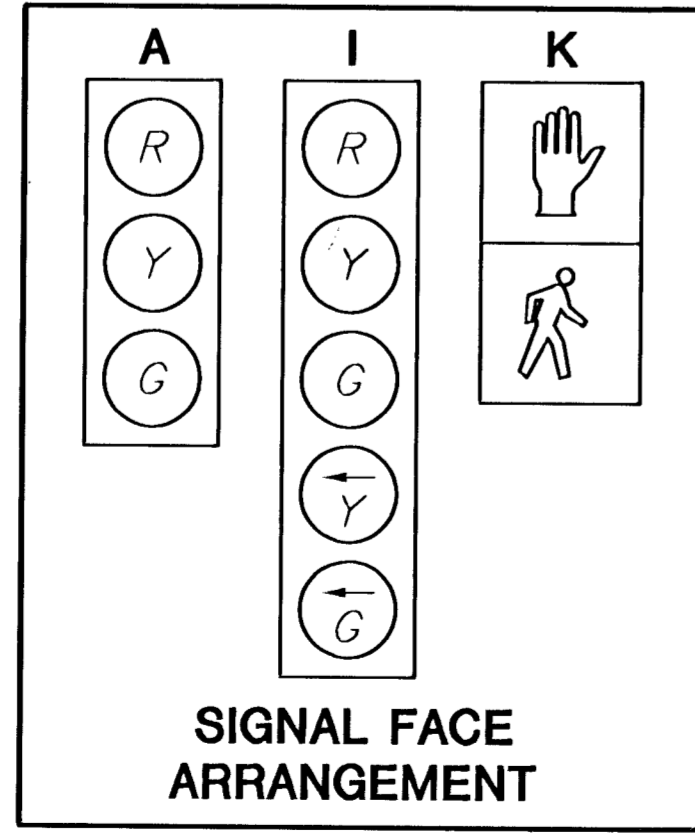


BILL OF MATERIALS (FOR INFORMATION ONLY)		
ITEM	UNIT	QUANTITY
TRAFFIC SIGNAL POLE STEEL W/MASTARM (JOINT USE)	EACH	2
TRAFFIC SIGNAL POLE STEEL W/MASTARM (STD. POLE)	EACH	2
CONCRETE CONTROLLER PAD	EACH	1
CONCRETE FOOTING - POLE	EACH	4
SERVICE BOX - 36 IN. DIA.	EACH	4
JUNCTION BOX - 24 IN. DIA. (INCLUDES INTERCONNECT)	EACH	8
GROUND ROD & CLAMP	EACH	6
CONDUIT CLAMP	EACH	AS REQUIRED
TRAFFIC SIGNAL LAMP 135 WATT	EACH	38
PEDESTRIAN SIGNAL LAMP 105 WATT	EACH	16
RED LENS L.E.D. UNIT	EACH	15
ENTRANCE HEAD	EACH	1
CIRCUIT BREAKER & BOX	EACH	1
BACK PLATE FOR SIGNAL HEAD (TYPE A)	EACH	7
BACK PLATE FOR SIGNAL HEAD (TYPE I)	EACH	4
TRAFFIC SIGNAL HEAD - 12" (TYPE A) W/MOUNTING BRACKET	EACH	11
TRAFFIC SIGNAL HEAD - 12" (TYPE I) W/MOUNTING BRACKET	EACH	4
PEDESTRIAN SIGNAL - 12" (TYPE K) W/MOUNTING BRACKET	EACH	8
PEDESTRIAN PUSHBUTTON W/SIGN	EACH	8
PAD MOUNTED CABINET & CONTROLLER SYSTEM-TYPE 170(SEE NOTE)	EACH	1
LEAD-IN WIRE NO. 6 AWG 1/c (TYPE THHN)	LIN. FT.	25
DETECTOR LOOP WIRE NO. 14, AWG 1/c (TYPE THHN)	LIN. FT.	3,140
MULTI-CONDUCTOR CABLE NO. 14 AWG 5/c	LIN. FT.	385
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/c	LIN. FT.	1,345
SHIELDED DETECTOR LEAD-IN NO. 14 AWG 2/c	LIN. FT.	3,385
6 PR. #19 COMMUNICATION CABLE (2ND. ST. TO McLEAN)	LIN. FT.	1,255
CONDUIT 3/4"	LIN. FT.	565
CONDUIT 1"	LIN. FT.	15
CONDUIT 1-1/4"	LIN. FT.	250
CONDUIT 2" (INCLUDES INTERCONNECT)	LIN. FT.	785
CONDUIT 3"	LIN. FT.	415
STANDARD 1C #8 (TYPE THHN)(GROUND)	LIN. FT.	550
STREET NAME SIGNS	EACH	4
LEFT TURN YIELD ON GREEN (R10-12) W/MOUNTING HARDWARE	EACH	4

TYPE 170 TRAFFIC CONTROLLER SYSTEM TO INCLUDE:
 ONE (1) MODEL 170E CONTROLLER UNIT COMPLETE WITH 412B2 SYSTEM MEMORY MODULE CAPABLE OF SUPPORTING WAPITI MICRO SYSTEM W4IKS (LATEST REVISION) TRAFFIC PROGRAM ON 27256 EPROM WITH 400 MODEM.
 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 CONFLICT MONITOR.
 THREE (3) MODEL 242 TWO CHANNEL ISOLATORS.
 TWELVE (12) MODEL 222 TWO CHANNEL LOOP DETECTOR SENSOR UNITS (800).
 TWELVE (12) MODEL 200 SWITCH PACKS.
 ONE (1) STAND ALONE HAYES COMPATIBLE MODEM.

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 HEAD SUMMARY				
SIGNAL NO.	TYPE	SIZE	MOUNTING BRACKET	QUANTITY
1	A	3-12"	TYPE I	2
1A	A	3-12"	TYPE III	1
1B	I	5-12"	TYPE I	1
2	K	2-12"	TYPE II	2
3	A	3-12"	TYPE I	1
3A	A	3-12"	TYPE III	1
3B	I	5-12"	TYPE I	1
4	K	2-12"	TYPE II	2
5	A	3-12"	TYPE I	2
5A	A	3-12"	TYPE III	1
5B	I	5-12"	TYPE I	1
6	K	2-12"	TYPE II	2
7	A	3-12"	TYPE I	2
7A	A	3-12"	TYPE III	1
7B	I	5-12"	TYPE I	1
8	K	2-12"	TYPE II	2

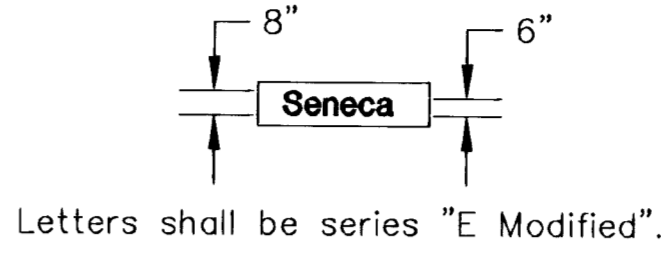


Red lens in each head shall be L.E.D. unit per note.

TRAFFIC SIGNAL POLE SUMMARY							
STATION	TYPE	ARM LENGTH	SIGNALS ON ARM	X1	X2	OTHER EQUIP. ON ARM	SIGNALS ON POLE
45+54, Lt.	A	34'	3-D	8	11	C, F, 3-G	2-E, 1-D
45+59, Rt.	A	39'	3-D	8	11	C, F, 3-G	2-E, 1-D
46+26, Lt.	B	25'	2-D	8		C, F, 2-G	2-E, 1-D
46+35, Rt.	B	34'	3-D	8	11	C, F, 3-G	2-E, 1-D

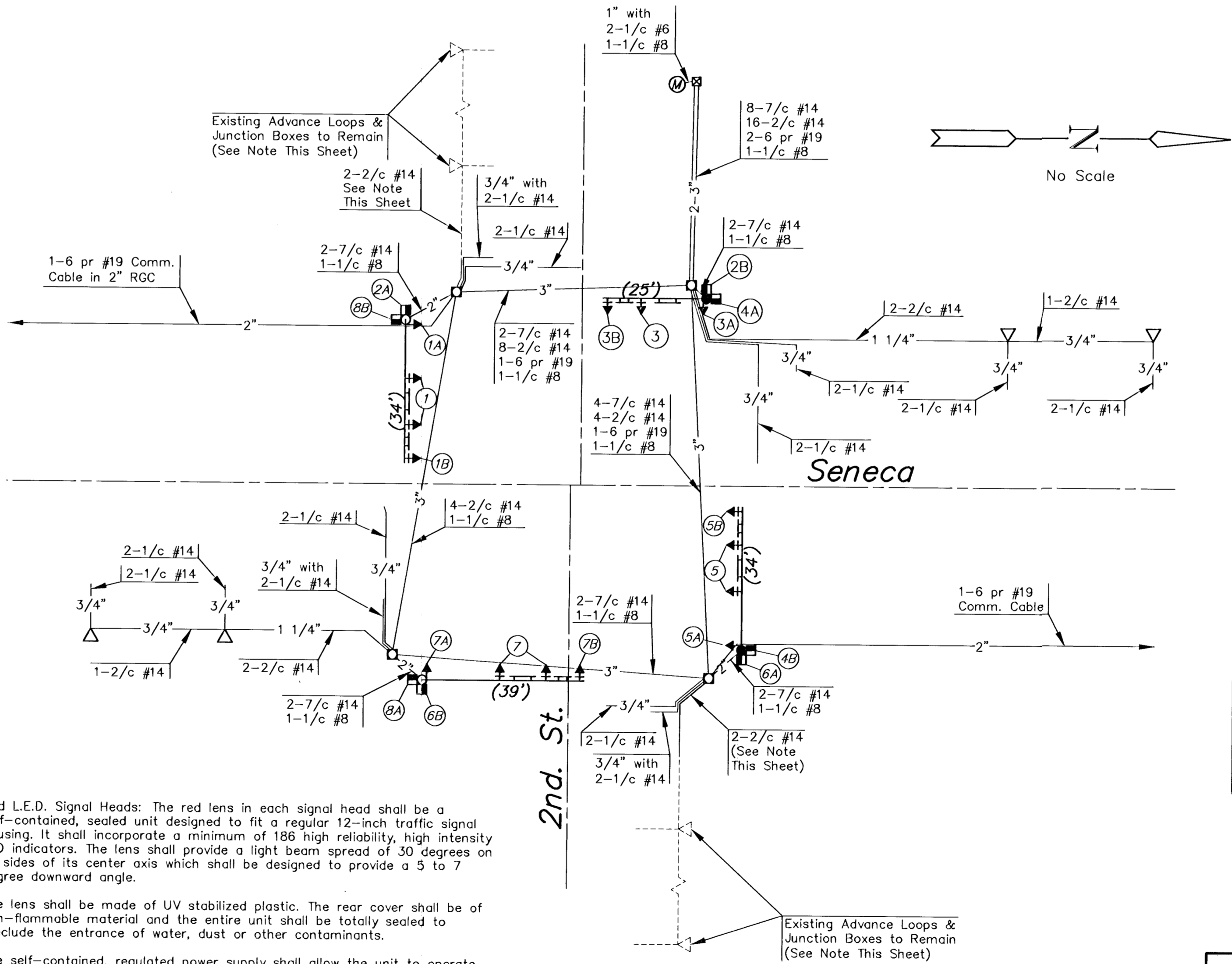
- A JOINT USE STEEL POLE WITH MAST ARM
- B STANDARD STEEL POLE WITH MAST ARM
- C PROTECTED TURN SIGN
- D TRAFFIC SIGNAL
- E PEDESTRIAN SIGNAL WITH PUSH BUTTON
- F STREET NAME SIGN
- G BACKPLATE FOR SIGNAL HEAD

STREET NAME SIGN SUMMARY	
LEGEND	QUANTITY
Seneca	2
2nd St	2
TOTAL	4



LEGEND

- Steel Traffic Signal Pole (Joint use)
- Steel Traffic Signal Pole (Std. Pole)
- Traffic Signal Indication
- Traffic Signal Indication with Back Plate
- ↙ Mast Arm Suspended Traffic Signal
- Service Box
- ⊠ Controller
- ⊞ Pedestrian Indication
- ◁ Junction Box
- Rigid Galvanized Conduit (RGC)
- ⊗ Meter Box and Power Disconnect
- TT Overhead Street Name Sign
- TT Overhead Sign R10-12 (Lt. Turn Yield on Green)



Red L.E.D. Signal Heads: The red lens 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 intensity, 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.

Note:
Remove existing 2/c #14 between each Junction Box and Controller. Cut and remove existing conduit in area of construction. Replace with same new conduit. Connect and install new 2/c #14 from each Junction Box to new Controller.

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES		
BID ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL INSTALLATION (SENECA & 2ND. ST.)	1	LUMP SUM



SOUTH SENECA STREET
 PROJECT NAME
SENECA/2ND. ST.
TRAFFIC SIGNAL SUMMARY
 SHEET TITLE

MID-KANSAS ENGINEERING CONSULTANTS, INC.
 411 N. WEBB ROAD
 WICHITA, KS. 67206
 316-684-9600

DCH DESIGN BY: WNJ DRAWN BY: DCH CHECKED BY:
 OCT. 2001 DATE: 98092WR2 JOB NO. 50 / 87 SHEET/OF