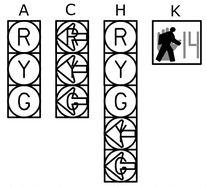
TRAFFIC SIGNAL HEADS



NOTE: ALL LENSES ARE 12" L.E.D. UNLESS OTHERWISE NOTED.

SUMMARY OF TRAFFIC SIGNAL HEADS

SIGNAL FACE NUMBER	SIGNAL FACE ARRANGEMENT	NO. SECTIONS (PER FACE)	SIGNAL MOUNTING TYPE	QUANTITY
1,2,4,5,6,8	A	3	MAST ARM W/ BACKPLATE	12
3,7	H	5	MAST ARM W/ BACKPLATE	2
2,4,6,8	A	3	SIDE-OF-POLE	4
1,2,4,5,6,8	K	1	SIDE-OF-POLE	12
TOTAL				30

TRAFFIC SIGNAL POLE SUMMARY

POLE NO.	POLE HEIGHT	ARM HEIGHT	ARM LENGTH	NO. OF SIGNALS ON ARM	BRACKET TYPE	XI	X2	X3	X4	NO. OF SIGNALS ON POLE	BRACKET TYPE	NO.OF PUSH BUTTONS ON POLE	LUMINAIRE MOUNTING HEIGHT
1	35	19	34	2	1	20	34	-	-	2	III	1	40
2	15	-	-	-	-	-	-	-	-	1	III	1	-
3	35	19	55	3	1	33	44	52	-	2	II	2	40
4	35	19	-	-	-	-	-	-	-	1	III	1	40
5	35	19	36	2	1	24	35	-	-	2	III	1	40
6	35	-	-	-	-	-	-	-	-	1	III	1	40
7	35	19	32	2	1	20	31	-	-	-	-	-	40
8	15	-	-	-	-	-	-	-	-	1	III	1	-
9	35	19	40	2	1	25	39	-	-	2	III	1	40
10	15	-	-	-	-	-	-	-	-	1	III	1	-
11	35	19	48	3	1	25	36	44	-	1	III	1	40
12	15	-	-	-	-	-	-	-	-	1	III	1	-

MAST ARM LENGTHS FOR FUTURE OPERATION WITH PROTECTED LEFT-TURNS.

GENERAL NOTES

All Signal Heads shall have 12" LED lenses.

Placement of Signal Poles, Service/Junction Boxes, Conduit runs and Controller are typical and may be adjusted as directed by the Engineer to facilitate installation.

Utility locations are approximate. The Contractor shall be responsible for locating all underground utilities prior to construction.

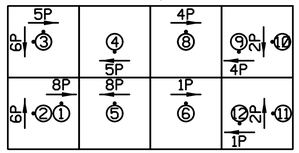
The Contractor shall coordinate with Westar Energy for the exact location of the meter and disconnect box and for the connection of power for the traffic signal installation.

PHASE TIMING

FUNCTION	PHASE							
	1	2	3	4	5	6	7	8
MINIMUM GREEN	8.0	8.0	5.0	8.0	8.0	8.0	5.0	8.0
MAXIMUM GREEN	35.0	25.0	15.0	25.0	35.0	25.0	15.0	25.0
YELLOW CHANGE	3.9	3.2	3.0	3.9	3.9	3.2	3.0	3.9
RED CLEAR	1.6	2.0	2.5	1.6	1.6	2.0	2.5	1.6
ADDED INITIAL	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.0
MAXIMUM INITIAL	10.0	15.0	10.0	15.0	10.0	15.0	10.0	15.0

Phase Timing reflects initial operation.
Phases 4 & 8 to Soft Recall.

Pedestrian Push Button Location and Designation



JUNCTION BOX SUMMARY

STATION	DIST.-SIDE	BASELINE
172+75	11' Rt.	K-96 Ramp W-NS
174+94	14' Rt.	K-96 Ramp W-NS
181+86	21.5' Rt.	K-96 Ramp E-NS
185+00	21.5' Rt.	K-96 Ramp E-NS

EQUIPMENT SPECIFICATIONS
2070 CONTROLLER

A. Controller Unit: The 2070L ATC controller supplied shall meet the requirements outlined in CalTrans TEES 2002 (latest revision), and the following requirements:
1. The 2070L controller shall have a 19" EIA rack mountable chassis (mated to the 170 cabinet).
2. 2070-1B CPU module with RJ-45 Ethernet port.
3. 2070-2A CI field I/O module for compatibility with CalTrans style CI connector.
4. 2070-3B 8X40 front panel with LCD display.
5. 2070-4A 10 amp power supply.
6. 2070-7A asynchronous serial communications module (RS-232).
7. Any unused slot position shall have a cover plate.

B. Conflict Monitor: The Conflict Monitor supplied shall be 2010 ECLiP conflict monitor.

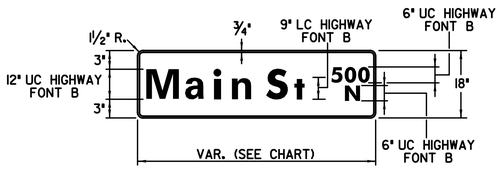
C. Backup System: The controller shall have a battery backup UPS system and accessories per City and/or KDOT Specifications.

DETECTOR SUMMARY

DETECTOR NO.	DETECTION ZONE	MODE	SIZE (LxW)	PHASE CALLED	PHASE EXTENDED	DELAY/ STRETCH TIMER	INITIAL SETTING (SEC.)
1	7-01	Presence	60x6	7	7	D	3.0
1	5-01	Presence	60x6	5	5	-	-
1	5-02	Presence	60x6	5	5	-	-
2	6-01	Presence	60x6	6	6	-	-
2	6-02	Presence	60x6	6	6	D	8.0
2	6-03	Pulse	6x6	6	6	S	1.0
2	6-04	Pulse	6x6	6	6	S	1.0
2	6-05	Pulse	6x6	6	6	S	1.0
2	6-06	Pulse	6x6	6	6	S	1.0
3	8-01	Presence	60x6	8	8	-	-
3	8-02	Presence	60x6	8	8	-	-
3	8-03	Presence	60x6	8	8	-	-
3	8-04	Pulse	6x6	8	8	S	1.0
3	8-05	Pulse	6x6	8	8	S	1.0
3	8-06	Pulse	6x6	8	8	S	1.0
3	8-07	Pulse	6x6	8	8	S	1.0
4	4-01	Presence	60x6	4	4	-	-
4	4-02	Presence	60x6	4	4	-	-
4	4-03	Pulse	6x6	4	4	S	1.0
4	4-04	Pulse	6x6	4	4	S	1.0
4	4-05	Pulse	6x6	4	4	S	1.0
4	4-06	Pulse	6x6	4	4	S	1.0
5	2-01	Presence	60x6	2	2	-	-
5	2-02	Presence	60x6	2	2	D	8.0
5	2-03	Pulse	6x6	2	2	S	1.0
5	2-04	Pulse	6x6	2	2	S	1.0
5	2-05	Pulse	6x6	2	2	S	1.0
6	3-01	Presence	60x6	3	3	D	3.0
6	1-01	Presence	60x6	1	1	-	-
6	1-02	Presence	60x6	1	1	-	-
	2-06	Presence	6x6	2	2	-	-
	6-06	Presence	6x6	6	6	-	-

OVERHEAD STREET NAME SIGNS

LEGEND	LENGTH	QUANTITY
K-96	3'-0"	4
Hillside 3400 N	6'-6"	1
Hillside 3500 N	6'-6"	1



BILL OF MATERIALS

ITEM	UNIT	QUANTITY
PAD MOUNTED CABINET	EACH	2
SIGNAL CONTROLLER (2070)	EACH	1
TRAFFIC SIGNAL HEAD W/MOUNTING HARDWARE	EACH	26
TRAFFIC SIGNAL POLE, STEEL (SEE POLE SUMMARY)	EACH	6
TRAFFIC SIGNAL PEDESTAL ALUM. (15')	EACH	4
TRAFFIC SIGNAL PEDESTAL (JOINT USE) ALUM. (35')	EACH	2
LUMINAIRE POLE W/15' ARM (SEE POLE SUMMARY)	EACH	---
CONCRETE CONTROLLER PAD	EACH	2
CONCRETE FOOTING - PEDESTAL (15')	EACH	4
CONCRETE FOOTING - PEDESTAL (35')	EACH	2
CONCRETE FOOTING - POLE	EACH	6
CONDUIT ELBOW 90° 2"	EACH	AS REQ'D
CONDUIT ELBOW 90° 3"	EACH	AS REQ'D
BACK PLATE 5' 3 SECTION	EACH	12
BACK PLATE 5' 5 SECTION	EACH	2
TERMINAL BLOCK	EACH	12
SERVICE BOX	EACH	---
JUNCTION BOX (PRE-FAB)	EACH	4
GROUND ROD & CLAMP	EACH	11
PEDESTRIAN INDICATIONS LED (16"x18" COMBINATION) (COUNTDOWN)	EACH	12
LED TRAFFIC SIGNAL LENS (12")	EACH	58
ENTRANCE HEAD	EACH	1
CIRCUIT BREAKER & BOX 50 AMP.	EACH	1
SURGE ARRESTOR - A.C.SERVICE	EACH	1
SURGE ARRESTOR - DETECTOR	EACH	---
PEDESTRIAN PUSHBUTTON W/SIGN ◓	EACH	12
6 PR. COMMUNICATION CABLE	LIN.FT.	---
DETECTOR LOOP WIRE NO. 14 AWG 1/c	LIN.FT.	220
SHEILDED DETECTOR LEAD-IN NO.14 AWG 2/c	LIN.FT.	1,430
MULTI-CONDUCTOR CABLE NO.14 AWG 15/c	LIN.FT.	915
MULTI-CONDUCTOR CABLE NO.14 AWG 7/c	LIN.FT.	1,425
MULTI-CONDUCTOR CABLE NO.14 AWG 5/c	LIN.FT.	2,400
MULTI-CONDUCTOR CABLE NO.14 AWG 3/c	LIN.FT.	60
#8 AWG GROUND (GREEN)	LIN.FT.	1,300
CONDUIT 1"(RGC)	LIN.FT.	AS REQ'D
CONDUIT 1 1/2"(RGC)	LIN.FT.	17
CONDUIT 2"(PVC)	LIN.FT.	---
CONDUIT 2"(RGC)	LIN.FT.	1,209
CONDUIT 3"(RGC)	LIN.FT.	164
STREET NAME SIGN	EACH	6
LEFT TURN SIGNAL (R10-12) SIGN	EACH	2
RIGHT TURN ONLY (R3-5R) SIGN	EACH	---
RADAR DETECTOR UNIT	EACH	6
RADAR DETECTOR CABLE	LIN. FT.	2,235

-QUANTITIES FOR INFORMATION ONLY-

◓ NOTE:
The traffic signal pushbuttons shall be Accessible Pedestrian Signals (APS) units per City Standard Specifications.

POLE AND EQUIPMENT FINISH:

Surface preparation
The exterior steel surface shall be blasted clean in accordance with the requirements outlined in the Steel Structures Painting Council Surface Preparation Specification No. 6, (SSPCSP60) utilizing a dry abrasive, closed cycle, recirculating system with centrifugal wheels and abrasive. The abrasive used shall be steel shot conforming to the Society of Automotive Engineers (SAE) Recommended Practice No. J827 with particle size meeting SAE Shot No. S280.

Zinc Coating
The pole assembly shall be hot-dip galvanized to the requirements of either ASTM A123 (Fabricated items) or ASTM A153 (Hardware items) by immersion in a molten bath of prime western grade zinc maintained between 810°F and 850°F. Maximum aluminum content of the bath shall not exceed 0.01%.

Top Coat
All visually exposed exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum dry film thickness (DFT) of 0.05mm (2.0 mils). Prior to application of the topcoat, the surface shall be mechanically etched and pre-heated to 450°F for a minimum of one hour. The coating shall be electrostatically applied and cured at a minimum temperature of 400°F and the color shall be BLACK.

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES

ITEM	UNIT	QUANTITY
TRAFFIC SIGNALIZATION (K-96 & HILLSIDE)	LUMP SUM	1

NOTE: The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for the complete operation of the traffic signal system whether specifically mentioned or not.

No.	Revision	By	Date

CITY OF WICHITA

GEN. NOTES AND QUANTITIES K-96 HWY. & HILLSIDE AVE.

GARY JANZEN, P.E.-CITY ENGINEER
CITY OF WICHITA PROJECT NO. 472-85174

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Designed by	SAC	Job No.	13675	Sht. 14 of 28
Drawn by	DRP	Date	May, 2014	

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