SHEET NUMBER 1

CAPACITY DESIGN STUDY

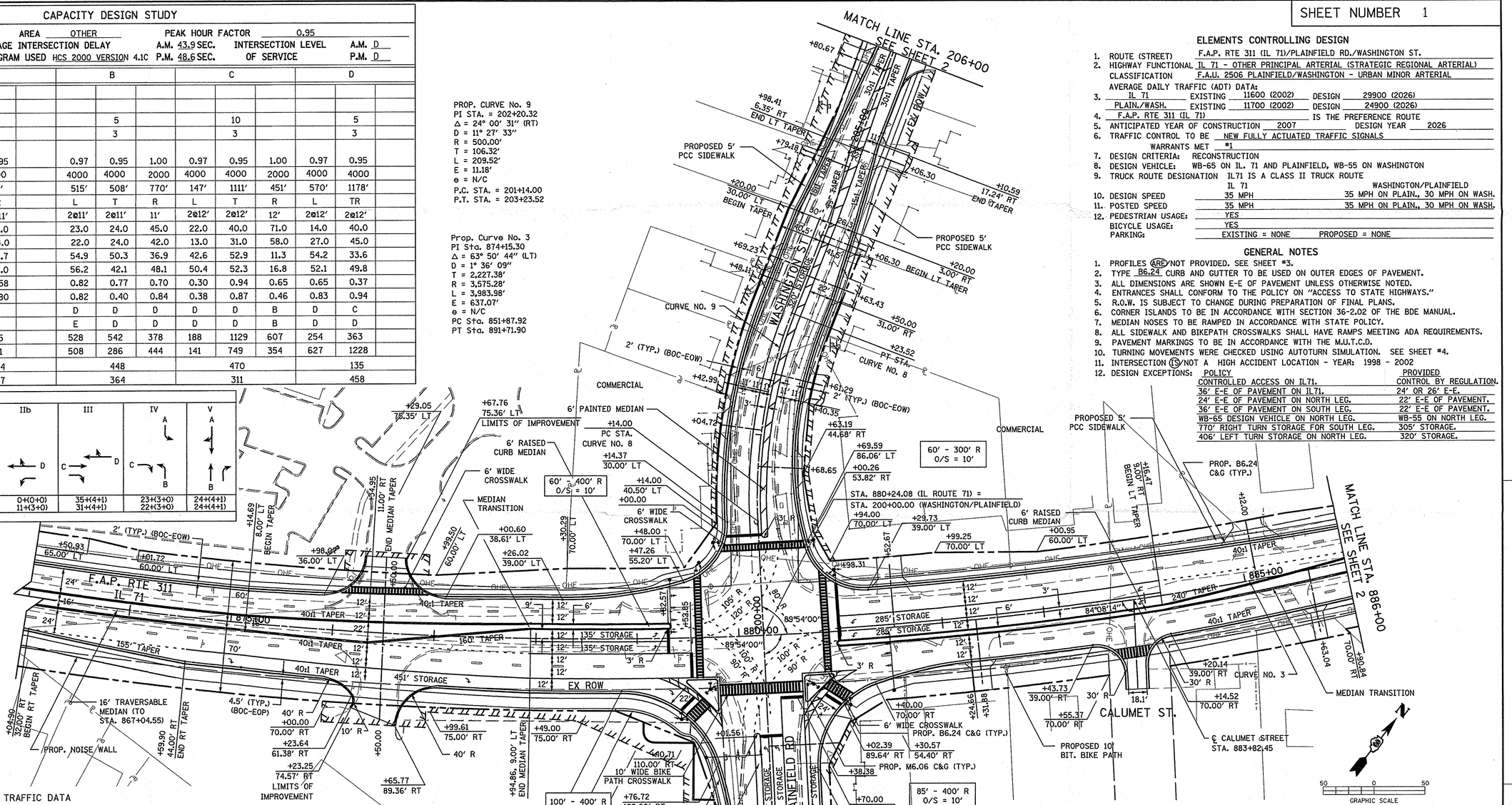
5 PHASE
120 SEC. CYCLE
SIGNAL TYPE ACTUATED

AREA OTHER
AVERAGE INTERSECTION DELAY
PROGRAM USED HCS 2000 VERSION 4.1C

PEAK HOUR FACTOR 0.95
A.M. 43.9 SEC. P.M. 48.6 SEC.
INTERSECTION LEVEL OF SERVICE A.M. D P.M. D

APPROACH		A			B			C			D		
BUS STOP CONDITION													
PARKING MANEUVER/HR.													
PEDESTRIANS			5			5			10			5	
ARRIVAL TYPE			3			3			3			3	
LANE UTILIZATION FACTOR		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	
BASE SATURATION FLOW		2000	4000		4000	4000	2000	4000	4000	2000	4000	4000	
D - DISTANCE		406′	505′		515′	508′	770′	147′	1111′	451′	570′	1178′	
LANE GROUP		L	TR		L	T	R	L	T	R	L	TR	
LANE WIDTHS		11′	2@11′		2@11′	2@11′	11′	2@12′	2@12′	12′	2@12′	2@12′	
GREEN TIME (SECONDS)	A.M.	23.0	24.0		23.0	24.0	45.0	22.0	40.0	71.0	14.0	40.0	
	P.M.	22.0	24.0		22.0	24.0	42.0	13.0	31.0	58.0	27.0	45.0	
LANE GROUP DELAY (SECONDS)	A.M.	53.5	44.7		54.9	50.3	36.9	42.6	52.9	11.3	54.2	33.6	
	P.M.	42.2	53.0		56.2	42.1	48.1	50.4	52.3	16.8	52.1	49.8	
V/C RATIO	A.M.	0.73	0.58		0.82	0.77	0.70	0.30	0.94	0.65	0.65	0.37	
	P.M.	0.24	0.80		0.82	0.40	0.84	0.38	0.87	0.46	0.83	0.94	
LEVEL OF SERVICE	A.M.	D	D		D	D	D	D	D	B	D	C	
	P.M.	D	D		E	D	D	D	D	B	D	D	
2026 30TH MAX. HOUR TRAFFIC	A.M.	231	385		528	542	378	188	1129	607	254	363	
	P.M.	72	531		508	286	444	141	749	354	627	1228	
2006 8TH MAX. HOURLY TRAFFIC	A.M.		244			448			470			135	
	P.M.		237			364			311			458	

	I	IIa	IIb	III	IV	V
A.M.	14+(3+0)	5+(3+0)	0+(0+0)	35+(4+1)	23+(3+0)	24+(4+1)
P.M.	13+(3+0)	0+(0+0)	11+(3+0)	31+(4+1)	22+(3+0)	24+(4+1)



ELEMENTS CONTROLLING DESIGN

1. ROUTE (STREET) F.A.P. RTE 311 (IL 71)/PLAINFIELD RD./WASHINGTON ST.
2. HIGHWAY FUNCTIONAL CLASSIFICATION: IL 71 - OTHER PRINCIPAL ARTERIAL (STRATEGIC REGIONAL ARTERIAL); F.A.U. 2506 PLAINFIELD/WASHINGTON - URBAN MINOR ARTERIAL
3. AVERAGE DAILY TRAFFIC (ADT) DATA:
   IL 71 — EXISTING 11600 (2002) DESIGN 29900 (2026)
   PLAIN./WASH. — EXISTING 11700 (2002) DESIGN 24900 (2026)
4. F.A.P. RTE 311 (IL 71) IS THE PREFERENCE ROUTE
5. ANTICIPATED YEAR OF CONSTRUCTION 2007 DESIGN YEAR 2026
6. TRAFFIC CONTROL TO BE NEW FULLY ACTUATED TRAFFIC SIGNALS
   WARRANTS MET #1
7. DESIGN CRITERIA: RECONSTRUCTION
8. DESIGN VEHICLE: WB-65 ON IL. 71 AND PLAINFIELD, WB-55 ON WASHINGTON
9. TRUCK ROUTE DESIGNATION IL71 IS A CLASS II TRUCK ROUTE

	IL 71	WASHINGTON/PLAINFIELD
10. DESIGN SPEED	35 MPH	35 MPH ON PLAIN., 30 MPH ON WASH.
11. POSTED SPEED	35 MPH	35 MPH ON PLAIN., 30 MPH ON WASH.
12. PEDESTRIAN USAGE:	YES	
BICYCLE USAGE:	YES	
PARKING:	EXISTING = NONE	PROPOSED = NONE

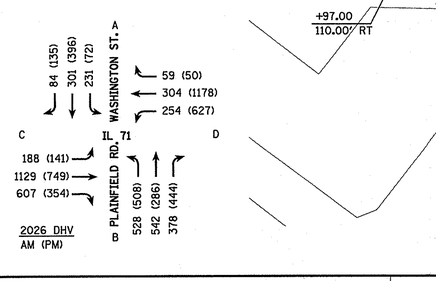
GENERAL NOTES

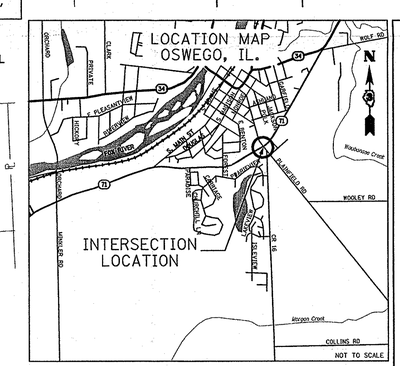
1. PROFILES ARE/NOT PROVIDED. SEE SHEET #3.
2. TYPE B6.24 CURB AND GUTTER TO BE USED ON OUTER EDGES OF PAVEMENT.
3. ALL DIMENSIONS ARE SHOWN E-E OF PAVEMENT UNLESS OTHERWISE NOTED.
4. ENTRANCES SHALL CONFORM TO THE POLICY ON "ACCESS TO STATE HIGHWAYS."
5. R.O.W. IS SUBJECT TO CHANGE DURING PREPARATION OF FINAL PLANS.
6. CORNER ISLANDS TO BE IN ACCORDANCE WITH SECTION 36-2.02 OF THE BDE MANUAL.
7. MEDIAN NOSES TO BE RAMPED IN ACCORDANCE WITH STATE POLICY.
8. ALL SIDEWALK AND BIKEPATH CROSSWALKS SHALL HAVE RAMPS MEETING ADA REQUIREMENTS.
9. PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH THE M.U.T.C.D.
10. TURNING MOVEMENTS WERE CHECKED USING AUTOTURN SIMULATION. SEE SHEET #4.
11. INTERSECTION IS/NOT A HIGH ACCIDENT LOCATION - YEAR: 1998 - 2002
12. DESIGN EXCEPTIONS:

POLICY	PROVIDED
CONTROLLED ACCESS ON IL71.	CONTROL BY REGULATION.
36′ E-E OF PAVEMENT ON IL71.	24′ OR 26′ E-E.
24′ E-E OF PAVEMENT ON NORTH LEG.	22′ E-E OF PAVEMENT.
36′ E-E OF PAVEMENT ON SOUTH LEG.	22′ E-E OF PAVEMENT.
WB-65 DESIGN VEHICLE ON NORTH LEG.	WB-55 ON NORTH LEG.
770′ RIGHT TURN STORAGE FOR SOUTH LEG.	305′ STORAGE.
406′ LEFT TURN STORAGE ON NORTH LEG.	320′ STORAGE.

TRAFFIC DATA

MOVEMENT	YEAR 2006 30TH MAXIMUM HOUR TRAFFIC A.M.	P.M.	PERCENT TRUCK TRAFFIC IN 30th MAX HOUR	ESTIMATED PERCENT INCREASE BY 2016	YEAR 2016 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.	ESTIMATED PERCENT INCREASE BY 2026	YEAR 2026 30th MAXIMUM HOUR TRAFFIC A.M.	P.M.
AB	241	316	2	10/9	266	346	25/25	301	396
AD	161	42	15	27/31	204	55	43/71	231	72
AC	41	73	1	51/59	62	116	105/85	84	135
BA	434	228	2	10/10	478	250	25/25	542	286
BC	242	222	4	59/64	385	363	118/129	528	508
BD	138	211	7	86/56	256	329	174/110	378	444
CD	479	334	8	62/55	774	517	136/124	1129	749
CA	97	77	2	47/57	143	121	94/83	188	141
CB	278	154	11	59/64	443	252	118/130	607	354
DC	113	505	3	106/65	233	831	169/133	304	1178
DB	92	299	4	87/56	172	465	176/110	254	627
DA	41	29	5	27/31	52	38	44/72	59	50
TOTAL A	1015	765	3	19/21	1205	926	38/41	1405	1080
TOTAL B	1425	1430	4	40/40	2000	2005	83/83	2610	2615
TOTAL C	1250	1365	5	63/61	2040	2200	127/125	2840	3065
TOTAL D	1024	1420	5	65/57	1691	2235	130/120	2355	3120





INTERSECTION DESIGN STUDY

FAP ROUTE 311 (IL 71)
WITH
FAU ROUTE 2506 (PLAINFIELD/WASHINGTON)

SEC. NO. (1-1) R-3 PROJ. NO.
SCALE 1:50 COUNTY KENDALL
SJN : P-93-048-01 REV. NO.

DESIGNED BY V3 INFRASTRUCTURE SERVICES DATE 03-15-04

SATISFACTORY — DISTRICT GEOMETRICS ENGINEER — DATE
SATISFACTORY — DISTRICT STUDIES AND PLANS ENGINEER — DATE
SATISFACTORY — DISTRICT OPERATIONS ENGINEER — DATE
APPROVED — DISTRICT ENGINEER — DATE

CADD FILE NAME : [PLAINFIELD] I.D.S. SHEET 1 OF 5

REVISION DATE: 08-27-04 BDE-9908

•DGN-SPEC• •DATE-TIME• •REF- •REF- •REF- •REF-

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