

ROUNDBOUT CAPACITY DESIGN STUDY

PROGRAM USED: SIDRA INTERSECTION VERSION: 10.0 AREA TYPE: NON-CBD PEAK HOUR FACTOR: .92
 INTERSECTION CONTROL DELAY A.M. 3.8 SECONDS P.M. 6.9 SECONDS SAT MD 8.4 SECONDS
 INTERSECTION LEVEL-OF-SERVICE A.M. LOS A P.M. LOS A SAT MD LOS A

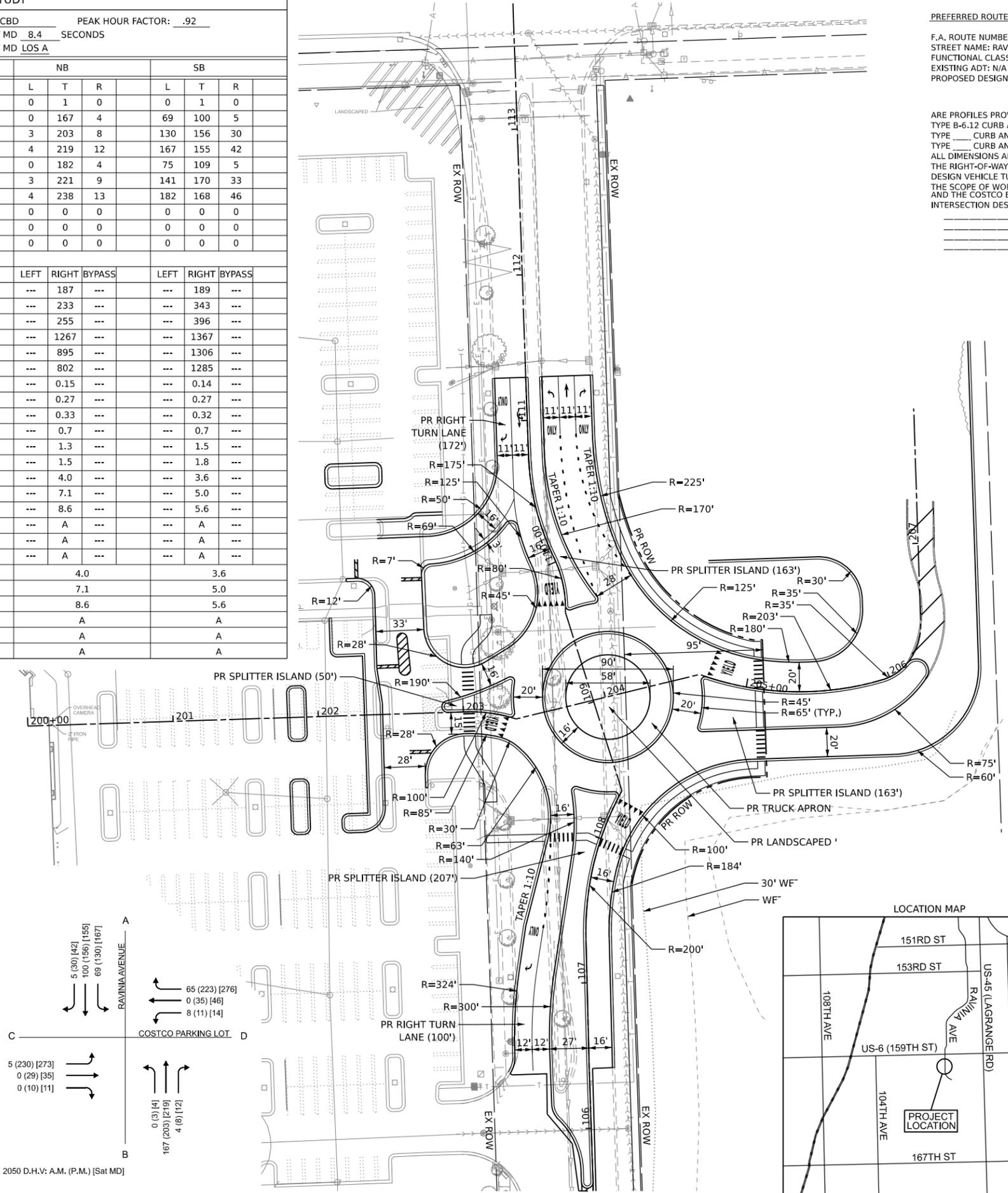
APPROACH	EB			WB			NB			SB			
LANE GROUP	L	T	R	L	T	R	L	T	R	L	T	R	
NUMBER OF LANES	0	1	0	0	1	0	0	1	0	0	1	0	
2050 30TH MAX. HOUR TRAFFIC (veh/h)	A.M.	5	0	0	8	0	65	0	167	4	69	100	5
	P.M.	230	29	10	11	35	223	3	203	8	130	156	30
	SAT	273	35	11	14	46	276	4	219	12	167	155	42
ENTRY FLOW RATE (V _{pc} pc/h)	A.M.	5	0	0	9	0	71	0	182	4	75	109	5
	P.M.	250	32	11	12	38	242	3	221	9	141	170	33
	SAT	297	38	12	15	50	300	4	238	13	182	168	46
PED/HOUR CROSSING THE APPROACH	A.M.	0	0	0	0	0	0	0	0	0	0	0	0
	P.M.	0	0	0	0	0	0	0	0	0	0	0	0
	SAT	0	0	0	0	0	0	0	0	0	0	0	0
LANE MOVEMENTS		LEFT	RIGHT	BYPASS									
ENTRY FLOW RATE V _i (vph)	A.M.	---	8	---	---	80	---	---	187	---	---	189	---
	P.M.	---	292	---	---	292	---	---	233	---	---	343	---
	SAT	---	347	---	---	365	---	---	255	---	---	396	---
LANE CAPACITY C _i (vph)	A.M.	---	1073	---	---	1046	---	---	1267	---	---	1367	---
	P.M.	---	989	---	---	854	---	---	895	---	---	1306	---
	SAT	---	938	---	---	782	---	---	802	---	---	1285	---
v/c RATIO (X)	A.M.	---	0.00	---	---	0.07	---	---	0.15	---	---	0.14	---
	P.M.	---	0.31	---	---	0.36	---	---	0.27	---	---	0.27	---
	SAT	---	0.38	---	---	0.48	---	---	0.33	---	---	0.32	---
STORAGE QUEUE (VEHICLES)	A.M.	---	0.0	---	---	0.3	---	---	0.7	---	---	0.7	---
	P.M.	---	1.5	---	---	1.7	---	---	1.3	---	---	1.5	---
	SAT	---	2.0	---	---	3.2	---	---	1.5	---	---	1.8	---
LANE GROUP DELAY (SECONDS)	A.M.	---	3.3	---	---	3.9	---	---	4.0	---	---	3.6	---
	P.M.	---	7.0	---	---	8.7	---	---	7.1	---	---	5.0	---
	SAT	---	8.3	---	---	11.5	---	---	8.6	---	---	5.6	---
LANE GROUP LEVEL-OF-SERVICE	A.M.	---	A	---									
	P.M.	---	A	---									
	SAT	---	A	---	---	B	---	---	A	---	---	A	---
APPROACH DELAY (SECONDS/VEHICLE)	A.M.	3.3			3.9			4.0			3.6		
	P.M.	6.9			8.7			7.1			5.0		
	SAT	8.3			11.5			8.6			5.6		
APPROACH LEVEL-OF-SERVICE	A.M.	A			A			A			A		
	P.M.	A			A			A			A		
	SAT	A			B			A			A		

PLOT DATE: 6/27/2025
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 PLOT SCALE: 80,000 / 1 in.
 USER NAME: mlfiores

ELEMENTS CONTROLLING DESIGN

PREFERRED ROUTE:
 F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: UNMARKED.
 STREET NAME: RAVINIA AVENUE. SRA ROUTE NO.
 FUNCTIONAL CLASSIFICATION: LOCAL ROAD. OSOW DESIGN ? NO
 EXISTING ADT: N/A VPD. DESIGN YEAR ADT: 1,800 VPD.
 PROPOSED DESIGN SPEED: 35 MPH. PROPOSED POSTED SPEED: 30 MPH.

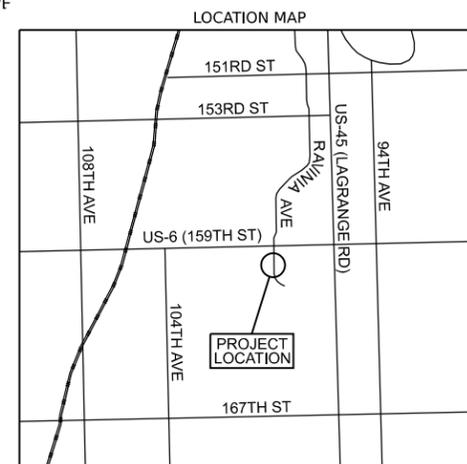
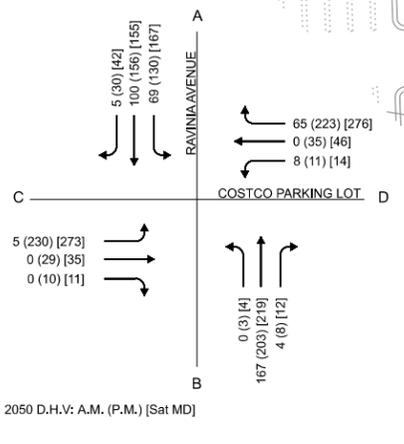
GENERAL NOTES
 ARE PROFILES PROVIDED? YES. IF NOT, STATE REASON WHY:
 TYPE B-6.12 CURB AND GUTTER ON THE OUTSIDE OF THE ROADWAY/SHOULDERS.
 TYPE ____ CURB AND GUTTER ON THE APPROACH MEDIAN.
 TYPE ____ CURB AND GUTTER ON THE CORNER ISLANDS.
 ALL DIMENSIONS ARE E-E, UNLESS OTHERWISE NOTED
 THE RIGHT-OF-WAY LIMITS ARE PRELIMINARY.
 DESIGN VEHICLE TURNING MOVEMENTS ARE ACCOMMODATE PER AUTOTURN SOFTWARE, VERSION 11.0.1.44.
 THE SCOPE OF WORK: PROPOSED ROUNDBOUT AT THE INTERSECTION OF RAVINIA AVENUE AND THE COSTCO ENTRANCE
 INTERSECTION DESIGN EXCEPTIONS:



TRAFFIC DATA

MOVEMENT	YEAR 2025 30TH MAXIMUM HOUR TRAFFIC			PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR			ESTIMATED PERCENT INCREASE BY 2050 AM/(PM)/(SAT)	YEAR 2050 30TH MAXIMUM HOUR TRAFFIC		
	A.M.	P.M.	SAT MD	A.M.	P.M.	SAT MD		A.M.	P.M.	SAT MD
AD (L)	74	141	183	0%	0%	0%	0	69	130	167
AB (T)	5	29	40	3%	3%	3%	1900/(438)/(288)	100	156	155
AC (R)	5	30	42	0%	0%	0%	0	5	30	42
BC (L)	0	0	0	0%	0%	0%	0	0	3	4
BA (T)	0	0	0	3%	3%	3%	--	167	203	219
BD (R)	0	0	0	0%	0%	0%	0	4	8	12
CA (L)	0	262	311	0%	0%	0%	0	5	230	273
CD (T)	0	26	31	0%	0%	0%	0	0	29	35
CB (R)	0	0	0	0%	0%	0%	0	0	10	11
DB (L)	0	0	0	0%	0%	0%	0	8	11	14
DC (T)	0	32	42	0%	0%	0%	0	0	35	46
DA (R)	73	234	290	0%	0%	0%	0	65	223	276
TOTAL A	84	200	265					174	316	364
TOTAL B	0	0	0					171	214	235
TOTAL C	0	288	342					5	269	319
TOTAL D	73	266	332					73	269	336

T = THROUGH, L = LEFT, R = RIGHT



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 www.v3co.com

PROJ. MGR. EIH PROJ. ENG. MGS

INTERSECTION DESIGN STUDY

ROUTE ____ WITH RAVINIA AVE
 ROUTE ____ WITH COSTCO PARKING LOT

SEC. NO. XX-XXXX-XX-XX PROJ. NO. _____
 SCALE 1" = 40' COUNTY COOK
 SJN: _____ REV. NO. ____

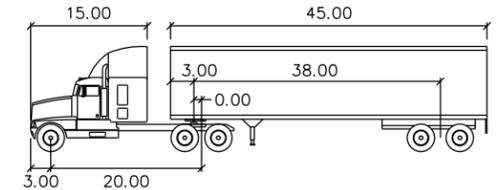
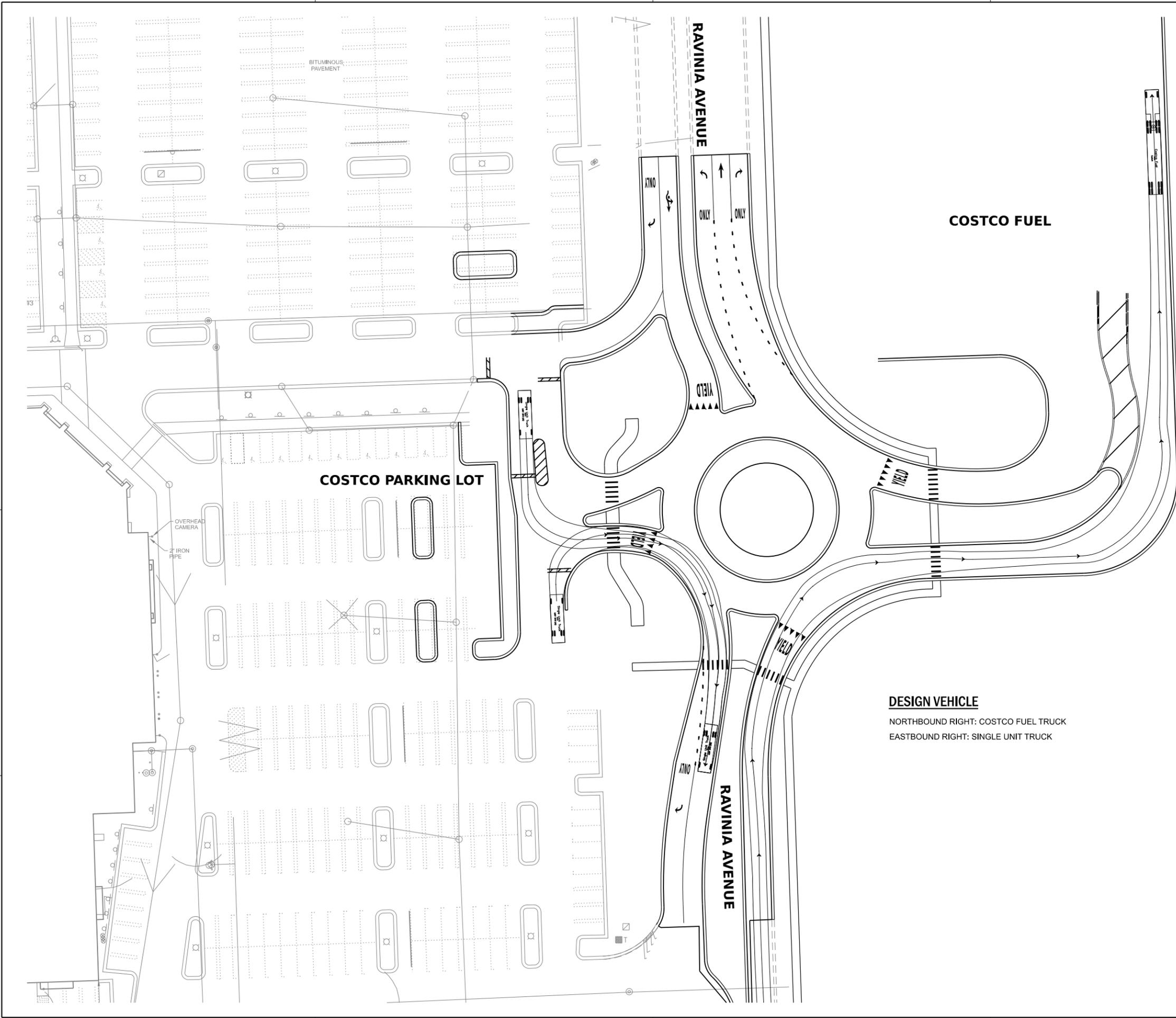
DESIGNED BY MRF DATE 6/27/2025

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER DATE _____
 SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER DATE _____
 SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER DATE _____

APPROVED _____ REGIONAL ENGINEER DATE _____

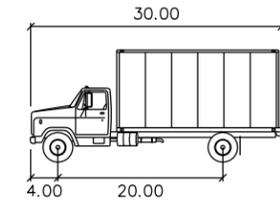
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 PLOT SCALE : 80,000 / in.
 USER NAME : mlaldek



COSTCO FUEL TRUCK

feet			
Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.3°
Tractor Track	: 8.00	Articulating Angle	: 70.0°
Trailer Track	: 8.50		



SINGLE UNIT TRUCK

feet	
Width	: 8.00
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 31.8

DESIGN VEHICLE

NORTHBOUND RIGHT: COSTCO FUEL TRUCK
 EASTBOUND RIGHT: SINGLE UNIT TRUCK



INTERSECTION DESIGN STUDY

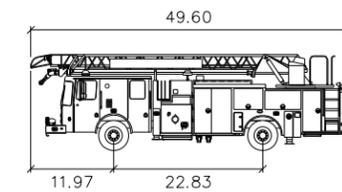
ROUTE _____ WITH RAVINIA AVE
 ROUTE _____ WITH COSTCO PARKING LOT

SEC. NO. XX-XXXX-XX-XX

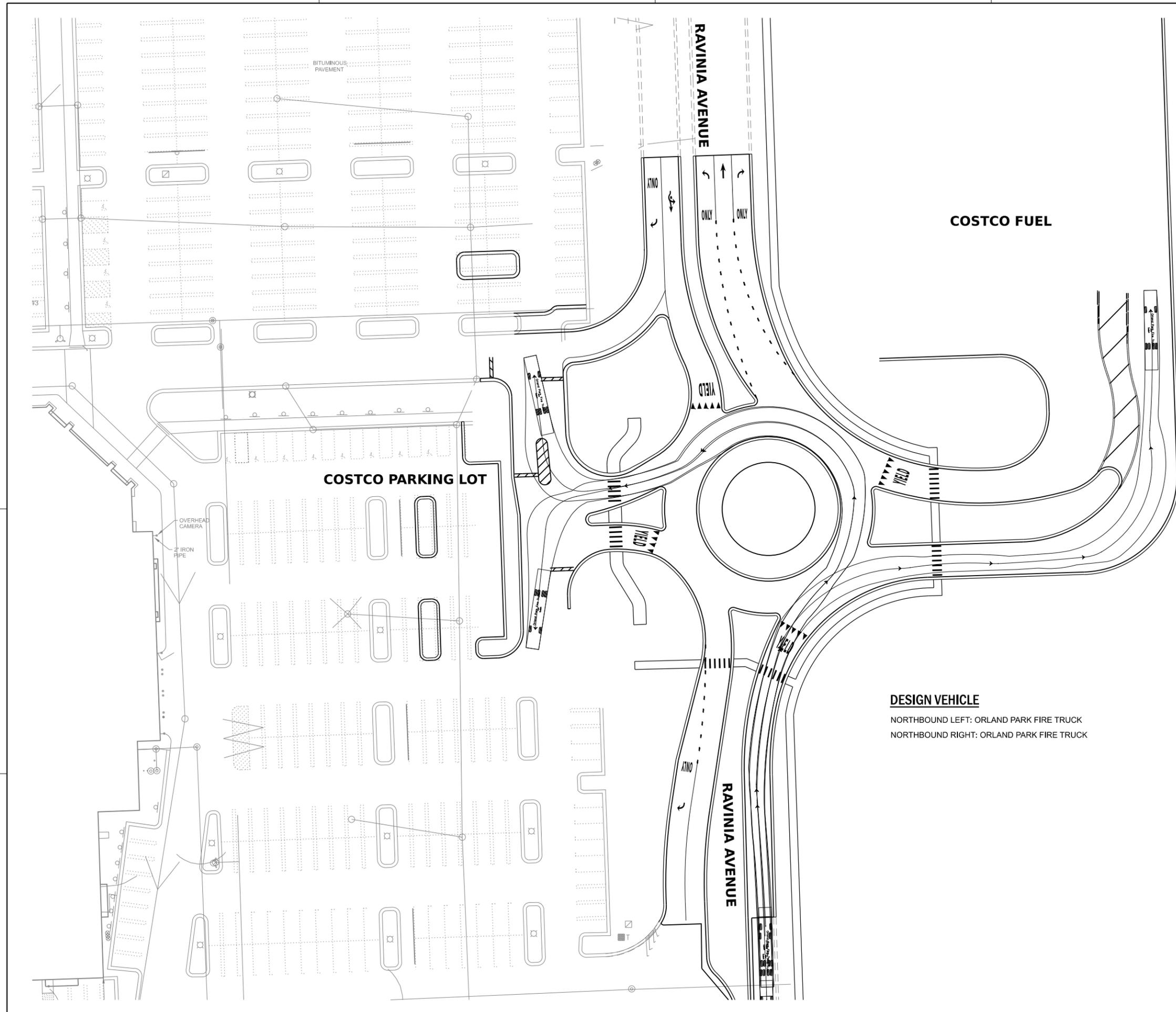
SCALE 1"=30' COUNTY COOK

SJN: _____ PROJ. NO. _____

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 PLOT SCALE: 80,000 / in.
 USER NAME: mlaldek



ORLAND PARK FIRE TRUCK
 feet
 Width : 8.00
 Track : 7.79
 Lock to Lock Time : 6.0
 Steering Angle : 40.0



DESIGN VEHICLE
 NORTHBOUND LEFT: ORLAND PARK FIRE TRUCK
 NORTHBOUND RIGHT: ORLAND PARK FIRE TRUCK



INTERSECTION DESIGN STUDY
 ROUTE _____ WITH RAVINIA AVE
 ROUTE _____ WITH COSTCO PARKING LOT
 SEC. NO. XX-XXXX-XX-XX
 SCALE 1"=30' COUNTY COOK
 SJN: _____ PROJ. NO. _____
 SHEET 6 OF 12

