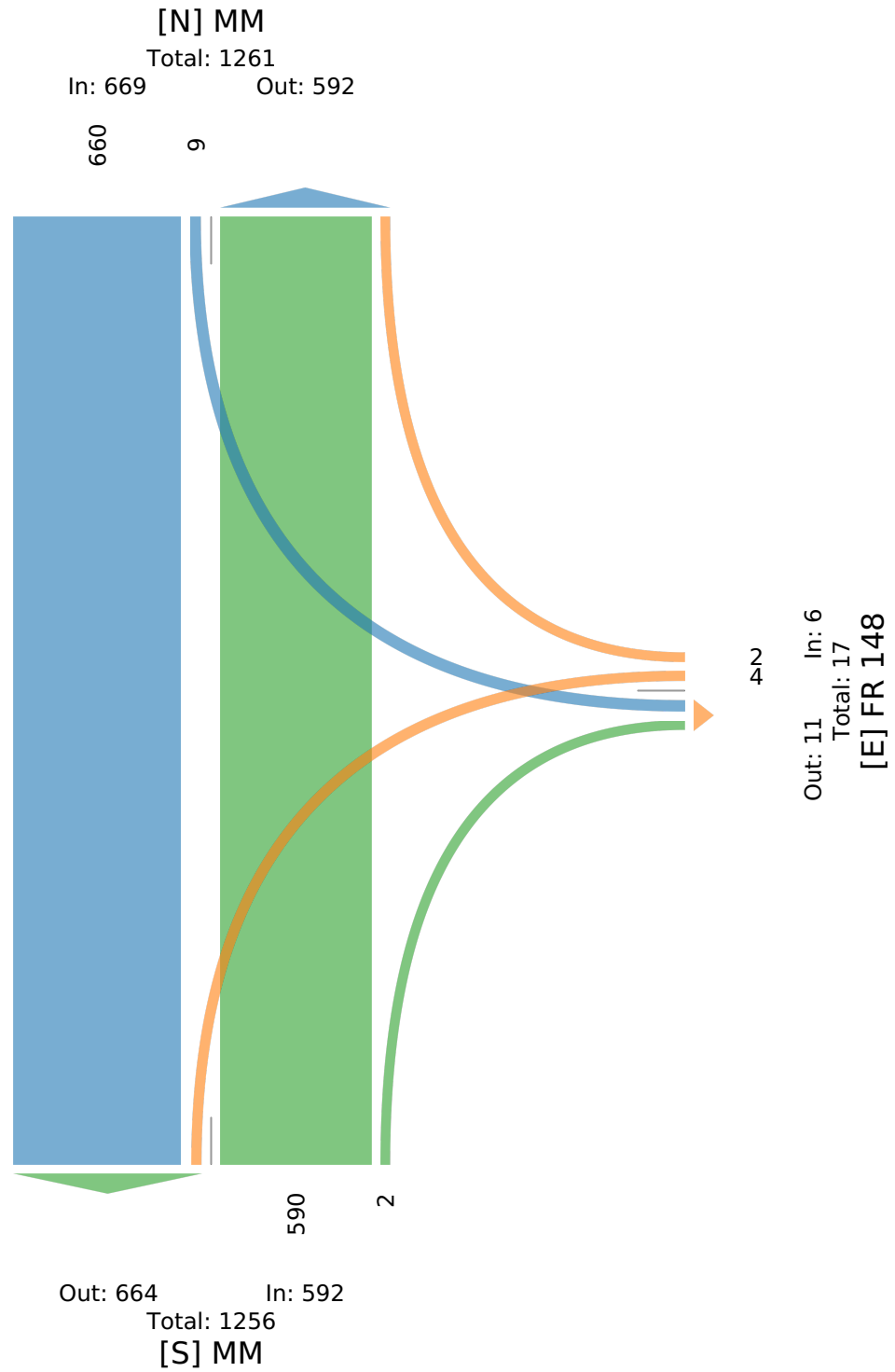
Leg	MM				FR 148				MM				
Direction	Southbound				Westbound				Northbound				
Time	T	L	U	**App**	R	L	U	**App**	R	T	U	**App**	**Int**
2021-07-29 4:30PM	151	4	0	**155**	1	0	0	**1**	0	150	0	**150**	**306**
4:45PM	173	1	0	**174**	0	3	0	**3**	0	140	0	**140**	**317**
5:00PM	181	2	0	**183**	1	0	0	**1**	1	144	0	**145**	**329**
5:15PM	155	2	0	**157**	0	1	0	**1**	1	156	0	**157**	**315**
Total	660	9	0	**669**	2	4	0	**6**	2	590	0	**592**	**1267**
% Approach	98.7%	1.3%	0%	**-**	33.3%	66.7%	0%	**-**	0.3%	99.7%	0%	**-**	-
% Total	52.1%	0.7%	0%	**52.8%**	0.2%	0.3%	0%	**0.5%**	0.2%	46.6%	0%	**46.7%**	-
PHF	0.912	0.563	-	**0.914**	0.500	0.333	-	**0.500**	0.500	0.946	-	**0.943**	0.963
Lights	628	9	0	**637**	2	4	0	**6**	2	543	0	**545**	1188
% Lights	95.2%	100%	0%	**95.2%**	100%	100%	0%	**100%**	100%	92.0%	0%	**92.1%**	93.8%
Articulated Trucks	10	0	0	**10**	0	0	0	**0**	0	14	0	**14**	24
% Articulated Trucks	1.5%	0%	0%	**1.5%**	0%	0%	0%	**0%**	0%	2.4%	0%	**2.4%**	1.9%
Buses and Single-Unit Trucks	22	0	0	**22**	0	0	0	**0**	0	33	0	**33**	55
% Buses and Single-Unit Trucks	3.3%	0%	0%	**3.3%**	0%	0%	0%	**0%**	0%	5.6%	0%	**5.6%**	4.3%

*L: Left, R: Right, T: Thru, U: U-Turn

2 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010600, Location: 37.18389, -93.423639

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



3 - South State Highway MM & West Kings Stre... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010601, Location: 37.187851, -93.423539

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

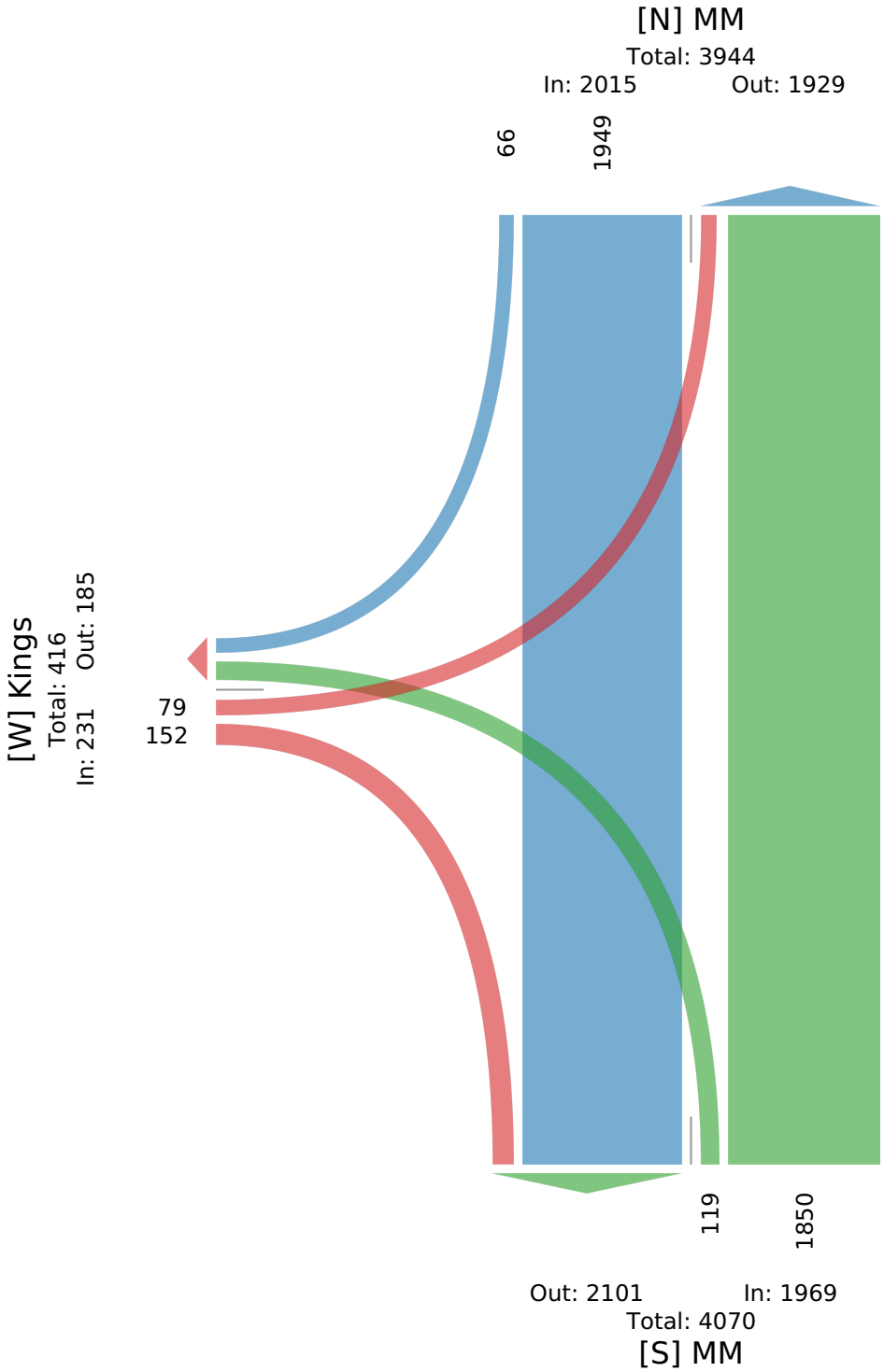
Leg	MM				MM				Kings				
Direction	Southbound				Northbound				Eastbound				
Time	R	T	U	**App**	T	L	U	**App**	R	L	U	**App**	**Int**
2021-07-29 7:00AM	7	109	0	**116**	99	9	0	**108**	6	2	0	**8**	**232**
7:15AM	7	114	0	**121**	134	12	0	**146**	8	6	0	**14**	**281**
7:30AM	8	134	0	**142**	135	11	0	**146**	6	1	0	**7**	**295**
7:45AM	7	129	0	**136**	109	23	0	**132**	6	5	0	**11**	**279**
Hourly Total	29	486	0	**515**	477	55	0	**532**	26	14	0	**40**	**1087**
8:00AM	12	93	0	**105**	104	13	0	**117**	5	4	0	**9**	**231**
8:15AM	3	108	0	**111**	85	10	0	**95**	6	2	0	**8**	**214**
8:30AM	5	83	0	**88**	67	8	0	**75**	8	4	0	**12**	**175**
8:45AM	3	78	0	**81**	80	4	0	**84**	4	3	0	**7**	**172**
Hourly Total	23	362	0	**385**	336	35	0	**371**	23	13	0	**36**	**792**
4:00PM	1	113	0	**114**	118	5	0	**123**	15	7	0	**22**	**259**
4:15PM	3	136	0	**139**	104	4	0	**108**	11	3	0	**14**	**261**
4:30PM	4	143	0	**147**	143	5	0	**148**	15	9	0	**24**	**319**
4:45PM	2	155	0	**157**	147	0	0	**147**	15	6	0	**21**	**325**
Hourly Total	10	547	0	**557**	512	14	0	**526**	56	25	0	**81**	**1164**
5:00PM	1	161	0	**162**	142	3	0	**145**	26	11	0	**37**	**344**
5:15PM	2	150	0	**152**	156	2	0	**158**	5	4	0	**9**	**319**
5:30PM	0	127	0	**127**	119	6	0	**125**	11	9	0	**20**	**272**
5:45PM	1	116	0	**117**	108	4	0	**112**	5	3	0	**8**	**237**
Hourly Total	4	554	0	**558**	525	15	0	**540**	47	27	0	**74**	**1172**
Total	66	1949	0	**2015**	1850	119	0	**1969**	152	79	0	**231**	**4215**
% Approach	3.3%	96.7%	0%	**-**	94.0%	6.0%	0%	**-**	65.8%	34.2%	0%	**-**	-
% Total	1.6%	46.2%	0%	**47.8%**	43.9%	2.8%	0%	**46.7%**	3.6%	1.9%	0%	**5.5%**	-
Lights	58	1793	0	**1851**	1682	98	0	**1780**	126	65	0	**191**	3822
% Lights	87.9%	92.0%	0%	**91.9%**	90.9%	82.4%	0%	**90.4%**	82.9%	82.3%	0%	**82.7%**	90.7%
Articulated Trucks	3	62	0	**65**	56	5	0	**61**	4	6	0	**10**	136
% Articulated Trucks	4.5%	3.2%	0%	**3.2%**	3.0%	4.2%	0%	**3.1%**	2.6%	7.6%	0%	**4.3%**	3.2%
Buses and Single-Unit Trucks	5	94	0	**99**	112	16	0	**128**	22	8	0	**30**	257
% Buses and Single-Unit Trucks	7.6%	4.8%	0%	**4.9%**	6.1%	13.4%	0%	**6.5%**	14.5%	10.1%	0%	**13.0%**	6.1%

*L: Left, R: Right, T: Thru, U: U-Turn

3 - South State Highway MM & West Kings Stre... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010601, Location: 37.187851, -93.423539

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



3 - South State Highway MM & West Kings Stre... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010601, Location: 37.187851, -93.423539

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

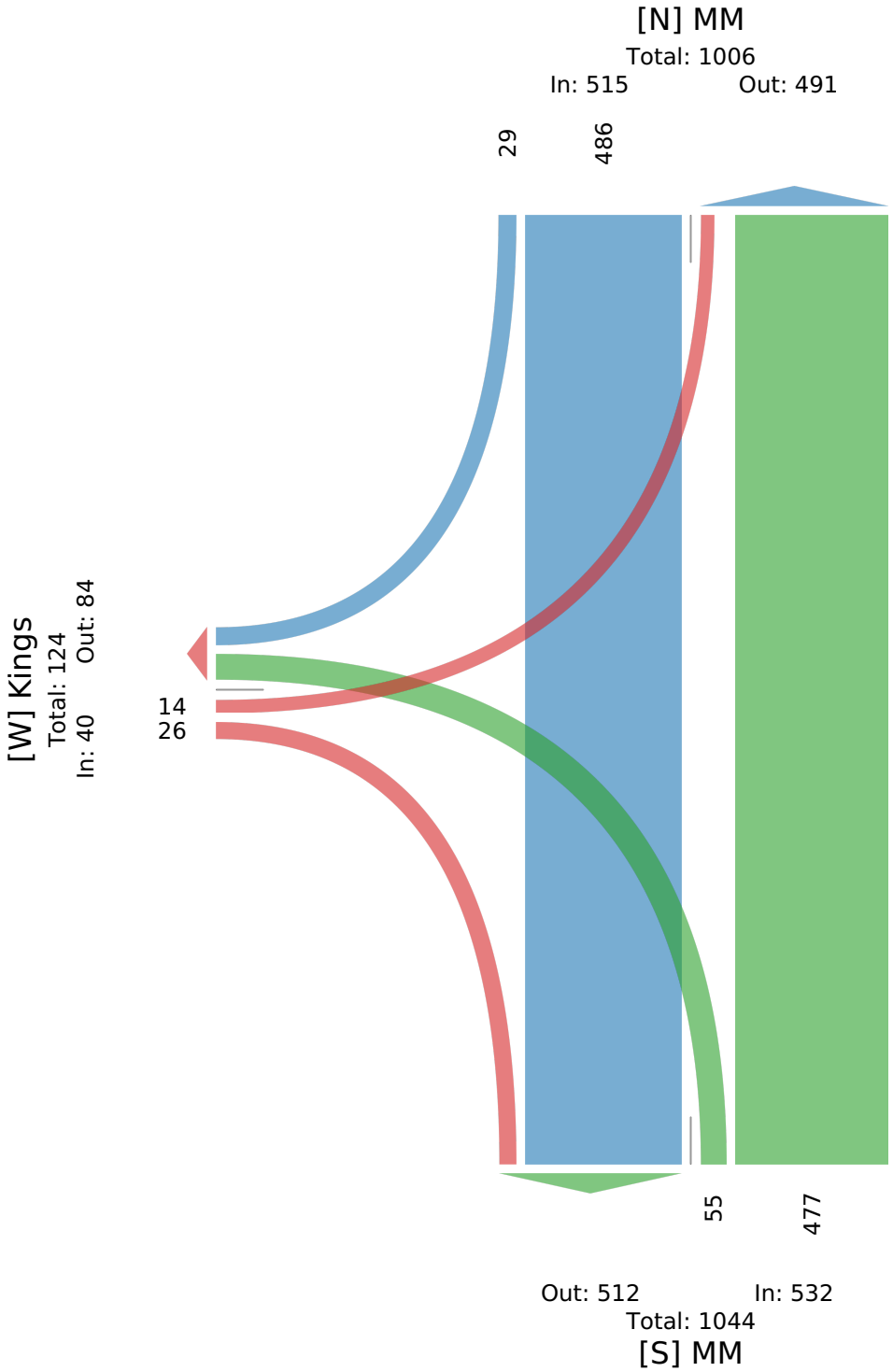
Leg	MM				MM				Kings				
Direction	Southbound				Northbound				Eastbound				
Time	R	T	U	**App**	T	L	U	**App**	R	L	U	**App**	**Int**
2021-07-29 7:00AM	7	109	0	**116**	99	9	0	**108**	6	2	0	**8**	**232**
7:15AM	7	114	0	**121**	134	12	0	**146**	8	6	0	**14**	**281**
7:30AM	8	134	0	**142**	135	11	0	**146**	6	1	0	**7**	**295**
7:45AM	7	129	0	**136**	109	23	0	**132**	6	5	0	**11**	**279**
Total	29	486	0	**515**	477	55	0	**532**	26	14	0	**40**	**1087**
% Approach	5.6%	94.4%	0%	**-**	89.7%	10.3%	0%	**-**	65.0%	35.0%	0%	**-**	-
% Total	2.7%	44.7%	0%	**47.4%**	43.9%	5.1%	0%	**48.9%**	2.4%	1.3%	0%	**3.7%**	-
PHF	0.906	0.907	-	**0.907**	0.883	0.598	-	**0.911**	0.813	0.583	-	**0.714**	0.921
Lights	27	431	0	**458**	422	51	0	**473**	15	10	0	**25**	956
% Lights	93.1%	88.7%	0%	**88.9%**	88.5%	92.7%	0%	**88.9%**	57.7%	71.4%	0%	**62.5%**	87.9%
Articulated Trucks	1	24	0	**25**	22	0	0	**22**	3	2	0	**5**	52
% Articulated Trucks	3.4%	4.9%	0%	**4.9%**	4.6%	0%	0%	**4.1%**	11.5%	14.3%	0%	**12.5%**	4.8%
Buses and Single-Unit Trucks	1	31	0	**32**	33	4	0	**37**	8	2	0	**10**	79
% Buses and Single-Unit Trucks	3.4%	6.4%	0%	**6.2%**	6.9%	7.3%	0%	**7.0%**	30.8%	14.3%	0%	**25.0%**	7.3%

*L: Left, R: Right, T: Thru, U: U-Turn

3 - South State Highway MM & West Kings Stre... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010601, Location: 37.187851, -93.423539

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



3 - South State Highway MM & West Kings Stre... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010601, Location: 37.187851, -93.423539

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

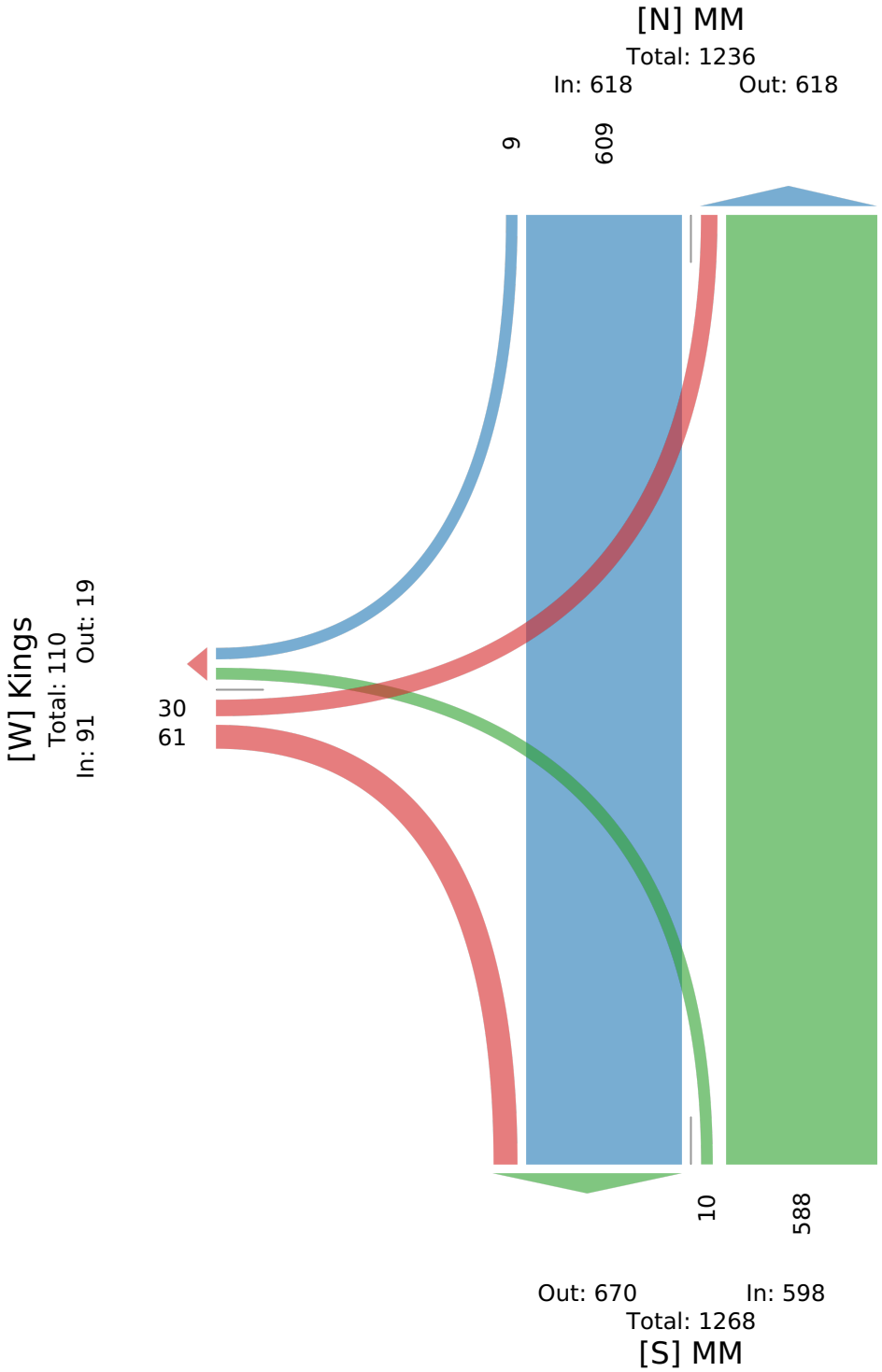
Leg	MM				MM				Kings				
Direction	Southbound				Northbound				Eastbound				
Time	R	T	U	**App**	T	L	U	**App**	R	L	U	**App**	**Int**
2021-07-29 4:30PM	4	143	0	**147**	143	5	0	**148**	15	9	0	**24**	**319**
4:45PM	2	155	0	**157**	147	0	0	**147**	15	6	0	**21**	**325**
5:00PM	1	161	0	**162**	142	3	0	**145**	26	11	0	**37**	**344**
5:15PM	2	150	0	**152**	156	2	0	**158**	5	4	0	**9**	**319**
Total	9	609	0	**618**	588	10	0	**598**	61	30	0	**91**	**1307**
% Approach	1.5%	98.5%	0%	**-**	98.3%	1.7%	0%	**-**	67.0%	33.0%	0%	**-**	-
% Total	0.7%	46.6%	0%	**47.3%**	45.0%	0.8%	0%	**45.8%**	4.7%	2.3%	0%	**7.0%**	-
PHF	0.563	0.946	-	**0.954**	0.942	0.500	-	**0.946**	0.587	0.682	-	**0.615**	0.950
Lights	6	579	0	**585**	547	4	0	**551**	58	26	0	**84**	1220
% Lights	66.7%	95.1%	0%	**94.7%**	93.0%	40.0%	0%	**92.1%**	95.1%	86.7%	0%	**92.3%**	93.3%
Articulated Trucks	0	10	0	**10**	11	2	0	**13**	0	2	0	**2**	25
% Articulated Trucks	0%	1.6%	0%	**1.6%**	1.9%	20.0%	0%	**2.2%**	0%	6.7%	0%	**2.2%**	1.9%
Buses and Single-Unit Trucks	3	20	0	**23**	30	4	0	**34**	3	2	0	**5**	62
% Buses and Single-Unit Trucks	33.3%	3.3%	0%	**3.7%**	5.1%	40.0%	0%	**5.7%**	4.9%	6.7%	0%	**5.5%**	4.7%

*L: Left, R: Right, T: Thru, U: U-Turn

3 - South State Highway MM & West Kings Stre... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010601, Location: 37.187851, -93.423539

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



4 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010602, Location: 37.191205, -93.423394

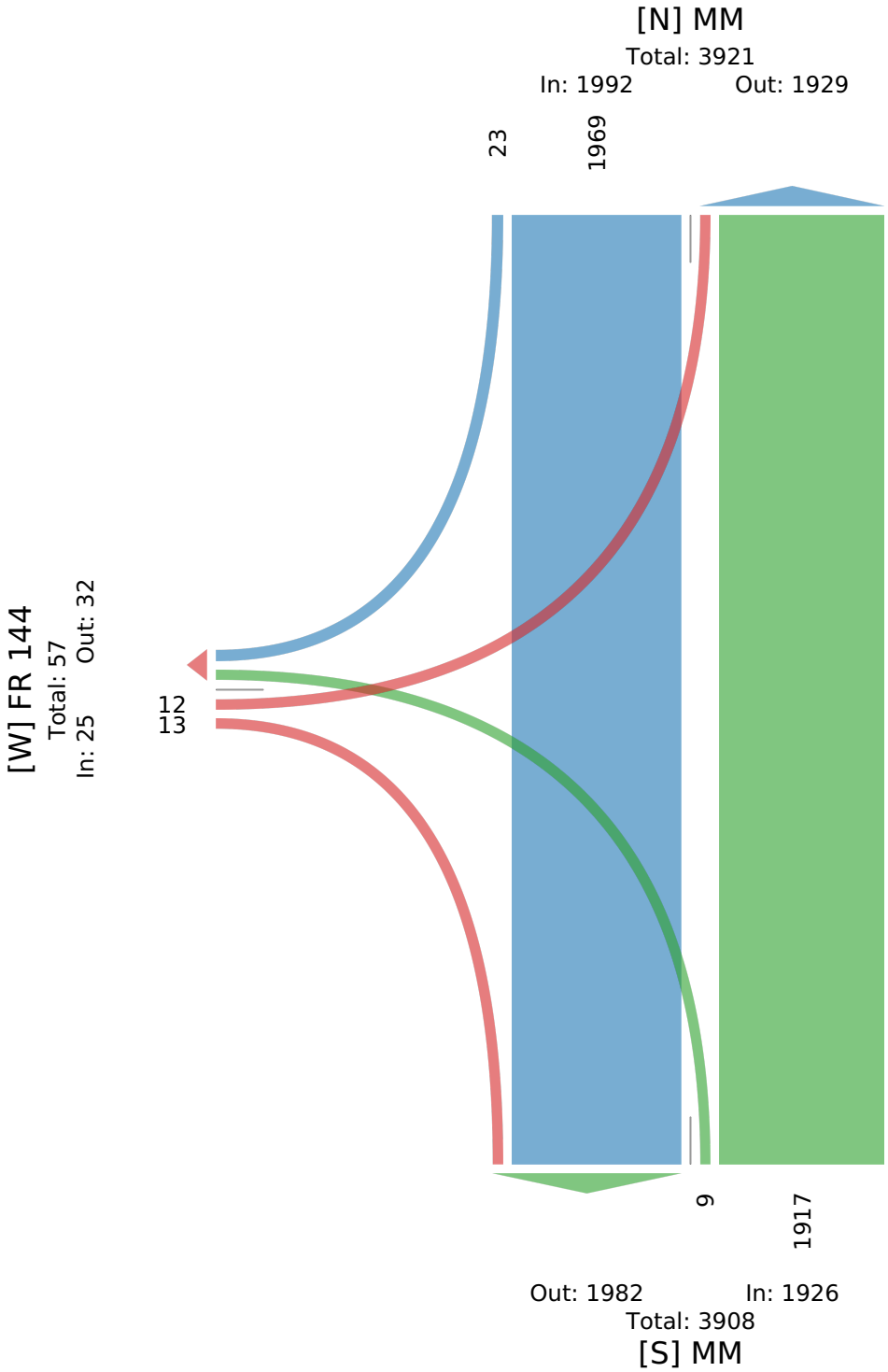
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	MM				MM				FR 144				
Direction	Southbound				Northbound				Eastbound				
Time	R	T	U	**App**	T	L	U	**App**	R	L	U	**App**	**Int**
2021-07-29 7:00AM	0	111	0	**111**	108	0	0	**108**	1	0	0	**1**	**220**
7:15AM	1	118	0	**119**	131	0	0	**131**	0	2	0	**2**	**252**
7:30AM	1	132	0	**133**	139	0	0	**139**	0	1	0	**1**	**273**
7:45AM	1	139	0	**140**	107	0	0	**107**	0	2	0	**2**	**249**
Hourly Total	3	500	0	**503**	485	0	0	**485**	1	5	0	**6**	**994**
8:00AM	0	101	0	**101**	109	1	0	**110**	1	0	0	**1**	**212**
8:15AM	2	108	0	**110**	81	0	0	**81**	0	1	0	**1**	**192**
8:30AM	3	85	0	**88**	73	0	0	**73**	2	2	0	**4**	**165**
8:45AM	1	81	0	**82**	82	0	0	**82**	2	0	0	**2**	**166**
Hourly Total	6	375	0	**381**	345	1	0	**346**	5	3	0	**8**	**735**
4:00PM	0	114	0	**114**	126	0	0	**126**	2	0	0	**2**	**242**
4:15PM	2	136	0	**138**	111	0	0	**111**	0	1	0	**1**	**250**
4:30PM	1	148	0	**149**	144	0	0	**144**	1	1	0	**2**	**295**
4:45PM	1	152	0	**153**	153	0	0	**153**	0	0	0	**0**	**306**
Hourly Total	4	550	0	**554**	534	0	0	**534**	3	2	0	**5**	**1093**
5:00PM	4	160	0	**164**	158	0	0	**158**	1	1	0	**2**	**324**
5:15PM	1	147	0	**148**	159	1	0	**160**	2	0	0	**2**	**310**
5:30PM	2	124	0	**126**	127	5	0	**132**	1	0	0	**1**	**259**
5:45PM	3	113	0	**116**	109	2	0	**111**	0	1	0	**1**	**228**
Hourly Total	10	544	0	**554**	553	8	0	**561**	4	2	0	**6**	**1121**
Total	23	1969	0	**1992**	1917	9	0	**1926**	13	12	0	**25**	**3943**
% Approach	1.2%	98.8%	0%	**-**	99.5%	0.5%	0%	**-**	52.0%	48.0%	0%	**-**	-
% Total	0.6%	49.9%	0%	**50.5%**	48.6%	0.2%	0%	**48.8%**	0.3%	0.3%	0%	**0.6%**	-
Lights	18	1802	0	**1820**	1727	9	0	**1736**	13	11	0	**24**	3580
% Lights	78.3%	91.5%	0%	**91.4%**	90.1%	100%	0%	**90.1%**	100%	91.7%	0%	**96.0%**	90.8%
Articulated Trucks	5	61	0	**66**	68	0	0	**68**	0	1	0	**1**	135
% Articulated Trucks	21.7%	3.1%	0%	**3.3%**	3.5%	0%	0%	**3.5%**	0%	8.3%	0%	**4.0%**	3.4%
Buses and Single-Unit Trucks	0	106	0	**106**	122	0	0	**122**	0	0	0	**0**	228
% Buses and Single-Unit Trucks	0%	5.4%	0%	**5.3%**	6.4%	0%	0%	**6.3%**	0%	0%	0%	**0%**	5.8%

*L: Left, R: Right, T: Thru, U: U-Turn

4 - South State Highway MM & West Farm Road ... - TMC
Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010602, Location: 37.191205, -93.423394

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



4 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010602, Location: 37.191205, -93.423394

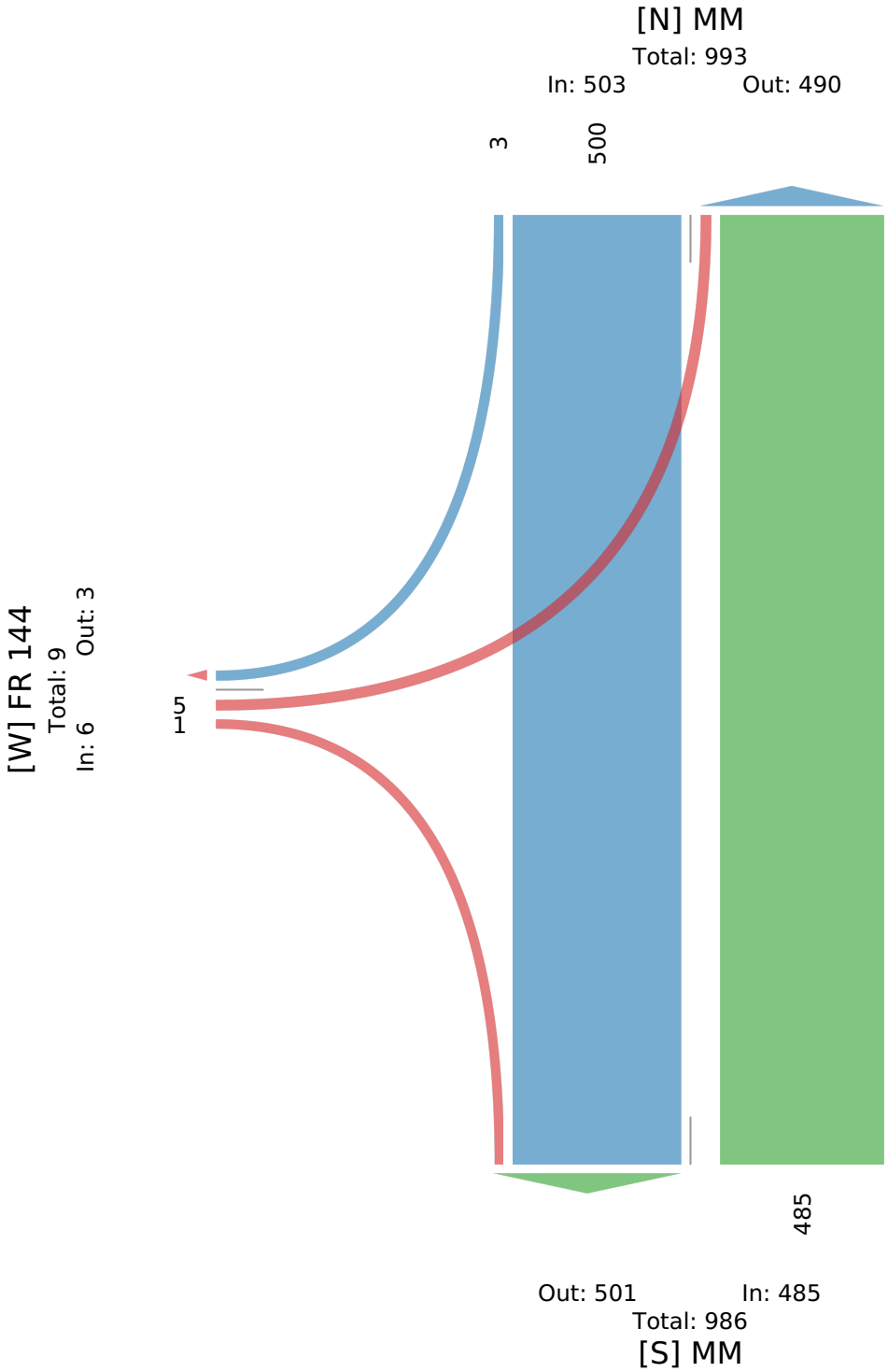
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	MM				MM				FR 144				
Direction	Southbound				Northbound				Eastbound				
Time	R	T	U	**App**	T	L	U	**App**	R	L	U	**App**	**Int**
2021-07-29 7:00AM	0	111	0	**111**	108	0	0	**108**	1	0	0	**1**	**220**
7:15AM	1	118	0	**119**	131	0	0	**131**	0	2	0	**2**	**252**
7:30AM	1	132	0	**133**	139	0	0	**139**	0	1	0	**1**	**273**
7:45AM	1	139	0	**140**	107	0	0	**107**	0	2	0	**2**	**249**
Total	3	500	0	**503**	485	0	0	**485**	1	5	0	**6**	**994**
% Approach	0.6%	99.4%	0%	**-**	100%	0%	0%	**-**	16.7%	83.3%	0%	**-**	-
% Total	0.3%	50.3%	0%	**50.6%**	48.8%	0%	0%	**48.8%**	0.1%	0.5%	0%	**0.6%**	-
PHF	0.750	0.899	-	**0.898**	0.872	-	-	**0.872**	0.250	0.625	-	**0.750**	0.910
Lights	0	438	0	**438**	423	0	0	**423**	1	5	0	**6**	867
% Lights	0%	87.6%	0%	**87.1%**	87.2%	0%	0%	**87.2%**	100%	100%	0%	**100%**	87.2%
Articulated Trucks	3	25	0	**28**	26	0	0	**26**	0	0	0	**0**	54
% Articulated Trucks	100%	5.0%	0%	**5.6%**	5.4%	0%	0%	**5.4%**	0%	0%	0%	**0%**	5.4%
Buses and Single-Unit Trucks	0	37	0	**37**	36	0	0	**36**	0	0	0	**0**	73
% Buses and Single-Unit Trucks	0%	7.4%	0%	**7.4%**	7.4%	0%	0%	**7.4%**	0%	0%	0%	**0%**	7.3%

*L: Left, R: Right, T: Thru, U: U-Turn

4 - South State Highway MM & West Farm Road ... - TMC
Thu Jul 29, 2021
AM Peak (7 AM - 8 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010602, Location: 37.191205, -93.423394

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



4 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010602, Location: 37.191205, -93.423394

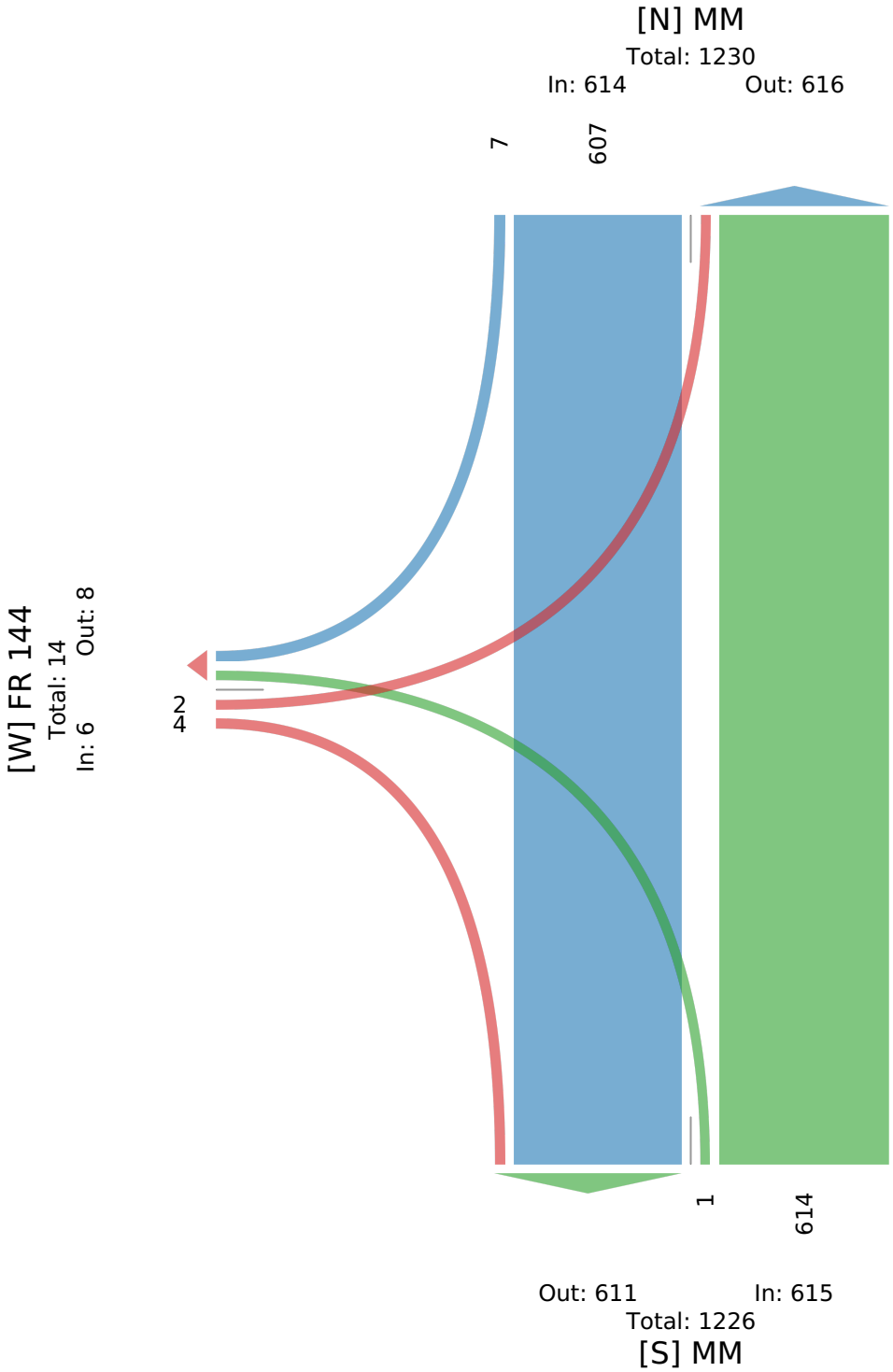
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	MM				MM				FR 144				
Direction	Southbound				Northbound				Eastbound				
Time	R	T	U	**App**	T	L	U	**App**	R	L	U	**App**	**Int**
2021-07-29 4:30PM	1	148	0	**149**	144	0	0	**144**	1	1	0	**2**	**295**
4:45PM	1	152	0	**153**	153	0	0	**153**	0	0	0	**0**	**306**
5:00PM	4	160	0	**164**	158	0	0	**158**	1	1	0	**2**	**324**
5:15PM	1	147	0	**148**	159	1	0	**160**	2	0	0	**2**	**310**
Total	7	607	0	**614**	614	1	0	**615**	4	2	0	**6**	**1235**
% Approach	1.1%	98.9%	0%	**-**	99.8%	0.2%	0%	**-**	66.7%	33.3%	0%	**-**	-
% Total	0.6%	49.1%	0%	**49.7%**	49.7%	0.1%	0%	**49.8%**	0.3%	0.2%	0%	**0.5%**	-
PHF	0.438	0.948	-	**0.936**	0.965	0.250	-	**0.961**	0.500	0.500	-	**0.750**	0.953
Lights	6	576	0	**582**	568	1	0	**569**	4	2	0	**6**	1157
% Lights	85.7%	94.9%	0%	**94.8%**	92.5%	100%	0%	**92.5%**	100%	100%	0%	**100%**	93.7%
Articulated Trucks	1	9	0	**10**	14	0	0	**14**	0	0	0	**0**	24
% Articulated Trucks	14.3%	1.5%	0%	**1.6%**	2.3%	0%	0%	**2.3%**	0%	0%	0%	**0%**	1.9%
Buses and Single-Unit Trucks	0	22	0	**22**	32	0	0	**32**	0	0	0	**0**	54
% Buses and Single-Unit Trucks	0%	3.6%	0%	**3.6%**	5.2%	0%	0%	**5.2%**	0%	0%	0%	**0%**	4.4%

*L: Left, R: Right, T: Thru, U: U-Turn

4 - South State Highway MM & West Farm Road ... - TMC
Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010602, Location: 37.191205, -93.423394

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



5 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010603, Location: 37.198538, -93.423094

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

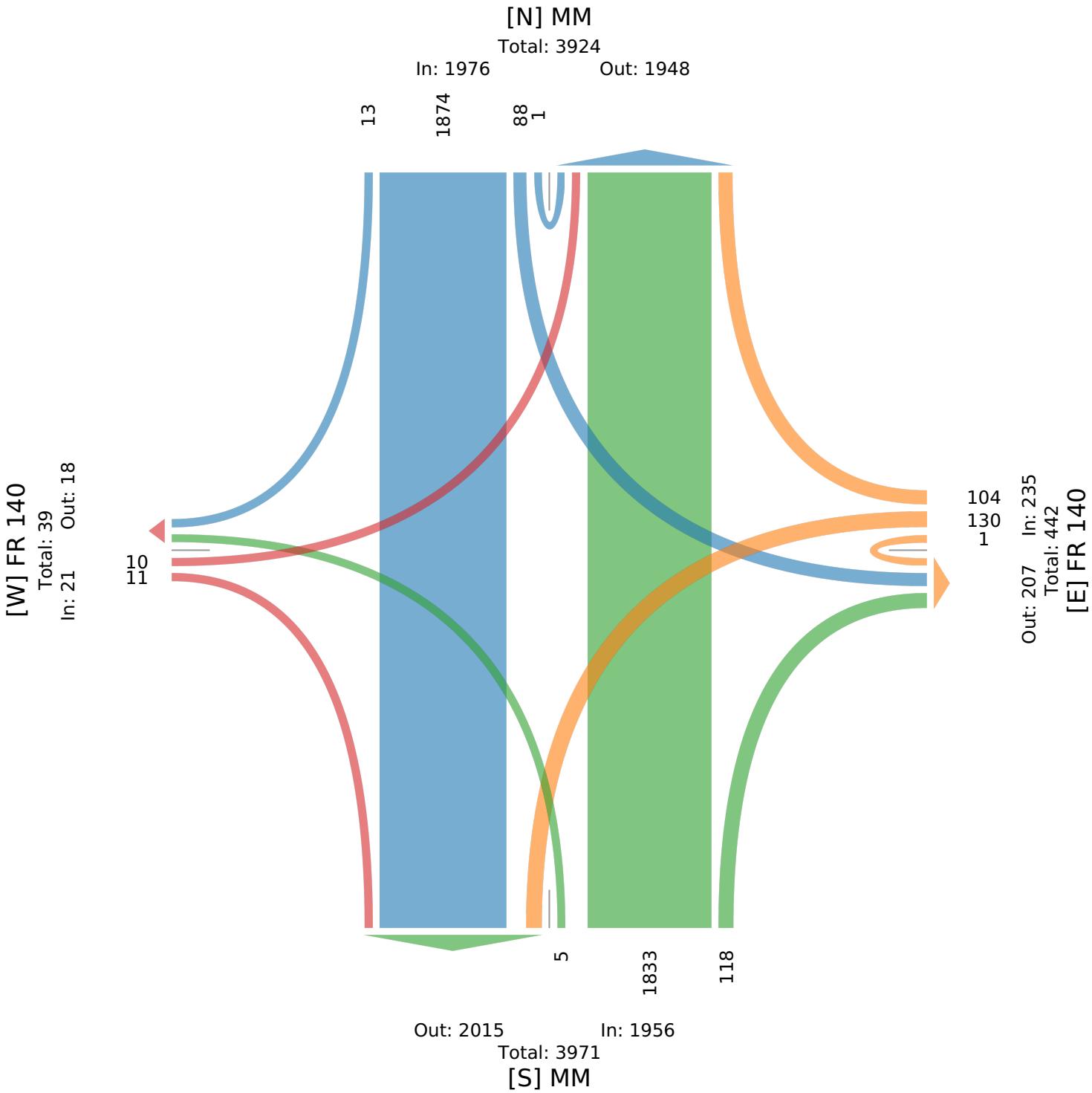
Leg	MM					FR 140					MM					FR 140					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2021-07-29 7:00AM	0	111	2	0	**113**	3	0	7	0	**10**	3	100	2	0	**105**	0	0	0	0	**0**	**228**
7:15AM	0	120	2	0	**122**	5	0	5	0	**10**	3	138	0	0	**141**	1	0	0	0	**1**	**274**
7:30AM	0	127	1	0	**128**	5	0	14	0	**19**	1	137	1	0	**139**	0	0	0	0	**0**	**286**
7:45AM	3	125	2	0	**130**	12	0	11	0	**23**	2	106	0	0	**108**	0	0	2	0	**2**	**263**
Hourly Total	3	483	7	0	**493**	25	0	37	0	**62**	9	481	3	0	**493**	1	0	2	0	**3**	**1051**
8:00AM	2	102	4	0	**108**	6	0	5	0	**11**	2	108	0	0	**110**	0	0	0	0	**0**	**229**
8:15AM	1	102	3	0	**106**	8	0	11	0	**19**	1	83	0	0	**84**	0	0	0	0	**0**	**209**
8:30AM	1	79	2	0	**82**	6	0	9	0	**15**	4	74	0	0	**78**	1	0	0	0	**1**	**176**
8:45AM	0	79	5	0	**84**	5	0	5	0	**10**	3	77	0	0	**80**	0	0	0	0	**0**	**174**
Hourly Total	4	362	14	0	**380**	25	0	30	0	**55**	10	342	0	0	**352**	1	0	0	0	**1**	**788**
4:00PM	1	96	9	0	**106**	7	0	10	0	**17**	6	123	0	0	**129**	2	0	2	0	**4**	**256**
4:15PM	3	126	11	0	**140**	7	0	11	1	**19**	7	107	0	0	**114**	2	0	1	0	**3**	**276**
4:30PM	0	142	5	0	**147**	3	0	10	0	**13**	17	132	0	0	**149**	0	0	0	0	**0**	**309**
4:45PM	1	147	10	0	**158**	6	0	4	0	**10**	15	134	1	0	**150**	1	0	1	0	**2**	**320**
Hourly Total	5	511	35	0	**551**	23	0	35	1	**59**	45	496	1	0	**542**	5	0	4	0	**9**	**1161**
5:00PM	1	152	8	1	**162**	4	0	10	0	**14**	16	140	1	0	**157**	0	0	1	0	**1**	**334**
5:15PM	0	137	8	0	**145**	6	0	5	0	**11**	16	154	0	0	**170**	1	0	0	0	**1**	**327**
5:30PM	0	121	6	0	**127**	10	0	9	0	**19**	10	116	0	0	**126**	2	0	2	0	**4**	**276**
5:45PM	0	108	10	0	**118**	11	0	4	0	**15**	12	104	0	0	**116**	1	0	1	0	**2**	**251**
Hourly Total	1	518	32	1	**552**	31	0	28	0	**59**	54	514	1	0	**569**	4	0	4	0	**8**	**1188**
Total	13	1874	88	1	**1976**	104	0	130	1	**235**	118	1833	5	0	**1956**	11	0	10	0	**21**	**4188**
% Approach	0.7%	94.8%	4.5%	0.1%	**-**	44.3%	0%	55.3%	0.4%	**-**	6.0%	93.7%	0.3%	0%	**-**	52.4%	0%	47.6%	0%	**-**	-
% Total	0.3%	44.7%	2.1%	0%	**47.2%**	2.5%	0%	3.1%	0%	**5.6%**	2.8%	43.8%	0.1%	0%	**46.7%**	0.3%	0%	0.2%	0%	**0.5%**	-
Lights	11	1705	84	1	**1801**	98	0	126	1	**225**	116	1645	4	0	**1765**	10	0	8	0	**18**	3809
% Lights	84.6%	91.0%	95.5%	100%	**91.1%**	94.2%	0%	96.9%	100%	**95.7%**	98.3%	89.7%	80.0%	0%	**90.2%**	90.9%	0%	80.0%	0%	**85.7%**	91.0%
Articulated Trucks	1	67	1	0	**69**	2	0	3	0	**5**	1	64	0	0	**65**	1	0	1	0	**2**	141
% Articulated Trucks	7.7%	3.6%	1.1%	0%	**3.5%**	1.9%	0%	2.3%	0%	**2.1%**	0.8%	3.5%	0%	0%	**3.3%**	9.1%	0%	10.0%	0%	**9.5%**	3.4%
Buses and Single-Unit Trucks	1	102	3	0	**106**	4	0	1	0	**5**	1	124	1	0	**126**	0	0	1	0	**1**	238
% Buses and Single-Unit Trucks	7.7%	5.4%	3.4%	0%	**5.4%**	3.8%	0%	0.8%	0%	**2.1%**	0.8%	6.8%	20.0%	0%	**6.4%**	0%	0%	10.0%	0%	**4.8%**	5.7%

*L: Left, R: Right, T: Thru, U: U-Turn

5 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010603, Location: 37.198538, -93.423094

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



5 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010603, Location: 37.198538, -93.423094

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

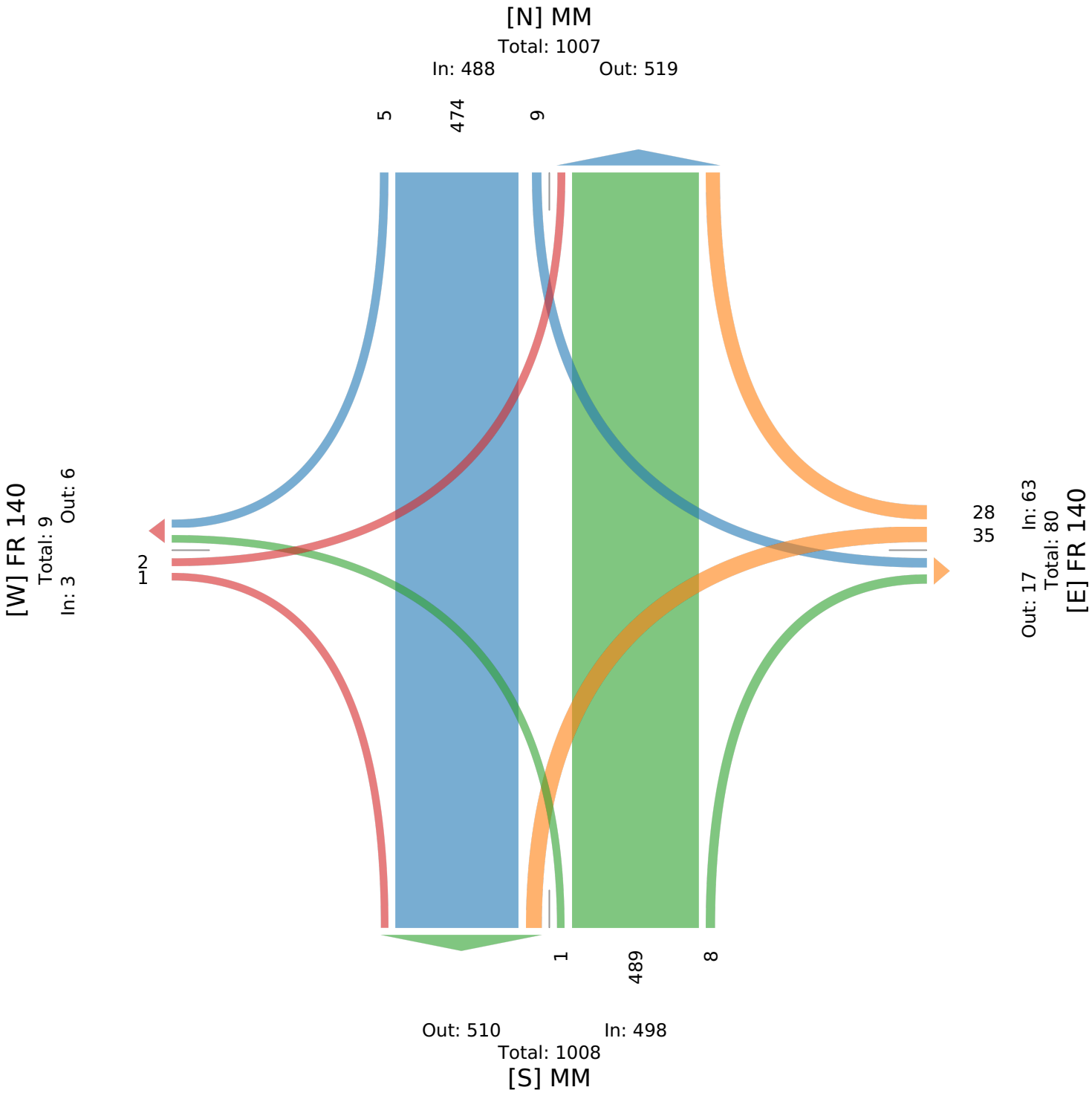
Leg	MM					FR 140					MM					FR 140					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2021-07-29 7:15AM	0	120	2	0	**122**	5	0	5	0	**10**	3	138	0	0	**141**	1	0	0	0	**1**	**274**
7:30AM	0	127	1	0	**128**	5	0	14	0	**19**	1	137	1	0	**139**	0	0	0	0	**0**	**286**
7:45AM	3	125	2	0	**130**	12	0	11	0	**23**	2	106	0	0	**108**	0	0	2	0	**2**	**263**
8:00AM	2	102	4	0	**108**	6	0	5	0	**11**	2	108	0	0	**110**	0	0	0	0	**0**	**229**
Total	5	474	9	0	**488**	28	0	35	0	**63**	8	489	1	0	**498**	1	0	2	0	**3**	**1052**
% Approach	1.0%	97.1%	1.8%	0%	**-**	44.4%	0%	55.6%	0%	**-**	1.6%	98.2%	0.2%	0%	**-**	33.3%	0%	66.7%	0%	**-**	-
% Total	0.5%	45.1%	0.9%	0%	**46.4%**	2.7%	0%	3.3%	0%	**6.0%**	0.8%	46.5%	0.1%	0%	**47.3%**	0.1%	0%	0.2%	0%	**0.3%**	-
PHF	0.417	0.933	0.563	-	**0.938**	0.583	-	0.625	-	**0.685**	0.667	0.886	0.250	-	**0.883**	0.250	-	0.250	-	**0.375**	0.920
Lights	4	417	9	0	**430**	25	0	34	0	**59**	7	422	1	0	**430**	1	0	2	0	**3**	922
% Lights	80.0%	88.0%	100%	0%	**88.1%**	89.3%	0%	97.1%	0%	**93.7%**	87.5%	86.3%	100%	0%	**86.3%**	100%	0%	100%	0%	**100%**	87.6%
Articulated Trucks	0	22	0	0	**22**	1	0	0	0	**1**	1	26	0	0	**27**	0	0	0	0	**0**	50
% Articulated Trucks	0%	4.6%	0%	0%	**4.5%**	3.6%	0%	0%	0%	**1.6%**	12.5%	5.3%	0%	0%	**5.4%**	0%	0%	0%	0%	**0%**	4.8%
Buses and Single-Unit Trucks	1	35	0	0	**36**	2	0	1	0	**3**	0	41	0	0	**41**	0	0	0	0	**0**	80
% Buses and Single-Unit Trucks	20.0%	7.4%	0%	0%	**7.4%**	7.1%	0%	2.9%	0%	**4.8%**	0%	8.4%	0%	0%	**8.2%**	0%	0%	0%	0%	**0%**	7.6%

*L: Left, R: Right, T: Thru, U: U-Turn

5 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010603, Location: 37.198538, -93.423094

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



5 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010603, Location: 37.198538, -93.423094

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

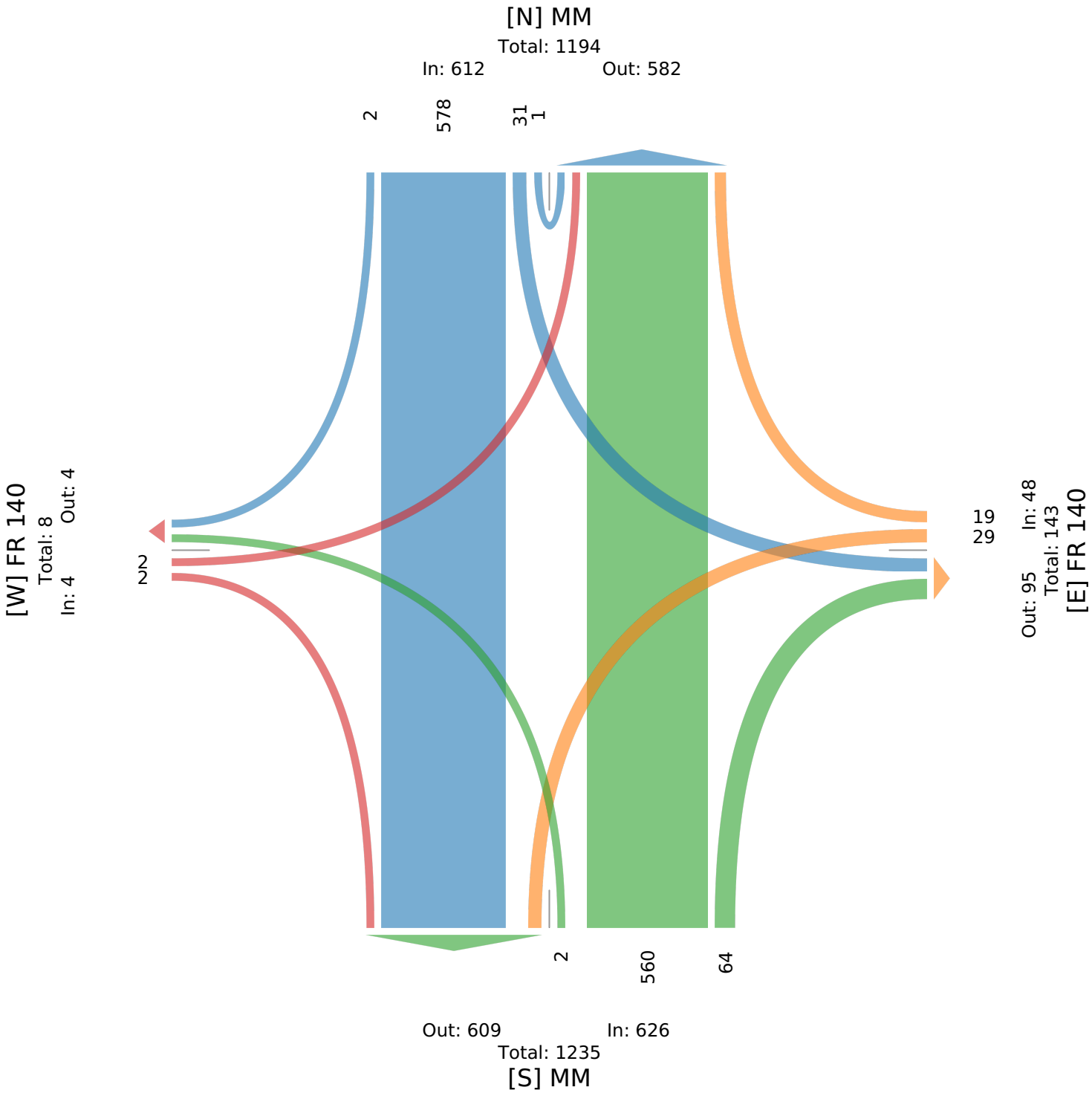
Leg	MM					FR 140					MM					FR 140					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2021-07-29 4:30PM	0	142	5	0	**147**	3	0	10	0	**13**	17	132	0	0	**149**	0	0	0	0	**0**	**309**
4:45PM	1	147	10	0	**158**	6	0	4	0	**10**	15	134	1	0	**150**	1	0	1	0	**2**	**320**
5:00PM	1	152	8	1	**162**	4	0	10	0	**14**	16	140	1	0	**157**	0	0	1	0	**1**	**334**
5:15PM	0	137	8	0	**145**	6	0	5	0	**11**	16	154	0	0	**170**	1	0	0	0	**1**	**327**
Total	2	578	31	1	**612**	19	0	29	0	**48**	64	560	2	0	**626**	2	0	2	0	**4**	**1290**
% Approach	0.3%	94.4%	5.1%	0.2%	**-**	39.6%	0%	60.4%	0%	**-**	10.2%	89.5%	0.3%	0%	**-**	50.0%	0%	50.0%	0%	**-**	-
% Total	0.2%	44.8%	2.4%	0.1%	**47.4%**	1.5%	0%	2.2%	0%	**3.7%**	5.0%	43.4%	0.2%	0%	**48.5%**	0.2%	0%	0.2%	0%	**0.3%**	-
PHF	0.500	0.951	0.775	0.250	**0.944**	0.792	-	0.725	-	**0.857**	0.941	0.909	0.500	-	**0.921**	0.500	-	0.500	-	**0.500**	0.966
Lights	2	548	30	1	**581**	19	0	28	0	**47**	63	515	1	0	**579**	1	0	0	0	**1**	1208
% Lights	100%	94.8%	96.8%	100%	**94.9%**	100%	0%	96.6%	0%	**97.9%**	98.4%	92.0%	50.0%	0%	**92.5%**	50.0%	0%	0%	0%	**25.0%**	93.6%
Articulated Trucks	0	9	0	0	**9**	0	0	1	0	**1**	0	12	0	0	**12**	1	0	1	0	**2**	24
% Articulated Trucks	0%	1.6%	0%	0%	**1.5%**	0%	0%	3.4%	0%	**2.1%**	0%	2.1%	0%	0%	**1.9%**	50.0%	0%	50.0%	0%	**50.0%**	1.9%
Buses and Single-Unit Trucks	0	21	1	0	**22**	0	0	0	0	**0**	1	33	1	0	**35**	0	0	1	0	**1**	58
% Buses and Single-Unit Trucks	0%	3.6%	3.2%	0%	**3.6%**	0%	0%	0%	0%	**0%**	1.6%	5.9%	50.0%	0%	**5.6%**	0%	0%	50.0%	0%	**25.0%**	4.5%

*L: Left, R: Right, T: Thru, U: U-Turn

5 - South State Highway MM & West Farm Road ... - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010603, Location: 37.198538, -93.423094

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



6 - South State Highway MM & I-44 EB - MERGED - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010605, Location: 37.200012, -93.423024

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

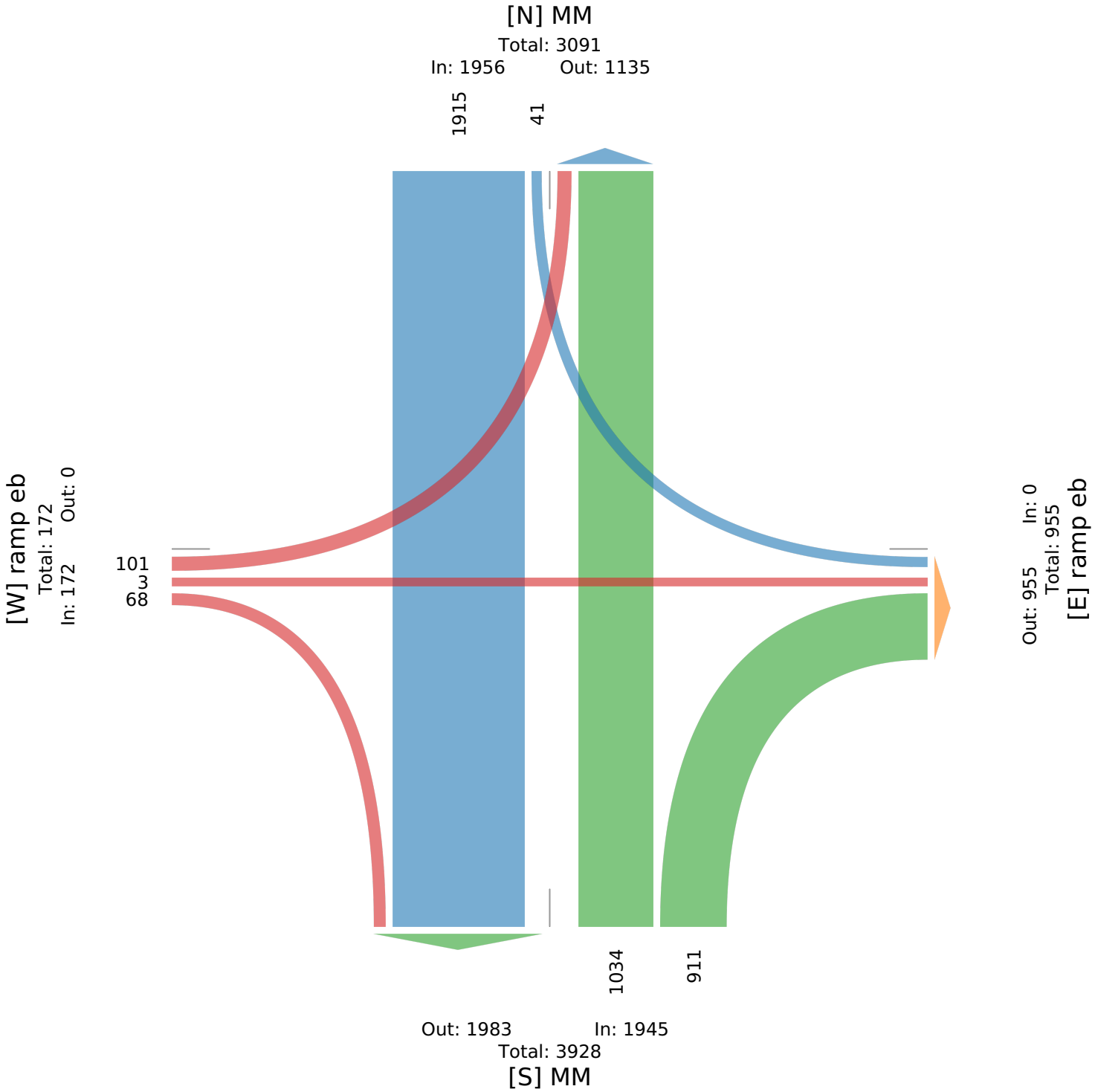
Leg	MM					ramp eb					MM					ramp eb					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2021-07-29 7:00AM	0	109	1	0	**110**	0	0	0	0	**0**	56	46	0	0	**102**	4	0	4	0	**8**	**220**
7:15AM	0	118	6	0	**124**	0	0	0	0	**0**	94	51	0	0	**145**	3	0	5	0	**8**	**277**
7:30AM	0	122	2	0	**124**	0	0	0	0	**0**	78	61	0	0	**139**	6	0	4	0	**10**	**273**
7:45AM	0	128	5	0	**133**	0	0	0	0	**0**	57	67	0	0	**124**	6	0	7	0	**13**	**270**
Hourly Total	0	477	14	0	**491**	0	0	0	0	**0**	285	225	0	0	**510**	19	0	20	0	**39**	**1040**
8:00AM	0	101	1	0	**102**	0	0	0	0	**0**	62	47	0	0	**109**	6	0	9	0	**15**	**226**
8:15AM	0	103	3	0	**106**	0	0	0	0	**0**	51	43	0	0	**94**	4	2	3	0	**9**	**209**
8:30AM	0	77	1	0	**78**	0	0	0	0	**0**	49	31	0	0	**80**	3	0	7	0	**10**	**168**
8:45AM	0	83	2	0	**85**	0	0	0	0	**0**	50	34	0	0	**84**	1	0	6	0	**7**	**176**
Hourly Total	0	364	7	0	**371**	0	0	0	0	**0**	212	155	0	0	**367**	14	2	25	0	**41**	**779**
4:00PM	0	104	3	0	**107**	0	0	0	0	**0**	48	77	0	0	**125**	3	0	14	0	**17**	**249**
4:15PM	0	134	2	0	**136**	0	0	0	0	**0**	42	78	0	0	**120**	7	1	10	0	**18**	**274**
4:30PM	0	143	3	0	**146**	0	0	0	0	**0**	56	81	0	0	**137**	4	0	9	0	**13**	**296**
4:45PM	0	157	3	0	**160**	0	0	0	0	**0**	52	92	0	0	**144**	3	0	7	0	**10**	**314**
Hourly Total	0	538	11	0	**549**	0	0	0	0	**0**	198	328	0	0	**526**	17	1	40	0	**58**	**1133**
5:00PM	0	156	4	0	**160**	0	0	0	0	**0**	67	77	0	0	**144**	5	0	6	0	**11**	**315**
5:15PM	0	141	2	0	**143**	0	0	0	0	**0**	54	102	0	0	**156**	5	0	4	0	**9**	**308**
5:30PM	0	125	2	0	**127**	0	0	0	0	**0**	38	90	0	0	**128**	3	0	2	0	**5**	**260**
5:45PM	0	114	1	0	**115**	0	0	0	0	**0**	57	57	0	0	**114**	5	0	4	0	**9**	**238**
Hourly Total	0	536	9	0	**545**	0	0	0	0	**0**	216	326	0	0	**542**	18	0	16	0	**34**	**1121**
Total	0	1915	41	0	**1956**	0	0	0	0	**0**	911	1034	0	0	**1945**	68	3	101	0	**172**	**4073**
% Approach	0%	97.9%	2.1%	0%	**-**	0%	0%	0%	0%	**-**	46.8%	53.2%	0%	0%	**-**	39.5%	1.7%	58.7%	0%	**-**	-
% Total	0%	47.0%	1.0%	0%	**48.0%**	0%	0%	0%	0%	**0%**	22.4%	25.4%	0%	0%	**47.8%**	1.7%	0.1%	2.5%	0%	**4.2%**	-
Lights	0	1750	38	0	**1788**	0	0	0	0	**0**	815	933	0	0	**1748**	59	3	92	0	**154**	3690
% Lights	0%	91.4%	92.7%	0%	**91.4%**	0%	0%	0%	0%	**-**	89.5%	90.2%	0%	0%	**89.9%**	86.8%	100%	91.1%	0%	**89.5%**	90.6%
Articulated Trucks	0	62	1	0	**63**	0	0	0	0	**0**	55	18	0	0	**73**	7	0	6	0	**13**	149
% Articulated Trucks	0%	3.2%	2.4%	0%	**3.2%**	0%	0%	0%	0%	**-**	6.0%	1.7%	0%	0%	**3.8%**	10.3%	0%	5.9%	0%	**7.6%**	3.7%
Buses and Single-Unit Trucks	0	103	2	0	**105**	0	0	0	0	**0**	41	83	0	0	**124**	2	0	3	0	**5**	234
% Buses and Single-Unit Trucks	0%	5.4%	4.9%	0%	**5.4%**	0%	0%	0%	0%	**-**	4.5%	8.0%	0%	0%	**6.4%**	2.9%	0%	3.0%	0%	**2.9%**	5.7%

*L: Left, R: Right, T: Thru, U: U-Turn

6 - South State Highway MM & I-44 EB - MERGED - TMC

Thu Jul 29, 2021
Full Length ()
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010605, Location: 37.200012, -93.423024

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



6 - South State Highway MM & I-44 EB - MERGED - TMC

Thu Jul 29, 2021
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010605, Location: 37.200012, -93.423024

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

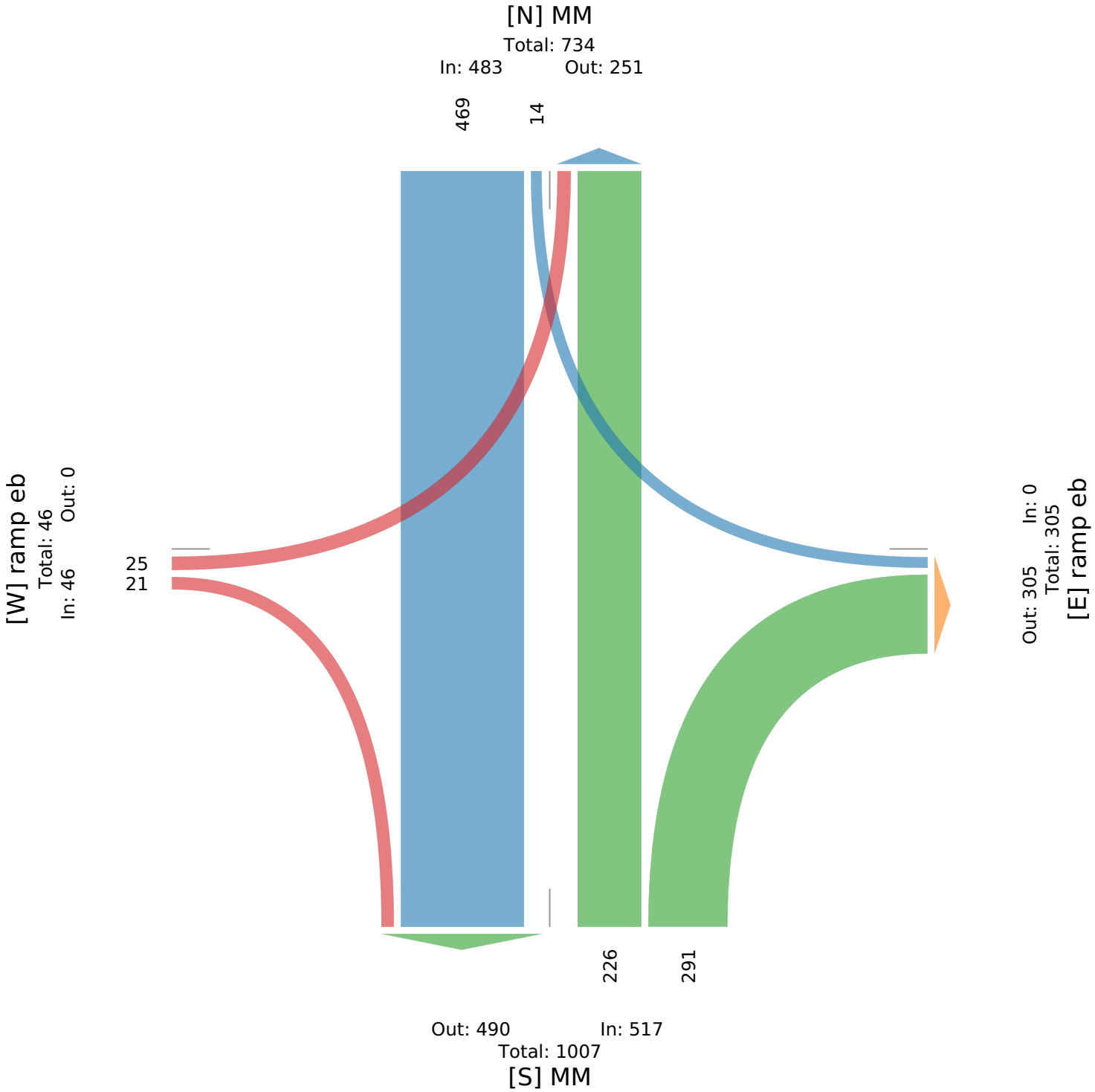
Leg	MM					ramp eb					MM					ramp eb					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2021-07-29 7:15AM	0	118	6	0	**124**	0	0	0	0	**0**	94	51	0	0	**145**	3	0	5	0	**8**	**277**
7:30AM	0	122	2	0	**124**	0	0	0	0	**0**	78	61	0	0	**139**	6	0	4	0	**10**	**273**
7:45AM	0	128	5	0	**133**	0	0	0	0	**0**	57	67	0	0	**124**	6	0	7	0	**13**	**270**
8:00AM	0	101	1	0	**102**	0	0	0	0	**0**	62	47	0	0	**109**	6	0	9	0	**15**	**226**
Total	0	469	14	0	**483**	0	0	0	0	**0**	291	226	0	0	**517**	21	0	25	0	**46**	**1046**
% Approach	0%	97.1%	2.9%	0%	**-**	0%	0%	0%	0%	**-**	56.3%	43.7%	0%	0%	**-**	45.7%	0%	54.3%	0%	**-**	-
% Total	0%	44.8%	1.3%	0%	**46.2%**	0%	0%	0%	0%	**0%**	27.8%	21.6%	0%	0%	**49.4%**	2.0%	0%	2.4%	0%	**4.4%**	-
PHF	-	0.916	0.583	-	**0.908**	-	-	-	-	**-**	0.774	0.843	-	-	**0.891**	0.875	-	0.694	-	**0.767**	0.944
Lights	0	413	12	0	**425**	0	0	0	0	**0**	254	192	0	0	**446**	19	0	21	0	**40**	911
% Lights	0%	88.1%	85.7%	0%	**88.0%**	0%	0%	0%	0%	**-**	87.3%	85.0%	0%	0%	**86.3%**	90.5%	0%	84.0%	0%	**87.0%**	87.1%
Articulated Trucks	0	21	1	0	**22**	0	0	0	0	**0**	23	7	0	0	**30**	1	0	3	0	**4**	56
% Articulated Trucks	0%	4.5%	7.1%	0%	**4.6%**	0%	0%	0%	0%	**-**	7.9%	3.1%	0%	0%	**5.8%**	4.8%	0%	12.0%	0%	**8.7%**	5.4%
Buses and Single-Unit Trucks	0	35	1	0	**36**	0	0	0	0	**0**	14	27	0	0	**41**	1	0	1	0	**2**	79
% Buses and Single-Unit Trucks	0%	7.5%	7.1%	0%	**7.5%**	0%	0%	0%	0%	**-**	4.8%	11.9%	0%	0%	**7.9%**	4.8%	0%	4.0%	0%	**4.3%**	7.6%

*L: Left, R: Right, T: Thru, U: U-Turn

6 - South State Highway MM & I-44 EB - MERGED - TMC

Thu Jul 29, 2021
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010605, Location: 37.200012, -93.423024

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



6 - South State Highway MM & I-44 EB - MERGED - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010605, Location: 37.200012, -93.423024

Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

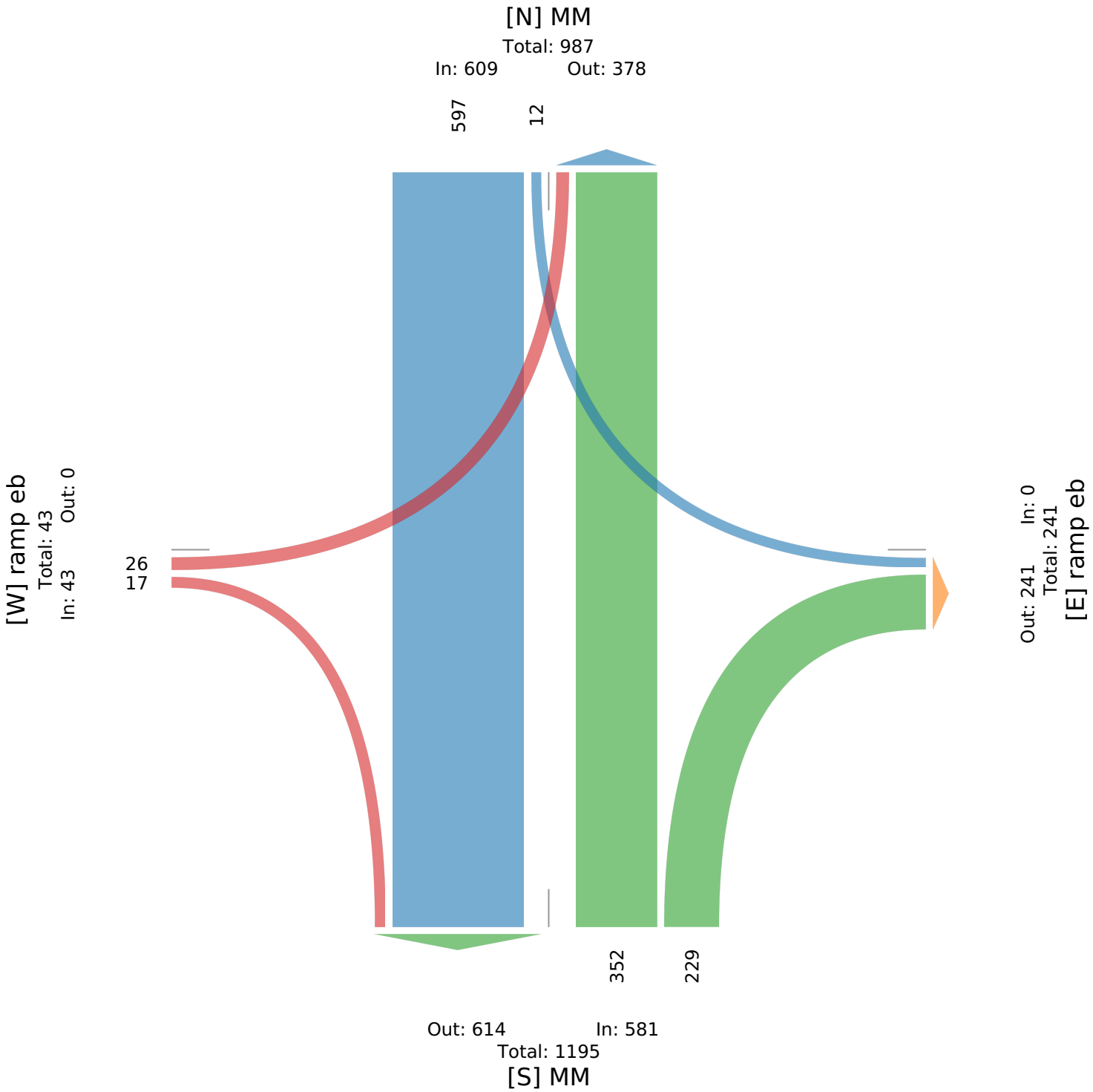
Leg	MM					ramp eb					MM					ramp eb					
Direction	Southbound					Westbound					Northbound					Eastbound					
Time	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	R	T	L	U	**App**	**Int**
2021-07-29 4:30PM	0	143	3	0	**146**	0	0	0	0	**0**	56	81	0	0	**137**	4	0	9	0	**13**	**296**
4:45PM	0	157	3	0	**160**	0	0	0	0	**0**	52	92	0	0	**144**	3	0	7	0	**10**	**314**
5:00PM	0	156	4	0	**160**	0	0	0	0	**0**	67	77	0	0	**144**	5	0	6	0	**11**	**315**
5:15PM	0	141	2	0	**143**	0	0	0	0	**0**	54	102	0	0	**156**	5	0	4	0	**9**	**308**
Total	0	597	12	0	**609**	0	0	0	0	**0**	229	352	0	0	**581**	17	0	26	0	**43**	**1233**
% Approach	0%	98.0%	2.0%	0%	**-**	0%	0%	0%	0%	**-**	39.4%	60.6%	0%	0%	**-**	39.5%	0%	60.5%	0%	**-**	-
% Total	0%	48.4%	1.0%	0%	**49.4%**	0%	0%	0%	0%	**0%**	18.6%	28.5%	0%	0%	**47.1%**	1.4%	0%	2.1%	0%	**3.5%**	-
PHF	-	0.951	0.750	-	**0.952**	-	-	-	-	**-**	0.854	0.863	-	-	**0.931**	0.850	-	0.722	-	**0.827**	0.979
Lights	0	569	12	0	**581**	0	0	0	0	**0**	204	332	0	0	**536**	14	0	25	0	**39**	1156
% Lights	0%	95.3%	100%	0%	**95.4%**	0%	0%	0%	0%	**-**	89.1%	94.3%	0%	0%	**92.3%**	82.4%	0%	96.2%	0%	**90.7%**	93.8%
Articulated Trucks	0	7	0	0	**7**	0	0	0	0	**0**	10	3	0	0	**13**	2	0	1	0	**3**	23
% Articulated Trucks	0%	1.2%	0%	0%	**1.1%**	0%	0%	0%	0%	**-**	4.4%	0.9%	0%	0%	**2.2%**	11.8%	0%	3.8%	0%	**7.0%**	1.9%
Buses and Single-Unit Trucks	0	21	0	0	**21**	0	0	0	0	**0**	15	17	0	0	**32**	1	0	0	0	**1**	54
% Buses and Single-Unit Trucks	0%	3.5%	0%	0%	**3.4%**	0%	0%	0%	0%	**-**	6.6%	4.8%	0%	0%	**5.5%**	5.9%	0%	0%	0%	**2.3%**	4.4%

*L: Left, R: Right, T: Thru, U: U-Turn

6 - South State Highway MM & I-44 EB - MERGED - TMC

Thu Jul 29, 2021
PM Peak (4:30 PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 1010605, Location: 37.200012, -93.423024

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



APPENDIX B

Future Baseline Conditions

Future Baseline Exhibit

ROUTE I-44
EB ON RAMP

U.I.P.

SAWCUT

+58.54
83.79'

+66.96
87.97'

R 60'

R 90'

+29.90
97.02'

+48.63
85.79'

SW 1/4
23-29N-23W

01

M&S PROPERTIES OF
SPFD, LLC
10,066.9 SF NEW CONTROLLED ACCESS R/W
4,306.8 SF PERM. UTILITY ESM'T
8.1 ACRES REMAINING

+16.00
75.00'
+16.32
85.00'

+99.20
85.00'
+99.20
75.00'

PERM. UTILITY ESM'T

TENTATIVE R/W

SPECIAL DITCH

SL

50

10' EXIST. UTILITY ESM'T

(R)

EXISTING R/W

+47.57
35.00'
+47.57
38.00'

+91.63
35.00'
+99.20
35.00'

PI STA 51+99.20
Δ = 0°27'0" RT.

EOP
C&G

BEGINS AT A POINT APPROX. 19.20'
EAST & 567.31' NORTH OF THE 1/4
CORNER OF SECTIONS 26 & 27, T29N R23W.

1/4 CORNER OF SECTIONS 26 & 27,
T29N R8E 567.63', N01°56'16"E
TO BEGINNING OF PROJECT.

EX. EOS

END COLDMILLING DEPTH TRANSITION
BEGIN 2" OVERLAY
STA. 51+09.01 ℄ RTE_MM

8" CONC.
MEDIAN

STA. 544+07.60 CL (RTEI-44) =
STA. 46+86.90 CL (RTEMM)

℄ RTEMM

SECTION LINE

SAWCUT

S01°49'27"W

S02°16'27"W

MATCHLINE STA. 52+45.00

74°

BEGIN PROJECT
STA 48+58.54

2" MILL/FILL

BEGIN COLDMILLING
DEPTH TRANSITION
STA. 49+09.01

+58.54
18.02'

+09.01
19.49'

CP #117

EX. EOS

EOP
C&G

U.I.P.

8" CONC.
MEDIAN

(R)

EXISTING R/W

+98.93
35.00'

+02.57
46.86'

+64.09
35.00'
+64.09
38.00'

R 65'

R 74'

SL

TENTATIVE R/W

+99.20
73.00'

+19.16
129.76'

SAWCUT

APPROXIMATE
SINKHOLE
LOCATION

+11.66
95.13'

02

LAND SOLUTIONS LLC
SE 1/4
23-29N-23W
9,324.5 SF NEW CONTROLLED ACCESS R/W
12.8 ACRES REMAINING

+39.52
127.88'

ROUTE I-44
EB OFF RAMP

SCALE
0 20 40 60

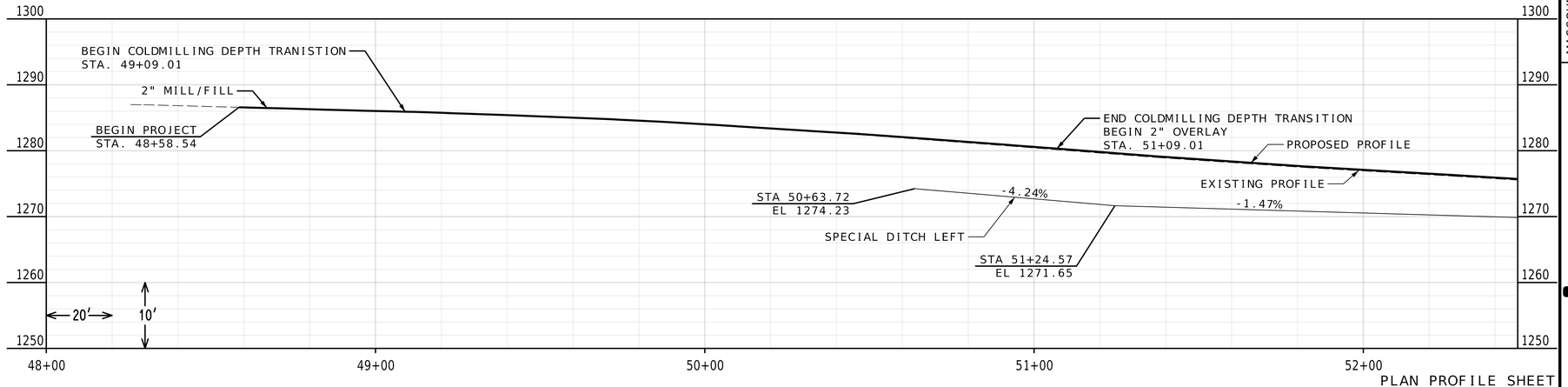
GENERAL NOTE:
THE APPROXIMATE LOCATION OF PROPERTY LINES AS SHOWN ON THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO THE COMMISSION AT THIS TIME. THIS INFORMATION IS PROVIDED BY THE COMMISSION "AS-IS" AND THE COMMISSION EXPPRESSLY DISCLAIMS ANY REPRESENTATION OR WARRANTY AS TO THE COMPLETENESS, ACCURACY, OR SUITABILITY OF THE INFORMATION FOR ANY USE.

RIGHT OF WAY LIMITS FOR THIS PROJECT EXTEND FROM STA. 49+48.63 TO STA. 20+26.86, ROUTE MM, A DISTANCE OF 1.412 MILES. PERMANENT EASEMENT LIMITS FOR THIS PROJECT EXTEND FROM STA. 49+29.90 TO STA. 3+81.45, ROUTE MM, A DISTANCE OF 1.104 MILES. TEMPORARY EASEMENT LIMITS FOR THIS PROJECT EXTEND FROM STA. 63+80.00 TO STA. 20+26.57, ROUTE MM, A DISTANCE OF 1.140 MILES.

ANY WORK INDICATED ON THE PLANS THAT EXTENDS BEYOND THE PROJECT LIMITS IS CONSIDERED INCIDENTAL TO AND A PART OF THE CONSTRUCTION OF THIS PROJECT.

ALL BEARINGS ARE BASED ON STATE PLANE BEARINGS, CENTRAL ZONE.

ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE MARKED.



PLAN PROFILE SHEET
SHEET 1 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	4

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(01)
M&S PROPERTIES OF SPFD, LLC
SEE SHEET 4

SW 1/4
23-29N-23W

20' EXIST. SAN. SEWER ESM'T

+91.36 120.00'
+13.00 11.03' SAWCUT
EXISTING COUNTY R/W
+13.00 11.03'
+50.13 120.00'
+66.16 75.00'
+71.76 85.00'
+82.63 80.00'
OBLITERATE
R 75'
W. FARM RD 140
PERM. UTILITY ESM'T
(D.N.D. C&G)
TENTATIVE R/W
ROCK LINING
TYPE A GUTTER
SL
EXISTING ESM'T
EXISTING R/W
SPECIAL DITCH LT
C&G
EOP
+19.52 38.00'
+37.13 35.00'
+09.19 35.00'
+54.80 35.00'
EX. EOS
+19.52 35.00'
+37.59 38.00'
SAWCUT
STA. 54+23.16 ℄ (RTEMM)=
STA. 5+00.00 ℄ (FR140E)
90°0'0"
SECTION LINE
BEGIN FULL DEPTH PAVEMENT
STA. 57+00.00
S02°16'27"W
RTEMM
STA. 54+25.53 ℄ (RTEMM)=
STA. 5+00.00 ℄ (FR140W)
+42.16 38.00'
+09.36 35.00'
+24.08 35.00'
+24.08 38.00'
+41.70 35.00'
15' EXIST. UTILITY ESM'T
SPECIAL DITCH RT
SL
+09.36 38.00'
+58.00 73.00'
+87.00 8.83'
+66.90 89.00'
+75.96 74.00'
APPROXIMATE SINKHOLE LOCATION
+99.54 118.00'
+49.37 118.00'
SAWCUT
EXISTING CITY R/W

MATCHLINE STA. 52+45.00
MATCHLINE STA. 58+05.00

STA. 5+57.25 FR140E
131' X 18" GROUP A PIPE (18")
2-18" GROUP A FES

NW1/4 NW1/4
26-29N-23W

(03)
AUSTIN, KENNETH W TR
53,911.3 SF NEW R/W
1,690.2 SF TEMP. CONST. ESM'T.
32.7 ACRES REMAINING

(02)
LAND SOLUTIONS LLC
SEE SHEET 4

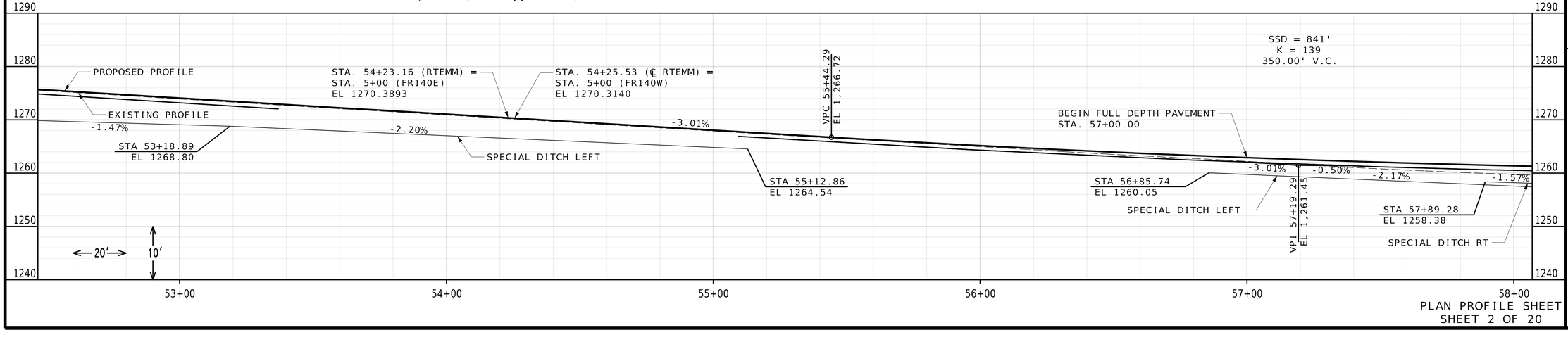
SE 1/4
23-29N-23W

STA. 4+42.17 FR140W
130' X 18" GROUP A PIPE (18")
2-18" GROUP A FES

NE1/4 NE1/4
26-29N-23W

(04)
MCGUIRE, HEATHER B
15,559.7 SF NEW R/W
6,271.1 SF PERM. UTILITY ESM'T
4.6 ACRES REMAINING

SCALE
0 20 40 60



PLAN PROFILE SHEET
SHEET 2 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	5

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

(03)
AUSTIN, KENNETH W TR
SEE SHEET 5

APPROXIMATE SINKHOLE LOCATION

NW1/4 NW1/4
26-29N-23W

TENTATIVE R/W
SL
SPECIAL DITCH LT
ROCK LINING
TYPE A GUTTER
+04.62
31.00'
EXISTING R/W
EOP
C&G
(R)
+60.89
31.70'
+73.88
31.49'
+56.34
31.00'
SECTION LINE
S02°16'27"W
RTEMM
℄ ROUTE MM
MATCHLINE STA. 58+05.00
MATCHLINE STA. 63+65.00
+60.99
31.70'
+73.99
31.49'
+56.43
31.00'
15' EXIST. UTILITY ESM'T
+87.86
31.00'
SPECIAL DITCH RT
TENTATIVE R/W
PERM. UTILITY ESM'T
EXIST. UTILITY ESM'T
+89.18
89.00'
+89.39
74.00'
+99.79
95.00'
+00.00
80.00'

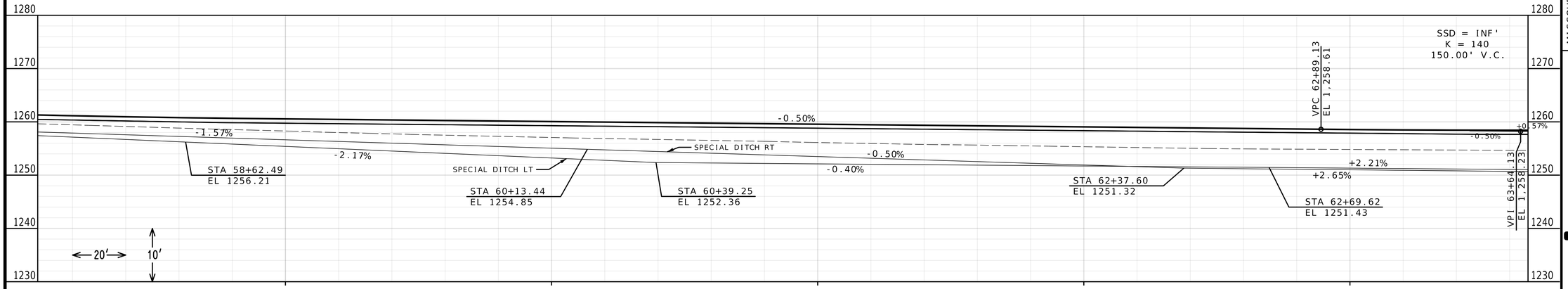
(04)
MCGUIRE, HEATHER B
SEE SHEET 5

NE1/4 NE1/4
27-29N-23W

(05)
MM FARM LLC
15,394.1 SF NEW R/W
4,810.5 SF PERM. UTILITY ESM'T
18.2 ACRES REMAINING

(06)
PLAZA SOUTHWEST LLC
27,475.2 SF NEW R/W
8,241.4 SF PERM. UTILITY ESM'T
300.0 SF PERM. DRAINAGE ESM'T
15.8 ACRES REMAINING

SCALE
0 20 40 60



PLAN PROFILE SHEET
SHEET 3 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	6

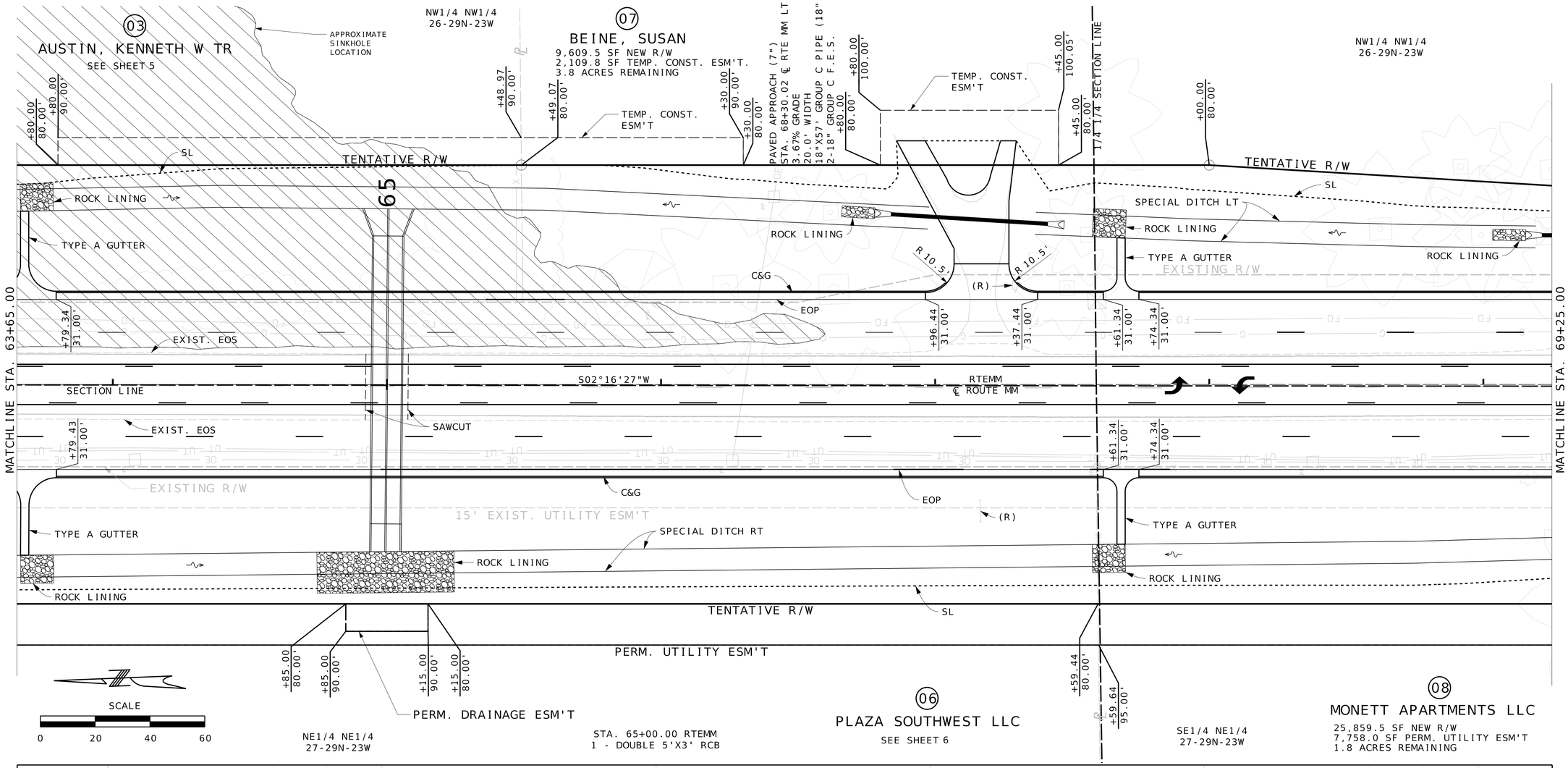
COUNTY
GREENE
JOB NO.
J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

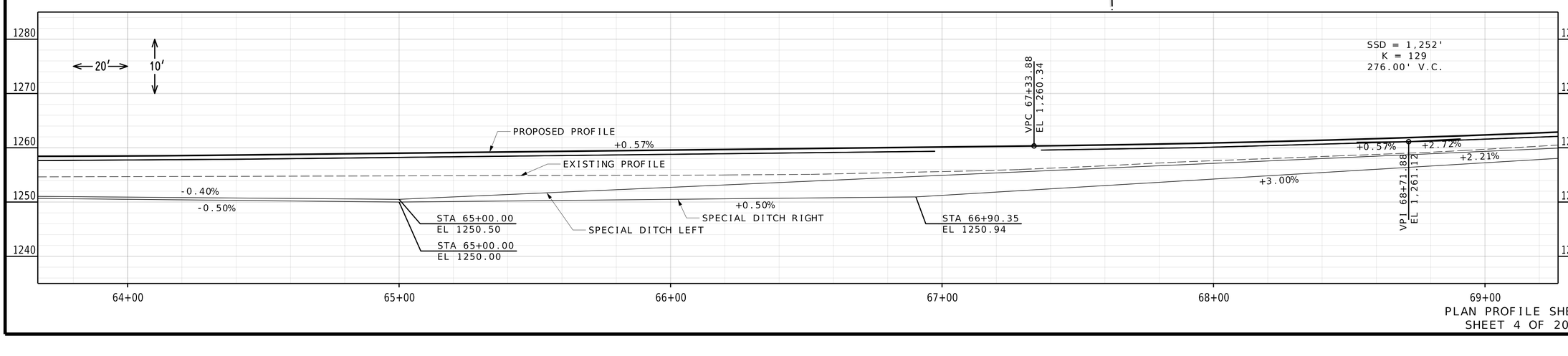
DESCRIPTION
DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592





PLAN PROFILE SHEET
SHEET 4 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

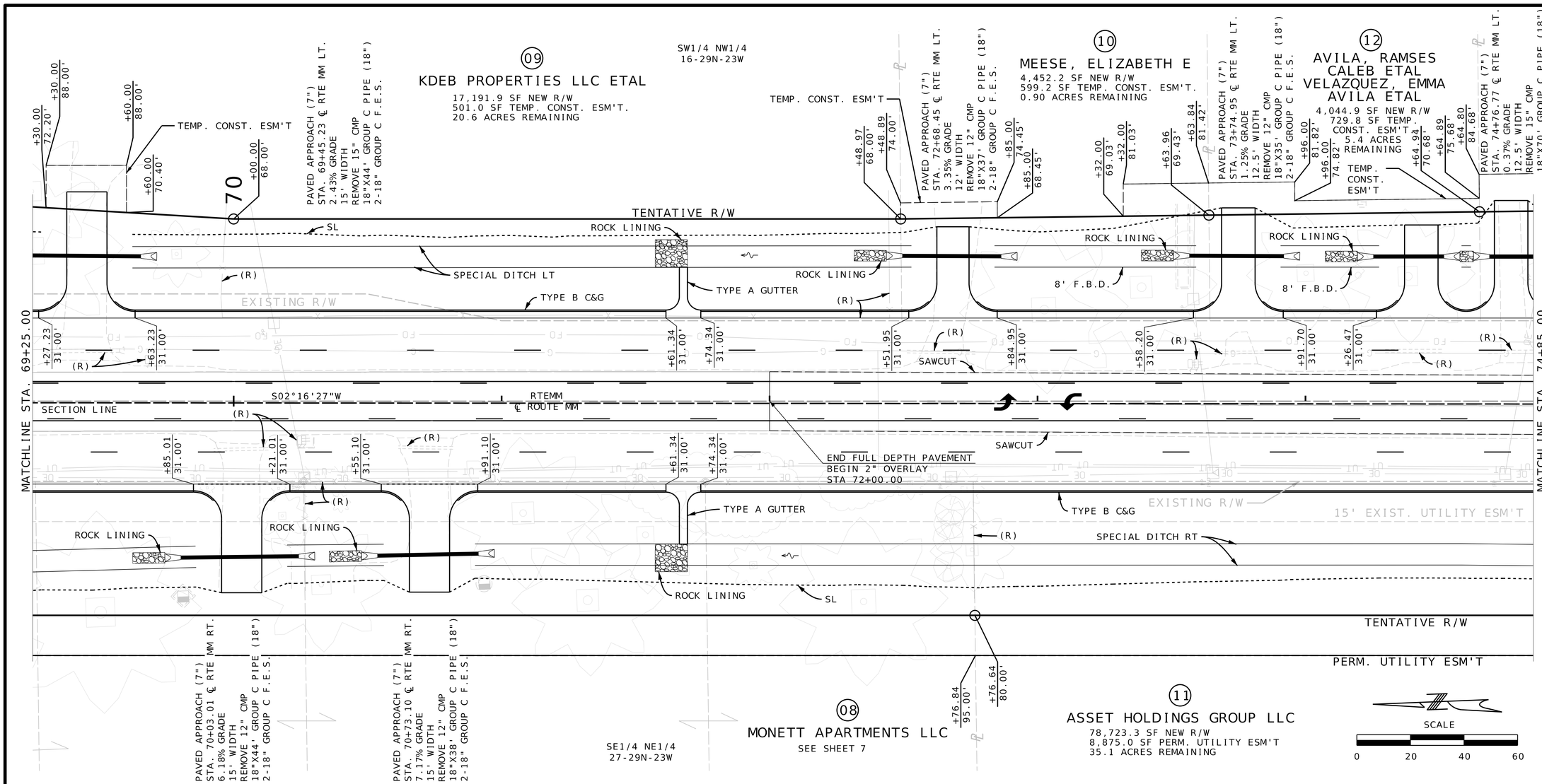
DATE PREPARED	
4/4/2023	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	7
COUNTY	
GREENE	
JOB NO.	
J8S0836B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

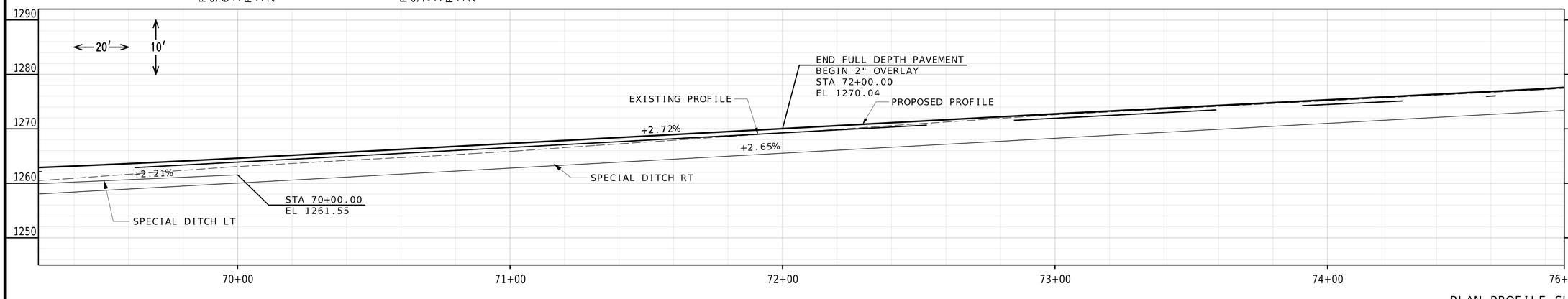
DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592





PLAN PROFILE SHEET
SHEET 5 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	
4/4/2023	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	8
COUNTY	
GREENE	
JOB NO.	
J8S0836B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(13)
JENKINS, JAMES W.
7,444.0 SF NEW R/W
421.9 SF TEMP. CONST. ESM'T.
6.7 ACRES REMAINING

SW1/4 NW1/4
26-29N-23W

(14)
WINDHAM, WILLIAM A.
3,905.0 SF NEW R/W
0.90 ACRES REMAINING

(15)
OAK FOREST PROP
1384 S HWY MM LLC
15,728.3 SF NEW R/W
128.0 SF TEMP. CONST. ESM'T.
10.5 ACRES REMAINING

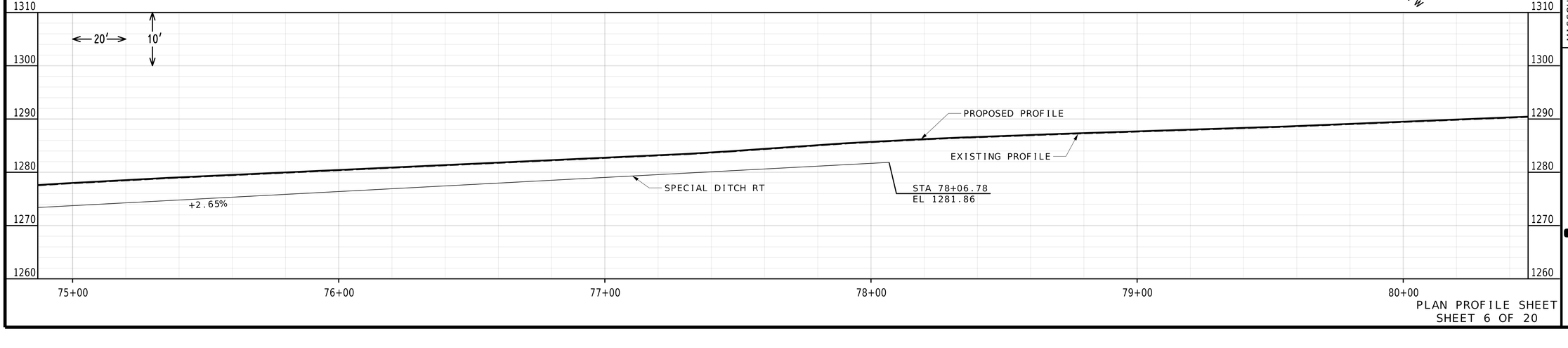
SCALE
0 20 40 60

TEMP. CONST. ESM'T
+95.00 85.05' +95.00 71.05'
PAVED APPROACH (7") STA. 76+15.54 ℄ RTE MM LT. 12' WIDTH 2.97% GRADE REMOVE EXIST. 18" CMP 18"X54' GROUP C PIPE (18") 2-18" GROUP C F.E.S.
+43.08 72.89'
+32.96 74.00'
PAVED APPROACH (7") STA. 77+27.93 ℄ RTE MM LT. 15' WIDTH 0.64% GRADE REMOVE EXIST. 12" CMP 18"X37' GROUP C PIPE (18") 2-18" GROUP C F.E.S.
PAVED APPROACH (7") STA. 78+21.83 ℄ RTE MM LT. 23' WIDTH 2.99% GRADE REMOVE EXIST. 12" CMP 18"X51' GROUP C PIPE (18") 2-18" GROUP C F.E.S.
PAVED APPROACH (7") STA. 79+67.64 ℄ RTE MM LT. 12.5' WIDTH 6.13% GRADE REMOVE EXIST. 12" CMP 18"X41' GROUP C PIPE (18") 2-18" GROUP C F.E.S.
+52.00 74.00' +52.00 78.00'
TEMP. CONST. ESM'T
+84.00 78.00' +84.00 74.00'

TENTATIVE R/W
8' F.B.D. LT
ROCK LINING
SL
TYPE A GUTTER
C&G
EOP
+93.52 31.00'
+99.03 31.00'
+32.03 31.00'
+09.93 31.00'
+45.93 31.00'
+00.08 31.00'
+43.58 31.00'
+50.90 31.00'
+84.37 31.00'
(R)
EXISTING R/W
EXIST. EOS
SAWCUT
S02°16'27"W
SECTION LINE
RTEMM
℄ ROUTE MM
MATCHLINE STA. 74+85.00
MATCHLINE STA. 80+45.00
15' EXIST. UTILITY ESM'T
+06.78 31.00'
8" CONC. MEDIAN
+06.78 43.00'
+16.61 43.00'
R 153'
54.46 77.76'
+91.96 57.33'
R 78'
PERM. UTILITY ESM'T
+39.09 80.00'
+97.73 95.00'
+78.63 115.70'

(11)
ASSET HOLDINGS GROUP LLC
SEE SHEET 8

SE1/4 NE1/4
27-29N-23W



PLAN PROFILE SHEET
SHEET 6 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED 4/4/2023
ROUTE MM | STATE MO
DISTRICT SW | SHEET NO. 9
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

SW1/4 NW1/4
26-29N-23W

15

OAK FOREST
PROP-1384 S
HWY MM LLC

SEE SHEET 9

1/4 SECTION LINE

100' EXIST. UTILITY ESM'T

NW1/4 SW1/4
26-29N-23W

FES 81FES1, ℄ RTEMM
STA. 81+98.69, 53.64' RT.
1-18" F.E.S.

FES 82FES1, ℄ RTEMM
STA. 82+05.21, 45.67' RT.
1-18" F.E.S.

INLET 82T1, ℄ RTEMM
STA. 82+04.05, 34.00' LT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENINGS

INLET 82T2, ℄ RTEMM
STA. 82+04.05, 34.00' RT.
1-5'X3' TYPE T INLET
2-15" PIPE OPENINGS
1-18" PIPE OPENING

INLET 84T1, ℄ RTEMM
STA. 84+15.00, 34.00' LT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENINGS

INLET 84T2, ℄ RTEMM
STA. 84+15.00, 34.00' RT.
1-5'X3' TYPE T INLET
3-15" PIPE OPENINGS

16

GARRETT, LEE TR ETAL

32,097.9 SF NEW R/W
22.0 ACRES REMAINING

SCALE
0 20 40 60

+50.00
74.00'

+00.00
70.00'

TENTATIVE R/W

SL

8' F.B.D. LT

INLET 82T1

INLET 84T1

EOP

C&G

(R)

EXISTING R/W

SAWCUT

EXIST. EOS

S02°16'27"W

RTEMM
℄ ROUTE MM

SECTION LINE

MATCHLINE STA. 80+45.00

MATCHLINE STA. 86+05.00

90.68°

8" CONC.
MEDIAN

STA. 80+89.73 ℄ (RTEMM)
STA. 15+17.83 ℄ (FR144)

INLET 82T2

INLET 84T2

FES 82FES1

SPECIAL DITCH RT

+39.38
+31.00'

+00.46
+31.00'

R 78'

FES 81FES1

SL

C&G

EOP

EXIST.
15' DRAINAGE,
SANITARY
SEWER, AND
U/E ESM'T

TENTATIVE R/W

PERM. UTILITY ESM'T

10' EXIST.
UTILITY ESM'T

+28.63
32.42'

+17.88
82.00'

+26.98
72.00'

+54.00
72.00'

+64.00
72.00'

+80.00
54.76'

17

MURFIN INC

12,072.9 SF NEW R/W
3,646.6 SF PERM. UTILITY ESM'T
15,127.3 SF TEMP. ESM'T.
8.8 ACRES REMAINING

AT&T
FACILITIES
ESM'T

+02.44
25.07'

+23.20
88.81'

+16.16
115.09'

(D.N.D.)

EXIST. CITY R/W

FR 144 CL S88°24'05"E

EXIST.
CITY R/W

R 153'

EXIST. UTILITY ESM'T

NE1/4 SE1/4
27-29N-23W

C&G

TEMP. CONST. ESM'T

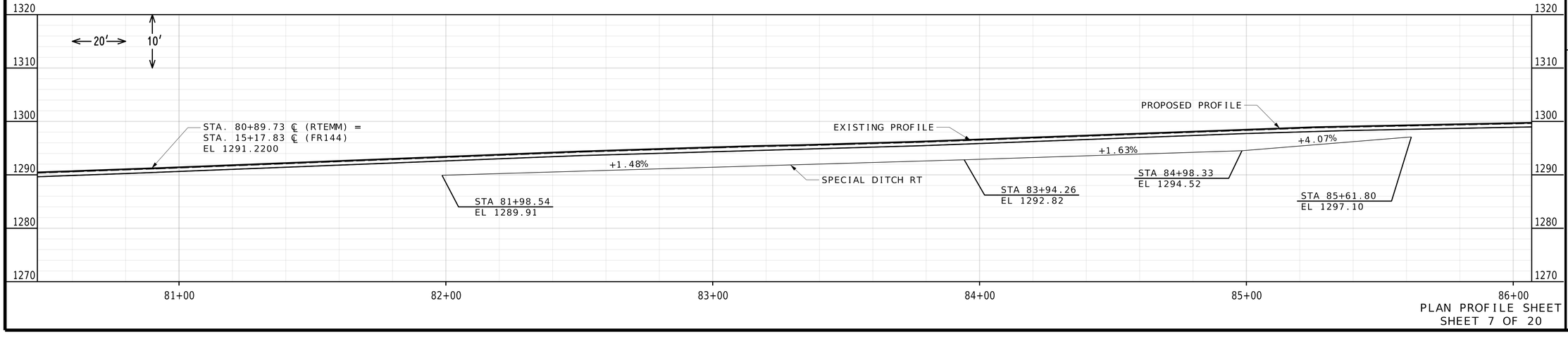
PAVED APPROACH (8")
STA. 85+87.68 ℄ ROUTE MM RT
33.4' WIDTH
GRADE = 4.05%
REMOVE EXIST. 18" RCP

+54.00
105.00'

+60.00
105.00'

15' EXIST.
UTILITY ESM'T

SAWCUT



PLAN PROFILE SHEET
SHEET 7 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	10

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

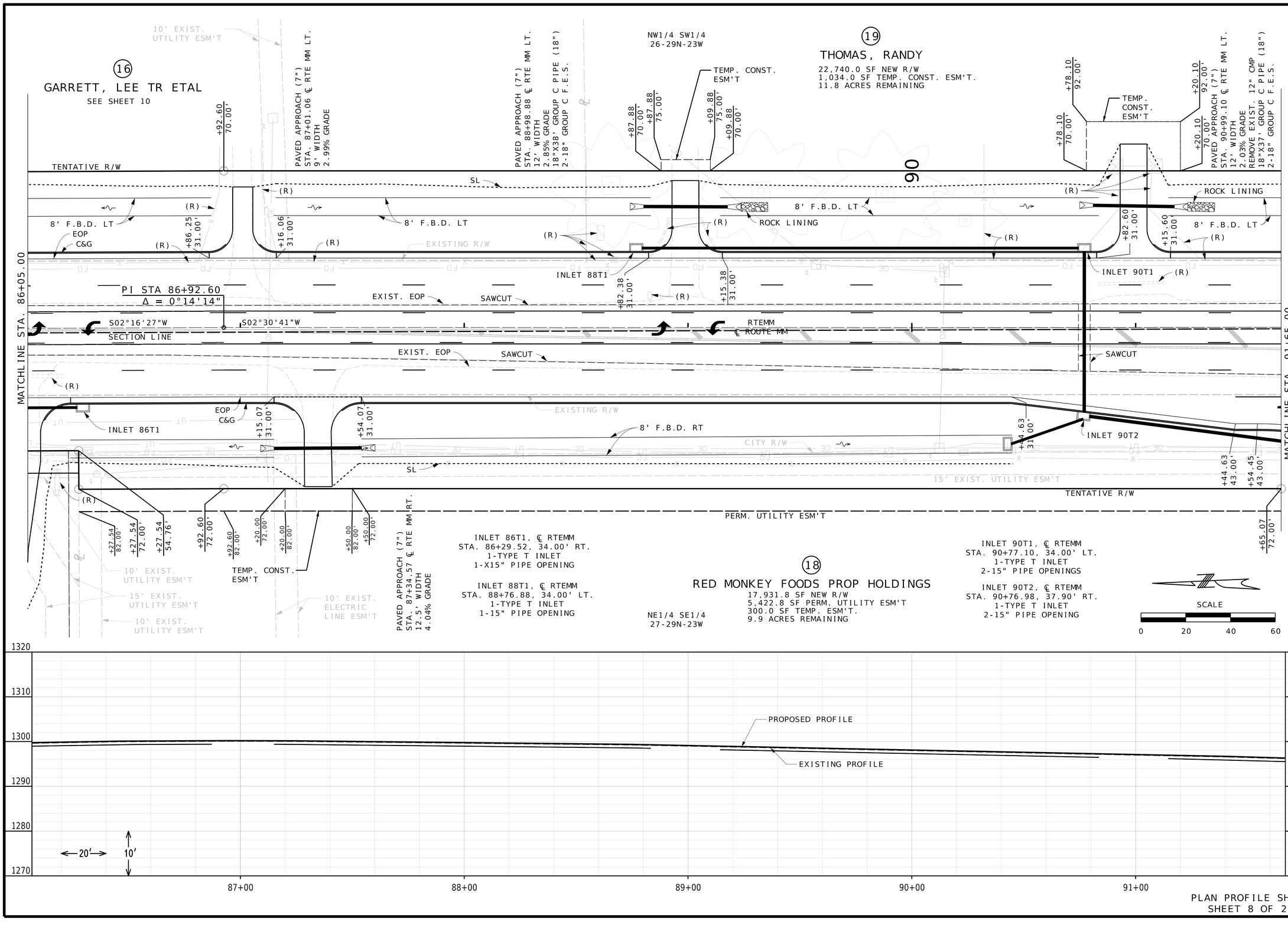
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

DATE	DESCRIPTION

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592



PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	11

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

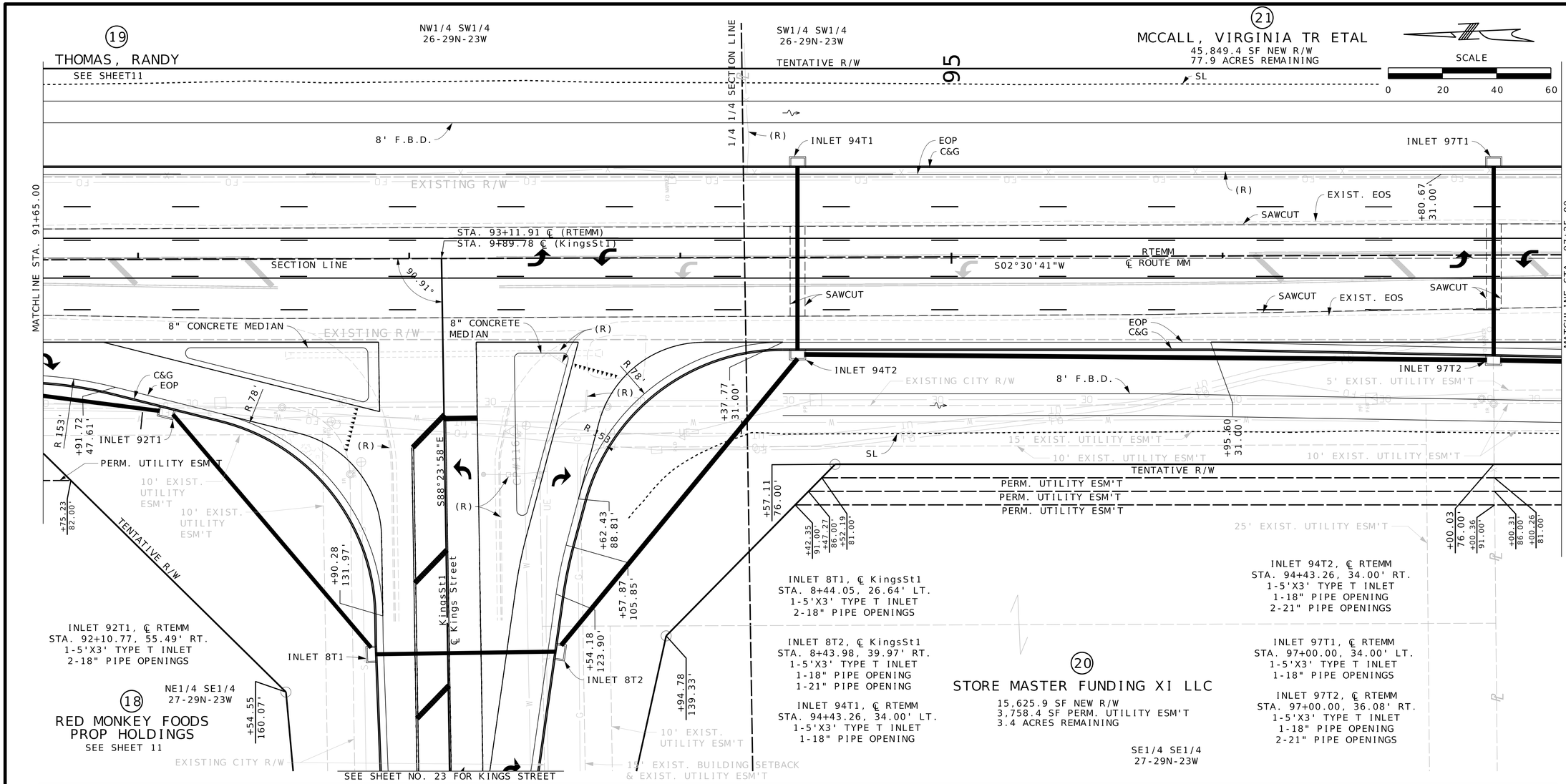
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

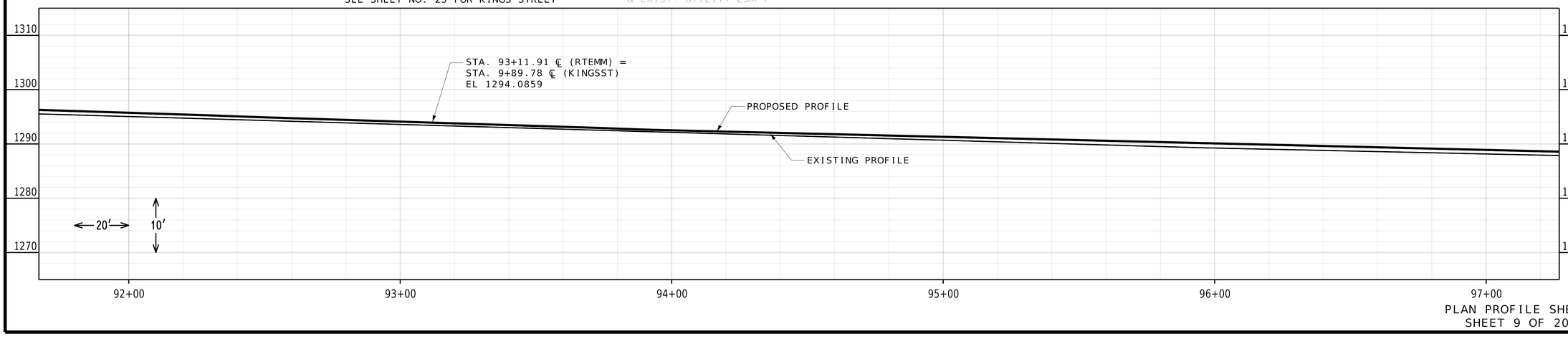
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

PLAN PROFILE SHEET
SHEET 8 OF 20





PLAN PROFILE SHEET
SHEET 9 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED: 4/4/2023
ROUTE: MM
STATE: MO
DISTRICT: SW
SHEET NO.: 12
COUNTY: GREENE
JOB NO.: J8S0836B
CONTRACT ID.:
PROJECT NO.:
BRIDGE NO.:

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(21)
MCCALL, VIRGINIA TR ETAL
SEE SHEET12

PAVED APPROACH (7")
STA. 99+38.65 ℄ RT
2.51% GRADE
10.0' WIDTH
18'X31' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

(23)
ERWIN, GREGGORY
6,400.0 SF NEW R/W
840.0 SF TEMP. CONST. ESM'T.
0.80 ACRES REMAINING

SW1/4 SW1/4
26-29N-23W

TEMP. CONST. ESM'T
+23.00 70.00'
+23.00 84.00'
+53.00 84.00'
+53.00 70.00'
+82.30 70.00'
+09.00 70.00'
+09.00 84.00'
TEMP. CONST. ESM'T
+39.00 84.00'
+39.00 70.00'

100

PAVED APPROACH (7")
STA. 100+24.35 ℄ RTE MM LT
2.93% GRADE
10.0' WIDTH
18'X31' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

(21)
MCCALL, VIRGINIA TR ETAL
SEE SHEET12

SCALE
0 20 40 60

TENTATIVE R/W
SL
8' F.B.D. LT
EOP
C&G
(R)
INLET 99T1
8' F.B.D. LT
INLET 100T1
(R)
8' F.B.D. LT
INLET 102T1
EXISTING R/W
PI STA 99+82.30
Δ = 0°8'18" LT
(R)
(R)
EXIST. EOS
SAWCUT
SECTION LINE
S02°30'41"W
SAWCUT
SAWCUT
S02°22'23"W ℄ Feature With Name.Feature Name
MATCHLINE STA. 97+25.00
MATCHLINE STA. 102+85.00
EXIST. EOS
(R)
(R)
(R)
(R)
EXISTING R/W
EXIST. 5' UTILITY ESM'T
C&G
EOP
8' F.B.D. RT
INLET 100T2
INLET 101T1
8' F.B.D. RT
INLET 102T2
+95.56
41.24'
EXIST. 10' UTILITY ESM'T
SL
TENTATIVE R/W
PERM. UTILITY ESM'T
PERM. UTILITY ESM'T
PERM. UTILITY ESM'T

+82.30 76.00'
+82.30 81.00'
+82.30 91.00'
+82.30 86.00'
+56.00 76.00'
+56.00 80.00'
+76.00 80.00'
+76.00 76.00'

TEMP. CONST. ESM'T

APPROXIMATE SINKHOLE LOCATION

SE1/4 SE1/4
27-29N-23W

PAVED APPROACH (7")
STA. 100+66.46 ℄ RTE MM RT
10.79% GRADE
10.0' WIDTH
18"X28' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

INLET 99T1, ℄ Feature With Name.Feature Name
STA. 99+17.35, 34.00' LT.
1-5'X3' TYPE T INLET
1-18" PIPE OPENING

INLET 100T1, ℄ Feature With Name.Feature Name
STA. 100+03.37, 34.01' LT.
1-5'X3' TYPE T INLET
1-18" PIPE OPENING
1-21" PIPE OPENING

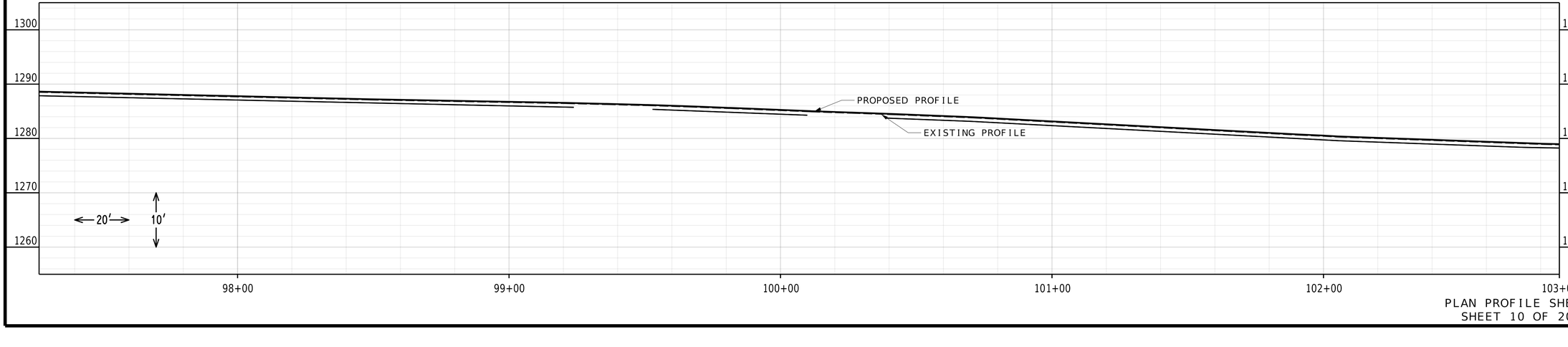
INLET 100T2, ℄ Feature With Name.Feature Name
STA. 100+01.97, 42.15' RT.
1-5'X3' TYPE T INLET
2-21" PIPE OPENINGS
1-24" PIPE OPENING

INLET 101T1, ℄ Feature With Name.Feature Name
STA. 101+25.00, 44.23' RT.
1-5'X3' TYPE T INLET
2-24" PIPE OPENINGS

INLET 102T1, ℄ Feature With Name.Feature Name
STA. 102+75.00, 34.00' LT.
1-5'X3' TYPE T INLET
1-18" PIPE OPENING

INLET 102T2, ℄ Feature With Name.Feature Name
STA. 102+75.00, 44.15' RT.
1-5'X3' TYPE T INLET
1-18" PIPE OPENING
2-24" PIPE OPENINGS

(22)
TCS LAND INVESTMENT LLC
46,332.9 SF NEW R/W
15,109.6 SF PERM. UTILITY ESM'T
80.0 SF TEMP. CONST. ESM'T.
18.2 ACRES REMAINING



PLAN PROFILE SHEET
SHEET 10 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	
4/4/2023	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	13

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

SCALE

0 20 40 60

(21)

MCCALL, VIRGINIA TR ETAL

SEE SHEET12

INLET 104T2, ℄ RTEMM
STA. 104+05.00, 34.00' LT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENINGS

INLET 104T3, ℄ RTEMM
STA. 104+70.00, 34.00' LT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENINGS

INLET 105T1, ℄ RTEMM
STA. 105+00.00, 34.00' LT.
1-5'X3' TYPE T INLET
2-15" PIPE OPENINGS
2-36" PIPE OPENINGS

INLET 105T3, ℄ RTEMM
STA. 105+30.00, 34.00' LT.
1-5'X3' TYPE T INLET
2-15" PIPE OPENINGS

SW1/4 SW1/4
26-29N-23W

INLET 106T1, ℄ RTEMM
STA. 106+00.00, 34.00' LT.
1-5'X3' TYPE T INLET
1-18" PIPE OPENINGS

INLET 4T1, ℄ RTEMM
STA. 4+67.60, 34.00' LT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENING

EXISTING CITY R/W

NW1/4 NW1/4
35-29N-23W

+28.95
115.05'

+55.44
115.22'

+92.70
70.00'

+78.89
70.00'

PLUG WELL

FR_148_CL

TENTATIVE R/W

8' F.B.D. LT

SL

105

+87.62
31.00'

FES 105FES2

(R)

INLET 105T1

INLET 105T3

INLET 104T2

INLET 104T3

INLET 106T1

EOP
C&G

+68.54
31.00'

R 75'
R 75'
R 75'
R 75'

INLET 4T1

+62.13
31.00'

SECTION LINE

EXISTING R/W

PI STA 105+92.90
Δ = 0°19'54"

STA. 107+52.92 (℄ RTEMM)
STA. 0+00.00 (℄ FR148)

MATCHLINE STA. 102+85.00

EXIST. EOS

SAWCUT

SECTION LINE

℄ RTEMM

S02°22'23"W

S02°02'29"W

80°

EXIST. EOS

SAWCUT

EQUATION:
STA 107+56.19 BK =
STA 3+80.96

MATCHLINE STA. 4+70.00

INLET 104T1

EXIST. 5' UTILITY ESM'T

EXIST. 10' UTILITY ESM'T

INLET 104T4

INLET 105T4

INLET 105T2

FES 105FES1

INLET 106T2

EOP
C&G

INLET 4T2

+92.90
41.00'

SL

TENTATIVE R/W

PERM. UTILITY ESM'T

PERM. UTILITY ESM'T

PERM. UTILITY ESM'T

8' F.B.D. RT

+92.90
76.00'

+81.41
76.00'

EXIST. UTIILITY ESM'T

EXISTING 10'
UTILITY ESM'T

EXISTING 15'X20'
UTILITY ESM'T

EXISTING 10'
UTILITY ESM'T

(22)

TCS LAND INVESTMENT LLC

SEE SHEET13

INLET 104T1, ℄ RTEMM
STA. 104+00.00, 44.08' RT.
1-5'X3' TYPE T INLET
2-24" PIPE OPENINGS

INLET 104T4, ℄ RTEMM
STA. 104+70.00, 44.04' RT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENINGS

INLET 105T2, ℄ RTEMM
STA. 105+00.01, 44.03' RT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENING
1-18" PIPE OPENING
2-36" PIPE OPENINGS

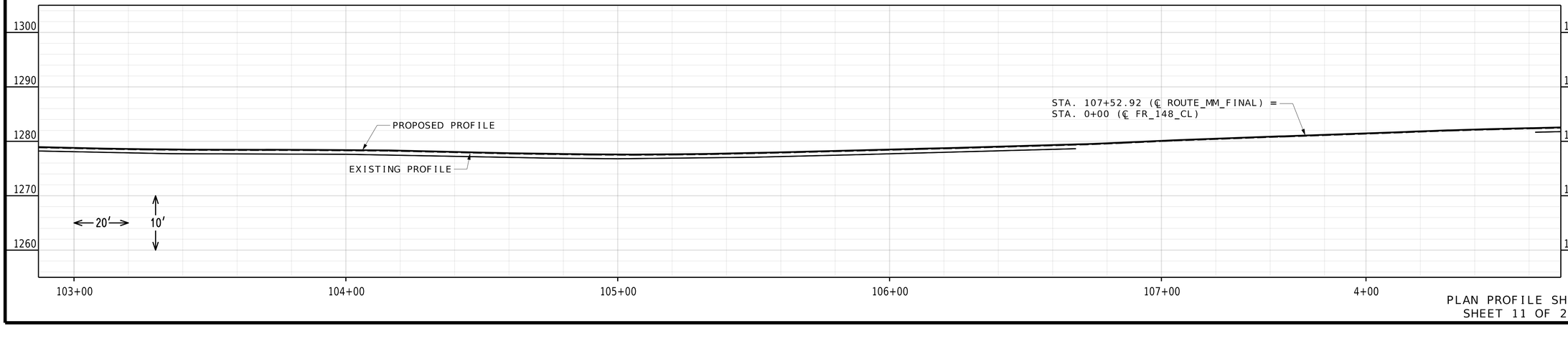
INLET 105T4, ℄ RTEMM
STA. 105+30.00, 44.01' RT.
1-5'X3' TYPE T INLET
2-18" PIPE OPENINGS

INLET 106T2, ℄ RTEMM
STA. 106+00.00, 44.00' RT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENING
1-18" PIPE OPENING

INLET 4T2, ℄ RTEMM
STA. 4+67.61, 44.00' RT.
1-5'X3' TYPE T INLET
2-15" PIPE OPENINGS

SE1/4 SE1/4
27-29N-23W

NE1/4 NE1/4
34-29N-23W



PLAN PROFILE SHEET
SHEET 11 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	
4/4/2023	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	14
COUNTY	
GREENE	
JOB NO.	
J8S0836B	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(24)
PSQUAREDSTORAGE LLC
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

NW1/4 NW1/4
35-29N-23W

PAVED APPROACH (8")
STA. 7+31.33 LT
GRADE = X.X%
30' WIDTH
18"X73' GROUP C PIPE
2-18" GROUP C F.E.S.

INLET 10T1, ℄ RTEMM
STA. 10+25.00, 38.00' LT.
1-5'X3' TYPE T INLET
1-15" PIPE OPENINGS

FES 9FES1, ℄ RTEMM
STA. 9+70.22, 64.64' LT.
1-18" GROUP C F.E.S.
REMOVE 25' EXISTING PIPE

(26)
S2J HOLDINGS LLC
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

EXISTING R/W

5

SL

8' F.B.D. LT

C&G
EOP

+64.28
31.00'

FES 9FES1

8' F.B.D. LT

10

+44.42
35.00'

INLET 10T1

MATCHLINE STA. 4+70.00

(R)

EXIST. EOS

SAWCUT

SECTION LINE

℄ RTEMM S02°02'22"W

SAWCUT

(R)

(R)

(R)

EXIST. EOS

MATCHLINE STA. 10+30.00

INLET 10T2

+22.17
41.00'

EOP
C&G

(R)

(R)

+92.31
35.00'

8' F.B.D. RT

8' F.B.D. RT

SL

EXISTING R/W

(25)
OLD C-W VENTURES INC ETAL
HAMMIT-EOFF PROPERTIES LLC ETAL
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

+04.64
88.58'

+04.64
116.00'

TEMP. CONST.
ESM'T

+59.63
116.00'

+59.63
88.58'

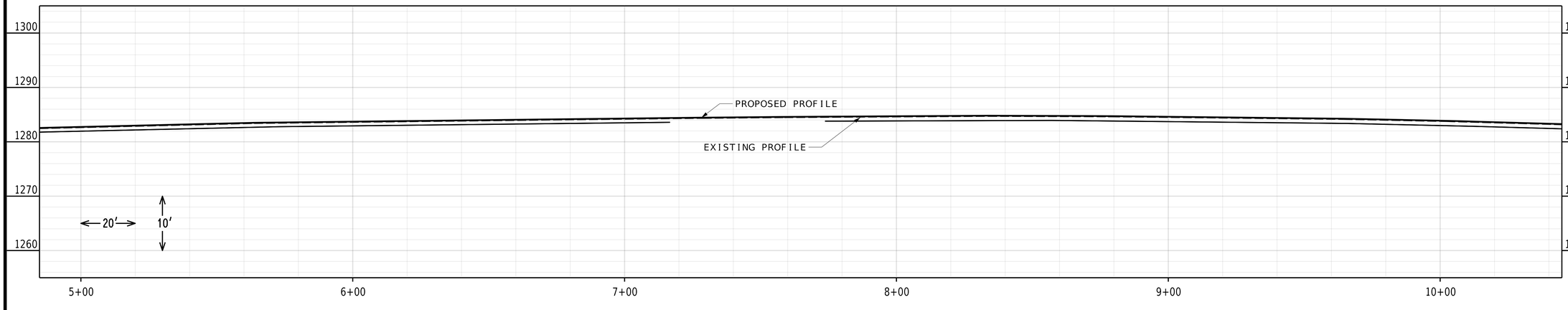
PAVED APPROACH (8")
STA. 7+32.22 RT
GRADE = X.X%
25.0' WIDTH
18"X62' GROUP C PIPE (18")
2-18" GROUP C F.E.S.

EXIST. 10' UTILITY ESM'T

EXIST. 10' ELECTRIC
LINE ESM'T (UNDERGROUND)

INLET 10T2, ℄ RTEMM
STA. 10+25.00, 38.00' RT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

NE1/4 NE1/4
34-29N-23W



PLAN PROFILE SHEET
SHEET 12 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	15

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

MATCHLINE STA. 10+30.00

MATCHLINE STA. 15+90.00

EXISTING R/W

PAVED APPROACH (8")
STA. 12+88.32 LT
GRADE = X.X%

8' F.B.D. LT

C&G
EOP

NW1/4 NW1/4
35-29N-23W

SL

SPECIAL DITCH LT

INLET 13T1, ℄ RTEMM
STA. 12+71.94, 38.02' LT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

+74.98
35.00'

15

INLET 15T1, ℄ RTEMM
STA. 15+65.00, 38.00' LT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

INLET 13T1

C&G
EOP

INLET 15T1

BEGIN COLDMILLING DEPTH TRANSITION
STA. 11+34.91 (℄ RTEMM)

STA. 12+31.01 (℄ RTEMM)
STA. 12+59.10 (℄ Carnahan)

END COLDMILLING DEPTH TRANSITION
END 2" OVERLAY
STA. 13+34.91 (℄ RTEMM)

SAWCUT

℄ RTEMM

90°28'

SECTION LINE

S02°02'22"W

S88°14'35"E

SAWCUT

EOP
C&G

INLET 13T2

C&G
EOP

INLET 15T2

SPECIAL DITCH RT

8' F.B.D. RT

+19.26
35.00'

(R)

Carnahan

+26.07
43.06'

+66.26
35.00'

SL

R 98'

R 98'

EXISTING R/W

EXISTING R/W

EXISTING 10'
UTILITY ESM'T

+00.03
88.58'

EXIST. 5.23'
X 41.25'
UTILITY ESM'T

EXISTING 25'
DRAINAGE AND
UTILITY ESM'T

+59.90
91.57'

EXISTING ESM'T

EXISTING 150'
ELECTRIC ESM'T

TENTATIVE R/W

EXIST. 10'
UTILITY ESM'T

TENTATIVE R/W

INLET 13T2, ℄ RTEMM
STA. 13+69.62, 38.00' RT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

INLET 15T2, ℄ RTEMM
STA. 15+75.00, 38.00' RT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

(25)

OLD C-W VENTURES INC ETAL
HAMMIT-EOFF PROPERTIES LLC ETAL
SEE SHEET15

NE1/4 NE1/4
34-29N-23W

+17.26
132.52'

+47.29
139.05'

+61.95
190.00'

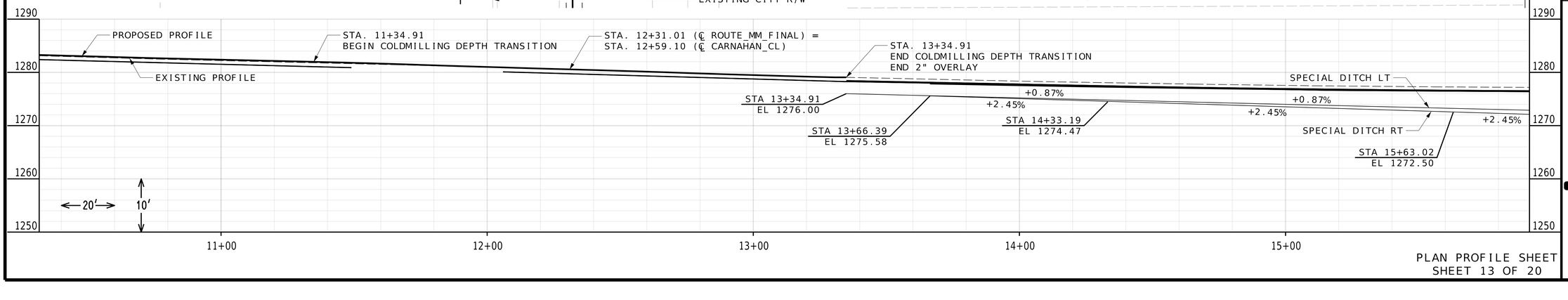
+01.95
190.00'

EXISTING 25' UTILITY ESM'T

EXISTING CITY R/W

(27)

HERRMAN REALTY CO
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING



PLAN PROFILE SHEET
SHEET 13 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	16

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

INLET 16T1, ℄ RTEMM
STA. 16+20.89, 37.99' LT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

INLET 16T3, ℄ RTEMM
STA. 16+96.44, 36.47' LT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

INLET 17T2, ℄ RTEMM
STA. 17+50.01, 35.41' LT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

NW1/4 NW1/4
35-29N-23W

SW1/4 NW1/4
35-29N-23W

(28)

1ST BAPTIST CHURCH OF BROOKLINE
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

PAVED APPROACH
STA. 19+83.78 LT
GRADE = X.X%
XX" CULVERT

(30)

SRB REAL ESTATE INVESTMENTS LLC
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

INLET 20T2, ℄ RTEMM
STA. 20+25.80, 34.00' LT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

EXISTING 10' UTILITY ESM'T

EXISTING R/W

TEMP. CONST. ESM'T

TENTATIVE R/W

SPECIAL DITCH LT

SAWCUT

SL

INLET 16T1

INLET 16T3

INLET 17T2

C&G
EOP

+11.55
80.00'
+11.61
70.00'

+38.78
80.00'
+38.78
91.00'

+26.57
70.00'
+26.42
91.00'

+20.88
34.99'

+20.57
31.00'

+39.45
31.00'

PI STA 16+26.03
Δ = 0°01'59" RT

POT STA 16+03.13

(R)

INLET 20T2

TST STA 20+39.45

EXISTING R/W

SAWCUT

MATCHLINE STA. 15+90.00

S02°02'22"W

S02°10'21"W

℄ RTEMM

SECTION LINE

SAWCUT

INLET 20T1

INLET 16T2

INLET 17T1

EOP
C&G

+20.56
31.00'

+20.61
31.00'

+39.45
31.00'

FES 16FES1

SL

SPECIAL DITCH RT

SPECIAL DITCH RT

FES 16FES1, ℄ RTEMM
STA. 16+24.38, 55.37' RT.
1-X" F.E.S.

INLET 17T1, ℄ RTEMM
STA. 17+00.01, 36.42' RT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

INLET 16T2, ℄ RTEMM
STA. 16+24.00, 38.22' RT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

1/4 1/4 SECTION LINE

EXISTING R/W

EXISTING 10' UTILITY ESM'T

EXISTING 10' UTILITY ESM'T

EXISTING 25' UTILITY ESM'T

NE1/4 NE1/4
34-29N-23W

SE1/4 NE1/4
34-29N-23W

INLET 20T1, ℄ RTEMM
STA. 20+05.17, 34.00' RT.
1-5'X3' TYPE T INLET
X-X" PIPE OPENINGS

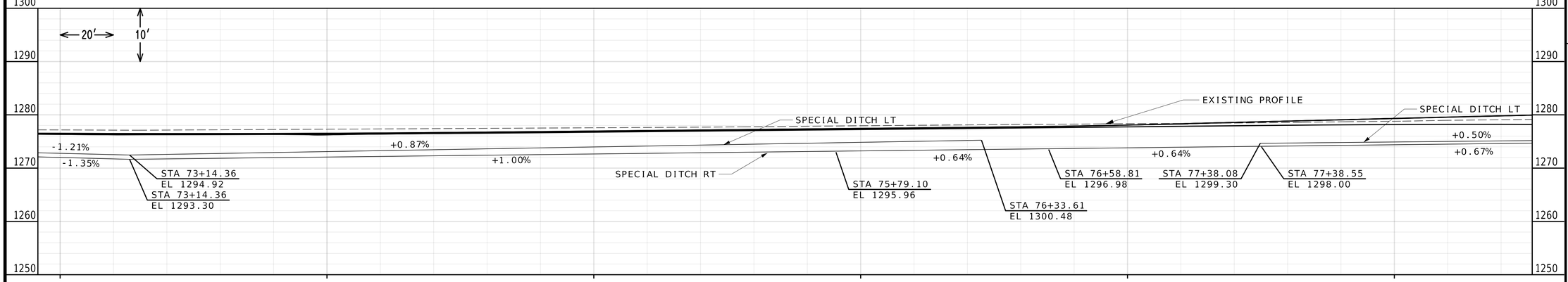
PAVED APPROACH (8")
STA. 19+77.12 RT
GRADE = X.X%
XX" CULVERT

(29)

MORELOCK FAMILY LIMITED PARTNERSHIP
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

APPROXIMATE
SINKHOLE
LOCATION

MATCHLINE STA. 21+50.00



PLAN PROFILE SHEET
SHEET 14 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	
4/4/2023	
ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	17

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

SW1/4 NW1/4
35-29N-23W

EXISTING 20' UTILITY ESM'T
EXISTING 10' UTILITY ESM'T
EXISTING R/W

PAVED APPROACH (7")
STA. 22+22.87 LT
GRADE = X.X%
XX" CULVERT

SPECIAL DITCH LT

SL

R 2327.58'

25

SPECIAL DITCH LT

SECTION LINE

CS STA A 12+03.49

+03.49
31.00'

CS STA A 15+99.49

+99.49
31.00'

(R)

C&G
EOP

SAWCUT

RTEMM

SAWCUT

INLET 24T1

EOP
C&G

(R)

(R)

MATCHLINE STA. 20+50.00

MATCHLINE STA. 27+10.00

INLET 22T1

R 2265.58'

+03.49
31.00'

SL

+99.33
31.00'

+02.26
31.00'

SPECIAL DITCH RT

EXISTING R/W
EXISTING 10' UTILITY ESM'T

PI 21+48.82
Ls 164.04'
Ys 1.95'
Xs 164.02'
LT 109.37'
ST 54.69'

PI 26+54.18
Ls 164.04'
Ys 3.91'
Xs 163.99'
LT 109.37'
ST 54.69'

PI 24+01.98
PC 22+03.49
PT 25+99.49
Δ 9°52'46.2" (RT)
D 2°29'41.4"
L 396.00' (ARC)
T 198.49'
R 2,296.58'

29

MORELOCK FAMILY LIMITED PARTNERSHIP

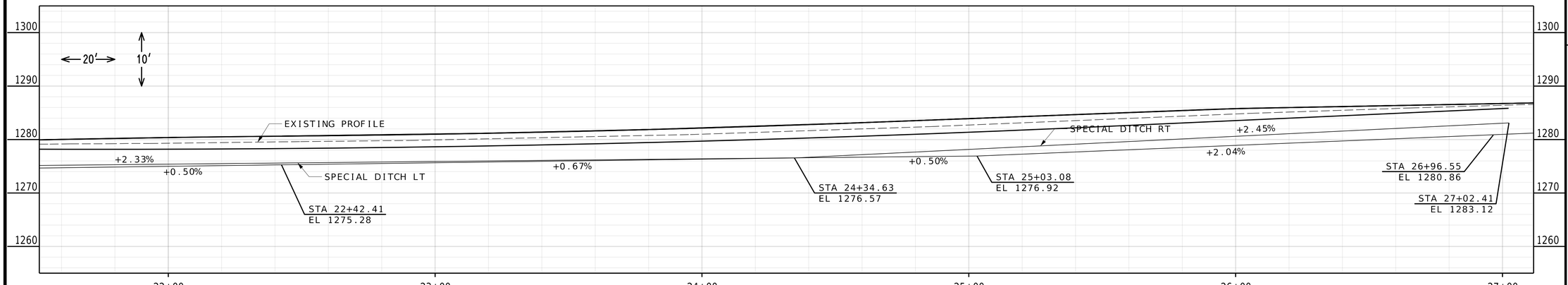
SEE SHEET17

APPROXIMATE
SINKHOLE
LOCATION

INLET 22T1, ℄ RTEMM
STA. 22+50.00, 34.00' RT.
1-TYPE X INLET
X-X" PIPE OPENINGS

INLET 24T1, ℄ RTEMM
STA. 24+75.00, 34.00' RT.
1-5'X3' TYPE T INLET
1-X" PIPE OPENINGS

SE1/4 NE1/4
34-29N-23W



PLAN PROFILE SHEET
SHEET 15 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	18

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

SW1/4 NW1/4
35-29N-23W

EXISTING R/W

SECTION LINE

SL

SPECIAL
DITCH LT

EOP

C&G

(R)

ST STA 27+63.53

MATCHLINE STA. 27+10.00

+85.78
31.00'

+58.06
43.04'

+18.89
90.88'

+22.99
104.69'

+24.84
100.99'

R 75'

EXIST. EOS

EOP

(R)

S16°08'40"W

END PROJECT
STA 29+24.84

℄ RTEMM

30

1/4 SECTION LINE

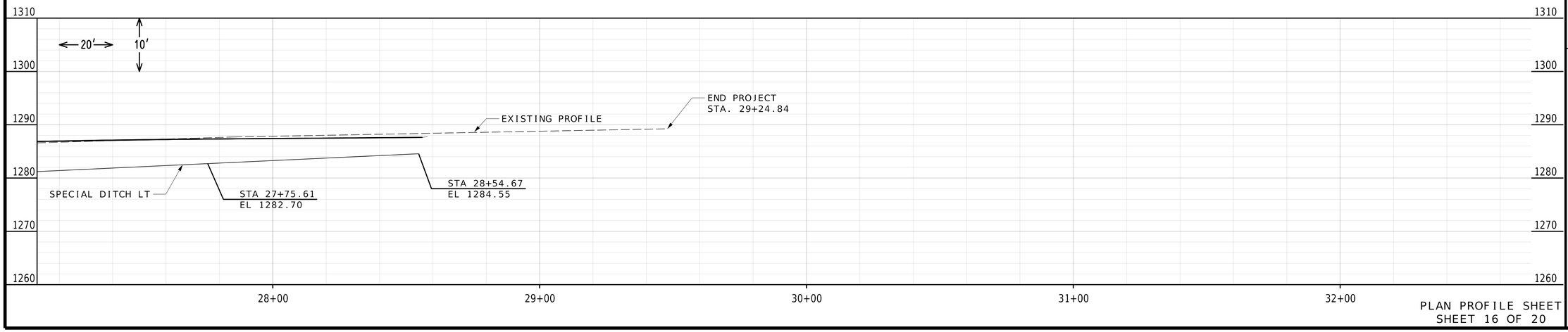
SW1/4
35-29N-23W

SCALE
0 20 40 60

ROUTE 360

SE1/4 NE1/4
34-29N-23W

SE1/4
34-29N-23W



PLAN PROFILE SHEET
SHEET 16 OF 20

PRELIMINARY
PLANS
NOT FOR
CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	19

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

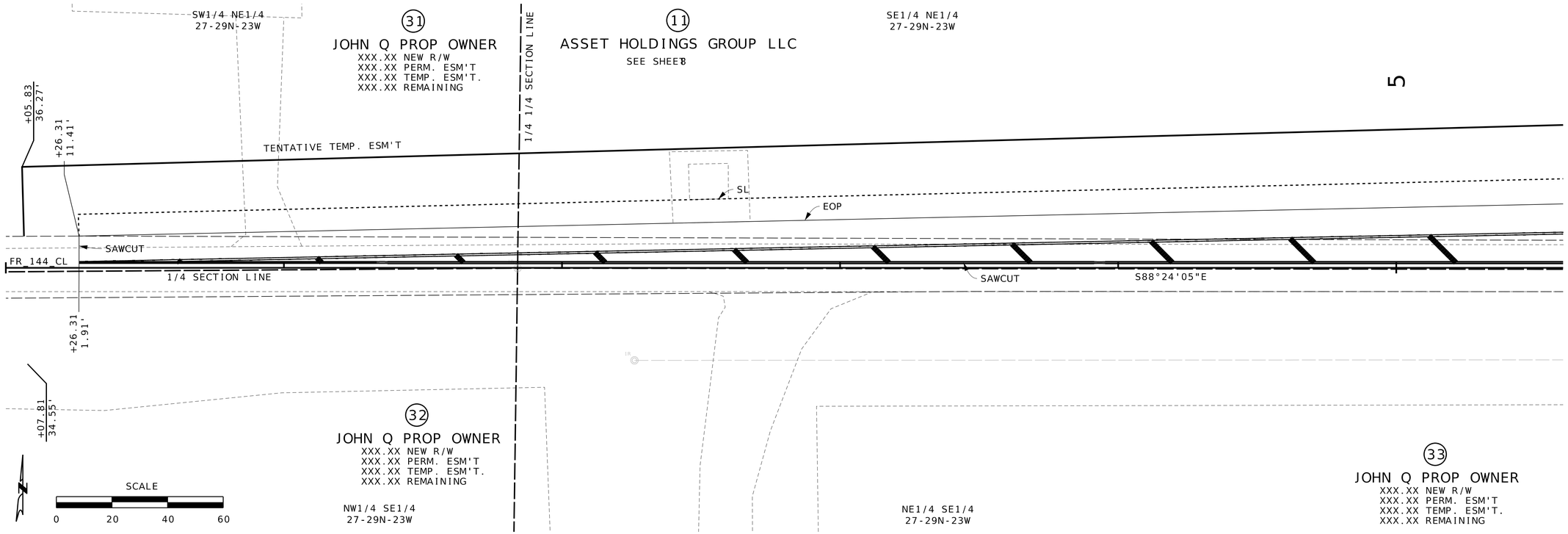
DESCRIPTION	DATE

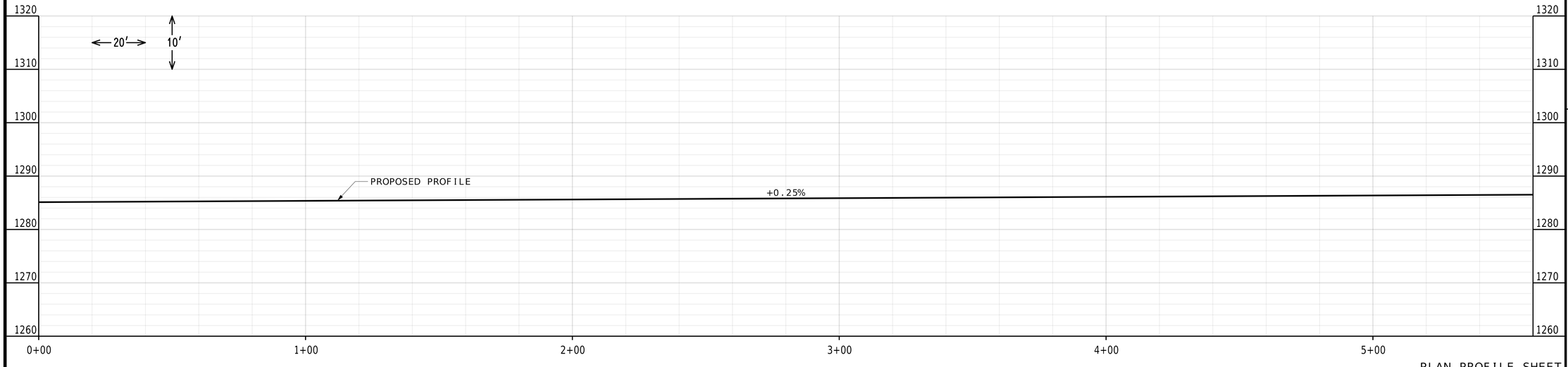
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592





PLAN PROFILE SHEET
SHEET 17 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	20

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

(11)
ASSET HOLDINGS GROUP
SEE SHEET 8

SE1/4 NE1/4
27-29N-23W

(34)
JOHN Q PROP OWNER
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

(11)
ASSET HOLDINGS GROUP
SEE SHEET 8

10

TENTATIVE TEMP. ESM'T

SL

EOP

EXISTING CITY R/W

FR_144_CL S88°24'05"E 1/4 SECTION LINE SAWCUT S88°24'05"E

TENTATIVE TEMP. ESM'T

EXISTING CITY R/W

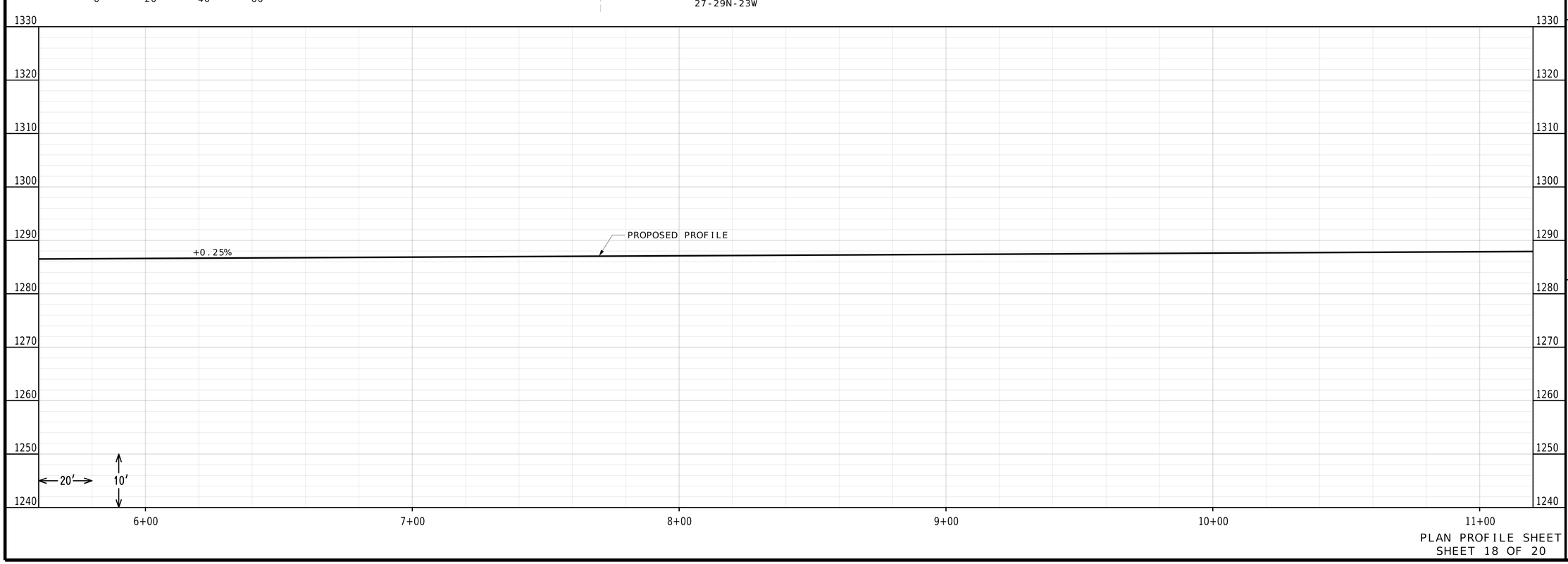
EXISTING ESM'T

(35)
MURFIN INC
XXX.XX NEW R/W
XXX.XX PERM. ESM'T
XXX.XX TEMP. ESM'T.
XXX.XX REMAINING

SCALE
0 20 40 60

(33)
JOHN Q PROP OWNER
SEE SHEET 20

NE1/4 SE1/4
27-29N-23W



PLAN PROFILE SHEET
SHEET 18 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	21

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

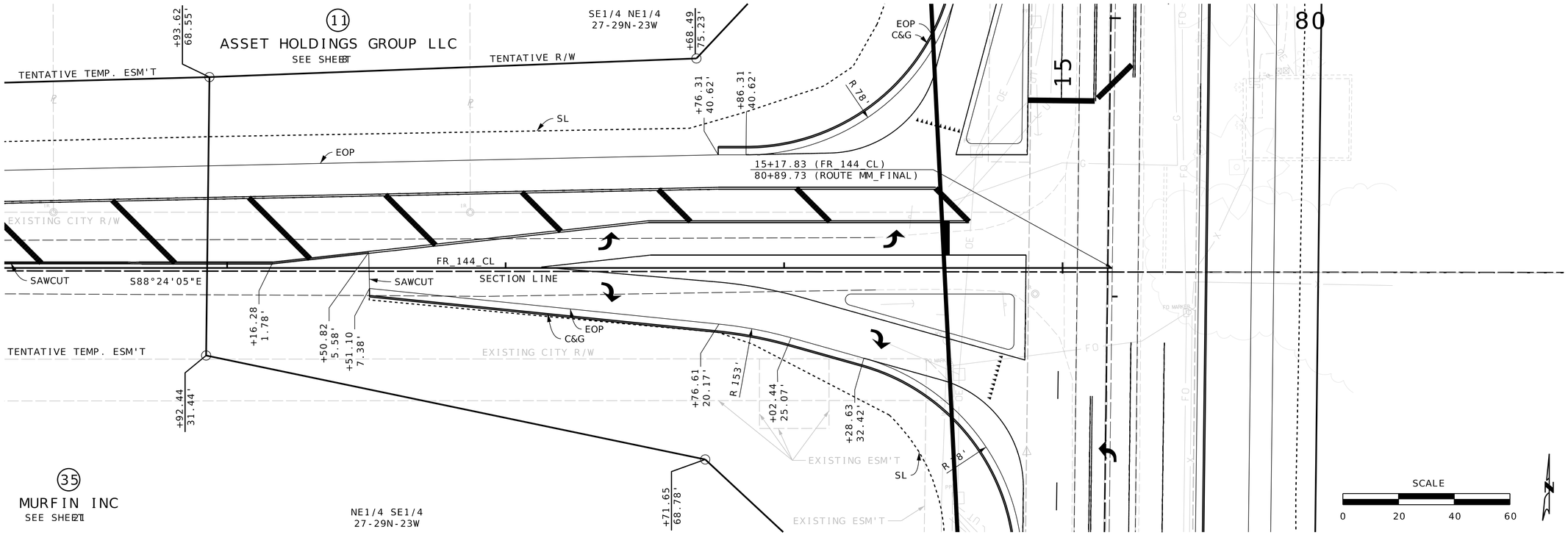
DESCRIPTION	DATE

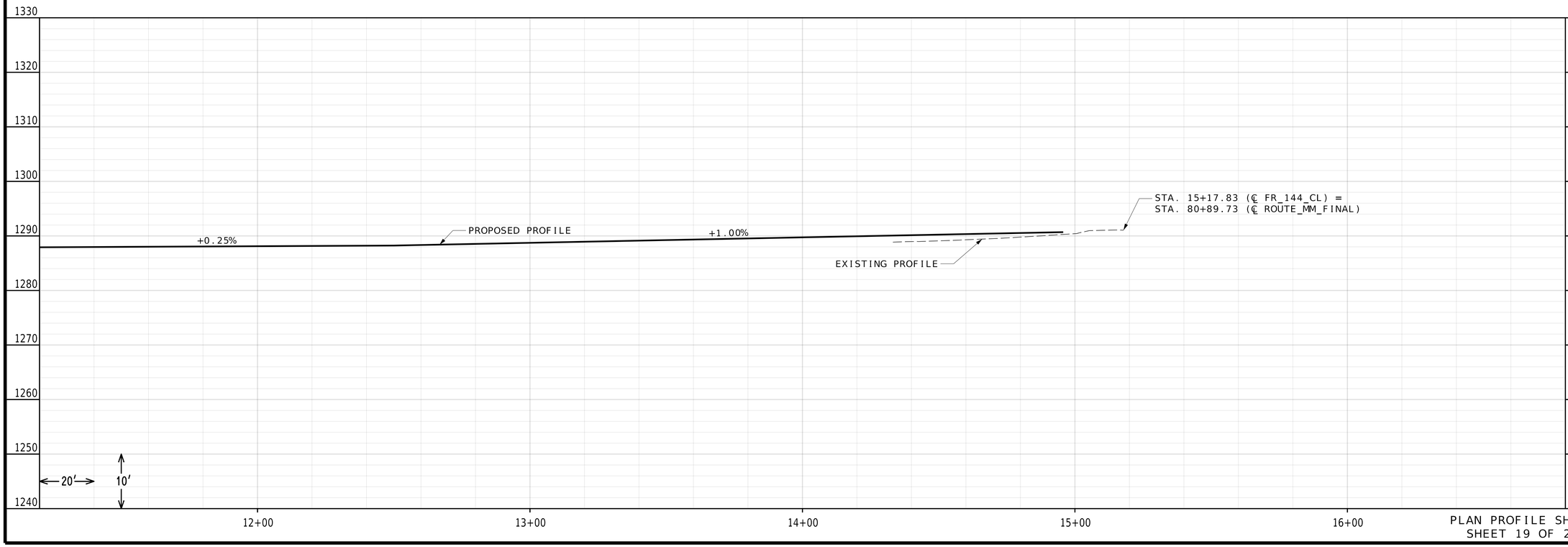
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592





PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED	4/4/2023
ROUTE	MM
STATE	MO
DISTRICT	SW
SHEET NO.	22
COUNTY	GREENE
JOB NO.	J8S0836B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION | DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

PLAN PROFILE SHEET
SHEET 19 OF 20

(18)
RED MONKEY FOODS PROP HOLDINGS
SEE SHEET11

5

EXISTING ESM'T
EXISTING CITY R/W
S88°23'58"E KINGS_ST_CL
+33.23
16.79'
+33.16
0.22'
C&G
EOP
SAWCUT
SAWCUT
+16.77
0.25'
+16.77
16.77'
EOP
C&G
EXISTING ESM'T
EXISTING CITY R/W
+57.80
54.44'
TENTATIVE R/W
+30.64
59.90'
EXISTING ESM'T
+48.20
23.73'
+58.17
23.73'
R 78'
ADJUST MH
CP#116
+65.22
40.29'
153'
+82.21
41.27'
+00.17
49.10'
R 78'
+57.78
59.06'
+49.15
80.64'
EXISTING ESM'T

SCALE
0 20 40 60

(20)
STORE MASTER FUNDING XI LLC
SEE SHEET12

NE1/4 SE1/4
27-29N-23W

1330
1320
1310
1300
1290
1280
1270
1260
1250
PROPOSED PROFILE
+0.50%
+1.50%
20'
10'
3+00
4+00
5+00
6+00
7+00
8+00

PLAN PROFILE SHEET
SHEET 20 OF 20

PRELIMINARY PLANS NOT FOR CONSTRUCTION

DATE PREPARED
4/4/2023
ROUTE MM
STATE MO
DISTRICT SW
SHEET NO. 23
COUNTY GREENE
JOB NO. J8S0836B
CONTRACT ID.
PROJECT NO.
BRIDGE NO.

DESCRIPTION
DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF
AUTHORITY NO. 001592

Trip Generation

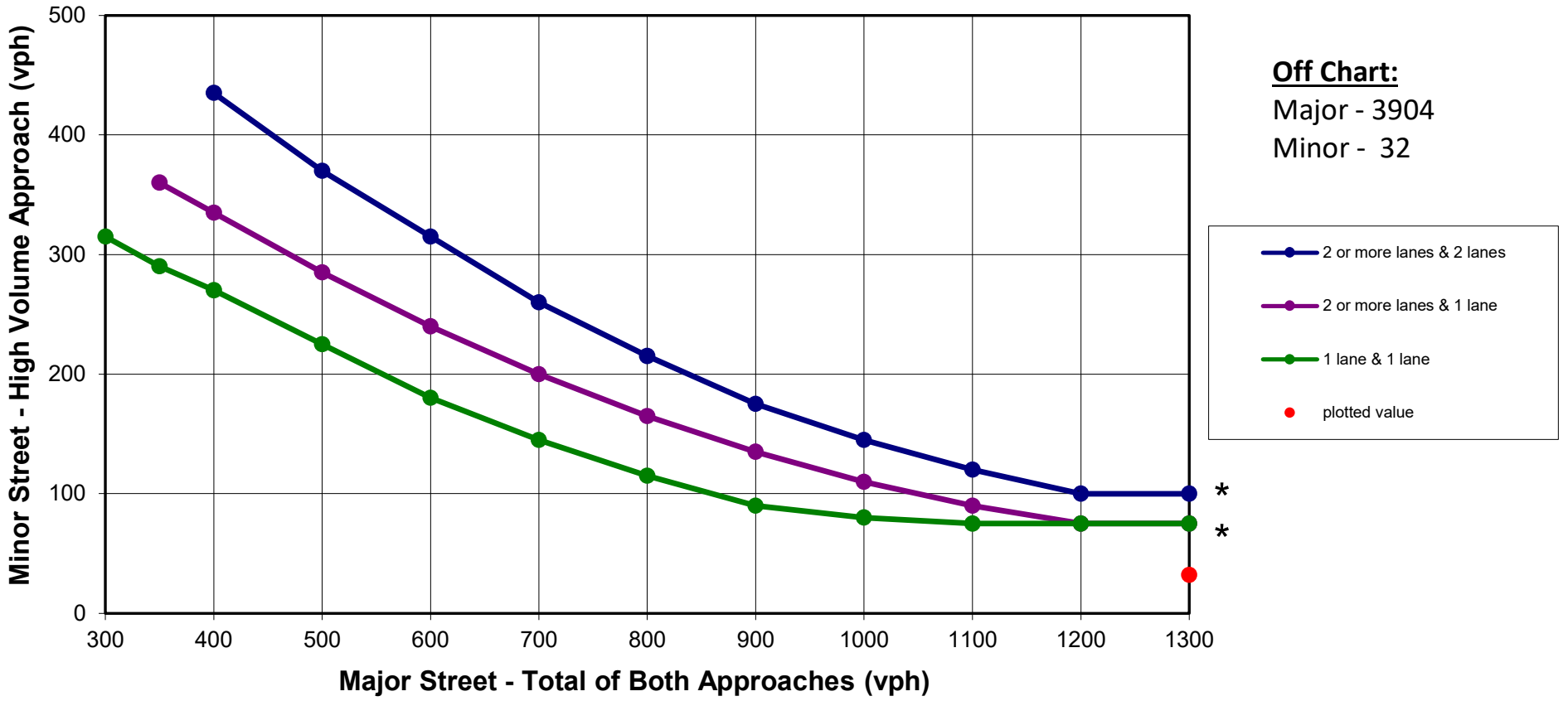
Route MM - I-44 to JRF

ITE Code	Land Use	Setting/Location	Density		Daily	AM Peak Hour			PM Peak Hour		
						Total	Enter	Exit	Total	Enter	Exit
130	Industrial Park	General Urban/Suburban	8,566,010	s.f.	9,499	2,912	2,359	553	2,912	641	2,271
GROSS TRIPS					**9,499**	**2,912**	**2,359**	**553**	**2,912**	**641**	**2,271**

Signal Warrant

2045 AM Peak Hour Volume Warrant
Route MM and Farm Road 144

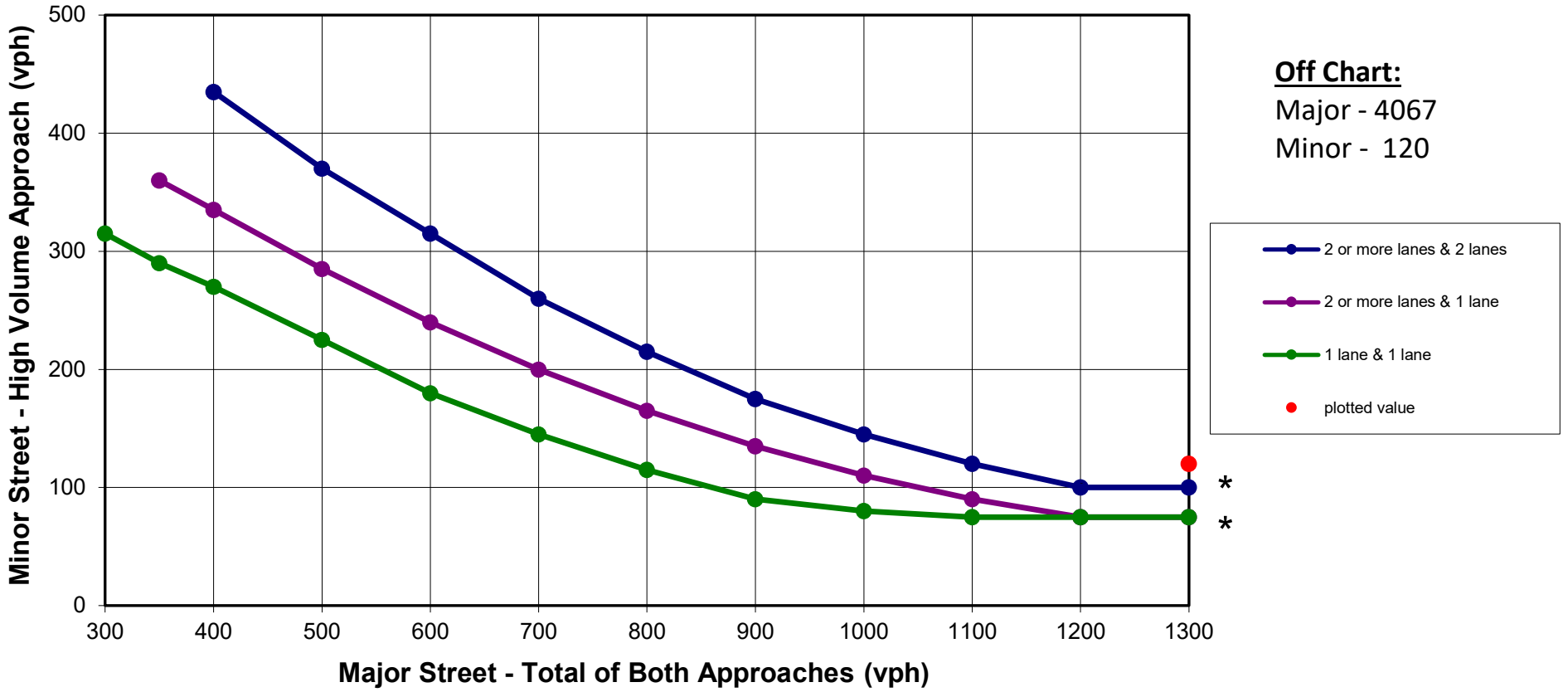
(Community less than 10,000 population or above 40mph on major street)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

2045 PM Peak Hour Volume Warrant
Route MM and Farm Road 144

(Community less than 10,000 population or above 40mph on major street)



*Note: 100 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor street approach with one lane.

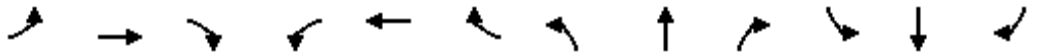
Capacity Analysis

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	101	970	33	1639	1450	66
v/c Ratio	0.62	2.15	0.15	0.71	0.73	0.07
Control Delay	42.2	542.8	3.9	6.9	14.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.2	542.8	3.9	6.9	14.8	0.1
Queue Length 50th (ft)	29	~240	2	111	88	0
Queue Length 95th (ft)	#86	#351	8	167	#354	0
Internal Link Dist (ft)				685	1587	
Turn Bay Length (ft)	325	325	250			50
Base Capacity (vph)	162	451	289	2317	1975	994
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	2.15	0.11	0.71	0.73	0.07

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



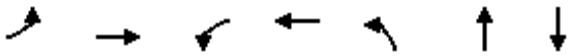
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	93	0	892	30	1508	0	0	1334	61
Future Volume (veh/h)	0	0	0	93	0	892	30	1508	0	0	1334	61
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1722	0	1826	1144	1796	0	0	1796	1870
Adj Flow Rate, veh/h				101	0	0	33	1639	0	0	1450	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				12	0	5	51	7	0	0	7	2
Cap, veh/h				126	0		236	2407	0	0	1856	
Arrive On Green				0.08	0.00	0.00	0.04	0.71	0.00	0.00	0.54	0.00
Sat Flow, veh/h				1640	0	2723	1090	3503	0	0	3503	1585
Grp Volume(v), veh/h				101	0	0	33	1639	0	0	1450	0
Grp Sat Flow(s),veh/h/ln				1640	0	1362	1090	1706	0	0	1706	1585
Q Serve(g_s), s				2.9	0.0	0.0	0.6	13.1	0.0	0.0	16.2	0.0
Cycle Q Clear(g_c), s				2.9	0.0	0.0	0.6	13.1	0.0	0.0	16.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				126	0		236	2407	0	0	1856	
V/C Ratio(X)				0.80	0.00		0.14	0.68	0.00	0.00	0.78	
Avail Cap(c_a), veh/h				170	0		399	2407	0	0	1856	
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				21.9	0.0	0.0	7.6	4.0	0.0	0.0	8.7	0.0
Incr Delay (d2), s/veh				17.4	0.0	0.0	0.3	1.6	0.0	0.0	3.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.6	0.0	0.0	0.1	0.5	0.0	0.0	3.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				39.3	0.0	0.0	7.9	5.6	0.0	0.0	12.1	0.0
LnGrp LOS				D	A		A	A	A	A	B	
Approach Vol, veh/h					101			1672			1450	
Approach Delay, s/veh					39.3			5.7			12.1	
Approach LOS					D			A			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	40.0		7.8	32.2		8.2						
Change Period (Y+Rc), s	6.0		6.0	6.0		4.5						
Max Green Setting (Gmax), s	34.0		9.0	19.0		5.0						
Max Q Clear Time (g_c+I1), s	15.1		2.6	18.2		4.9						
Green Ext Time (p_c), s	10.9		0.0	0.6		0.0						

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

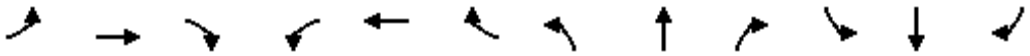


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	10	32	43	20	54	2434	1411
v/c Ratio	0.04	0.12	0.18	0.07	0.24	0.90	0.52
Control Delay	15.4	7.4	17.5	4.9	7.6	17.2	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	7.4	17.5	4.9	7.6	17.2	4.6
Queue Length 50th (ft)	2	0	10	0	5	~389	103
Queue Length 95th (ft)	11	15	28	9	25	#548	90
Internal Link Dist (ft)		787		705		1587	785
Turn Bay Length (ft)	200		200		300		
Base Capacity (vph)	620	654	620	654	227	2715	2713
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.05	0.07	0.03	0.24	0.90	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	0	29	40	0	18	50	2069	170	0	1192	106
Future Volume (veh/h)	9	0	29	40	0	18	50	2069	170	0	1192	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	0	0	43	0	20	54	2249	185	0	1296	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	124		254	0	105	472	2442	198	160	2607	
Arrive On Green	0.07	0.00	0.00	0.07	0.00	0.07	0.73	0.73	0.73	0.00	1.00	0.00
Sat Flow, veh/h	1392	1870	0	1418	0	1585	425	3329	270	140	3647	0
Grp Volume(v), veh/h	10	0	0	43	0	20	54	1186	1248	0	1296	0
Grp Sat Flow(s),veh/h/ln	1392	1870	0	1418	0	1585	425	1777	1822	140	1777	0
Q Serve(g_s), s	0.3	0.0	0.0	1.3	0.0	0.5	1.7	24.1	26.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.8	0.0	0.0	1.3	0.0	0.5	1.7	24.1	26.1	0.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.15	1.00		0.00
Lane Grp Cap(c), veh/h	236	124		254	0	105	472	1303	1336	160	2607	
V/C Ratio(X)	0.04	0.00		0.17	0.00	0.19	0.11	0.91	0.93	0.00	0.50	
Avail Cap(c_a), veh/h	700	748		727	0	634	472	1303	1336	160	2607	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.09	0.09	0.09	0.00	0.87	0.00
Uniform Delay (d), s/veh	20.3	0.0	0.0	20.2	0.0	19.9	1.8	4.8	5.1	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.9	0.0	1.2	1.6	0.0	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	0.4	0.0	0.2	0.0	0.4	0.6	0.0	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	0.0	0.0	20.5	0.0	20.7	1.9	6.0	6.7	0.0	0.6	0.0
LnGrp LOS	C	A		C	A	C	A	A	A	A	A	
Approach Vol, veh/h		10			63			2488			1296	
Approach Delay, s/veh		20.3			20.6			6.3			0.6	
Approach LOS		C			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		37.5		7.5		37.5		7.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		28.1		2.8		2.0		3.3				
Green Ext Time (p_c), s		0.0		0.0		7.5		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			4.6									
HCM 6th LOS			A									

Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

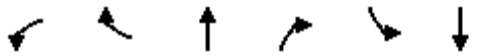
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	34	32	2306	233	1374
v/c Ratio	0.13	0.14	0.84	1.27	0.49
Control Delay	17.5	17.4	10.4	173.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	17.4	10.4	173.4	5.6
Queue Length 50th (ft)	8	7	~140	~86	110
Queue Length 95th (ft)	25	24	m#425	m#186	196
Internal Link Dist (ft)	829		785		1357
Turn Bay Length (ft)		200		250	
Base Capacity (vph)	708	633	2735	184	2779
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05	0.84	1.27	0.49

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

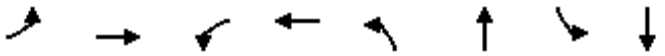
m Volume for 95th percentile queue is metered by upstream signal.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	29	1854	268	214	1264
Future Volume (veh/h)	31	29	1854	268	214	1264
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	32	2015	291	233	1374
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	111	99	2307	325	277	2621
Arrive On Green	0.06	0.06	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1781	1585	3221	441	159	3647
Grp Volume(v), veh/h	34	32	1123	1183	233	1374
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1791	159	1777
Q Serve(g_s), s	0.8	0.9	0.0	0.0	33.2	0.0
Cycle Q Clear(g_c), s	0.8	0.9	0.0	0.0	33.2	0.0
Prop In Lane	1.00	1.00		0.25	1.00	
Lane Grp Cap(c), veh/h	111	99	1311	1321	277	2621
V/C Ratio(X)	0.31	0.32	0.86	0.90	0.84	0.52
Avail Cap(c_a), veh/h	713	634	1311	1321	277	2621
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.33	0.33	0.80	0.80
Uniform Delay (d), s/veh	20.2	20.2	0.0	0.0	8.2	0.0
Incr Delay (d2), s/veh	1.5	1.9	2.6	3.6	21.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.3	1.0	1.3	2.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.7	22.1	2.6	3.6	29.3	0.6
LnGrp LOS	C	C	A	A	C	A
Approach Vol, veh/h	66		2306			1607
Approach Delay, s/veh	21.9		3.1			4.8
Approach LOS	C		A			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		37.7			37.7	7.3
Change Period (Y+Rc), s		4.5			4.5	4.5
Max Green Setting (Gmax), s		18.0			18.0	18.0
Max Q Clear Time (g_c+I1), s		2.0			35.2	2.9
Green Ext Time (p_c), s		13.4			0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	4.1
HCM 6th LOS	A



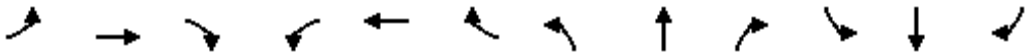
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	21	32	59	59	71	1865	252	1567
v/c Ratio	0.09	0.11	0.25	0.20	0.38	0.70	1.36	0.58
Control Delay	15.6	7.0	18.2	10.5	15.8	9.4	210.5	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	7.0	18.2	10.5	15.8	9.4	210.5	6.4
Queue Length 50th (ft)	5	0	14	5	13	183	~102	117
Queue Length 95th (ft)	17	14	35	26	m17	m#263	m#184	192
Internal Link Dist (ft)		805		888		1357		1153
Turn Bay Length (ft)	200		200		350		250	
Base Capacity (vph)	572	654	572	654	185	2665	185	2697
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.05	0.10	0.09	0.38	0.70	1.36	0.58

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	0	29	54	0	54	65	1484	232	232	1395	47
Future Volume (veh/h)	19	0	29	54	0	54	65	1484	232	232	1395	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	0	32	59	0	59	71	1613	252	252	1516	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	245	0	156	270	0	156	390	2168	331	332	2461	83
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1344	0	1585	1377	0	1585	328	3090	472	246	3508	118
Grp Volume(v), veh/h	21	0	32	59	0	59	71	912	953	252	766	801
Grp Sat Flow(s),veh/h/ln	1344	0	1585	1377	0	1585	328	1777	1785	246	1777	1849
Q Serve(g_s), s	0.7	0.0	0.8	1.9	0.0	1.6	0.0	0.0	0.0	31.6	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.8	2.7	0.0	1.6	0.0	0.0	0.0	31.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.26	1.00		0.06
Lane Grp Cap(c), veh/h	245	0	156	270	0	156	390	1247	1253	332	1247	1297
V/C Ratio(X)	0.09	0.00	0.21	0.22	0.00	0.38	0.18	0.73	0.76	0.76	0.61	0.62
Avail Cap(c_a), veh/h	651	0	634	685	0	634	390	1247	1253	332	1247	1297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.44	0.44	0.44	0.74	0.74	0.74
Uniform Delay (d), s/veh	20.0	0.0	18.7	19.9	0.0	19.0	0.0	0.0	0.0	5.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.6	0.4	0.0	1.5	0.5	1.7	2.0	11.4	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.3	0.6	0.0	0.6	0.0	0.6	0.7	1.1	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.2	0.0	19.3	20.3	0.0	20.5	0.5	1.7	2.0	16.4	1.7	1.6
LnGrp LOS	C	A	B	C	A	C	A	A	A	B	A	A
Approach Vol, veh/h		53			118			1936			1819	
Approach Delay, s/veh		19.7			20.4			1.8			3.7	
Approach LOS		B			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.1		8.9		36.1		8.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0		4.2		33.6		4.7				
Green Ext Time (p_c), s		11.6		0.1		0.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			3.5									
HCM 6th LOS			A									

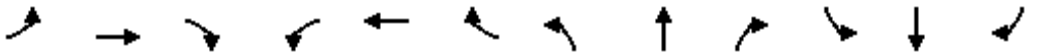
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	20	16	63	63	64	1629	268	1741	61
v/c Ratio	0.08	0.05	0.26	0.21	0.35	0.61	1.46	0.64	0.05
Control Delay	15.4	3.5	18.3	10.8	14.4	7.1	245.4	8.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	3.5	18.3	10.8	14.4	7.1	245.4	8.4	3.6
Queue Length 50th (ft)	4	0	14	6	8	111	~105	150	1
Queue Length 95th (ft)	16	7	37	27	m18	195	m#171	#233	m6
Internal Link Dist (ft)		956		598		1153		1343	
Turn Bay Length (ft)	250				250		250		250
Base Capacity (vph)	572	654	572	654	184	2651	184	2704	1224
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.02	0.11	0.10	0.35	0.61	1.46	0.64	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	0	15	58	0	58	59	1252	247	247	1602	56
Future Volume (veh/h)	18	0	15	58	0	58	59	1252	247	247	1602	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	0	16	63	0	63	64	1361	268	268	1741	61
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	0	153	282	0	153	344	2088	405	377	2500	1115
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1339	0	1585	1397	0	1585	261	2968	576	309	3554	1585
Grp Volume(v), veh/h	20	0	16	63	0	63	64	806	823	268	1741	61
Grp Sat Flow(s),veh/h/ln	1339	0	1585	1397	0	1585	261	1777	1767	309	1777	1585
Q Serve(g_s), s	0.6	0.0	0.4	1.9	0.0	1.7	0.0	0.0	0.0	31.7	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	0.4	2.4	0.0	1.7	0.0	0.0	0.0	31.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.33	1.00		1.00
Lane Grp Cap(c), veh/h	239	0	153	282	0	153	344	1250	1243	377	2500	1115
V/C Ratio(X)	0.08	0.00	0.10	0.22	0.00	0.41	0.19	0.65	0.66	0.71	0.70	0.05
Avail Cap(c_a), veh/h	646	0	634	706	0	634	344	1250	1243	377	2500	1115
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.66	0.66	0.66	0.61	0.61	0.61
Uniform Delay (d), s/veh	20.2	0.0	18.6	19.6	0.0	19.1	0.0	0.0	0.0	3.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.4	0.0	1.8	0.8	1.7	1.8	6.8	1.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.1	0.6	0.0	0.6	0.1	0.6	0.6	0.7	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	0.0	18.9	20.0	0.0	20.9	0.8	1.7	1.8	9.8	1.0	0.1
LnGrp LOS	C	A	B	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		36			126			1693			2070	
Approach Delay, s/veh		19.7			20.5			1.7			2.1	
Approach LOS		B			C			A			A	

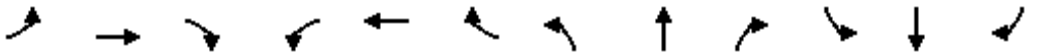
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.2		8.8		36.2		8.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0		4.3		33.7		4.4				
Green Ext Time (p_c), s		10.4		0.1		0.0		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			2.7									
HCM 6th LOS			A									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	22	23	20	43	92	1366	185	2041	93
v/c Ratio	0.09	0.09	0.08	0.17	0.50	0.49	0.73	0.73	0.07
Control Delay	17.0	6.3	16.9	9.8	21.9	5.6	26.9	9.3	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	6.3	16.9	9.8	21.9	5.6	26.9	9.3	2.3
Queue Length 50th (ft)	5	0	5	2	15	115	36	207	1
Queue Length 95th (ft)	19	11	17	20	m#35	193	m#64	m#315	m4
Internal Link Dist (ft)		930		945		1343		1156	
Turn Bay Length (ft)	250		250		250		250		250
Base Capacity (vph)	727	654	727	654	183	2767	252	2788	1267
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.04	0.03	0.07	0.50	0.49	0.73	0.73	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	0	21	18	0	40	85	1180	76	170	1878	86
Future Volume (veh/h)	20	0	21	18	0	40	85	1180	76	170	1878	86
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	0	23	20	0	43	92	1283	83	185	2041	93
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	0	130	256	0	130	295	2432	157	446	2550	1138
Arrive On Green	0.08	0.00	0.08	0.08	0.00	0.08	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	1364	0	1585	1388	0	1585	189	3389	219	398	3554	1585
Grp Volume(v), veh/h	22	0	23	20	0	43	92	672	694	185	2041	93
Grp Sat Flow(s),veh/h/ln	1364	0	1585	1388	0	1585	189	1777	1831	398	1777	1585
Q Serve(g_s), s	0.7	0.0	0.6	0.6	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	0.6	1.2	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		1.00
Lane Grp Cap(c), veh/h	237	0	130	256	0	130	295	1275	1314	446	2550	1138
V/C Ratio(X)	0.09	0.00	0.18	0.08	0.00	0.33	0.31	0.53	0.53	0.42	0.80	0.08
Avail Cap(c_a), veh/h	671	0	634	697	0	634	295	1275	1314	446	2550	1138
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.3	0.0	19.2	19.8	0.0	19.5	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.1	0.0	1.5	2.1	1.2	1.2	2.8	2.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.2	0.2	0.0	0.4	0.2	0.4	0.4	0.4	1.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.5	0.0	19.9	19.9	0.0	20.9	2.1	1.2	1.2	2.8	2.7	0.1
LnGrp LOS	C	A	B	B	A	C	A	A	A	A	A	A
Approach Vol, veh/h		45			63			1458			2319	
Approach Delay, s/veh		20.2			20.6			1.2			2.6	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.8		8.2		36.8		8.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		2.0		3.8		2.0		3.2				
Green Ext Time (p_c), s		9.9		0.1		13.4		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			2.6									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	13.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	1	35	0	28	1	1229	8	9	2067	5
Future Vol, veh/h	2	0	1	35	0	28	1	1229	8	9	2067	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	250	-	-	250	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	1	38	0	30	1	1336	9	10	2247	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2940	3617	1126	2487	3615	673	2252	0	0	1345	0	0
Stage 1	2270	2270	-	1343	1343	-	-	-	-	-	-	-
Stage 2	670	1347	-	1144	2272	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	7	5	199	~ 15	5	398	225	-	-	508	-	-
Stage 1	41	75	-	160	219	-	-	-	-	-	-	-
Stage 2	413	218	-	213	75	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	6	5	199	~ 15	5	398	225	-	-	508	-	-
Mov Cap-2 Maneuver	6	5	-	~ 15	5	-	-	-	-	-	-	-
Stage 1	41	74	-	159	218	-	-	-	-	-	-	-
Stage 2	380	217	-	208	74	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 544.8	$ 683.2	0	0.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	225	-	-	6	199	15	398	508	-	-
HCM Lane V/C Ratio	0.005	-	-	0.362	0.005	2.536	0.076	0.019	-	-
HCM Control Delay (s)	21.1	-	-	$ 805.6	23.2	$ 1217.9	14.8	12.2	-	-
HCM Lane LOS	C	-	-	F	C	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0	5.5	0.2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

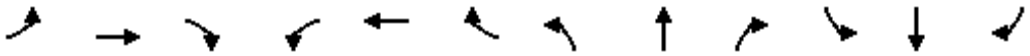
Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	508	627	446	15	1750
v/c Ratio	0.08	1.22	0.31	0.41	0.03	0.81
Control Delay	15.8	138.6	7.6	3.8	3.1	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	15.8	138.6	7.6	3.8	3.1	7.7
Queue Length 50th (ft)	6	~137	22	3	1	148
Queue Length 95th (ft)	21	#285	106	78	m1	m126
Internal Link Dist (ft)			446			347
Turn Bay Length (ft)		275		400	150	
Base Capacity (vph)	334	416	2013	1092	506	2162
Starvation Cap Reductn	0	0	0	0	0	39
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.22	0.31	0.41	0.03	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	467	0	0	0	0	577	410	14	1610	0
Future Volume (veh/h)	25	0	467	0	0	0	0	577	410	14	1610	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	27	0	508				0	627	446	15	1750	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	2	2	0
Cap, veh/h	336	0	299				0	1749	780	450	2172	0
Arrive On Green	0.19	0.00	0.19				0.00	0.98	0.98	0.03	0.81	0.00
Sat Flow, veh/h	1781	0	1585				0	3647	1585	1781	3647	0
Grp Volume(v), veh/h	27	0	508				0	627	446	15	1750	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1781	1777	0
Q Serve(g_s), s	0.6	0.0	8.5				0.0	0.2	0.5	0.2	12.0	0.0
Cycle Q Clear(g_c), s	0.6	0.0	8.5				0.0	0.2	0.5	0.2	12.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	336	0	299				0	1749	780	450	2172	0
V/C Ratio(X)	0.08	0.00	1.70				0.00	0.36	0.57	0.03	0.81	0.00
Avail Cap(c_a), veh/h	336	0	299				0	1749	780	614	2172	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.09	0.09	0.00
Uniform Delay (d), s/veh	15.0	0.0	18.2				0.0	0.2	0.2	4.5	2.8	0.0
Incr Delay (d2), s/veh	0.1	0.0	327.5				0.0	0.6	3.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	29.9				0.0	0.2	0.7	0.0	0.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.1	0.0	345.8				0.0	0.8	3.2	4.5	3.1	0.0
LnGrp LOS	B	A	F				A	A	A	A	A	A
Approach Vol, veh/h		535						1073			1765	
Approach Delay, s/veh		329.1						1.8			3.1	
Approach LOS		F						A			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	5.4	26.6		13.0		32.0
Change Period (Y+Rc), s	4.5	4.5		4.5		4.5
Max Green Setting (Gmax), s	5.0	18.0		8.5		27.5
Max Q Clear Time (g_c+I1), s	2.2	2.5		10.5		14.0
Green Ext Time (p_c), s	0.0	4.7		0.0		9.2

Intersection Summary	
HCM 6th Ctrl Delay	54.4
HCM 6th LOS	D

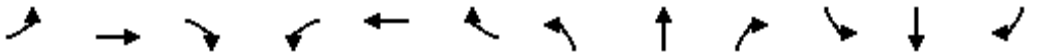
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	239	958	86	716	2527	266
v/c Ratio	0.72	1.04	0.54	0.33	1.30	0.41
Control Delay	55.0	62.1	29.9	0.6	154.6	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	62.1	29.9	0.6	154.7	2.5
Queue Length 50th (ft)	159	~252	20	0	~1241	14
Queue Length 95th (ft)	#266	#394	73	0	m#1108	m4
Internal Link Dist (ft)				685	1587	
Turn Bay Length (ft)	325	325	250			50
Base Capacity (vph)	331	925	160	2182	1946	649
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	26	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	1.04	0.54	0.33	1.32	0.41

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



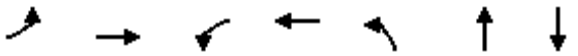
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	220	0	881	79	659	0	0	2325	245
Future Volume (veh/h)	0	0	0	220	0	881	79	659	0	0	2325	245
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1781	0	1870	1618	1767	0	0	1870	1159
Adj Flow Rate, veh/h				239	0	0	86	716	0	0	2527	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				8	0	2	19	9	0	0	2	50
Cap, veh/h				269	0		287	2345	0	0	1858	
Arrive On Green				0.16	0.00	0.00	0.22	1.00	0.00	0.00	1.00	0.00
Sat Flow, veh/h				1697	0	2790	1541	3445	0	0	3647	982
Grp Volume(v), veh/h				239	0	0	86	716	0	0	2527	0
Grp Sat Flow(s),veh/h/ln				1697	0	1395	1541	1678	0	0	1777	982
Q Serve(g_s), s				15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s				15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				269	0		287	2345	0	0	1858	
V/C Ratio(X)				0.89	0.00		0.30	0.31	0.00	0.00	1.36	
Avail Cap(c_a), veh/h				336	0		287	2345	0	0	1858	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	2.00
Upstream Filter(I)				1.00	0.00	0.00	0.89	0.89	0.00	0.00	0.09	0.00
Uniform Delay (d), s/veh				45.3	0.0	0.0	20.5	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh				20.6	0.0	0.0	0.5	0.3	0.0	0.0	162.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.8	0.0	0.0	1.8	0.1	0.0	0.0	41.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				65.9	0.0	0.0	21.0	0.3	0.0	0.0	162.5	0.0
LnGrp LOS				E	A		C	A	A	A	F	
Approach Vol, veh/h					239			802			2527	
Approach Delay, s/veh					65.9			2.5			162.5	
Approach LOS					E			A			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	84.4		19.4	65.0		25.6						
Change Period (Y+Rc), s	7.5		7.5	7.5		8.2						
Max Green Setting (Gmax), s	72.5		7.5	57.5		21.8						
Max Q Clear Time (g_c+I1), s	2.0		2.0	2.0		17.2						
Green Ext Time (p_c), s	4.8		0.1	38.6		0.3						

Intersection Summary		
HCM 6th Ctrl Delay	120.1	
HCM 6th LOS	F	

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



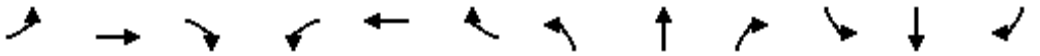
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	29	111	180	80	23	1629	2378
v/c Ratio	0.14	0.47	0.80	0.19	0.21	0.69	1.09
Control Delay	37.3	9.8	66.4	1.0	12.3	13.0	60.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.3	9.8	66.4	1.0	12.3	13.0	60.8
Queue Length 50th (ft)	17	0	114	0	5	270	~200
Queue Length 95th (ft)	42	26	#199	0	m11	m330	#1246
Internal Link Dist (ft)		787		705		1587	785
Turn Bay Length (ft)	200		200		300		
Base Capacity (vph)	245	266	224	423	125	2345	2175
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.42	0.80	0.19	0.18	0.69	1.09

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	0	102	166	0	74	21	1453	46	0	2163	25
Future Volume (veh/h)	27	0	102	166	0	74	21	1453	46	0	2163	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1722	1870	1870	1870	966	1811	1870	1870	1841	-1064
Adj Flow Rate, veh/h	29	0	0	180	0	80	23	1579	50	0	2351	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	12	2	2	2	63	6	2	2	4	200
Cap, veh/h	154	31		248	0	108	95	2522	80	268	2272	
Arrive On Green	0.04	0.00	0.00	0.09	0.00	0.07	0.06	1.00	1.00	0.00	1.00	0.00
Sat Flow, veh/h	1781	1870	0	1781	0	1585	920	3405	108	1781	3589	0
Grp Volume(v), veh/h	29	0	0	180	0	80	23	796	833	0	2351	0
Grp Sat Flow(s),veh/h/ln	1781	1870	0	1781	0	1585	920	1721	1792	1781	1749	0
Q Serve(g_s), s	1.7	0.0	0.0	9.8	0.0	5.4	0.8	0.0	0.0	0.0	71.4	0.0
Cycle Q Clear(g_c), s	1.7	0.0	0.0	9.8	0.0	5.4	0.8	0.0	0.0	0.0	71.4	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	154	31		248	0	108	95	1274	1327	268	2272	
V/C Ratio(X)	0.19	0.00		0.73	0.00	0.74	0.24	0.62	0.63	0.00	1.03	
Avail Cap(c_a), veh/h	246	167		248	0	141	137	1274	1327	404	2272	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	0.60	0.60	0.60	0.00	0.38	0.00
Uniform Delay (d), s/veh	50.0	0.0	0.0	47.2	0.0	50.3	28.6	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	10.2	0.0	13.6	0.8	1.4	1.4	0.0	22.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	5.5	0.0	2.6	0.4	0.5	0.5	0.0	7.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	0.0	0.0	57.4	0.0	63.8	29.4	1.4	1.4	0.0	22.1	0.0
LnGrp LOS	D	A		E	A	E	C	A	A	A	F	
Approach Vol, veh/h		29			260			1652			2351	
Approach Delay, s/veh		50.6			59.4			1.8			22.1	
Approach LOS		D			E			A			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	0.0	88.0	9.3	12.7	10.0	77.9	15.0	7.0
Change Period (Y+Rc), s	6.5	6.5	5.2	5.2	6.5	6.5	5.2	5.2
Max Green Setting (Gmax), s	8.5	58.5	9.8	9.8	8.5	58.5	9.8	9.8
Max Q Clear Time (g_c+I1), s	0.0	2.0	3.7	7.4	2.8	73.4	11.8	0.0
Green Ext Time (p_c), s	0.0	15.4	0.0	0.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	16.7
HCM 6th LOS	B

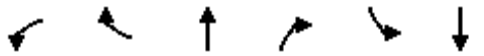
Notes

Unsignalized Delay for [EBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	149	191	1709	160	2217
v/c Ratio	0.64	0.57	0.92	0.63	0.88
Control Delay	57.0	19.1	21.6	38.8	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	57.0	19.1	21.6	38.8	10.2
Queue Length 50th (ft)	101	29	417	74	107
Queue Length 95th (ft)	160	95	#824	m77	m167
Internal Link Dist (ft)	829		785		1357
Turn Bay Length (ft)		200		250	
Base Capacity (vph)	431	496	1854	253	2516
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	0.39	0.92	0.63	0.88

Intersection Summary

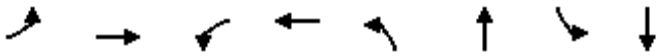
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	137	176	1471	101	147	2040
Future Volume (veh/h)	137	176	1471	101	147	2040
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1796	1870	1870	1841
Adj Flow Rate, veh/h	149	191	1599	110	160	2217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	7	2	2	4
Cap, veh/h	255	227	1890	129	345	2498
Arrive On Green	0.14	0.14	1.00	1.00	0.13	1.00
Sat Flow, veh/h	1781	1585	3331	221	1781	3589
Grp Volume(v), veh/h	149	191	837	872	160	2217
Grp Sat Flow(s),veh/h/ln	1781	1585	1706	1756	1781	1749
Q Serve(g_s), s	8.6	12.9	0.0	0.0	3.8	0.0
Cycle Q Clear(g_c), s	8.6	12.9	0.0	0.0	3.8	0.0
Prop In Lane	1.00	1.00		0.13	1.00	
Lane Grp Cap(c), veh/h	255	227	995	1024	345	2498
V/C Ratio(X)	0.59	0.84	0.84	0.85	0.46	0.89
Avail Cap(c_a), veh/h	434	386	995	1024	354	2498
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.67	0.67	0.09	0.09
Uniform Delay (d), s/veh	44.1	45.9	0.0	0.0	6.4	0.0
Incr Delay (d2), s/veh	2.1	8.3	5.9	6.2	0.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.4	1.6	1.8	1.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.2	54.2	5.9	6.2	6.5	0.5
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	340		1709			2377
Approach Delay, s/veh	50.7		6.1			0.9
Approach LOS	D		A			A

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.4	71.6		23.9		86.1
Change Period (Y+Rc), s	7.5	7.5		8.2		7.5
Max Green Setting (Gmax), s	7.5	52.5		26.8		67.5
Max Q Clear Time (g_c+I1), s	5.8	2.0		14.9		2.0
Green Ext Time (p_c), s	0.1	16.8		0.8		33.6

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A



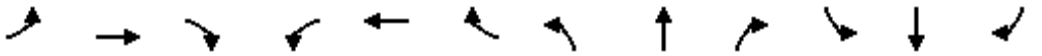
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	85	146	242	242	26	1776	68	2019
v/c Ratio	0.49	0.45	1.02	0.66	0.17	1.03	0.35	1.08
Control Delay	42.5	6.4	103.6	19.5	19.4	58.7	20.8	75.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.5	6.4	103.6	19.5	19.4	58.7	20.8	75.7
Queue Length 50th (ft)	50	0	~186	28	11	~692	22	~921
Queue Length 95th (ft)	84	21	#267	104	m18	m#946	m41	#1131
Internal Link Dist (ft)		805		888		1357		1153
Turn Bay Length (ft)	200		200		350		250	
Base Capacity (vph)	176	428	238	447	162	1722	197	1861
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.34	1.02	0.54	0.16	1.03	0.35	1.08

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	0	134	223	0	223	24	1571	63	63	1833	25
Future Volume (veh/h)	78	0	134	223	0	223	24	1571	63	63	1833	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1870	1826	1870	1870	1870	1604	1811	1870	1870	1841	1574
Adj Flow Rate, veh/h	85	0	146	242	0	242	26	1708	68	68	1992	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	2	5	2	2	2	20	6	2	2	4	22
Cap, veh/h	187	0	248	280	0	267	119	1456	58	165	1598	22
Arrive On Green	0.06	0.00	0.16	0.07	0.00	0.17	0.07	0.86	0.86	0.07	0.60	0.60
Sat Flow, veh/h	1711	0	1585	1781	0	1585	1527	3374	134	1781	3533	48
Grp Volume(v), veh/h	85	0	146	242	0	242	26	867	909	68	984	1035
Grp Sat Flow(s),veh/h/ln	1711	0	1585	1781	0	1585	1527	1721	1787	1781	1749	1832
Q Serve(g_s), s	4.5	0.0	9.4	7.8	0.0	16.5	1.0	47.5	47.5	2.2	49.8	49.8
Cycle Q Clear(g_c), s	4.5	0.0	9.4	7.8	0.0	16.5	1.0	47.5	47.5	2.2	49.8	49.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		0.03
Lane Grp Cap(c), veh/h	187	0	248	280	0	267	119	742	771	165	791	829
V/C Ratio(X)	0.46	0.00	0.59	0.87	0.00	0.91	0.22	1.17	1.18	0.41	1.24	1.25
Avail Cap(c_a), veh/h	207	0	271	280	0	271	170	742	771	187	791	829
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.34	0.34	0.34	0.43	0.43	0.43
Uniform Delay (d), s/veh	36.8	0.0	43.1	42.6	0.0	44.9	25.2	7.5	7.5	24.8	21.9	21.9
Incr Delay (d2), s/veh	1.7	0.0	2.8	23.5	0.0	31.2	0.3	80.9	85.3	0.7	114.4	116.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	3.9	4.7	0.0	8.7	0.3	19.3	21.0	0.8	38.7	41.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.5	0.0	45.9	66.0	0.0	76.1	25.5	88.4	92.8	25.5	136.3	138.6
LnGrp LOS	D	A	D	E	A	E	C	F	F	C	F	F
Approach Vol, veh/h		231			484			1802			2087	
Approach Delay, s/veh		43.2			71.1			89.7			133.9	
Approach LOS		D			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	55.0	14.7	26.7	11.3	57.3	16.0	25.4
Change Period (Y+Rc), s	7.5	7.5	8.2	8.2	7.5	7.5	8.2	8.2
Max Green Setting (Gmax), s	7.5	44.5	7.8	18.8	7.5	44.5	7.8	18.8
Max Q Clear Time (g_c+I1), s	4.2	49.5	6.5	18.5	3.0	51.8	9.8	11.4
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

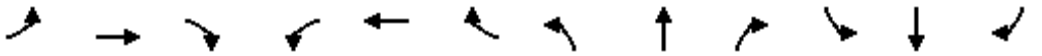
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	62	72	259	259	20	2009	73	1742	32
v/c Ratio	0.63	0.25	0.91	0.61	0.11	1.08	0.39	0.83	0.03
Control Delay	75.6	2.0	72.5	23.7	3.6	58.2	22.5	26.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.6	2.0	72.5	23.7	3.6	58.2	22.5	26.5	0.0
Queue Length 50th (ft)	43	0	157	72	1	~948	27	322	0
Queue Length 95th (ft)	#99	0	#287	156	m2	m#936	m53	#805	m0
Internal Link Dist (ft)		956		598		1153		1343	
Turn Bay Length (ft)	250				250		250		250
Base Capacity (vph)	109	303	286	476	190	1858	190	2105	926
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.24	0.91	0.54	0.11	1.08	0.38	0.83	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	0	66	238	0	238	18	1781	67	67	1603	29
Future Volume (veh/h)	57	0	66	238	0	238	18	1781	67	67	1603	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1796	1870	1870	1841	1693
Adj Flow Rate, veh/h	62	0	72	259	0	259	20	1936	73	73	1742	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	7	2	2	4	14
Cap, veh/h	147	0	140	295	0	356	254	1704	64	170	1873	768
Arrive On Green	0.09	0.00	0.09	0.10	0.00	0.22	0.06	1.00	1.00	0.11	1.00	1.00
Sat Flow, veh/h	1120	0	1585	1781	0	1585	1781	3354	126	1781	3497	1434
Grp Volume(v), veh/h	62	0	72	259	0	259	20	979	1030	73	1742	32
Grp Sat Flow(s),veh/h/ln	1120	0	1585	1781	0	1585	1781	1706	1774	1781	1749	1434
Q Serve(g_s), s	6.0	0.0	4.8	10.5	0.0	16.7	0.6	55.9	55.9	2.0	0.0	0.0
Cycle Q Clear(g_c), s	7.6	0.0	4.8	10.5	0.0	16.7	0.6	55.9	55.9	2.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	147	0	140	295	0	356	254	867	901	170	1873	768
V/C Ratio(X)	0.42	0.00	0.52	0.88	0.00	0.73	0.08	1.13	1.14	0.43	0.93	0.04
Avail Cap(c_a), veh/h	159	0	156	295	0	372	323	867	901	190	1873	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.09	0.09	0.45	0.45	0.45
Uniform Delay (d), s/veh	50.0	0.0	47.9	43.3	0.0	39.5	11.6	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	2.9	24.6	0.0	6.7	0.0	59.8	66.1	0.8	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	1.9	4.0	0.0	7.1	0.2	14.4	16.5	0.8	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	0.0	50.8	67.9	0.0	46.3	11.6	59.8	66.1	24.3	5.0	0.0
LnGrp LOS	D	A	D	E	A	D	B	F	F	C	A	A
Approach Vol, veh/h		134			518			2029			1847	
Approach Delay, s/veh		51.4			57.1			62.5			5.6	
Approach LOS		D			E			E			A	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.7	63.4		32.9	10.7	66.4	15.0	17.9				
Change Period (Y+Rc), s	7.5	7.5		8.2	7.5	7.5	4.5	8.2				
Max Green Setting (Gmax), s	7.5	53.5		25.8	7.5	53.5	10.5	10.8				
Max Q Clear Time (g_c+I1), s	4.0	57.9		18.7	2.6	2.0	12.5	9.6				
Green Ext Time (p_c), s	0.0	0.0		0.9	0.0	19.2	0.0	0.1				

Intersection Summary			
HCM 6th Ctrl Delay		38.4	
HCM 6th LOS		D	

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	102	77	80	178	21	2170	50	1683	27
v/c Ratio	0.44	0.21	0.62	0.61	0.12	1.19	0.27	0.84	0.03
Control Delay	52.8	1.3	71.1	14.6	3.4	104.8	15.2	27.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.8	1.3	71.1	14.6	3.4	104.8	15.2	27.2	0.0
Queue Length 50th (ft)	69	0	56	0	2	~1039	15	451	0
Queue Length 95th (ft)	125	0	#121	52	m2	m#965	m29	#780	m0
Internal Link Dist (ft)		930		945		1343		1156	
Turn Bay Length (ft)	250		250		250		250		250
Base Capacity (vph)	252	374	131	298	190	1818	190	2012	989
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.21	0.61	0.60	0.11	1.19	0.26	0.84	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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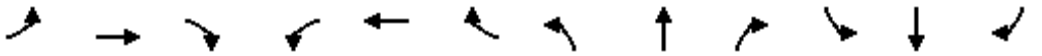
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	0	71	74	0	164	19	1975	21	46	1548	25
Future Volume (veh/h)	94	0	71	74	0	164	19	1975	21	46	1548	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	102	0	77	80	0	178	21	2147	23	50	1683	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	174	0	108	179	0	112	162	1920	21	154	1964	876
Arrive On Green	0.06	0.00	0.07	0.06	0.00	0.07	0.06	1.00	1.00	0.05	0.55	0.55
Sat Flow, veh/h	1781	0	1585	1781	0	1585	1781	3602	39	1781	3554	1585
Grp Volume(v), veh/h	102	0	77	80	0	178	21	1057	1113	50	1683	27
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1585	1781	1777	1863	1781	1777	1585
Q Serve(g_s), s	2.0	0.0	5.2	4.8	0.0	7.8	0.5	58.6	58.6	1.3	44.3	0.5
Cycle Q Clear(g_c), s	2.0	0.0	5.2	4.8	0.0	7.8	0.5	58.6	58.6	1.3	44.3	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	174	0	108	179	0	112	162	947	993	154	1964	876
V/C Ratio(X)	0.59	0.00	0.71	0.45	0.00	1.58	0.13	1.12	1.12	0.32	0.86	0.03
Avail Cap(c_a), veh/h	257	0	170	192	0	112	230	947	993	187	1964	876
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	0.0	50.2	50.4	0.0	51.1	18.7	0.0	0.0	25.5	20.9	3.3
Incr Delay (d2), s/veh	3.1	0.0	8.4	1.7	0.0	300.6	0.0	53.9	55.7	1.2	5.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	0.0	2.3	2.2	0.0	12.5	0.2	14.2	15.4	0.7	16.8	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.9	0.0	58.6	52.1	0.0	351.7	18.7	53.9	55.7	26.7	26.0	3.4
LnGrp LOS	D	A	E	D	A	F	B	F	F	C	C	A
Approach Vol, veh/h		179			258			2191			1760	
Approach Delay, s/veh		54.8			258.8			54.5			25.7	
Approach LOS		D			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	66.1	15.2	15.7	10.8	68.3	14.9	16.0
Change Period (Y+Rc), s	7.5	7.5	8.2	8.2	7.5	7.5	8.2	8.2
Max Green Setting (Gmax), s	7.5	51.5	7.8	11.8	7.5	51.5	11.8	7.8
Max Q Clear Time (g_c+I1), s	3.3	60.6	6.8	7.2	2.5	46.3	4.0	9.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.1	0.0	4.1	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	55.0
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	260.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	4	0	4	59	0	39	4	2109	130	2	63	1551	4
Future Vol, veh/h	4	0	4	59	0	39	4	2109	130	2	63	1551	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	250	-	-	250	200	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	100	2	50	2	2	2	50	7	2	2	2	4	2
Mvmt Flow	4	0	4	64	0	42	4	2292	141	2	68	1686	4

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	2982	4269	845	3354	4201	1217	1690	0	0	2434	2433	0	0
Stage 1	1828	1828	-	2371	2371	-	-	-	-	-	-	-	-
Stage 2	1154	2441	-	983	1830	-	-	-	-	-	-	-	-
Critical Hdwy	9.5	6.54	7.9	7.54	6.54	6.94	5.1	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	8.5	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	8.5	5.54	-	6.54	5.54	-	-	-	-	-	-	-	-
Follow-up Hdwy	4.5	4.02	3.8	3.52	4.02	3.32	2.7	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	~ 1	2	224	~ 3	2	173	215	-	-	38	191	-	-
Stage 1	27	126	-	~ 35	66	-	-	-	-	-	-	-	-
Stage 2	99	61	-	267	126	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	0	1	224	~ 2	1	173	215	-	-	163	163	-	-
Mov Cap-2 Maneuver	0	1	-	~ 2	1	-	-	-	-	-	-	-	-
Stage 1	26	71	-	~ 34	65	-	-	-	-	-	-	-	-
Stage 2	73	60	-	148	71	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 10515.5	0	1.7
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	215	-	-	-	224	2	173	163	-	-
HCM Lane V/C Ratio	0.02	-	-	-	0.019	32.065	0.245	0.433	-	-
HCM Control Delay (s)	22.1	-	-	-	21.4	$ 17445	32.4	43	-	-
HCM Lane LOS	C	-	-	-	C	F	D	E	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	10.1	0.9	2	-	-

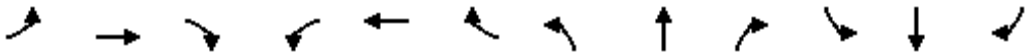
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	202	1346	1072	26	1565
v/c Ratio	0.36	0.79	0.58	0.81	0.09	0.59
Control Delay	52.5	42.8	6.1	12.3	6.9	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	7.4
Total Delay	52.5	42.8	6.1	12.3	6.9	17.8
Queue Length 50th (ft)	38	56	252	684	8	260
Queue Length 95th (ft)	80	#161	m142	m602	m6	m185
Internal Link Dist (ft)			446			347
Turn Bay Length (ft)		275		400	150	
Base Capacity (vph)	186	276	2332	1325	303	2651
Starvation Cap Reductn	0	0	0	0	0	1045
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.73	0.58	0.81	0.09	0.97

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	0	186	0	0	0	0	1238	986	24	1440	0
Future Volume (veh/h)	53	0	186	0	0	0	0	1238	986	24	1440	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	0	1870				0	1811	1752	1870	1841	0
Adj Flow Rate, veh/h	58	0	202				0	1346	1072	26	1565	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	0	2				0	6	10	2	4	0
Cap, veh/h	188	0	170				0	2226	960	187	2623	0
Arrive On Green	0.11	0.00	0.11				0.00	0.65	0.65	0.07	1.00	0.00
Sat Flow, veh/h	1753	0	1585				0	3532	1485	1781	3589	0
Grp Volume(v), veh/h	58	0	202				0	1346	1072	26	1565	0
Grp Sat Flow(s),veh/h/ln	1753	0	1585				0	1721	1485	1781	1749	0
Q Serve(g_s), s	3.4	0.0	11.8				0.0	25.0	71.2	0.5	0.0	0.0
Cycle Q Clear(g_c), s	3.4	0.0	11.8				0.0	25.0	71.2	0.5	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	188	0	170				0	2226	960	187	2623	0
V/C Ratio(X)	0.31	0.00	1.19				0.00	0.60	1.12	0.14	0.60	0.00
Avail Cap(c_a), veh/h	188	0	170				0	2226	960	247	2623	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.09	0.09	0.00
Uniform Delay (d), s/veh	45.3	0.0	49.1				0.0	11.3	19.4	8.7	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	128.6				0.0	1.2	66.4	0.0	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	10.7				0.0	7.9	36.2	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.3	0.0	177.7				0.0	12.5	85.9	8.7	0.1	0.0
LnGrp LOS	D	A	F				A	B	F	A	A	A
Approach Vol, veh/h		260						2418			1591	
Approach Delay, s/veh		148.4						45.0			0.2	
Approach LOS		F						D			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.3	78.7		20.0		90.0
Change Period (Y+Rc), s	7.5	7.5		8.2		7.5
Max Green Setting (Gmax), s	7.5	67.5		11.8		82.5
Max Q Clear Time (g_c+I1), s	2.5	73.2		13.8		2.0
Green Ext Time (p_c), s	0.0	0.0		0.0		16.5

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

APPENDIX C

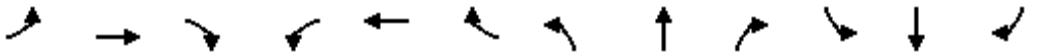
Future Improved Conditions

Capacity Analysis

Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	101	1158	33	1787	1495	79
v/c Ratio	0.64	0.75	0.19	0.66	0.62	0.07
Control Delay	82.7	3.5	0.7	0.7	5.1	0.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	82.7	3.5	0.7	1.0	5.1	0.5
Queue Length 50th (ft)	97	0	0	0	43	1
Queue Length 95th (ft)	157	0	m0	m0	340	3
Internal Link Dist (ft)				685	660	
Turn Bay Length (ft)	325	325	250			50
Base Capacity (vph)	223	1538	188	2690	2426	1164
Starvation Cap Reductn	0	0	0	326	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.75	0.18	0.76	0.62	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	93	0	1065	30	1644	0	0	1375	73
Future Volume (veh/h)	0	0	0	93	0	1065	30	1644	0	0	1375	73
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1722	0	1826	1144	1796	0	0	1796	1870
Adj Flow Rate, veh/h				101	0	0	33	1787	0	0	1495	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				12	0	5	51	7	0	0	7	2
Cap, veh/h				121	0		200	2803	0	0	2514	
Arrive On Green				0.07	0.00	0.00	0.07	1.00	0.00	0.00	0.74	0.00
Sat Flow, veh/h				1640	0	1547	1090	3503	0	0	3503	1585
Grp Volume(v), veh/h				101	0	0	33	1787	0	0	1495	0
Grp Sat Flow(s),veh/h/ln				1640	0	1547	1090	1706	0	0	1706	1585
Q Serve(g_s), s				9.1	0.0	0.0	1.0	0.0	0.0	0.0	30.8	0.0
Cycle Q Clear(g_c), s				9.1	0.0	0.0	1.0	0.0	0.0	0.0	30.8	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				121	0		200	2803	0	0	2514	
V/C Ratio(X)				0.83	0.00		0.16	0.64	0.00	0.00	0.59	
Avail Cap(c_a), veh/h				227	0		231	2803	0	0	2514	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.13	0.13	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				68.5	0.0	0.0	7.5	0.0	0.0	0.0	9.3	0.0
Incr Delay (d2), s/veh				13.6	0.0	0.0	0.0	0.1	0.0	0.0	1.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.2	0.0	0.0	0.2	0.1	0.0	0.0	10.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				82.1	0.0	0.0	7.6	0.1	0.0	0.0	10.3	0.0
LnGrp LOS				F	A		A	A	A	A	B	
Approach Vol, veh/h					101			1820			1495	
Approach Delay, s/veh					82.1			0.3			10.3	
Approach LOS					F			A			B	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	130.7		12.7	118.0		19.3						
Change Period (Y+Rc), s	7.5		7.5	7.5		8.2						
Max Green Setting (Gmax), s	113.5		9.5	96.5		20.8						
Max Q Clear Time (g_c+I1), s	2.0		3.0	32.8		11.1						
Green Ext Time (p_c), s	25.6		0.0	16.3		0.1						

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	32	0	0	22	97	2405	96	95	1282	39
Future Vol, veh/h	0	0	32	0	0	22	97	2405	96	95	1282	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	150	250	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	35	0	0	24	105	2614	104	103	1393	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	697	-	-	1307	1435	0	0	2718	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	383	0	0	150	469	-	-	147	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	383	-	-	150	469	-	-	147	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.3	33.5	0.6	4.9
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	469	-	-	383	150	147	-	-
HCM Lane V/C Ratio	0.225	-	-	0.091	0.159	0.702	-	-
HCM Control Delay (s)	14.9	-	-	15.3	33.5	73.1	-	-
HCM Lane LOS	B	-	-	C	D	F	-	-
HCM 95th %tile Q(veh)	0.9	-	-	0.3	0.6	4.1	-	-

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	8	88	61	67	2176	415	357	1440	85
v/c Ratio	0.13	0.04	0.55	0.19	0.30	0.96	0.39	0.78	0.49	0.06
Control Delay	61.0	0.3	83.2	13.0	9.2	20.6	2.7	60.8	10.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.0	0.3	83.2	13.0	9.2	20.6	2.7	60.8	10.0	2.8
Queue Length 50th (ft)	17	0	44	0	12	402	20	165	315	7
Queue Length 95th (ft)	39	0	75	43	m34	#1375	101	#267	627	m27
Internal Link Dist (ft)		663				785			718	
Turn Bay Length (ft)	200		300	200	250		150	250		150
Base Capacity (vph)	142	217	160	329	220	2273	1067	459	2920	1319
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.04	0.55	0.19	0.30	0.96	0.39	0.78	0.49	0.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	0	7	81	0	56	62	2002	382	328	1325	78
Future Volume (veh/h)	17	0	7	81	0	56	62	2002	382	328	1325	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	0	8	88	0	61	67	2176	415	357	1440	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	166	0	103	161	222	369	273	2351	1049	395	2935	1309
Arrive On Green	0.02	0.00	0.06	0.05	0.00	0.12	0.66	0.66	0.66	0.23	1.00	1.00
Sat Flow, veh/h	1781	0	1585	3456	1870	1585	342	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	18	0	8	88	0	61	67	2176	415	357	1440	85
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1728	1870	1585	342	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.4	0.0	0.7	3.7	0.0	4.6	12.5	80.2	18.0	15.1	0.0	0.0
Cycle Q Clear(g_c), s	1.4	0.0	0.7	3.7	0.0	4.6	12.9	80.2	18.0	15.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	0	103	161	222	369	273	2351	1049	395	2935	1309
V/C Ratio(X)	0.11	0.00	0.08	0.55	0.00	0.17	0.25	0.93	0.40	0.90	0.49	0.06
Avail Cap(c_a), veh/h	194	0	106	161	222	369	273	2351	1049	403	2935	1309
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.8	0.0	65.9	70.0	0.0	45.9	10.9	22.1	11.6	57.1	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.3	3.8	0.0	0.2	2.1	7.7	1.1	23.1	0.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.3	1.7	0.0	1.8	1.0	32.1	6.2	7.0	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.1	0.0	66.2	73.7	0.0	46.1	13.0	29.9	12.7	80.1	0.6	0.1
LnGrp LOS	E	A	E	E	A	D	B	C	B	F	A	A
Approach Vol, veh/h		26			149			2658			1882	
Approach Delay, s/veh		64.7			62.4			26.8			15.7	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	24.6	107.2	15.2	17.9	131.8	7.1	26.0
Change Period (Y+Rc), s	7.5	7.5	8.2	* 8.2	7.5	4.5	8.2
Max Green Setting (Gmax), s	17.5	84.8	7.0	* 10	109.8	5.0	15.0
Max Q Clear Time (g_c+I1), s	17.1	82.2	5.7	2.7	2.0	3.4	6.6
Green Ext Time (p_c), s	0.1	2.5	0.0	0.0	16.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

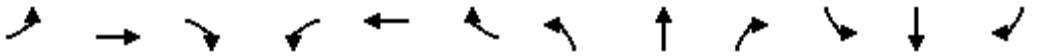
Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	21	29	53	43	76	1858	187	228	1799	82
v/c Ratio	0.16	0.11	0.33	0.13	0.51	0.84	0.18	0.79	0.72	0.07
Control Delay	59.4	0.8	75.1	0.8	35.4	5.8	0.3	43.5	4.5	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	0.8	75.1	0.8	35.4	5.8	0.3	43.5	4.5	0.1
Queue Length 50th (ft)	18	0	26	0	19	597	8	158	98	0
Queue Length 95th (ft)	45	0	51	0	m27	m24	m0	m206	108	m0
Internal Link Dist (ft)						560			559	
Turn Bay Length (ft)	200	100	200	200	350		150	250		150
Base Capacity (vph)	132	265	160	334	164	2213	1047	287	2488	1158
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.11	0.33	0.13	0.46	0.84	0.18	0.79	0.72	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	0	27	49	0	40	70	1709	172	210	1655	75
Future Volume (veh/h)	19	0	27	49	0	40	70	1709	172	210	1655	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	0	29	53	0	43	76	1858	187	228	1799	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	85	72	144	112	95	241	2007	895	389	2341	1044
Arrive On Green	0.03	0.00	0.05	0.04	0.00	0.06	0.09	1.00	1.00	0.28	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	21	0	29	53	0	43	76	1858	187	228	1799	82
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.7	0.0	2.7	2.2	0.0	2.9	3.1	0.0	0.0	2.6	0.0	0.0
Cycle Q Clear(g_c), s	1.7	0.0	2.7	2.2	0.0	2.9	3.1	0.0	0.0	2.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	85	72	144	112	95	241	2007	895	389	2341	1044
V/C Ratio(X)	0.13	0.00	0.40	0.37	0.00	0.45	0.31	0.93	0.21	0.59	0.77	0.08
Avail Cap(c_a), veh/h	193	87	74	161	112	95	274	2007	895	389	2341	1044
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	0.0	69.6	70.0	0.0	37.4	16.7	0.0	0.0	32.7	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	3.5	1.6	0.0	3.3	0.7	8.9	0.5	2.3	2.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	1.2	1.0	0.0	1.7	1.3	2.5	0.1	6.5	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.6	0.0	73.1	71.5	0.0	40.7	17.4	8.9	0.5	34.9	2.5	0.1
LnGrp LOS	E	A	E	E	A	D	B	A	A	C	A	A
Approach Vol, veh/h		50			96			2121			2109	
Approach Delay, s/veh		70.0			57.7			8.4			5.9	
Approach LOS		E			E			A			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.3	92.2	14.4	15.1	14.2	106.3	12.3	17.2
Change Period (Y+Rc), s	7.5	7.5	8.2	8.2	7.5	7.5	8.2	8.2
Max Green Setting (Gmax), s	19.9	84.7	7.0	7.0	9.5	95.1	7.0	7.0
Max Q Clear Time (g_c+I1), s	4.6	2.0	4.2	4.7	5.1	2.0	3.7	4.9
Green Ext Time (p_c), s	0.5	29.0	0.0	0.0	0.0	26.2	0.0	0.0

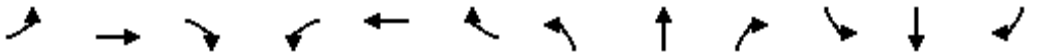
Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	35	21	53	43	92	1614	186	228	2036	87
v/c Ratio	0.51	0.08	0.33	0.12	0.54	0.76	0.18	0.68	0.86	0.08
Control Delay	94.3	0.6	75.1	0.8	33.7	9.5	0.9	32.3	6.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	94.3	0.6	75.1	0.8	33.7	9.5	0.9	32.3	6.0	0.1
Queue Length 50th (ft)	34	0	26	0	51	114	1	140	113	0
Queue Length 95th (ft)	#81	0	51	0	m71	173	m11	m155	m123	m0
Internal Link Dist (ft)						513			659	
Turn Bay Length (ft)	250	100	150	150	250		150	250		250
Base Capacity (vph)	70	270	160	372	169	2131	1033	333	2379	1112
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.08	0.33	0.12	0.54	0.76	0.18	0.68	0.86	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	0	19	49	0	40	85	1485	171	210	1873	80
Future Volume (veh/h)	32	0	19	49	0	40	85	1485	171	210	1873	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	0	21	53	0	43	92	1614	186	228	2036	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	86	73	144	257	218	290	1997	891	451	2246	1002
Arrive On Green	0.05	0.00	0.05	0.04	0.00	0.14	0.15	1.00	1.00	0.29	1.00	1.00
Sat Flow, veh/h	1364	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	35	0	21	53	0	43	92	1614	186	228	2036	87
Grp Sat Flow(s),veh/h/ln	1364	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	3.8	0.0	1.9	2.2	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	1.9	2.2	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	86	73	144	257	218	290	1997	891	451	2246	1002
V/C Ratio(X)	0.32	0.00	0.29	0.37	0.00	0.20	0.32	0.81	0.21	0.51	0.91	0.09
Avail Cap(c_a), veh/h	116	94	79	161	274	232	290	1997	891	451	2246	1002
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.1	0.0	69.2	70.0	0.0	57.4	16.2	0.0	0.0	19.4	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	2.2	1.6	0.0	0.4	0.6	3.6	0.5	0.9	6.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.8	1.0	0.0	1.5	1.8	1.0	0.1	6.2	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.7	0.0	71.3	71.5	0.0	57.8	16.8	3.6	0.5	20.4	6.7	0.2
LnGrp LOS	E	A	E	E	A	E	B	A	A	C	A	A
Approach Vol, veh/h		56			96			1892			2351	
Approach Delay, s/veh		71.6			65.4			4.0			7.8	
Approach LOS		E			E			A			A	

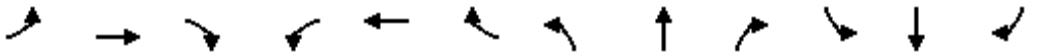
Timer - Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	29.4	91.8	14.4	14.4	18.9	102.3		28.8				
Change Period (Y+Rc), s	7.5	7.5	8.2	7.5	7.5	7.5		8.2				
Max Green Setting (Gmax), s	20.5	84.3	7.0	7.5	10.0	94.8		22.0				
Max Q Clear Time (g_c+I1), s	2.0	2.0	4.2	5.8	2.0	2.0		5.6				
Green Ext Time (p_c), s	0.6	21.3	0.0	0.0	0.1	35.4		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			8.2									
HCM 6th LOS			A									

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	37	33	82	34	154	1377	146	186	2210	135
v/c Ratio	0.27	0.12	0.51	0.10	0.89	0.62	0.14	0.69	0.96	0.13
Control Delay	61.9	1.0	81.5	0.6	65.4	6.4	0.5	29.1	17.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	1.0	81.5	0.6	65.4	6.4	0.5	29.1	17.9	0.1
Queue Length 50th (ft)	32	0	41	0	92	103	2	67	756	0
Queue Length 95th (ft)	68	0	71	0	m#196	108	m3	m70	m#1234	m0
Internal Link Dist (ft)						604			536	
Turn Bay Length (ft)	250	100	250	100	250		150	250		250
Base Capacity (vph)	135	265	160	339	174	2213	1046	331	2292	1078
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.12	0.51	0.10	0.89	0.62	0.14	0.56	0.96	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	0	30	75	0	31	142	1267	134	171	2033	124
Future Volume (veh/h)	34	0	30	75	0	31	142	1267	134	171	2033	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	0	33	82	0	34	154	1377	146	186	2210	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	191	86	73	156	87	74	253	2252	1005	340	2229	994
Arrive On Green	0.04	0.00	0.05	0.05	0.00	0.05	0.14	1.00	1.00	0.13	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	37	0	33	82	0	34	154	1377	146	186	2210	135
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	3.0	3.5	0.0	2.6	0.8	0.0	0.0	7.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	3.0	3.5	0.0	2.6	0.8	0.0	0.0	7.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	191	86	73	156	87	74	253	2252	1005	340	2229	994
V/C Ratio(X)	0.19	0.00	0.45	0.53	0.00	0.46	0.61	0.61	0.15	0.55	0.99	0.14
Avail Cap(c_a), veh/h	194	87	74	161	87	74	253	2252	1005	457	2229	994
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.7	0.0	69.7	70.0	0.0	47.0	41.0	0.0	0.0	13.1	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	4.3	2.9	0.0	4.4	4.2	1.2	0.3	1.4	17.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.3	1.6	0.0	1.4	5.3	0.4	0.1	2.7	5.3	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	0.0	74.0	72.9	0.0	51.4	45.2	1.2	0.3	14.5	17.1	0.3
LnGrp LOS	E	A	E	E	A	D	D	A	A	B	B	A
Approach Vol, veh/h		70			116			1677			2531	
Approach Delay, s/veh		68.8			66.6			5.2			16.0	
Approach LOS		E			E			A			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	102.6	15.0	15.1	18.3	101.6	14.9	15.2
Change Period (Y+Rc), s	7.5	7.5	8.2	8.2	7.5	7.5	8.2	8.2
Max Green Setting (Gmax), s	19.7	84.9	7.0	7.0	10.5	94.1	7.0	7.0
Max Q Clear Time (g_c+I1), s	9.5	2.0	5.5	5.0	2.8	2.0	2.0	4.6
Green Ext Time (p_c), s	0.3	15.2	0.0	0.0	0.2	43.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	14.1
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	0	0	28	39	1284	8	9	2338	43
Future Vol, veh/h	0	0	10	0	0	28	39	1284	8	9	2338	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	200	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	0	0	30	42	1396	9	10	2541	47

Major/Minor	Minor2		Minor1			Major1				Major2		
Conflicting Flow All	-	-	1271	-	-	698	2588	0	0	1405	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	159	0	0	383	166	-	-	482	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	159	-	-	383	166	-	-	482	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

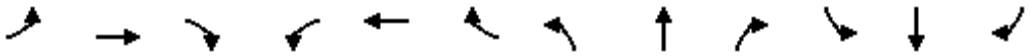
Approach	EB	WB	NB	SB
HCM Control Delay, s	29.3	15.2	1	0
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	166	-	-	159	383	482	-	-
HCM Lane V/C Ratio	0.255	-	-	0.068	0.079	0.02	-	-
HCM Control Delay (s)	34	-	-	29.3	15.2	12.6	-	-
HCM Lane LOS	D	-	-	D	C	B	-	-
HCM 95th %tile Q(veh)	1	-	-	0.2	0.3	0.1	-	-

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	523	627	499	15	2071
v/c Ratio	0.05	1.00	0.31	0.45	0.03	0.97
Control Delay	38.7	83.0	35.1	16.7	8.6	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	25.0
Total Delay	38.7	83.0	35.1	16.7	8.6	54.3
Queue Length 50th (ft)	19	448	266	187	4	600
Queue Length 95th (ft)	45	#698	398	374	m5	#1190
Internal Link Dist (ft)			446			347
Turn Bay Length (ft)		275		400	150	
Base Capacity (vph)	516	523	1998	1111	471	2135
Starvation Cap Reductn	0	0	0	0	0	179
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.05	1.00	0.31	0.45	0.03	1.06

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	481	0	0	0	0	577	459	14	1905	0
Future Volume (veh/h)	25	0	481	0	0	0	0	577	459	14	1905	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1870	0	1870				0	1870	1870	1870	1870	0
Adj Flow Rate, veh/h	27	0	0				0	627	499	15	2071	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2				0	2	2	2	2	0
Cap, veh/h	56	0					0	1801	803	842	3070	0
Arrive On Green	0.03	0.00	0.00				0.00	1.00	1.00	0.61	1.00	0.00
Sat Flow, veh/h	1781	0	1585				0	3647	1585	1781	3647	0
Grp Volume(v), veh/h	27	0	0				0	627	499	15	2071	0
Grp Sat Flow(s),veh/h/ln	1781	0	1585				0	1777	1585	1781	1777	0
Q Serve(g_s), s	2.2	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	56	0					0	1801	803	842	3070	0
V/C Ratio(X)	0.48	0.00					0.00	0.35	0.62	0.02	0.67	0.00
Avail Cap(c_a), veh/h	520	0					0	1801	803	842	3070	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	0.60	0.60	0.00
Uniform Delay (d), s/veh	71.4	0.0	0.0				0.0	0.0	0.0	1.7	0.0	0.0
Incr Delay (d2), s/veh	6.3	0.0	0.0				0.0	0.5	3.6	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0				0.0	0.1	0.8	0.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	0.0	0.0				0.0	0.5	3.6	1.7	0.7	0.0
LnGrp LOS	E	A					A	A	A	A	A	A
Approach Vol, veh/h		27						1126			2086	
Approach Delay, s/veh		77.7						1.9			0.7	
Approach LOS		E						A			A	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	53.6	83.5		12.9		137.1
Change Period (Y+Rc), s	7.5	7.5		8.2		7.5
Max Green Setting (Gmax), s	7.0	76.0		43.8		90.5
Max Q Clear Time (g_c+I1), s	2.0	2.0		4.2		2.0
Green Ext Time (p_c), s	0.0	6.8		0.1		35.1

Intersection Summary	
HCM 6th Ctrl Delay	1.8
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

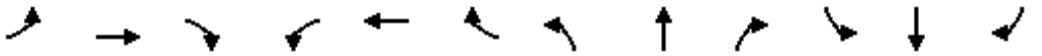
Lane Group	WBL	WBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	239	997	86	743	2768	342
v/c Ratio	1.14	0.63	0.76	0.29	1.16	0.45
Control Delay	162.3	1.9	83.4	0.6	96.7	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0
Total Delay	162.3	1.9	83.4	0.6	96.9	4.7
Queue Length 50th (ft)	~272	0	61	0	~1681	28
Queue Length 95th (ft)	#453	0	m#143	0	m#1674	m38
Internal Link Dist (ft)				685	660	
Turn Bay Length (ft)	325	325	250			50
Base Capacity (vph)	209	1583	113	2550	2382	755
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	197	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.14	0.63	0.76	0.29	1.27	0.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	220	0	917	79	684	0	0	2547	315
Future Volume (veh/h)	0	0	0	220	0	917	79	684	0	0	2547	315
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1781	0	1870	1618	1767	0	0	1870	1159
Adj Flow Rate, veh/h				239	0	0	86	743	0	0	2768	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				8	0	2	19	9	0	0	2	50
Cap, veh/h				213	0		120	2585	0	0	2393	
Arrive On Green				0.13	0.00	0.00	0.09	1.00	0.00	0.00	0.67	0.00
Sat Flow, veh/h				1697	0	1585	1541	3445	0	0	3647	982
Grp Volume(v), veh/h				239	0	0	86	743	0	0	2768	0
Grp Sat Flow(s),veh/h/ln				1697	0	1585	1541	1678	0	0	1777	982
Q Serve(g_s), s				18.8	0.0	0.0	3.3	0.0	0.0	0.0	101.0	0.0
Cycle Q Clear(g_c), s				18.8	0.0	0.0	3.3	0.0	0.0	0.0	101.0	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				213	0		120	2585	0	0	2393	
V/C Ratio(X)				1.12	0.00		0.72	0.29	0.00	0.00	1.16	
Avail Cap(c_a), veh/h				213	0		120	2585	0	0	2393	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.73	0.73	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				65.6	0.0	0.0	65.4	0.0	0.0	0.0	24.5	0.0
Incr Delay (d2), s/veh				99.0	0.0	0.0	13.9	0.2	0.0	0.0	75.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				13.9	0.0	0.0	3.5	0.1	0.0	0.0	62.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh				164.6	0.0	0.0	79.3	0.2	0.0	0.0	100.2	0.0
LnGrp LOS				F	A		E	A	A	A	F	
Approach Vol, veh/h					239			829			2768	
Approach Delay, s/veh					164.6			8.4			100.2	
Approach LOS					F			A			F	

Timer - Assigned Phs	2		5	6		8						
Phs Duration (G+Y+Rc), s	123.0		14.5	108.5		27.0						
Change Period (Y+Rc), s	7.5		7.5	7.5		8.2						
Max Green Setting (Gmax), s	115.5		7.0	101.0		18.8						
Max Q Clear Time (g_c+I1), s	2.0		5.3	103.0		20.8						
Green Ext Time (p_c), s	5.5		0.0	0.0		0.0						

Intersection Summary		
HCM 6th Ctrl Delay		84.4
HCM 6th LOS		F

Notes

Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	144	0	0	92	26	1533	26	26	2577	4
Future Vol, veh/h	0	0	144	0	0	92	26	1533	26	26	2577	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	300	-	150	250	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	12	2	2	2	56	6	2	2	4	200
Mvmt Flow	0	0	157	0	0	100	28	1666	28	28	2801	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	1401	-	-	833	2805	0	0	1694	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	6.94	5.22	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.42	-	-	3.32	2.76	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	~ 118	0	0	312	54	-	-	373	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	~ 118	-	-	312	54	-	-	373	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	262.6	21.9	2.1	0.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	54	-	-	118	312	373	-	-
HCM Lane V/C Ratio	0.523	-	-	1.326	0.321	0.076	-	-
HCM Control Delay (s)	129.4	-	-	262.6	21.9	15.4	-	-
HCM Lane LOS	F	-	-	F	C	C	-	-
HCM 95th %tile Q(veh)	2	-	-	10.4	1.3	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

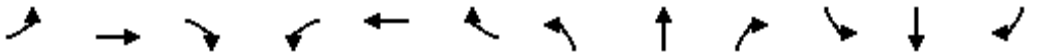
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	117	62	371	309	10	1630	143	193	2392	12
v/c Ratio	0.30	0.26	0.86	1.50	0.20	0.88	0.15	0.73	1.02	0.01
Control Delay	49.7	2.5	84.2	279.0	43.7	50.9	9.6	61.3	30.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	2.5	84.2	279.0	43.7	50.9	9.6	61.3	30.3	0.0
Queue Length 50th (ft)	93	0	185	~332	7	834	28	94	~1348	0
Queue Length 95th (ft)	153	0	#263	#531	m20	928	81	m106	#1470	m0
Internal Link Dist (ft)		663				785			718	
Turn Bay Length (ft)	200		300	200	250		150	250		150
Base Capacity (vph)	387	242	441	206	49	1855	936	263	2349	1101
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.26	0.84	1.50	0.20	0.88	0.15	0.73	1.02	0.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	0	57	341	0	284	9	1500	132	178	2201	11
Future Volume (veh/h)	108	0	57	341	0	284	9	1500	132	178	2201	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1796	1870	1870	1841	1870
Adj Flow Rate, veh/h	117	0	62	371	0	309	10	1630	143	193	2392	12
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	7	2	2	4	2
Cap, veh/h	274	0	106	416	212	314	48	1786	830	293	2302	1043
Arrive On Green	0.07	0.00	0.07	0.12	0.00	0.11	0.52	0.52	0.52	0.17	1.00	1.00
Sat Flow, veh/h	1781	0	1585	3456	1870	1585	146	3413	1585	3456	3497	1585
Grp Volume(v), veh/h	117	0	62	371	0	309	10	1630	143	193	2392	12
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1728	1870	1585	146	1706	1585	1728	1749	1585
Q Serve(g_s), s	9.1	0.0	5.7	15.9	0.0	12.8	0.0	65.4	3.7	7.8	98.7	0.0
Cycle Q Clear(g_c), s	9.1	0.0	5.7	15.9	0.0	12.8	78.5	65.4	3.7	7.8	98.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	274	0	106	416	212	314	48	1786	830	293	2302	1043
V/C Ratio(X)	0.43	0.00	0.59	0.89	0.00	0.98	0.21	0.91	0.17	0.66	1.04	0.01
Avail Cap(c_a), veh/h	324	0	106	445	212	314	48	1786	830	293	2302	1043
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	0.0	68.0	65.0	0.0	37.5	75.0	32.6	5.2	60.2	0.0	0.0
Incr Delay (d2), s/veh	1.1	0.0	8.2	18.9	0.0	46.1	9.6	8.6	0.5	5.3	29.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	2.5	8.0	0.0	8.3	0.5	27.5	2.5	3.4	9.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.4	0.0	76.1	83.9	0.0	83.6	84.6	41.3	5.7	65.6	29.9	0.0
LnGrp LOS	E	A	E	F	A	F	F	D	A	E	F	A
Approach Vol, veh/h		179			680			1783			2597	
Approach Delay, s/veh		65.8			83.8			38.6			32.4	
Approach LOS		E			F			D			C	

Timer - Assigned Phs	1	2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s	20.2	86.0	26.3	17.5		106.2	19.3	24.5				
Change Period (Y+Rc), s	7.5	7.5	8.2	7.5		7.5	8.2	7.5				
Max Green Setting (Gmax), s	11.5	78.5	19.3	10.0		97.5	15.3	14.0				
Max Q Clear Time (g_c+I1), s	9.8	80.5	17.9	7.7		100.7	11.1	14.8				
Green Ext Time (p_c), s	0.1	0.0	0.2	0.0		0.0	0.1	0.0				

Intersection Summary	
HCM 6th Ctrl Delay	42.3
HCM 6th LOS	D

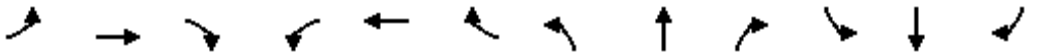
Notes

User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	113	151	220	179	24	2024	51	62	2229	26
v/c Ratio	0.63	0.67	0.60	0.84	0.19	0.86	0.04	0.42	0.94	0.03
Control Delay	79.1	25.0	70.5	46.8	16.7	22.9	0.0	25.9	19.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.1	25.0	70.5	46.8	16.7	22.9	0.0	25.9	19.3	0.0
Queue Length 50th (ft)	108	4	107	31	10	607	0	11	784	0
Queue Length 95th (ft)	171	76	147	#162	m12	m651	m0	m20	#1357	m0
Internal Link Dist (ft)						560			559	
Turn Bay Length (ft)	200	100	200	200	350		150	250		150
Base Capacity (vph)	180	227	366	214	129	2356	1142	147	2361	949
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.67	0.60	0.84	0.19	0.86	0.04	0.42	0.94	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	0	139	202	0	165	22	1862	47	57	2051	24
Future Volume (veh/h)	104	0	139	202	0	165	22	1862	47	57	2051	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1870	1826	1870	1870	1870	1604	1811	1870	1870	1841	1574
Adj Flow Rate, veh/h	113	0	108	220	0	136	24	2024	51	62	2229	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	2	5	2	2	2	20	6	2	2	4	22
Cap, veh/h	240	97	126	260	97	156	170	2122	977	236	2217	845
Arrive On Green	0.08	0.00	0.05	0.08	0.00	0.05	0.06	1.00	1.00	0.09	1.00	1.00
Sat Flow, veh/h	1711	1870	1547	3456	1870	1585	1527	3441	1585	1781	3497	1334
Grp Volume(v), veh/h	113	0	108	220	0	136	24	2024	51	62	2229	26
Grp Sat Flow(s),veh/h/ln	1711	1870	1547	1728	1870	1585	1527	1721	1585	1781	1749	1334
Q Serve(g_s), s	0.0	0.0	7.7	9.4	0.0	5.7	1.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	0.0	7.7	9.4	0.0	5.7	1.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	240	97	126	260	97	156	170	2122	977	236	2217	845
V/C Ratio(X)	0.47	0.00	0.86	0.85	0.00	0.87	0.14	0.95	0.05	0.26	1.01	0.03
Avail Cap(c_a), veh/h	240	97	126	260	122	178	196	2122	977	236	2217	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	0.0	39.1	68.5	0.0	66.7	13.0	0.0	0.0	18.7	0.0	0.0
Incr Delay (d2), s/veh	1.4	0.0	40.5	21.8	0.0	32.0	0.4	11.3	0.1	0.6	20.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	4.4	5.0	0.0	6.5	0.3	3.3	0.0	1.2	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.4	0.0	79.6	90.2	0.0	98.6	13.4	11.3	0.1	19.2	20.5	0.1
LnGrp LOS	E	A	E	F	A	F	B	B	A	B	F	A
Approach Vol, veh/h		221			356			2099			2317	
Approach Delay, s/veh		71.3			93.5			11.1			20.2	
Approach LOS		E			F			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	100.0	19.5	16.0	11.9	102.6	19.5	16.0
Change Period (Y+Rc), s	7.5	7.5	8.2	8.2	7.5	7.5	8.2	8.2
Max Green Setting (Gmax), s	7.0	92.5	9.3	9.8	7.0	92.5	11.3	7.8
Max Q Clear Time (g_c+I1), s	2.0	2.0	2.0	7.7	3.0	2.0	11.4	9.7
Green Ext Time (p_c), s	0.0	34.4	0.1	0.1	0.0	42.8	0.0	0.0

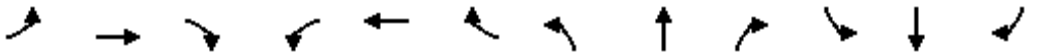
Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	130	98	220	179	25	2263	51	62	1985	35
v/c Ratio	0.67	0.52	0.58	0.78	0.15	0.98	0.05	0.34	0.80	0.03
Control Delay	80.1	16.1	69.2	46.8	4.9	20.2	0.0	21.6	14.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.1	16.1	69.2	46.8	4.9	20.2	0.0	21.6	14.4	0.0
Queue Length 50th (ft)	124	0	107	56	2	755	0	22	441	0
Queue Length 95th (ft)	191	39	146	#146	m3	#1400	m0	m45	537	m0
Internal Link Dist (ft)						513			659	
Turn Bay Length (ft)	250	100	150	150	250		150	250		250
Base Capacity (vph)	195	188	387	229	164	2312	1124	181	2474	1046
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.52	0.57	0.78	0.15	0.98	0.05	0.34	0.80	0.03

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	0	90	202	0	165	23	2082	47	57	1826	32
Future Volume (veh/h)	120	0	90	202	0	165	23	2082	47	57	1826	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1796	1870	1870	1841	1693
Adj Flow Rate, veh/h	130	0	98	220	0	179	25	2263	51	62	1985	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	7	2	2	4	14
Cap, veh/h	163	87	169	271	172	214	266	2208	1026	125	2203	904
Arrive On Green	0.03	0.00	0.05	0.08	0.00	0.09	0.12	1.00	1.00	0.09	1.00	1.00
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	1781	3413	1585	1781	3497	1434
Grp Volume(v), veh/h	130	0	98	220	0	179	25	2263	51	62	1985	35
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1781	1706	1585	1781	1749	1434
Q Serve(g_s), s	1.9	0.0	0.0	9.4	0.0	13.3	0.0	97.1	0.0	2.2	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	9.4	0.0	13.3	0.0	97.1	0.0	2.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	163	87	169	271	172	214	266	2208	1026	125	2203	904
V/C Ratio(X)	0.80	0.00	0.58	0.81	0.00	0.84	0.09	1.02	0.05	0.50	0.90	0.04
Avail Cap(c_a), veh/h	187	97	178	299	172	214	266	2208	1026	131	2203	904
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	0.0	63.8	68.0	0.0	41.4	13.7	0.0	0.0	33.9	0.0	0.0
Incr Delay (d2), s/veh	18.6	0.0	4.2	14.2	0.0	24.0	0.2	25.8	0.1	3.0	6.5	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	3.7	4.6	0.0	6.6	0.4	7.9	0.0	1.3	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.3	0.0	68.0	82.2	0.0	65.4	13.8	25.8	0.1	37.0	6.5	0.1
LnGrp LOS	F	A	E	F	A	E	B	F	A	D	A	A
Approach Vol, veh/h		228			399			2339			2082	
Approach Delay, s/veh		79.0			74.7			25.1			7.3	
Approach LOS		E			E			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	104.6	9.5	22.0	16.5	102.0	16.3	15.2
Change Period (Y+Rc), s	7.5	7.5	4.5	8.2	7.5	7.5	4.5	8.2
Max Green Setting (Gmax), s	7.0	94.5	7.0	13.8	7.0	94.5	13.0	7.8
Max Q Clear Time (g_c+I1), s	4.2	99.1	3.9	15.3	2.0	2.0	11.4	2.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	32.6	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	24.1
HCM 6th LOS	C

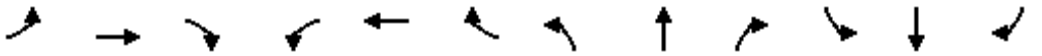
Lane Group	EBL	EBR	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	162	118	243	139	38	2459	39	51	1713	38
v/c Ratio	0.88	0.72	0.68	0.85	0.19	1.00	0.03	0.38	0.70	0.03
Control Delay	106.1	44.0	74.7	64.6	2.0	20.3	0.0	22.4	5.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.1	44.0	74.7	64.6	2.0	20.3	0.0	22.4	5.4	0.1
Queue Length 50th (ft)	158	25	119	46	2	~901	0	4	120	0
Queue Length 95th (ft)	#286	#116	167	#169	m2	m#1384	m0	m32	180	m0
Internal Link Dist (ft)						604			536	
Turn Bay Length (ft)	250	100	250	100	250		150	250		250
Base Capacity (vph)	195	166	379	166	200	2449	1142	138	2449	1142
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.71	0.64	0.84	0.19	1.00	0.03	0.37	0.70	0.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	0	109	224	0	128	35	2262	36	47	1576	35
Future Volume (veh/h)	149	0	109	224	0	128	35	2262	36	47	1576	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	0	118	243	0	139	38	2459	39	51	1713	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	283	114	194	293	87	171	211	2073	925	234	2073	925
Arrive On Green	0.10	0.00	0.06	0.08	0.00	0.05	0.12	1.00	1.00	0.06	0.58	0.58
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	162	0	118	243	0	139	38	2459	39	51	1713	38
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	12.8	0.0	1.7	10.4	0.0	2.2	0.0	0.0	0.0	0.0	58.2	0.8
Cycle Q Clear(g_c), s	12.8	0.0	1.7	10.4	0.0	2.2	0.0	0.0	0.0	0.0	58.2	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	283	114	194	293	87	171	211	2073	925	234	2073	925
V/C Ratio(X)	0.57	0.00	0.61	0.83	0.00	0.81	0.18	1.19	0.04	0.22	0.83	0.04
Avail Cap(c_a), veh/h	303	114	194	382	87	172	211	2073	925	234	2073	925
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	0.0	34.1	67.6	0.0	34.9	44.4	0.0	0.0	15.4	25.1	3.5
Incr Delay (d2), s/veh	2.3	0.0	5.3	11.3	0.0	24.6	0.4	89.0	0.1	0.5	3.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.0	0.0	3.3	5.1	0.0	4.8	1.1	25.6	0.0	1.0	23.9	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	0.0	39.4	78.9	0.0	59.6	44.8	89.0	0.1	15.9	29.1	3.6
LnGrp LOS	E	A	D	E	A	E	D	F	A	B	C	A
Approach Vol, veh/h		280			382			2536			1802	
Approach Delay, s/veh		52.7			71.8			87.0			28.2	
Approach LOS		D			E			F			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	95.0	23.1	15.2	16.7	95.0	20.9	17.4
Change Period (Y+Rc), s	7.5	7.5	8.2	8.2	7.5	7.5	8.2	8.2
Max Green Setting (Gmax), s	7.5	87.5	16.6	7.0	7.5	87.5	16.6	7.0
Max Q Clear Time (g_c+I1), s	2.0	2.0	14.8	4.2	2.0	60.2	12.4	3.7
Green Ext Time (p_c), s	0.0	51.9	0.1	0.1	0.0	15.2	0.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	62.7
HCM 6th LOS	E

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	0	0	41	0	0	39	14	2406	130	2	63	1600	14
Future Vol, veh/h	0	0	41	0	0	39	14	2406	130	2	63	1600	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	-	-	-	-	-	-	200	-	150	-	200	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	50	2	2	2	50	7	2	2	2	4	2
Mvmt Flow	0	0	45	0	0	42	15	2615	141	2	68	1739	15

Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	-	-	870	-	-	1308	1754	0	0	2615	2756	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.9	-	-	6.94	5.1	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.8	-	-	3.32	2.7	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	0	0	215	0	0	150	200	-	-	29	142	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-	-
Platoon blocked, %								-	-			-	-
Mov Cap-1 Maneuver	-	-	215	-	-	150	200	-	-	121	121	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.1	38.2	0.1	2.7
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	200	-	-	215	150	121	-	-
HCM Lane V/C Ratio	0.076	-	-	0.207	0.283	0.584	-	-
HCM Control Delay (s)	24.5	-	-	26.1	38.2	70.3	-	-
HCM Lane LOS	C	-	-	D	E	F	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.8	1.1	2.9	-	-

Lane Group	EBL	EBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	197	1389	1346	26	1634
v/c Ratio	0.37	0.89	0.55	0.99	0.09	0.59
Control Delay	70.5	73.7	8.7	27.3	0.4	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	70.5	73.7	8.7	27.3	0.4	1.4
Queue Length 50th (ft)	54	109	233	~534	0	1
Queue Length 95th (ft)	102	#248	m234	m#607	m0	1
Internal Link Dist (ft)			446			347
Turn Bay Length (ft)		275		400	150	
Base Capacity (vph)	171	234	2542	1356	291	2792
Starvation Cap Reductn	0	0	0	0	0	713
Spillback Cap Reductn	0	0	8	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.84	0.55	0.99	0.09	0.79

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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95th percentile volume exceeds capacity, queue may be longer.
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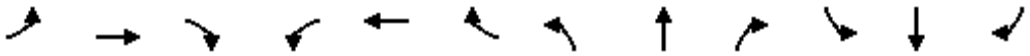
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	53	0	181	0	0	0	0	1278	1238	24	1503	0
Future Volume (veh/h)	53	0	181	0	0	0	0	1278	1238	24	1503	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1841	0	1870				0	1811	1752	1870	1841	0
Adj Flow Rate, veh/h	58	0	0				0	1389	1346	26	1634	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	0	2				0	6	10	2	4	0
Cap, veh/h	75	0					0	2656	1146	183	2983	0
Arrive On Green	0.04	0.00	0.00				0.00	1.00	1.00	0.06	1.00	0.00
Sat Flow, veh/h	1753	0	1585				0	3532	1485	1781	3589	0
Grp Volume(v), veh/h	58	0	0				0	1389	1346	26	1634	0
Grp Sat Flow(s),veh/h/ln	1753	0	1585				0	1721	1485	1781	1749	0
Q Serve(g_s), s	4.9	0.0	0.0				0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0				0.0	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	75	0					0	2656	1146	183	2983	0
V/C Ratio(X)	0.78	0.00					0.00	0.52	1.17	0.14	0.55	0.00
Avail Cap(c_a), veh/h	173	0					0	2656	1146	212	2983	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	2.00	2.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	1.00	0.51	0.51	0.00
Uniform Delay (d), s/veh	71.1	0.0	0.0				0.0	0.0	0.0	2.5	0.0	0.0
Incr Delay (d2), s/veh	15.8	0.0	0.0				0.0	0.7	88.0	0.2	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0				0.0	0.3	28.0	0.1	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.9	0.0	0.0				0.0	0.7	88.0	2.7	0.4	0.0
LnGrp LOS	F	A					A	A	F	A	A	A
Approach Vol, veh/h		58						2735			1660	
Approach Delay, s/veh		86.9						43.7			0.4	
Approach LOS		F						D			A	

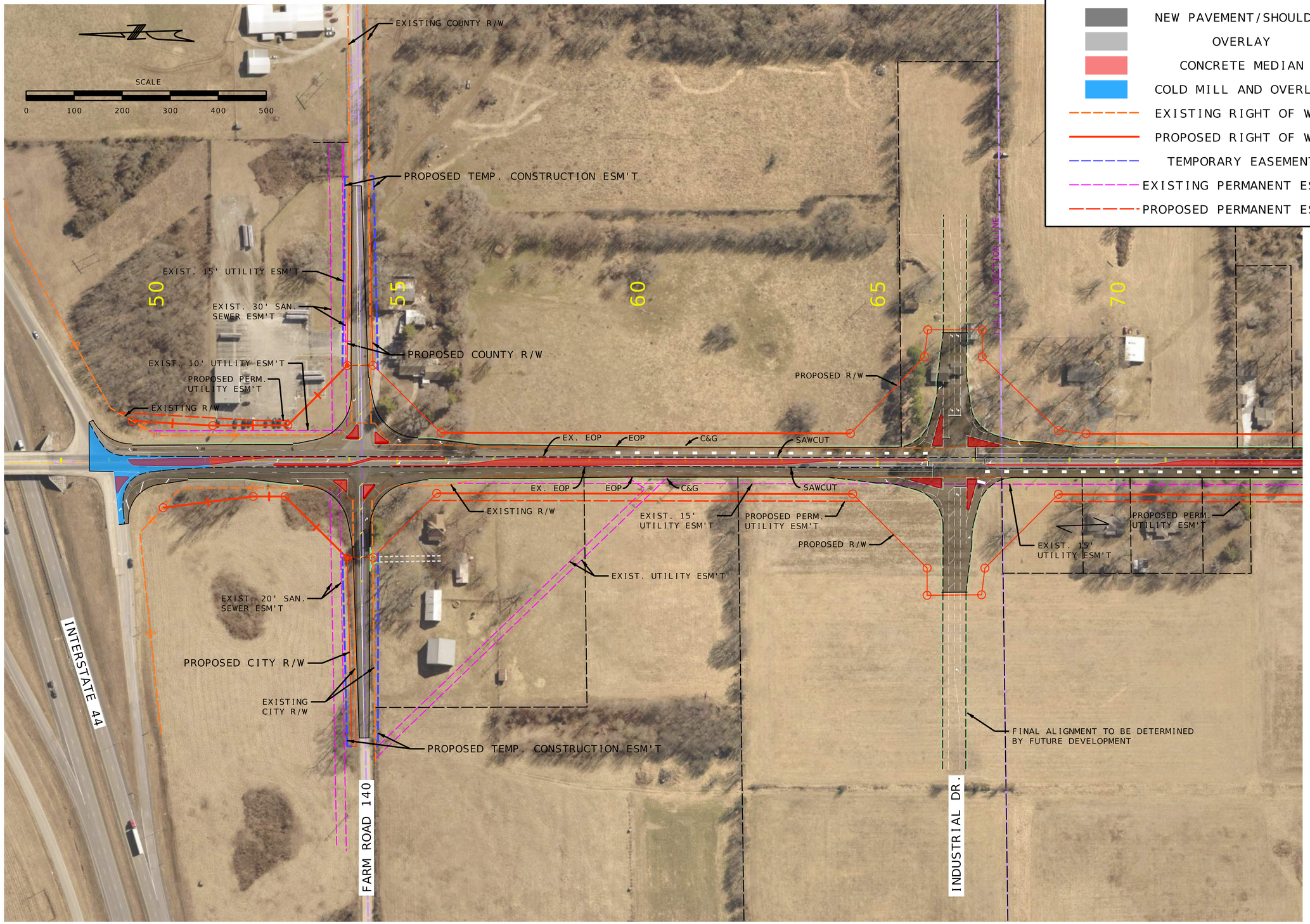
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.1	123.3		14.6		135.4
Change Period (Y+Rc), s	7.5	7.5		8.2		7.5
Max Green Setting (Gmax), s	7.1	104.9		14.8		119.5
Max Q Clear Time (g_c+I1), s	2.4	2.0		6.9		2.0
Green Ext Time (p_c), s	0.0	48.3		0.1		20.5

Intersection Summary		
HCM 6th Ctrl Delay		28.1
HCM 6th LOS		C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Future Improved Exhibit



LEGEND

- NEW PAVEMENT/SHOULDER
- OVERLAY
- CONCRETE MEDIAN
- COLD MILL AND OVERLAY
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- EXISTING PERMANENT ESM'T
- PROPOSED PERMANENT ESM'T

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED 3/10/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	1

COUNTY: GREENE

JOB NO.: J8S0836B

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

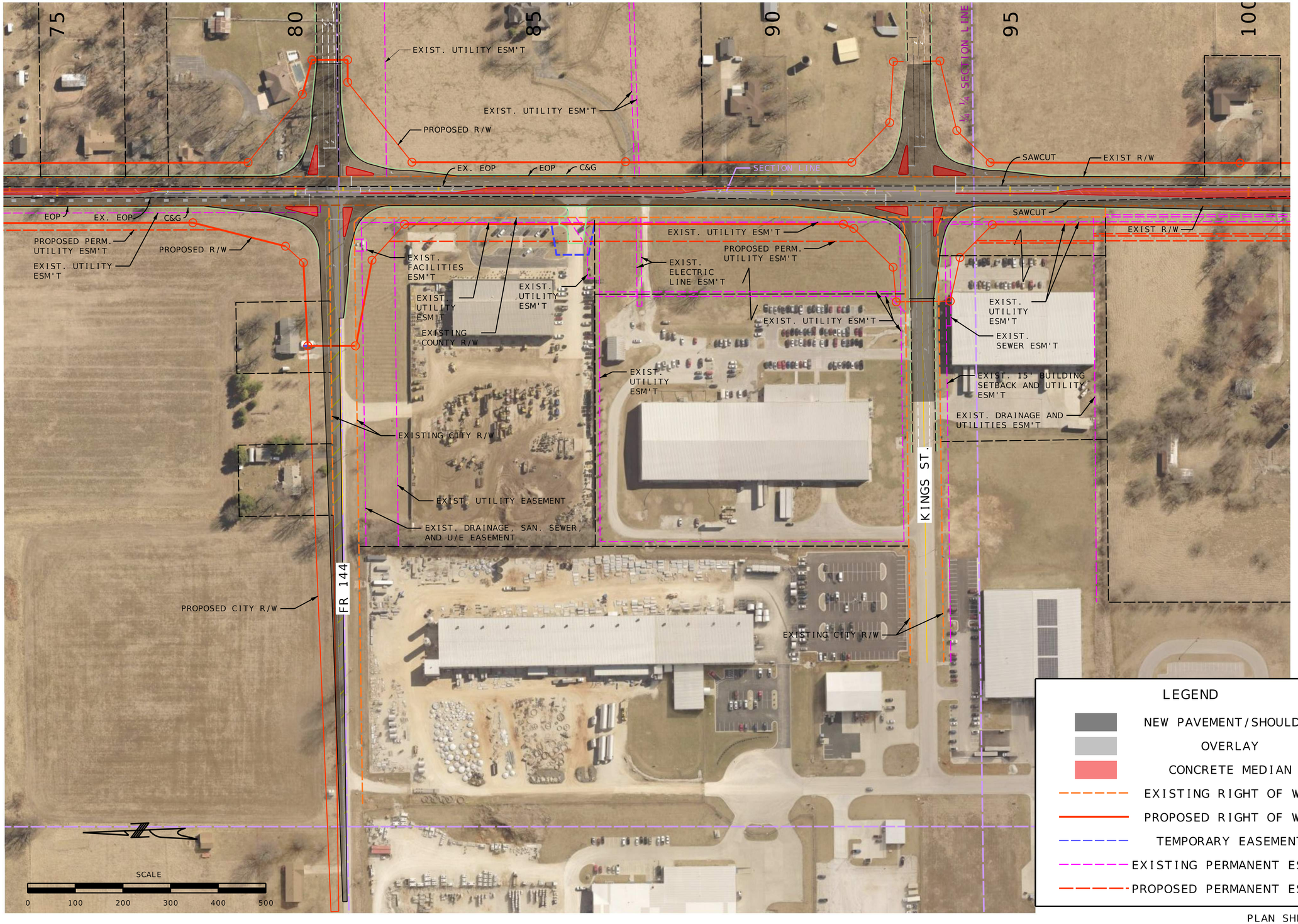
DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

olsson
550 ST. LOUIS STREET
SPRINGFIELD, MO 65806
CERTIFICATE OF AUTHORITY NO. 001592

PLAN SHEET
SHEET 1 OF 4



LEGEND

- NEW PAVEMENT/SHOULDER
- OVERLAY
- CONCRETE MEDIAN
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- TEMPORARY EASEMENT
- EXISTING PERMANENT ESM'T
- PROPOSED PERMANENT ESM'T

PLAN SHEET
SHEET 2 OF 4

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED	3/10/2023
ROUTE	MM
STATE	MO
DISTRICT	SW
SHEET NO.	2
COUNTY	GREENE
JOB NO.	J8S0836B
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	

DESCRIPTION

DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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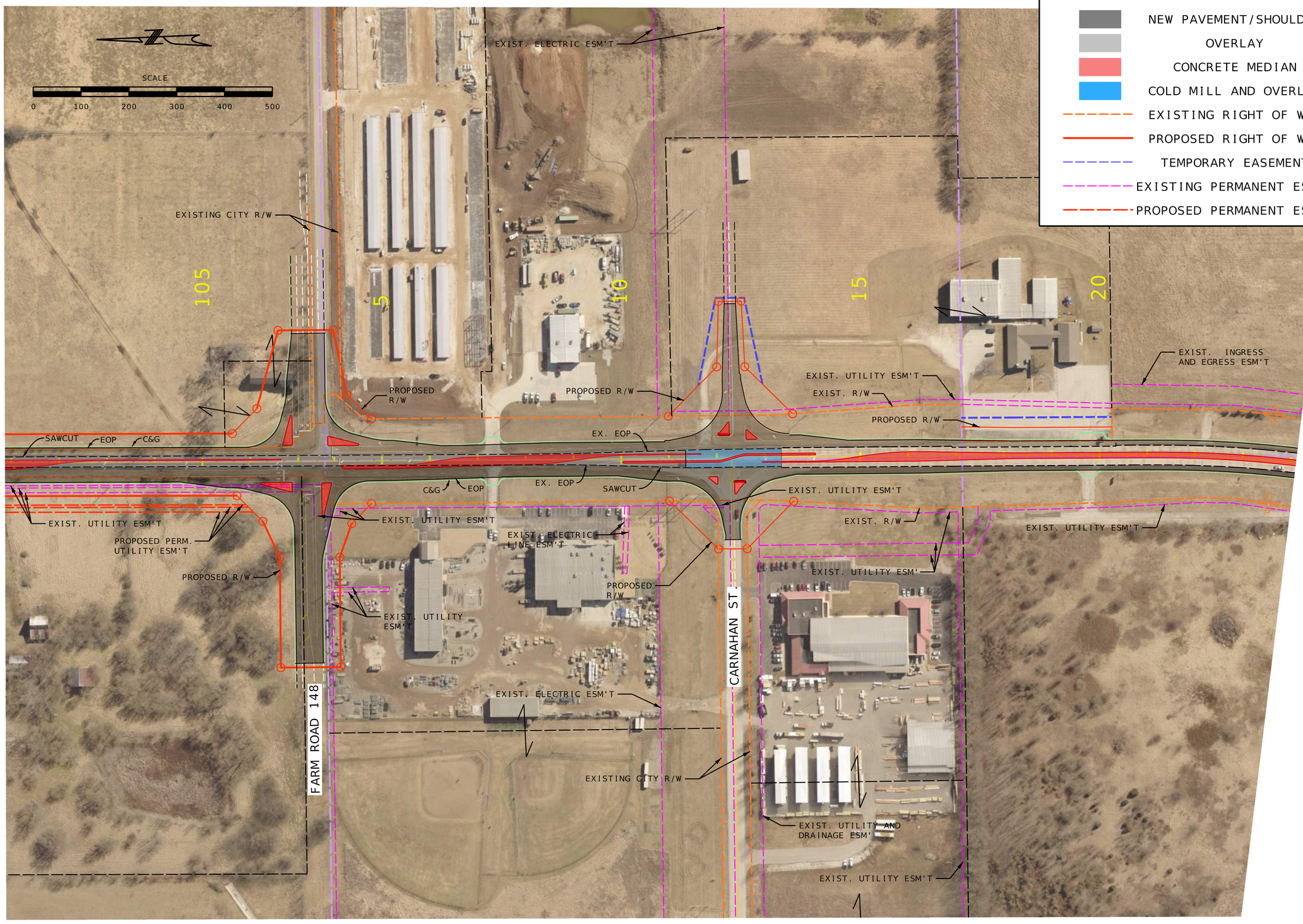

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED
3/10/2023

ROUTE	STATE
MM	MO
DISTRICT	SHEET NO.
SW	3

COUNTY
GREENE

JOB NO.
J8S0836B

CONTRACT ID.

PROJECT NO.

BRIDGE NO.

DESCRIPTION	DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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olsson
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SPRINGFIELD, MO 65806
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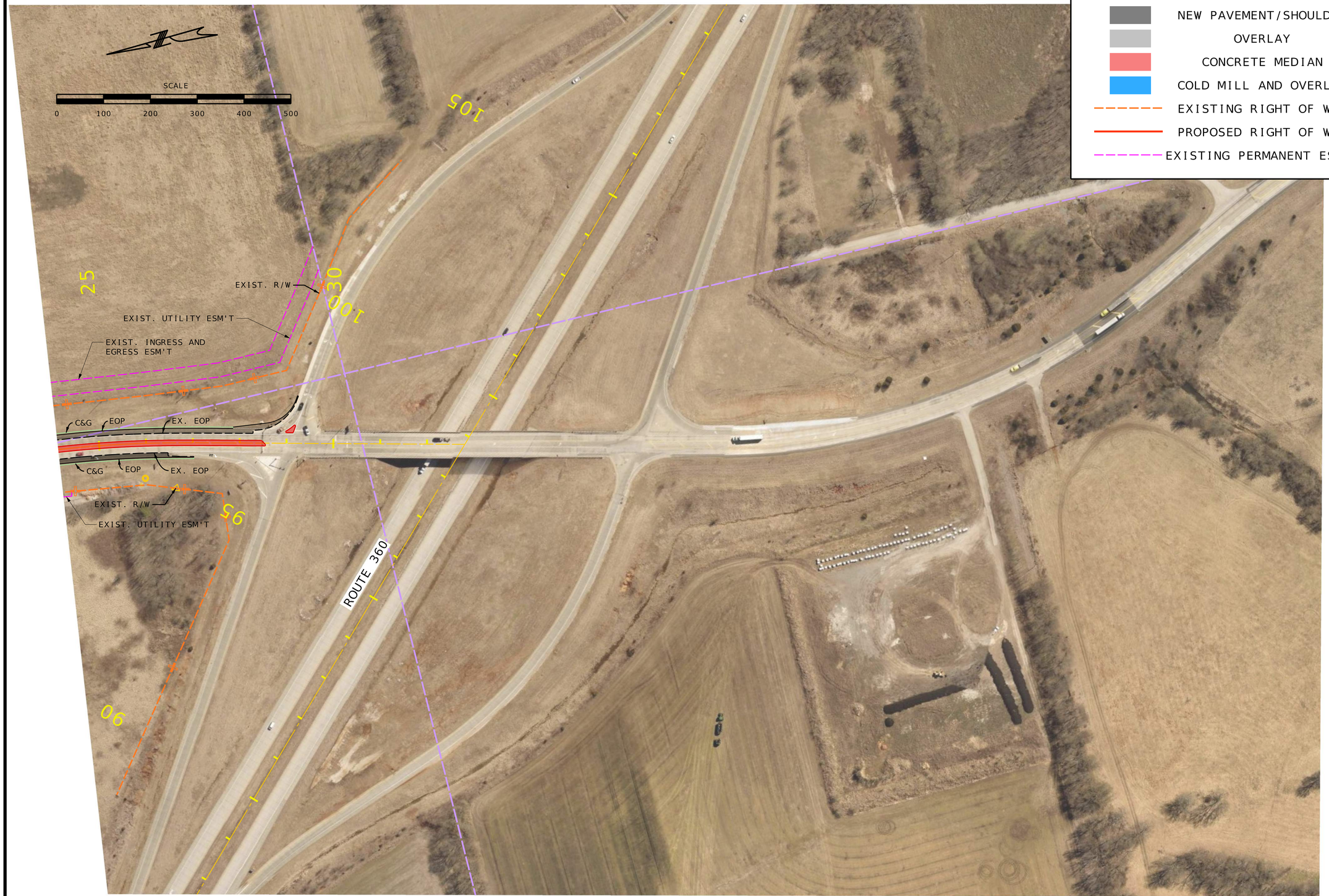
PLAN SHEET
SHEET 3 OF 4



LEGEND

- NEW PAVEMENT/SHOULDER
- OVERLAY
- CONCRETE MEDIAN
- COLD MILL AND OVERLAY
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- EXISTING PERMANENT ESM'T

PLAN SHEET
SHEET 4 OF 4

CONCEPT PLANS NOT FOR CONSTRUCTION

DATE PREPARED: 3/10/2023

ROUTE	STATE
MM	MO

DISTRICT	SHEET NO.
SW	4

COUNTY: GREENE

JOB NO.: J8S0836B

CONTRACT ID.:

PROJECT NO.:

BRIDGE NO.:

DESCRIPTION	DATE

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Project J8S0836B - ROUTE MM Design Criteria			
Roadway	**ROUTE MM**	**FARM ROAD 144**	**Notes**
Classification	Minor Aterial		Springfield_6.pdf (modot.org)
Number of Traffic Lanes	2	2	
Width of Traffic Lanes	12'	12'	
Number of Parking Lanes	-	-	
Left Turn Lane	14'	14	
Bike Lane	-	-	
Width of Median	-	-	
Lighting			
Right-of-Way Width - Existing	60'		
Design Speed	45 mph	45 mph	
Posted Speed	55 mph		Existing posted speed is 55 mph, lowering to 45 mph.
Design Vehicle	WB-67	WB-67	
Current AADT (2019)	9565		
Future AADT (2039)	15600		From concept plans
HORIZONTAL ALIGNMENT			
Stopping Site Distance	495	495	Intersection Sight Distance (AASHTO Table 9-7)
Minimum Horizontal Curve Length	15x Design Speed (825' Min.)	15x Design Speed (825' Min.)	AASHTO - 3.3.13
Roadway Cross-Slope	2%	2%	AASHTO - 4.2.2.1
Superelevation eMax	NC	NC	Use 200' min for Minor roadways.
Minimum Radii Horizontal Curve	-	-	
Superelevation Runoff, L	N/A	N/A	
Percent Runoff Length Prior to Curve	N/A	N/A	
Minimum Tangent between Reverse Curves	N/A	N/A	No Reverse Curves in Alignment
Clear Zone	6:1 = 22'-24' or 4:1 = 26'-32'	6:1 = 22'-24' or 4:1 = 26'-32'	AASHTO - RSDG
Lateral Offset (Horizontal Clearance)	1.5'	1.5'	AASHTO - Section 7.3.4
VERTICAL ALIGNMENT			
Minimum SSD Crest Vertical Curve	495	495	AASHTO Table 3-34
Minimum SSD Sag Vertical Curve	495	495	AASHTO Table 3-36
Maximum Grade	8%	8%	10% with specical justification.
Minimum Grade	0.5%	0.5%	AASHTO - 3.4.2.2.2
Minimum Vertical Curve Length	3x Design Speed (165')	3x Design Speed (165')	AASHTO - 3.4.6.2.1
Minimum K Crest Vertical Curve	114	114	K Values correspond to design speed as specified in Table 3-35.
Minimum K Sag Vertical Curve	115	115	K Values correspond to design speed as specified in Table 3-37.
Maximum K Type III Sag Vertical Curve-Curbed Sections	167	167	AASHTO - 3.4.6 - Fig. 3-36
MISCELLANEOUS			
Minimum Curb Return Radius	30'	30'	
Sidewalks	6'	6'	Design for future sidewalk on back of curb
Shared Use Path	10'	10'	
Minimum Greenspace	0'	0'	
Pavement Section	11. Asph / 6" Agg Base or 10" PCC / 6" Agg Base	11. Asph / 6" Agg Base or 10" PCC / 6" Agg Base	From MoDOT provided pavement design
Foreslope/Backslope - Minimum	3:1 / 2:1	3:1 / 2:1	
Foreslope/Backslope - Desirable	4:1 / 3:1	4:1 / 3:1	Desireable slopes within the clear zone.
PAVEMENT DRAINAGE DESIGN			
Maximum Gutter Spread	Up to 1/2 of the lane nearest to gutter	Up to 1/2 of the lane nearest to gutter	EPG 640.1.2.2
Design Storm	10 year for typical, 10-25 year for non-typical locations	10 year for typical, 10-25 year for non-typical locations	EPG 640.1.2.1; no critical locations
Maximum Flow Across Intersections	2.0 cfs	2.0 cfs	EPG 640.1.2.4
Maximum Inlet Spacing	400' for <=15" conduit, 500' for >=18" conduit	400' for <=15" conduit, 500' for >=18" conduit	EPG 750.4.2.5
Minimum Pipe Size	18" from storm sewer, 12" for storm sewer outlets	18" from storm sewer, 12" for storm sewer outlets	EPG 750.7.2.1
Minimum Pipe Cover	1' outside of shoulder line, 6" below agg. Base	1' outside of shoulder line, 6" below agg. Base	750.7.11.1
Min. Pipe Slope (Storm Sewer)	See EPG 750.4.2.4	See EPG 750.4.2.4	EPG 750.4.2.4
Freeboard	1' below intake of drop inlets, 2' below top of manhole covers	1' below intake of drop inlets, 2' below top of manhole covers	EPG 750.4.4.8
CROSS ROAD CULVERT DESIGN			
Design Storm	10-25 years pipe culverts; 25-50 years box culverts	10-25 years pipe culverts; 25-50 years box culverts	EPG 748.2.2.2
Minimum Pipe Size	18"	18"	EPG 750.7.2.1
Freeboard	1' below lowest shoulder point	1' below lowest shoulder point	EPG 748.2.2.2
Minimum Pipe Cover	1' outside shoulder or 6" below agg. base	1' outside shoulder or 6" below agg. base	EPG 750.7.11.1

REFERENCES
EPG = MoDOT Engineering Policy Guide
AASHTO = A Policy on Geometric Design of Highways and Streets - 2018 7th Edition
AASHTO RSDG = Roadside Design Guide 4th Edition 2011

SCALE

0 500 1,000 1,500

BEGIN IMPROVEMENTS

FARM RD. 140

EX. ROUTE MM

EXISTING LANES WIDENED TO 5 LANES

110' MINIMUM RIGHT-OF-WAY WIDTH REQUIRED

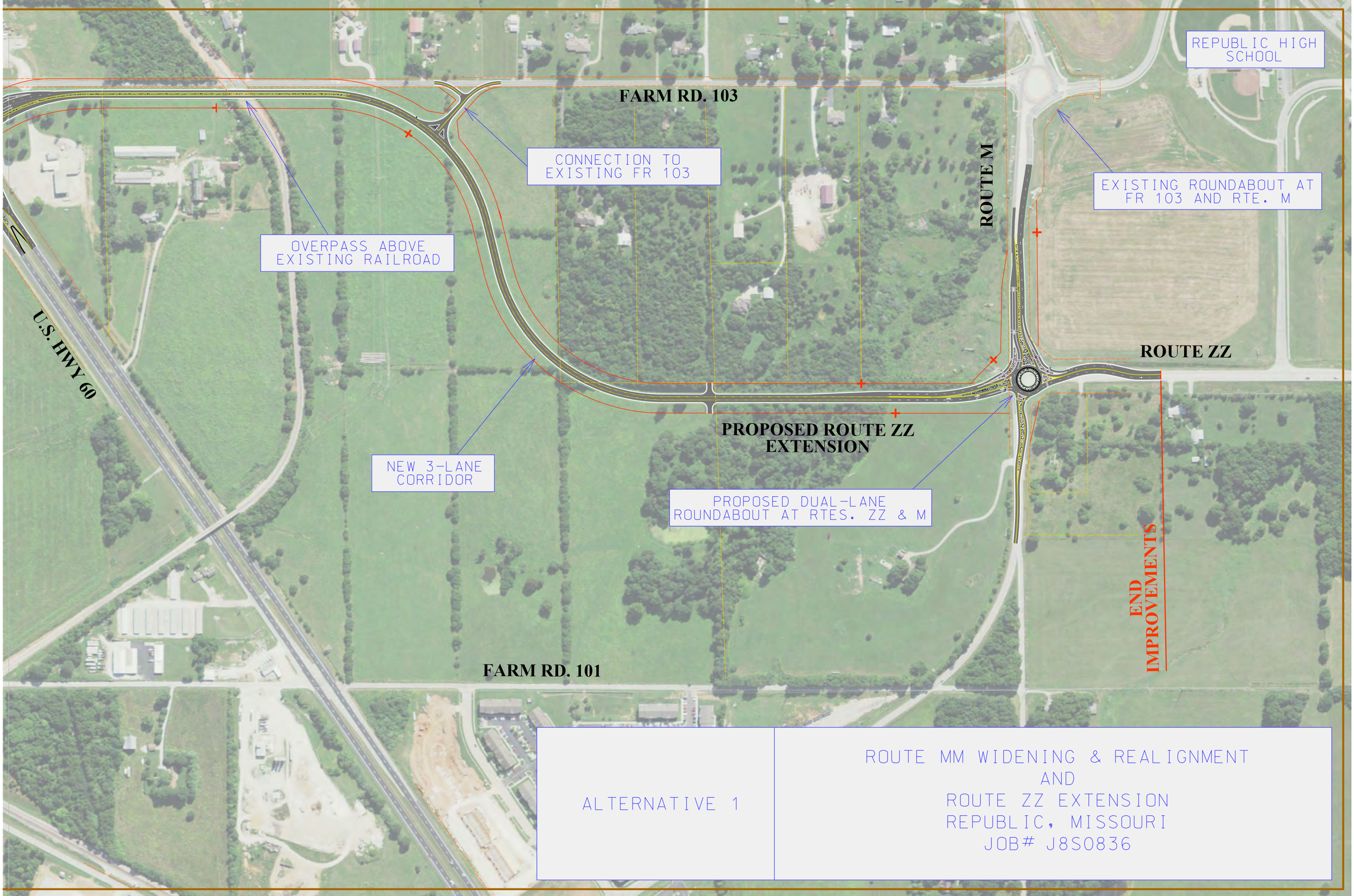
FARM RD. 144

KINGS ST.

I-44


FARM RD. 148
CARNAHAN ST.
EXISTING LANES WIDENED TO 5 LANES
INTERSECTION IMPROVEMENTS
ROUTE 360 (JAMES RIVER FREEWAY)
SAWYER RD.
FARM RD. 156


COMMERCIAL AVE.
NEW 5-LANE CORRIDOR
CONNECTION TO EXISTING COMMERCIAL AVE.
ORR ST.
PROPOSED ROUTE MM REALIGNMENT
OVERPASS ABOVE EXISTING RAILROAD
130' MINIMUM RIGHT-OF-WAY WIDTH REQUIRED
NEW SIGNALIZED INTERSECTION AT U.S. 60 & FR 103
BNSF RAILROAD
HAILE ST.
EX. ROUTE MM
FARM RD. 160
EXISTING LANES WIDENED TO 5 LANES
PROPOSED DUAL-LANE ROUNDABOUT AT RTE. MM & FR 160
LEGEND
EXISTING MODOT RIGHT-OF-WAY
EXISTING PROPERTY LINES
PROPOSED MODOT RIGHT-OF-WAY ACQUISITION
CLOSURE OF EXISTING RAILROAD CROSSINGS



ALTERNATIVE 1

ROUTE MM WIDENING & REALIGNMENT
AND
ROUTE ZZ EXTENSION
REPUBLIC, MISSOURI
JOB# J8S0836