BILL OF MATERIALS (FOR INFORMATION ONLY)

ITEM	UNIT	QUANTITY
TRAFFIC SIGNAL POLE STEEL W/MASTARM (JOINT USE)	EACH	1
TRAFFIC SIGNAL POLE STEEL W/MASTARM (STD)	EACH	2
TRAFFIC SIGNAL PEDESTAL (10')	EACH	2
CONCRETE CONTROLLER PAD	EACH	1
CONCRETE FOOTING – POLE	EACH	3
CONCRETE FOOTING – PEDESTAL POLE	EACH	2
SERVICE BOX – 36 IN. DIA.	EACH	4
JUNCTION BOX – 24 IN. DIA. (INCLUDES INTERCONNECT)	EACH	–
GROUND ROD & CLAMP	EACH	6
CONDUIT CLAMP	EACH	AS REQUIRED
PEDESTRIAN SIGNAL LAMP (12" COMBINATION)	EACH	4
L.E.D. UNIT	EACH	22
BACK PLATE FOR SIGNAL HEAD (TYPE A)	EACH	6
BACK PLATE FOR SIGNAL HEAD (TYPE I)	EACH	1
ENTRANCE HEAD	EACH	1
CIRCUIT BREAKER & BOX	EACH	1
TRAFFIC SIGNAL HEAD – 12" (TYPE A) W/MOUNTING BRACKET	EACH	9
TRAFFIC SIGNAL HEAD – 12" (TYPE I) W/MOUNTING BRACKET	EACH	1
PEDESTRIAN SIGNAL – 12" (TYPE K) W/MOUNTING BRACKET	EACH	4
PEDESTRIAN PUSHBUTTON W/SIGN	EACH	4
PAD MOUNTED CABINET & CONTROLLER SYSTEM–TYPE 170(SEE NOTE)	EACH	1
LEAD–IN WIRE NO. 6 AWG 1/c (TYPE THHN)	LIN. FT.	375
MULTI–CONDUCTOR CABLE NO. 14 AWG 5/c	LIN. FT.	430
MULTI–CONDUCTOR CABLE NO. 14 AWG 7/c	LIN. FT.	1080
STANDARD 1/c #8 (TYPE THHN)(GROUND)	LIN. FT.	675
1" PVC	LIN. FT.	16
2" PVC	LIN. FT.	310
CONDUIT 1"	LIN. FT.	16
CONDUIT 2"	LIN. FT.	45
CONDUIT 3"	EACH	465
VIDEO DETECTION CAMERA AND MOUNTING HARDWARE (RISER BRACKETS)	EACH	3
VIDEO DETECTION PROCESSOR UNIT (ITERIS VANTAGE OR APR'VD EQUAL)	EACH	3
VIDEO POWER CABLE NO. 16 AWG 3/C	LIN. FT.	433
VIDEO CABLE 75 OHM COAXIAL (BELDON #8281)	LIN. FT.	433
TV MONITOR	EACH	1
VIDEO SYSTEM PROGRAMMING UNIT	EACH	1
STREET NAME SIGNS	EACH	3
LEFT TURN YIELD ON GREEN W/MOUNTING HARDWARE (R10–12)	EACH	1

TYPE 170 TRAFFIC CONTROLLER SYSTEM TO INCLUDE:

ONE (1) MODEL 170 CONTROLLER UNIT COMPLETE WITH 412B2 SYSTEM MEMORY MODULE CAPABLE OF SUPPORTING WAPITI MICRO SYSTEM W4IKS (56A OR LATEST REVISION) TRAFFIC PROGRAM ON 27256 EPROM.

ONE (1) MODEL 332 CABINET COMPLETE WITH ALL ACCESSORIES INCLUDING FOUR (4) MODEL 430 TRANSFER RELAYS, TWO (2) MODEL 204 FLASHER UNITS AND ONE (1) MODEL 210PC (ECL OR MS) CONFLICT MONITOR.

THREE (3) MODEL 242 TWO CHANNEL ISOLATORS.

TWELVE (12) MODEL 200 SWITCH PACKS.

ONE (1) SURGE PROTECTOR.

NOTE: THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY MATERIAL AND EQUIPMENT FOR THE COMPLETE INSTALLATION AND OPERATION OF THE TRAFFIC SIGNAL WHETHER SPECIFICALLY MENTIONED OR NOT.

TRAFFIC SIGNAL POLE SUMMARY

STATION	TYPE	ARM LENGTH	SIGNALS ON ARM	X_1	X_2	OTHER EQUIP. ON ARM	SIGNALS ON POLE
31+48, Lt.	H	–	–	–		–	–
31+58, Rt.	H	–	–	–		–	2–E
31+61, Lt.	B	44'	3–D	11	11	C, F, G	1–D, 1–E
32+61, Lt.	B	23'	2–D	11		F, G	1–D
32+67, Rt.	A	47'	3–D	11		F, G	1–D, 1–E

A JOINT USE STEEL POLE WITH MAST ARM
B STANDARD STEEL POLE WITH MAST ARM
C PROTECTED TURN SIGN
D TRAFFIC SIGNAL
E PEDESTRIAN SIGNAL WITH PUSH BUTTON
F STREET NAME SIGN
G VIDEO DETECTION CAMERA
H STANDARD 10' POLE (ALUMINUM)

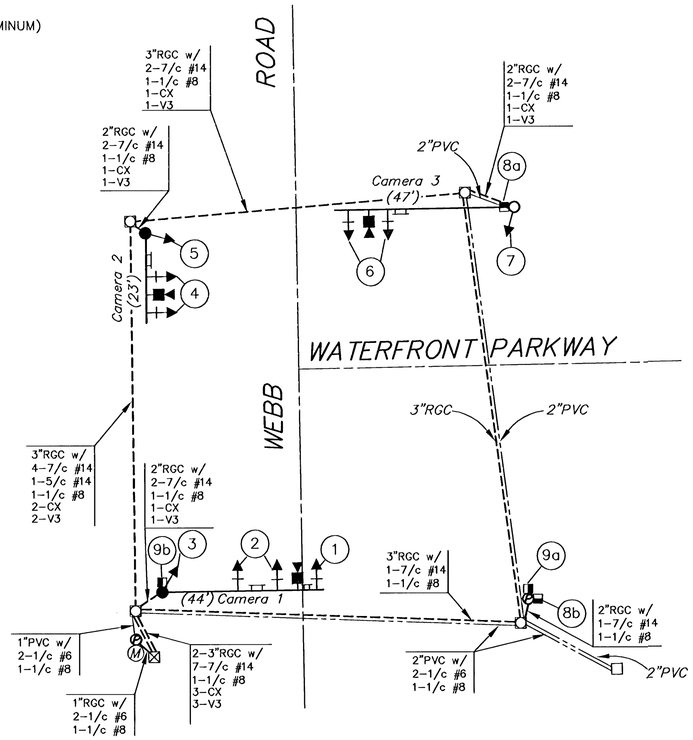
STREET NAME SIGN SUMMARY

LEGEND	QUANTITY
Webb Rd	1
Waterfront	2
TOTAL	3

Letters shall be series "E Modified".

LEGEND

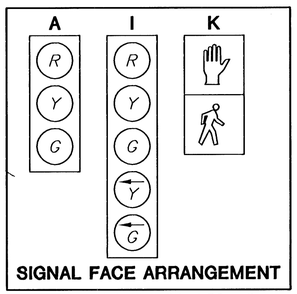
- Pedestal Pole (10')
- Steel Traffic Signal Pole (Joint use)
- Steel Traffic Signal Pole (Std. Pole)
- Traffic Signal Indication (Type A)
- Mast Arm Suspended Traffic Signal
- Video Detection Camera
- Service Box
- Controller
- Pedestrian Indication
- Junction Box
- Rigid Galvanized Conduit (RGC)
- PVC Conduit
- Meter Box and Power Disconnect
- Overhead Street Name Sign
- Overhead Sign R10–12 (Lt. Yield on Green)
- CX Video Coax Cable (75 OHM)
- V3 Video Power Cable (#16 AWG 3/c)



SCALE 1"=20'

TRAFFIC SIGNAL HEAD SUMMARY

SIGNAL NO.	TYPE	SIZE	MOUNTING BRACKET	QUANTITY
1	I	5–12"	TYPE I	1
2	A	3–12"	TYPE I	2
3	A	3–12"	TYPE III	1
4	A	3–12"	TYPE I	2
5	A	3–12"	TYPE III	1
6	A	3–12"	TYPE I	2
7	A	3–12"	TYPE III	1
8a	K	1–12"	TYPE III	1
8b	K	1–12"	TYPE II	1
9a	K	1–12"	TYPE II	1
9b	K	1–12"	TYPE III	1



SIGNAL FACE ARRANGEMENT

All lenses in each head shall be L.E.D. unit per note.

ALL SIGNAL HEADS TO BE L.E.D.

*ALL POLE, MASTARMS AND CABINET SHALL BE POWDER COATED BLACK

L.E.D. Signal Heads: All lenses in each signal head shall be a self–contained, sealed unit designed to fit a regular 12–inch traffic signal housing. It shall incorporate a minimum of 186 high reliability, high intensity LED indicators. The lens shall provide a light beam spread of 30 degrees on all sides of its center axis which shall be designed to provide a 5 to 7 degree downward angle.

The lens shall be made of UV stabilized plastic. The rear cover shall be of non–flammable material and the entire unit shall be totally sealed to preclude the entrance of water, dust or other contaminants.

The self–contained, regulated power supply shall allow the unit to operate over an input voltage range between 89 and 135 volts A.C. and shall be configured in at least 3 parallel circuits for reliability. Light output shall be comparable to that provided by a standard, 12 inch traffic signal lens illuminated by a 150 watt incandescent lamp. The red wave length shall be 630 to 660 nm.

The manufacturer shall warrant the unit against defects in workmanship and materials for a period of at least five years after date of shipment. This warranty shall be assigned to the maintenance agency.

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES

BID ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL INSTALLATION (WEBB & WATERFRONT)	1	L.S.

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MKEC ENGINEERING CONSULTANTS
411 N. WEBB ROAD
WICHITA, KS. 67206
316 - 684 - 9600

WEBB ROAD TRAFFIC SIGNALIZATION
PROJECT NAME

WIRING PLAN
SHEET TITLE

DFL	KKL	GJA
DESIGN BY:	DRAWN BY:	CHECKED BY:
NOVEMBER 2003	02014SG2	3 / 8
DATE	JOB NO.	SHEET/OF