Appendix G

Intersection Design Studies and Approvals

Contents

IDS - Brush College Road / William Street	Appendix G-1
IDS – Brush College Road /Marietta Street	Appendix G-2
IDS – Brush College Road / Faries Parkway	Appendix G-3

Appendix G-1

Brush College Road / William Street Intersection Design Study

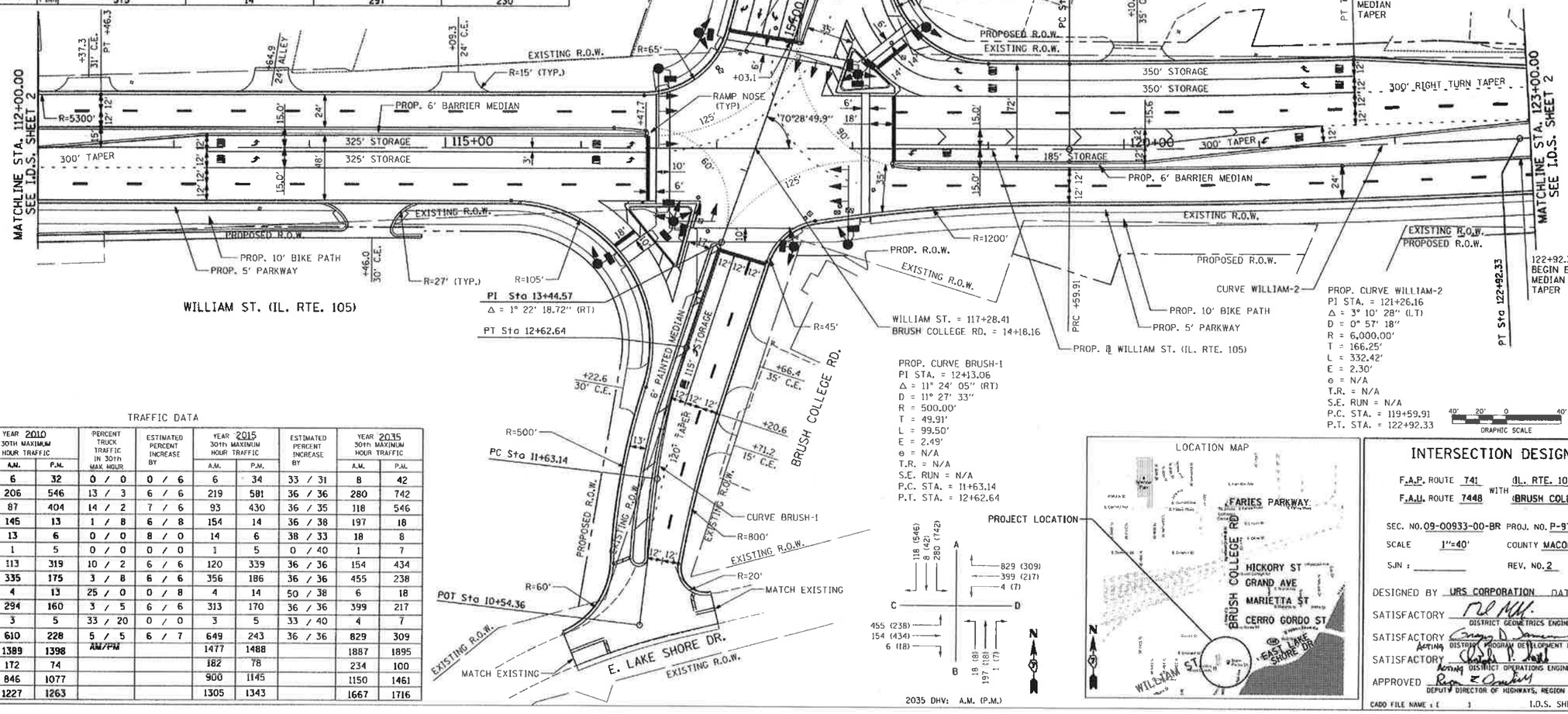
CAPACITY DESIGN STUDY

5 PHASE
110 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER (NOT CBD)
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS V5.5

PEAK HOUR FACTOR 0.91
A.M. 31.4 SEC. INTERSECTION LEVEL A.M. C
P.M. 28.6 SEC. OF SERVICE P.M. C

APPROACH		A (SB)			B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
PARKING MANEUVER/HR.			0			0			0			0	
PEDESTRIANS			5			5			5			5	
ARRIVAL TYPE		3	3	3	3	3		3	3		3	3	3
LANE UTILIZATION FACTOR		0.97	1.00	1.00	1.00	0.95		0.97	0.95		1.00	0.95	0.88
BASE SATURATION FLOW		1900	1900	1900	1900	1900		1900	1900		1900	1900	1900
D - DISTANCE		425	50	475	50	150		325	275		25	250	300
LANE GROUP		L	T	R	L	TR		L	TR		L	T	R
LANE WIDTHS		12	12	12	12	12		12	12		12	12	12
GREEN TIME (SECONDS)	A.M.	28	28	53	10	10		20	45		7	32	60
	P.M.	39	39	57	7	7		13	37		7	31	70
G/C RATIO	A.M.	0.25	0.25	0.48	0.09	0.09		0.18	0.41		0.06	0.29	0.55
	P.M.	0.35	0.35	0.52	0.06	0.06		0.12	0.34		0.06	0.28	0.64
LANE GROUP DELAY (SECONDS)	A.M.	34.3	30.7	16.4	46.3	53.6		51.0	20.3		48.6	31.9	18.0
	P.M.	31.6	23.5	24.1	48.8	48.9		51.4	28.4		48.9	30.6	8.4
V/C RATIO	A.M.	0.39	0.02	0.19	0.12	0.67		0.81	0.13		0.05	0.43	0.62
	P.M.	0.68	0.07	0.73	0.08	0.14		0.68	0.42		0.08	0.25	0.20
LEVEL OF SERVICE	A.M.	C	C	B	D	D		D	C		D	C	B
	P.M.	C	C	C	D	D		D	C		D	C	A
2035 30TH MAX. HOUR TRAFFIC	A.M.	280	8	118	18	198		455	160		4	399	829
	P.M.	742	42	546	8	25		238	432		7	217	309
2015 8TH MAX. HOURLY TRAFFIC	A.M.		175			93			265			531	
	P.M.		575			14			297			230	



PROP. CURVE BRUSH-1
PI STA. = 12+13.06
Δ = 11° 24' 05" (RT)
D = 11° 27' 33"
R = 500.00'
T = 49.91'
L = 99.50'
E = 2.49'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 11+63.14
P.T. STA. = 12+62.64

PROP. CURVE WILLIAM-2
PI STA. = 121+26.16
Δ = 3° 10' 28" (LT)
D = 0° 57' 18"
R = 6,000.00'
T = 166.25'
L = 332.42'
E = 2.30'
e = N/A
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 119+59.91
P.T. STA. = 122+92.33

40' 20' 0 40'
GRAPHIC SCALE

2035 DHV: A.M. (P.M.)

TRAFFIC DATA

MOVEMENT	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY	YEAR 2015 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2035 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	6	32	0 / 0	0 / 6	6	34	33 / 31	8	42
AD	206	546	13 / 3	6 / 6	219	581	36 / 36	280	742
AC	87	404	14 / 2	7 / 6	93	430	36 / 35	118	546
BA	145	13	1 / 8	6 / 8	154	14	36 / 38	197	18
BC	13	6	0 / 0	8 / 0	14	6	38 / 33	18	8
BD	1	5	0 / 0	0 / 0	1	5	0 / 40	1	7
CD	113	319	10 / 2	6 / 6	120	339	36 / 36	154	434
CA	335	175	3 / 8	6 / 6	356	186	36 / 36	455	238
CB	4	13	25 / 0	0 / 8	4	14	50 / 38	6	18
DC	294	160	3 / 5	6 / 6	313	170	36 / 36	399	217
DB	3	5	33 / 20	0 / 0	3	5	33 / 40	4	7
DA	610	228	5 / 5	6 / 7	649	243	36 / 36	829	309
TOTAL A	1389	1398	AM/PM		1477	1488		1887	1895
TOTAL B	172	74			182	78		234	100
TOTAL C	846	1077			900	1145		1150	1461
TOTAL D	1227	1263			1305	1343		1667	1716

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION F.A.P. RTE. 741 (IL. RTE. 105)(WILLIAM ST.) OTHER PRINCIPAL ARTERIAL, ADT = 18,900 vpd (2035) WITH F.A.U. RTE. 7448 (BRUSH COLLEGE RD.) MINOR ARTERIAL (URBAN), ADT= 18,950 vpd (2035)
2. F.A.P. RTE. 741 (IL. RTE. 105) IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2015
4. TRAFFIC CONTROL TO BE FULLY ACTUATED TRAFFIC SIGNALS. EXISTING SIGNAL INSTALLATION IS TO BE MODERNIZED.
5. DESIGN VEHICLE: WB-65 (ALL APPROACHES)
6. DESIGN SPEED WILLIAM ST. = 45 MPH BRUSH COLLEGE RD. = 40 MPH
   POSTED SPEED WILLIAM ST. = 40 MPH BRUSH COLLEGE RD. = 35 MPH
7. F.A.P. RTE. 741 (IL. RTE. 105) IS A DESIGNATED CLASS II TRUCK ROUTE.
8. PEDESTRIAN USE: YES BICYCLE USE: YES

GENERAL NOTES

1. PROFILES (ARE) NOT PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1.0% ON WILLIAM ST. AND BRUSH COLLEGE RD.
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.12 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. CURBS TO BE DEPRESSED AT CROSSWALKS TO MEET ADA REQUIREMENTS.
6. SIDEWALKS AND R.O.W. ARE SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. ALL ENTRANCES WILL BE IN ACCORDANCE WITH IDOT POLICIES ON ENTRANCES AND DRIVEWAYS.
8. PAVEMENT MARKING TO BE THERMOPLASTIC. RAISED REFLECTIVE MARKERS TO BE USED IN ACCORDANCE WITH IDOT POLICY.
9. A DISTANCE OF 6' HAS BEEN PROVIDED BETWEEN ALL STOP BARS AND CROSSWALKS UNLESS OTHERWISE NOTED.
10. TURNING MOVEMENTS CHECKED WITH AUTOTURN

LOCATION MAP

INTERSECTION DESIGN STUDY

F.A.P. ROUTE 741 (IL. RTE. 105) (WILLIAM ST.) WITH
F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)

SEC. NO. 09-00933-00-BR PROJ. NO. P-97-072-10
SCALE 1"=40' COUNTY MACON
SJN : REV. NO. 2

DESIGNED BY URS CORPORATION DATE AUG-2012
SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE 10-26-12
SATISFACTORY — ACTING DISTRICT PROGRAM DEVELOPMENT ENGINEER — DATE 10-29-12
SATISFACTORY — ACTING DISTRICT OPERATIONS ENGINEER — DATE 10-31-12
APPROVED — DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER — DATE 11-13-12

CADD FILE NAME : ( ) I.D.S. SHEET 1 OF 6

SHEET NUMBER

CAPACITY DESIGN STUDY

5 PHASE
110 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER (NOT CBD)
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS V5.5

PEAK HOUR FACTOR 0.91
A.M. 31.4 SEC. P.M. 28.6 SEC.
INTERSECTION LEVEL OF SERVICE A.M. C P.M. C

APPROACH		A (SB)			B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
PARKING MANEUVER/HR.			0			0			0			0	
PEDESTRIANS			5			5			5			5	
ARRIVAL TYPE		3	3	3	3	3		3	3		3	3	3
LANE UTILIZATION FACTOR		0.97	1.00	1.00	1.00	0.95		0.97	0.95		1.00	0.95	0.88
BASE SATURATION FLOW		1900	1900	1900	1900	1900		1900	1900		1900	1900	1900
D - DISTANCE		425	50	475	50	150		325	275		25	250	300
LANE GROUP		L	T	R	L	TR		L	TR		L	T	R
LANE WIDTHS		12	12	12	12	12		12	12		12	12	12
GREEN TIME (SECONDS)	A.M.	28	28	53	10	10		20	45		7	32	60
	P.M.	39	39	57	7	7		13	37		7	31	70
G/C RATIO	A.M.	0.25	0.25	0.48	0.09	0.09		0.18	0.41		0.06	0.29	0.55
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	P.M.	0.68	0.07	0.73	0.08	0.14		0.68	0.42		0.08	0.25	0.20
LEVEL OF SERVICE	A.M.	C	C	B	D	D		D	C		D	C	B
	P.M.	C	C	C	D	D		D	C		D	C	A
2035 30TH MAX. HOUR TRAFFIC	A.M.	280	8	118	18	198		455	160		4	399	829
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2015 8TH MAX. HOURLY TRAFFIC	A.M.		175			93			265			531	
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6. DESIGN SPEED WILLIAM ST. = 45 MPH BRUSH COLLEGE RD. = 40 MPH
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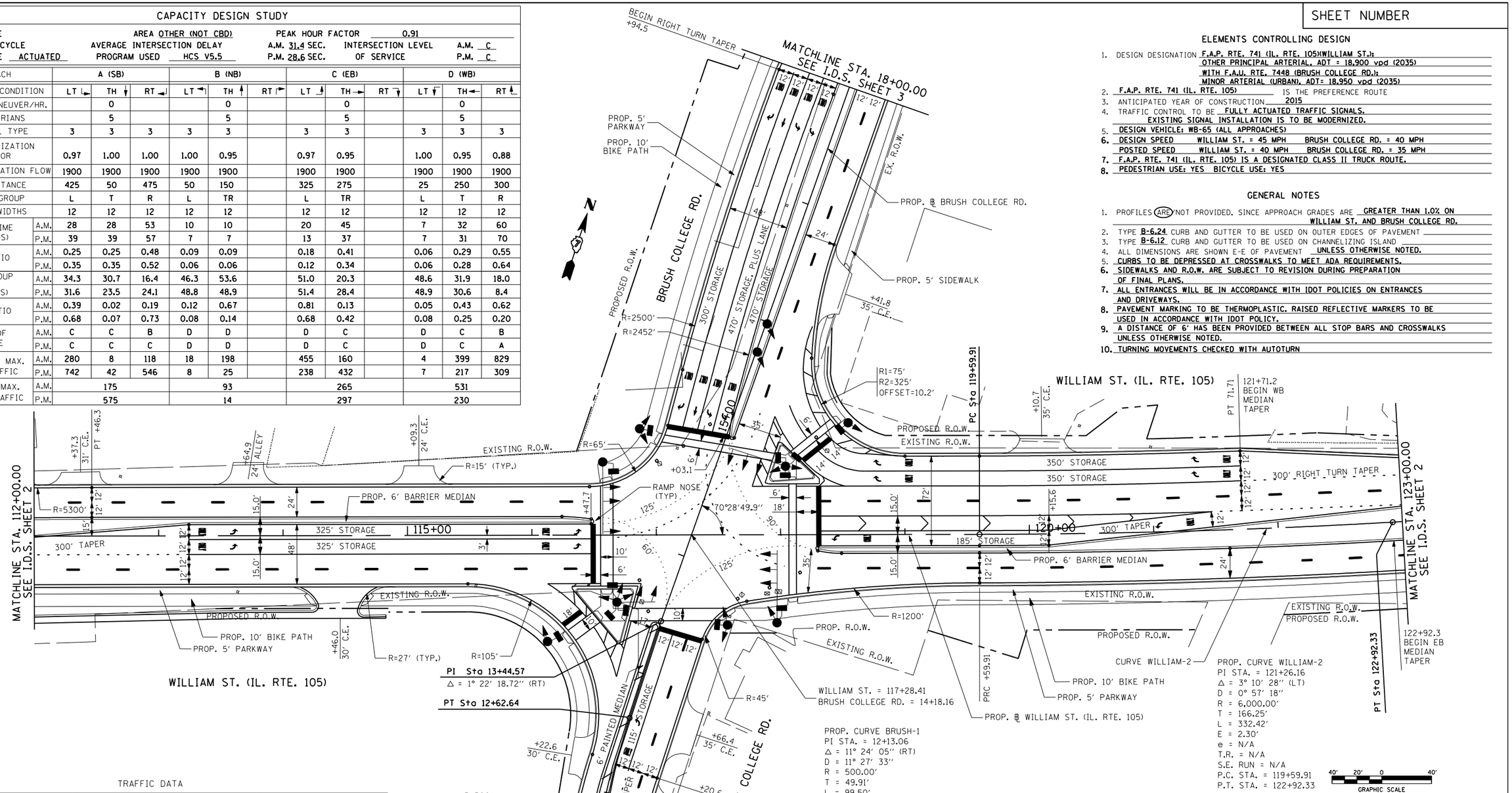
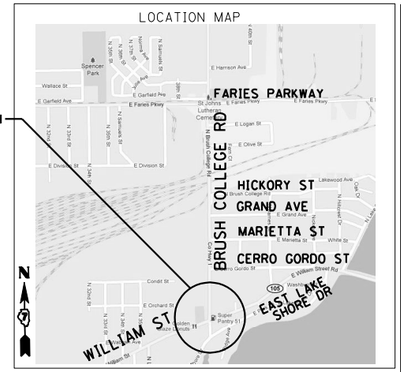
10. TURNING MOVEMENTS CHECKED WITH AUTOTURN



TRAFFIC DATA

MOVEMENT	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC A.M.	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR AM/PM	ESTIMATED PERCENT INCREASE BY	YEAR 2015 30th MAXIMUM HOUR TRAFFIC A.M.	YEAR 2015 30th MAXIMUM HOUR TRAFFIC P.M.	ESTIMATED PERCENT INCREASE BY	YEAR 2035 30th MAXIMUM HOUR TRAFFIC A.M.	YEAR 2035 30th MAXIMUM HOUR TRAFFIC P.M.
AB	6	32	0 / 0	0 / 6	6	34	33 / 31	8	42
AD	206	546	13 / 3	6 / 6	219	581	36 / 36	280	742
AC	87	404	14 / 2	7 / 6	93	430	36 / 35	118	546
BA	145	13	1 / 8	6 / 8	154	14	36 / 38	197	18
BC	13	6	0 / 0	8 / 0	14	6	38 / 33	18	8
BD	1	5	0 / 0	0 / 0	1	5	0 / 40	1	7
CD	113	319	10 / 2	6 / 6	120	339	36 / 36	154	434
CA	335	175	3 / 8	6 / 6	356	186	36 / 36	455	238
CB	4	13	25 / 0	0 / 8	4	14	50 / 38	6	18
DC	294	160	3 / 5	6 / 6	313	170	36 / 36	399	217
DB	3	5	33 / 20	0 / 0	3	5	33 / 40	4	7
DA	610	228	5 / 5	6 / 7	649	243	36 / 36	829	309
TOTAL A	1389	1398			1477	1488		1887	1895
TOTAL B	172	74			182	78		234	100
TOTAL C	846	1077			900	1145		1150	1461
TOTAL D	1227	1263			1305	1343		1667	1716

LOCATION MAP



INTERSECTION DESIGN STUDY

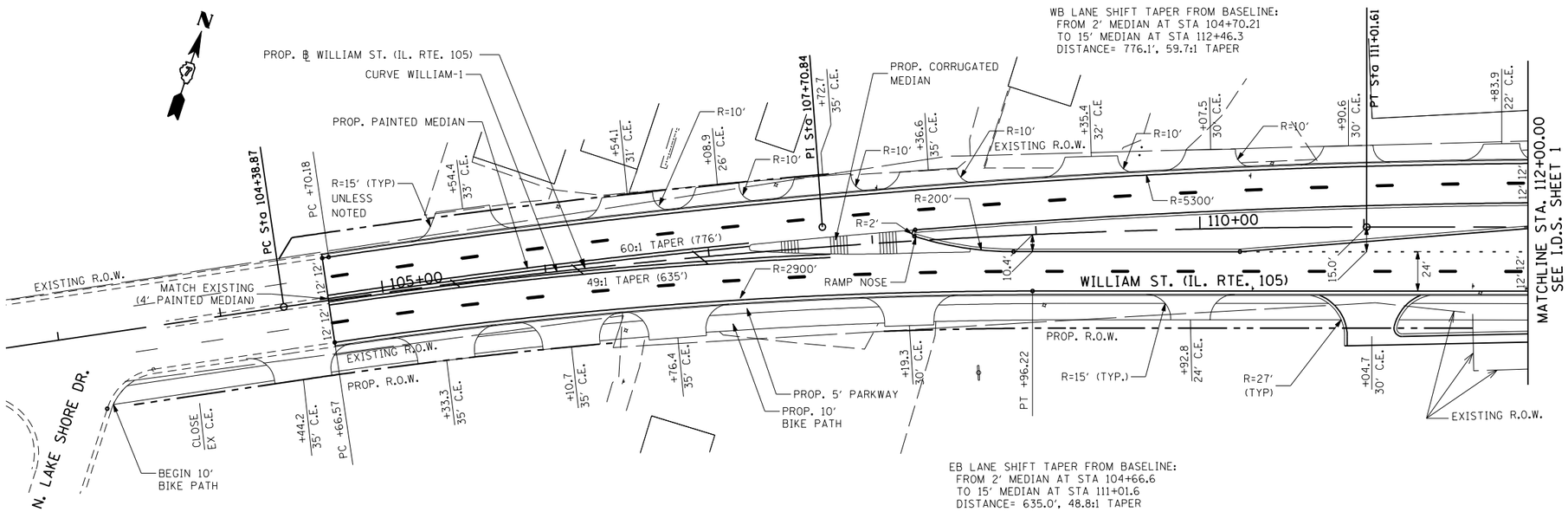
F.A.P. ROUTE 741 (IL. RTE. 105) (WILLIAM ST.)
WITH
F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)

SEC. NO. 09-00933-00-BR PROJ. NO. P-97-072-10
SCALE 1"=40' COUNTY MACON
SJN : REV. NO. 2

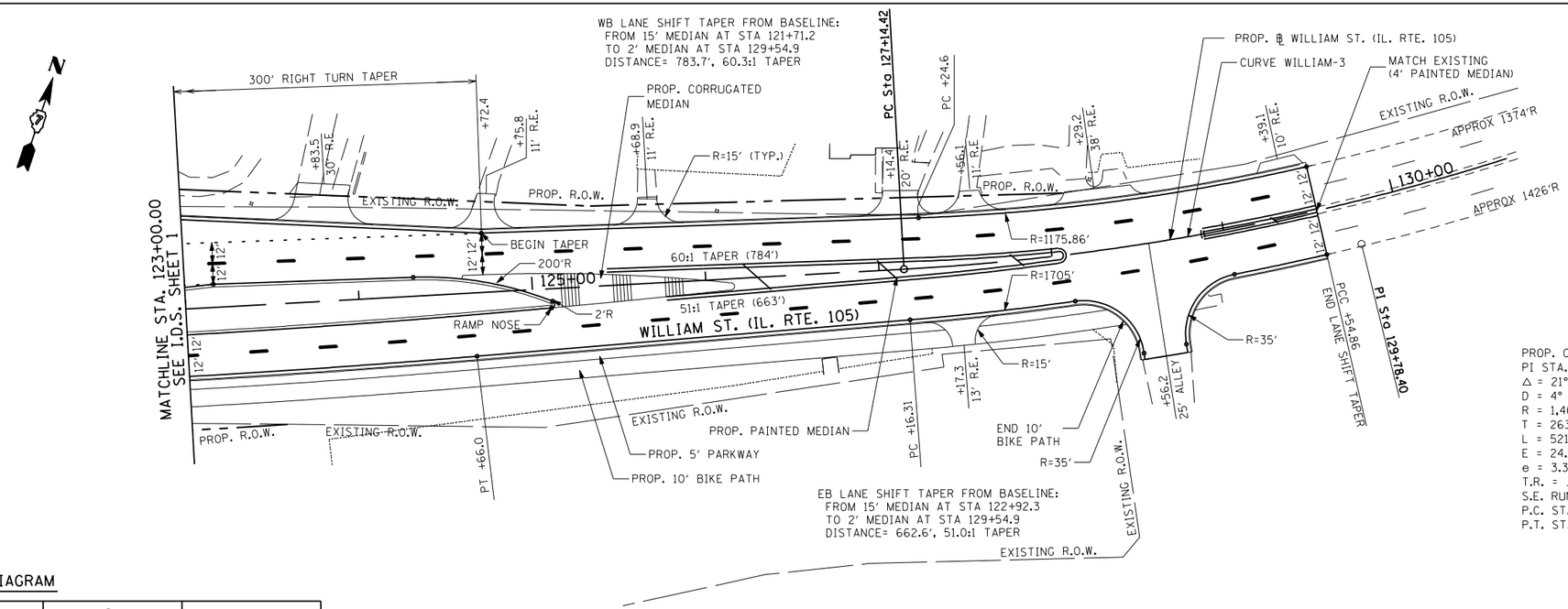
DESIGNED BY URS CORPORATION DATE AUG-2012

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER _____ DATE
APPROVED _____ DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER _____ DATE

CADD FILE NAME : ( ) I.D.S. SHEET 1 OF 6



PROP. CURVE WILLIAM-1
PI STA. = 107+70.84
Δ = 8° 26' 18'' (RT)
D = 1° 16' 24''
R = 4,500.00'
T = 331.97'
L = 662.74'
E = 12.23'
e = 3.0%
T.R. = -----
S.E. RUN = 67'
P.C. STA. = 104+38.87
P.T. STA. = 111+01.61



PROP. CURVE WILLIAM-3
PI STA. = 129+78.40
Δ = 21° 21' 22'' (LT)
D = 4° 05' 33''
R = 1,400.00'
T = 263.98'
L = 521.83'
E = 24.67'
e = 3.3%
T.R. = -----
S.E. RUN = 110'
P.C. STA. = 127+14.42
P.T. STA. = 132+36.25

PHASING DIAGRAM

	I	II	III	IV	V	
	A, C, D	A, C, P, P	(•) P, P, D, C, P, P	P, B, P	P, A, D, P	
A.M.	7+(3+2)	8+(3+2)	32+(3+2)	10+(3+2)	28+(3+2)	110
P.M.	7+(3+2)	1+(3+2)	31+(3+2)	7+(3+2)	39+(3+2)	110

GREEN + (AMBER + ALL RED)

(•) FOR DUAL RIGHT TURN LANES, THE TRAFFIC SIGNALS ARE TO BE CONFIGURED TO ONLY ALLOW PEDESTRIANS TO CROSS WHEN BUTTON IS ACTIVATED, REQUIRING RIGHT TURNING TRAFFIC TO STOP

40' 20' 0 40'
GRAPHIC SCALE
1''=40'

INTERSECTION DESIGN STUDY

F.A.P. ROUTE 741 (IL. RTE. 105)(WILLIAM ST.)
F.A.U. ROUTE 7448 WITH (BRUSH COLLEGE RD.)

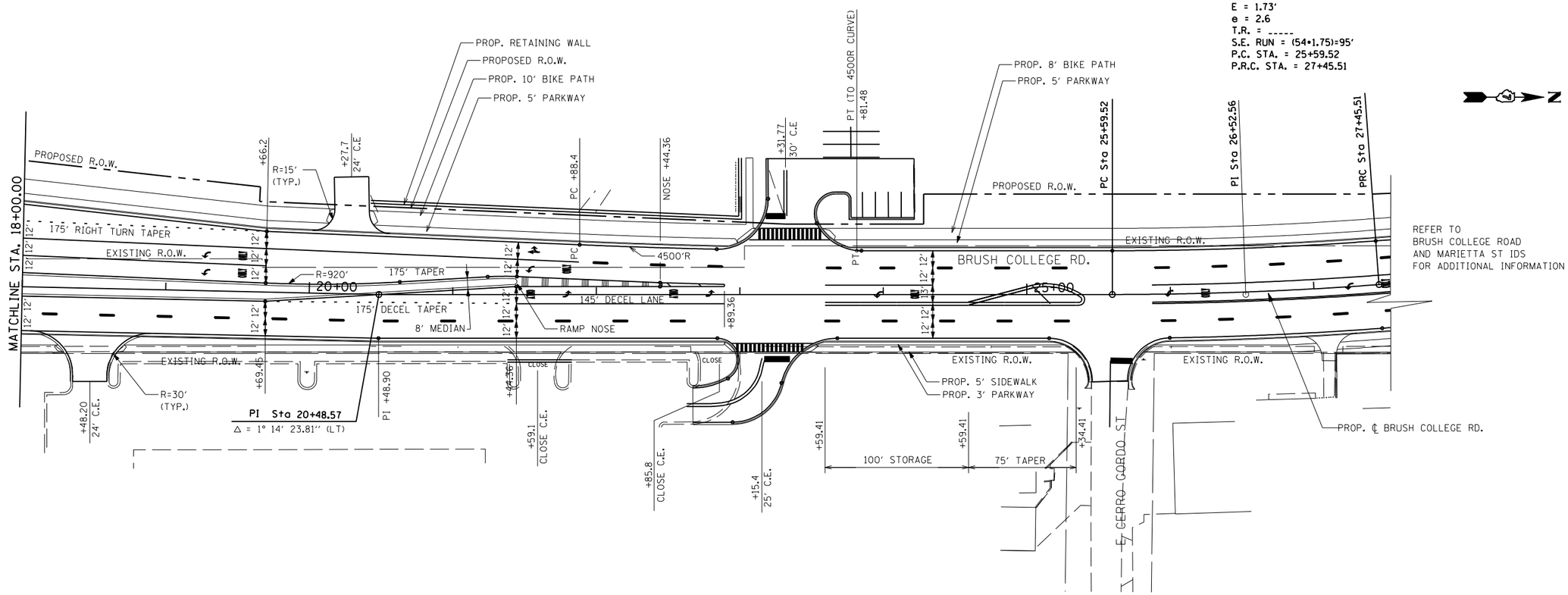
SEC. NO. 09-00933-00-BR

SCALE 1''=40' COUNTY MACON

SJN : _____ PROJ. NO. P-97-072-10

REV 2: NOV 2011 I.D.S. SHEET 2 OF 6

CURVE BRUSH COLLEGE 1
PI STA. = 26+52.56
Δ = 4° 15′ 46″ (LT)
D = 2° 17′ 31″
R = 2,500.00′
T = 93.04′
L = 185.99′
E = 1.73′
e = 2.6
T.R. = -----
S.E. RUN = (54•1.75)=95′
P.C. STA. = 25+59.52
P.R.C. STA. = 27+45.51



40′ 20′ 0 40′
GRAPHIC SCALE
1″=40′

INTERSECTION DESIGN STUDY

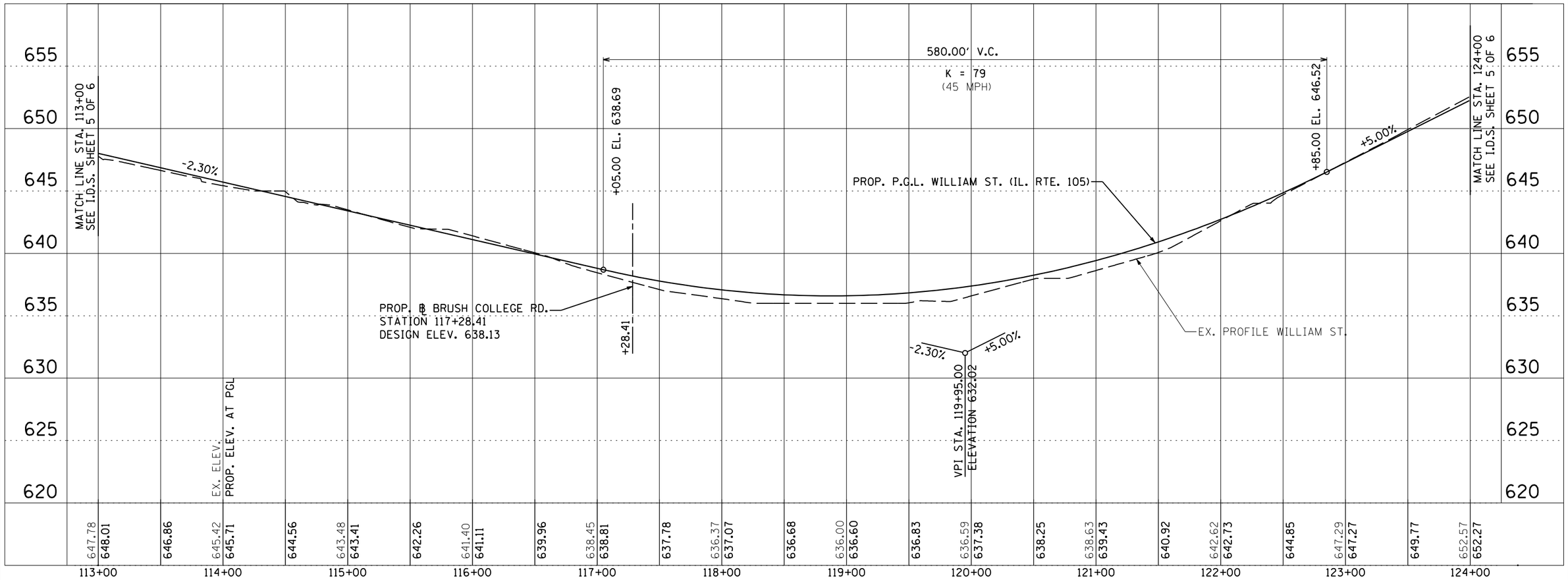
F.A.P. ROUTE 741 (IL. RTE. 105)(WILLIAM ST.)
F.A.U. ROUTE 7448 WITH (BRUSH COLLEGE RD.)

SEC. NO. 09-00933-00-BR

SCALE 1″=40′ COUNTY MACON

SJN : _____ PROJ. NO. P-97-072-10

REV 2: NOV 2011 I.D.S. SHEET 3 OF 6



INTERSECTION DESIGN STUDY

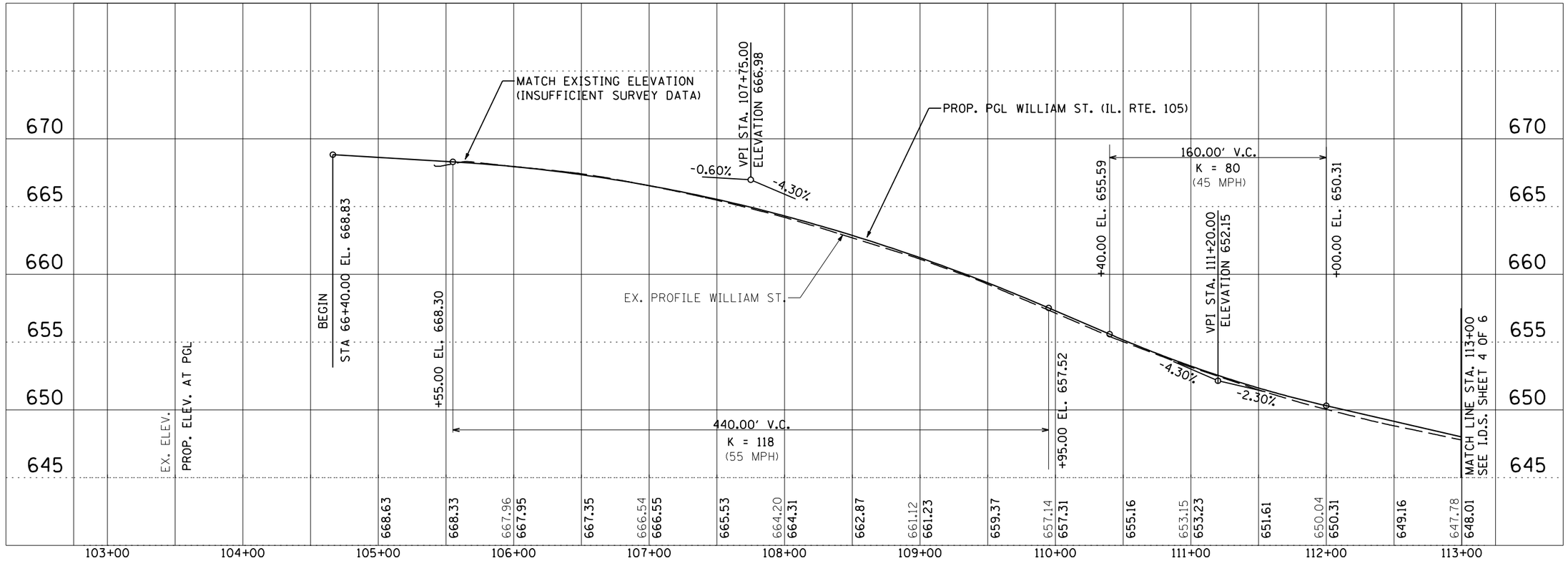
F.A.P. ROUTE 741 (IL. RTE. 105)(WILLIAM ST.)
F.A.U. ROUTE 7448 WITH (BRUSH COLLEGE RD.)

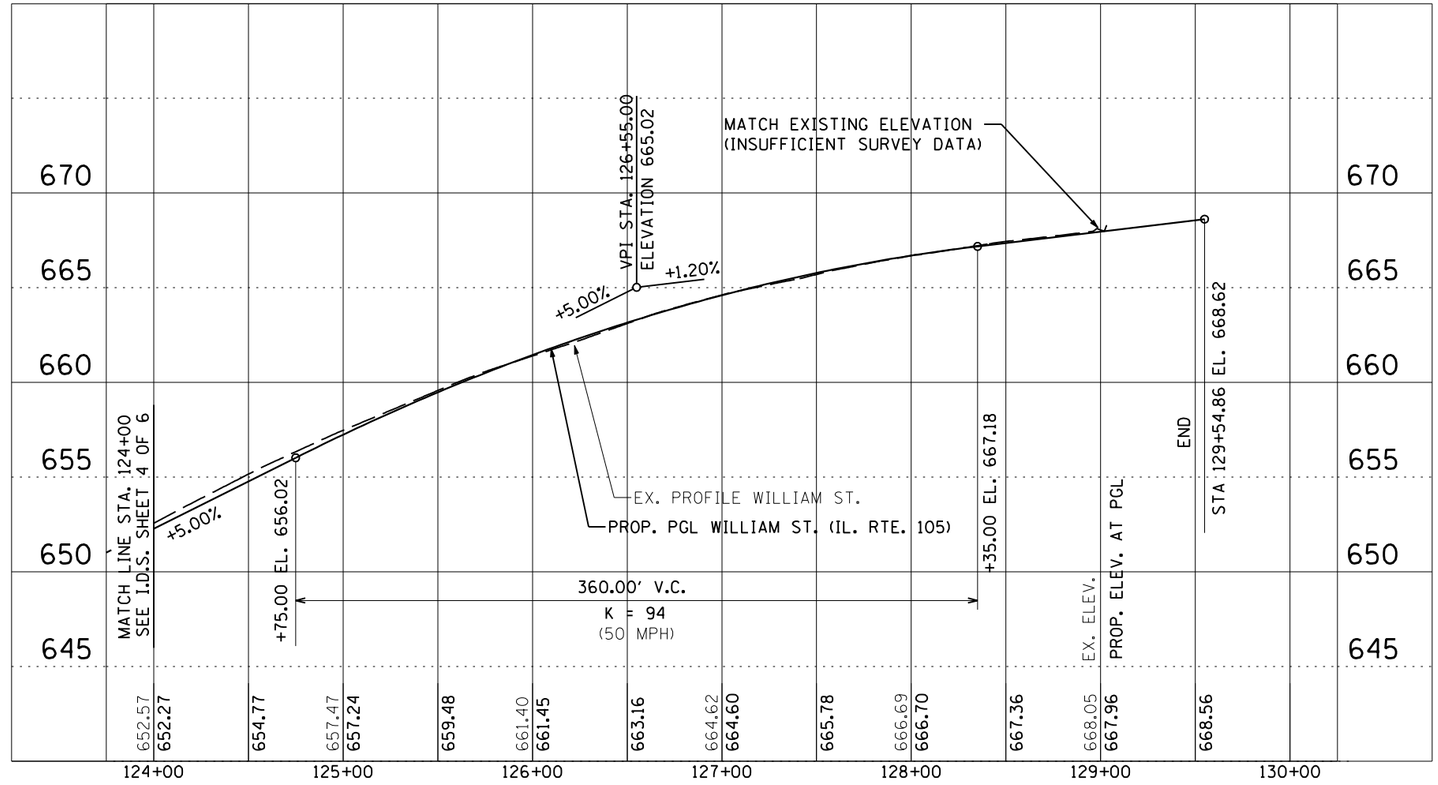
SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT. COUNTY MACON

SJN : PROJ. NO. P-97-072-10

REV 2: NOV 2011 I.D.S. SHEET 4 OF 6





INTERSECTION DESIGN STUDY

F.A.P. ROUTE 741 (IL. RTE. 105)(WILLIAM ST.)
WITH
F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT.

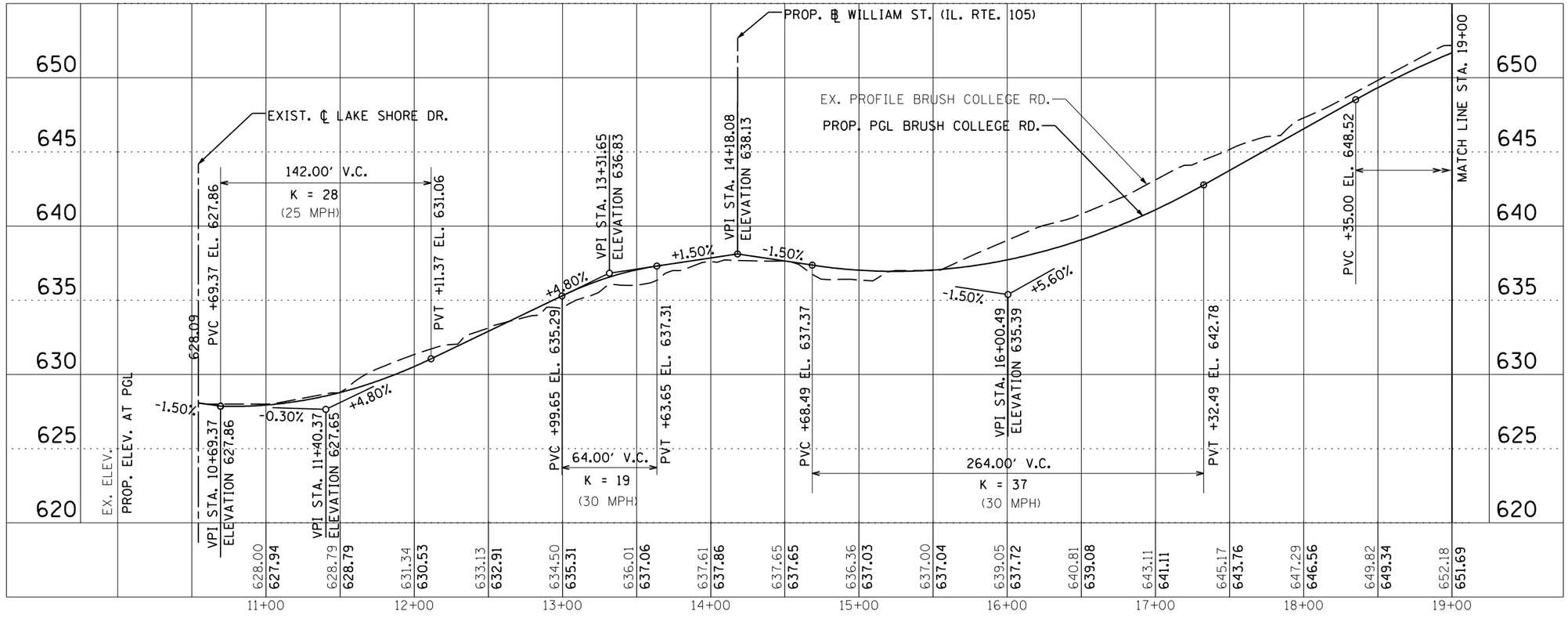
COUNTY MACON

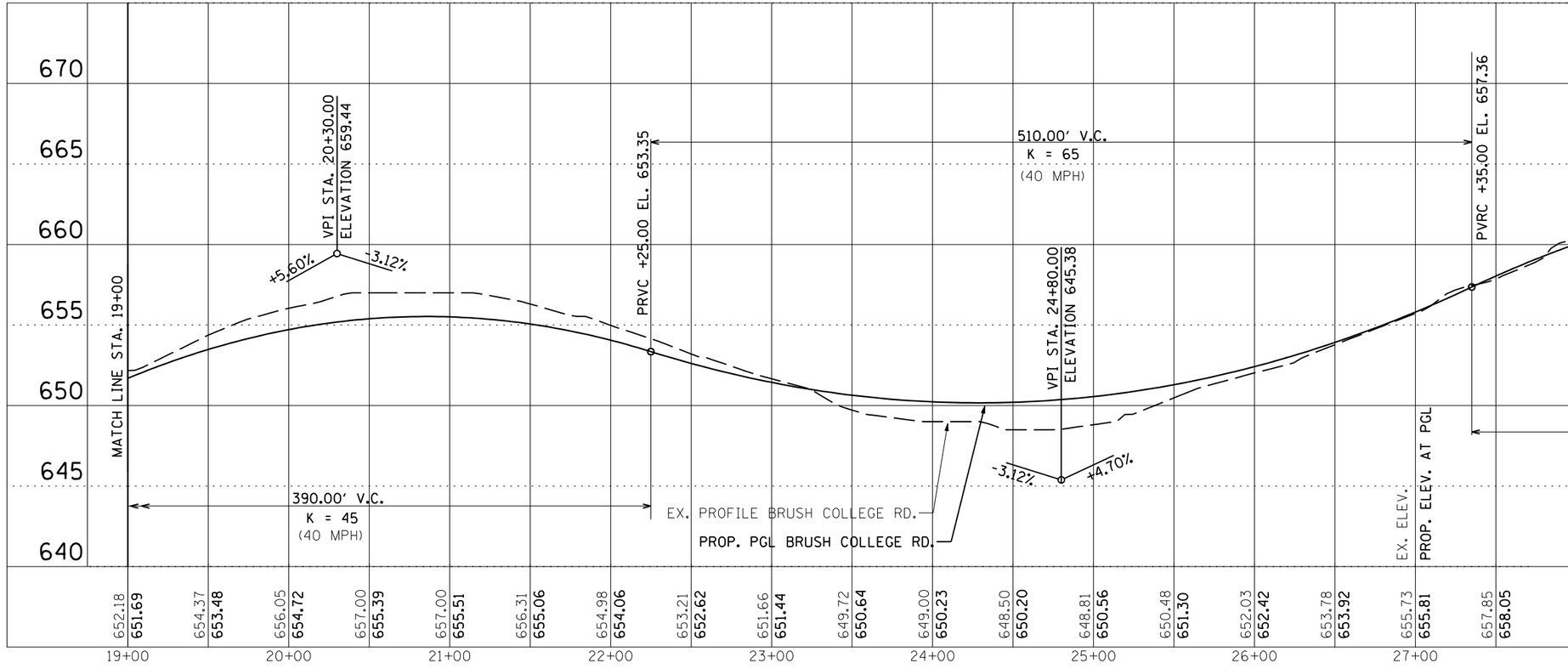
SJN :

PROJ. NO. P-97-072-10

REV 2: NOV 2011

I.D.S. SHEET 5 OF 6





INTERSECTION DESIGN STUDY

F.A.P. ROUTE 741 (IL. RTE. 105)(WILLIAM ST.) WITH

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT.

COUNTY MACON

SJN :

PROJ. NO. P-97-072-10

REV 2: NOV 2011

I.D.S. SHEET 6 OF 6

Appendix G-2

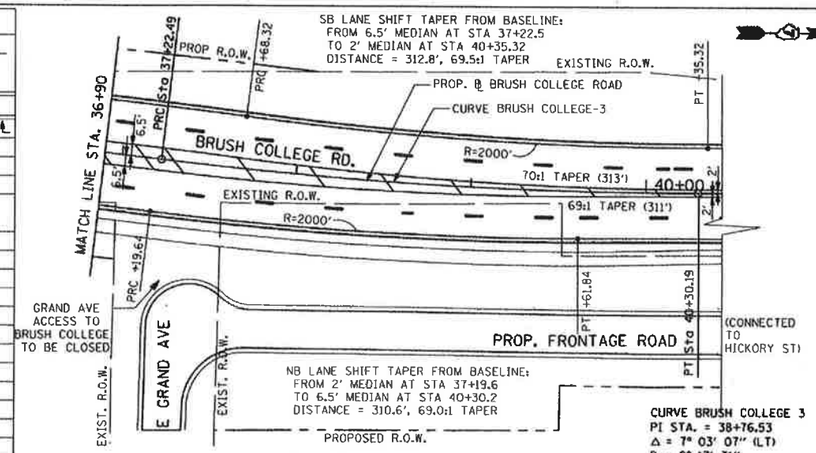
Brush College Road / Marietta Street Intersection Design Study

CAPACITY DESIGN STUDY

5,4 PHASE (notes 5(AM), 4(PM)) — AREA OTHER (NOT CBD) — PEAK HOUR FACTOR 0.91
100 SEC. CYCLE — AVERAGE INTERSECTION DELAY — A.M. 32.2 SEC. — INTERSECTION LEVEL OF SERVICE — A.M. C
SIGNAL TYPE ACTUATED — PROGRAM USED HCS V5.5 — P.M. 25.7 SEC. — P.M. C

APPROACH		A (SB)			B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
PARKING MANEUVER/HR.			0			0			0			0	
PEDESTRIANS			0			10			10			0	
ARRIVAL TYPE		3	3	3	3	3		3	3		3	3	
LANE UTILIZATION FACTOR		1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
BASE SATURATION FLOW		1900	1900	1900	1900	1900		1900	1900		1900	1900	
D - DISTANCE		100	525	125	50	550		75	25		25	100	
LANE GROUP		L	T	R	L	TR		L	TR		L	TR	
LANE WIDTHS		12	12	12	12	12		12	12		12	12	
GREEN TIME (SECONDS)	A.M.	44	39	39	58	49		34	26		34	26	
	P.M.	56	47	47	56	47		36	28		36	28	
G/C RATIO	A.M.	0.44	0.39	0.39	0.58	0.49		0.34	0.26		0.34	0.26	
	P.M.	0.56	0.47	0.47	0.56	0.47		0.36	0.28		0.36	0.28	
LANE GROUP DELAY (SECONDS)	A.M.	20.5	22.0	20.6	9.7	30.8		22.2	27.4		21.9	29.2	
	P.M.	11.9	30.8	14.2	18.2	17.3		21.6	26.4		20.5	27.1	
V/C RATIO	A.M.	0.14	0.37	0.23	0.11	0.91		0.06	0.00		0.02	0.21	
	P.M.	0.35	0.89	0.02	0.05	0.38		0.17	0.06		0.01	0.14	
LEVEL OF SERVICE	A.M.	C	C	C	A	C		C	C		C	C	
	P.M.	B	C	B	B	B		C	C		C	C	
(1) 2035 30TH MAX. HOUR TRAFFIC	A.M.	22	428	133	59	1417	3	24	1	0	7	0	80
	P.M.	129	1355	14	7	525	35	73	0	25	4	1	57
(1) 2015 8TH MAX. HOURLY TRAFFIC	A.M.	252			636			12			38		
	P.M.	649			254			43			28		

REFER TO BRUSH COLLEGE RD AND WILLIAM IDS FOR ADDITIONAL INFORMATION



CURVE BRUSH COLLEGE 1
PI STA. = 26+52.56
Δ = 4° 15' 46" (LT)
D = 2° 17' 31"
R = 2,500.00'
T = 93.04'
L = 185.99'
E = 1.73'
e = 2.6
T.R. = -----
S.E. RUN = (54+1.75)=95'
P.C. STA. = 25+59.52
P.R.C. STA. = 27+45.51

CURVE BRUSH COLLEGE 2
PI STA. = 32+35.56
Δ = 11° 11' 43" (RT)
D = 1° 08' 45"
R = 5,000.00'
T = 490.05'
L = 976.97'
E = 23.96'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.R.C. STA. = 27+45.51
P.R.C. STA. = 37+22.49

CURVE BRUSH COLLEGE 3
PI STA. = 38+76.53
Δ = 7° 03' 07" (LT)
D = 2° 17' 31"
R = 2,500.00'
T = 154.05'
L = 307.70'
E = 4.74'
e = 2.6
T.R. = -----
S.E. RUN = (54+1.75)=95'
P.R.C. STA. = 37+22.49
P.T. STA. = 40+30.19

SHEET NUMBER

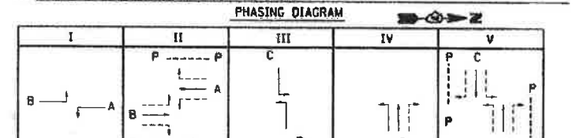
ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION F.A.U. RTE. 7448 (BRUSH COLLEGE RD.): MINOR ARTERIAL (URBAN), ADT= 18,900 vpd (2035); MARIETTA ST.: LOCAL ROAD, ADT=200 VPD (2035); ADM ENTRANCE: COMMERCIAL ENTRANCE, ADT = 700 vpd (2035)
2. F.A.U. RTE. 7448 (BRUSH COLLEGE RD.) IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2015
4. TRAFFIC CONTROL TO BE FULLY ACTUATED TRAFFIC SIGNALS. NEW SIGNAL INSTALLATION IS PROPOSED. MEETS WARRANT 1.
5. DESIGN VEHICLE: ADM ENTRANCE (WEST LEG) WB-65; DESIGN VEHICLE: MARIETTA (EAST LEG) WB-55
6. DESIGN SPEED: BRUSH COLLEGE RD. = 40 MPH, MARIETTA = 25 MPH; POSTED SPEED: BRUSH COLLEGE RD. = 35 MPH, MARIETTA = 25 MPH
7. PEDESTRIAN USE: YES BICYCLE USE: YES

GENERAL NOTES

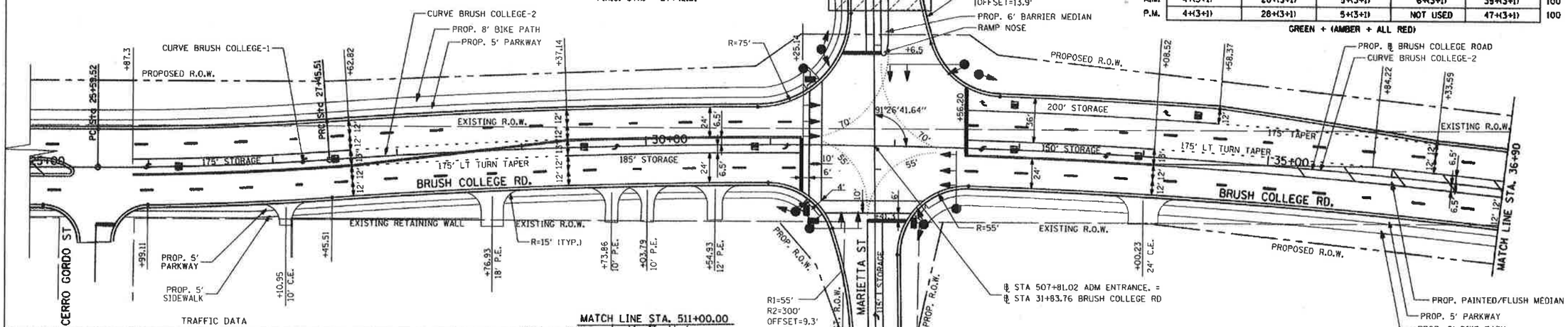
1. PROFILES ARE/(ARE) NOT PROVIDED. SINCE APPROACH GRADES ARE GREATER THAN 1.0% ON MARIETTA STREET
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.12 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. CURBS TO BE DEPRESSED AT CROSSWALKS TO MEET ADA REQUIREMENTS.
6. SIDEWALKS AND R.O.W. ARE SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. ALL ENTRANCES WILL BE IN ACCORDANCE WITH IDOT POLICIES ON ENTRANCES AND DRIVEWAYS.
8. PAVEMENT MARKING TO BE THERMOPLASTIC. RAISED REFLECTIVE MARKERS TO BE USED IN ACCORDANCE WITH IDOT POLICY.
9. A DISTANCE OF 6' HAS BEEN PROVIDED BETWEEN ALL STOP BARS AND CROSSWALKS.
10. TURNING MOVEMENTS CHECKED WITH AUTOTURN

PHASING DIAGRAM



	I	II	III	IV	V	
A.M.	4+(3+1)	26+(3+1)	5+(3+1)	6+(3+1)	39+(3+1)	100
P.M.	4+(3+1)	28+(3+1)	5+(3+1)	NOT USED	47+(3+1)	100

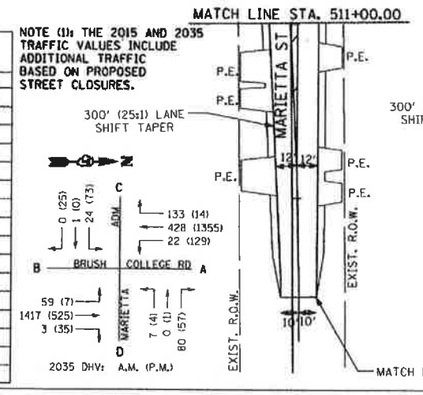
GREEN + (AMBER + ALL RED)

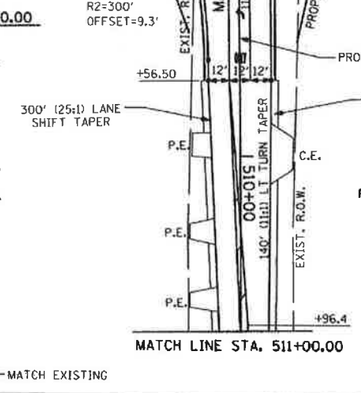


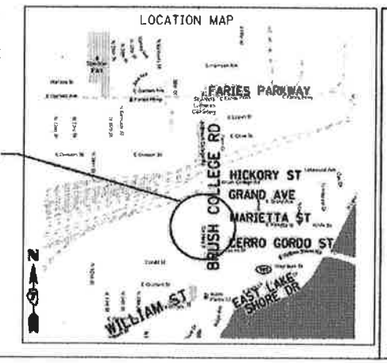
TRAFFIC DATA

MOVEMENT	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	(1) ESTIMATED PERCENT INCREASE BY 2015	(1) YEAR 2015 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	(1) ESTIMATED PERCENT INCREASE BY 2035	(1) YEAR 2035 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	315	1002	12 / 2	7 / 6	336	1067	36 / 35	428	1355
AD	4	29	0 / 0	350 / 252	18	102	450 / 345	22	129
AC	98	10	0 / 0	7 / 10	105	11	36 / 40	133	14
BA	1044	402	3 / 5	6 / 6	1111	428	36 / 31	1417	525
BC	43	5	0 / 0	7 / 20	46	6	37 / 40	59	7
BD	0	10	0 / 0	/ 180	0	28	/ 250	3	35
CD	0	0	0 / 0	/	0	0	/ 0	1	0
CA	18	54	0 / 0	11 / 7	20	58	33 / 35	24	73
CB	1	19	0 / 0	100 / 11	2	21	/ 32	0	25
DC	0	1	0 / 0	/ 100	0	2	/ 0	0	1
DB	3	1	0 / 0	100 / 300	6	4	113 / 300	7	4
DA	15	9	0 / 0	320 / 400	63	45	433 / 533	80	57
TOTAL A	1494	1506	A.M./P.M.		1653	1711		2104	2153
TOTAL B	1406	1439			1501	1554		1914	1951
TOTAL C	160	89			173	98		217	120
TOTAL D	22	50			87	181		113	226

NOTE (1): THE 2015 AND 2035 TRAFFIC VALUES INCLUDE ADDITIONAL TRAFFIC BASED ON PROPOSED STREET CLOSURES.







INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.) WITH ___ ROUTE ___ MARIETTA STREET, AND ADM/ JRRC ENTRANCE

SEC. NO. 09-00933-00-BR PROJ. NO. P-97-072-10
SCALE 1"=40' COUNTY MACON
SJN : ___ REV. NO. 2

DESIGNED BY URS CORPORATION DATE AUG-2012
SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE 10-26-12
SATISFACTORY — CITY ENGINEER — DATE 10-16-12
SATISFACTORY — DISTRICT LOCAL ROADS ENGINEER — DATE 11-8-12
APPROVED — DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER — DATE 11-9-12

CADD FILE NAME = I I.D.S. SHEET 1 OF 2

SHEET NUMBER

CAPACITY DESIGN STUDY

5.4 PHASE [note: 5(AM), 4(PM)] AREA OTHER (NOT CBD) PEAK HOUR FACTOR 0.91
100 SEC. CYCLE AVERAGE INTERSECTION DELAY A.M. 32.2 SEC. INTERSECTION LEVEL A.M. C
SIGNAL TYPE ACTUATED PROGRAM USED HCS V5.5 P.M. 25.7 SEC. OF SERVICE P.M. C

APPROACH		A (SB)			B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION		LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
PARKING MANEUVER/HR.			0			0			0			0	
PEDESTRIANS			0			10			10			0	
ARRIVAL TYPE		3	3	3	3	3		3	3		3	3	
LANE UTILIZATION FACTOR		1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
BASE SATURATION FLOW		1900	1900	1900	1900	1900		1900	1900		1900	1900	
D - DISTANCE		100	525	125	50	550		75	25		25	100	
LANE GROUP		L	T	R	L	TR		L	TR		L	TR	
LANE WIDTHS		12	12	12	12	12		12	12		12	12	
GREEN TIME (SECONDS)	A.M.	44	39	39	58	49		34	26		34	26	
	P.M.	56	47	47	56	47		36	28		36	28	
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	P.M.	0.35	0.89	0.02	0.05	0.38		0.17	0.06		0.01	0.14	
LEVEL OF SERVICE	A.M.	C	C	C	A	C		C	C		C	C	
	P.M.	B	C	B	B	B		C	C		C	C	
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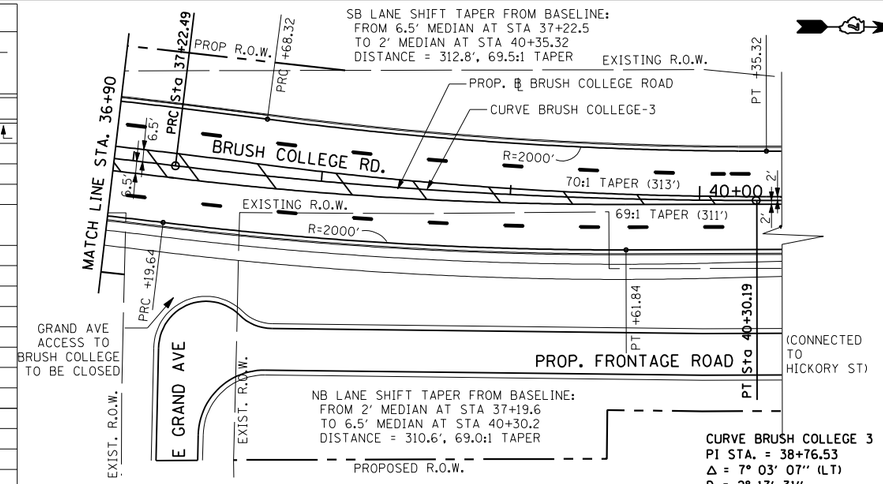

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P.T. STA. = 40+30.19

GRAPHIC SCALE 40' 20' 0 40'

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION F.A.U. RTE. 7448 (BRUSH COLLEGE RD.): MINOR ARTERIAL (URBAN), ADT= 18,900 vpd (2035)
   MARIETTA ST.: LOCAL ROAD, ADT=200 VPD (2035)
   ADM ENTRANCE: COMMERCIAL ENTRANCE, ADT = 700 vpd (2035)
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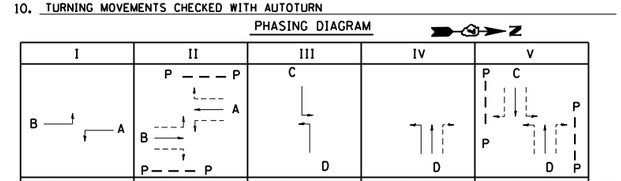
PHASING DIAGRAM



	I	II	III	IV	V	
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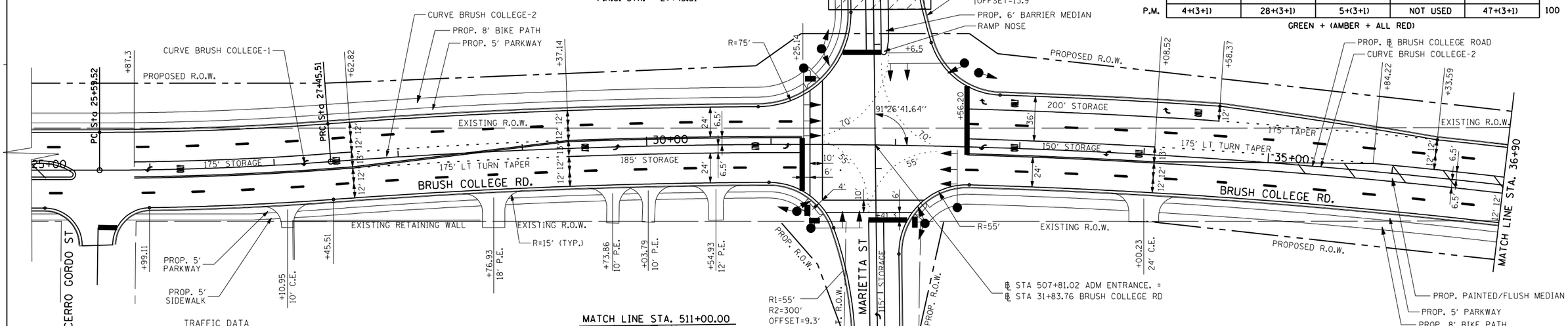

TRAFFIC DATA

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AC	98	10	0 / 0	7 / 10	105	11	36 / 40	133	14
BA	1044	402	3 / 5	6 / 6	1111	428	36 / 31	1417	525
BC	43	5	0 / 0	7 / 20	46	6	37 / 40	59	7
BD	0	10	0 / 0	/ 180	0	28	/ 250	3	35
CD	0	0	0 / 0	/	0	0	/ 0	1	0
CA	18	54	0 / 0	11 / 7	20	58	33 / 35	24	73
CB	1	19	0 / 0	100 / 11	2	21	/ 32	0	25
DC	0	1	0 / 0	/ 100	0	2	/ 0	0	1
DB	3	1	0 / 0	100 / 300	6	4	113 / 300	7	4
DA	15	9	0 / 0	320 / 400	63	45	433 / 533	80	57
TOTAL A	1494	1506	AM/PM		1653	1711		2104	2153
TOTAL B	1406	1439			1501	1554		1914	1951
TOTAL C	160	89			173	98		217	120
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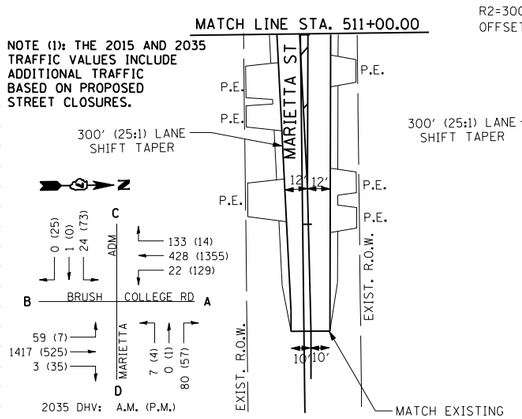
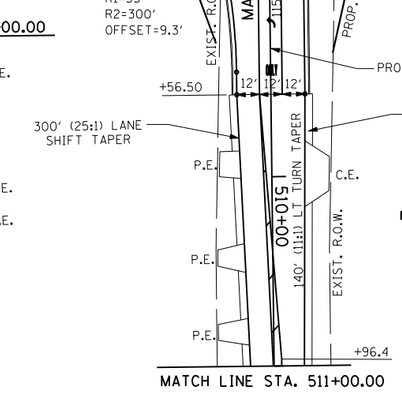
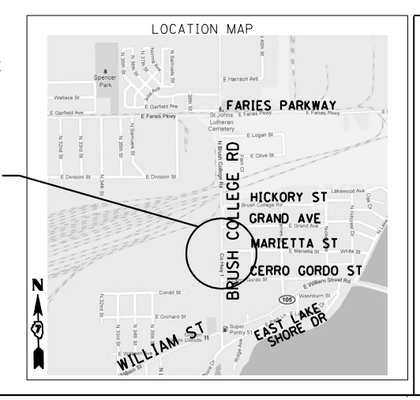






INTERSECTION DESIGN STUDY

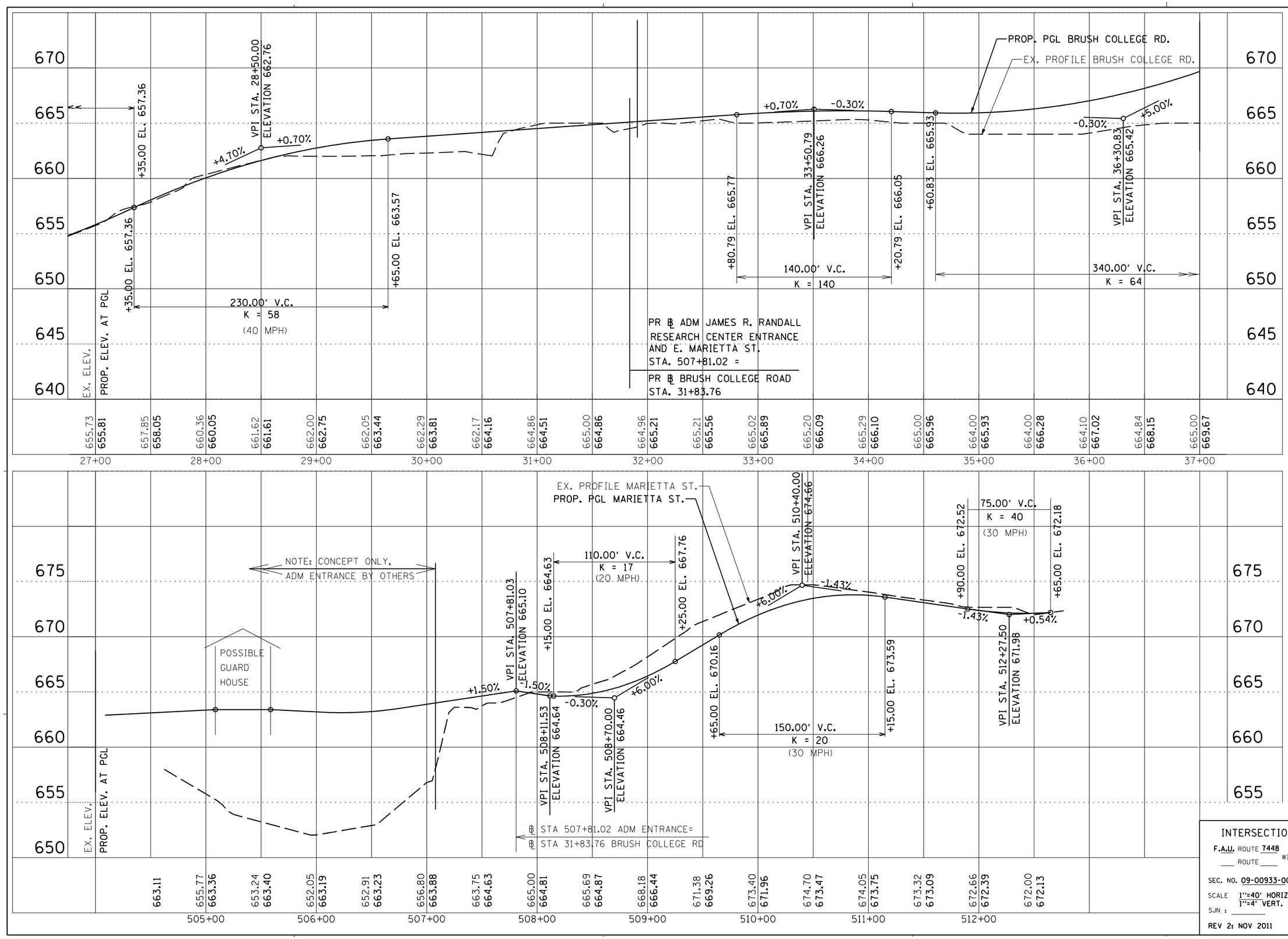
F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.) WITH
ROUTE (MARIETTA STREET, AND ADM/ JRRC ENTRANCE

SEC. NO. 09-00933-00-BR PROJ. NO. P-97-072-10
SCALE 1"=40' COUNTY MACON
SJN : REV. NO. 2

DESIGNED BY URS CORPORATION DATE AUG-2012

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER _____ DATE
SATISFACTORY _____ CITY ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT LOCAL ROADS ENGINEER _____ DATE
APPROVED _____ DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER _____ DATE

CADD FILE NAME : [ ] I.D.S. SHEET 1 OF 2



INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 BRUSH COLLEGE RD.

___ ROUTE ___ WITH MARIETTA STREET, AND ADM/JRRC ENTRANCE

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT.

COUNTY MACON

SJN : ___

PROJ. NO. P-97-072-10

REV 2: NOV 2011

I.D.S. SHEET 2 OF 2

Appendix G-3

Brush College Road / Faries Parkway Intersection Design Study

CAPACITY DESIGN STUDY

3 PHASE
70/80 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER (NOT CBD)
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2010 V6.3

PEAK HOUR FACTOR 0.85/0.82
A.M. 20.6 SEC. INTERSECTION LEVEL A.M. C
P.M. 22.7 SEC. OF SERVICE P.M. C

APPROACH		A (SB)			B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION		LT	TH	RT	LT	TH	RT				LT	TH	RT
PARKING MANEUVER/HR.			0			0					0		
PEDESTRIANS			0			10					0	•	
ARRIVAL TYPE		3	3			3	3				3		3
LANE UTILIZATION FACTOR		0.97	0.95			0.95	1.00				0.97		1.00
BASE SATURATION FLOW		1900	1900			1900	1900				1900		1900
D - DISTANCE		175	225			225	N/A				275		N/A
LANE GROUP		L	T			T	R				L		R
LANE WIDTHS		12	12			12					12		
GREEN TIME (SECONDS)	A.M.	18	45			22					15		
	P.M.	13	36			18					34		
G/C RATIO	A.M.	0.26	0.64			0.31					0.21	•	
	P.M.	0.16	0.45			0.23					0.43		
LANE GROUP DELAY (SECONDS)	A.M.	24.1	5.1			23.3					24.9		
	P.M.	30.6	16.8			33.1					20.1		
V/C RATIO	A.M.	0.63	0.16			0.63					0.54		
	P.M.	0.47	0.50			0.68					0.70		
LEVEL OF SERVICE	A.M.	C	A			C					C		
	P.M.	C	B			C					B		
2035 30TH MAX. HOUR TRAFFIC	A.M.	449	291			592	928				293		182
	P.M.	202	658			437	218				840		400
2015 8TH MAX. HOURLY TRAFFIC			359			636					519		

* IN LINEAR FEET (ASSUMES 1 VEHICLE = 25 FT)

PHASING DIAGRAM

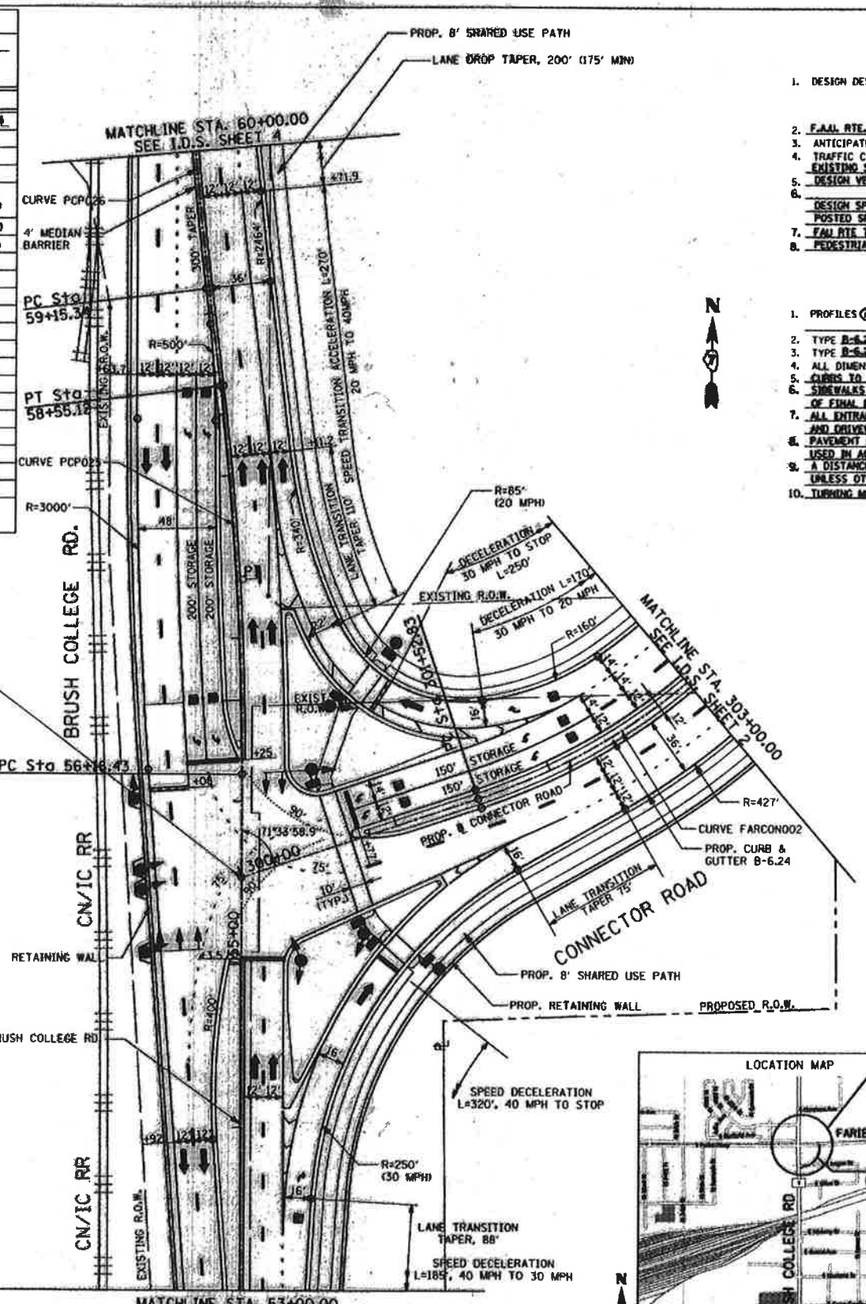
	I	II	III	
A.M.	18.0+(3.0+2)	22.0+(3.0+2)	15.0+(3.0+2)	70
P.M.	13.0+(3.0+2)	18.0+(3.0+2)	34.0+(3.0+2)	80

GREEN + (AMBER + ALL RED)

• FFR= FREE FLOW RIGHT, STOPPED WITH PEDESTRIAN SIGNAL CALL BUTTON

TRAFFIC DATA

MOVEMENT	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30TH MAX HOUR	ESTIMATED PERCENT INCREASE BY 2015	YEAR 2015 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2035	YEAR 2035 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	
AB	208	470	9 / 2	6 / 6	221	500	40 / 40	291	658	
AD	317	144	7 / 8	6 / 6	337	153	40 / 40	449	202	
AC										
BA	423	312	3 / 4	6 / 6	450	332	40 / 40	592	437	
BC										
BD	663	156	3 / 3	6 / 6	705	166	40 / 40	928	218	
CD										
CA										
CB			AM / PM	AM / PM			AM / PM			
DC										
DB	209	600	18 / 2	6 / 6	222	638	40 / 40	293	840	
DA	130	286	34 / 4	6 / 6	138	304	40 / 40	182	400	
TOTAL A	1078	1212	2010 ADT = 12,000		1146	1289		1514	1697	2035 ADT = 16,000
TOTAL B	1503	1538	2010 ADT = 15,000		1598	1636		2104	2153	2035 ADT = 21,000
TOTAL C										
TOTAL D	1319	1186	2010 ADT = 13,000		1402	1261		1852	1660	2035 ADT = 18,000



PROP. CURVE PCP025
PI STA. = 57+35.92
Δ = 6° 50' 41" (LT)
D = 2° 52' 04"
R = 1,998.00'
T = 119.49'
L = 238.69'
E = 3.57'
e = NC (40 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 56+16.43
P.T. STA. = 58+55.12

PROP. CURVE PCP026
PI STA. = 60+64.97
Δ = 6° 50' 41" (RT)
D = 2° 17' 24"
R = 2,502.00'
T = 149.63'
L = 298.90'
E = 4.47'
e = NC (40 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 59+15.34
P.T. STA. = 62+14.24

PROP. CURVE FARCON002
PI STA. = 304+40.24
Δ = 73° 29' 07" (LT)
D = 14° 52' 55"
R = 385.00'
T = 287.42'
L = 493.78'
E = 95.45'
e = NC (30 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 301+52.83
P.T. STA. = 306+46.61

PROJECT LOCATION

GRAPHIC SCALE

SHEET NUMBER

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION F.A.U. RTE. 7448 (BRUSH COLLEGE RD.) MINOR ARTERIAL (URBAN) ADT= 21,000 vpd (2035) WITH (CONNECTOR ROAD) MINOR ARTERIAL (URBAN) ADT= 18,000 vpd (2035)
2. F.A.U. RTE. 7448 (BRUSH COLLEGE RD.) IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2015
4. TRAFFIC CONTROL TO BE FULLY ACTUATED TRAFFIC SIGNALS. EXISTING SIGNAL AT INTERSECTION OF BRUSH COLLEGE RD & FARIES PARKWAY TO BE REMOVED
5. DESIGN VEHICLE: WB-65 (ALL APPROACHES)
6.

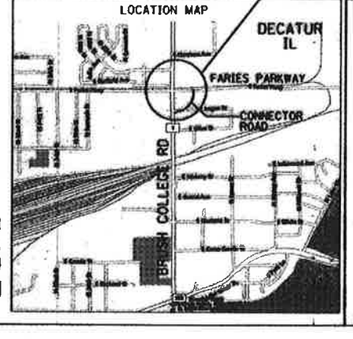
	BRUSH COLLEGE	CONNECTOR RD
DESIGN SPEED	40 MPH	30 MPH
POSTED SPEED	35 MPH	30 MPH (TBD)

7. FAU RTE 7448 (BRUSH COLLEGE RD) IS NOT A DESIGNATED TRUCK ROUTE.
8. PEDESTRIAN USE: YES BICYCLE USE: YES

GENERAL NOTES

1. PROFILES ARE NOT PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1.0% ON BRUSH COLLEGE RD AND CONNECTOR ROAD
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. CURBS TO BE DEPRESSED AT CROSSWALKS TO MEET ADA REQUIREMENTS.
6. SIDEWALKS AND R.O.W. ARE SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. ALL ENTRANCES WILL BE IN ACCORDANCE WITH IDOT POLICIES ON ENTRANCES AND DRIVEWAYS.
8. PAVEMENT MARKING TO BE THERMOPLASTIC. RAISED REFLECTIVE MARKERS TO BE USED IN ACCORDANCE WITH IDOT POLICY.
9. A DISTANCE OF 6' HAS BEEN PROVIDED BETWEEN ALL STOP BARS AND CROSSWALKS UNLESS OTHERWISE NOTED.
10. TURNING MOVEMENTS CHECKED WITH AUTOTURN

LOCATION MAP



INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.) WITH
F.A.U. ROUTE 7369 (FARIES PARKWAY)

SEC. NO. 08-00033-00-BR PROJ. NO. P-97-072-10
SCALE 1"=40' COUNTY MACON
SJN : REV. NO. 1

DESIGNED BY URS CORPORATION DATE JUN-2013
SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE 7-8-13
SATISFACTORY — INTERIM DISTRICT PROGRAM DEVELOPMENT ENGINEER — DATE
SATISFACTORY — CITY ENGINEER — DATE 7-3-13
SATISFACTORY — DISTRICT LOCAL ROADS ENGINEER — DATE 7-8-13
APPROVED — DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER — DATE 7-8-13

CADD FILE NAME : I.D.S. SHEET 1 OF 13

SHEET NUMBER

CAPACITY DESIGN STUDY

3 PHASE
70/80 SEC. CYCLE
SIGNAL TYPE ACTUATED

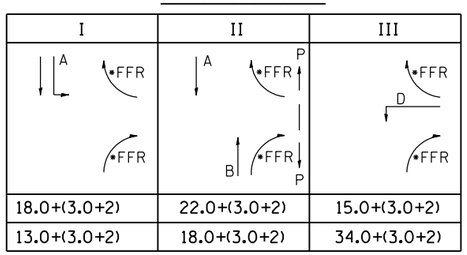
AREA OTHER (NOT CBD)
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2010 V6.3

PEAK HOUR FACTOR 0.85/0.82
A.M. 20.6 SEC. P.M. 22.7 SEC.
INTERSECTION LEVEL OF SERVICE A.M. C P.M. C

APPROACH		A (SB)			B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION		LT	TH	RT	LT	TH	RT				LT	TH	RT
PARKING MANEUVER/HR.			0			0					0		
PEDESTRIANS			0			10					0		
ARRIVAL TYPE		3	3			3	3				3		3
LANE UTILIZATION FACTOR		0.97	0.95			0.95	1.00				0.97		1.00
BASE SATURATION FLOW		1900	1900			1900	1900				1900		1900
D - DISTANCE		175	225			225	N/A				275		N/A
LANE GROUP		L	T			T	R				L		R
LANE WIDTHS		12	12			12					12		
GREEN TIME (SECONDS)	A.M.	18	45			22	RT				15		RT
	P.M.	13	36			18					34		
G/C RATIO	A.M.	0.26	0.64			0.31	FLOW				0.21		FLOW
	P.M.	0.16	0.45			0.23					0.43		
LANE GROUP DELAY (SECONDS)	A.M.	24.1	5.1			23.3	FREE				24.9		FREE
	P.M.	30.6	16.8			33.1					20.1		
V/C RATIO	A.M.	0.63	0.16			0.63	FREE				0.54		FREE
	P.M.	0.47	0.50			0.68					0.70		
LEVEL OF SERVICE	A.M.	C	A			C	F				C		F
	P.M.	C	B			C					B		
2035 30TH MAX. HOUR TRAFFIC	A.M.	449	291			592	928				293		182
	P.M.	202	658			437	218				840		400
2015 8TH MAX. HOURLY TRAFFIC			359			636					519		

• IN LINEAR FEET (ASSUMES 1 VEHICLE = 25 FT)

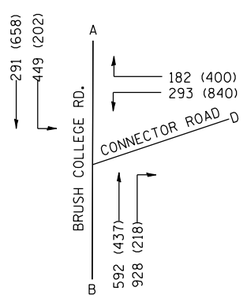
PHASING DIAGRAM



	I	II	III	
A.M.	18.0+(3.0+2)	22.0+(3.0+2)	15.0+(3.0+2)	70
P.M.	13.0+(3.0+2)	18.0+(3.0+2)	34.0+(3.0+2)	80

GREEN + (AMBER + ALL RED)

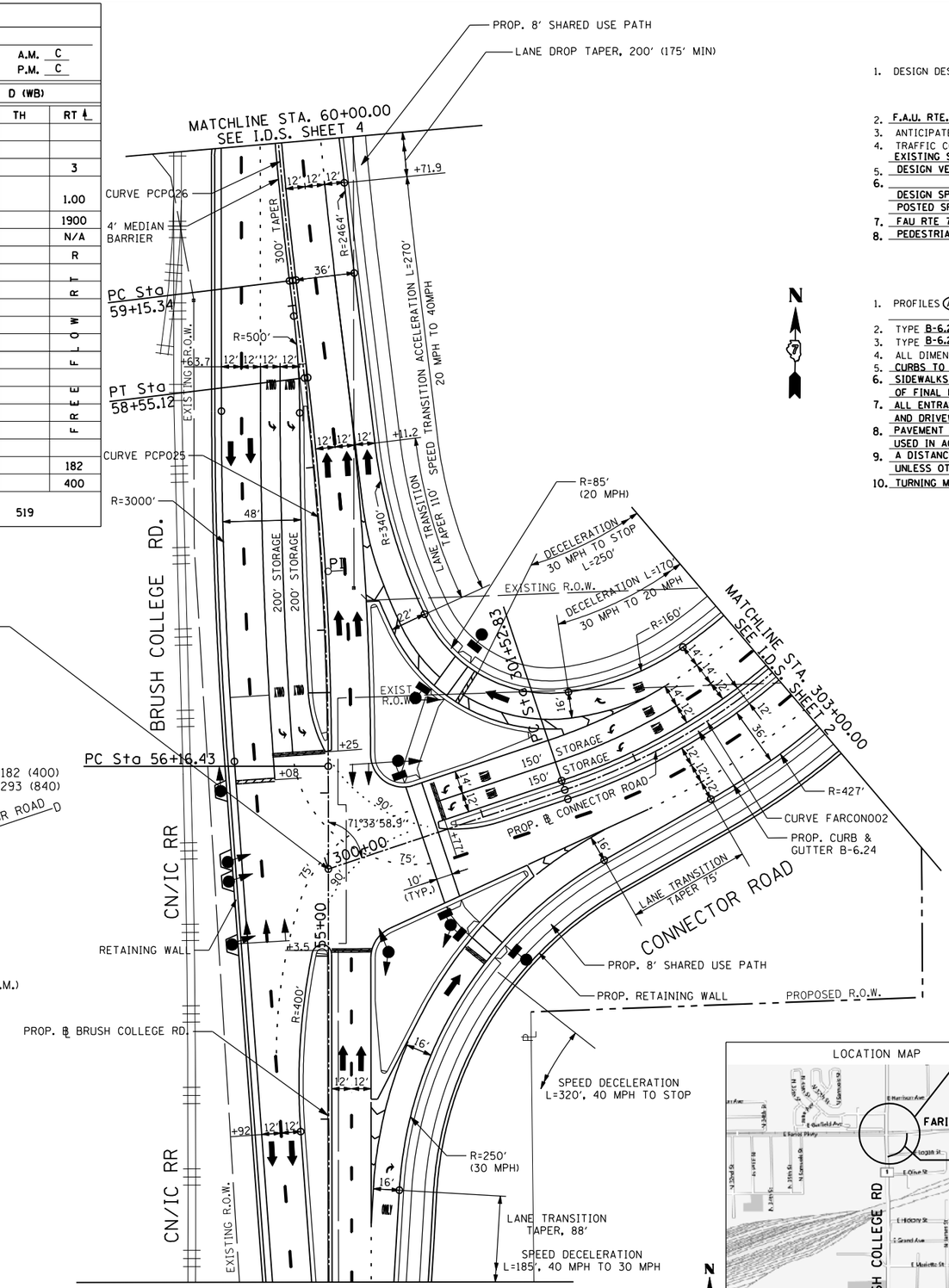
* FFR= FREE FLOW RIGHT, STOPPED WITH PEDESTRIAN SIGNAL CALL BUTTON



2035 DHV: A.M. (P.M.)

TRAFFIC DATA

MOVEMENT	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2015	YEAR 2015 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2035	YEAR 2035 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	
AB	208	470	9 / 2	6 / 6	221	500	40 / 40	291	658	
AD	317	144	7 / 8	6 / 6	337	153	40 / 40	449	202	
AC										
BA	423	312	3 / 4	6 / 6	450	332	40 / 40	592	437	
BC										
BD	663	156	3 / 3	6 / 6	705	166	40 / 40	928	218	
CD										
CA										
CB			AM / PM	AM / PM			AM / PM			
DC										
DB	209	600	18 / 2	6 / 6	222	638	40 / 40	293	840	
DA	130	286	34 / 4	6 / 6	138	304	40 / 40	182	400	
TOTAL A	1078	1212	2010 ADT = 12,000		1146	1289		1514	1697	2035 ADT = 16,000
TOTAL B	1503	1538	2010 ADT = 15,000		1598	1636		2104	2153	2035 ADT = 21,000
TOTAL C										
TOTAL D	1319	1186	2010 ADT = 13,000		1402	1261		1852	1660	2035 ADT = 18,000



℄ CONNECTOR ROAD = 300+00.00
BRUSH COLLEGE RD. = 55+53.68

ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION F.A.U. RTE. 7448 (BRUSH COLLEGE RD.): MINOR ARTERIAL (URBAN), ADT= 21,000 vpd (2035) WITH (CONNECTOR ROAD): MINOR ARTERIAL (URBAN), ADT= 18,000 vpd (2035)
2. F.A.U. RTE. 7448 (BRUSH COLLEGE RD.): IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2015
4. TRAFFIC CONTROL TO BE FULLY ACTUATED TRAFFIC SIGNALS. EXISTING SIGNAL AT INTERSECTION OF BRUSH COLLEGE RD & FARIES PARKWAY TO BE REMOVED
5. DESIGN VEHICLE: WB-65 (ALL APPROACHES)
6.

	BRUSH COLLEGE	CONNECTOR RD
DESIGN SPEED	40 MPH	30 MPH
POSTED SPEED	35 MPH	30 MPH (TBD)

7. FAU RTE 7448 (BRUSH COLLEGE RD) IS NOT A DESIGNATED TRUCK ROUTE.
8. PEDESTRIAN USE: YES BICYCLE USE: YES

GENERAL NOTES

1. PROFILES (ARE) NOT PROVIDED. SINCE APPROACH GRADES ARE GREATER THAN 1.0% ON BRUSH COLLEGE RD AND CONNECTOR ROAD
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. CURBS TO BE DEPRESSED AT CROSSWALKS TO MEET ADA REQUIREMENTS.
6. SIDEWALKS AND R.O.W. ARE SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. ALL ENTRANCES WILL BE IN ACCORDANCE WITH IDOT POLICIES ON ENTRANCES AND DRIVEWAYS.
8. PAVEMENT MARKING TO BE THERMOPLASTIC. RAISED REFLECTIVE MARKERS TO BE USED IN ACCORDANCE WITH IDOT POLICY.
9. A DISTANCE OF 6' HAS BEEN PROVIDED BETWEEN ALL STOP BARS AND CROSSWALKS UNLESS OTHERWISE NOTED.
10. TURNING MOVEMENTS CHECKED WITH AUTOTURN

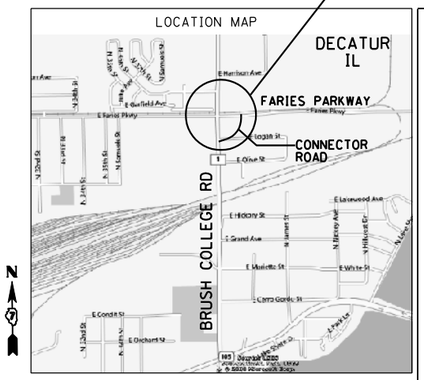
PROP. CURVE PCP025	PROP. CURVE PCP026
PI STA. = 57+35.92	PI STA. = 60+64.97
Δ = 6° 50' 41'' (LT)	Δ = 6° 50' 41'' (RT)
D = 2° 52' 04''	D = 2° 17' 24''
R = 1,998.00'	R = 2,502.00'
T = 119.49'	T = 149.63'
L = 238.69'	L = 298.90'
E = 3.57'	E = 4.47'
e = NC (40 MPH)	e = NC (40 MPH)
T.R. = N/A	T.R. = N/A
S.E. RUN = N/A	S.E. RUN = N/A
P.C. STA. = 56+16.43	P.C. STA. = 59+15.34
P.T. STA. = 58+55.12	P.T. STA. = 62+14.24

PROP. CURVE FARCON002
PI STA. = 304+40.24
Δ = 73° 29' 07'' (LT)
D = 14° 52' 55''
R = 385.00'
T = 287.42'
L = 493.78'
E = 95.45'
e = NC (30 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 301+52.83
P.T. STA. = 306+46.61

PROJECT LOCATION

40' 20' 0 40'
GRAPHIC SCALE

LOCATION MAP



INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.) WITH
F.A.U. ROUTE 7369 (FARIES PARKWAY

SEC. NO. 09-00933-00-BR PROJ. NO. P-97-072-10
SCALE 1"=40' COUNTY MACON
SJN : REV. NO. 1

DESIGNED BY URS CORPORATION DATE JUN-2013

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER DATE
SATISFACTORY _____ INTERIM DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE
SATISFACTORY _____ DISTRICT LOCAL ROADS ENGINEER DATE
APPROVED _____ DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER DATE

CADD FILE NAME : [ ] I.D.S. SHEET 1 OF 13

BDE-9908

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$

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SHEET NUMBER

CAPACITY DESIGN STUDY

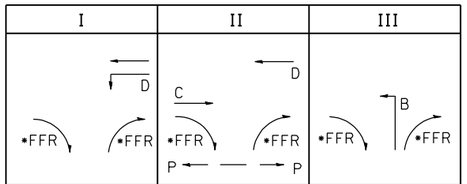
3 PHASE
70/80 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER (NOT CBD)
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2010 V6.3

PEAK HOUR FACTOR 0.85/0.71
A.M. 18 SEC. P.M. 22.7 SEC.
INTERSECTION LEVEL OF SERVICE A.M. B P.M. C

APPROACH					B (NB)			C (EB)			D (WB)		
BUS STOP CONDITION					LT	TH	RT	LT	TH	RT	LT	TH	RT
PARKING MANEUVER/HR.					0				0			0	
PEDESTRIANS					0				10			0	
ARRIVAL TYPE					3		3		3	3	3	3	
LANE UTILIZATION FACTOR					0.97		1.00		0.95	1.00	0.97	0.95	
BASE SATURATION FLOW					1900		1900		1900	1900	1900	1900	
D - DISTANCE					175		N/A		125	N/A	300	75	
LANE GROUP					L		R		T	R	L	T	
LANE WIDTHS					12				12		12	12	
GREEN TIME (SECONDS)	A.M.				22		RT		25	RT	8	38	
	P.M.				16				17		32	54	
G/C RATIO	A.M.				0.31		FLOW		0.36	FLOW	0.11	0.54	
	P.M.				0.20				0.21		0.40	0.68	
LANE GROUP DELAY (SECONDS)	A.M.				15.7		FREE		16.6	FREE	32.2	7.6	
	P.M.				34				25.7		26.4	5.3	
V/C RATIO	A.M.				0.42				0.37		0.37	0.07	
	P.M.				0.74				0.10		0.84	0.24	
LEVEL OF SERVICE	A.M.				B				B		C	A	
	P.M.				C				C		C	A	
2035 30TH MAX. HOUR TRAFFIC	A.M.				325		1053		358	330	144	77	
	P.M.				349		71		50	407	833	406	
2015 8TH MAX. HOURLY TRAFFIC					574			288			518		

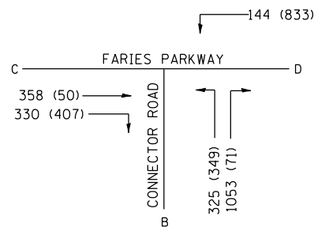
PHASING DIAGRAM



	I	II	III	
A.M.	8.0+(3.0+2)	25.0+(3.0+2)	22.0+(3.0+2)	70
P.M.	32.0+(3.0+2)	17.0+(3.0+2)	16.0+(3.0+2)	80

GREEN + (AMER + ALL RED)

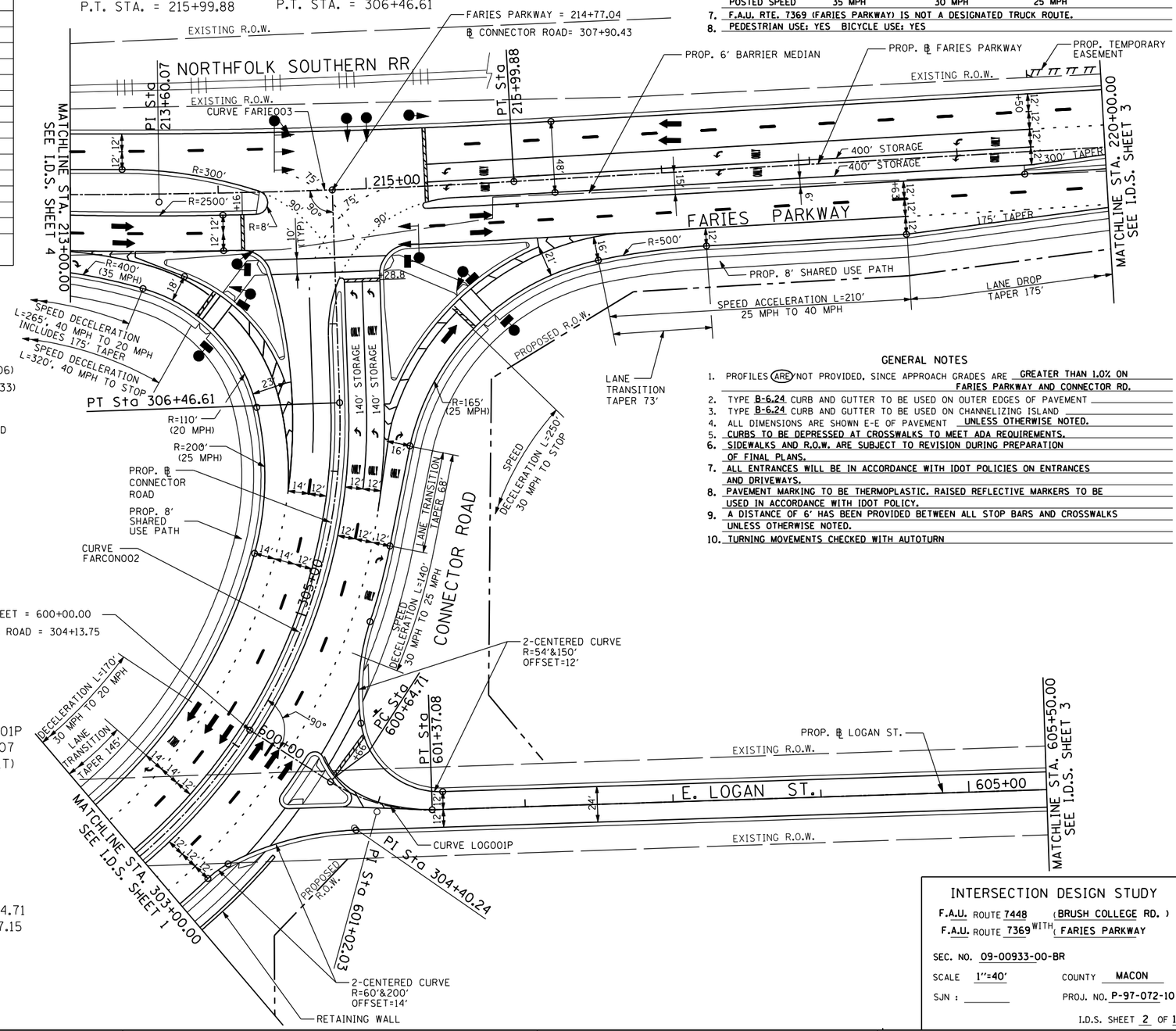
* FFR= FREE FLOW RIGHT, STOPPED WITH PEDESTRIAN SIGNAL CALL BUTTON



2035 DHV: A.M. (P.M.)

PROP. CURVE FARIE003
PI STA. = 213+60.07
Δ = 5° 12′ 12″ (LT)
D = 1° 05′ 03″
R = 5,285.00′
T = 240.14′
L = 479.96′
E = 5.45′
e = NC (40 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 211+19.92
P.T. STA. = 215+99.88

PROP. CURVE FARCON002
PI STA. = 304+40.24
Δ = 73° 29′ 07″ (LT)
D = 14° 52′ 55″
R = 385.00′
T = 287.42′
L = 493.78′
E = 95.45′
e = NC (30 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 301+52.83
P.T. STA. = 306+46.61



ELEMENTS CONTROLLING DESIGN

1. DESIGN DESIGNATION F.A.U. RTE. 7369 (FARIES PARKWAY) :
   WEST LEG - MINOR ARTERIAL, ADT = 12,000 vpd (2035)
   EAST LEG - COLLECTOR, ADT = 15,000 vpd (2035)
   WITH (CONNECTOR ROAD):
   MINOR ARTERIAL (URBAN), ADT= 18,000 vpd (2035)
2. F.A.U. RTE. 7369 (FARIES PARKWAY) IS THE PREFERENCE ROUTE
3. ANTICIPATED YEAR OF CONSTRUCTION 2015
4. TRAFFIC CONTROL TO BE FULLY ACTUATED TRAFFIC SIGNALS, EXISTING SIGNAL AT INTERSECTION OF BRUSH COLLEGE RD & FARIES PARKWAY TO BE REMOVED
5. DESIGN VEHICLE: WB-65 (ALL APPROACHES)
6.

	FARIES PARKWAY	CONNECTOR RD	LOGAN ST
DESIGN SPEED	40 MPH	30 MPH	30 MPH
POSTED SPEED	35 MPH	30 MPH	25 MPH

7. F.A.U. RTE. 7369 (FARIES PARKWAY) IS NOT A DESIGNATED TRUCK ROUTE.
8. PEDESTRIAN USE: YES BICYCLE USE: YES

GENERAL NOTES

1. PROFILES ARE NOT PROVIDED, SINCE APPROACH GRADES ARE GREATER THAN 1.0% ON FARIES PARKWAY AND CONNECTOR RD.
2. TYPE B-6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT
3. TYPE B-6.24 CURB AND GUTTER TO BE USED ON CHANNELIZING ISLAND
4. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
5. CURBS TO BE DEPRESSED AT CROSSWALKS TO MEET ADA REQUIREMENTS.
6. SIDEWALKS AND R.O.W. ARE SUBJECT TO REVISION DURING PREPARATION OF FINAL PLANS.
7. ALL ENTRANCES WILL BE IN ACCORDANCE WITH IDOT POLICIES ON ENTRANCES AND DRIVEWAYS.
8. PAVEMENT MARKING TO BE THERMOPLASTIC. RAISED REFLECTIVE MARKERS TO BE USED IN ACCORDANCE WITH IDOT POLICY.
9. A DISTANCE OF 6′ HAS BEEN PROVIDED BETWEEN ALL STOP BARS AND CROSSWALKS UNLESS OTHERWISE NOTED.
10. TURNING MOVEMENTS CHECKED WITH AUTOTURN

TRAFFIC DATA

MOVEMENT	YEAR 2010 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2015	YEAR 2015 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2035	YEAR 2035 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	
AB										
AD										
AC										
BA										
BC	232	249	12 / 6	6 / 6	247	265	40 / 40	325	349	
BD	748	51	2 / 5	6 / 6	796	54	41 / 39	1053	71	
CD	256	36	6 / 14	6 / 6	272	38	40 / 39	358	50	
CA										
CB	236	291	15 / 6	6 / 7	251	310	40 / 40	330	407	
DC	55	290	44 / 1	7 / 7	59	309	40 / 40	77	406	
DB	103	595	49 / 1	7 / 6	110	633	40 / 40	144	833	
DA			AM/PM	AM / PM			AM / PM			
TOTAL A										
TOTAL B	1319	1186	2010 ADT = 13,000		1404	1262		1852	1660	2035 ADT = 18,000
TOTAL C	779	866	2010 ADT = 8,000		829	922		1090	1212	2035 ADT = 12,000
TOTAL D	1162	972	2010 ADT = 11,000		1237	1034		1632	1360	2035 ADT = 15,000

PROP. CURVE LOG001P
PI STA. = 601+02.07
Δ = 34° 35′ 21″ (LT)
D = 47° 44′ 47″
R = 120.00′
T = 37.36′
L = 72.44′
E = 5.68′
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 600+64.71
P.T. STA. = 601+37.15

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR
SCALE 1″=40′ COUNTY MACON
SJN : PROJ. NO. P-97-072-10
I.D.S. SHEET 2 OF 13

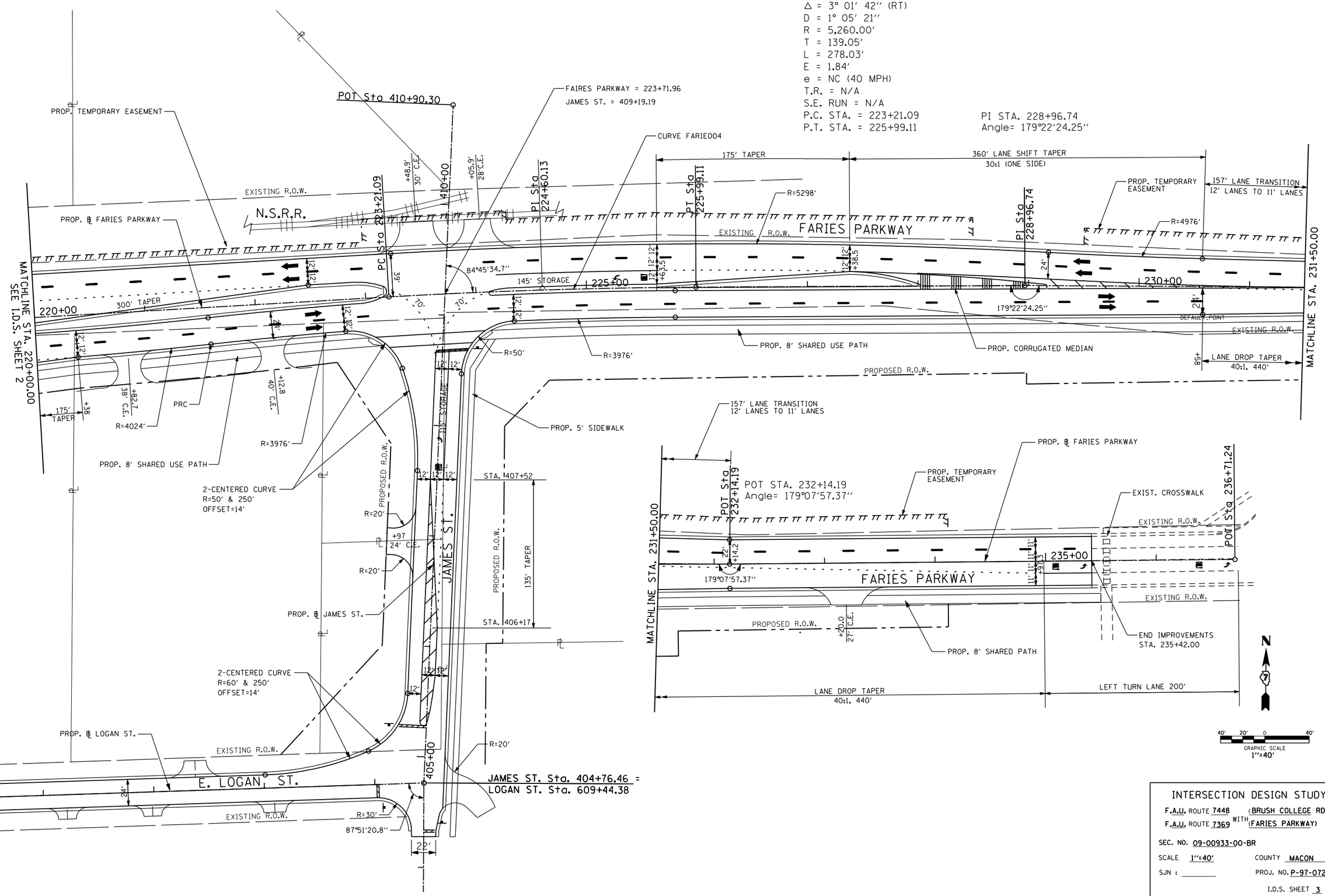
PLOT DATE = $DATE$
FILE NAME = $FILE$
PLOT SCALE = $SCALE$
USER NAME = $USER$

BDE-9908

...\D732772-SHT-IDS-Faries-02.dgn 6/13/2013 1:42:36 PM

PROP. CURVE FARIE004
PI STA. = 224+60.13
Δ = 3° 01′ 42″ (RT)
D = 1° 05′ 21″
R = 5,260.00′
T = 139.05′
L = 278.03′
E = 1.84′
e = NC (40 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 223+21.09
P.T. STA. = 225+99.11

PI STA. 228+96.74
Angle= 179°22′24.25″



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INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
WITH
F.A.U. ROUTE 7369 (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1″=40′ COUNTY MACON

SJN : _____ PROJ. NO. P-97-072-10

I.D.S. SHEET 3 OF 13

BDE-9908

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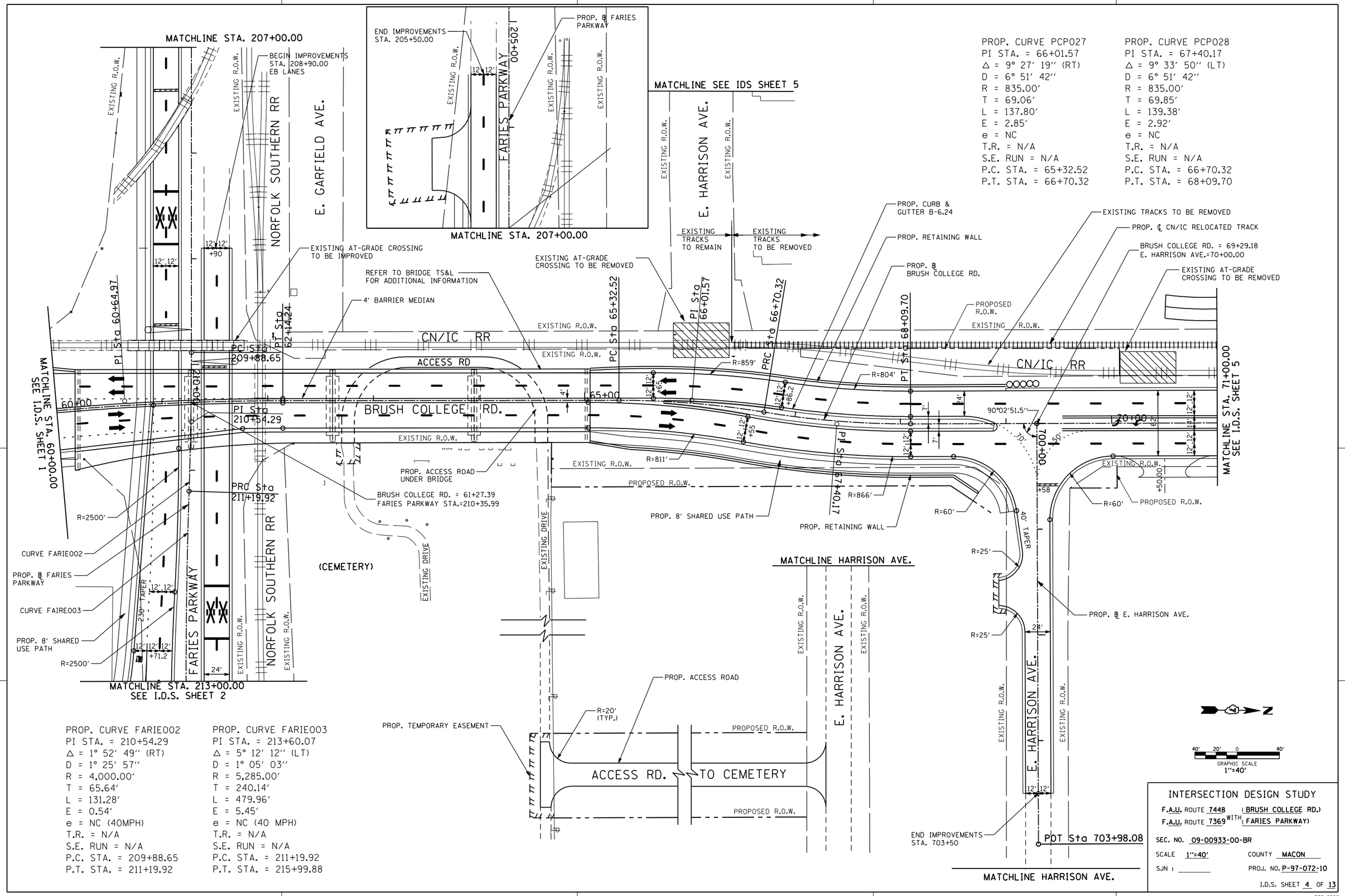

PROP. CURVE PCP027
PI STA. = 66+01.57
Δ = 9° 27' 19" (RT)
D = 6° 51' 42"
R = 835.00'
T = 69.06'
L = 137.80'
E = 2.85'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 65+32.52
P.T. STA. = 66+70.32

PROP. CURVE PCP028
PI STA. = 67+40.17
Δ = 9° 33' 50" (LT)
D = 6° 51' 42"
R = 835.00'
T = 69.85'
L = 139.38'
E = 2.92'
e = NC
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 66+70.32
P.T. STA. = 68+09.70

PROP. CURVE FARIE002
PI STA. = 210+54.29
Δ = 1° 52' 49" (RT)
D = 1° 25' 57"
R = 4,000.00'
T = 65.64'
L = 131.28'
E = 0.54'
e = NC (40MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 209+88.65
P.T. STA. = 211+19.92

PROP. CURVE FARIE003
PI STA. = 213+60.07
Δ = 5° 12' 12" (LT)
D = 1° 05' 03"
R = 5,285.00'
T = 240.14'
L = 479.96'
E = 5.45'
e = NC (40 MPH)
T.R. = N/A
S.E. RUN = N/A
P.C. STA. = 211+19.92
P.T. STA. = 215+99.88

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' COUNTY MACON

SJN : _____ PROJ. NO. P-97-072-10

I.D.S. SHEET 4 OF 13

BDE-9908

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PROP. CURVE ACC001P
PI STA. = 806+58.90
Δ = 90° 00′ 00″ (RT)
D = 31° 49′ 52″
R = 180.00′
T = 180.00′
L = 282.74′
E = 74.56′
e = NC (25 MPH)
T.R. =N/A
S.E. RUN = N/A
P.C. STA. = 804+78.90
P.T. STA. = 807+61.64

POT Sta 800+00.00
800+00
PC Sta 804+78.90
PI Sta 806+58.90
PROPOSED R.O.W.
ACCESS RD.
24′
12′ 12′
16′ 16′
805+00
CURVE ACC001P
PT Sta 807+61.64
16′ 16′
EXISTING R.O.W.
E. HARRISON AVE.
MATCHLINE STA. SEE IDS SHEET 4

RECONFIGURED ACCESS TO BE COORDINATED WITH OWNER
EXISTING CROSSING & DRIVEWAY ACCESS TO BE REMOVED
NEW CROSSING
12′ 16′
22′
R=30′
R=65′
2-CENTERED CURVE
R=50′ & 200′
OFFSET=10′
EXISTING ℄ CN/ICRR
PROP. ℄ CN/IC RELOCATED TRACK
EXISTING TRACKS TO BE REMOVED
EXISTING TRACKS TO REMAIN
NEW TRACKS ON NEW ALIGNMENT
EXISTING R.O.W.
CN/IC RR
00+01.8
POT Sta 74+66.52
12′
MATCHLINE STA. 71+00.00 SEE I.D.S. SHEET 4
62′
12′ 12′
12′ 12′
BRUSH COLLEGE RD.
EXISTING R.O.W.
+71.30
+4.26
MATCH EXISTING STA. 74+66.52
PROP. ℄ BRUSH COLLEGE RD.
145′ RT TURN LANE
175′ RT TURN TAPER
BRUSH COLLEGE RD. = 72+71.71
ACCESS RD.=810+61.33
N
40′ 20′ 0 40′
GRAPHIC SCALE 1″=40′

PLOT DATE : $DATE$
FILE NAME : $FILEL$
PLOT SCALE : $SCALE$
USER NAME : $USER$

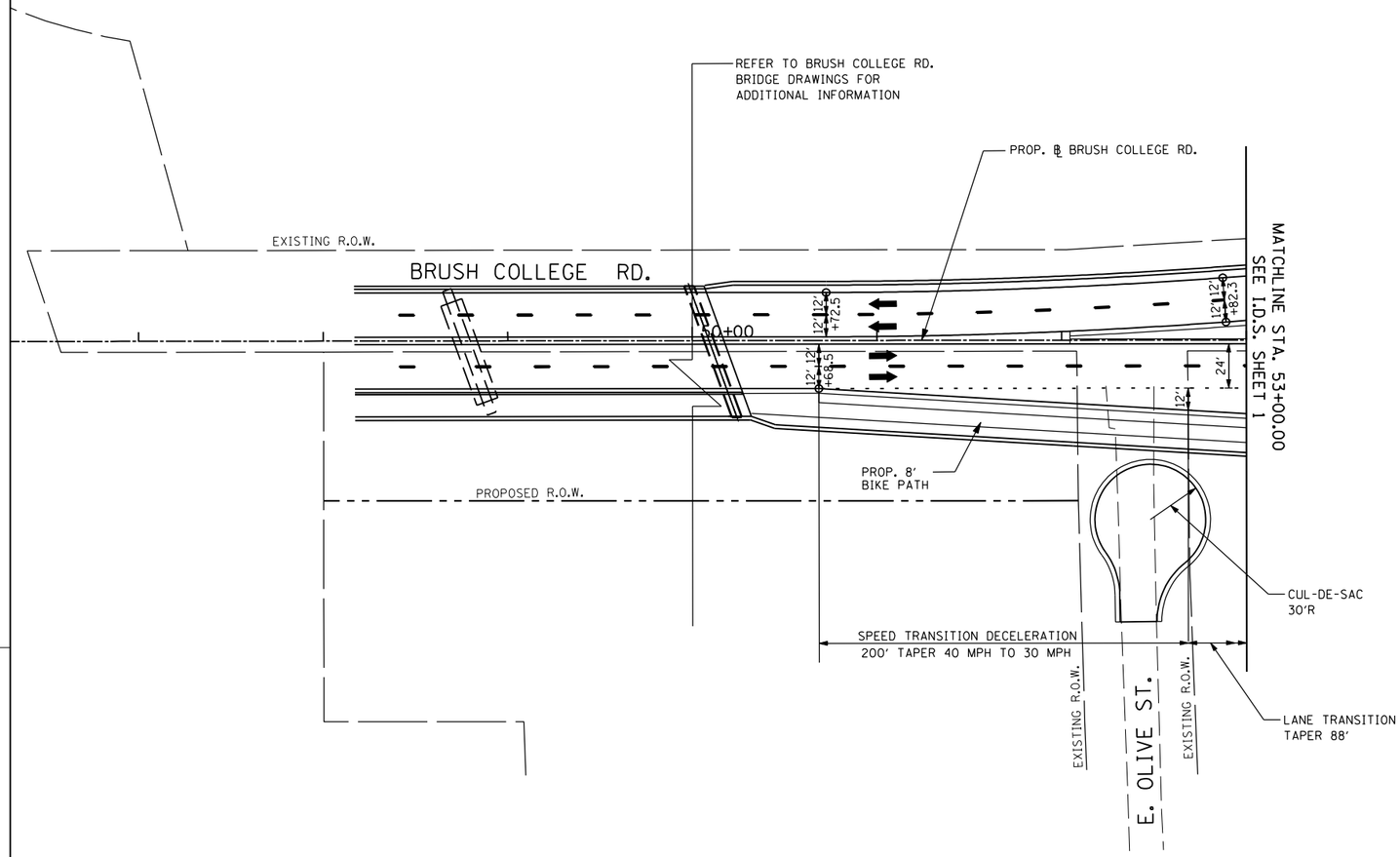
INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR
SCALE 1″=40′ COUNTY MACON
SJN : _____ PROJ. NO. P-97-072-10

I.D.S. SHEET 5 OF 13

BDE-9908



40' 20' 0 40'
GRAPHIC SCALE
1"=40'

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' COUNTY MACON

SJN : _____ PROJ. NO. P-97-072-10

I.D.S. SHEET 6 OF 13

BDE-9908

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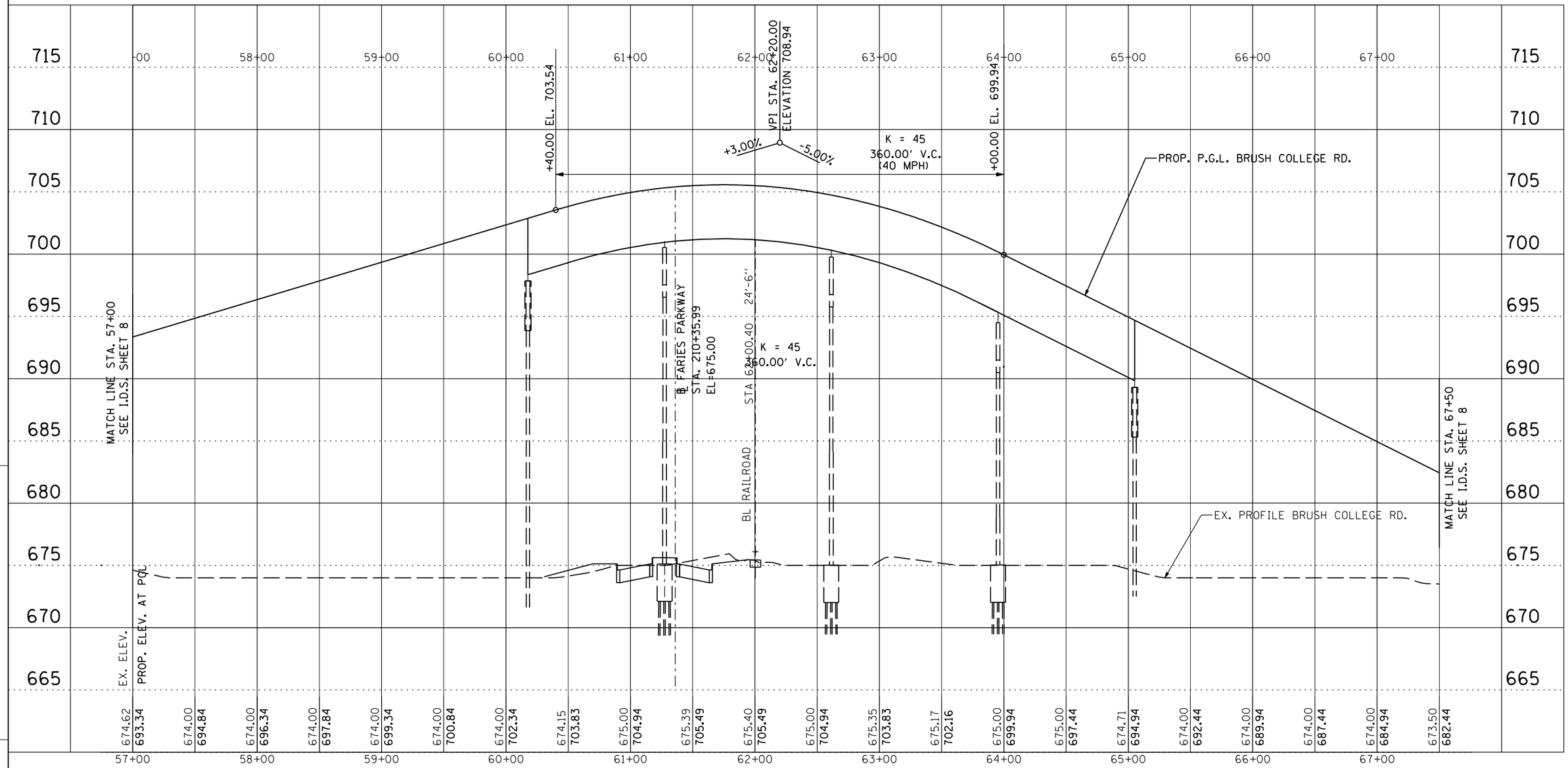

BRUSH COLLEGE RD. PROFILE

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ.
1"=4' VERT.

COUNTY MACON

SJN :

PROJ. NO. P-97-072-10

REV :

I.D.S. SHEET 7 OF 13

BDE-9908

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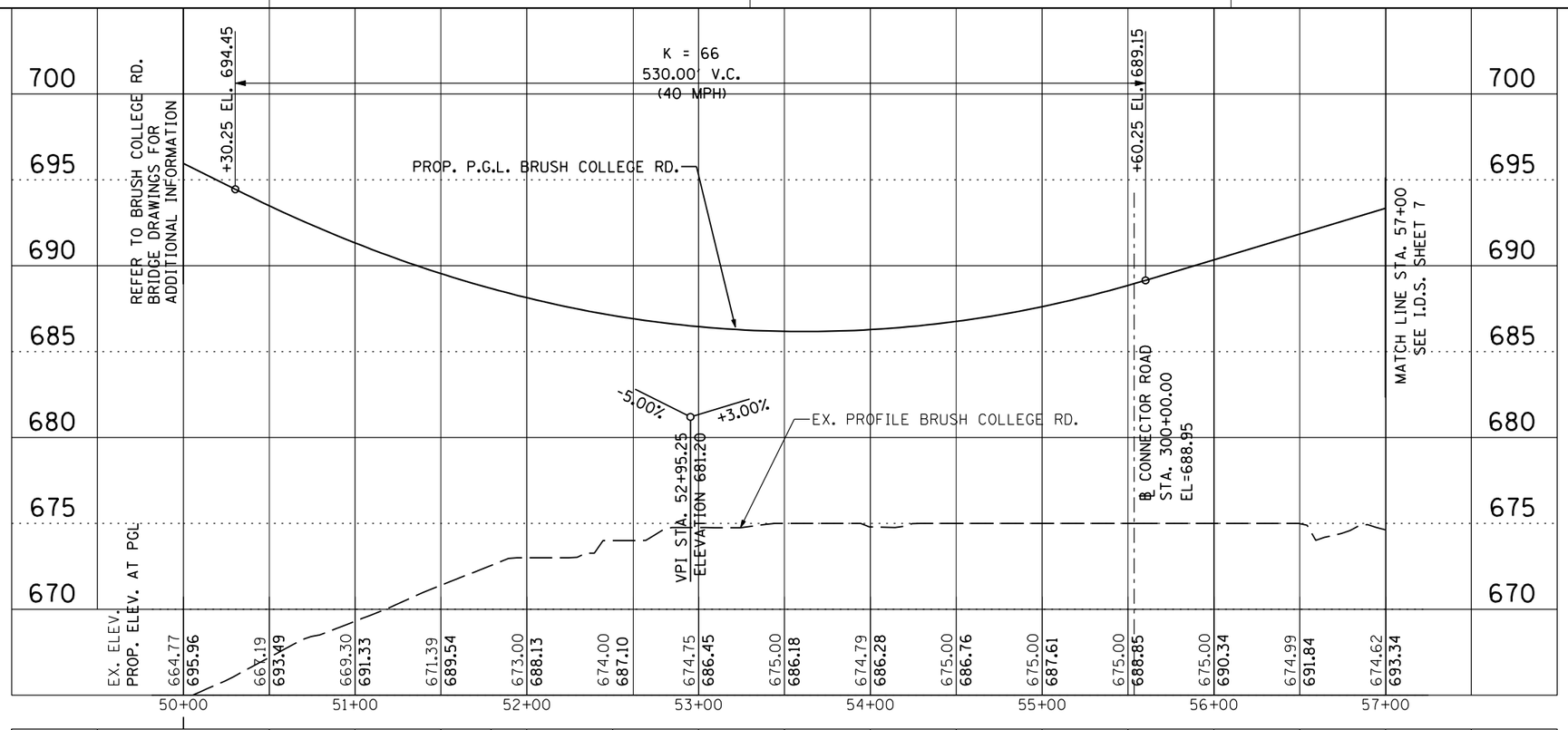

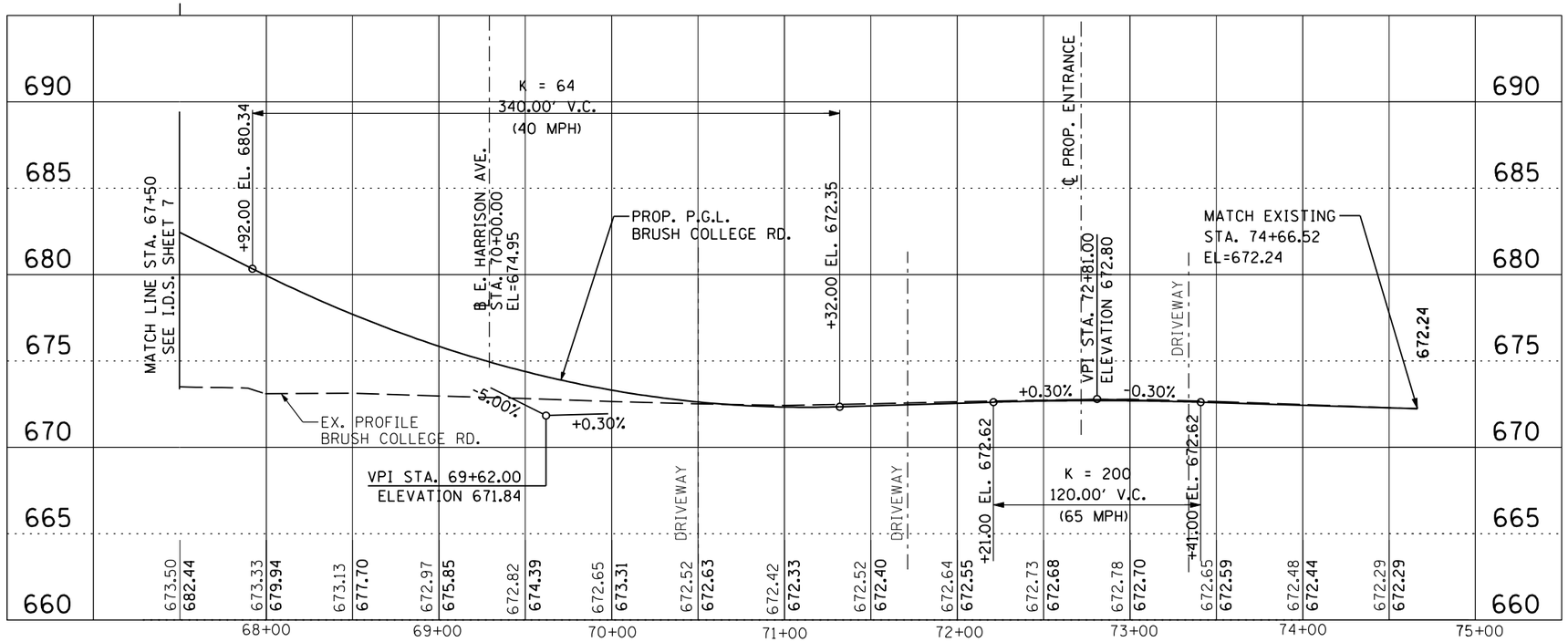

BRUSH COLLEGE RD. PROFILE

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT.

COUNTY MACON

SJN :

PROJ. NO. P-97-072-10

REV :

I.D.S. SHEET 8 OF 13

BDE-9908

PLOT DATE = $DATE$
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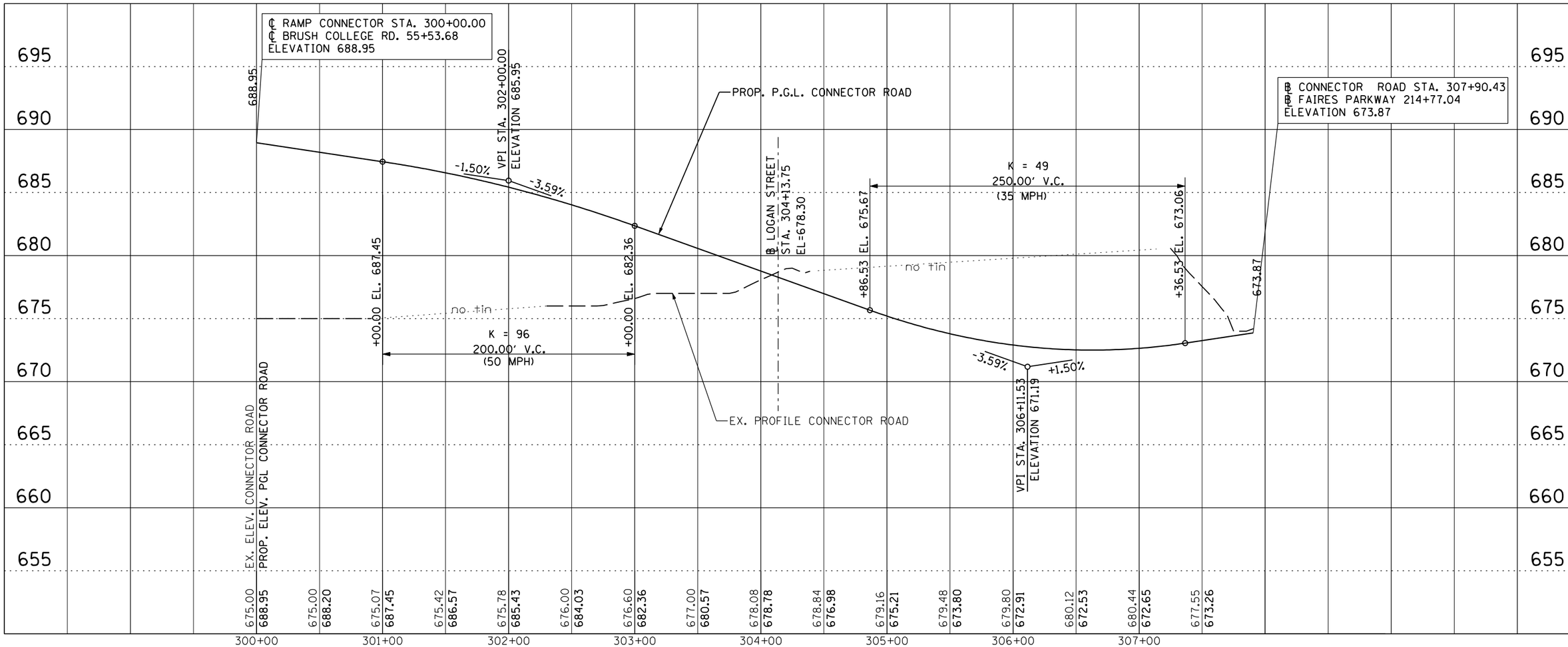


CONNECTOR ROAD PROFILE

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ.
1"=4' VERT.

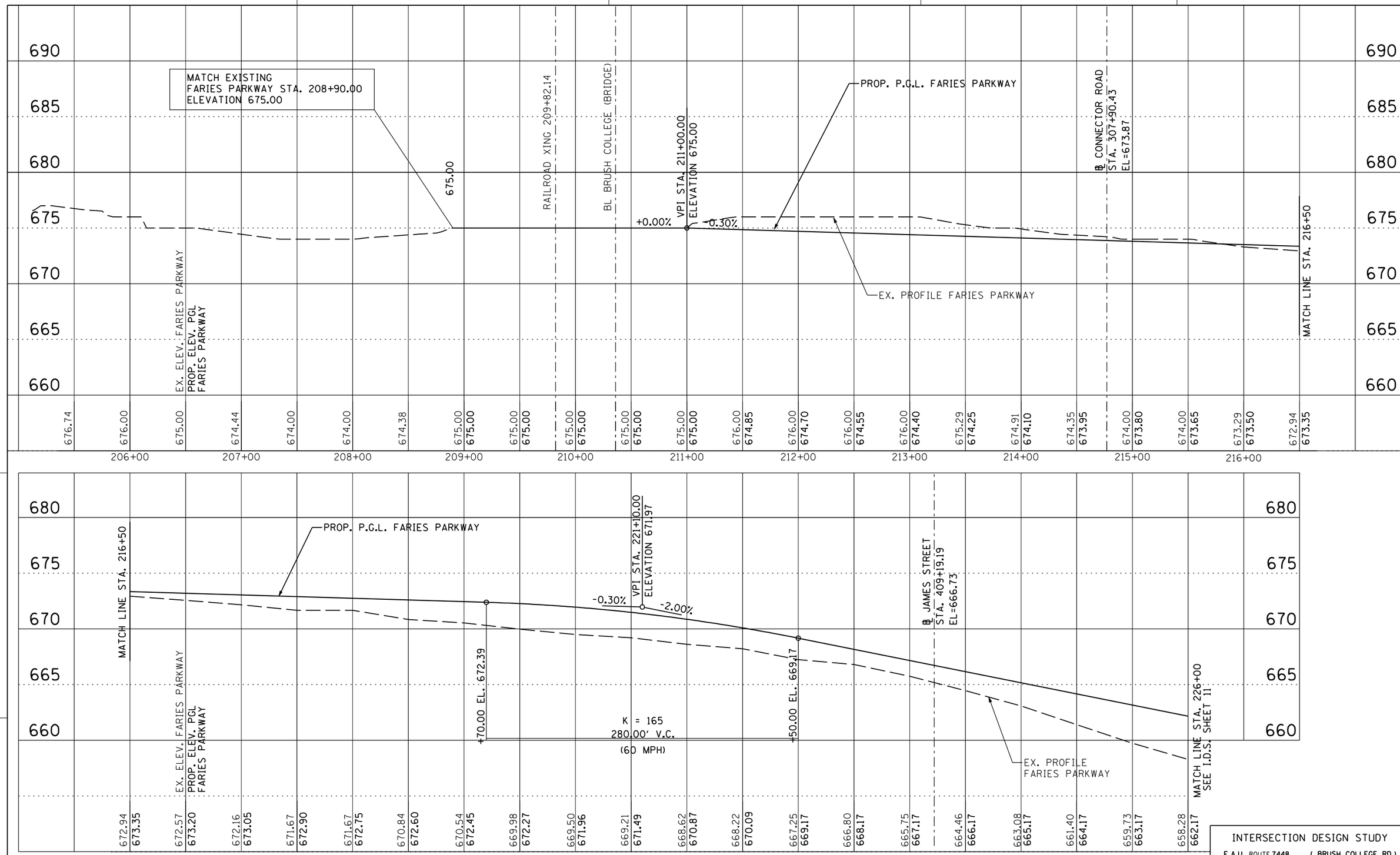
COUNTY MACON

SJN : _____

PROJ. NO. P-97-072-10

I.D.S. SHEET 9 OF 13

BDE-9908



FARIES PARKWAY PROFILE

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ.
1"=4' VERT.

COUNTY MACON

SJN : _____

PROJ. NO. P-97-072-10

I.D.S. SHEET 10 OF 13

BDE-9908

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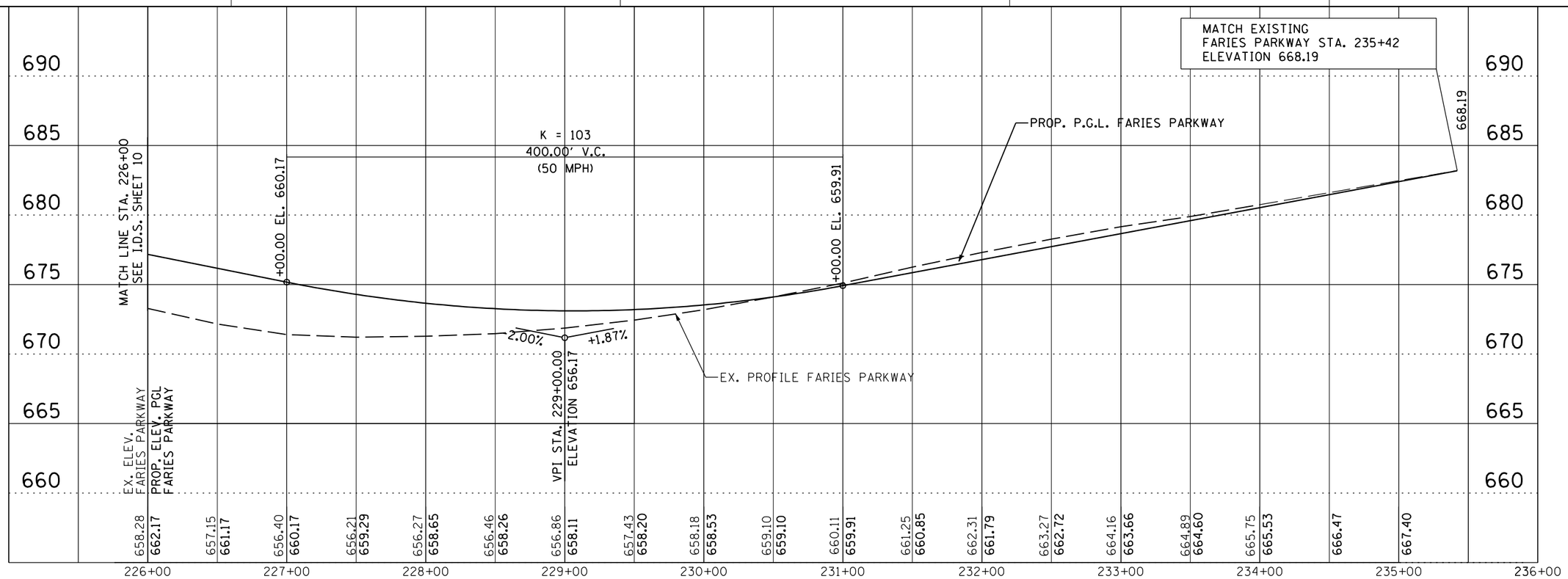


FARIES PARKWAY PROFILE

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT.

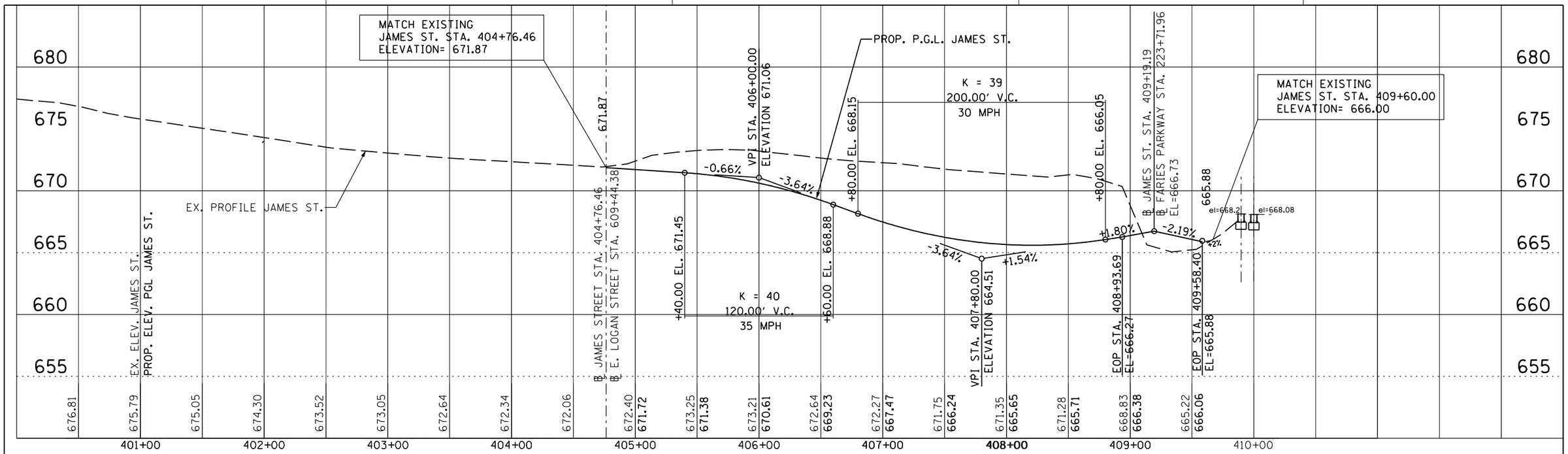
COUNTY MACON

SJN :

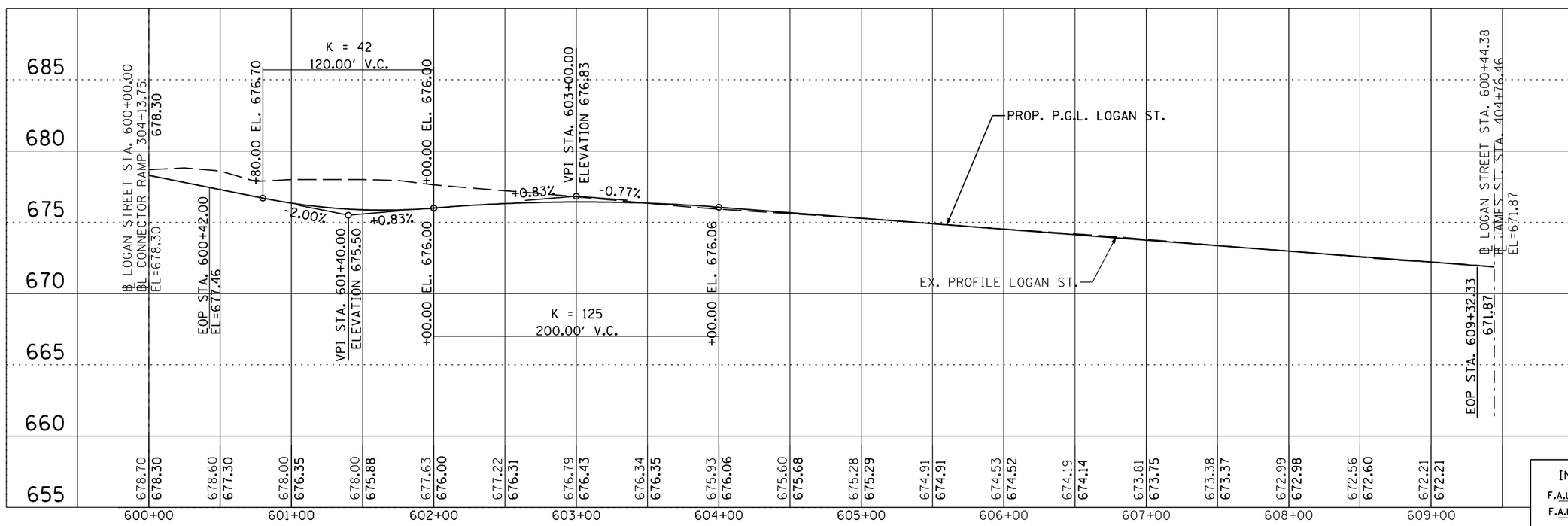
PROJ. NO. P-97-072-10

I.D.S. SHEET 11 OF 13

BDE-9908



JAMES ST. PROFILE



E LOGAN ST. PROFILE

PLOT DATE : $DATE$
FILE NAME : $FILEL$
PLOT SCALE : $SCALE$
USER NAME : $USER$

INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT. COUNTY MACON

SJN : PROJ. NO. P-97-072-10

I.D.S. SHEET 12 OF 13

BDE-9908

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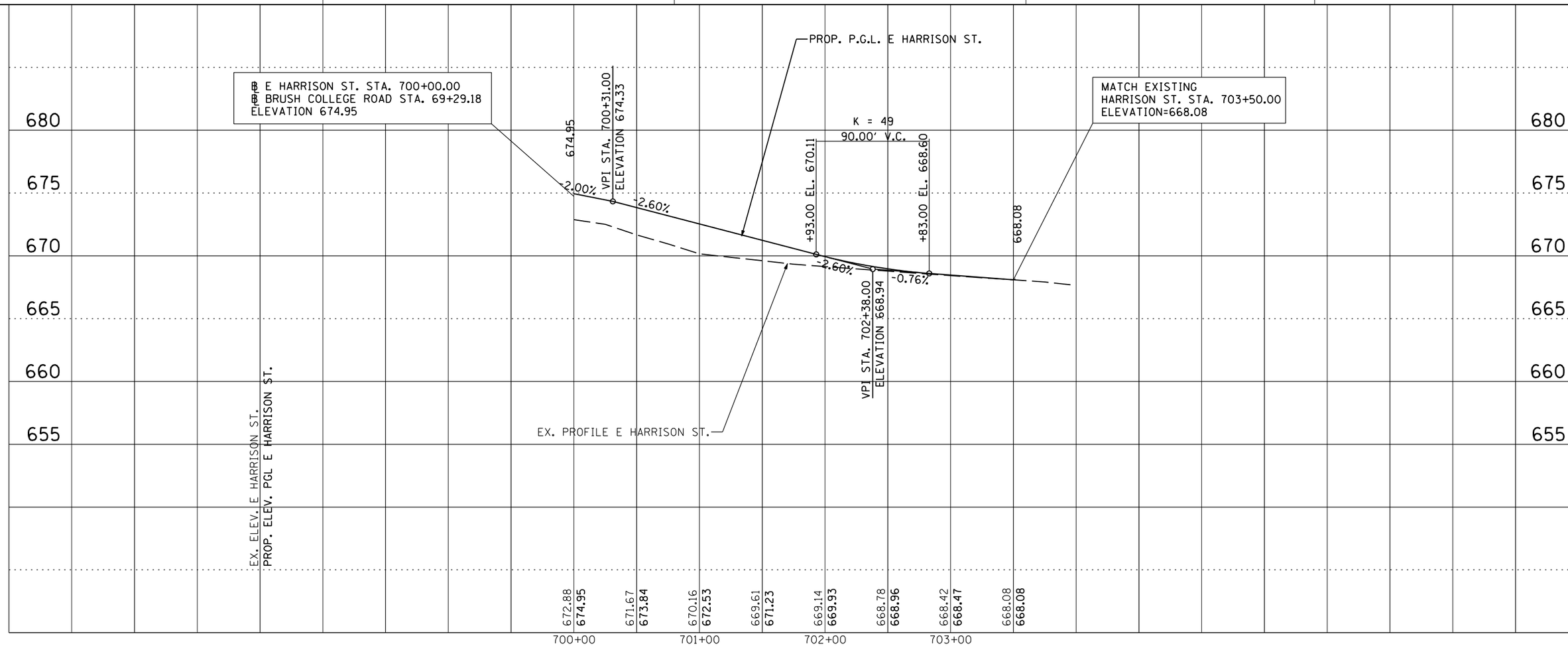

E HARRISON ST. PROFILE

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INTERSECTION DESIGN STUDY

F.A.U. ROUTE 7448 (BRUSH COLLEGE RD.)
F.A.U. ROUTE 7369 WITH (FARIES PARKWAY)

SEC. NO. 09-00933-00-BR

SCALE 1"=40' HORIZ. 1"=4' VERT.

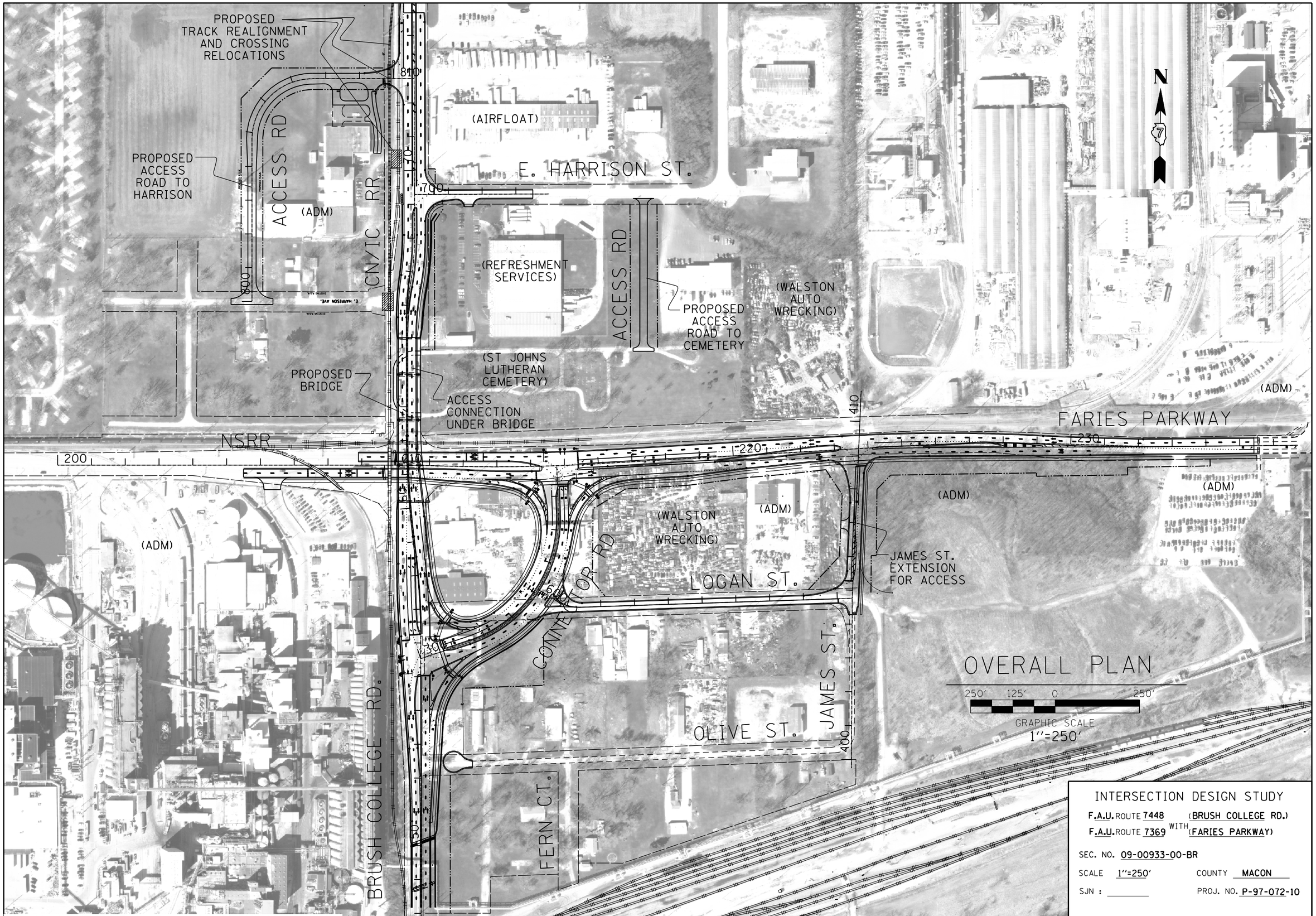
COUNTY MACON

SJN : _____

PROJ. NO. P-97-072-10

I.D.S. SHEET 13 OF 13

BDE-9908



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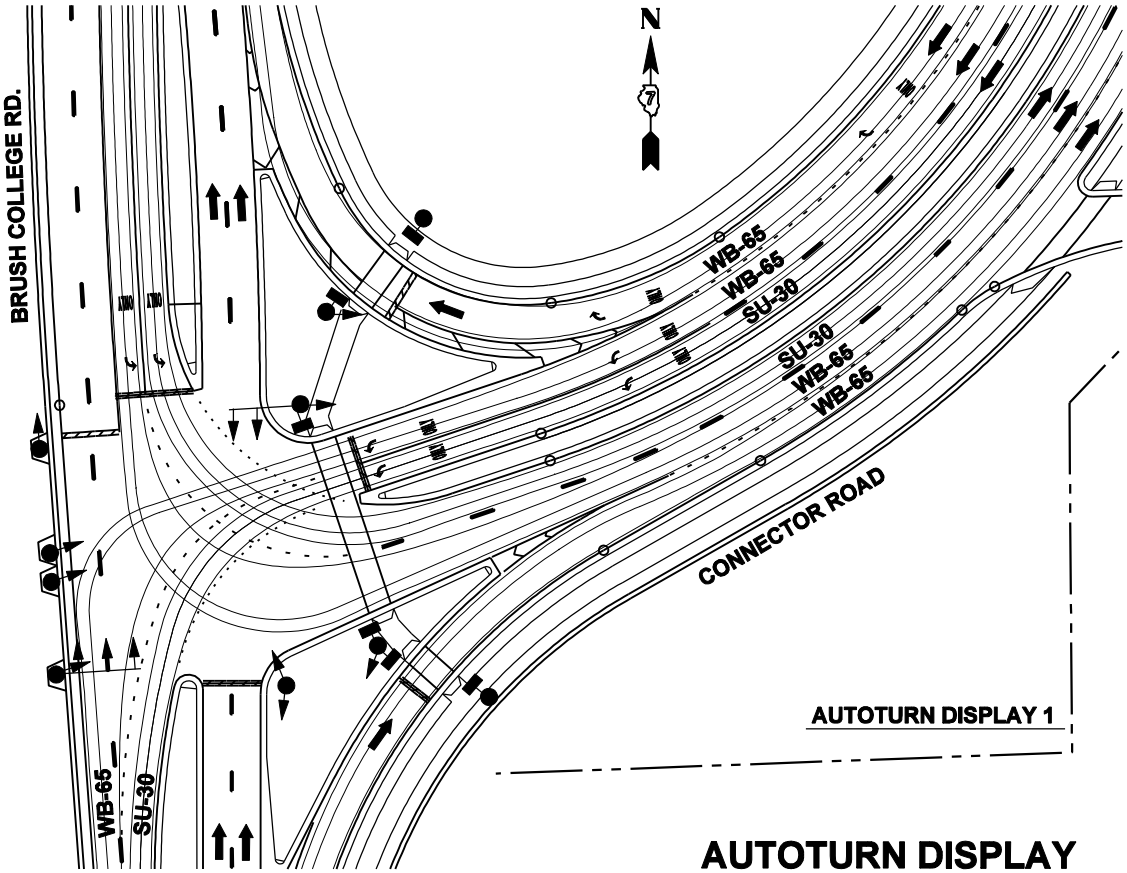
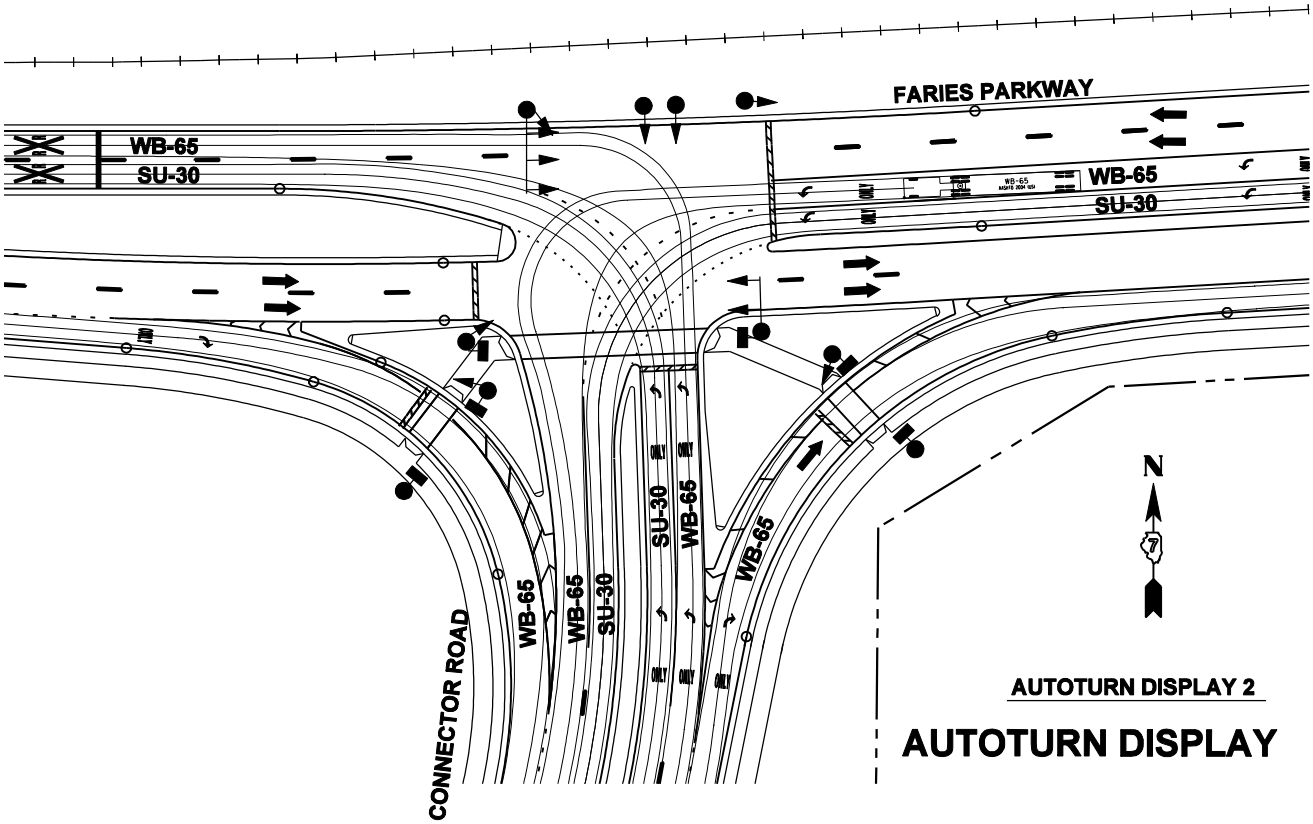


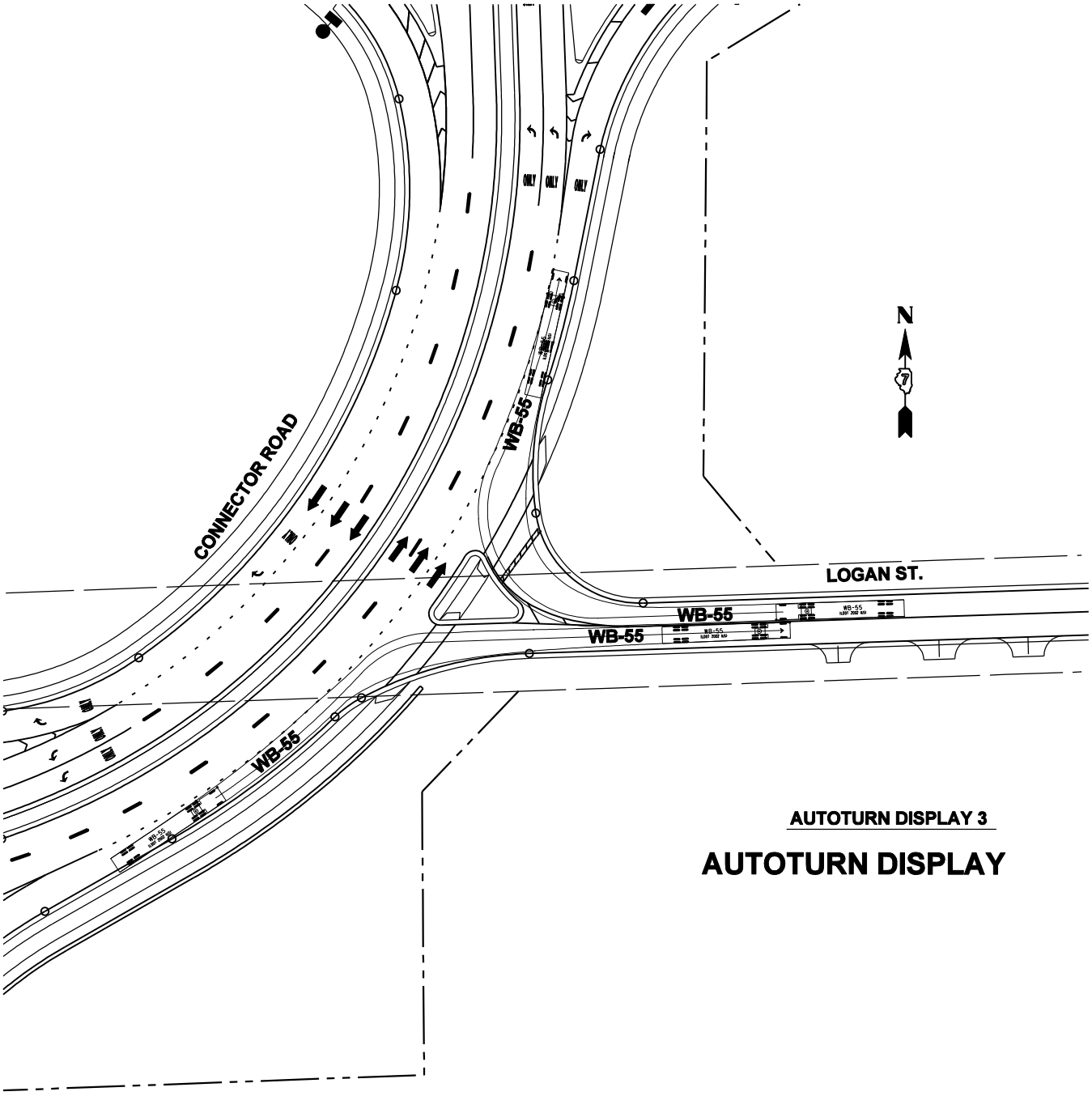
AUTOTURN DISPLAY 1

AUTOTURN DISPLAY



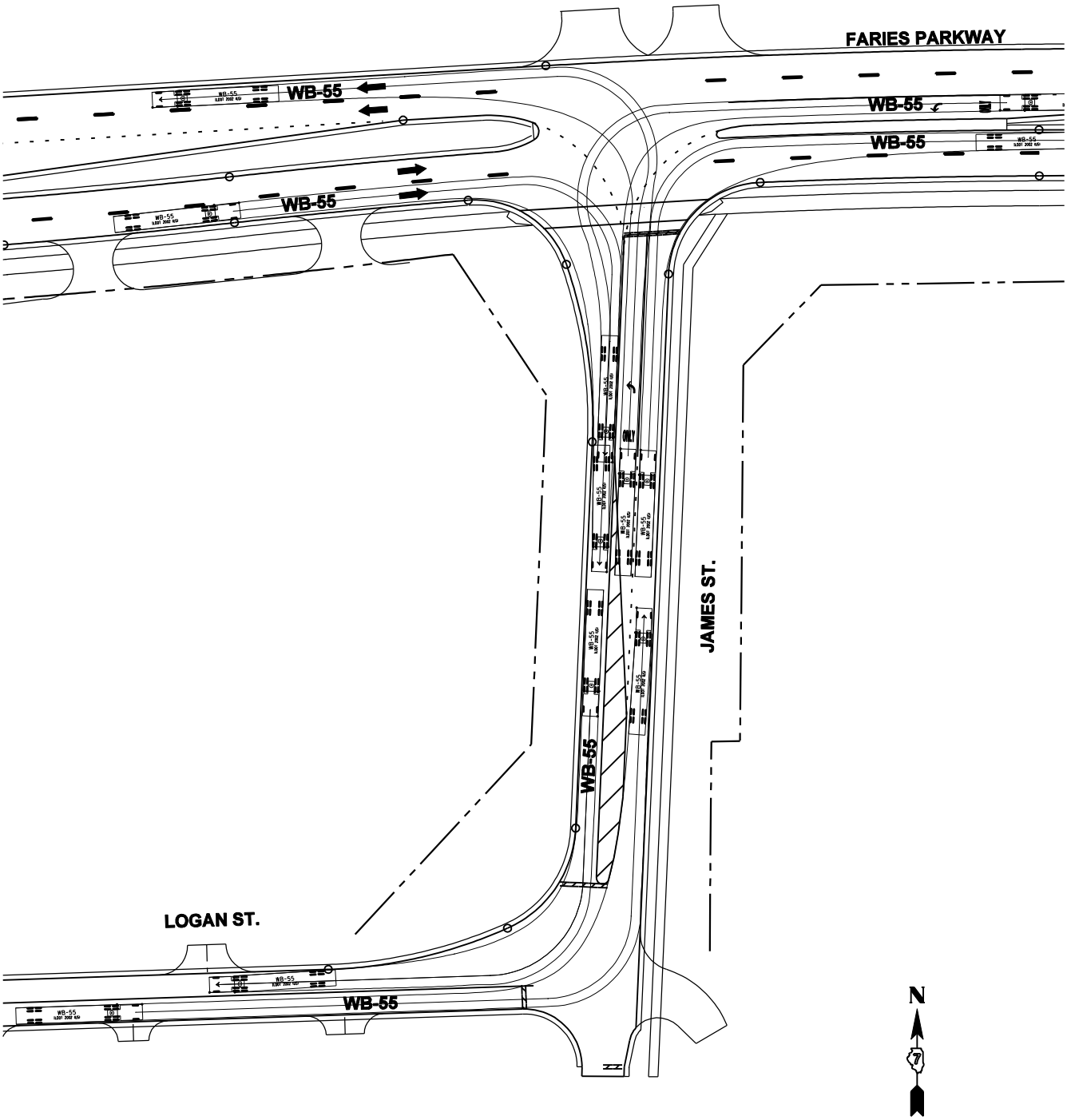
AUTOTURN DISPLAY 2

AUTOTURN DISPLAY



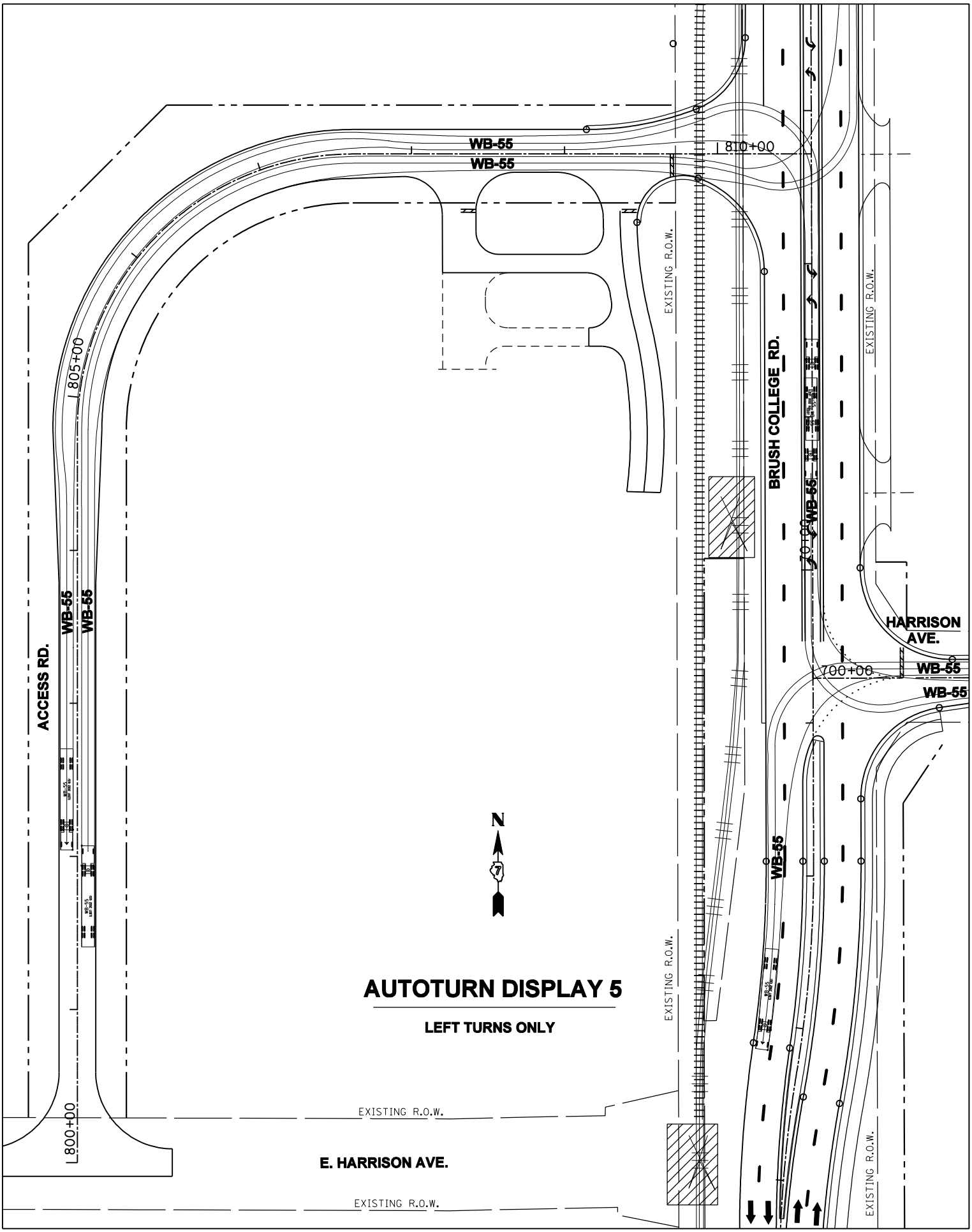
AUTOTURN DISPLAY 3

AUTOTURN DISPLAY



AUTOTURN DISPLAY 4

AUTOTURN DISPLAY



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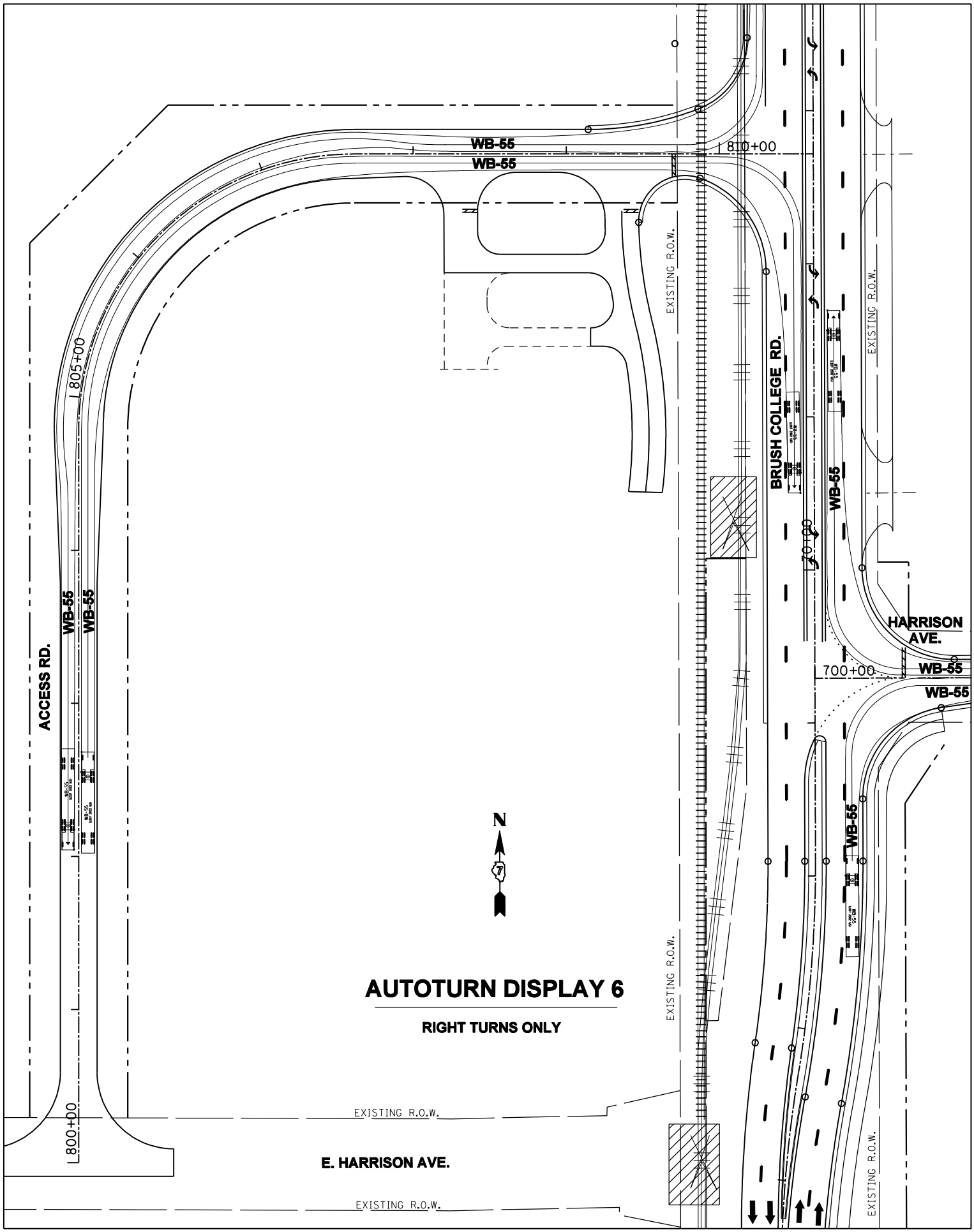

AUTOTURN DISPLAY 6

RIGHT TURNS ONLY