COLLEGE DR IMR
Appendix D

DRAFT

URBAN SYSTEMS inc.

Critical Geometry and Striping Layout

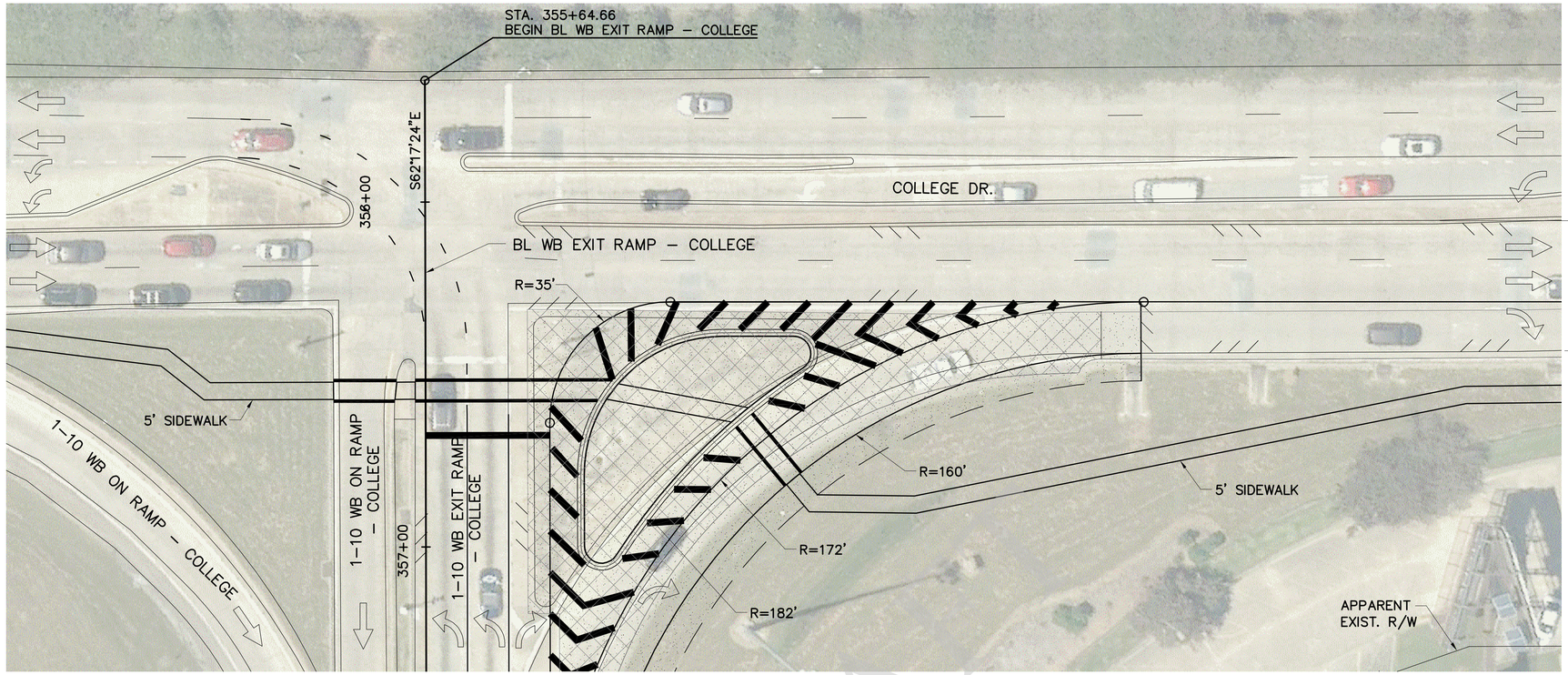
DRAFT

URBAN SYSTEMS inc.

Project # 10-085-2

OCT. 2019

LINE & GRADE STUDY - DRAFT



SEE SHEET CR07

DRAFT

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS

LICENSE #: 23094

DATE: OCT. 2019

SHEET NUMBER	CR06
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED / CHECKED	WILLIAMS
DETAILED / CHECKED	THYMES
SERIES NUMBER	1 OF 2

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
WB EXIT RAMP - COLLEGE
OPTION 2

I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

SIGMA CONSULTING GROUP

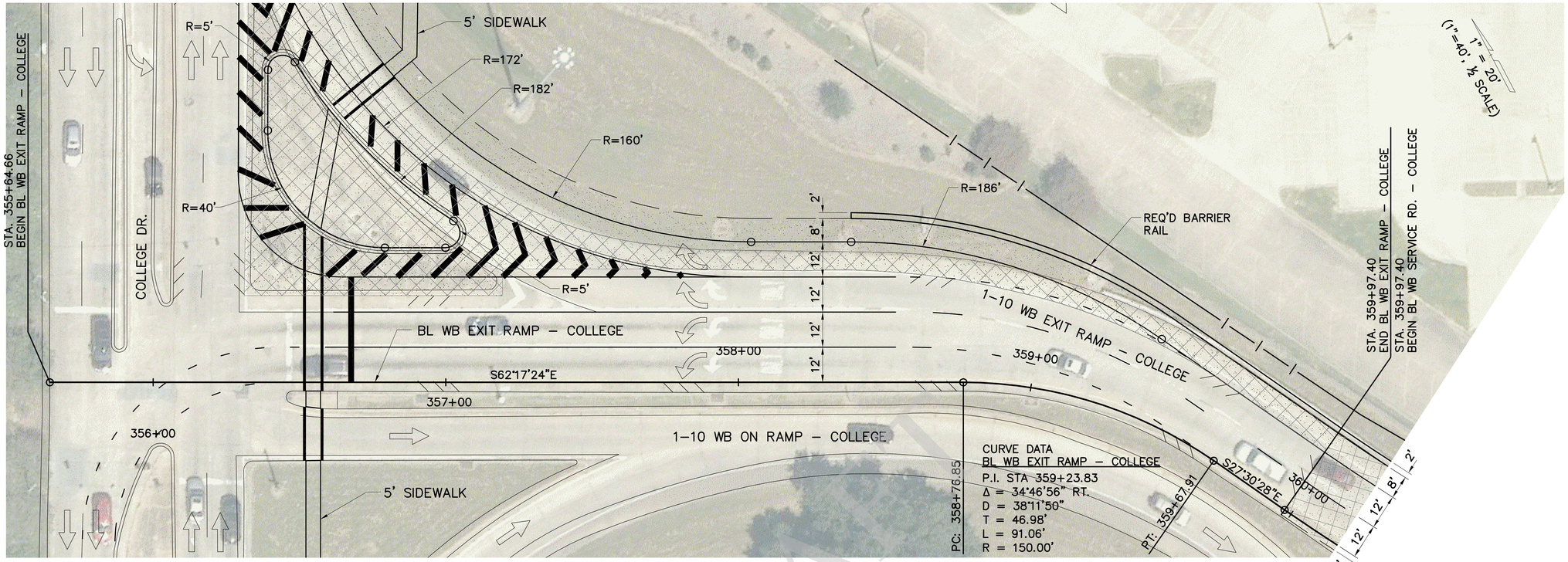
SIGMA CONSULTING GROUP, INC.

F:\020201\01013\01800\Line And Grade Study\College Drive Alternates-PIP.dwg [CR06] Oct 01, 2019 - 2:07pm

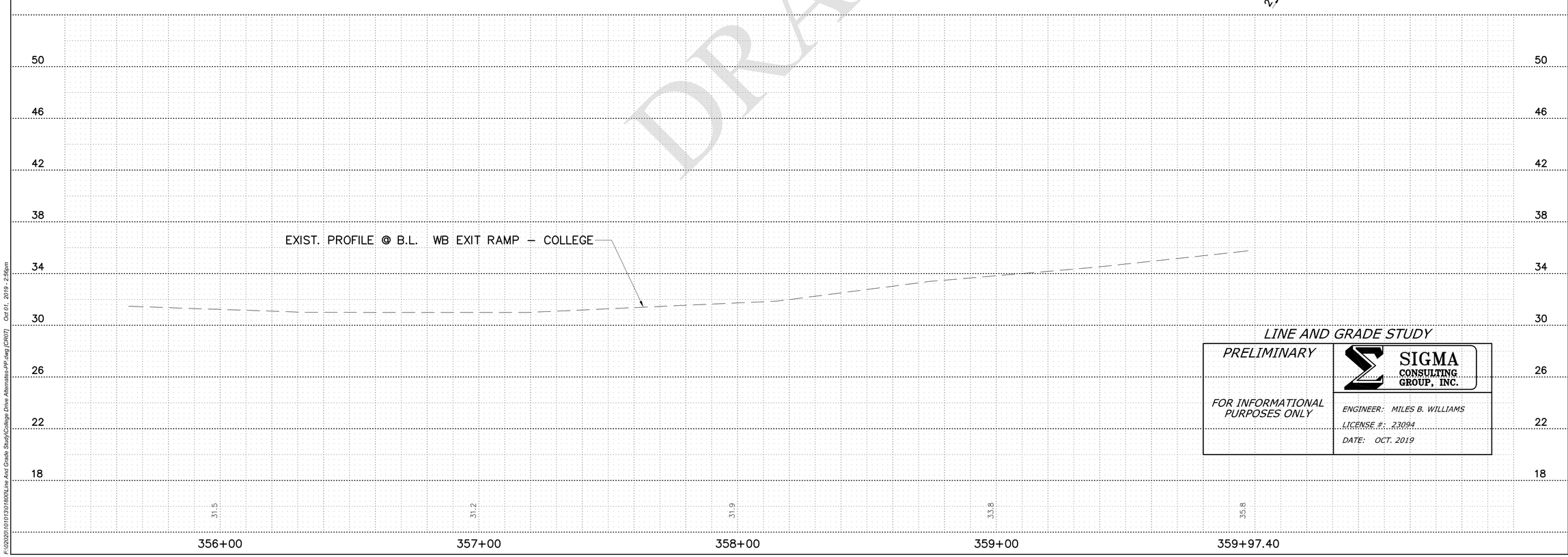
OCT. 2019

LINE & GRADE STUDY - DRAFT

SEE SHEET CR06



CURVE DATA
BL WB EXIT RAMP – COLLEGE
P.I. STA 359+23.83
Δ = 34°46'56" RT.
D = 38°11'50"
T = 46.98'
L = 91.06'
R = 150.00'



DRAFT

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	CR07

PARISH	CONTROL SECTION	STATE PROJECT
EAST BATON ROUGE	450–10	H.004100

DESIGNED	CHECKED	DETAILED	CHECKED	SERIES NUMBER	BY
WILLIAMS		THYMES		2 OF 2	

NO.	REVISION OR CHANGE ORDER DESCRIPTION	DATE

PLAN AND PROFILE
WB EXIT RAMP – COLLEGE
OPTION 2

I–10: LA 415 TO ESSEN ON I–10 AND I–12

DOTD

SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

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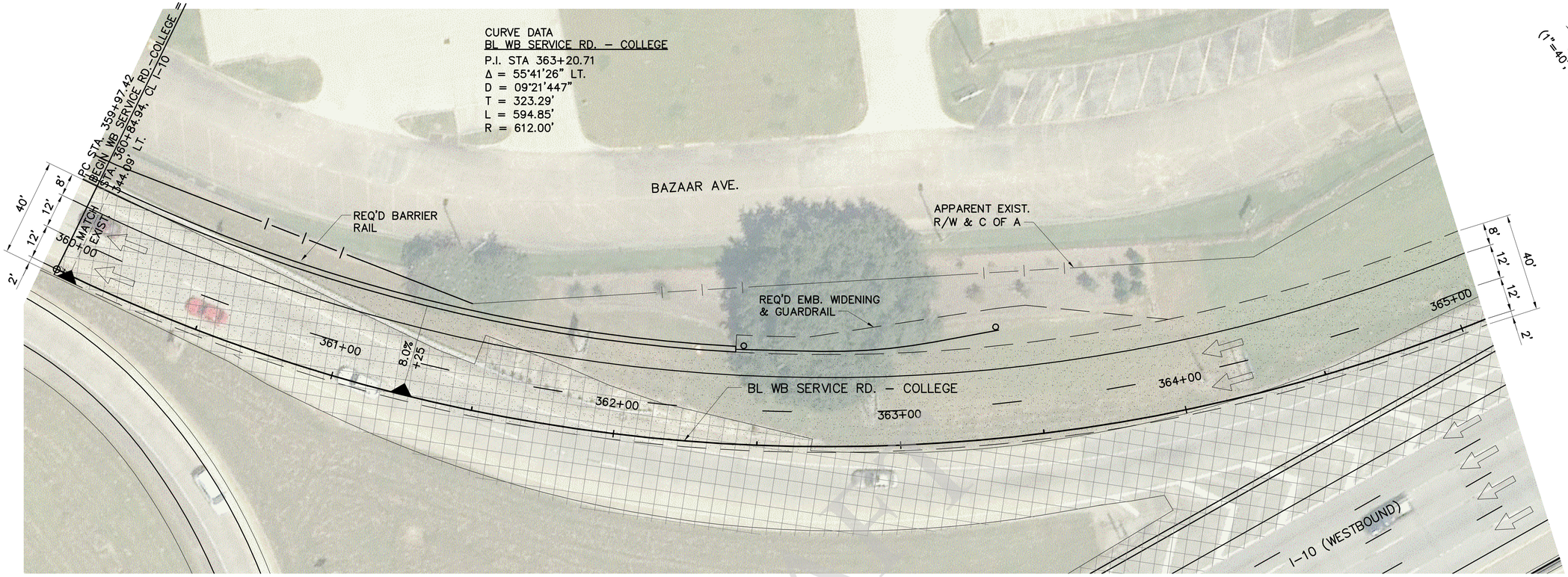
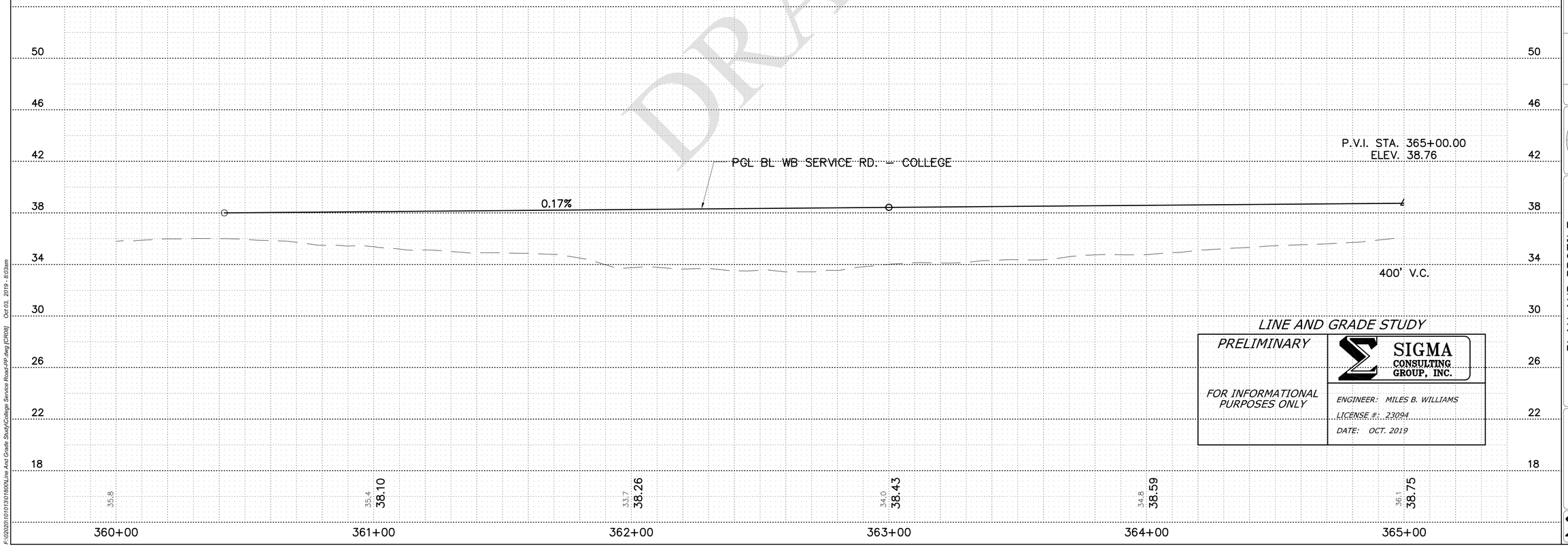
OCT. 2019

LINE & GRADE STUDY - DRAFT





LINE AND GRADE STUDY

PRELIMINARY	SIGMA CONSULTING GROUP, INC.
FOR INFORMATIONAL PURPOSES ONLY	*ENGINEER: MILES B. WILLIAMS* *LICENSE #: 23094* *DATE: OCT. 2019*

SHEET NUMBER	CR08
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	1 OF 3

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
WB SERVICE ROAD - COLLEGE
OPTION 1 & 2

I-10: LA 415 TO ESSEN ON I-10 AND I-12

SIGMA CONSULTING GROUP

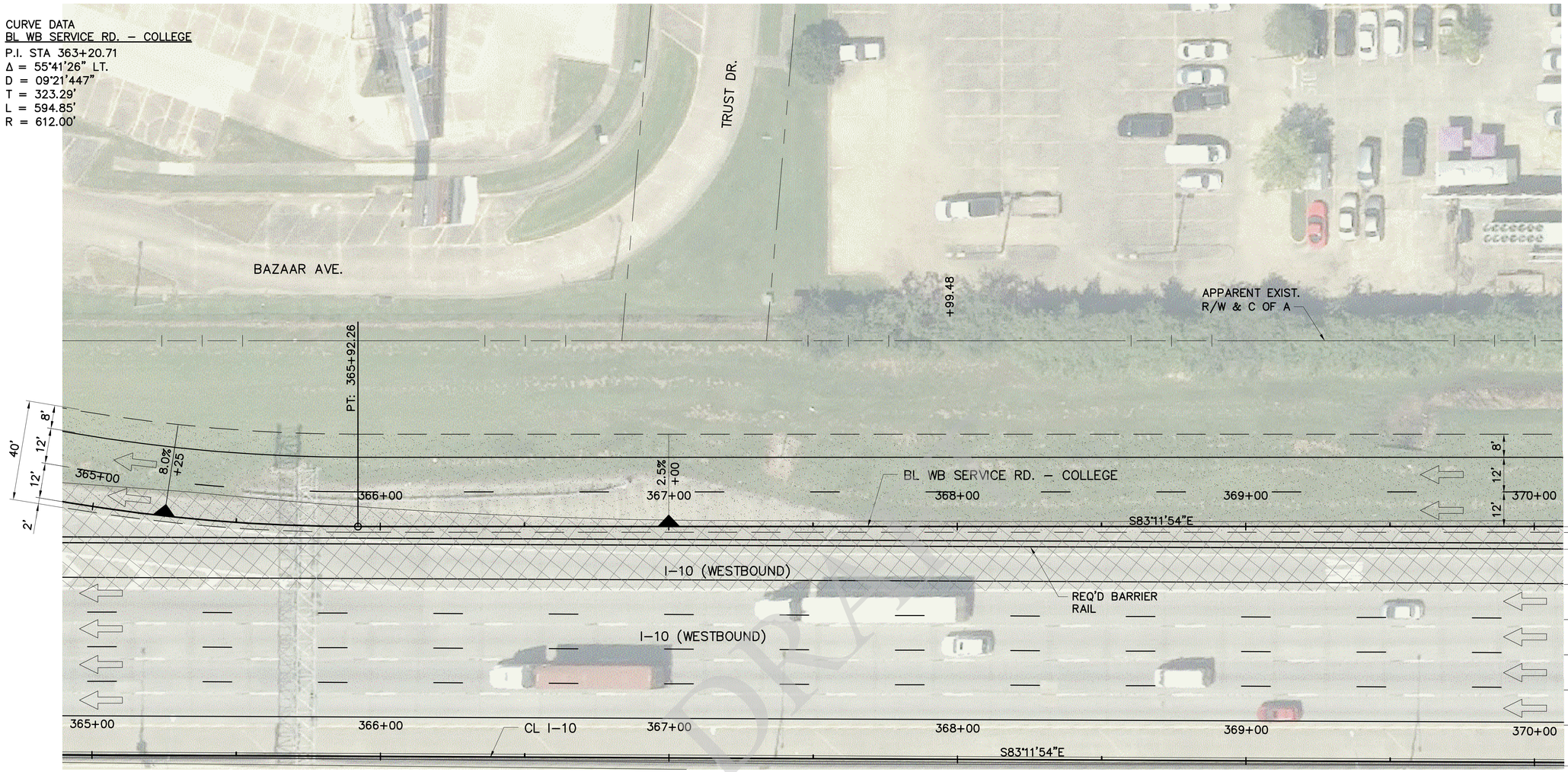
DRAFT

F:\2020\2010101301800\Line And Grade Study\College Service Road-PP.dwg [CR08] Oct 03, 2019 - 8:03am

OCT. 2019

LINE & GRADE STUDY - DRAFT

CURVE DATA
BL WB SERVICE RD. – COLLEGE
P.I. STA 363+20.71
Δ = 55°41'26" LT.
D = 09°21'447"
T = 323.29'
L = 594.85'
R = 612.00'



1" = 20'
(1"=40', ½ SCALE)

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	CR09		
PARISH	EAST BATON ROUGE	CONTROL SECTION	450-10
STATE PROJECT	H.004100		
DESIGNED	WILLIAMS	SERIES NUMBER	2 OF 3
CHECKED			
DETAILED	THYMES		
CHECKED			

NO.	REVISION OR CHANGE ORDER DESCRIPTION	DATE	BY

PLAN AND PROFILE
WB SERVICE RD - COLLEGE
OPTION 2

I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

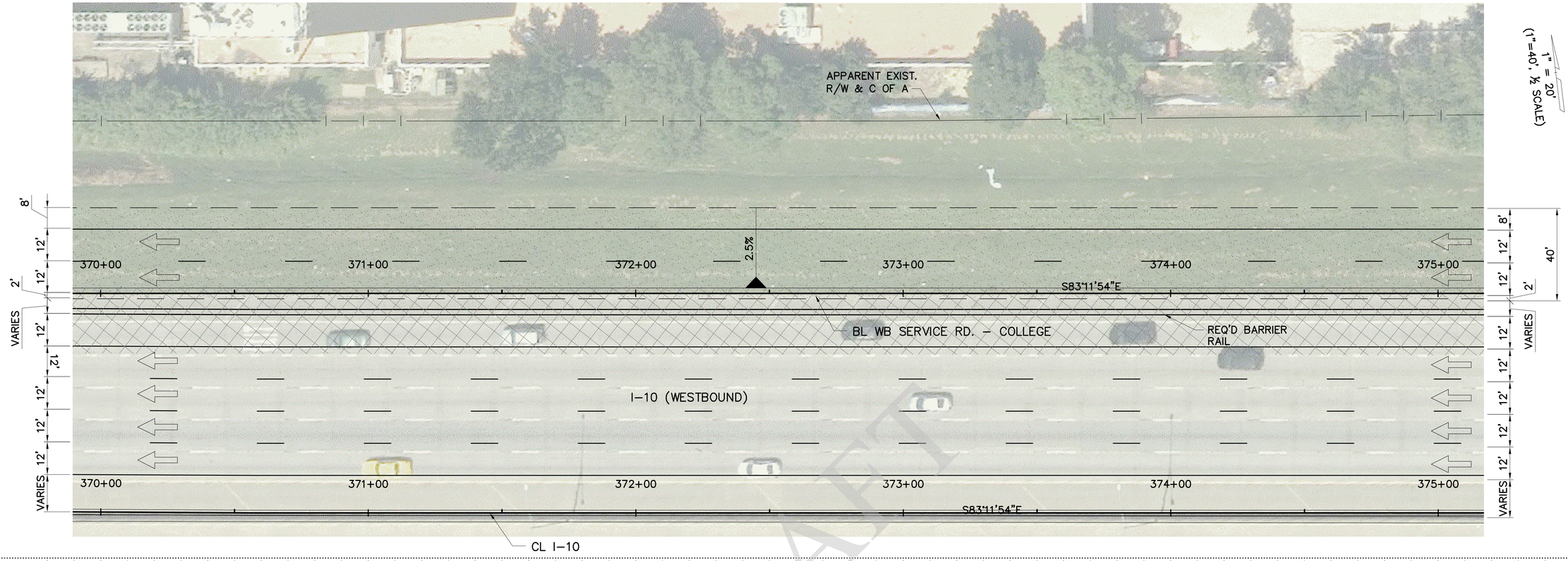
SIGMA CONSULTING GROUP

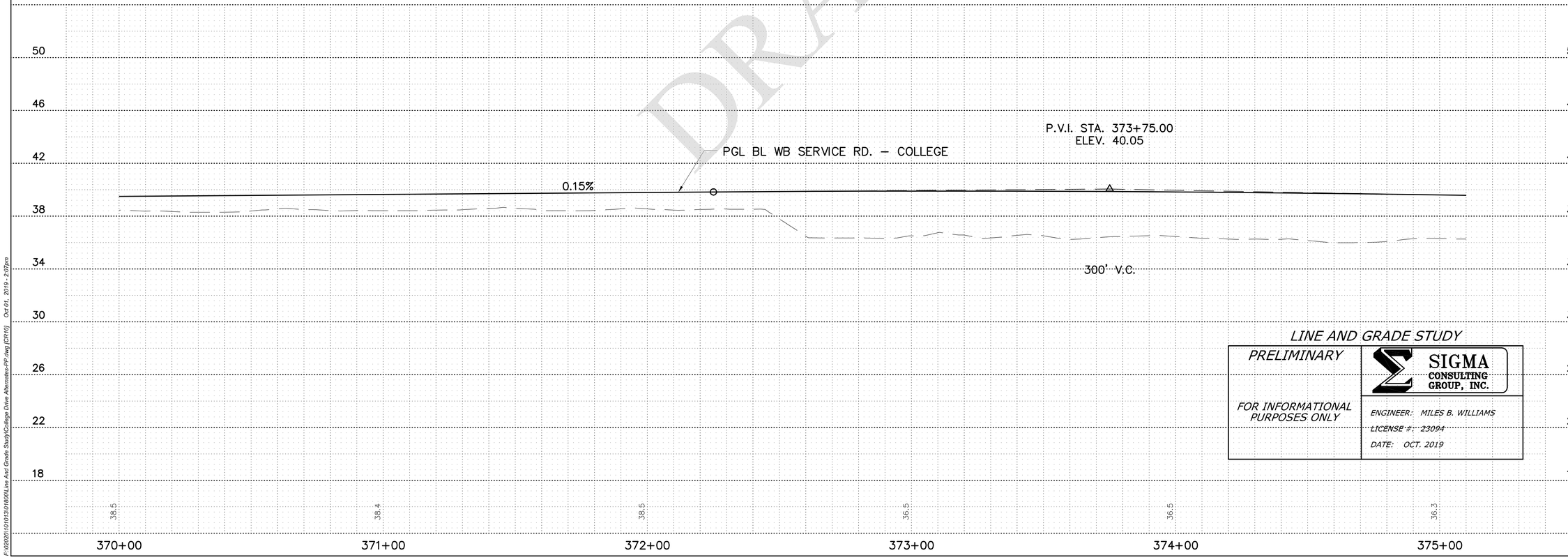
SIGMA CONSULTING GROUP, INC.

F:\(2020\101013018\00\Line And Grade Study\College Drive Alternates-PP.dwg [CR09] Oct 01, 2019 - 2:07pm

OCT. 2019

LINE & GRADE STUDY - DRAFT





1" = 20'
(1"=40', ½ SCALE)

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	CR10
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	THYMES
CHECKED	
SERIES NUMBER	1 OF 3

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
WB SERVICE ROAD - COLLEGE
OPTION 2

I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

SIGMA CONSULTING GROUP

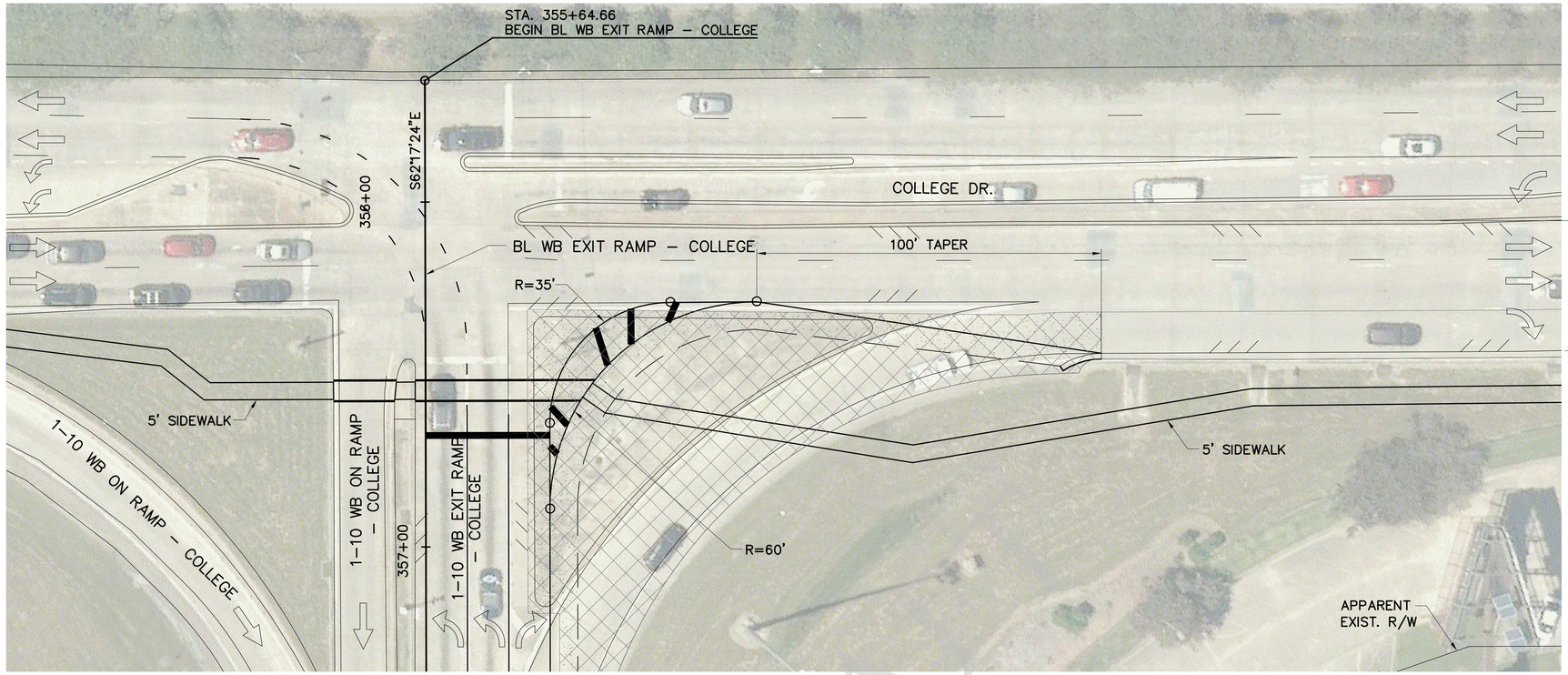
SIGMA CONSULTING GROUP, INC.

DRAFT

F:\2020\101013019001\Line And Grade Study\College Drive Alternates-PP.dwg (CR10) Oct 01, 2019 - 2:07pm

OCT. 2019

LINE & GRADE STUDY - DRAFT



SEE SHEET CR12

DRAFT

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS

LICENSE #: 23094

DATE: OCT. 2019

SHEET NUMBER: CR11

PARISH: EAST BATON ROUGE

CONTROL SECTION: 450-10

STATE PROJECT: H.004100

DESIGNED: WILLIAMS

CHECKED:

DETAILED: THYMES

CHECKED:

SERIES NUMBER: 1 OF 2

NO. | REVISION OR CHANGE ORDER DESCRIPTION | DATE | BY

PLAN AND PROFILE
WB EXIT RAMP - COLLEGE
OPTION 1

I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

SIGMA CONSULTING GROUP

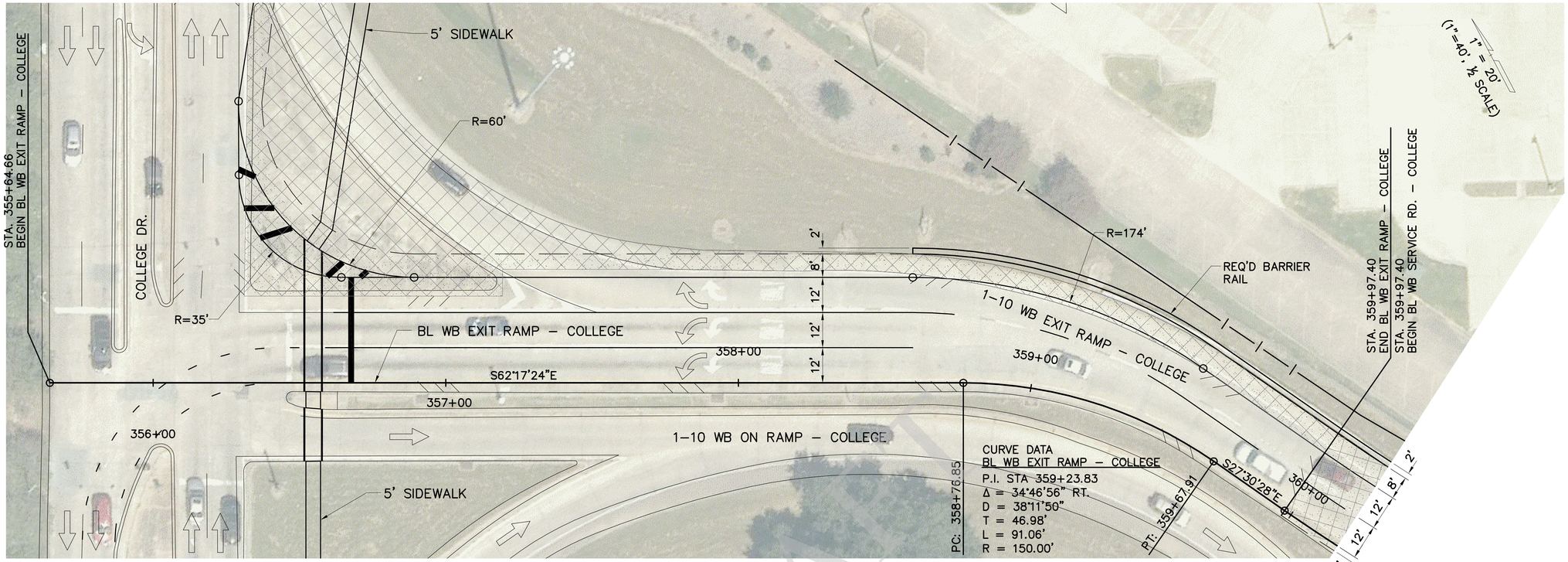
SIGMA CONSULTING GROUP, INC.

F:\020201101013018090\Line And Grade Study\College Drive Alternates-PP.dwg [CR11] Oct 01, 2019 - 2:07pm

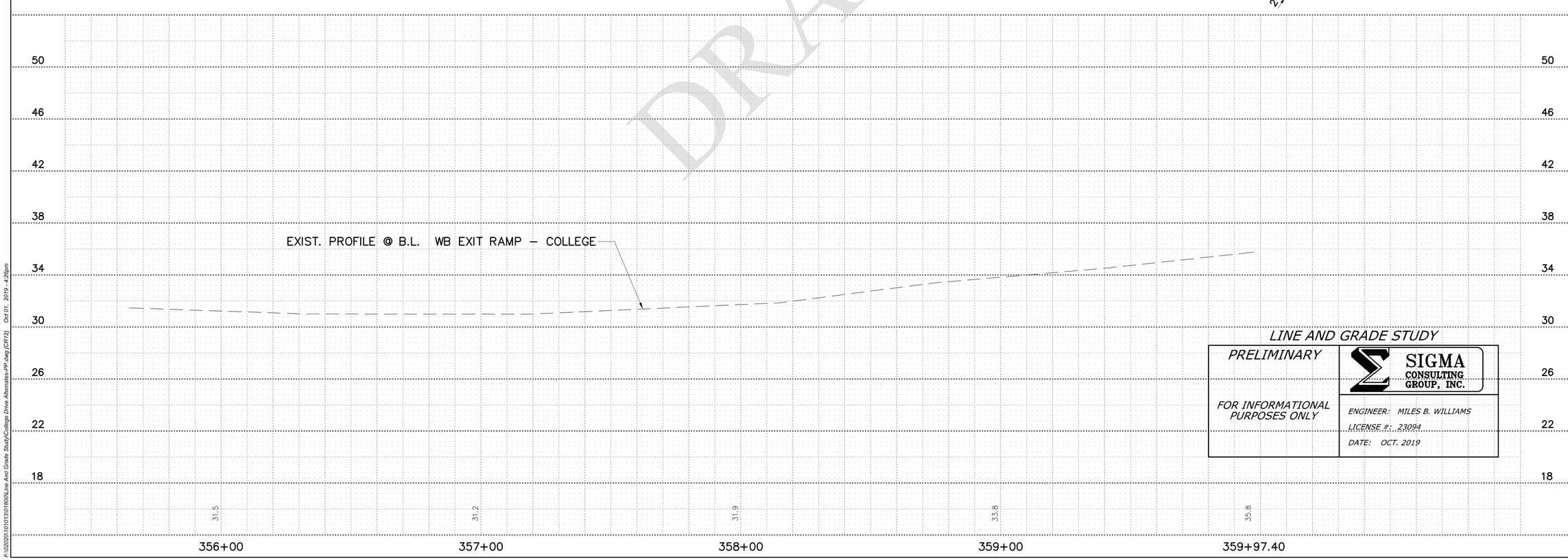
OCT. 2019

LINE & GRADE STUDY - DRAFT

SEE SHEET CR11



DRAFT



LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	CR12
PARISH	EAST BATON ROUGE
CONTROL SECTION	450–10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	THYMES
CHECKED	
SERIES NUMBER	2 OF 2

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
WB EXIT RAMP – COLLEGE
OPTION 1

I–10: LA 415 TO ESSEN ON I–10 AND I–12

DOTD

SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

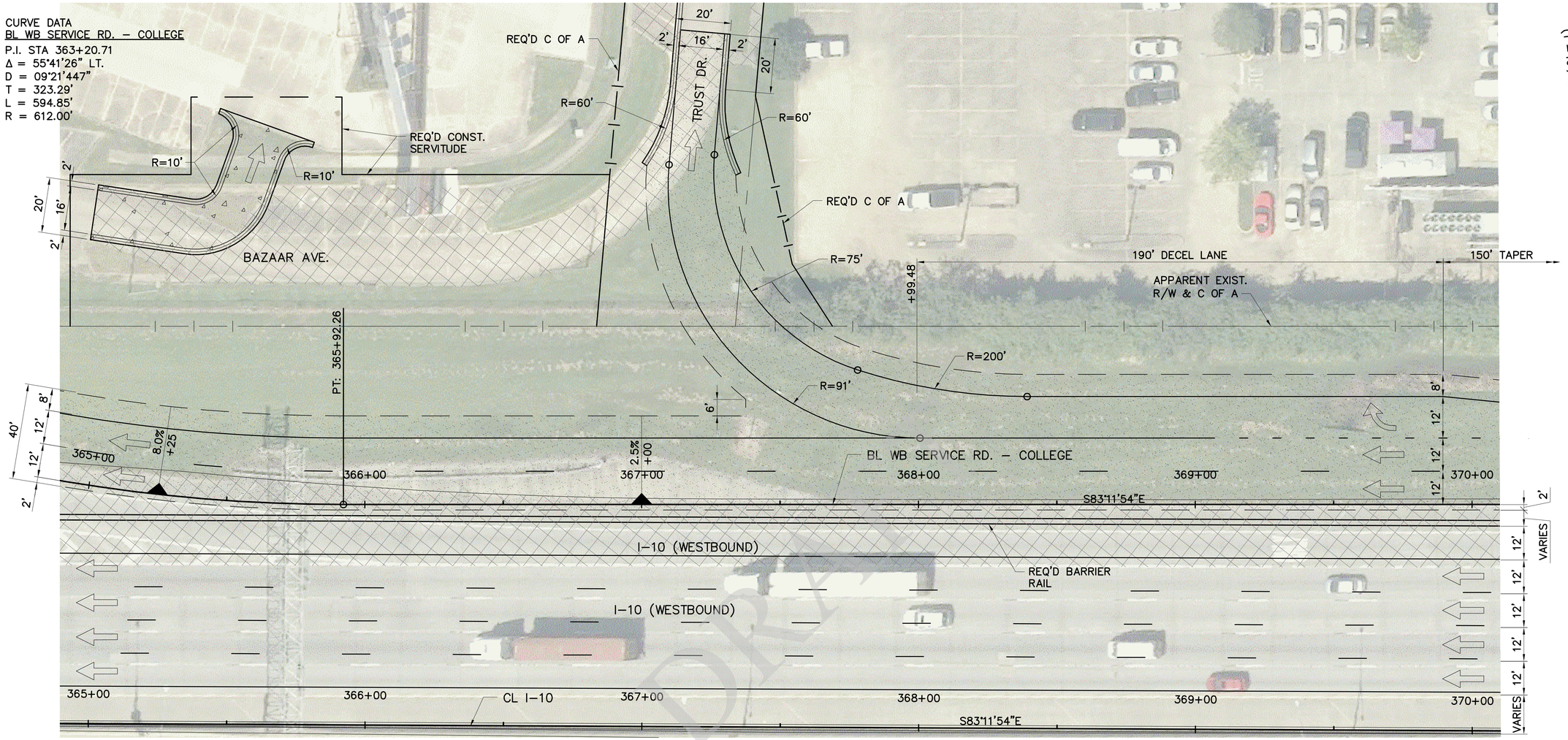
F:\02020110101301809\Line And Grade Study\College Drive Alternates-PP.dwg [CR12] Oct 01, 2019 - 4:26pm

OCT. 2019

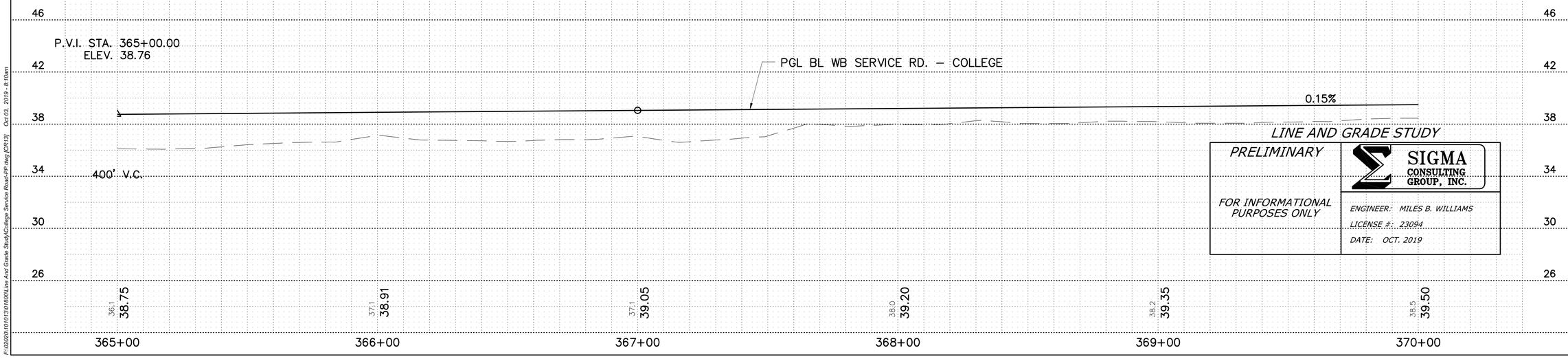
LINE & GRADE STUDY - DRAFT

CURVE DATA
BL WB SERVICE RD. – COLLEGE

P.I. STA 363+20.71
Δ = 55°41'26" LT.
D = 09°21'447"
T = 323.29'
L = 594.85'
R = 612.00'



1" = 20'
(1"=40', ½ SCALE)



LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	CR13
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	1 OF 2

NO.	REVISION OR CHANGE ORDER DESCRIPTION	DATE	BY

PLAN AND PROFILE
I-10/I-12 COLLEGE DR. EXIT RAMP
OPTION 1

I-10: LA 415 TO ESSEN ON I-10 AND I-12

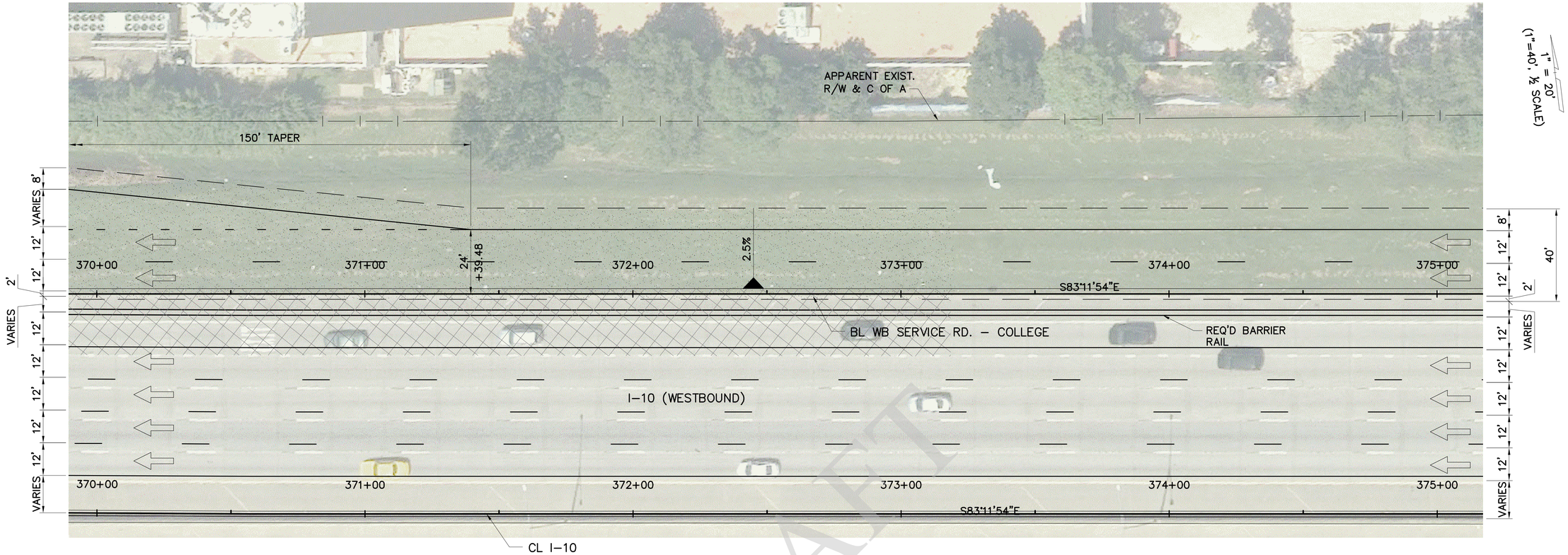
DOTD
SIGMA CONSULTING GROUP

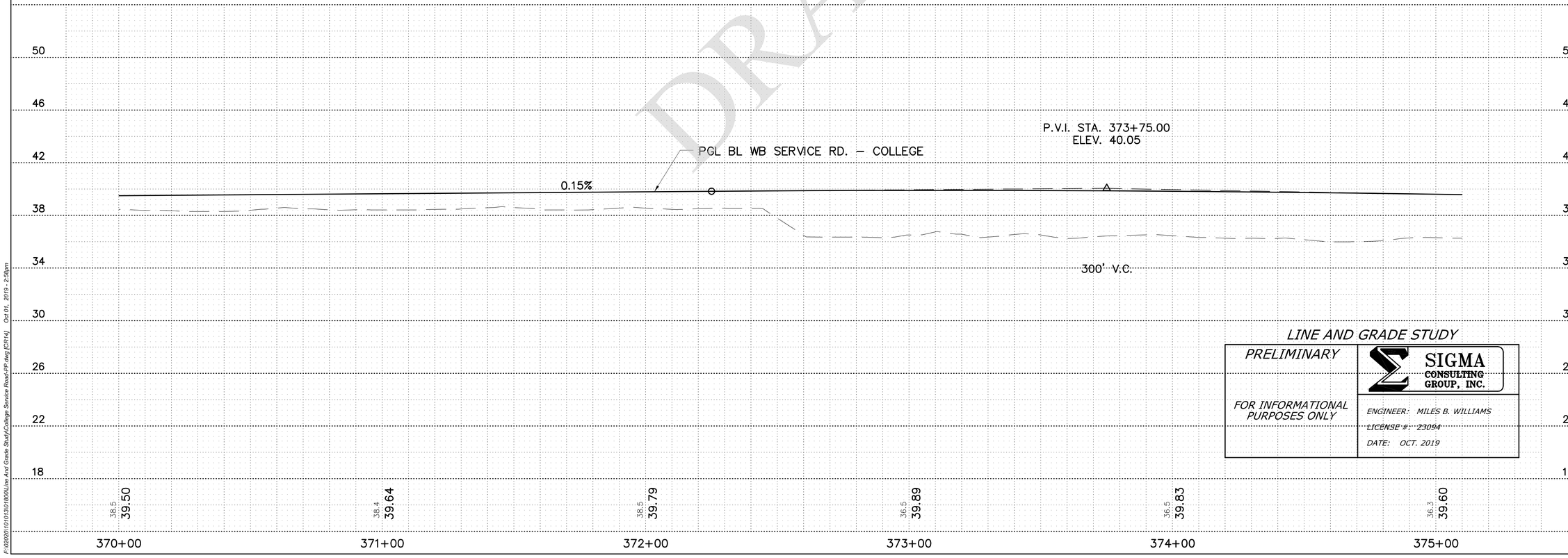
SIGMA CONSULTING GROUP, INC.

F:\(2020\101013018\00\Line And Grade Study\College Service Road-PP.dwg [CR13] Oct 03, 2019 - 8:10am

OCT. 2019

LINE & GRADE STUDY - DRAFT





LINE AND GRADE STUDY

PRELIMINARY	SIGMA CONSULTING GROUP, INC.
FOR INFORMATIONAL PURPOSES ONLY	ENGINEER: MILES B. WILLIAMS LICENSE #: 23094 DATE: OCT. 2019

DRAFT

SHEET NUMBER	CR14
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	2 OF 2

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
I-10/I-12 COLLEGE DR. EXIT RAMP
OPTION 1

I-10: LA 415 TO ESSEN ON I-10 AND I-12

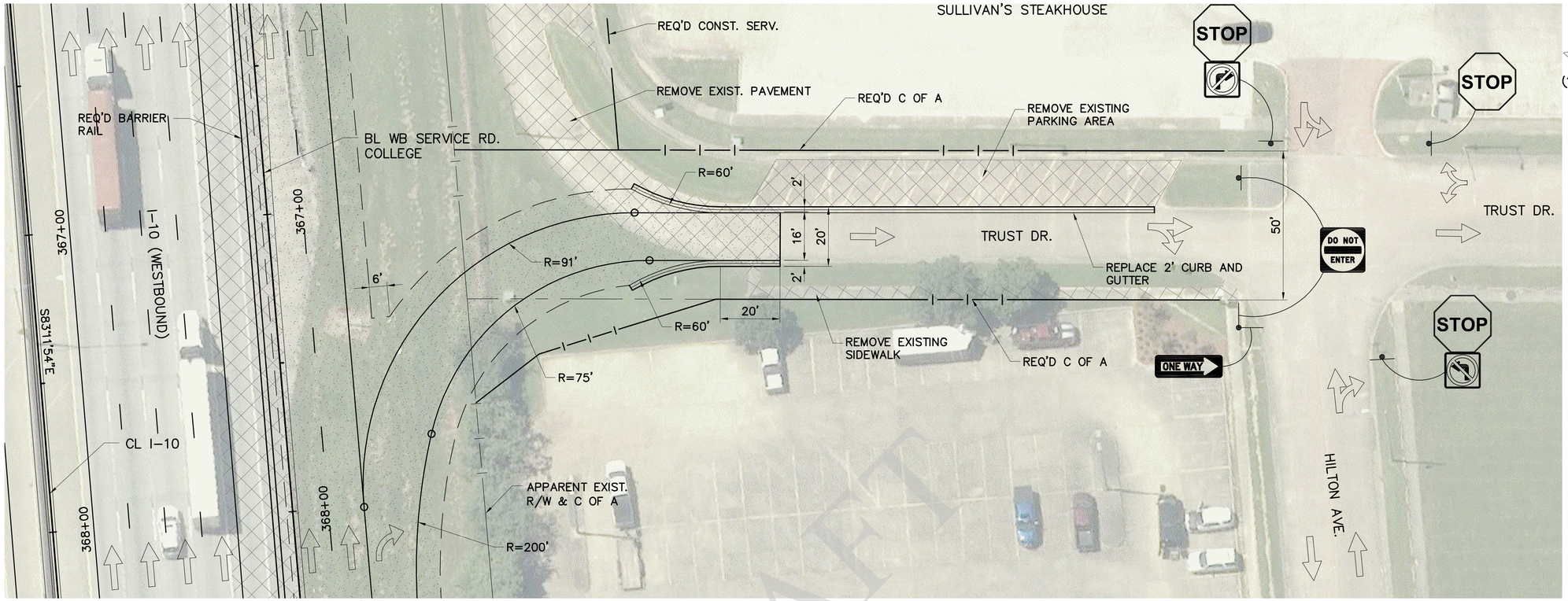
DOTD
SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

F:\2020\101013018\00\Line And Grade Study\College Service Road-PP.dwg [CR14] Oct 01, 2019 - 2:58pm

OCT. 2019

LINE & GRADE STUDY - DRAFT



DRAFT

50 46 42 38 34 30 26 22 18

PLANNING PURPOSES ONLY - NOT APPROVED BY DOTD TRAFFIC SECTION FOR DISTRIBUTION

LINE AND GRADE STUDY

PRELIMINARY	SIGMA CONSULTING GROUP, INC.
FOR INFORMATIONAL PURPOSES ONLY	*ENGINEER: MILES B. WILLIAMS* *LICENSE #: 23094* *DATE: OCT. 2019*

SHEET NUMBER	CR15
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	1 OF 1

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

STATE OF LOUISIANA

PLAN AND PROFILE
WB SERVICE ROAD - TRUST DR.
OPTION 1

I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

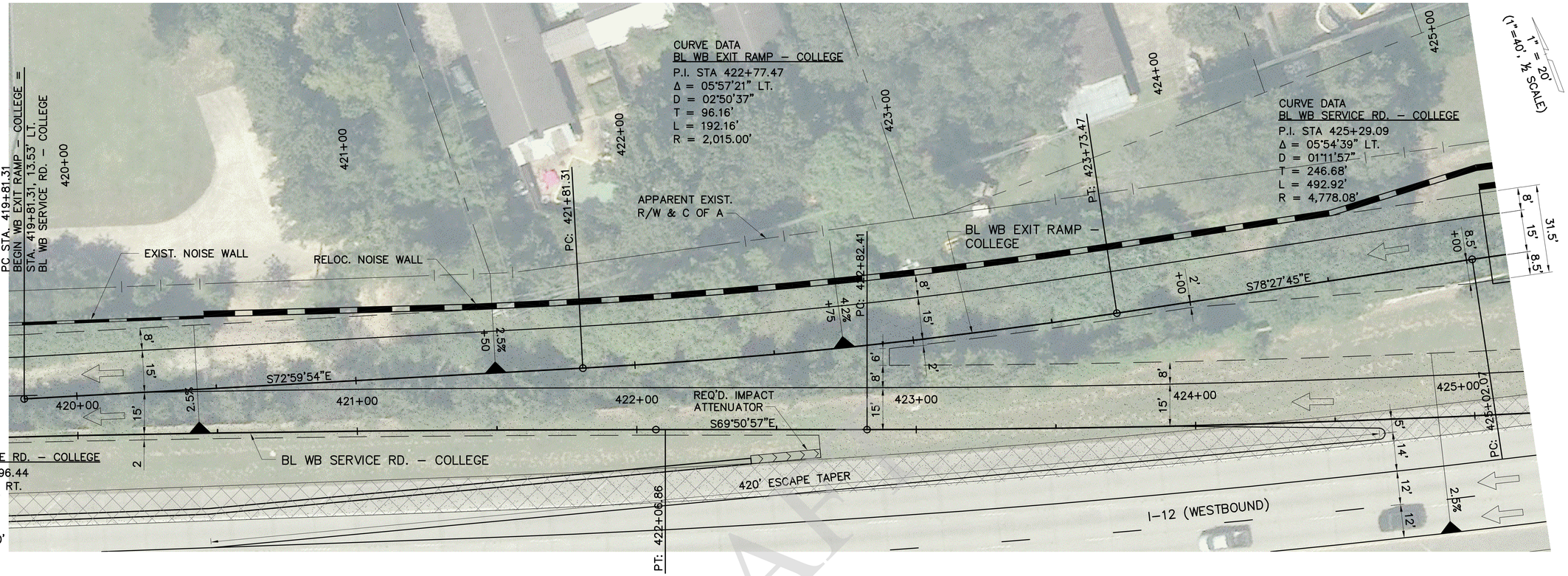
SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

F:\02020110101301800\Line And Grade Study\TRUST-PP.dwg [CR15] Oct 03, 2019 - 7:14am

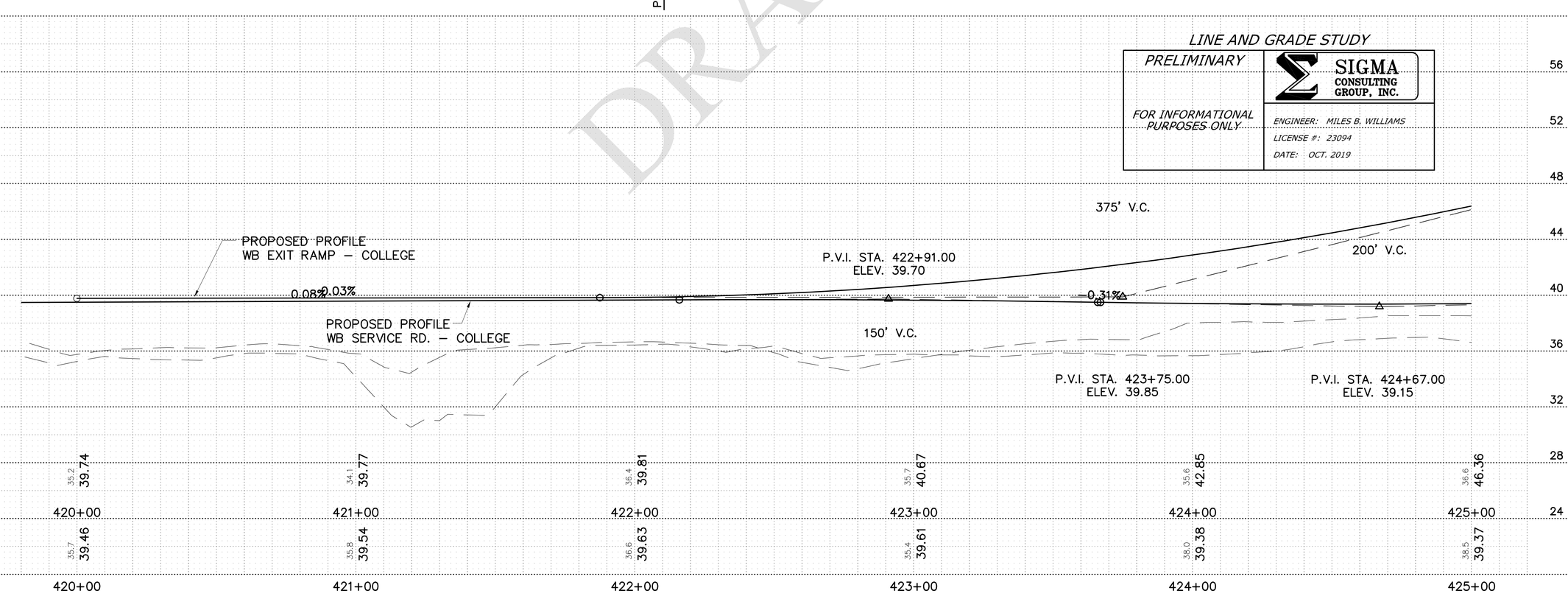
OCT. 2019

LINE & GRADE STUDY - DRAFT



LINE AND GRADE STUDY

PRELIMINARY	SIGMA CONSULTING GROUP, INC.
FOR INFORMATIONAL PURPOSES ONLY	*ENGINEER: MILES B. WILLIAMS* *LICENSE #: 23094* *DATE: OCT. 2019*



DRAFT

SHEET NUMBER	CS01

PARISH	CONTROL SECTION	STATE PROJECT
EAST BATON ROUGE	450-10	H.004100

DESIGNED	WILLIAMS	SERIES NUMBER	1 OF 5
CHECKED			
DETAILED	AMEDEE		
CHECKED			

NO.	REVISION OR CHANGE ORDER DESCRIPTION	DATE	BY

PLAN AND PROFILE
WB EXIT RAMP - COLLEGE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD
SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

F:\2020\20101013018\00\Line And Grade Study\College Service Road-PP.dwg [CS01] Oct 01, 2019 - 2:59pm

OCT. 2019

LINE & GRADE STUDY - DRAFT

CURVE DATA
BL WB SERVICE RD. – COLLEGE
P.I. STA 425+29.09
Δ = 05°54'39" LT.
D = 01°11'57"
T = 246.68'
L = 492.92'
R = 4,778.08'

APPARENT EXIST. R/W & C OF A

EXIST. NOISE WALL

RELOC. NOISE WALL

NEW NOISE WALL – SPECIAL STATE APPROPRIATION & BARRIER RAIL

REQ'D GUARD RAIL

BL WB EXIT RAMP – COLLEGE

CURVE DATA
CL I–12
P.I. STA 423+73.59
Δ = 11°10'20" LT.
D = 01°30'00"
T = 373.59'
L = 744.82'
R = 3,819.72'

(1"=40', ½ SCALE)

425+00 426+00 427+00 428+00 429+00 430+00

1.25' 27.5' 1.25' 10' 1.25'

8' 15' 8.5' 31.5'

6.8% +05

40' APPROACH SLAB

PC: 426+20.00

8' 15' VARIES

BL WB SERVICE RD. – COLLEGE

I–12 (WESTBOUND)

PT STA. 427+75.33
END WB SERVICE RD.
STA. 427+70.01, CL – COLLEGE
46.36' LT.

REQ'D GUARD RAIL

CL I–12

CURVE DATA
BL WB EXIT RAMP – COLLEGE
P.I. STA 428+26.27
Δ = 36°26'10" RT.
D = 05°49'01"
T = 324.20'
L = 626.39'
R = 985.00'

P.V.I. STA. 429+30.00
ELEV. 67.60
0.00%

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

PROPOSED PROFILE
WB EXIT RAMP – COLLEGE

5.00%

400' V.C.

16.5' MIN. VERT. CLR.

PROPOSED PROFILE
WB SERVICE RD. – COLLEGE

0.41%

	425+00	426+00	427+00	428+00	429+00	430+00
	36.6 46.36	37.2 51.10	36.8 56.10	36.9 60.79	40.0 64.29	38.0 66.54
	38.5 39.37	37.9 39.69	39.9 40.10			

68 64 60 56 52 48 44 40 36 32

DRAFT

SHEET NUMBER	CS02
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED / CHECKED	WILLIAMS
DETAILED / CHECKED	AMEDEE
SERIES NUMBER	2 OF 5

REVISION OR CHANGE ORDER DESCRIPTION | DATE | BY | NO.

STATE OF LOUISIANA

PLAN AND PROFILE
WB SERVICE ROAD - COLLEGE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

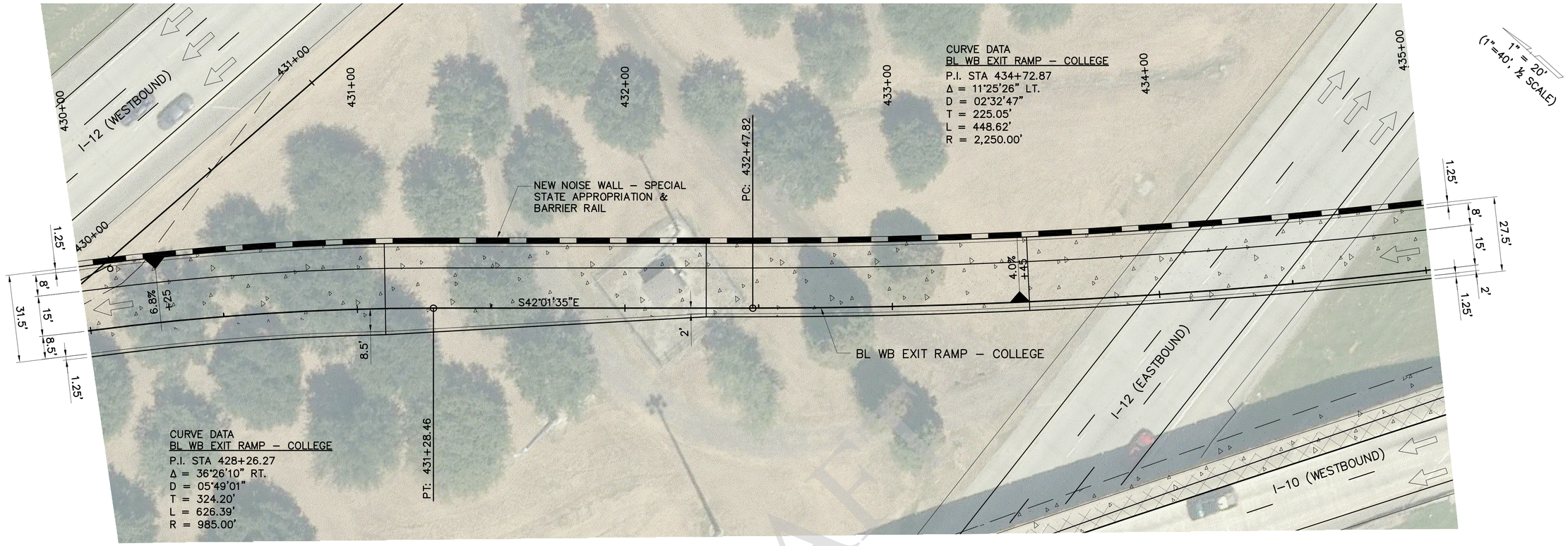
SIGMA CONSULTING GROUP

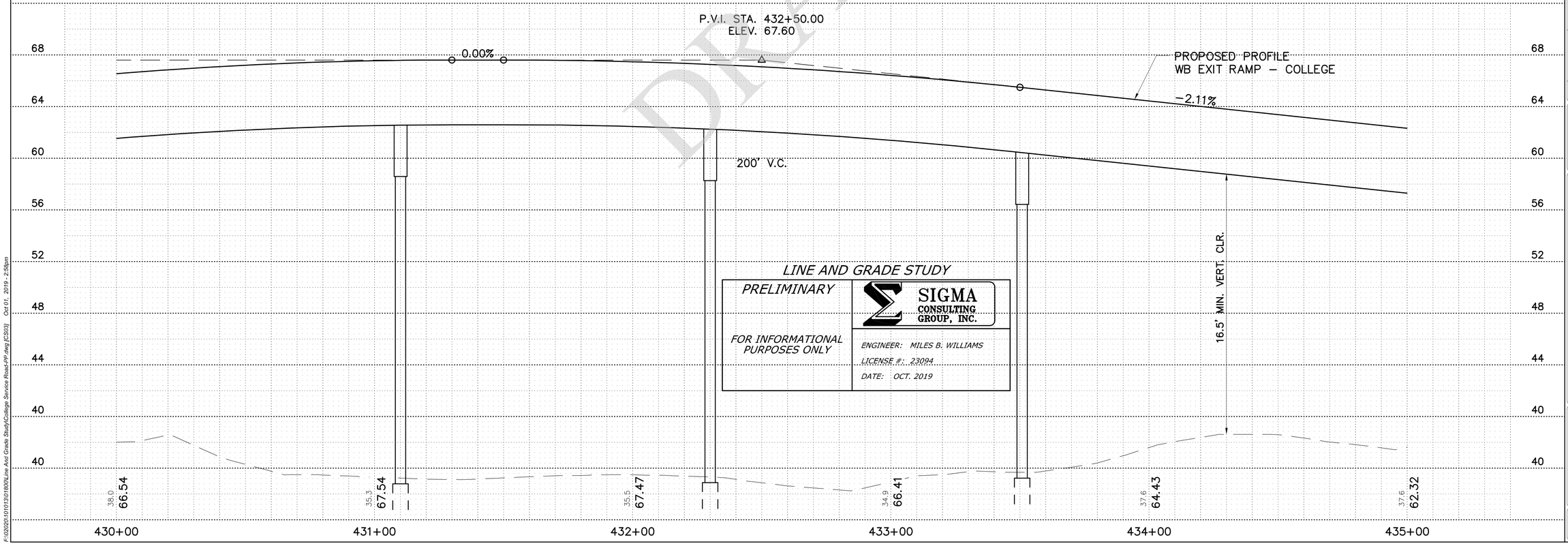
SIGMA CONSULTING GROUP, INC.

F:\2020\20101013018\00\Line And Grade Study\College Service Road-PP.dwg [CS02] Oct 01, 2019 - 2:59pm

OCT. 2019

LINE & GRADE STUDY - DRAFT





LINE AND GRADE STUDY

PRELIMINARY

SIGMA CONSULTING GROUP, INC.

FOR INFORMATIONAL PURPOSES ONLY

ENGINEER: MILES B. WILLIAMS

LICENSE #: 23094

DATE: OCT. 2019

DRAFT

SHEET NUMBER	CS03
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	3 OF 5

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

STATE OF LOUISIANA – DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

PLAN AND PROFILE

WB SERVICE ROAD - COLLEGE

I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

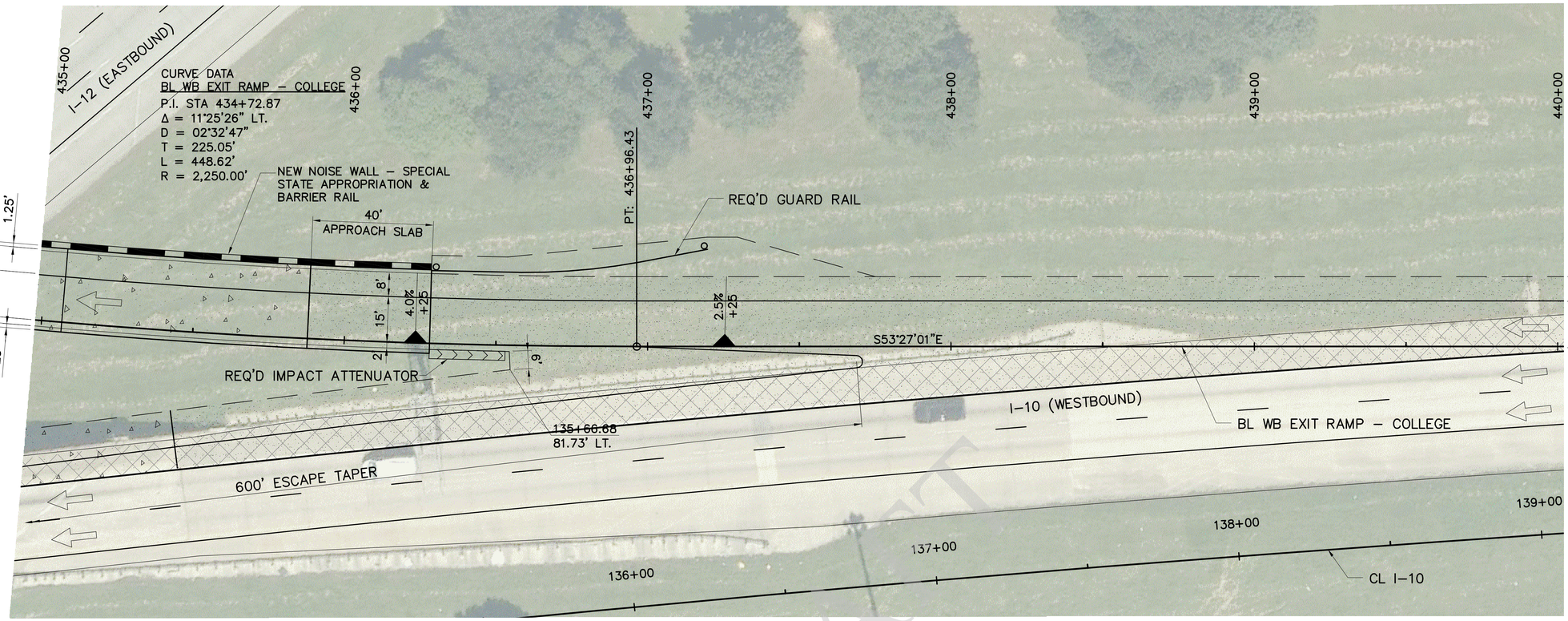
SIGMA CONSULTING GROUP

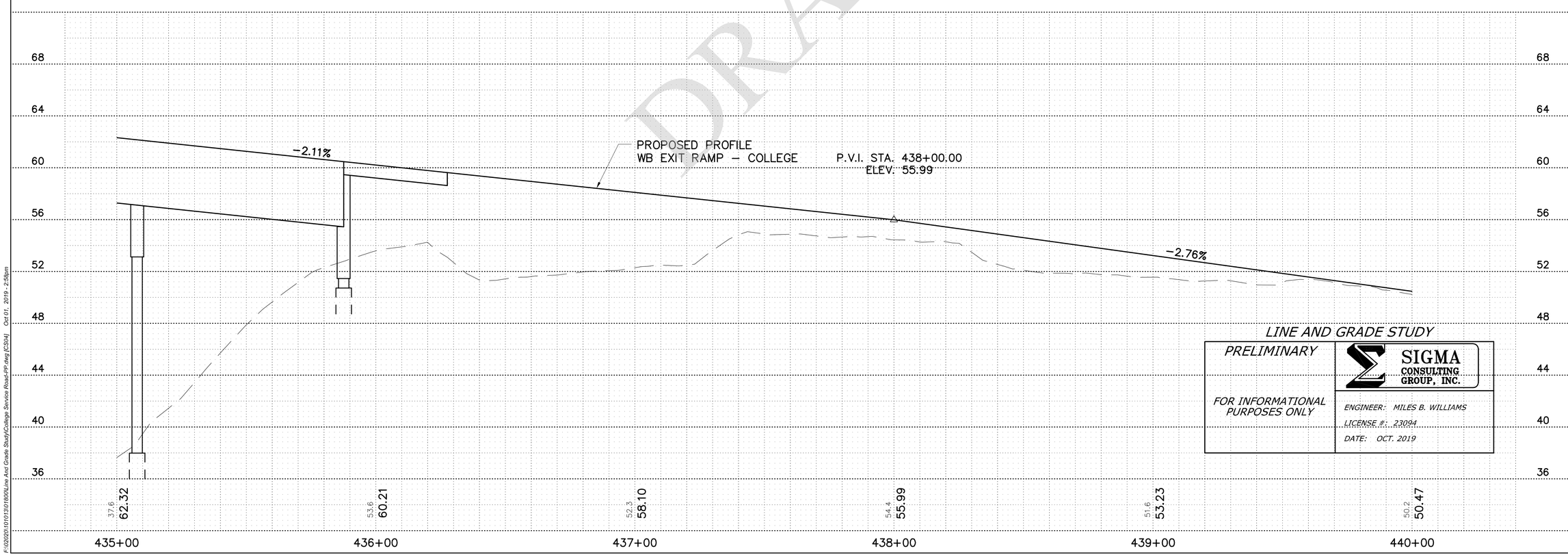
SIGMA CONSULTING GROUP, INC.

F:\02020110101301800\Line And Grade Study\College Service Road-PP.dwg [CS03] Oct 01, 2019 - 2:58pm

OCT. 2019

LINE & GRADE STUDY - DRAFT





DRAFT

LINE AND GRADE STUDY

PRELIMINARY	SIGMA CONSULTING GROUP, INC.
FOR INFORMATIONAL PURPOSES ONLY	*ENGINEER: MILES B. WILLIAMS* *LICENSE #: 23094* *DATE: OCT. 2019*

SHEET NUMBER	CS04
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	4 OF 5

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

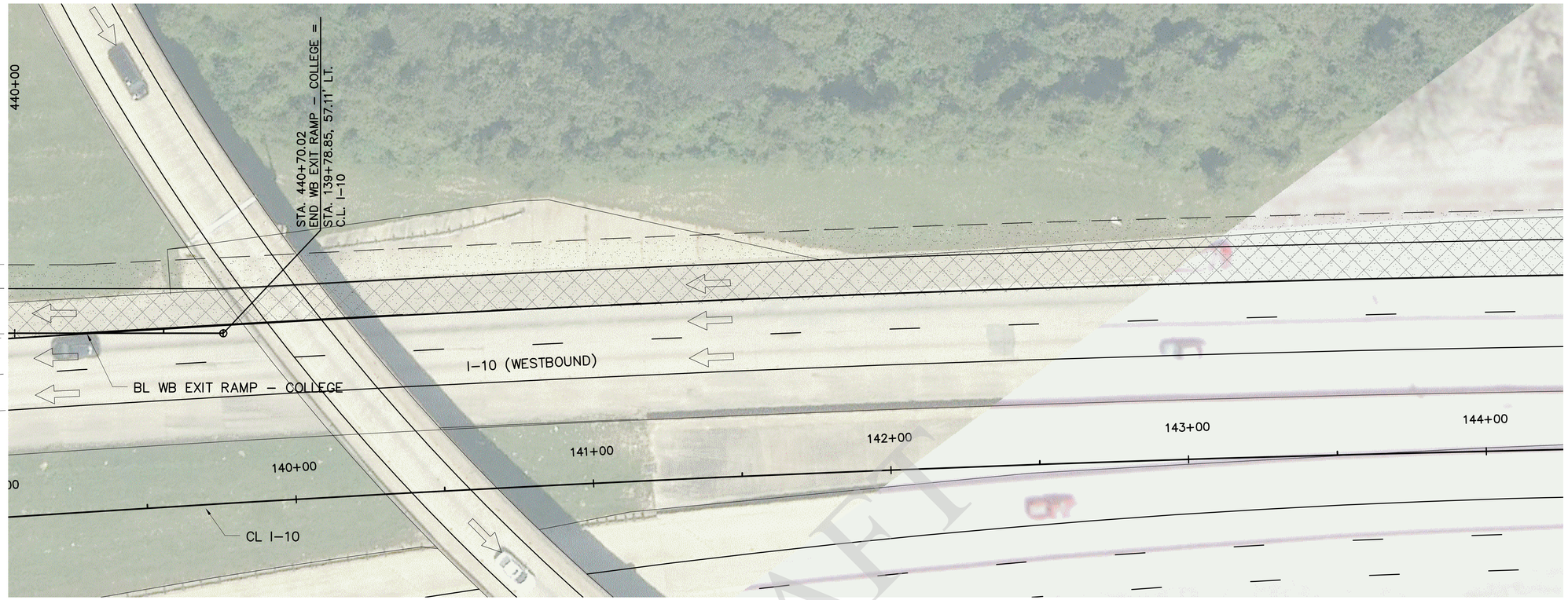
PLAN AND PROFILE
WB SERVICE ROAD - COLLEGE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

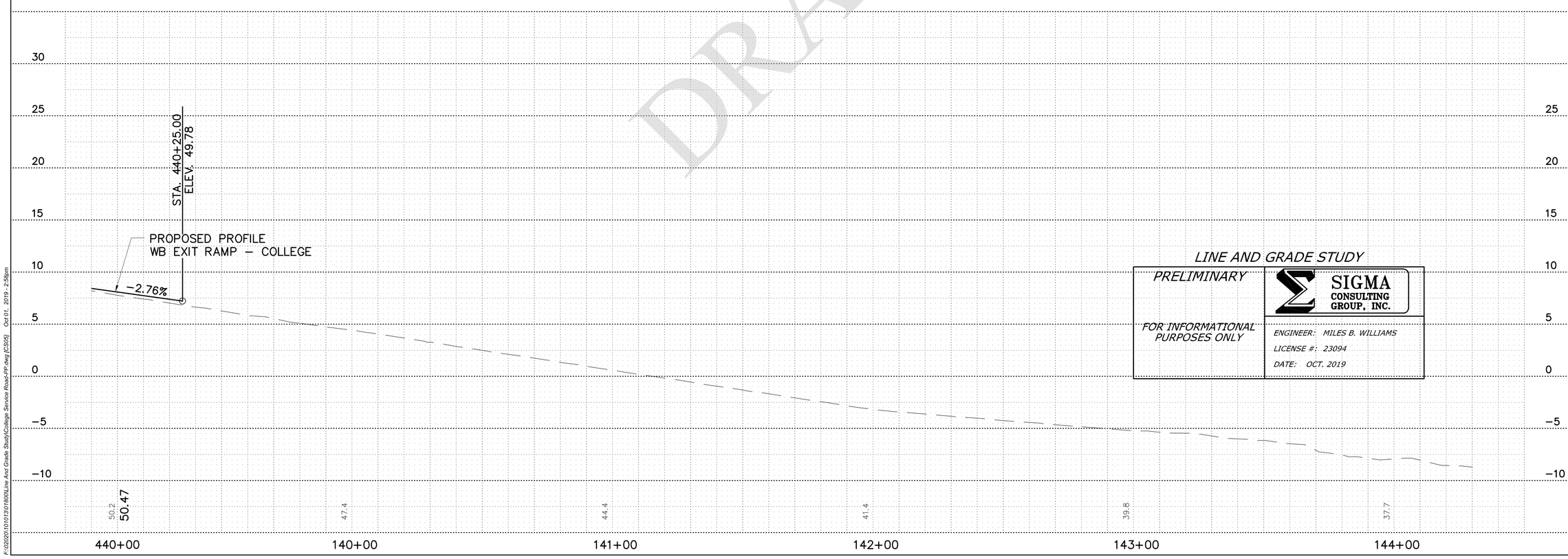
SIGMA CONSULTING GROUP

F:\02020110101301800\Line And Grade Study\College Service Road-PP.dwg [CS04] Oct 01, 2019 - 2:58pm

OCT. 2019

LINE & GRADE STUDY - DRAFT





LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

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SHEET NUMBER	CS05
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	AMEDEE
CHECKED	
SERIES NUMBER	5 OF 5

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
WB SERVICE ROAD - COLLEGE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

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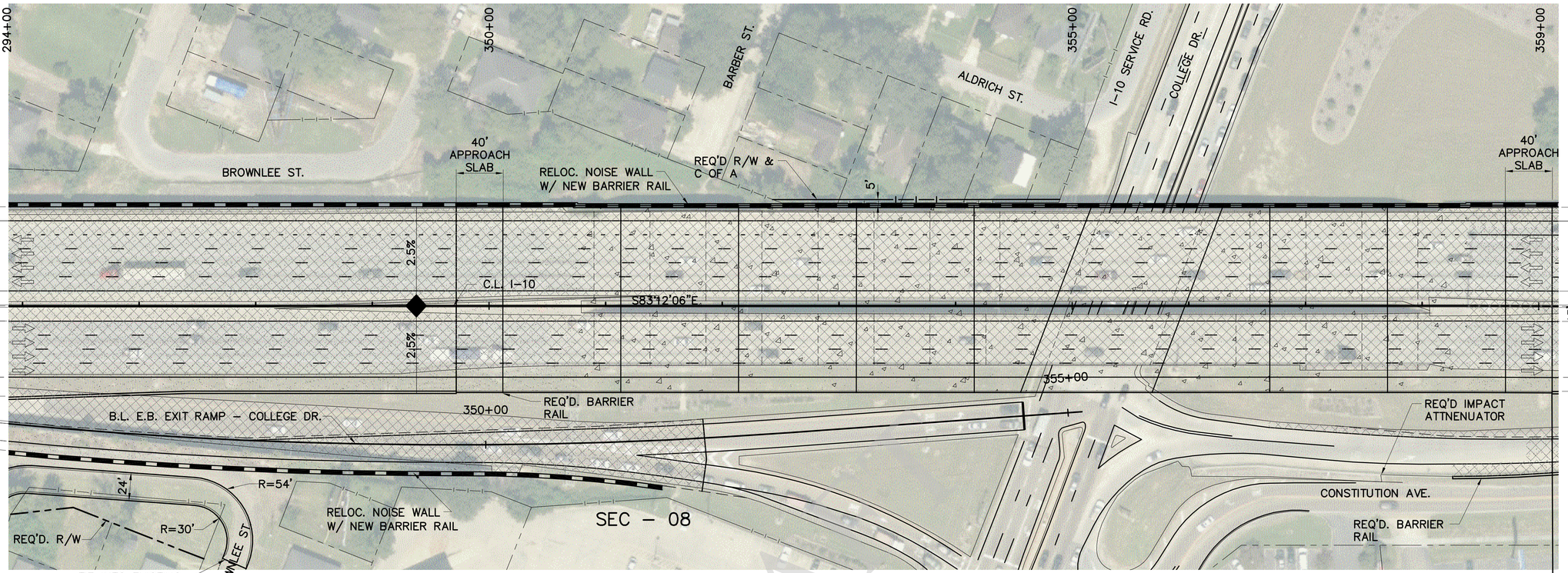
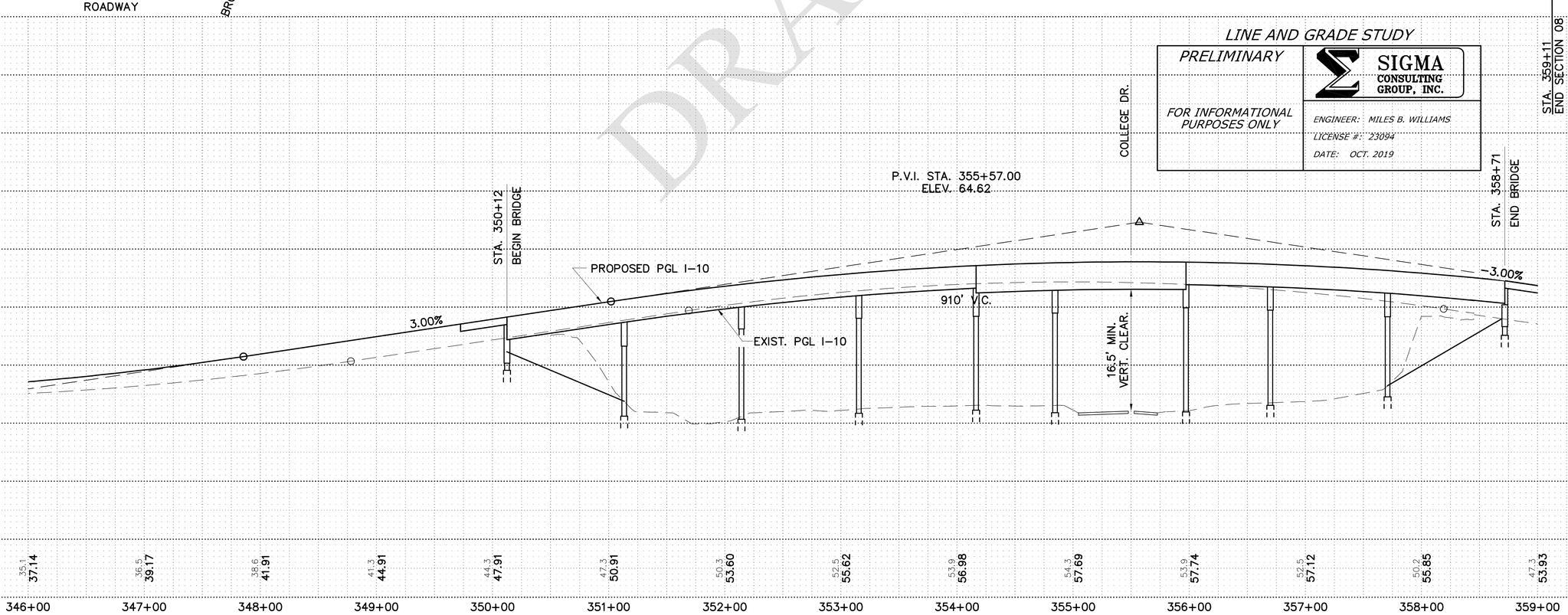
OCT. 2019

LINE & GRADE STUDY - DRAFT





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SHEET NUMBER	ML28
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	YARBROUGH
DETAILED	
CHECKED	
SERIES NUMBER	27 OF 38

REVISION OR CHANGE ORDER DESCRIPTION | NO. | DATE | BY

PLAN AND PROFILE

I-10: LA 415 TO ESSEN ON I-10 AND I-12

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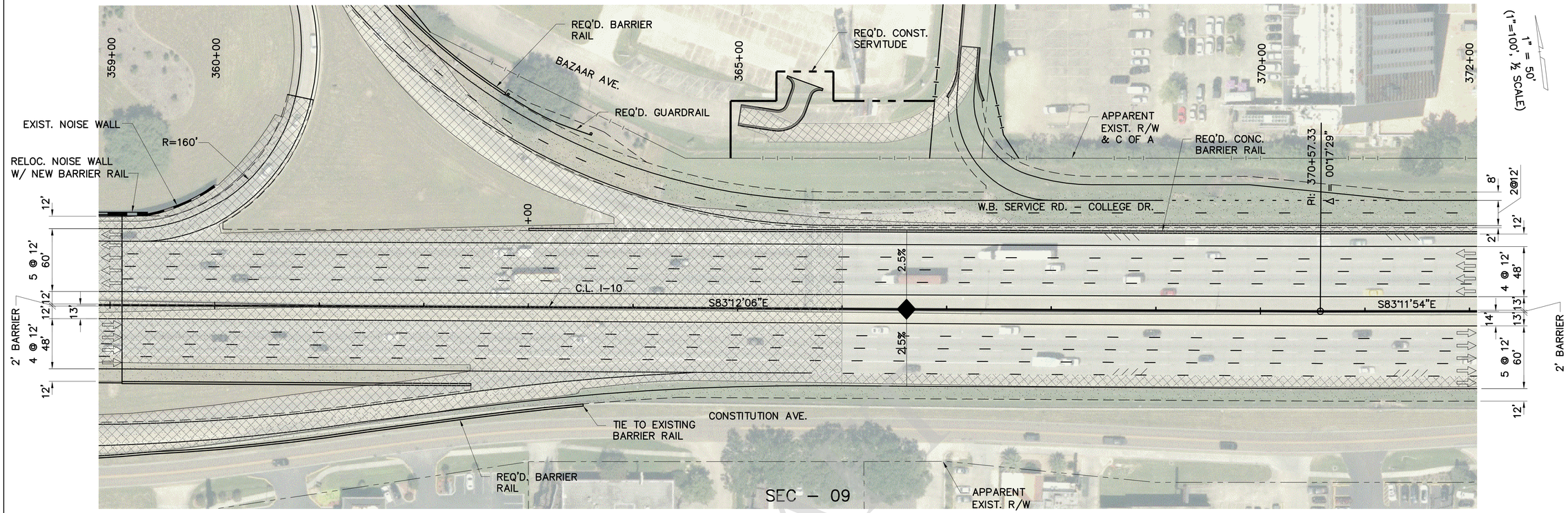
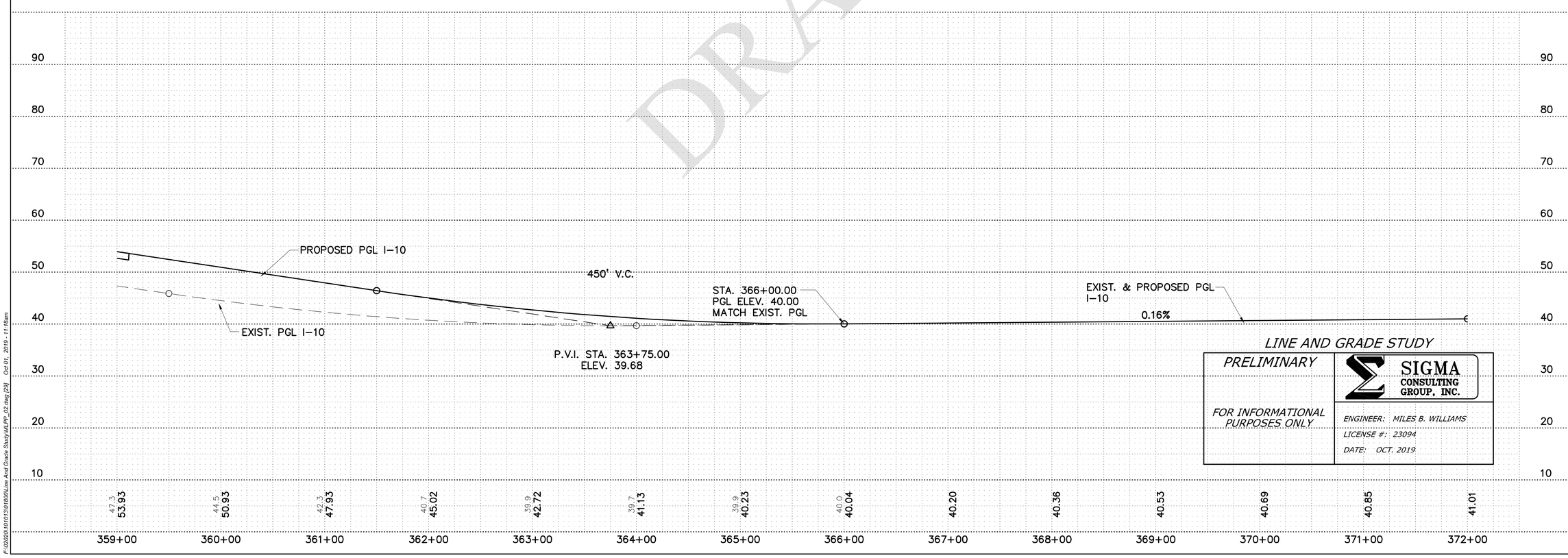
OCT. 2019

LINE & GRADE STUDY - DRAFT





LINE AND GRADE STUDY

PRELIMINARY

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SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

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SHEET NUMBER	ML29
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED / CHECKED	WILLIAMS
DETAILED / CHECKED	YARBROUGH
SERIES NUMBER	28 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE

I-10; LA 415 TO ESSEN ON I-10 AND I-12

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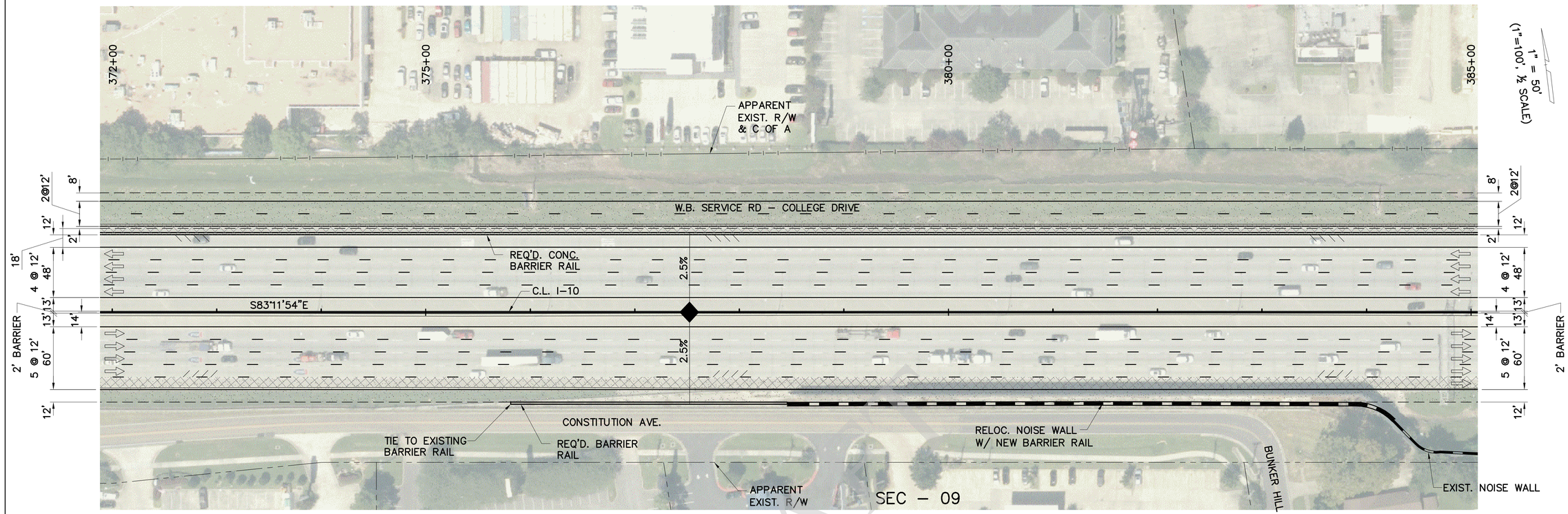
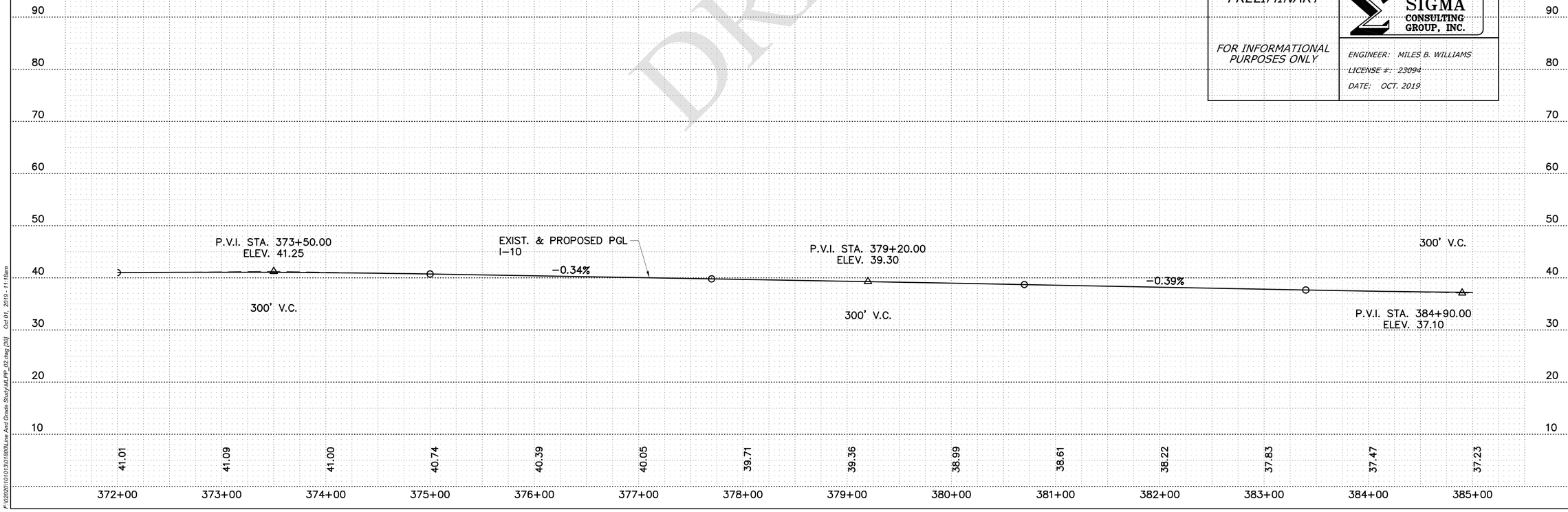
LINE & GRADE STUDY - DRAFT





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LINE AND GRADE STUDY

PRELIMINARY

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SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	ML30
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	29 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE

I-10: LA 415 TO ESSEN ON I-10 AND I-12

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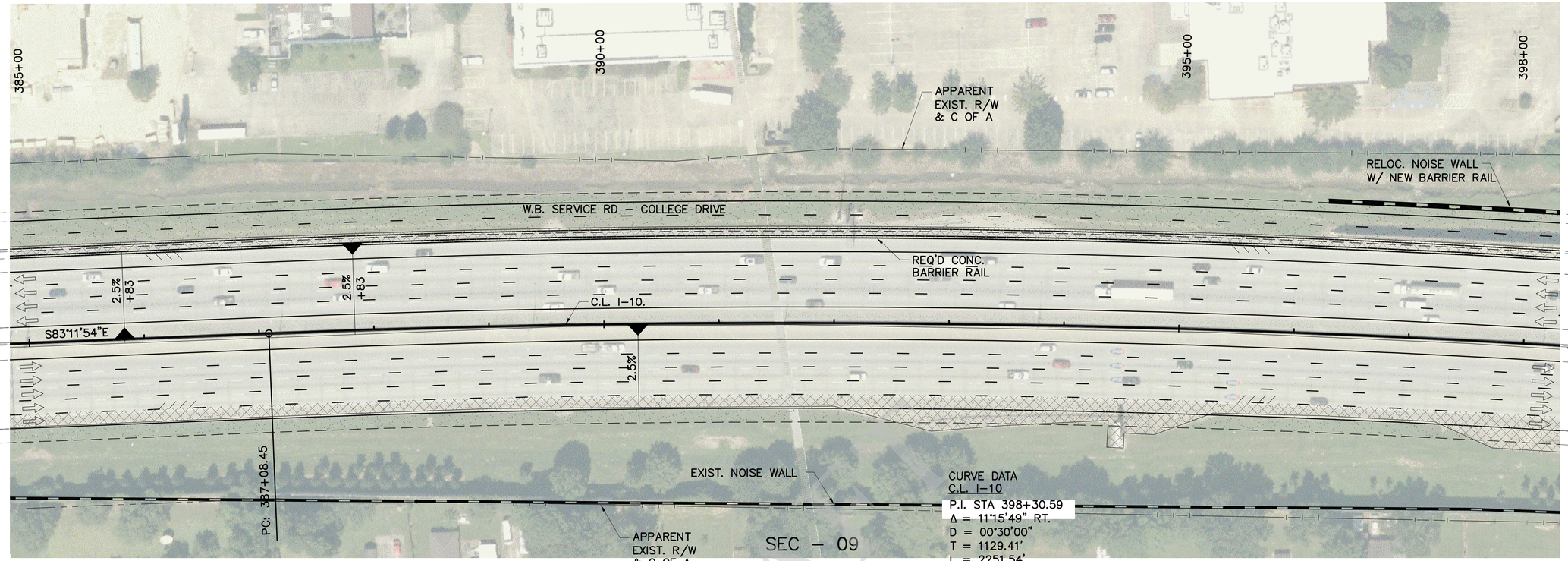
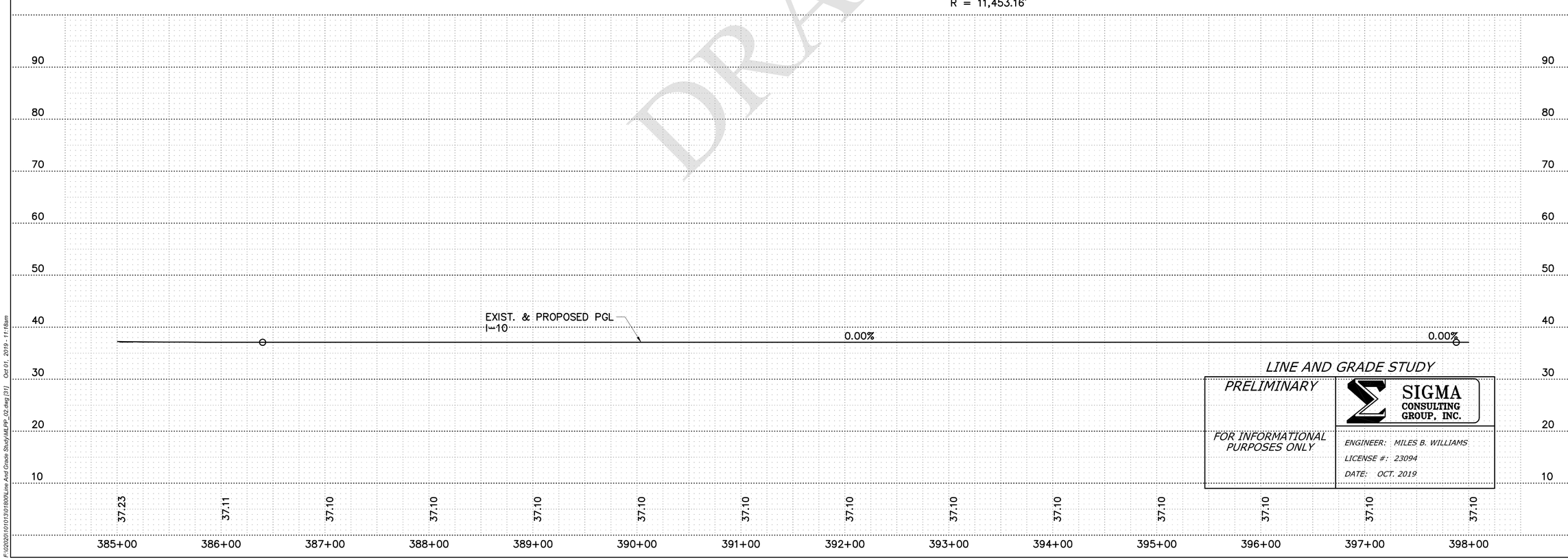
LINE & GRADE STUDY - DRAFT





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LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	ML31
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	30 OF 38

REVISION OR CHANGE ORDER DESCRIPTION | DATE | NO. | BY

PLAN AND PROFILE

I-10: LA 415 TO ESSEN ON I-10 AND I-12

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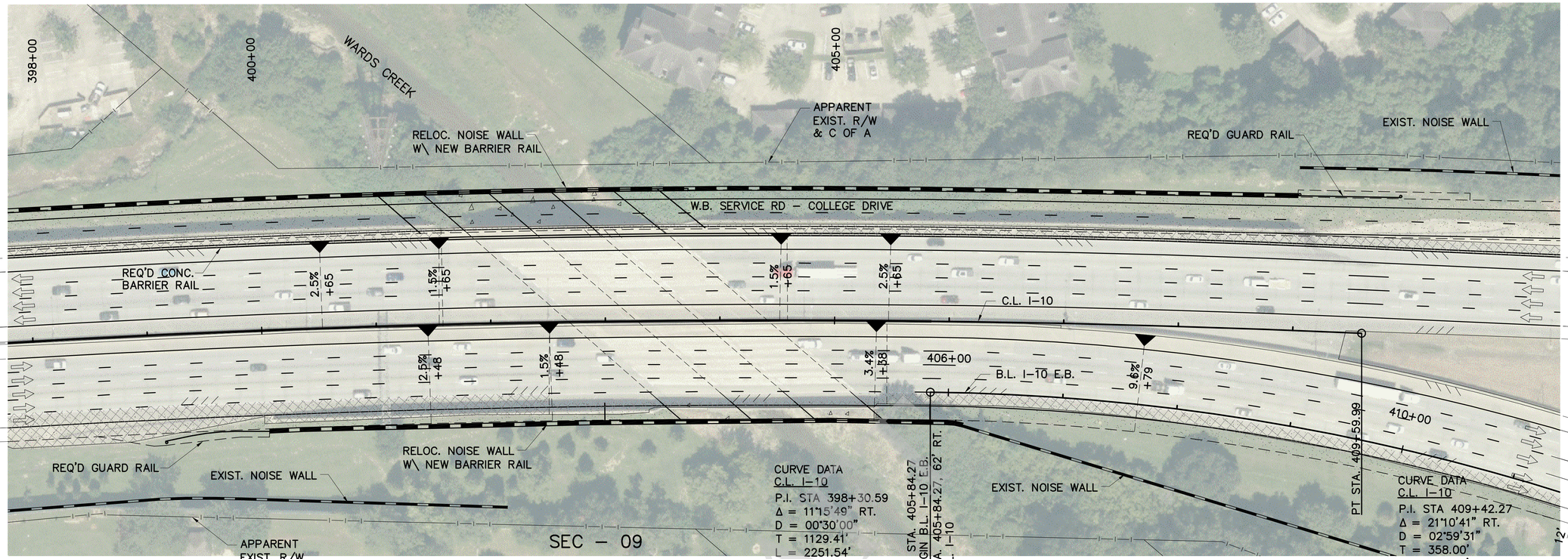
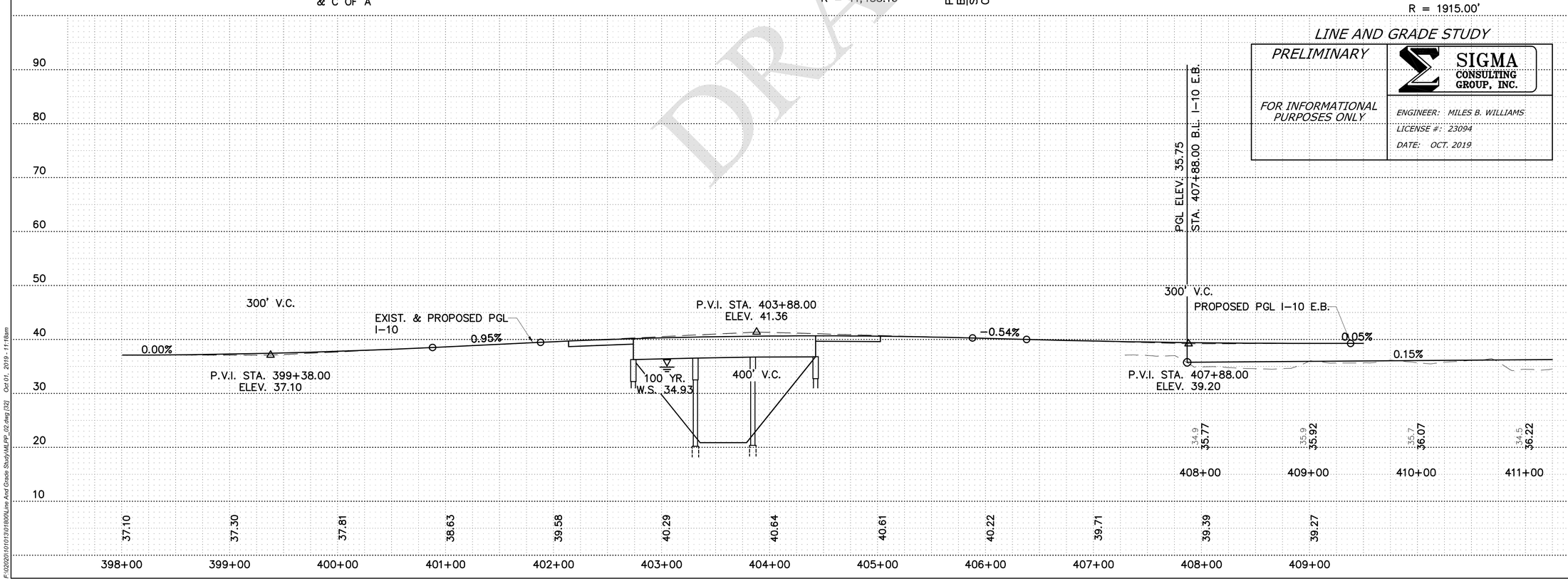


LINE AND GRADE STUDY



LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

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SHEET NUMBER	ML32
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	31 OF 38

NO.	REVISION OR CHANGE ORDER DESCRIPTION	DATE	BY

PLAN AND PROFILE

I-10: LA 415 TO ESSEN ON I-10 AND I-12

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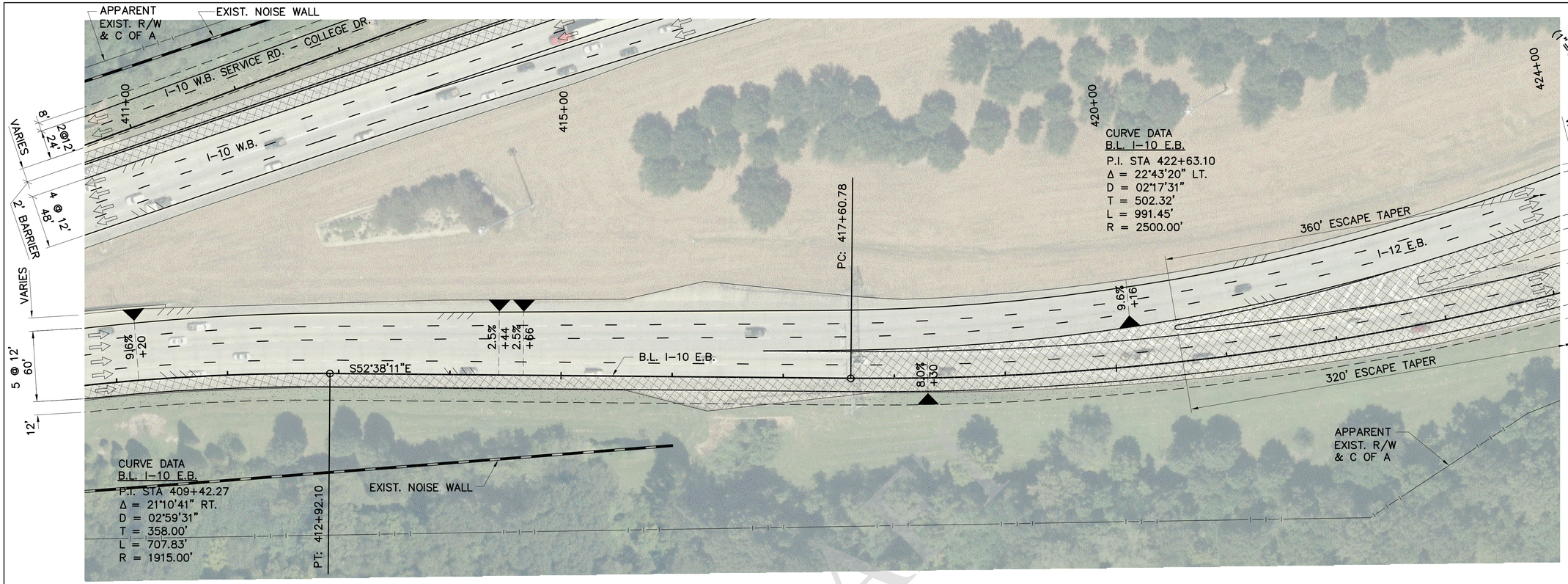
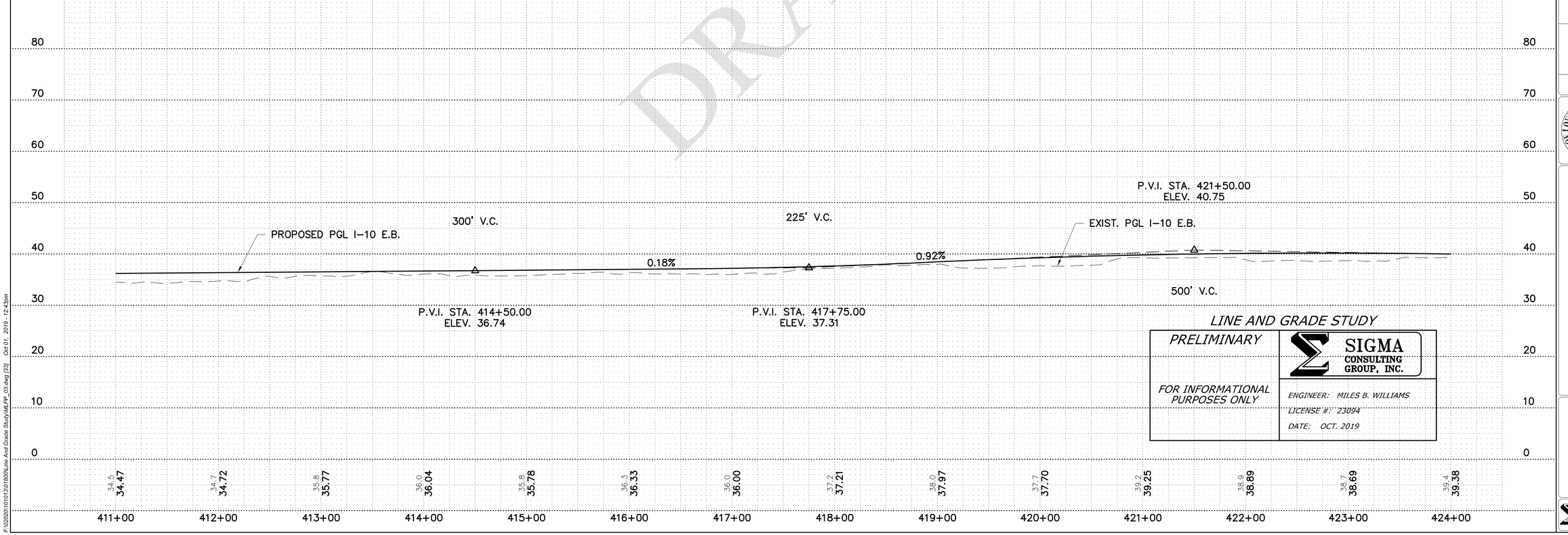
LINE & GRADE STUDY - DRAFT





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LINE AND GRADE STUDY

PRELIMINARY	SIGMA CONSULTING GROUP, INC.
FOR INFORMATIONAL PURPOSES ONLY	*ENGINEER: MILES B. WILLIAMS* *LICENSE #: 23094* *DATE: OCT. 2019*

SHEET NUMBER	ML33
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	33 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

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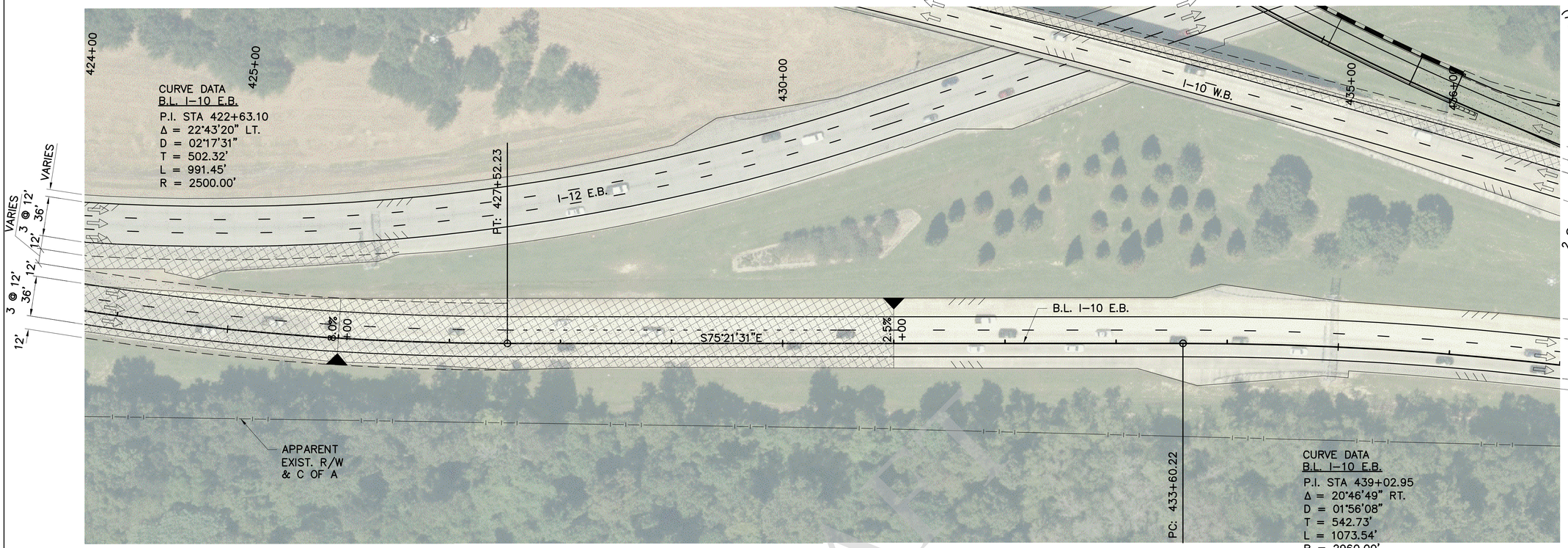
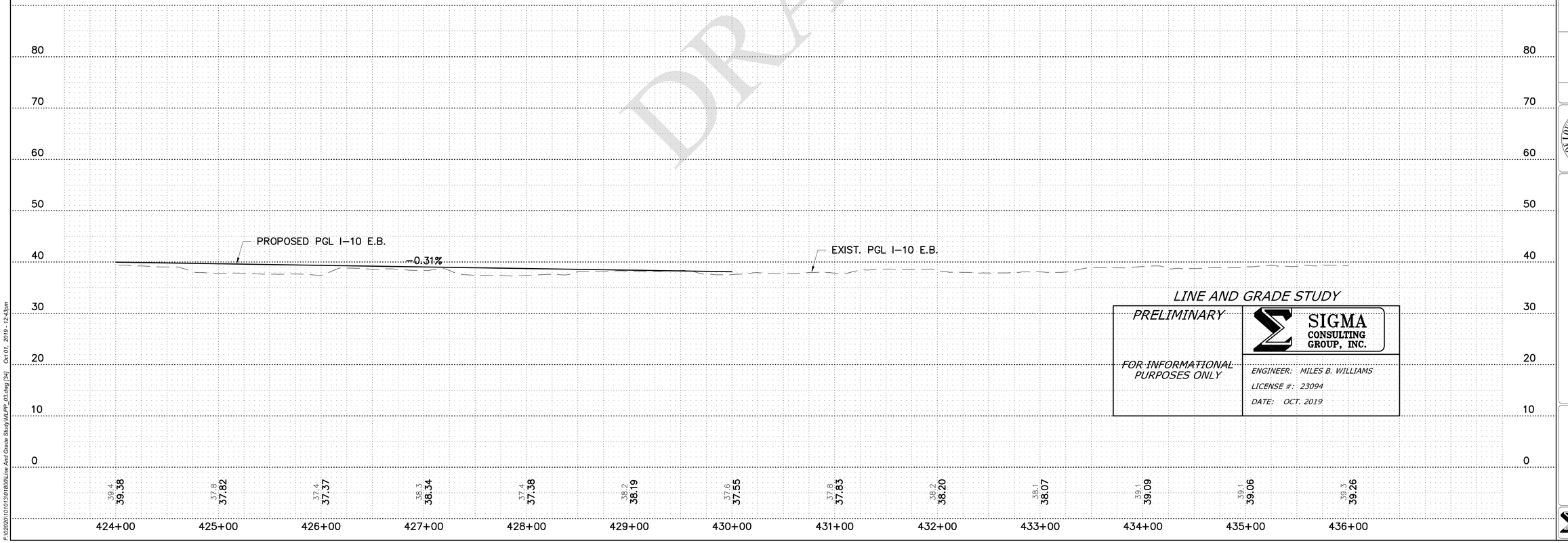
OCT. 2019

LINE & GRADE STUDY - DRAFT





LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

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SHEET NUMBER	ML34
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	34 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

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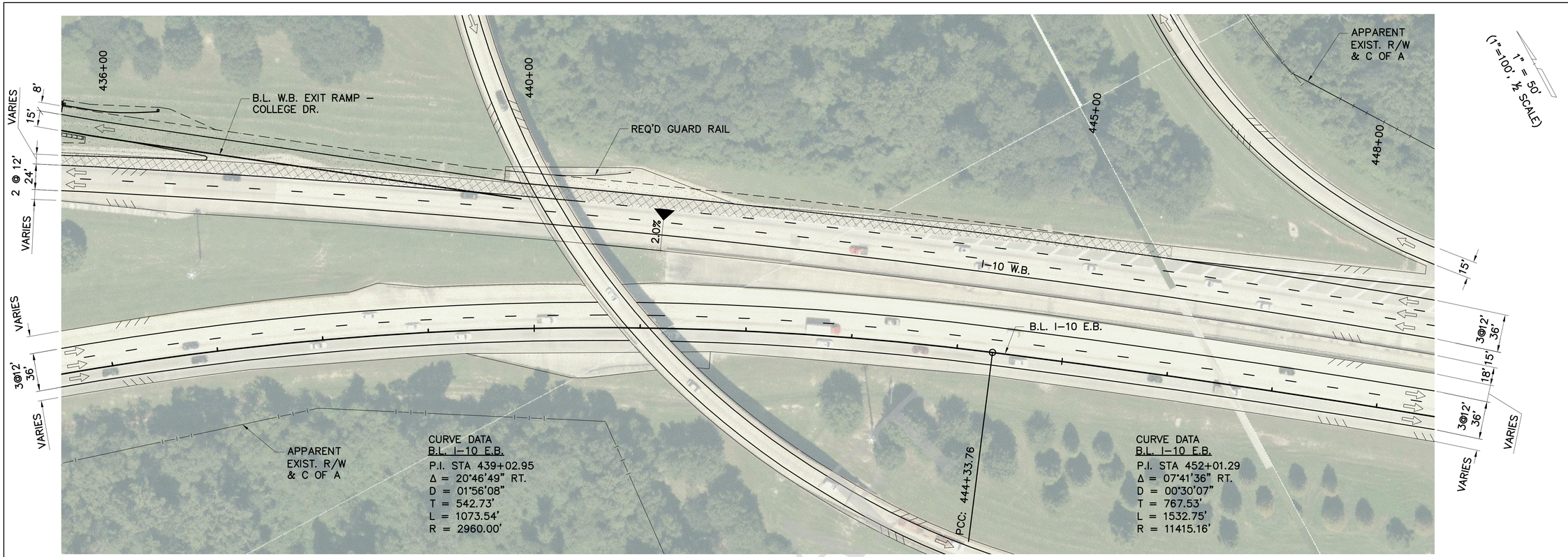
LINE & GRADE STUDY - DRAFT



FOR PROFILE OF
W.B. EXIT RAMP – COLLEGE DR.
SEE SHTS. CS04 & CS05

80 70 60 50 40 30 20 10 0

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

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SHEET NUMBER ML35

PARISH	CONTROL SECTION	STATE PROJECT
EAST BATON ROUGE	450-10	H.004100

DESIGNED	CHECKED	DETAILED	CHECKED	SERIES NUMBER
WILLIAMS		YARBROUGH		35 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

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SIGMA CONSULTING GROUP

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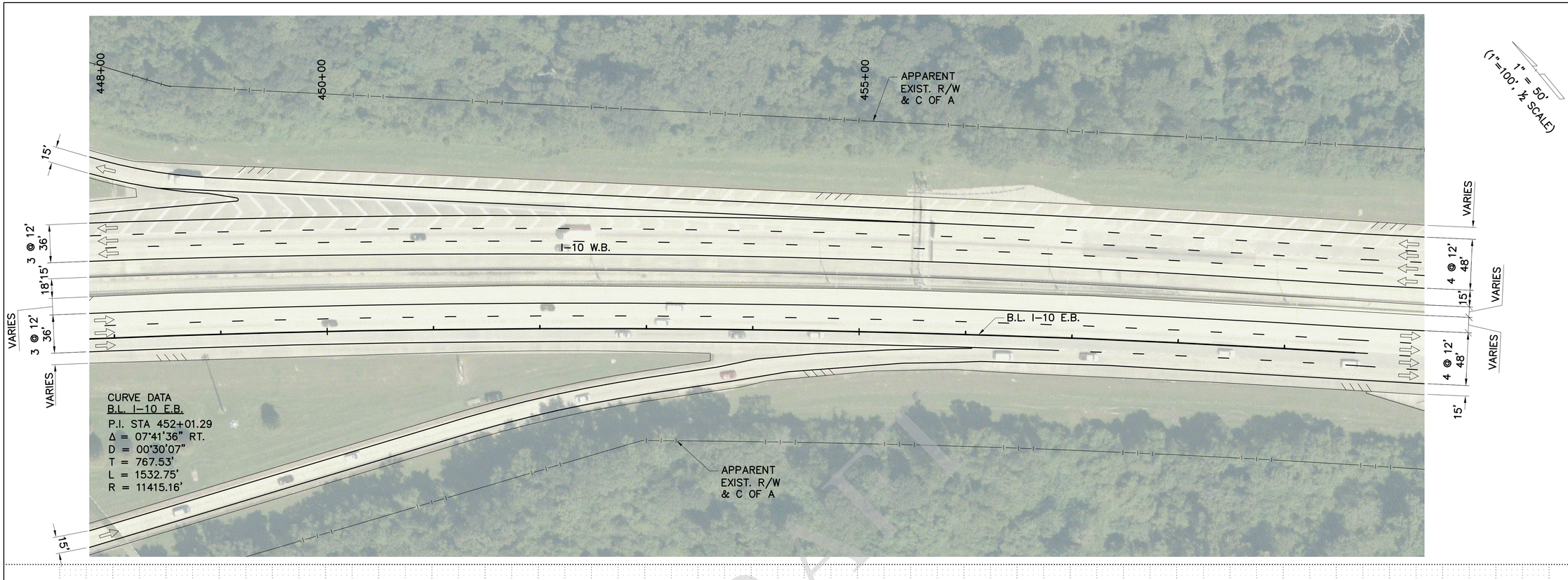
LINE & GRADE STUDY - DRAFT



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80 70 60 50 40 30 20 10 0

LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS

LICENSE #: 23094

DATE: OCT. 2019

SHEET NUMBER	ML36
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	36 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

STATE OF LOUISIANA

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

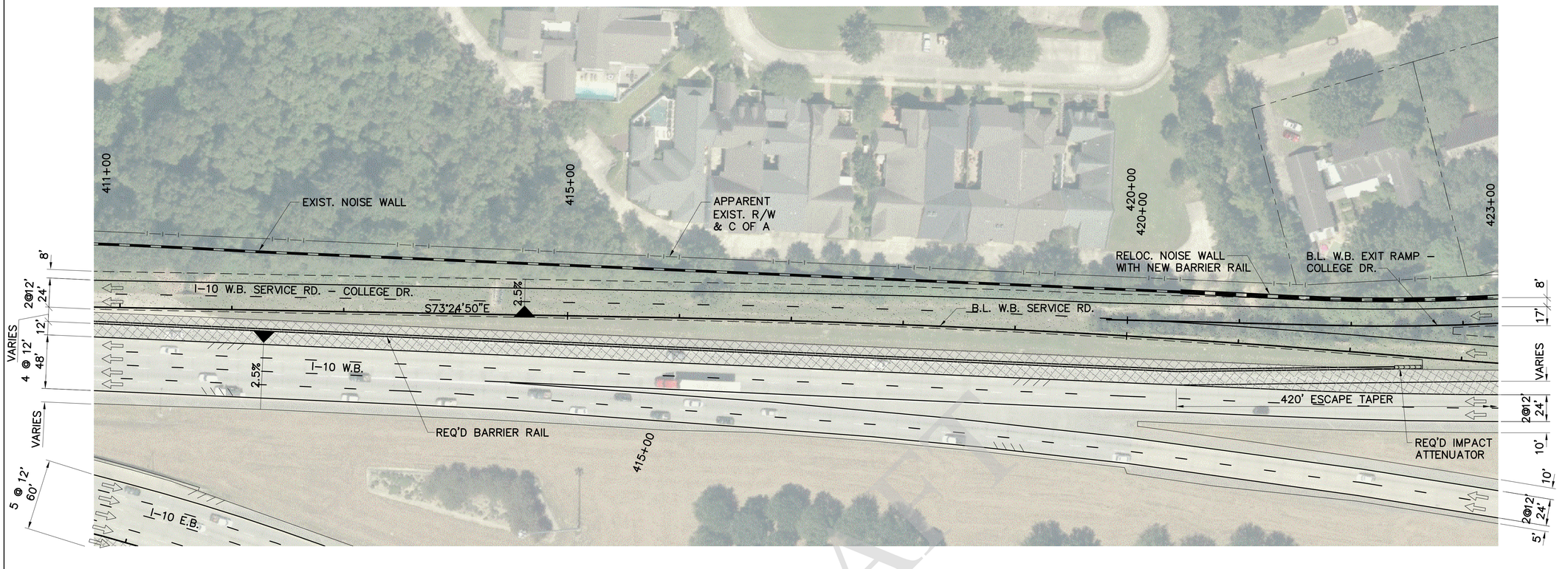
DOTD

SIGMA CONSULTING GROUP, INC.

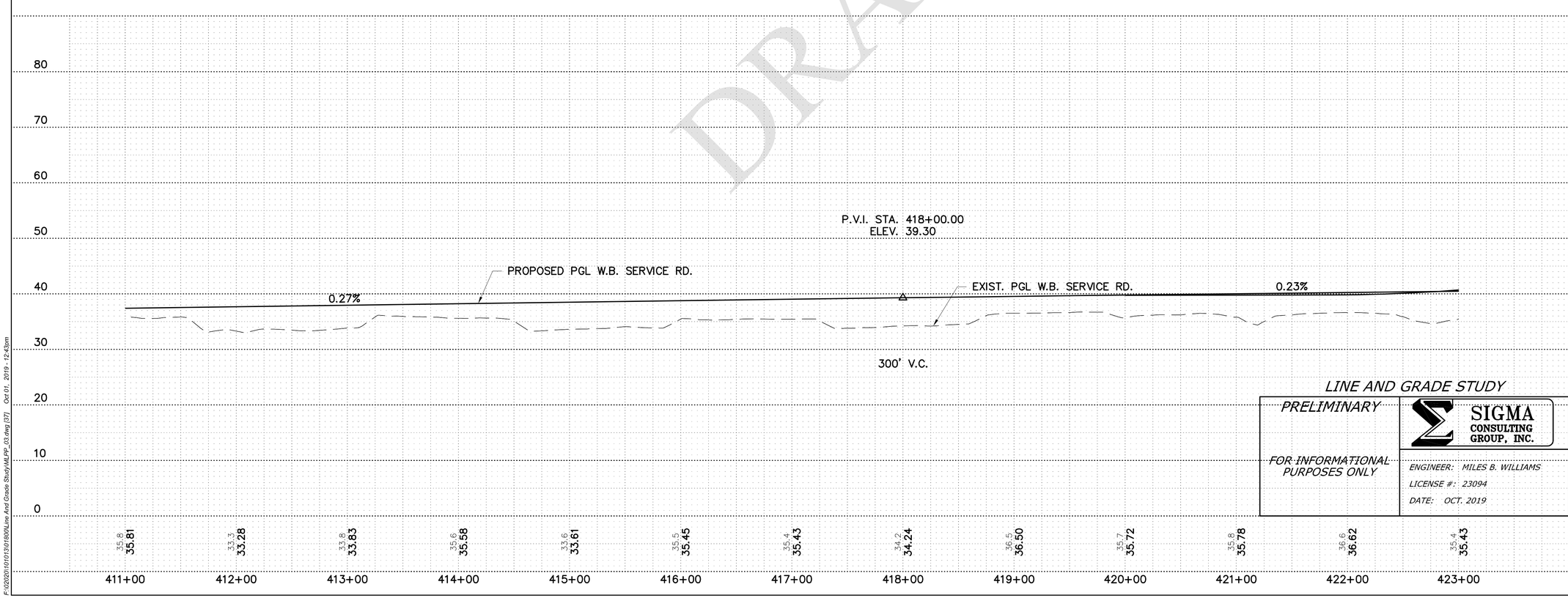
SIGMA CONSULTING GROUP, INC.

OCT. 2019

LINE & GRADE STUDY - DRAFT



1" = 50'
(1"=10', ¼ SCALE)



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LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS
LICENSE #: 23094
DATE: OCT. 2019

SHEET NUMBER	ML37
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED	WILLIAMS
CHECKED	
DETAILED	YARBROUGH
CHECKED	
SERIES NUMBER	37 OF 38

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

DOTD

SIGMA CONSULTING GROUP

SIGMA CONSULTING GROUP, INC.

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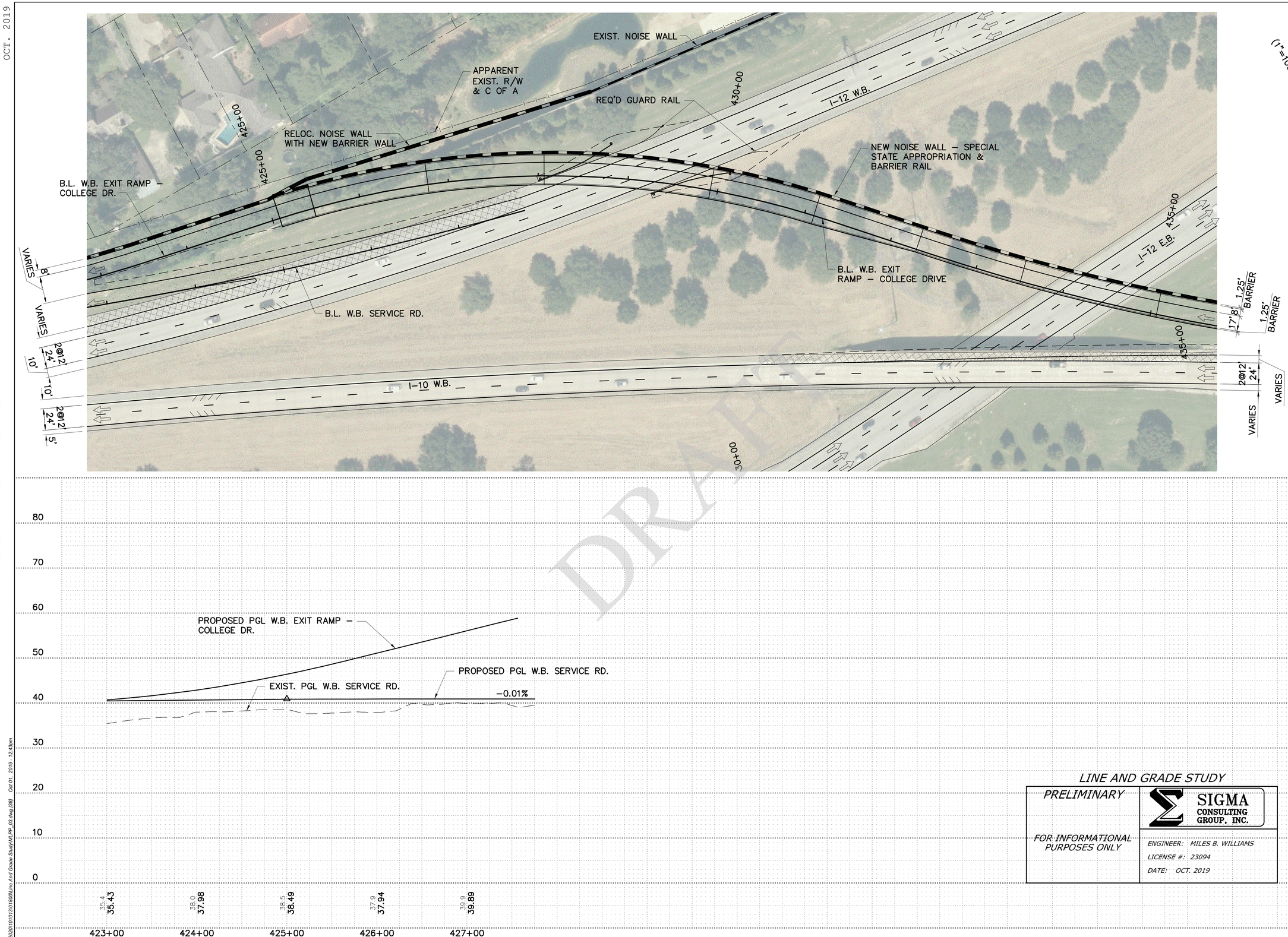
OCT. 2019

LINE & GRADE STUDY - DRAFT



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LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS

LICENSE #: 23094

DATE: OCT. 2019

SHEET NUMBER	ML38
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED / CHECKED	WILLIAMS
DETAILED / CHECKED	YARBROUGH
SERIES NUMBER	38 OF 38

REVISION OR CHANGE ORDER DESCRIPTION | DATE | BY

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

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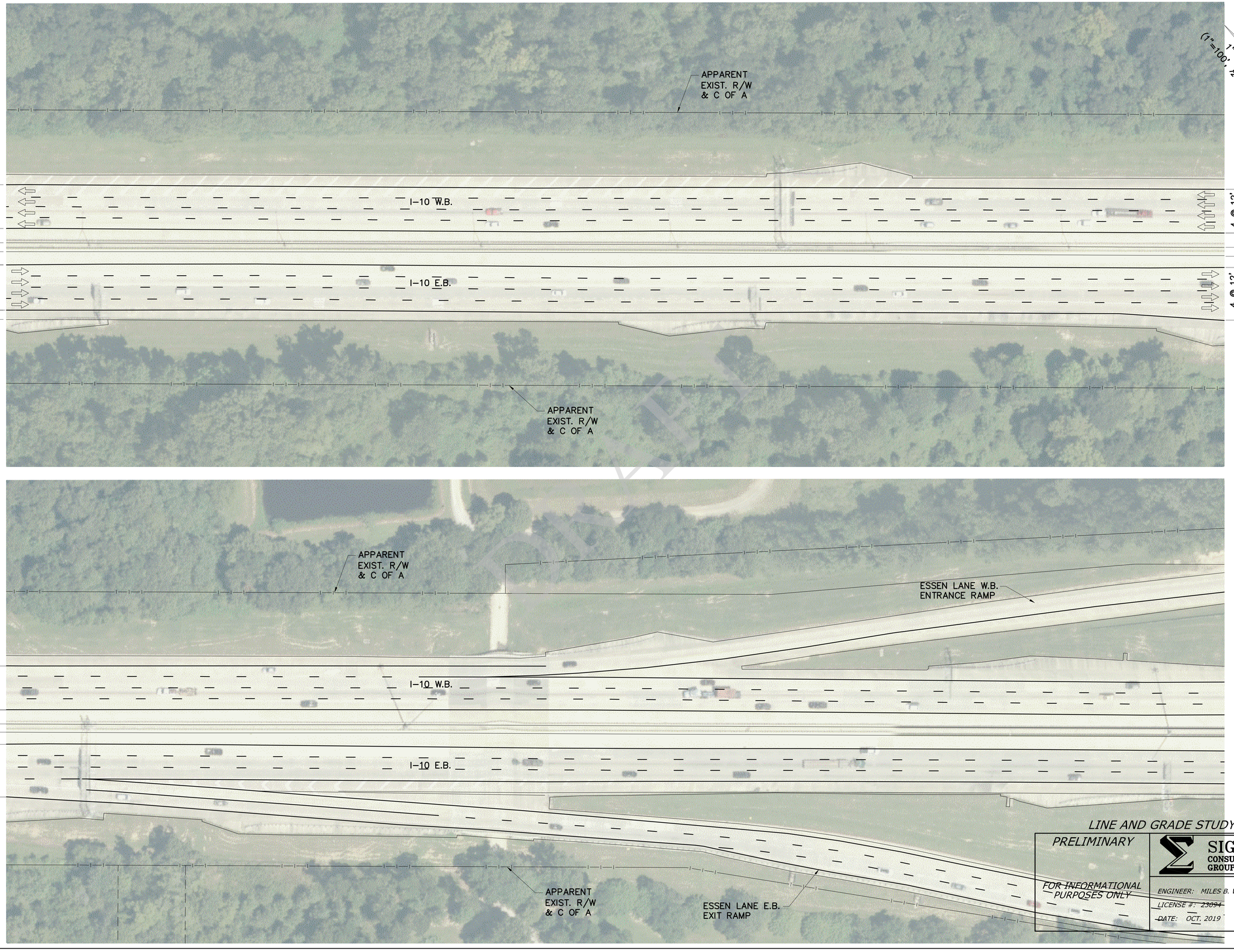
OCT. 2019

LINE & GRADE STUDY - DRAFT



LINE AND GRADE STUDY

PRELIMINARY

FOR INFORMATIONAL PURPOSES ONLY

SIGMA CONSULTING GROUP, INC.

ENGINEER: MILES B. WILLIAMS

LICENSE #: ~~23894~~

DATE: OCT. 2019

SHEET NUMBER	ML39
PARISH	EAST BATON ROUGE
CONTROL SECTION	450-10
STATE PROJECT	H.004100
DESIGNED / CHECKED	WILLIAMS
DETAILED / CHECKED	YARBROUGH
SERIES NUMBER	

NO.	DATE	REVISION OR CHANGE ORDER DESCRIPTION	BY

PLAN AND PROFILE
I-10 MAINLINE
I-10: LA 415 TO ESSEN ON I-10 AND I-12

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SIGMA CONSULTING GROUP

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Design Criteria

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URBAN SYSTEMS inc.

2. PROJECT DESIGN CONSIDERATIONS

2.1 Project Design Guidelines

The design guidance, criteria and standards contained herein for the Interstate 10 Corridor Improvements, LA 415 to Essen Lane, generally conform to the following:

- LA DOTD *"Roadway Design Procedures and Details"*
- LA DOTD *"Bridge Design and Evaluation Manual"*
- LA DOTD "Minimum Design Guidelines" (dated March 6, 2017)
- American Association of State Highway and Transportation Officials' (AASHTO) publication *"A Policy on Geometric Design of Highways and Streets",* 7th Edition dated 2018 (Green Book)
- AASHTO publication *"LRFD Bridge Design Specifications"* (7th Edition, 2014 with 2015 and 2016 Interim Revisions)
- LA DOTD Engineering Directives and Standards (EDSMs).

The Corridor specific "Minimum Design Guidelines" and criteria generated were used as a basis to develop line and grade alternatives for Interstate 10 and the associated interchange and surface street improvements through the project corridor. It is important that these design guidelines and criteria are developed early on in project development to provide a coherent and reliable reference and that they are reviewed and updated throughout the roadway and bridge design process.

Geometric Criteria

The project corridor includes both rural (West Baton Rouge Parish) and urban (East Baton Rouge Parish) settings. There are various roadway classifications (types) identified through the limits of the study. These include:

Rural Freeway	I-10 – LA 415 to Mississippi River Bridge West Approach
Urban Freeway	I-10 – Mississippi River Bridge West Approach to Essen Lane
Ramps – Diagonal	Majority of Interchange ramp mods./additions, Service Roads
Ramps – Loop	Dalrymple Drive & College Drive Loop Ramps
Urban Arterial	Acadian Thruway, Washington Street, Perkins Road, etc.
Urban Local	E. Harrison Street, Nairn Drive, S. Eugene Street, etc

Using the LA DOTD "Minimum Design Guidelines" (dated March 6, 2017) supplemented by the other referenced manuals and standards, the following "Design Report" worksheets were generated for each of the roadway classifications (types) identified. There are two "Design Report" worksheets for the Urban Freeway classification. One applies to the I-10 Mississippi River Bridge Approaches and the other applies to I-10 from the I-10/I-110 Interchange to Essen Lane.

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Roadway Features:

Design Feature	Preferred	Acceptable	Proposed Value	Design Waiver Required	Design Exception Required	Remarks or Explanation for Proposed Value
Design Speed (mph)		70 - 80	70			
Lane Width (ft)	NA	12	12			
Shoulder Width (ft)						
Inside	12	10	12			
Outside	12	10	12			
Shoulder Type						
Inside	Paved	Paved	Paved			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)			12			
Clear Zone (ft)		30-34	34			
Cross Slope (%)		2.5%	2.5%			
Longitudinal Grade	NA	3% MAX	3% MAX			
Slopes (ft/ft)						
Fore Slope	6:1	4:1	6:1			
Back Slope	4:1	3:1	4:1			
Median Width (ft)	NA	64 w/o	64			CABLE BARRIER PROVIDED

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?		Design Exception Required	Remarks or Explanation for Proposed Value
☑ Yes	☐ No	☐	SSD=730, K crest = 247, K sag = 181

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?		Design Exception Required	Remarks or Explanation for Proposed Value
☐ Yes	☐ No	☐	

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e_{max}	Design Speed (mph)	Required Minimum Radius (ft)			Minimum radius and appropriate superelevation are being used for all curves?	Design Exception Required	Remarks or Explanation for Proposed Value
		Normal Crown	Reverse Crown	Full Super			
8	70	14500	8495	1810	☑ Yes ☐ No	☐	
					☐ Yes ☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb				☐	☐	
Shoulder				☐	☐	N/A

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes ☐ No	☐	N/A

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes ☐ No	☐	N/A

Additional Comments:

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Roadway Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Design Speed (mph)		60 - 70	60			
Lane Width (ft)	NA	12	12			
Shoulder Width (ft)						
Inside	12	10	2.75		✔	INSIDE SHOULDERS TO MATCH WIDTH ON MAIN TRUSS. MEDIAN BARRIER TO BE UPGRADED.
Outside	12	10	12			12' OUTSIDE SHOULDERS TO BE PROVIDED WHERE ATTAINABLE
Shoulder Type						
Inside	Paved	Paved	Paved			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)	NA	NA	NA			LIMIT OF REGION ON STRUCTURE WITH BARRIER RAIL @ EDGE OF SHOULDER
Clear Zone (ft)		NA	NA			LIMIT OF REGION ON STRUCTURE WITH BARRIER RAIL @ EDGE OF SHOULDER
Cross Slope (%)		2.5%	1.5 / 2.5%		✔	2.5% ON ALL NEW CONSTRUCTION - MATCH EXISTING 1.5% ON STRUCTURE WIDENING
Longitudinal Grade	NA	3% MAX	3.8% MAX		✔	3.8% IS EXISTING MAXIMUM GRADE
Slopes (ft/ft)						
Fore Slope	NA	NA	NA			
Back Slope	NA	NA	NA			
Median Width (ft)	NA	NA	8			LIMIT OF REGION ON STRUCTURE WITH NEW MEDIAN BARRIER RAIL PROVIDED

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes ☐ No	☐	N/A

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e max	Design Speed (mph)	***Required Minimum Radius (ft)*** Normal Crown	Reverse Crown	Full Super	*Minimum radius and appropriate superelevation are being used for all curves?*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
8	60	11500	6678	1200	☐ Yes ☑ No	☑	SSD=570', Kcrest = 151, Ksag = 136. ACCEPTABLE GUIDELINES PROVIDED ON ALL NEW CONSTRUCTION - MATCH EXISTING ON STRUCTURE WIDENING
					☐ Yes ☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb				☐	☐	
Shoulder	TL + SW	TL + SW	TL + SW	☐	☑	SAME DESIGN EXCEPTION FOR INSIDE SHOULDER WIDTH

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes ☑ No	☑	REQUIRED MINIMUM CLEARANCE (16.5' OVER ROADWAYS & 23' OVER RAILROADS) PROVIDED WHERE ATTAINABLE. SEE VERTICAL CLEARANCE MEMO FOR ADDITIONAL DETAILS

Additional Comments:

APPLIES TO THE I-10 MISSISSIPPI RIVER BRIDGE APPROACHES

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Roadway Features:

Design Feature	Preferred	Acceptable	Proposed Value	Design Waiver Required	Design Exception Required	Remarks or Explanation for Proposed Value
Design Speed (mph)		60 - 70	60			
Lane Width (ft)	NA	12	12			
Shoulder Width (ft)						
Inside	12	10	10 / 12	✔		10' INSIDE SHOULDER MAY BE REQUIRED ON SOME ELEVATED SEGMENTS TO ADDRESS CONSTRUCTABILITY CONSTRAINTS. ALL OTHER INSIDE SHOULDERS WILL BE 12'.
Outside	12	10	12			
Shoulder Type						
Inside	Paved	Paved	Paved			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)	12	12	12			
Clear Zone (ft)		30 - 32	32			ALL AREAS WITH CLEAR ZONE LESS THAN 32' WILL BE PROTECTED BY BARRIER RAIL OR GUARDRAIL
Cross Slope (%)		2.5%	1.5 / 2.5%		✔	2.5% ON ALL NEW CONSTRUCTION & ROADWAY WIDENING - MATCH EXISTING 1.5% ON STRUCTURE WIDENING
Longitudinal Grade	NA	3% MAX	3% MAX			
Slopes (ft/ft)						
Fore Slope	6:1	4:1	6:1			
Back Slope	4:1	3:1	4:1			
Median Width (ft)	NA	64 W/O	64 W/O			ALL AREAS WITH MEDIAN WIDTH LESS THAN 64' WILL BE PROTECTED BY BARRIER RAIL

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?		Design Exception Required	Remarks or Explanation for Proposed Value
☑ Yes	☐ No	☐	

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?		Design Exception Required	Remarks or Explanation for Proposed Value
☐ Yes	☐ No	☐	N/A

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e_{max}	Design Speed (mph)	Required Minimum Radius (ft)			Minimum radius and appropriate superelevation are being used for all curves?		Design Exception Required	Remarks or Explanation for Proposed Value
		Normal Crown	Reverse Crown	Full Super				
8	60	11500	6678	1200	☐ Yes	☑ No	☑	SSD=570', Kcrest = 151, Ksag = 136. ACCEPTABLE GUIDELINES PROVIDED ON ALL NEW CONSTRUCTION & ROADWAY WIDENING - MATCH EXISTING ON STRUCTURE WIDENING
					☐ Yes	☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb				☐	☐	
Shoulder	TL + SW	TL + SW	TL + SW	☐	☐	

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes ☑ No	☑	REQUIRED MINIMUM CLEARANCE (16.5' OVER ROADWAYS & 23' OVER RAILROADS) PROVIDED WHERE ATTAINABLE. SEE VERTICAL CLEARANCE MEMO FOR ADDITIONAL DETAILS

Additional Comments:

APPLIES TO INTERSTATE 10 FROM THE I-10/I-110 INTERCHANGE TO ESSEN LANE

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Roadway Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Design Speed (mph)		30 - 50	45			
Lane Width (ft)	NA	12 / 15	15			15' SINGLE LANE/24' DUAL LANE - USE CASE "C" FROM AASHTO.
Shoulder Width (ft)						
Inside	NA	2 - 4	2			SEE AASHTO
Outside	NA	8 - 10	8			SEE AASHTO
Shoulder Type						
Inside	Paved	Paved	Paved			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)	10 Rt.	6 Rt. / 4 Lt.	10 Rt.			
Clear Zone (ft)		NA	NA			
Cross Slope (%)		2.5%	1.5%/2.5%		✔	2.5% ON ALL NEW RAMPS - MATCH EXISTING 1.5% ON RAMP WIDENING
Longitudinal Grade	NA	5% Max	5% Max			
Slopes (ft/ft)						
Fore Slope	NA	4:1	4:1			
Back Slope	NA	3:1	3:1			
Median Width (ft)	NA	NA	NA			

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	SSD=360', K crest = 61, K sag = 79

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes ☐ No	☐	N/A

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e max	Design Speed (mph)	***Required Minimum Radius (ft)*** Normal Crown	Reverse Crown	Full Super	*Minimum radius and appropriate superelevation are being used for all curves?*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
8	45	6710	4930	587	☐ Yes ☑ No	☑	FULL RECONSTRUCTION MEETS GUIDELINES. SOME LOCATIONS OF WIDENING OF EXIST. MAY REQUIRE DESIGN EXCEPTIONS.
					☐ Yes ☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb			23	☐	☐	TRAVEL LANES + 8'
Shoulder			25	☐	☐	TRAVEL LANES + SHOULDER WIDTH

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Additional Comments:

APPLIES TO ALL RAMPS EXCLUDING THE DALRYMPLE DRIVE WB EXIT LOOP RAMP AND THE COLLEGE DRIVE WB ENTRANCE LOOP RAMP
WHERE ELEVATED RAMPS TIE INTO EXISTING, THE CROSS SLOPE/SUPERELEVATION VALUES AND/OR SHOULDER WIDTH VALUES MAY REQUIRE DESIGN EXCEPTIONS.

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Roadway Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Design Speed (mph)		30 - 50	30			
Lane Width (ft)	NA	16	16			USE CASE "C" FROM AASHTO.
Shoulder Width (ft)						
Inside	NA	2 - 4	2			SEE AASHTO
Outside	NA	8 - 10	8			SEE AASHTO
Shoulder Type						
Inside	Paved	Paved	Paved			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)	10 Rt.	6 Rt. / 4 Lt.	10 Rt.			
Clear Zone (ft)		NA	NA			
Cross Slope (%)		2.5%	2.5%			
Longitudinal Grade	NA	5% MAX	5% MAX			
Slopes (ft/ft)						
Fore Slope	NA	4:1	4:1			
Back Slope	NA	3:1	3:1			
Median Width (ft)	NA	NA	NA			

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?		*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes	☐ No	☐	SSD=200', K crest = 19 K sag = 37

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?		*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☐ Yes	☐ No	☐	N/A

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e max	Design Speed (mph)	***Required Minimum Radius (ft)*** Normal Crown	Reverse Crown	Full Super	*Minimum radius and appropriate superelevation are being used for all curves?*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
8	30	3240	2370	214	☑ Yes ☑ No	☑	MINIMUMS PROVIDED FOR DALRYMPLE LOOP RAMP - DESIGN EXCEPTION REQUIRED FOR COLLEGE LOOP RAMP
					☐ Yes ☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb			23	☐	☐	TRAVEL LANES + 8'
Shoulder			25	☐	☐	TRAVEL LANES + SHOULDER WIDTH

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Additional Comments:

APPLIES TO DALRYMPLE WB EXIT LOOP RAMP AND COLLEGE WB ENTRANCE LOOP RAMP

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Roadway Features:

Design Feature	Preferred	Acceptable	Proposed Value	Design Waiver Required	Design Exception Required	Remarks or Explanation for Proposed Value
Design Speed (mph)		30 - 60	35			
Lane Width (ft)	12	11	12			
Shoulder Width (ft)						
Inside	1 (curb)	1 (curb)	1 (curb)			
Outside	4 (curb)	1 (curb)	1 (curb)	✔		
Shoulder Type						
Inside	Paved	Paved	Paved			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)	4	1.5 (3@ I/D)	1.5 (3@ I/D)	✔		PROVIDE 4' WHERE ATTAINABLE
Clear Zone (ft)		NA	NA			
Cross Slope (%)		2.5%	2.5%			
Longitudinal Grade	NA	5% MAX	5% MAX		✔	5.8% GRADE REQUIRED @ ACADIAN/KCSRR UNDERPASS
Slopes (ft/ft)						
Fore Slope	NA	4:1	4:1			
Back Slope	NA	3:1	3:1			
Median Width (ft)	NA	NA	NA			

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?		Design Exception Required	Remarks or Explanation for Proposed Value
☑ Yes	☐ No	☐	

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?		Design Exception Required	Remarks or Explanation for Proposed Value
☐ Yes	☑ No	☑	ACCOMODATE COMPLETE STREETS WHERE ATTAINABLE

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e_{max}	Design Speed (mph)	Required Minimum Radius (ft)			Minimum radius and appropriate superelevation are being used for all curves?	Design Exception Required	Remarks or Explanation for Proposed Value
		Normal Crown	Reverse Crown	Full Super			
4	35	527	399	371	☑ Yes ☐ No	☐	SSD=250, Kcrest = 29, Ksag = 49
					☐ Yes ☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb	TL + 8	TL + SW	TL + SW	☑	☐	
Shoulder				☐	☐	

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☑ Yes ☐ No	☐	

Additional Comments:

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Roadway Features:

Design Feature	Preferred	Acceptable	Proposed Value	Design Waiver Required	Design Exception Required	Remarks or Explanation for Proposed Value
Design Speed (mph)		20 - 30	30			
Lane Width (ft)	11	10	11/12			
Shoulder Width (ft)						
Inside	NA	NA	NA			
Outside	4 (curb)	1 (curb)	1 & 4 (curb)	↘		PROVIDE 4' WHERE ATTAINABLE
Shoulder Type						
Inside	NA	NA	NA			
Outside	Paved	Paved	Paved			
Lateral Offset (ft)	4	1.5 (3@I/D)	1.5 & 4	↘		PROVIDE 4' WHERE ATTAINABLE
Clear Zone (ft)		NA	NA			
Cross Slope (%)		2.5%	2.5%			
Longitudinal Grade	NA	5% MAX	5%/6% MAX		↘	6% GRADE PROPOSED FOR SOUTH APPROACH OF NAIRN DR OVERPASS TO MATCH EXISTING. ALL OTHERS TO BE 5% MAX
Slopes (ft/ft)						
Fore Slope	NA	4:1	4:1			
Back Slope	NA	3:1	3:1			
Median Width (ft)	NA	NA	NA			

Stopping Sight Distance: *Vertical and horizontal distances must be met.*

Do plans meet Stopping Sight Distance requirements?		Design Exception Required	Remarks or Explanation for Proposed Value
↘ Yes	☐ No	☐	SSD=200', K crest = 19, K sag = 37

Complete Streets: *Accommodations for bikes and pedestrians must be considered. See Design Guidelines for accommodation requirements.*

Do plans meet Complete Streets accommodations?		Design Exception Required	Remarks or Explanation for Proposed Value
☐ Yes	↘ No	↘	COMPLETE STREETS WILL BE ACCOMODATED WHERE ATTAINABLE

Horizontal Curves Radius/Superelevation:

Max Super-elevation rate (%) e_{max}	Design Speed (mph)	Required Minimum Radius (ft) Normal Crown	Reverse Crown	Full Super	Minimum radius and appropriate superelevation are being used for all curves?	Design Exception Required	Remarks or Explanation for Proposed Value
4	30	343	267	250	↘ Yes ☐ No	☐	
					☐ Yes ☐ No	☐	

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Bridge Features:

Design Feature	*Preferred*	*Acceptable*	*Proposed Value*	*Design Waiver Required*	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
Bridge Width (ft)						
Curb	TL + 8	TL + SW	32	☐	☐	NAIRN BRIDGE PROPOSED WIDTH MEETS PREFERRED
Shoulder				☐	☐	

Structural Capacity:

Do all structures meet requirements for Structural Capacity?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☒ Yes ☐ No	☐	

Vertical Clearance:

Are minimum required roadway clearances met for all structure types?	*Design Exception Required*	*Remarks or Explanation for Proposed Value*
☒ Yes ☐ No	☐	

Additional Comments:

Applies to Nairn Drive and other local roads that are relocated.

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Right of Way and Construction Servitude Criteria

During the development of the line and grade for the I-10 Corridor Improvements every attempt was made to minimize right of way acquisitions through the corridor. Where acquisition is necessary the guidelines used for the width of proposed Right of Way or Construction Servitude was developed in consultation with LA DOTD based on the existing and proposed roadway/bridge types and location of proposed noise barriers and retaining walls. The description of each roadway/bridge section along with the designation of acquisition width is below.

At-Grade Roadways:
With Noise Barriers – Right-of-way will be set 1'-6" from the back of the noise barrier. A construction servitude will be set 10'-0" from the back of the noise barrier.

Without Noise Barriers – Right-of-way will be 10'-0" from the edge of the proposed roadway shoulder. This excludes areas which are tight, such as Braddock Street, where the existing edge of pavement was used as the marker for the 10'-0" construction servitude.

Elevated Structures:
With or Without Noise Barriers – Right-of-way will be 5'-0" from the fascia of the elevated structure. There will be no construction servitude shown along structures.

Bridge Criteria

Per BDEM 6.1, the minimum requirements for Bridge Widening projects shall include the following:

1. All deficiencies in the existing structure were identified and documented. This was documented under a separate document "Final Bridge Condition Assessment Report."
2. The existing structure shall be rehabilitated to improve the overall condition of the bridge to extend its service life and/or improve its bridge load rating as appropriate.
3. The new or widened portions of the structure shall be designed in accordance with the latest *AASHTO LRFD Bridge Design Specifications* and LADOTD Bridge Design Manuals including Bridge Design Technical Memoranda.
4. Existing bridge components, such as exterior girders, bent caps, columns, piles etc., that are subject to new loadings from the widening sections shall be evaluated based on the current specifications to determine their adequacy. Bridge components with insufficient capacity shall be replaced or rehabilitated as appropriate.

Design Loads: Any new bridge components shall be designed for a future wearing surface equal to 25 psf and a stay-in-place form weight of 10 psf. Live load for all limit states shall be both the HL-93 and the Louisiana design vehicle LADV-11 applied in accordance with LRFD code.

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Earthquake, EQ: [AASHTO *LRFD Bridge Design Specifications 3.10]*: The seismic performance zone is 1b with an acceleration coefficient equal to 0.078, and a site class E(F). The structure has an operational classification of "Essential Bridges". All connections designed to resist 25% of the vertical reaction due to tributary dead loads. No earthquake loads are assumed during construction.

Vehicular Collision force, CT: [AASHTO *LRFD Bridge Design Specifications 3.6.5]*: All bents and piers located within a distance of 30.0 ft to the edge of any roadway (or 25 ft from railroad tracks) shall be investigated for collision. Collision shall be addressed by either redirecting the load through the use of pier protection or designing the structural member to absorb the lateral impact load. All existing columns that are not designed for lateral impact forces shall be protected in accordance with *AASHTO LRFD Bridge Design Specifications*.

Bridge Barrier: All new bridge barrier railings shall have a 36" tall single-slope traffic railing meeting TL-4 test level. Existing bridge railings that do not meet NCHRP 350 or MASH TL-4 shall be replaced.

2.2 Segments of Independent Utility

For major corridor improvement programs or projects it is important to break down the overall proposed improvement program into manageable project increments or Segments of Independent Utility (SIU). Segments of Independent Utility, within a large corridor improvement, each provide beneficial use by interconnecting existing infrastructure, providing upgraded capacity and/or providing increased safety based on its own merits. In addition, segmenting the I-10 Corridor Improvements into reasonable potential independent projects (SIU's) allows for the development of more robust staging and construction packaging scenarios, programmatic scheduling and corridor financial planning.

Following are recommended Segments of Independent Utility for the I-10 Corridor Improvements delineated from west to east through the corridor (See Figure 2-1 at the end of this section for a layout of the SIU's):

I-10: LA 415 to LA 1 – **SIU-01**
(LA 415 to Base of Westside Approach of MRB)
This segment consists of three laning the at-grade roadways of I-10 in each direction from the LA 415 Interchange east to the beginning of the west approaches to the Mississippi River Bridge (MRB). Lane balance can be maintained by adding/dropping the third lane in each direction at the LA 415 east side ramps and the LA 1 west side ramps.

I-10: Mississippi River Bridge Westside Approach – **SIU-02**
(Base of Westside Approach of MRB to Main Cantilever Truss)
This segment consists of proposed shoulder widening improvements, acceleration/deceleration lane extensions at the LA 1 ramps, and the continuation of a third westbound lane past the LA 1 WB exit ramp. This segment provides some capacity

improvement by the addition of the third I-10 westbound lane and the improvement of the movements at the ramps. It also provides a reasonable safety improvement by adding outside shoulders to I-10 where practical.

I-10: Mississippi River Bridge Eastside Approach – **SIU-03**
(Main Cantilever Truss to I-10 EB/I-110 NB Diverge)
This segment consists of proposed shoulder widening improvements, deceleration lane improvements at the Highland/Nicholson exit ramp and an acceleration lane extension at the St. Ferdinand/St. Louis entrance ramp. This segment provides only limited capacity improvement with the extension of the acceleration/deceleration ramps. It also provides a reasonable safety improvement by adding outside shoulders to I-10 where practical.

Note: The work required for **SIU-02** and **SIU-03** is similar in nature and magnitude and it would be reasonable to consider combining these two sections into one major construction project.

I-10 Eastbound Ramp – **SIU-04**
(I-10 EB/I-110 NB Diverge to I-10 EB/I-110 SB Merge)
This segment consists of proposed shoulder widening improvements and increase of the superelevation to increase design speed. This segment provides very limited capacity improvement by widening shoulders and increasing operating speed. It also provides a reasonable safety improvement by adding full width shoulders where practical.

I-10: Washington/Dalrymple Interchange Area – **SIU-05**
(I-10/I-110 Interchange to Dalrymple)
This segment consists of the four laning of I-10 in each direction from the I-10/I-110 Interchange to Dalrymple Drive. Also included are interchange modifications with the relocation of the Washington Street and Dalrymple Drive Eastbound Exit to a consolidated exit prior to the I-10/I-110 Eastbound merge. The westbound exit to Dalrymple Drive will be incorporated with a weaving set of ramps to provide for traffic to continue to Washington Street and Louise Street. In addition, an at-grade turnaround will be incorporated prior to Washington Street with the westbound entrance provide an eastbound entrance to I-10 for traffic from Dalrymple.

This segment provides limited mainline independent utility by providing a fourth lane in each direction for approximately 4,500 feet. The at-grade/interchange improvements will provide enhanced access through the Louise Street/Washington Street/Dalrymple Drive area by eliminating the lane drop at the Washington Street Eastbound Exit and by providing I-10 Eastbound access from the Dalrymple/LSU area.

I-10: City Park Lake Bridge and Roadways – **SIU-06**
(Dalrymple to Elissalde)
This segment consists of the four laning of I-10 in each direction from Dalrymple Drive to the beginning of the Perkins/KCSRR/Acadian Overpass Bridge. The major components are the improvements to the City Park Lake Bridge and the at-grade roadways to the east for approximately 2,000 feet.

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This segment provides additional mainline independent utility by providing a fourth lane in each direction for approximately 2,900 feet. This segment in conjunction with **SIU-5** *Washington/Dalrymple Interchange Area* will provide four lanes in each direction for approximately 7,400 feet.

I-10: Perkins Road/KCSRR/Acadian Thruway Overpass Bridge – **SIU-07**
(Elissalde to Acadian Thruway)
This segment consists of four laning the I-10 bridge in each direction from just east of Elissalde Street to the east side of Acadian Thruway. The Perkins Road Westbound Entrance Ramp and Eastbound Exit Ramp will be removed. The Acadian Thruway Interchange will be improved to address traffic demand.

This segment provides additional mainline independent utility by providing a fourth lane in each direction for approximately 3,500 feet. This segment in conjunction with **SIU-5** *Washington/Dalrymple Interchange Area* and **SIU-6** *City Park Lake Bridge and Roadways* will provide four lanes in each direction for approximately 10,900 feet. This segment also provides enhanced safety and at grade capacity improvements with the elimination of the Perkins Road Partial Interchange and improvements to the Acadian Thruway Interchange.

- *Acadian Thruway Interchange At-Grade Improvements* – **SIU-07(A)**
  The at-grade improvements for the interchange may be considered a separate project or combined in **SIU-07**. These improvements must be completed to accommodate the additional traffic from the closure of the Perkins Road Partial Interchange

- *Perkins Road Area At-Grade Improvements* – **SIU-07(B)**
  Potential Enhancements Project – may be considered a separate project or combined in **SIU-07.**

I-10: Acadian Thruway to College Drive– **SIU-08**
This segment consists of four laning the I-10 in each direction from just east of Acadian Thruway to just east of College Drive. Minor adjustments to the ramps on the east side of the Acadian Thruway Interchange and the west side of the College Drive Interchange are included in this segment. In addition, the Nairn Drive Overpass will be replaced in this segment.

This segment provides additional mainline independent utility by providing a fourth lane in each direction for approximately 3,400 feet. This segment in conjunction with **SIU-05** *Washington/Dalrymple Interchange Area*, **SIU-06** *City Park Lake Bridge and Roadways* and **SIU-07** *Perkins Road/KCSRR/Acadian Thruway Overpass Bridge* will provide four lanes in each direction through the corridor from the I-10/I-110 Interchange to the I-10/I-12 Split.

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- *Nairn Drive Overpass over I-10* - **SIU-08(A)**: This new bridge can be separated out of **SIU-08** as a standalone project. This bridge must be replaced/extended prior to or in conjunction with the completion of **SIU-08.**

I-10: College Drive to I-10/I-12 Interchange– **SIU-09**
This segment consists of five laning I-10 Eastbound to the I-10/I-12 Split. It also includes providing dedicated westbound exit ramps from I-10 and I-12 to a service road to access College Drive.

This segment provides independent utility by providing eastbound lane balance at the I-10/I-12 split.

- *College Drive Westbound Exits from I-10/I-12* - **SIU-09(A)**: The improvements to provide dedicated westbound exit ramps from I-10 and I-12 to a service road to access College Drive can be separated out of **SIU-09** as a standalone project. As stated above, this improvement provides a safety/capacity improvement for the westbound College Drive exit by eliminating the multilane weave required from I-10 westbound to the existing College Drive exit.

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Project Segment of Independent Utility
Staging and Construction Packaging

Legend

- I-10: LA 415 to LA 1 - SIU-01
- I-10: Mississippi Bridge Westside Approach - SIU-02
- I-10: Mississippi Bridge Eastside Approach - SIU-03
- I-10: Eastbound Ramp - SIU-04
- I-10: Washington/Dalrymple Interchange Area - SIU-05
- I-10: City Park Lake Bridge and Roadways - SIU-06
- I-10: Perkins Road/KCSRR/Acadian Thruway Overpass Bridge - SIU-07
- I-10: Acadian Thruway Interchange At-Grade Improvements - SIU-07 (A)
- I-10: Perkins Road Area At-Grade Enhancements - SIU-07 (B)
- I-10: Acadian Thruway to College Drive - SIU-08
- I-10: Nairn Drive Overpass Over I-10 - SIU-08 (A)
- I-10: College Drive to I-10/I-12 Interchange - SIU-09
- I-10: College Drive WB Exits from I-10/1-12 - SIU-09 (A)

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FIGURE 2-1

2.3 Design Waivers and Exceptions

A substantial portion of The I-10 Corridor Improvements Project involves complex and congested transportation facilities in close proximity to intensely urbanized areas. The design guidelines and criteria described in Section 2.1 above set the framework for which all of the proposed alternative improvements were developed. However, because of the complexity of the facility and the proximity to established residential and commercial areas there are areas or components of the proposed improvements that could not be reasonably designed to meet some of the appropriate design values described in the Design Reports for that type of facility. Therefore several potential design waivers and design exceptions have been identified based on the proposed line and grade design.

There are various reasons that these design waivers and exceptions are necessary. These include:

- Substantial adverse impact to the surrounding neighborhoods
- Substantial increase in project cost for some component of the project
- Difficulty maintaining traffic flow during the construction or reconstruction of that component of the project

A design waiver must be granted by the LA DOTD Supervising Engineer for any design value utilized which is designated as "acceptable" when a "preferred" value for that particular element is also provided. No design waiver is needed for elements which are designated as "acceptable" and where a "preferred" value is not provided. A design exception must be granted by the LA DOTD Chief Engineer for any design value chosen which does not meet the "acceptable" value for the specific criteria.

The designated design waivers and exceptions described below will not create an unsafe condition or compromise the capacity of the upgraded facility.

Potential design waivers and design exceptions for the corridor delineated by Segment of Independent Utility (SIU) and roadway classification include:

- *I-10: LA 415 to LA 1* – **SIU-01**
  - Rural Freeway
    - No design waivers or exceptions anticipated in SIU-01

- *I-10: Mississippi Bridge Westside Approach* – **SIU-02** &
  I-10: Mississippi Bridge Eastside Approach – **SIU-03**
  - Urban Freeway
    - The existing cross slopes of the mainline bridge and approaches are 1.5%. The minimum guideline is 2.5%. Widening of the mainline bridge approaches can be accomplished with a break in cross slope to 2.5%. However, a design exception will be required for the existing portions to remain at 1.5% and if the widening is accomplished with a 1.5% cross slope.

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        - The maximum existing vertical grade is 3.8%. The guideline calls for a maximum vertical grade of 3.0%. This will require a design exception.
        - Existing inside shoulders are 2' in width. The guideline calls for inside shoulders of 12' in width. No work is proposed for the main cantilever truss and therefore full width inside shoulders cannot be developed on the approaches. This will require a design exception.
    - Ramps – Diagonal
        - Ramps at LA 1 Interchange, Exit Ramp at Nicholson Drive and Entrance Ramp at St. Ferdinand: Where ramps are being widened and/or tie into existing, the cross slopes/superelevation values and shoulder width values may require design exceptions.
        - EB Entrance Ramp – LA 1: The horizontal curve proposed at the beginning of the ramp has a radius of 430'. This value exceeds the minimum guideline of 587'. This will require a design exception.
        - WB Entrance Ramp – St. Ferdinand: The horizontal curve proposed (widen existing) along a majority of the ramp has a radius of 327'. This value exceeds the minimum guideline of 587'. This will require a design exception.

- *I-10 Eastbound Ramp* – **SIU-04**
    - Urban Freeway
        - The existing cross slopes and superelevation rates do not meet the minimum guidelines. Design exceptions will be required where the structure is proposed to be widened at the existing cross slopes/superelevation rates.
        - The horizontal curve proposed along a majority of the segment has a radius of 832'. This value exceeds the minimum guideline of 1200'. This will require a design exception. Also the minimum stopping sight distance for a 60 mph design speed is not provided. The horizontal curve and shoulder offset will comply with a design speed of 50 mph.

- *I-10: Washington/Dalrymple Interchange Area* – **SIU-05**
    - Urban Freeway
        - The existing cross slopes and superelevation rates do not meet the minimum guidelines. Design exceptions will be required where the structure is proposed to be widened at the existing cross slopes/superelevation rates.
        - The required minimum vertical clearance of 16.5' cannot be feasibly provided at Terrace Street (14.6' provided) and Louise Street (14.7' provided). These will require design exceptions.
        - 10' inside shoulders may be required on some portions of the elevated viaduct to address constructability constraints. This does

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not meet the preferred minimum width of 12'. However it does meet the acceptable minimum width of 10'. This will require a design waiver.

- Ramps – Diagonal
  - WB Entrance Ramp – Washington Street: Minimum required full superelevation rates of 6.7%+/- for the reverse curves at the tie in to I-10 cannot be achieved. The superelevation rates provided are 5.0%+/-. This will require a design exception.
- Urban Arterial – Washington St., etc.
  - The proposed outside shoulder width with curb is 1' (2' curb and gutter section). This meets the acceptable guideline but does not meet the preferred guideline of 4'. A design waiver will be required for this.
  - Some components of the complete streets accommodations cannot be feasibly met. This will require a design exception.

- *I-10: City Park Lake Bridge and Roadways* – **SIU-06**
  - Urban Freeway
    - The required minimum vertical clearance of 16.5' cannot be feasibly provided at East Lakeshore Drive (13.4' provided). This will require a design exception.
    - 10' inside shoulders may be required on the City Park Lake Bridge to address constructability constraints. This will require a design waiver.

- *I-10: Perkins Road/KCSRR/Acadian Thruway Overpass Bridge* – **SIU-07**
  - Urban Freeway
    - Required minimum vertical clearance of 16.5' cannot be feasibly provided at Christian Street (13.0' provided). This will require a design exception.
    - 10' inside shoulders may be required on some portions of the elevated viaduct to address constructability constraints. This will require a design waiver.

- *Acadian Thruway Interchange At-Grade Improvements* – **SIU-07(A)**
  - Urban Arterial
    - The proposed outside shoulder width with curb is 1' (2' curb and gutter section). This meets the acceptable guideline but does not meet the preferred guideline of 4'. A design waiver will be required for this.
    - The required minimum vertical clearance of 16.5' cannot be feasibly provided under the Kansas City Southern Railroad Overpass (15.5' provided). This will require a design exception.

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- The maximum existing vertical grade under the KCSRR is 5.8%. This is greater than the maximum allowed in the guidelines of 5.0%. This will require a design exception.
- Some components of the complete streets accommodations cannot be feasibly met. This will require a design exception.

- *I-10: Acadian Thruway to College Drive*– **SIU-08**
  - Urban Freeway
    - 10' inside shoulders may be required on some portions of the College Drive overpass to address constructability constraints. This will require a design waiver.
  - Ramps – Loop
    - WB Entrance Ramp @ College Drive: The horizontal curve proposed (match existing) at the tie in to I-10 has a radius of 160'. This value exceeds the minimum guideline of 212'. This will require a design exception.

- *Nairn Drive Overpass over I-10* - **SIU-08(A)**
  - Urban Arterial
    - The proposed grade for the south approach to the overpass is 6.0%. This exceeds the minimum guideline of 5.0%. This will require a design exception.

- *I-10: College Drive to I-10/I-12 Interchange*– **SIU-09** - Urban Freeway &
- *College Drive Westbound Exits from I-10/I-12* – **SIU-09A** – Ramps Diagonal
    - No design exceptions or waivers are anticipated for these segments.

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Build Analysis Input Parameters and Results

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PHF = Vt / (Vpeak 15 * 4)

I-12 WB before merge with I-10	
Count Source	#11
Day	Tuesday 10/24/17
Time	7:00:00 AM-8:00 AM
	15 Min Volumes
7:00	838
7:15	836
7:30	743
7:45	858
PHF	0.95

I-12 WB before merge with I-10	
Count Source	#11
Day	Tuesday 10/24/17
Time	5:00:00 PM-6:00 PM
	15 Min Volumes
5:00	651
5:15	672
5:30	577
5:45	566
PHF	0.92

I-10 WB before merge with I-12	
Count Source	#10
Day	Wednesday 10/11/17
Time	7:00:00 AM-8:00 AM
	15 Min Volumes
7:00	898
7:15	923
7:30	939
7:45	862
PHF	0.96

I-10 WB before merge with I-12	
Count Source	#10
Day	Tuesday 10/24/17
Time	5:00:00 PM-6:00 PM
	15 Min Volumes
5:00	834
5:15	945
5:30	820
5:45	708
PHF	0.87

I-10 WB on ramp from College Dr	
Count Source	#59
Day	Thursday 11/9/17
Time	7:00:00 AM-8:00 AM
	15 Min Volumes
7:00	120
7:15	109
7:30	120
7:45	107
PHF	0.95

I-10 WB on ramp from College Dr	
Count Source	#59
Day	Thursday 11/9/17
Time	5:00:00 PM-6:00 PM
	15 Min Volumes
5:00	99
5:15	86
5:30	81
5:45	89
PHF	0.90

I-10 WB on ramp from Essen Ln	
Count Source	#58
Day	Wednesday 10/11/17
Time	7:00:00 AM-8:00 AM
	15 Min Volumes
7:00	105
7:15	111
7:30	109
7:45	99
PHF	0.95

I-10 WB on ramp from Essen Ln	
Count Source	#58
Day	Wednesday 10/11/17
Time	5:00:00 PM-6:00 PM
	15 Min Volumes
5:00	163
5:15	141
5:30	164
5:45	127
PHF	0.91

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	8/15/2018
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB after merge with I-12 4 lanes		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7429	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.98	Flow Rate (V_p), pc/h/ln	2010
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	8/15/2018
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB after merge with I-12 4 lanes		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6050	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.89	Flow Rate (V_p), pc/h/ln	1835
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.1
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	7/26/19
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-12 WB between ramp to I-10 EB and ramp to College Dr AM		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3572	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1329
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.59
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	7/26/19
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-12 WB between ramp to I-10 EB and ramp to College Dr PM		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2663	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1071
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.48
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	19.9
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	7/26/19
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-12 WB between ramp to College Dr and merge with I-10 AM		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3223	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.95	Flow Rate (V_p), pc/h/ln	1799
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.4
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	7/26/19
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-12 WB between ramp to College Dr and merge with I-10 PM		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	2296	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.92	Flow Rate (V_p), pc/h/ln	1385
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (ET)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	4/4/2018
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB btw Ramp to I-12 EB and Ramp to College Dr AM		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4650	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	1727
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.1
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	4/4/2018
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB btw Ramp to I-12 EB and Ramp to College Dr PM		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4202	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	1707
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.7
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	8/15/2018
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB btw Ramp to College Dr and merge with I-12		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	4206	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	2343
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Basic Freeway Report

Project Information

Analyst	AMB	Date	4/4/2018
Agency	US - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB btw Ramp to College Dr and merge with I-12 PM		

Geometric Data

Number of Lanes, ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	2.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.8
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	3754	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.87	Flow Rate (V_p), pc/h/ln	2288
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2238
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2238
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.02
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	6.2	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.8		

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HCS7 Freeway Diverge Report

Project Information

Analyst	AMB	Date	3/13/2019
Agency	USI	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - College Dr Off Ramp Diverge to Trust Dr		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	45.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Highway/CD Roadway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	793	137
Peak Hour Factor (PHF)	0.93	0.93
Total Trucks, %	4.20	4.20
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.960	0.960
Flow Rate (v_i), pc/h	888	153
Capacity (c), pc/h	3800	2000
Volume-to-Capacity Ratio (v/c)	0.23	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	8.8
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.442
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	43.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	888	Ramp Junction Speed (S), mi/h	43.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.2
Level of Service (LOS)	A		

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HCS7 Freeway Diverge Report

Project Information

Analyst	AMB	Date	3/13/2019
Agency	USI	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - College Dr Off Ramp Diverge to Trust Dr		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	2	1
Free-Flow Speed (FFS), mi/h	45.0	35.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	340
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Highway/CD Roadway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	815	136
Peak Hour Factor (PHF)	0.91	0.91
Total Trucks, %	3.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.971	0.971
Flow Rate (v_i), pc/h	922	154
Capacity (c), pc/h	3800	2000
Volume-to-Capacity Ratio (v/c)	0.24	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	9.1
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.442
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	-
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influence Area Speed (S_R), mi/h	43.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	1.000	Outer Lanes Freeway Speed (S_O), mi/h	-
Flow in Lanes 1 and 2 (v_{12}), pc/h	922	Ramp Junction Speed (S), mi/h	43.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	10.5
Level of Service (LOS)	A		

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HCS Weave analysis		
INPUT		Notes
Project Properties		
Analyst	Initials of person doing analysis	
Agency	USI- 10-085-2	
Analysis Year	2017	Or 2040 as applicable
Project Description	I-10 Corridor Improvement Stage 1 EA - "segment location"	Example: I-10 Corridor Improvement Stage 1 EA - I-10 EB btwn Perkins and Acadian ramps
Jurisdiction	LADOTD	
Time Period	"Scenario AM"	Example: Existing AM, No Build PM, Build AM
Date	"Date of analysis"	should be autofilled with date analysis is conducted
Freeway Geometric Data		
Number of lanes	4	# of lanes in analysis direction
Measured FFS	unchecked	
Free Flow Speed	Posted speed	
Weaving Configuration	One-Sided	
Number of Manuver Lanes	2	
Short Length	2200	the distance in feet between the end points of any barrier markings (solid white lines) that prohibit or discourage lane changing
Interchange Density	1	
Managed Lane	unchecked	
Cross Weaving Managed Lane	unchecked	
Terrain Type	Level	
Percent Grade	-	
Grade Length	-	
Minimum FR Lane Changes	1	
Minimum RF Lane Changes	1	
Minimum RR Lane Changes	0	
Highway of C-D Roadway	unchecked	
Ramp Geometric Data		
On Ramp/Off Ramp		
Number of lanes	1	# of lanes in analysis direction
Free Flow Speed	Posted speed	
Terrain Type	Level	
Percent Grade	-	
Grade Length	-	
Demand Data		
Freeway to Freeway (FF), Ramp to Freeway (RF), Ramp to Ramp (RR), Freeway to Ramp(FR)		
Demand	Volume	See Weave Sensitivity Analysis volume figure on page D-X of Appendix D
Demand Adjustment Factor	default	1.00
Peak Hour Factor	Calculated PHF	Same day and time as 2017 vol. Print out to document source.
Total Trucks	HV % from DCR reports	
Percent Grade	-	
Grade Length	-	
Adjustment Factors		
Driver Population	default	All familiar
Weather Type	default	Non-severe Weather
Incident Type	default	No Incident
Work Zone	default	unchecked
Speed Adjustment Factor	default	1.00
Capacity Adjustment Factor	default	1.00

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The following assumptions were made for the weave analysis:

- PHF and HV% were chosen based on the vehicles' origin
- For example: Freeway to Ramp movement uses I-10 mainline values

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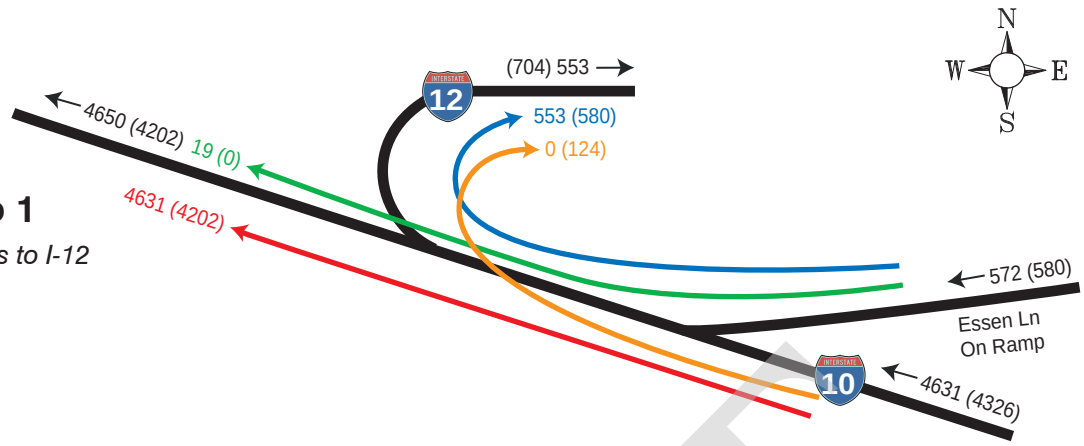
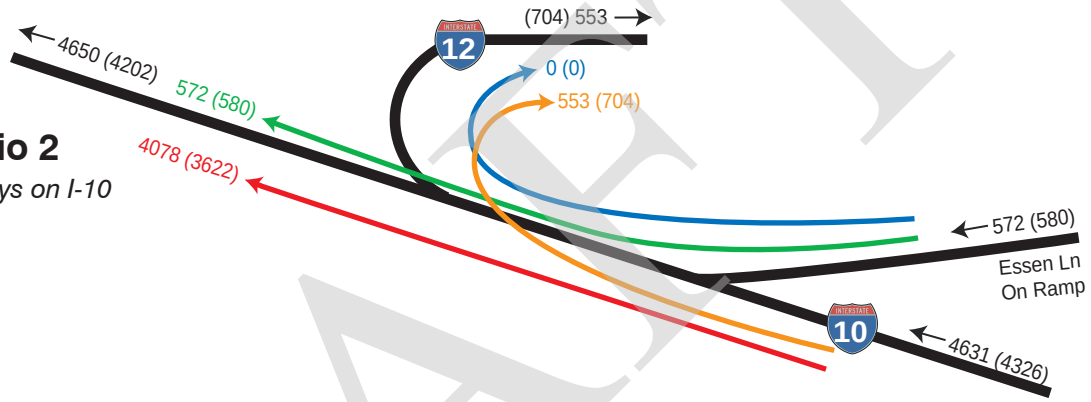
Volume Scenario 1

100% of Essen On Ramp Exits to I-12



Volume Scenario 2

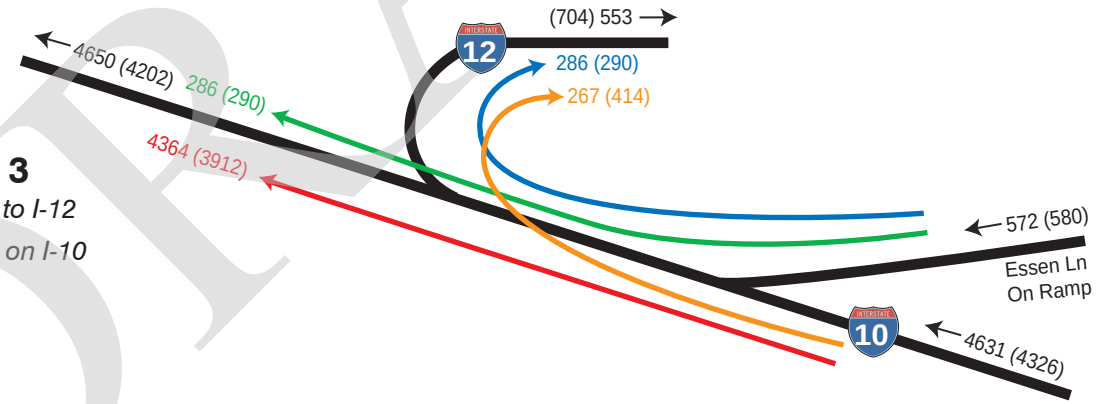
100% of Essen On Ramp Stays on I-10



Volume Scenario 3

50% of Essen On Ramp Exits to I-12

50% of Essen On Ramp Stays on I-10



LEGEND:

AM (PM)	Ramp to Freeway Volumes (RF)
AM (PM)	Ramp to Ramp Volumes (RR)
AM (PM)	Freeway to Freeway Volumes (FF)
AM (PM)	Freeway to Ramp Volumes (FR)
AM (PM)	Total Volumes

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Build Volume Sensitivity Weave Analysis

IMR Data Collection
Directional Ramp from I-10 WB to College Drive
East Baton Rouge Parish, LA

NOT TO SCALE
FOR PLANNING PURPOSES ONLY

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HCS7 Freeway Weaving Report

Project Information

Analyst	AMB	Date	3/1/2019
Agency	US 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build Volume Scenario 1 AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB weave btwn Essen On and I-12 Off		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	2200	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	4631	19	553	0
Peak Hour Factor (PHF)	0.96	0.95	0.95	0.96
Total Trucks, %	7.00	2.00	2.00	7.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.935	0.980	0.980	0.935
Flow Rate (v_i), pc/h	5159	20	594	0

Weaving Flow Rate (v_w), pc/h	20	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	5753	Density-Based Capacity (c_{IWL}), pc/h/ln	2268
Total Flow Rate (v), pc/h	5773	Demand Flow-Based Capacity (c_{IW}), pc/h	800000
Volume Ratio (VR)	0.003	Weaving Segment Capacity (c_W), veh/h	8482
Minimum Lane Change Rate (LC_{MIN}), lc/h	20	Adjusted Weaving Area Capacity, pc/h	9024
Maximum Weaving Length (L_{MAX}), ft	2624	Volume-to-Capacity Ratio (v/c)	0.64

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	1266	Average Weaving Speed (S_W), mi/h	51.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	1607	Average Non-Weaving Speed (S_{NW}), mi/h	52.9
Weaving Lane Change Rate (LC_W), lc/h	494	Average Speed (S), mi/h	52.9
Total Lane Change Rate (LC_{All}), lc/h	2101	Density (D), pc/mi/ln	27.3
Weaving Intensity Factor (W)	0.218	Level of Service (LOS)	C

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HCS7 Freeway Weaving Report

Project Information

Analyst	AMB	Date	3/1/2019
Agency	US 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build Volume Scenario 1 PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB weave btwn Essen On and I-12 Off		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	2200	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	4202	0	580	124
Peak Hour Factor (PHF)	0.87	0.91	0.91	0.87
Total Trucks, %	6.00	3.00	3.00	6.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971	0.971	0.943
Flow Rate (v_i), pc/h	5122	0	656	151

Weaving Flow Rate (v_w), pc/h	151	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	5778	Density-Based Capacity (c_{IWL}), pc/h/ln	2252
Total Flow Rate (v), pc/h	5929	Demand Flow-Based Capacity (c_{IW}), pc/h	96000
Volume Ratio (VR)	0.025	Weaving Segment Capacity (c_W), veh/h	8495
Minimum Lane Change Rate (LC_{MIN}), lc/h	151	Adjusted Weaving Area Capacity, pc/h	8978
Maximum Weaving Length (L_{MAX}), ft	2827	Volume-to-Capacity Ratio (v/c)	0.66

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	1271	Average Weaving Speed (S_W), mi/h	51.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	1612	Average Non-Weaving Speed (S_{NW}), mi/h	51.8
Weaving Lane Change Rate (LC_W), lc/h	625	Average Speed (S), mi/h	51.8
Total Lane Change Rate (LC_{All}), lc/h	2237	Density (D), pc/mi/ln	28.6
Weaving Intensity Factor (W)	0.229	Level of Service (LOS)	D

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HCS7 Freeway Weaving Report

Project Information

Analyst	AMB	Date	3/1/2019
Agency	US 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build Volume Scenario 2 AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB weave btwn Essen On and I-12 Off		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	2200	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	4078	572	0	553
Peak Hour Factor (PHF)	0.96	0.95	0.95	0.96
Total Trucks, %	7.00	2.00	2.00	7.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.935	0.980	0.980	0.935
Flow Rate (v_i), pc/h	4543	614	0	616

Weaving Flow Rate (v_w), pc/h	1230	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	4543	Density-Based Capacity (c_{IWL}), pc/h/ln	2111
Total Flow Rate (v), pc/h	5773	Demand Flow-Based Capacity (c_{IW}), pc/h	11268
Volume Ratio (VR)	0.213	Weaving Segment Capacity (c_W), veh/h	7895
Minimum Lane Change Rate (LC_{MIN}), lc/h	1230	Adjusted Weaving Area Capacity, pc/h	8400
Maximum Weaving Length (L_{MAX}), ft	4670	Volume-to-Capacity Ratio (v/c)	0.69

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	999	Average Weaving Speed (S_W), mi/h	49.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	1358	Average Non-Weaving Speed (S_{NW}), mi/h	44.2
Weaving Lane Change Rate (LC_W), lc/h	1704	Average Speed (S), mi/h	45.3
Total Lane Change Rate (LC_{All}), lc/h	3062	Density (D), pc/mi/ln	31.9
Weaving Intensity Factor (W)	0.293	Level of Service (LOS)	D

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HCS7 Freeway Weaving Report

Project Information

Analyst	AMB	Date	3/1/2019
Agency	US 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build Volume Scenario 2 PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB weave btwn Essen On and I-12 Off		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	2200	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	3622	580	0	704
Peak Hour Factor (PHF)	0.87	0.91	0.91	0.87
Total Trucks, %	6.00	3.00	3.00	6.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971	0.971	0.943
Flow Rate (v_i), pc/h	4415	656	0	858

Weaving Flow Rate (v_w), pc/h	1514	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	4415	Density-Based Capacity (c_{IWL}), pc/h/ln	2078
Total Flow Rate (v), pc/h	5929	Demand Flow-Based Capacity (c_{IW}), pc/h	9412
Volume Ratio (VR)	0.255	Weaving Segment Capacity (c_W), veh/h	7838
Minimum Lane Change Rate (LC_{MIN}), lc/h	1514	Adjusted Weaving Area Capacity, pc/h	8284
Maximum Weaving Length (L_{MAX}), ft	5106	Volume-to-Capacity Ratio (v/c)	0.72

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	971	Average Weaving Speed (S_W), mi/h	49.3
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	1331	Average Non-Weaving Speed (S_{NW}), mi/h	42.0
Weaving Lane Change Rate (LC_W), lc/h	1988	Average Speed (S), mi/h	43.7
Total Lane Change Rate (LC_{All}), lc/h	3319	Density (D), pc/mi/ln	33.9
Weaving Intensity Factor (W)	0.313	Level of Service (LOS)	D

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HCS7 Freeway Weaving Report

Project Information

Analyst	AMB	Date	3/1/2019
Agency	US 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build Volume Scenario 3 AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB weave btwn Essen On and I-12 Off		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	2200	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	4364	286	286	267
Peak Hour Factor (PHF)	0.96	0.95	0.95	0.96
Total Trucks, %	7.00	2.00	2.00	7.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.935	0.980	0.980	0.935
Flow Rate (v_i), pc/h	4862	307	307	297

Weaving Flow Rate (v_w), pc/h	604	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	5169	Density-Based Capacity (c_{IWL}), pc/h/ln	2194
Total Flow Rate (v), pc/h	5773	Demand Flow-Based Capacity (c_{IW}), pc/h	22857
Volume Ratio (VR)	0.105	Weaving Segment Capacity (c_W), veh/h	8206
Minimum Lane Change Rate (LC_{MIN}), lc/h	604	Adjusted Weaving Area Capacity, pc/h	8731
Maximum Weaving Length (L_{MAX}), ft	3588	Volume-to-Capacity Ratio (v/c)	0.66

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	1137	Average Weaving Speed (S_W), mi/h	50.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	1487	Average Non-Weaving Speed (S_{NW}), mi/h	48.7
Weaving Lane Change Rate (LC_W), lc/h	1078	Average Speed (S), mi/h	48.9
Total Lane Change Rate (LC_{All}), lc/h	2565	Density (D), pc/mi/ln	29.5
Weaving Intensity Factor (W)	0.255	Level of Service (LOS)	D

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HCS7 Freeway Weaving Report

Project Information

Analyst	AMB	Date	3/1/2019
Agency	US 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	Build Volume Scenario 3 PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB weave btwn Essen On and I-12 Off		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	2200	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.00	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	3912	290	290	414
Peak Hour Factor (PHF)	0.87	0.91	0.91	0.87
Total Trucks, %	6.00	3.00	3.00	6.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.971	0.971	0.943
Flow Rate (v_i), pc/h	4768	328	328	505

Weaving Flow Rate (v_w), pc/h	833	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	5096	Density-Based Capacity (c_{IWL}), pc/h/ln	2167
Total Flow Rate (v), pc/h	5929	Demand Flow-Based Capacity (c_{IW}), pc/h	17143
Volume Ratio (VR)	0.140	Weaving Segment Capacity (c_W), veh/h	8174
Minimum Lane Change Rate (LC_{MIN}), lc/h	833	Adjusted Weaving Area Capacity, pc/h	8639
Maximum Weaving Length (L_{MAX}), ft	3932	Volume-to-Capacity Ratio (v/c)	0.69

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	1121	Average Weaving Speed (S_W), mi/h	50.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	1472	Average Non-Weaving Speed (S_{NW}), mi/h	46.9
Weaving Lane Change Rate (LC_W), lc/h	1307	Average Speed (S), mi/h	47.4
Total Lane Change Rate (LC_{All}), lc/h	2779	Density (D), pc/mi/ln	31.3
Weaving Intensity Factor (W)	0.272	Level of Service (LOS)	D

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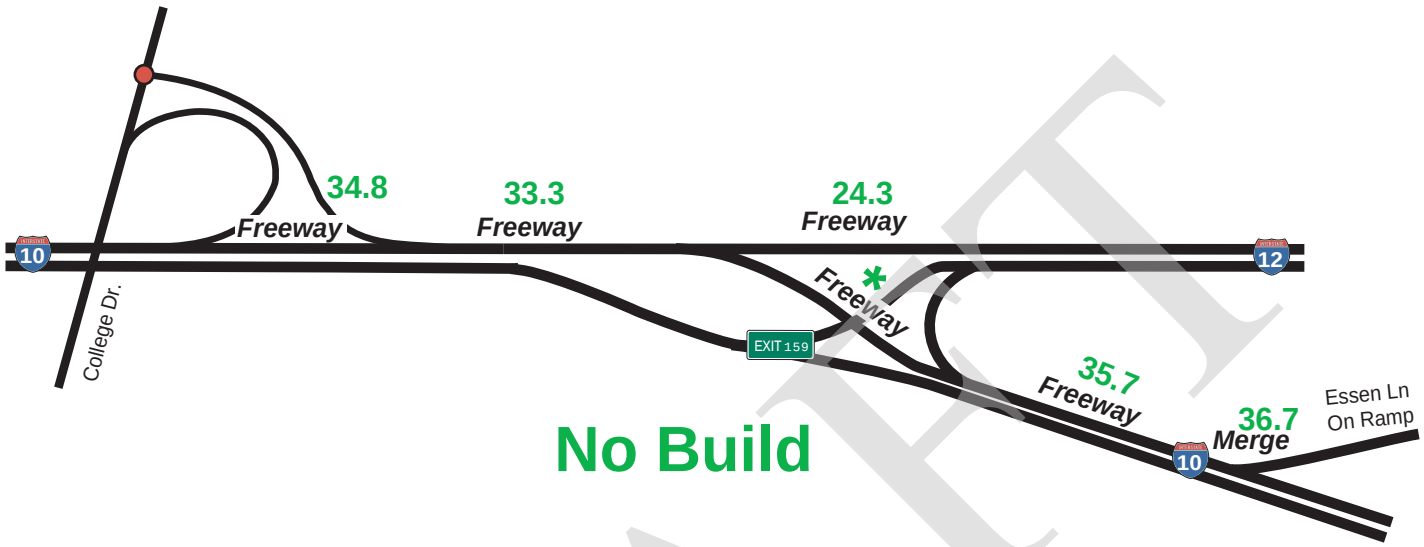
LEGEND:

- X AM No Build Reported Density (pc/mi/ln)
- X AM Build Reported Density (pc/mi/ln)
- X Freeway Analysis Type
- * V/C ratio > 1; HCS software does not report density
- V.S. Volume Scenario



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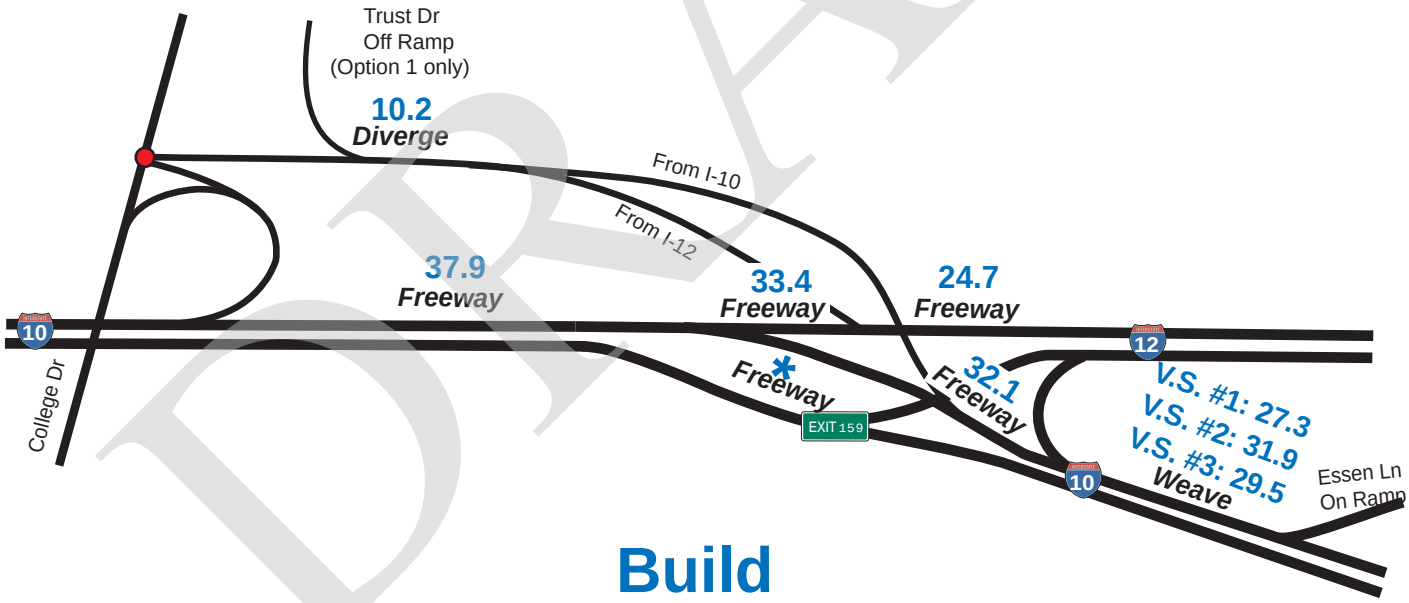

Build

AM 2040 No Build vs. Build MOE Results

IMR Data Collection
Directional Ramp from I-10 WB to College Drive
East Baton Rouge Parish, LA

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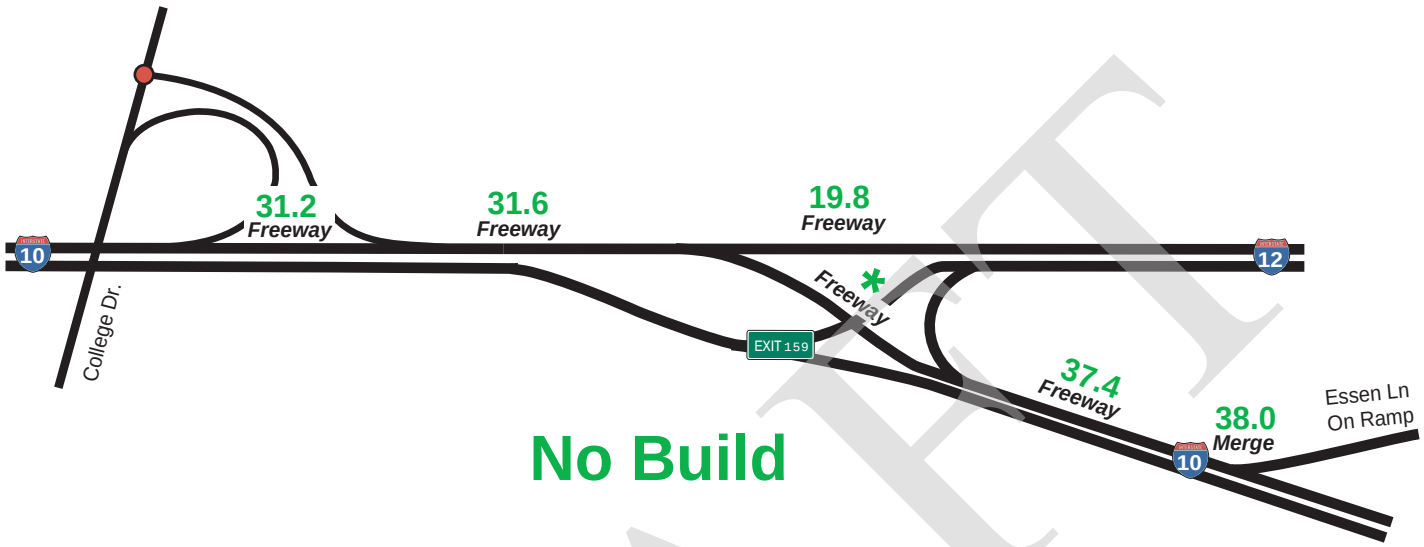
LEGEND:

- X AM No Build Reported Density (pc/mi/ln)
- X AM Build Reported Density (pc/mi/ln)
- X Freeway Analysis Type
- * V/C ratio > 1; HCS software does not report density
- V.S. Volume Scenario



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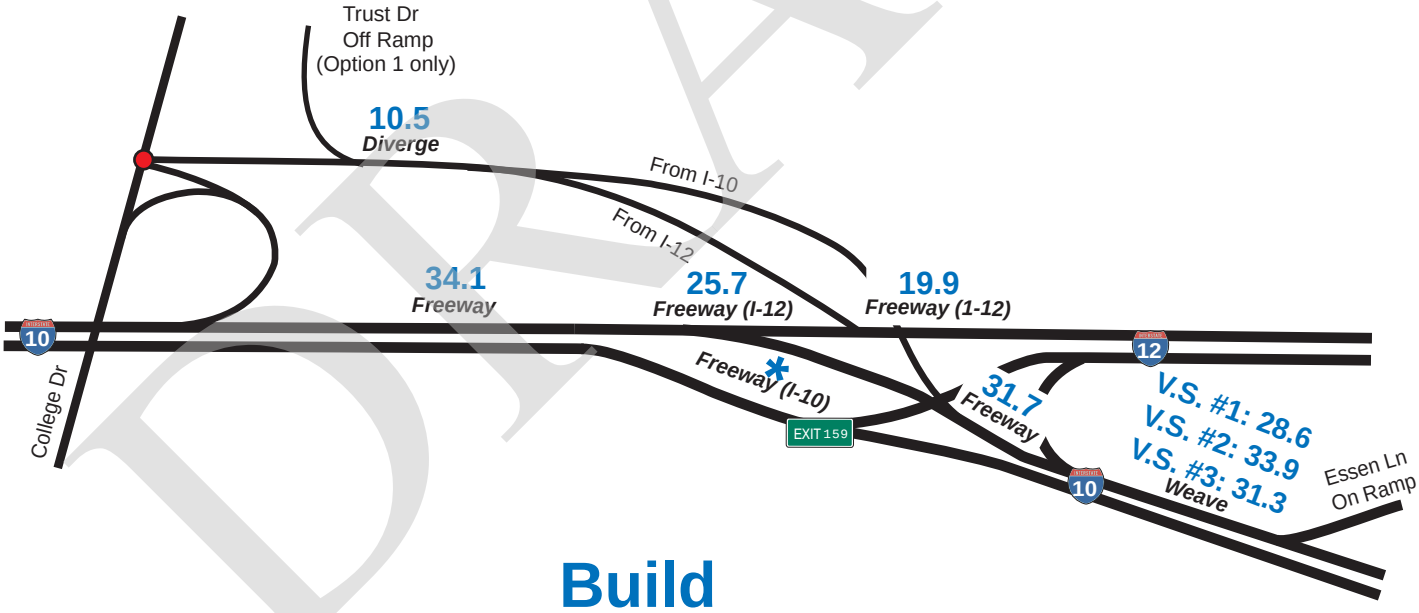

Build

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PM 2040 No Build and Build MOE Results

IMR Data Collection
Directional Ramp from I-10 WB to College Drive
East Baton Rouge Parish, LA

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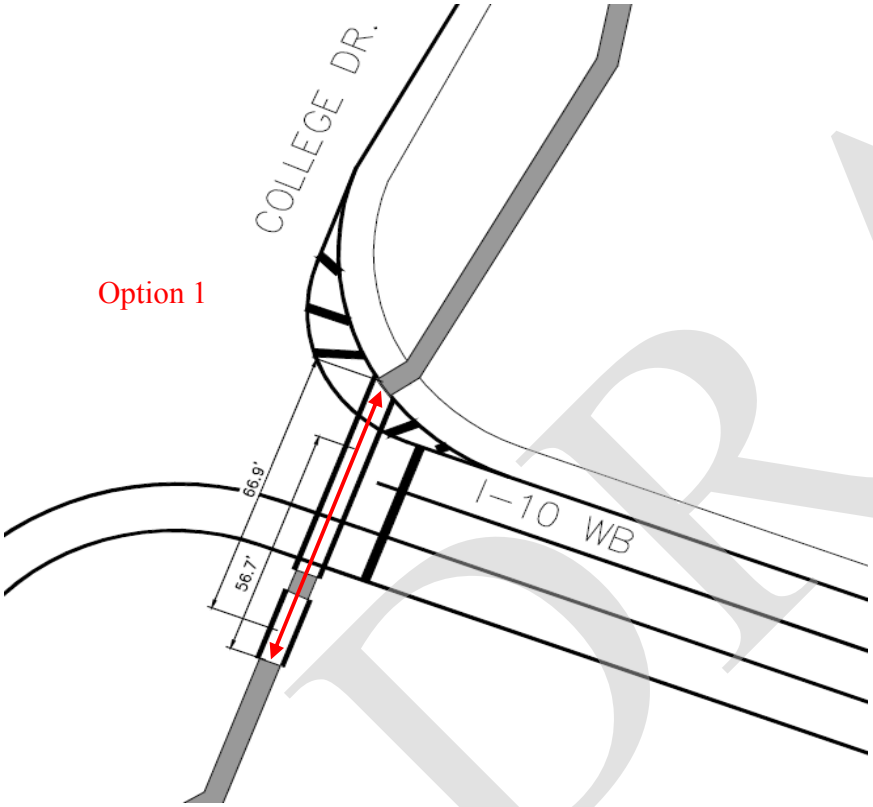
Pedestrian Timing Calculations

College Dr at I-10 WB							
Location	Distance (ft)	Speed (ft/sec)	Clearance (sec)	**Total Required Pedestrian Time**	**AM Min Green + Yellow**	**PM Min Green + Yellow**	**Phase(s)**
NS Crossing W Approach Option 1	67	3.5	19.1	26.1	19.7	19.7	2 + 6
NS Crossing W Approach Option 2	67	3.5	19.1	26.1	19.7	19.7	2 + 6

Option 1



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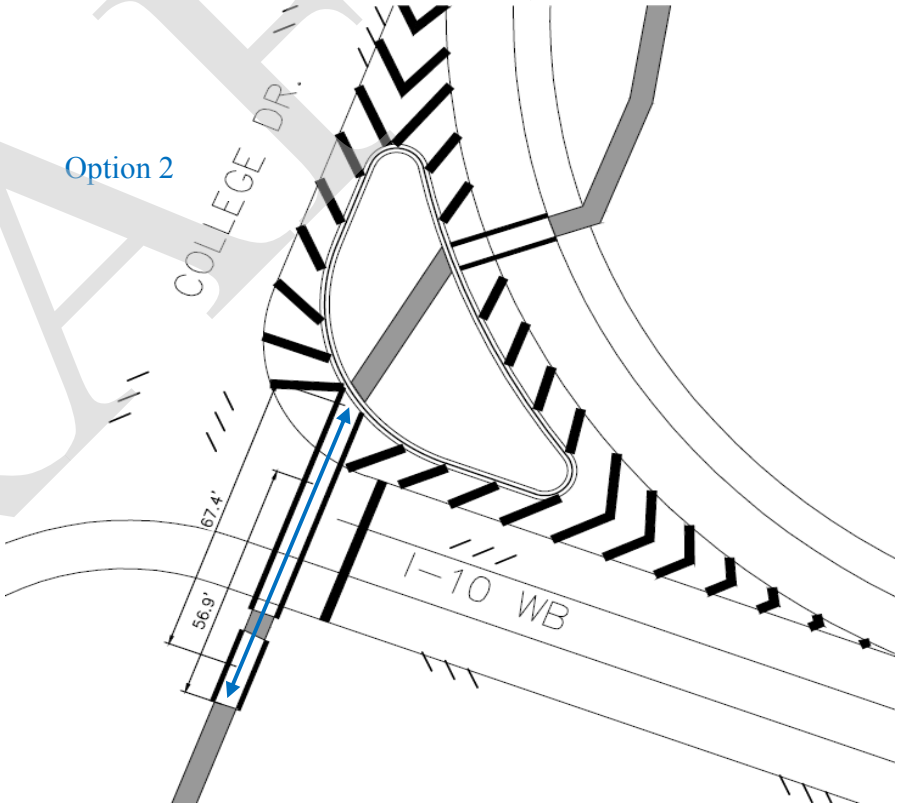

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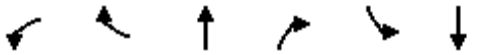

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	401	255	1300	405	371	1106
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1881	1863	1845
Adj Flow Rate, veh/h	431	274	1398	0	399	1189
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	1	2	3
Cap, veh/h	688	316	1460	660	423	2301
Arrive On Green	0.20	0.20	0.41	0.00	0.20	0.66
Sat Flow, veh/h	3442	1583	3632	1599	1774	3597
Grp Volume(v), veh/h	431	274	1398	0	399	1189
Grp Sat Flow(s),veh/h/ln	1721	1583	1770	1599	1774	1752
Q Serve(g_s), s	13.7	20.1	46.0	0.0	21.7	21.2
Cycle Q Clear(g_c), s	13.7	20.1	46.0	0.0	21.7	21.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	688	316	1460	660	423	2301
V/C Ratio(X)	0.63	0.87	0.96	0.00	0.94	0.52
Avail Cap(c_a), veh/h	846	389	1460	660	433	2322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	46.4	34.2	0.0	37.3	10.7
Incr Delay (d2), s/veh	1.2	16.1	15.4	0.0	28.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.9	24.7	33.7	0.0	23.0	15.4
LnGrp Delay(d),s/veh	45.1	62.6	49.6	0.0	66.0	11.0
LnGrp LOS	D	E	D		E	B
Approach Vol, veh/h	705		1398			1588
Approach Delay, s/veh	51.9		49.6			24.8
Approach LOS	D		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		84.3		29.5	29.3	55.0		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		79.5		29.5	24.5	49.5		
Max Q Clear Time (g_c+I1), s		23.2		22.1	23.7	48.0		
Green Ext Time (p_c), s		45.9		1.9	0.1	1.4		

Intersection Summary	
HCM 2010 Ctrl Delay	39.4
HCM 2010 LOS	D

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Phase Number	2	4	5	6
Movement	SBTL	WBL	SBL	NBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	Min	None	None	C-Max
Maximum Split (s)	85	35	30	55
Maximum Split (%)	70.8%	29.2%	25.0%	45.8%
Minimum Split (s)	15.5	10.5	15.5	32.5
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	10	5	3	10
Vehicle Extension (s)	4	3.4	2	4
Minimum Gap (s)	2	3.4	2	2
Time Before Reduce (s)	20	0	0	20
Time To Reduce (s)	2	0	0	2
Walk Time (s)				7
Flash Dont Walk (s)				20
Dual Entry	No	No	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	35.5	0.5	35.5	65.5
End Time (s)	0.5	35.5	65.5	0.5
Yield/Force Off (s)	115	30	60	115
Yield/Force Off 170(s)	115	30	60	95
Local Start Time (s)	40.5	5.5	40.5	70.5
Local Yield (s)	0	35	65	0
Local Yield 170(s)	0	35	65	100

Intersection Summary	
Cycle Length	120
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 115 (96%), Referenced to phase 6:NBT, Start of Yellow	

Splits and Phases: 7: College Dr & I-10

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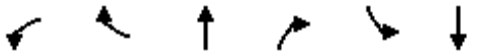

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	415	264	1428	198	323	1416
Number	7	14	6	16	5	2
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1881	1900	1900	1863
Adj Flow Rate, veh/h	456	290	1569	0	355	1556
Adj No. of Lanes	2	1	2	1	1	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	1	0	0	2
Cap, veh/h	671	309	1847	834	376	2511
Arrive On Green	0.19	0.19	0.52	0.00	0.16	0.71
Sat Flow, veh/h	3442	1583	3668	1615	1810	3632
Grp Volume(v), veh/h	456	290	1569	0	355	1556
Grp Sat Flow(s),veh/h/ln	1721	1583	1787	1615	1810	1770
Q Serve(g_s), s	18.4	27.1	56.7	0.0	21.2	34.2
Cycle Q Clear(g_c), s	18.4	27.1	56.7	0.0	21.2	34.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	671	309	1847	834	376	2511
V/C Ratio(X)	0.68	0.94	0.85	0.00	0.94	0.62
Avail Cap(c_a), veh/h	677	311	1847	834	414	2584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	59.5	31.2	0.0	45.7	11.3
Incr Delay (d2), s/veh	2.9	35.3	5.1	0.0	28.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.0	32.9	38.1	0.0	24.3	23.5
LnGrp Delay(d),s/veh	58.9	94.8	36.3	0.0	73.7	11.8
LnGrp LOS	E	F	D		E	B
Approach Vol, veh/h	746		1569			1911
Approach Delay, s/veh	72.9		36.3			23.3
Approach LOS	E		D			C

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		111.9		34.7	28.9	83.0		
Change Period (Y+Rc), s		5.5		5.5	5.5	5.5		
Max Green Setting (Gmax), s		109.5		29.5	26.5	77.5		
Max Q Clear Time (g_c+I1), s		36.2		29.1	23.2	58.7		
Green Ext Time (p_c), s		66.1		0.2	0.2	18.2		

Intersection Summary	
HCM 2010 Ctrl Delay	36.9
HCM 2010 LOS	D

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Phase Number	2	4	5	6
Movement	SBTL	WBL	SBL	NBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	Min	None	None	C-Max
Maximum Split (s)	115	35	32	83
Maximum Split (%)	76.7%	23.3%	21.3%	55.3%
Minimum Split (s)	15.5	10.5	9.5	32.5
Yellow Time (s)	4.5	4.5	4.5	4.5
All-Red Time (s)	1	1	1	1
Minimum Initial (s)	10	5	3	24
Vehicle Extension (s)	4	3.4	2	4
Minimum Gap (s)	2	3.4	2	2
Time Before Reduce (s)	20	0	0	20
Time To Reduce (s)	2	0	0	2
Walk Time (s)				7
Flash Dont Walk (s)				20
Dual Entry	No	No	No	No
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	82.5	47.5	82.5	114.5
End Time (s)	47.5	82.5	114.5	47.5
Yield/Force Off (s)	42	77	109	42
Yield/Force Off 170(s)	42	77	109	22
Local Start Time (s)	40.5	5.5	40.5	72.5
Local Yield (s)	0	35	67	0
Local Yield 170(s)	0	35	67	130

Intersection Summary	
Cycle Length	150
Control Type	Actuated-Coordinated
Natural Cycle	80
Offset: 42 (28%), Referenced to phase 6:NBT, Start of Yellow	

Splits and Phases: 7: College Dr & I-10

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AM 2040 No Build vs Build Intersection Comparison
Synchro Analysis

Location	AM					
	No Build			Build (Options 1 and 2)		
	Delay (sec)	v/c Ratio	95th % Queues	Delay (sec)	v/c Ratio	95th % Queues
I-10 WB ramp at College Drive	**32.6**			**39.4**		
I-10 ramp Westbound	56.0	0.88	413	51.9	0.87	618
College Drive Northbound	35.3	0.81	630	49.6	0.96	843
College Drive Southbound	20.3	0.89	483	24.8	0.94	575

PM 2040 No Build vs Build Intersection Comparison
Synchro Analysis

Location	PM					
	No Build			Build (Options 1 and 2)		
	Delay (sec)	v/c Ratio	95th % Queues	Delay (sec)	v/c Ratio	95th % Queues
I-10 WB ramp at College Drive	**36.6**			**36.9**		
I-10 ramp Westbound	99.8	1.02	798	72.9	0.94	823
College Drive Northbound	28.0	0.71	738	36.3	0.85	953
College Drive Southbound	18.6	0.85	668	23.3	0.94	608

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Build Conflict Points

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Existing vs Build Conflict Point Comparison
I-10 WB Mainline

Conflict Type	Existing	Build
I-10 WB Mainline		
Diverging Conflict	8	10
Merging Conflict	9	10
TOTAL	**17**	**20**

Existing vs Build Conflict Point Comparison
College Dr at I-10 WB Terminal

Conflict Type	Existing	Build
Option 1 College Dr at I-10 WB Terminal (Includes Trust Dr Diverge)		
Diverging Conflict	8	8
Merging Conflict	5	5
Crossing Conflict	9	9
TOTAL	**22**	**22**
Option 2 College Dr at I-10 WB Terminal		
Diverging Conflict	8	7
Merging Conflict	5	5
Crossing Conflict	9	9
TOTAL	**22**	**21**

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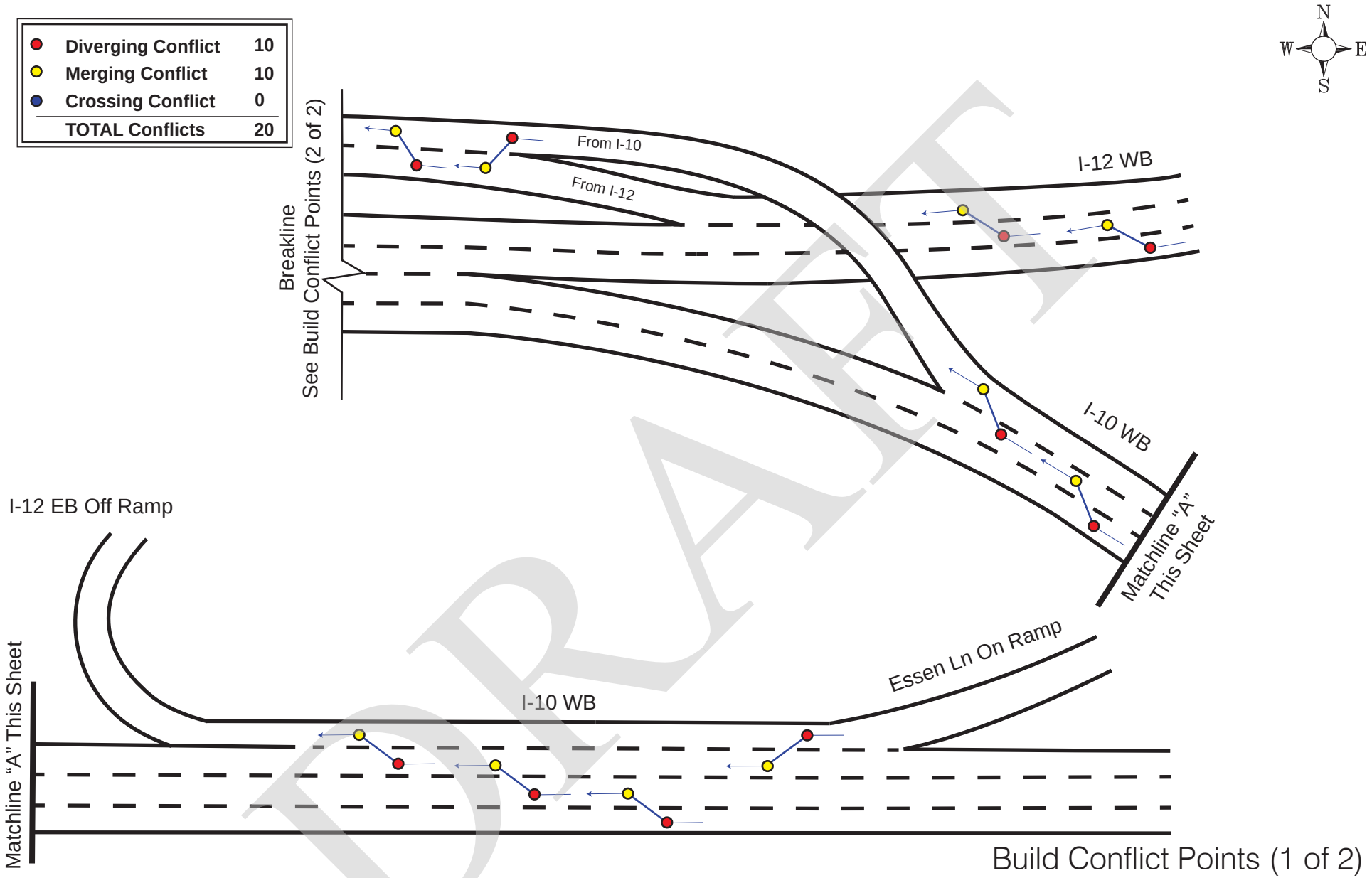

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Build Conflict Points (1 of 2)

I-10 WB Mainline

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IMR Data Collection

Directional Ramp from I-10 WB to College Drive

East Baton Rouge Parish, LA

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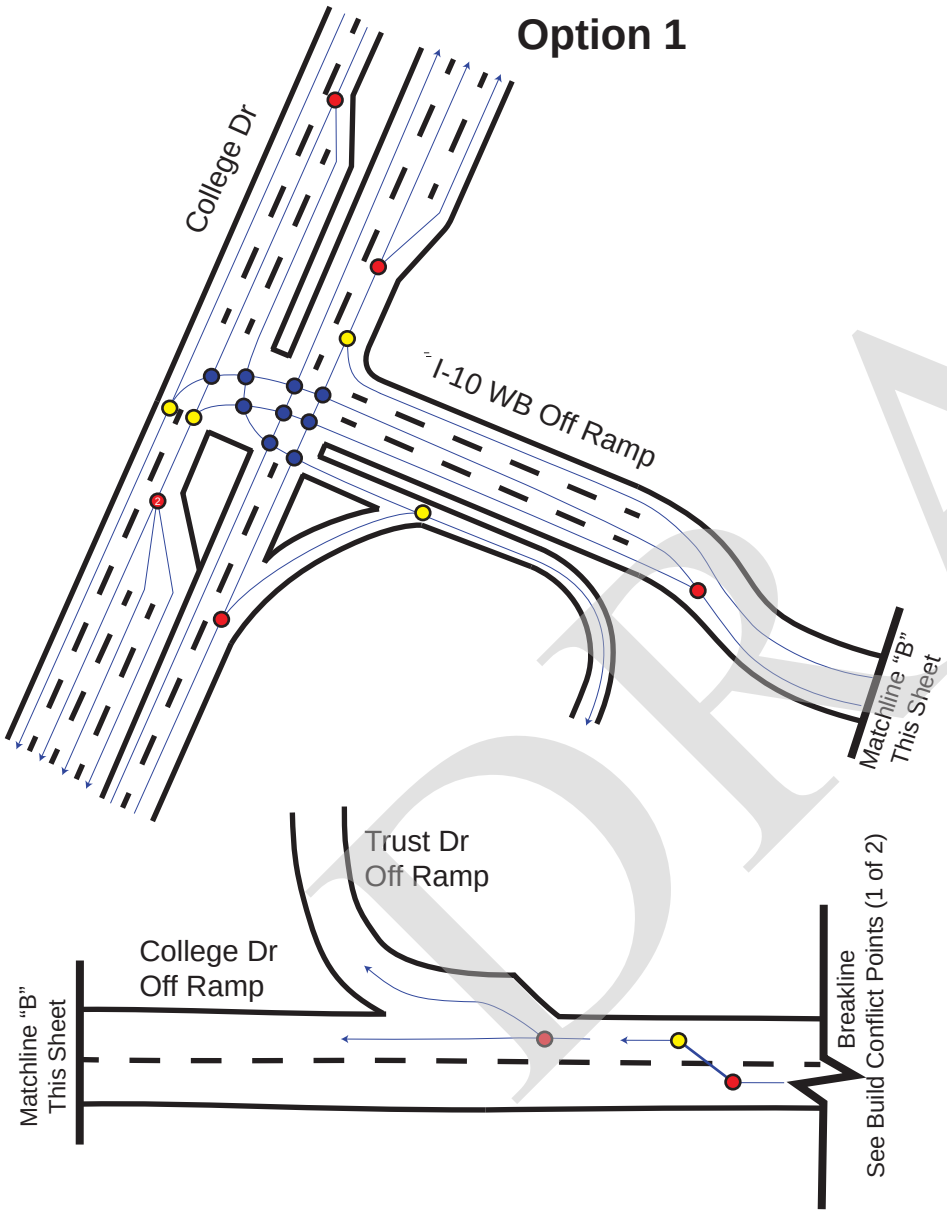
Diverging Conflict	8
Merging Conflict	5
Crossing Conflict	9
TOTAL Conflicts	22

Option 1



Diverging Conflict	7
Merging Conflict	5
Crossing Conflict	9
TOTAL Conflicts	21

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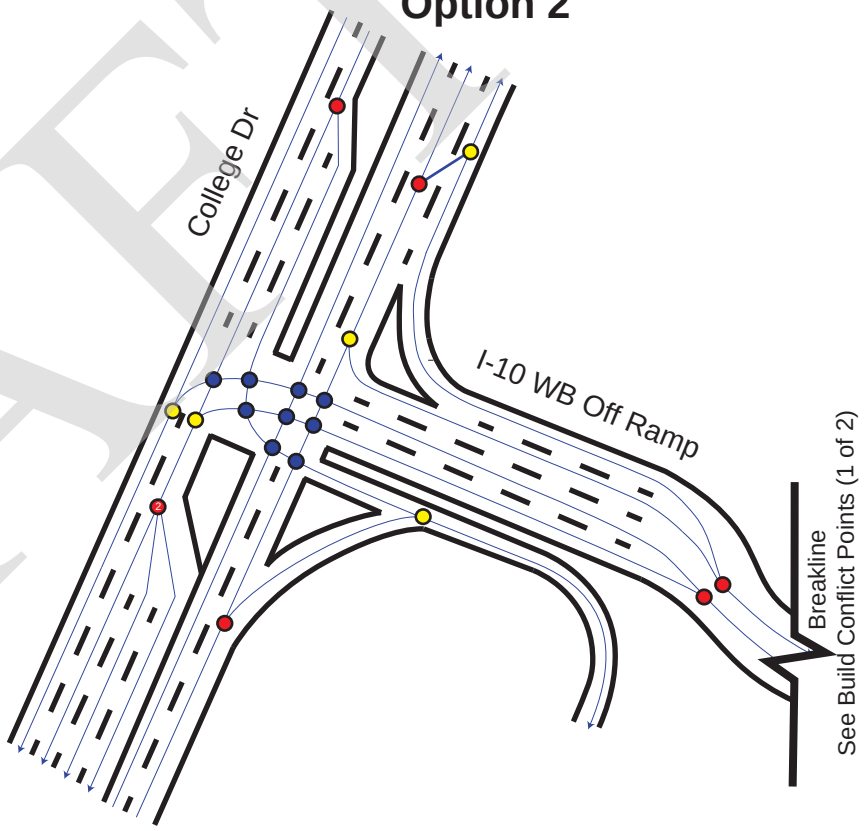
Option 2



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Build Conflict Points (2 of 2)
College Dr at I-10 WB Terminal

IMR Data Collection
Directional Ramp from I-10 WB to College Drive
East Baton Rouge Parish, LA

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QA-QC Documentation

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Chapter 3 and Appendix D QAQC

Task	Chapter/Appendix	Done by and Date	Checked by and Date
Archive Appendix D pdf with "submittal" and the submittal date in the title	App D	AMB 6/10/19	BDP 7/30/19
Obtain Line and Grade sheets - make sure they are the current line and grade and all areas of IMR are s	App D	AMB 7/25/19	BDP 7/27/19
Update Line and Grade Study, Design Criteria and Exceptions if needed (ask if these have changed)	App D	AMB 7/30/19	BDP 7/31/19
Additional freeway analysis on I-12	App D	AMB 7/25/19	BDP 7/27/19
Update Build Merge/Diverge/Freeway Analyses, including C-D box for trust diverge per comment	App D	AMB 7/26/19	BDP 7/27/19
PDF new and updated Merge/Diverge/Freeway analyses pdf's	App D	AMB 7/26/19	BDP 7/31/19
Update Appendix with new and updated Merge/Diverge/Freeway analyses pdf's	App D	AMB 7/31/19	BDP 7/31/19
Update MOE's in Merge/Diverge Comparison Figure	App D	AMB 7/31/19	BDP 7/31/19
Determine and Calculate Ped clearence times based on L&G	App D	AMB 7/26/19	BDP 7/27/19
Add peds to Synchro	App D	AMB 7/27/19	BDP 7/27/19
Creat Ped documents for Appendix	App D	AMB 7/30/19	BDP 8/1/19
Re-pdf reports in Build AM and PM Synchro using HCM 10 report	App D	AMB 7/27/19	BDP 7/31/19
Replace new HCM 10 Synchro report pdf's in Appendix	App D	AMB 7/31/19	BDP 7/31/19
Update MOE's in Synchro comparison Table (copy table from Ch 3)	App D	AMB 7/31/19	BDP 7/31/19
Add intersection conflict points for options 1 and 2	App D	AMB 7/23/19	BDP 7/23/19
Check Appendix to make sure nothing else should be updated	App D	AMB 7/31/19	BDP 8/8/19
Incorporate comments from Providence	App D	AMB 8/5/19	BDP 8/5/19
create a pdf and print	App D	AMB 8/8/19	N/A
check the print copy	App D	AMB 8/7/19	BDP 8/8/19
Archive Ch 3 pdf and word with "submittal" and the submittal date in the title	Ch 3	AMB 6/10/19	BDP 7/30/19
Added statement about presenting highest movement moe	Ch 3	AMB 7/8/19	BDP 7/24/19
Update Build Lane Configuration to include options 1 and 2 and match line and grade	Ch 3	AMB 7/23/19	BDP 7/27/19
Add Build Lane Configuration to PDF	Ch 3	AMB 8/1/19	BDP 8/1/19
Determine additonal required Build analysis	Ch 3	AMB 7/9/19	BDP 7/24/19
Conduct additonal Build analysis	Ch 3	AMB 7/25/19	BDP 7/27/19
Create Merge/Diverge/Freeway Figure	Ch 3	AMB 7/27/19	BDP 7/27/19
Add MOE Figure to Ch 3 and renumber Figures	Ch 3	AMB 8/1/19	BDP 8/1/19
Discuss Merge/Diverge/Freeway analysis results in the report. Prepare additional analyses to describe:	Ch 3	AMB 7/30/19	BDP 7/31/19
Delete Merge/Diverge tables (replaced with Figure). Renumber Tables.	Ch 3	AMB 7/27/19	BDP 8/1/19
Update intersection comparison table (no build vs build)	Ch 3	AMB 7/29/19	MHM 7/29/19
Update conflcit point table to address comments	Ch 3	AMB 7/30/19	BDP 8/1/19
Address comment on *Striping and Signage layouts verbiage*	Ch 3	AMB 7/30/19	BDP 7/31/19
Read Ch 3 to make sure nothing else should be updated	Ch 3	AMB 7/30/19	NHS 8/1/19
create a pdf and print	Ch 3	AMB 8/8/19	N/A
Incorporate comments from Providence	Ch 3	AMB 8/5/19	BDP 8/5/19
check the print copy	Ch 3	AMB 8/7/19	BDP 8/8/19
Comment Response letter	Ch 3	AMB 8/1/19	BDP 8/8/19

Alyssa Bienes — 8/8/19

Alyssa Bienes, E.I. — Date

8/8/19

Brandon Perilloux, P.E., PTOE, RSP — Date

8/8/19

Nicole Stewart, P.E., PTOE (Verified) — Date

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