

BILL OF MATERIALS		
ITEM	UNIT	EST. QUANTITIES (*)
Model 2070 Controller	Each	Supplied by C.O.W.
Controller Cabinet	Each	1
Concrete Base for Controller	Each	1
Traffic Signal w/ Mast Arm (See Chart B)	Each	4
Pedestrian Signal Pole	Each	2
Concrete Base for Signal Poles	Each	6
Traffic Signal Head (Type A) w/ Backplate & Brkt	Each	12
Traffic Signal Head (Type C) w/ Backplate & Brkt	Each	8
Traffic Signal Head (Type J)	Each	4
Pedestrian Indication (16"x18") w/ Countdown (Type K)	Each	8
Traffic Signal Lamp (Red LED Kit)	Each	24
Traffic Signal Lamp (Yellow LED Kit)	Each	16
Traffic Signal Lamp (Green LED Kit)	Each	16
Traffic Signal Lamp (Red Arrow LED Kit)	Each	-
Traffic Signal Lamp (Yellow Arrow LED Kit)	Each	12
Traffic Signal Lamp (Green Arrow LED Kit)	Each	12
R10-10 (Left Turn Signal) w/ Mtg. Brackets	Each	4
D3 Assy. (Street Name Size) w. Mtg. Brackets	Each	4
Pedestrian Pushbutton w/ Sign	Each	8
Ground Rod & Clamp	Each	7
Service Box	Each	4
3" RGC Conduit	L.F.	661
2" RGC Conduit	L.F.	97
1 1/2" RGC Conduit	L.F.	x
2" PVC (Street Light Conduit)	L.F.	25
Video Detection Camera and Mounting Hardware	Each	4
Video Detection Processor	Each	1
Camera Housing	Each	4
Video Power Cable No. 16 AWG 3/C (V3)	L.F.	782
Video Cable 75 OHM Coaxial (Belden 8281)(CX)	L.F.	782
TV Monitor	Each	1
Camera Charged Coupling Device	Each	4
Multi-Conductor Cable 7C #14 AWG	L.F.	1805
Ground Wire 1C (THHN #8 AWG)	L.F.	596
Power Supply Wire (THHN #6 AWG)	L.F.	25

CHART 'A' - SIGNAL INVENTORY				
NO. WAYS	NO. SECTIONS (Per Face)	SIGNAL FACE ARRANGEMENT	MOUNTING TYPE	QTY
1	3	A	TYPE I	12
1	3	I	TYPE I	8
1	5	J	TYPE III	4
1	2	K (SYM)	TYPE II	8

CHART 'B' - TRAFFIC SIGNAL POLES							
STA	STATION	DIST.	SIDE	ARM LENGTH	NO. OF SIGNALS ON ARM	SIGNAL SPACING	TYPE*
Sta. 19+38.28	21st STREET	105.5'	Rt.	62.0'	5	16.05' - 11.00' - 11.00' - 11.50' - 8.00'	STD
Sta. 19+39.16	21st STREET	56.9'	Lt.	70.0'	5	27.00' - 11.00' - 11.00' - 11.50' - 8.00'	STD
Sta. 20+81.46	21st STREET	75.2'	Rt.	62.0'	5	18.62' - 11.00' - 11.00' - 11.50' - 8.00'	STD
Sta. 20+82.01	21st STREET	57.0'	Lt.	72.0'	5	29.38' - 11.00' - 11.00' - 11.50' - 8.00'	STD

* The Contractor Shall Verify Signal Pole Types w/ Westar PRIOR to Ordering

CHART 'C' - PEDESTRIAN SIGNAL POLE SUMMARY			
STATION	DISTANCE	SIDE	
Sta. 19+19.24	21st STREET	94.0'	Rt
Sta. 20+69.05	21st STREET	88.5'	Rt

CHART 'D' - CONDUIT		
CONDUIT SIZE	TRENCHED	PUSHED
1.5" RGC	25'	-
2" RGC	97'	-
3" RGC	661'	-

CHART 'E' - TRAFFIC MANHOLE SUMMARY			
STATION	DISTANCE	SIDE	
Sta. 19+35.53	21st STREET	94.0'	Rt
Sta. 19+50.75	21st STREET	67.2'	Lt
Sta. 20+69.05	21st STREET	88.5'	Rt
Sta. 20+90.81	21st STREET	67.0'	Lt

CHART 'F' - STREET NAME SIGN SUMMARY					
LEGEND	TYPE	QTY	UNITS	SIZE	ADDRESS
21st Street	D-3	1	EA	2.5' X 5.0'	10300 W
21st Street	D-3	1	EA	2.5' X 5.0'	10400 W
Maize Road	D-3	1	EA	2.5' X 5.0'	2100 N
Maize Road	D-3	1	EA	2.5' X 5.0'	2200 N

(*) For Information Only

GENERAL NOTES

- The Contractor shall be responsible for furnishing and installing the controller, cabinet, concrete base, and all other equipment necessary for the complete and satisfactory operation of the traffic signal, whether said equipment is specifically mentioned or not.
- Lengths given are to the centerline of poles/boxes and do not include lengths for elbows and risers.
- Signal heads, pedestrian signals, traffic signals, & etc. shall **INCLUDE** all brackets, hardware, & other incidentals necessary for installation.
- See City of Wichita Standard Specifications for additional wiring notes.

TYPE 2070 CONTROLLER SPECIFICATIONS

A. Controller Unit: The 2070L controllers supplied shall meet the requirements outlined in CalTrans TEES 2002 (latest revision), and the following requirements:

- The 2070L controllers shall have a 19" EIA rack mountable chassis (mated to the 107 cabinet).
- 2070-1B CPU module with RJ-45 Ethernet port.
- 2070-2A C1 field I/O module for compatibility with CalTrans style C1 connector.
- 2070-3B 8X40 front panel with LCD display.
- 2070-4A 10 amp power supply.
- 2070-7A asynchronous serial communications module (RS-232).
- Any unused slot position shall have a cover plate.

- B. Conflict Monitors supplied shall be 2010 ECL conflict monitors with Ethernet Capabilities.
 C. 1-Loop-back cable for 2070-2A Field I/O (Type 170,104 pin and 37 pin connector).
 D. 1- Loop-back cable for 2070-7A Port.

SPECIAL FINISH FOR TRAFFIC SIGNAL EQUIPMENT:

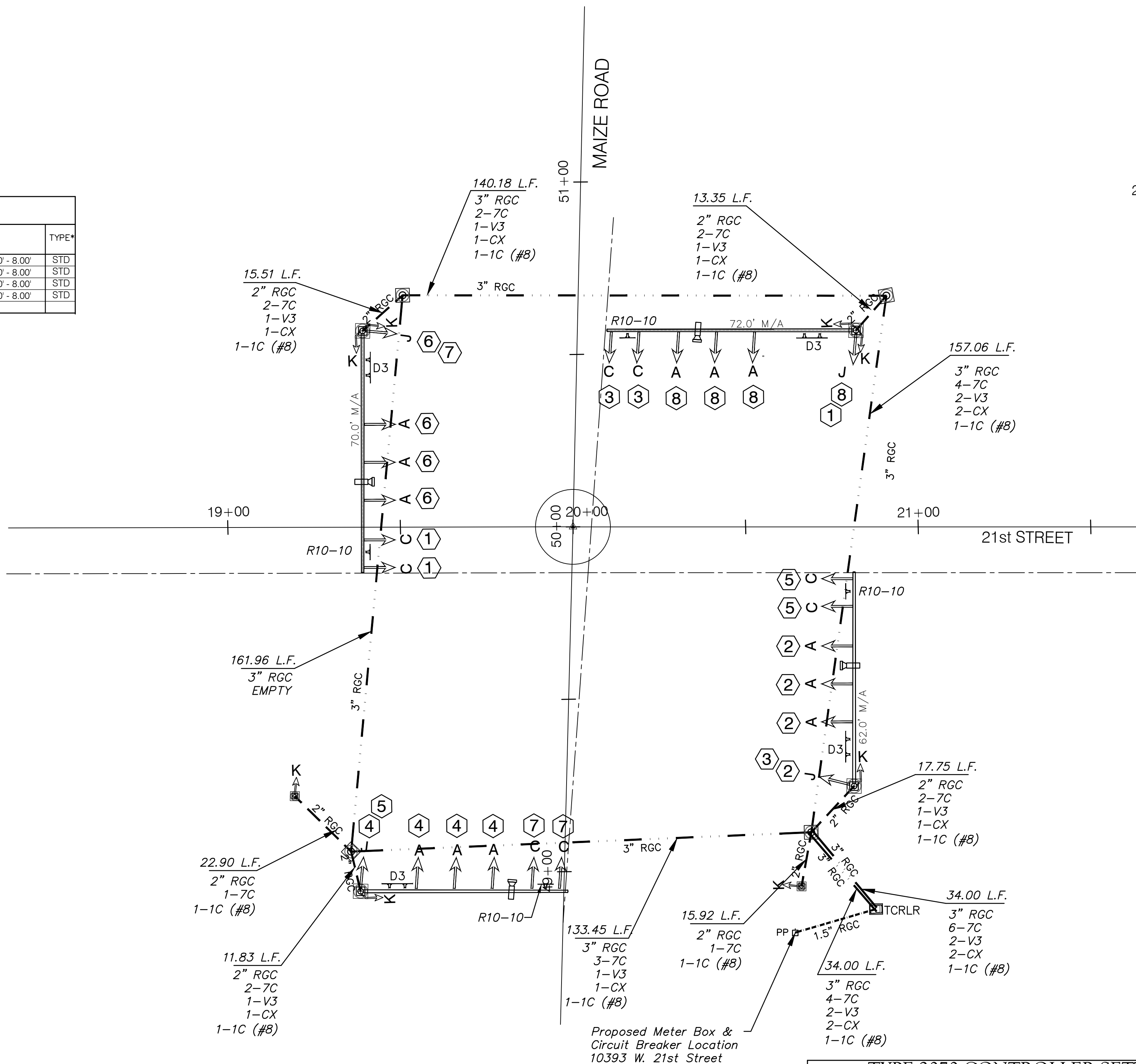
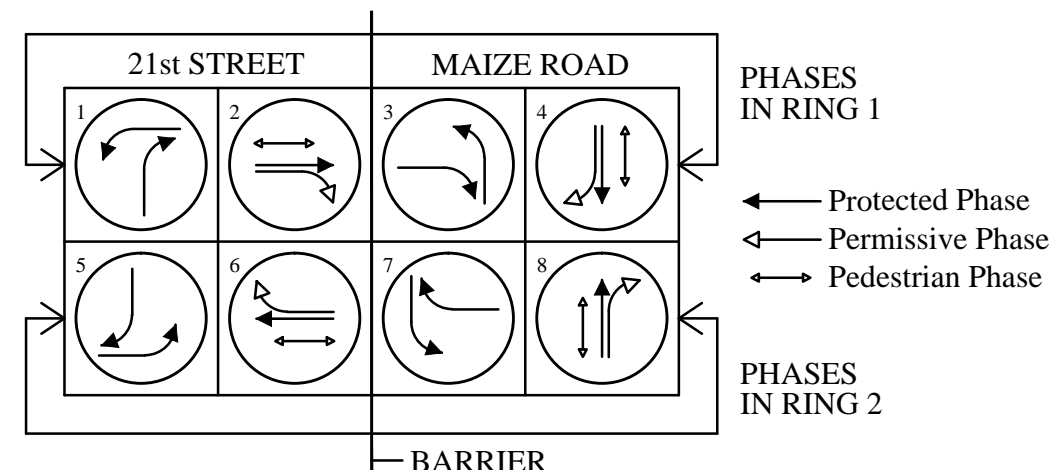
The traffic signal controller cabinet, brackets, sign blank backs, signal backs and other exposed surfaces shall be shop painted with an aerosol lacquer cellulose ester to match the traffic signal pole color. The Contractor shall submit two copies of the proposed coating system to the City for approval to application.

TRAFFIC SIGNAL POLE EXTERIOR COATING:

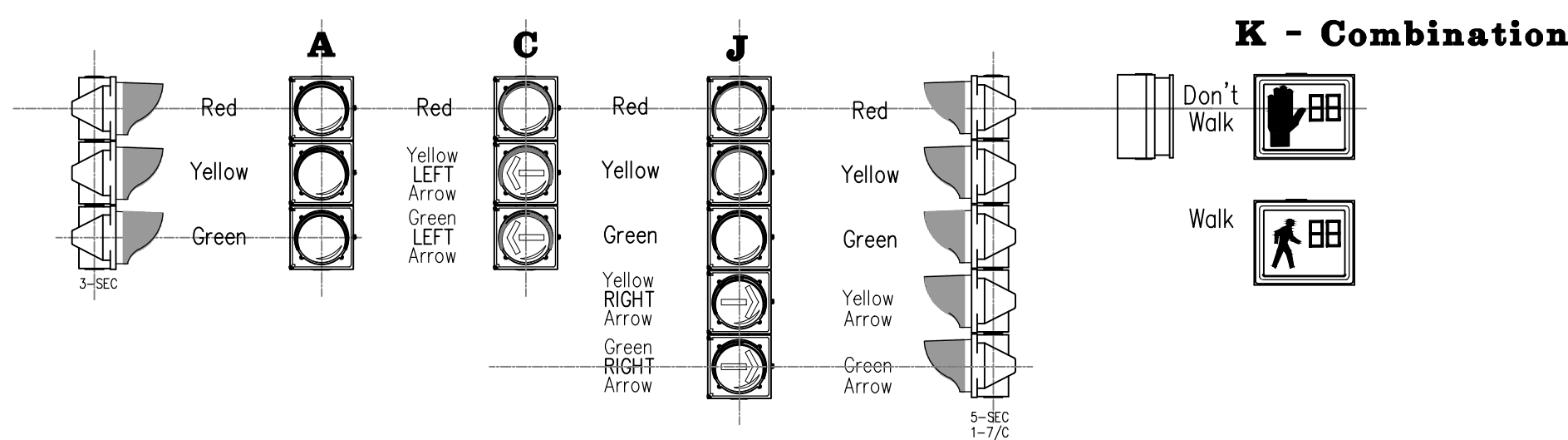
In addition to being galvanized, all exterior surfaces shall be coated with a zinc rich epoxy powder to a minimum dry film thickness of 2.0 mils. The coating shall be electrostatically applied and partially cured in a gas fired convection oven by heating the steel substrate to a minimum of 250° Fahrenheit.

The powder primed surface shall be coated with an intermediate coat of polyester powder to a minimum dry film thickness of 2.0 mils. The coating shall be electrostatically applied and cured by heating the steel substrate in a convection oven to a minimum of 350° Fahrenheit and a maximum of 400° Fahrenheit.

The intermediate coat shall be top coated with one coat of high-build acrylic polyurethane enamel to a minimum dry film thickness of 2.0 mils. The coating shall be electrostatically applied and cured by heating the steel substrate in a convection oven to a minimum of 225° Fahrenheit. The final top coating color shall be **BLACK**.



TYPICAL TRAFFIC SIGNAL HEADS



TYPE 2070 CONTROLLER SETTINGS

Interval	Phase								Time Clock	Nominal Display							
	1 WBLT	2 EB	3 SBLT	4 NB	5 EBLT	6 WB	7 NBLT	8 SB		1	2	3	4	5	6	7	8
Max.	0	30	60	30	60	30	60	30	60	0	Year	Veh Recall	X				X
Max. 2	1	30	60	30	60	30	60	30	60	1	Month	Ped Recall					
Walk	2		8		8		8		8	2	Day/Month	Red Lock					
Fl. Dw.	3		30		30		30		30	3	Day/Week	Yel Lock					
Max. Init.	4	6	10	6	10	6	10	6	10	4	Hour	0 Permit	X	X	X	X	X
Min. Green	5	5	8	5	8	5	8	5	8	5	Minute	Ped Phases	X	X	X	X	X
TBR	6	1	1	1	1	1	1	1	1	6	Second	Lead Phases	X	X	X	X	X
TTR	7	1	1	1	1	1	1	1	1	7		Dbl Entry					
Obs. Gap	8									8		Sequential					
Passage	9									9		Start Up Yel					X
Min Gap	a									a		Overlap A					
Act/Act	b									b		Overlap B					
Yellow	c	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	c		Overlap C					
Red Cir	d	1	1.5	1	1.5	1	1.5	1	1.5	d		Overlap D					
Red Rev	e									e		Exclusive					
Walk II	f									f		Sim Gap					