

DATE	
BY	
REFERENCES NOTED	
REFERENCES CHECKED	

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. POLE)	EACH	3
CONCRETE CONTROLLER PAD	EACH	1
CONCRETE FOOTING - POLE	EACH	4
SERVICE BOX - 915 mm DIA.	EACH	4
JUNCTION BOX - 610 mm DIA.	EACH	4
GROUND ROD & CLAMP	EACH	6
CONDUIT CLAMP	EACH	AS REQUIRED
TRAFFIC SIGNAL LAMP 135 WATT	EACH	28
PEDESTRIAN SIGNAL LAMP 105 WATT	EACH	12
RED LENS L.E.D. UNIT	EACH	12
ENTRANCE HEAD	EACH	1
CIRCUIT BREAKER & BOX	EACH	1
TRAFFIC SIGNAL HEAD - 305 mm (TYPE A) W/MOUNTING BRACKET	EACH	10
TRAFFIC SIGNAL HEAD - 305 mm (TYPE I) W/MOUNTING BRACKET	EACH	2
PEDESTRIAN SIGNAL - 305 mm (TYPE K) W/MOUNTING BRACKET	EACH	6
PEDESTRIAN PUSHBUTTON W/SIGN	EACH	6
PAD MOUNTED CABINET & CONTROLLER SYSTEM-TYPE 170(SEE NOTE)	EACH	1
LEAD-IN WIRE NO. 6 AWG 1/c (TYPE THHN)	m	12
DETECTOR LEAD-IN NO. 14 AWG 1/c	m	717
SHIELDED DETECTOR LEAD-IN NO. 14 AWG 2/c	m	585
MULTI-CONDUCTOR CABLE NO. 14 AWG 5/c	m	142
MULTI-CONDUCTOR CABLE NO. 14 AWG 7/c	m	340
STANDARD 1/c #8 (TYPE THHN)(GROUND)	m	229
CONDUIT 20 mm	m	135
CONDUIT 25 mm	m	5
CONDUIT 30 mm	m	80
CONDUIT 50 mm	m	15
CONDUIT 75 mm	m	120
STREET NAME SIGNS	EACH	4
LEFT TURN YIELD ON GREEN W/MOUNTING HARDWARE (R10-12)	EACH	2

TYPE 170 TRAFFIC CONTROLLER SYSTEM TO INCLUDE:  
 ONE (1) MODEL 170 CONTROLLER UNIT & MODEM COMPLETE WITH 412B2 SYSTEM MEMORY MODULE CAPABLE OF SUPPORTING WAPITI MICRO SYSTEM W4IKS (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 CONFLICT MONITOR.

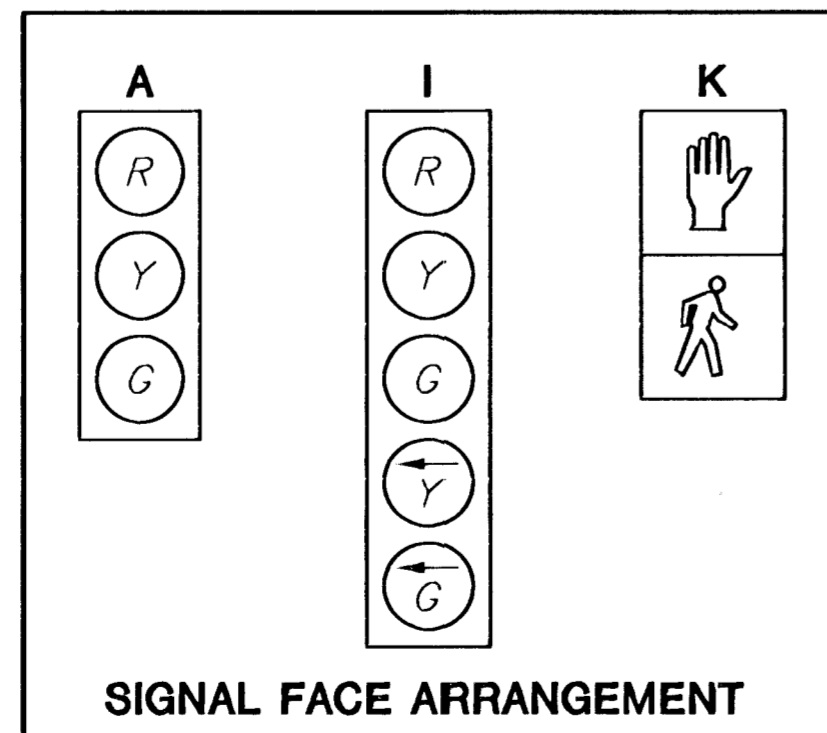
THREE (3) MODEL 242 TWO CHANNEL ISOLATORS.

TEN (10) MODEL 222 TWO CHANNEL LOOP DETECTOR SENSOR UNITS.

ELEVEN (11) MODEL 200 SWITCH PACKS.

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	I	5-300mm	TYPE I	1
2	A	3-300mm	TYPE I	2
3	A	3-300mm	TYPE III	1
4	K	2-300mm	TYPE II	2
5	A	3-300mm	TYPE I	1
6	A	3-300mm	TYPE III	1
7	I	5-300mm	TYPE I	1
8	A	3-300mm	TYPE I	2
9	A	3-300mm	TYPE III	1
10	K	2-300mm	TYPE II	2
11	A	3-300mm	TYPE I	1
12	A	3-300mm	TYPE III	1
13	K	2-300mm	TYPE II	2



Red lens in each head shall be L.E.D. unit per Note 1.

JOINT-USE POLE ON SW CORNER ONLY

TRAFFIC SIGNAL POLE SUMMARY							
STATION	TYPE	ARM LENGTH	SIGNALS ON ARM	X1	X2	OTHER EQUIP. ON ARM	SIGNALS ON POLE
1+310.89, Rt.	A	10.0 m	1-D			F	1-D, 2-E
1+311.41, Lt.	B	15.0 m	3-D	3.58	3.40	C, F	1-D, 2-E
1+338.38, Rt.	B	12.4 m	3-D	3.58	3.40	C, F	1-D, 1-E
1+339.88, Lt.	B	10.0 m	1-D			F	1-D, 1-E

- A JOINT USE STEEL POLE WITH MAST ARM
- B STANDARD STEEL POLE WITH MAST ARM
- C LEFT TURN YIELD ON GREEN SIGN (R10-12)
- D TRAFFIC SIGNAL
- E PEDESTRIAN SIGNAL WITH PUSH BUTTON
- F STREET NAME SIGN

STREET NAME SIGN SUMMARY	
LEGEND	QUANTITY
21st St	2
Belmont	1
Perimeter Rd	1
Belmont	1
TOTAL	4

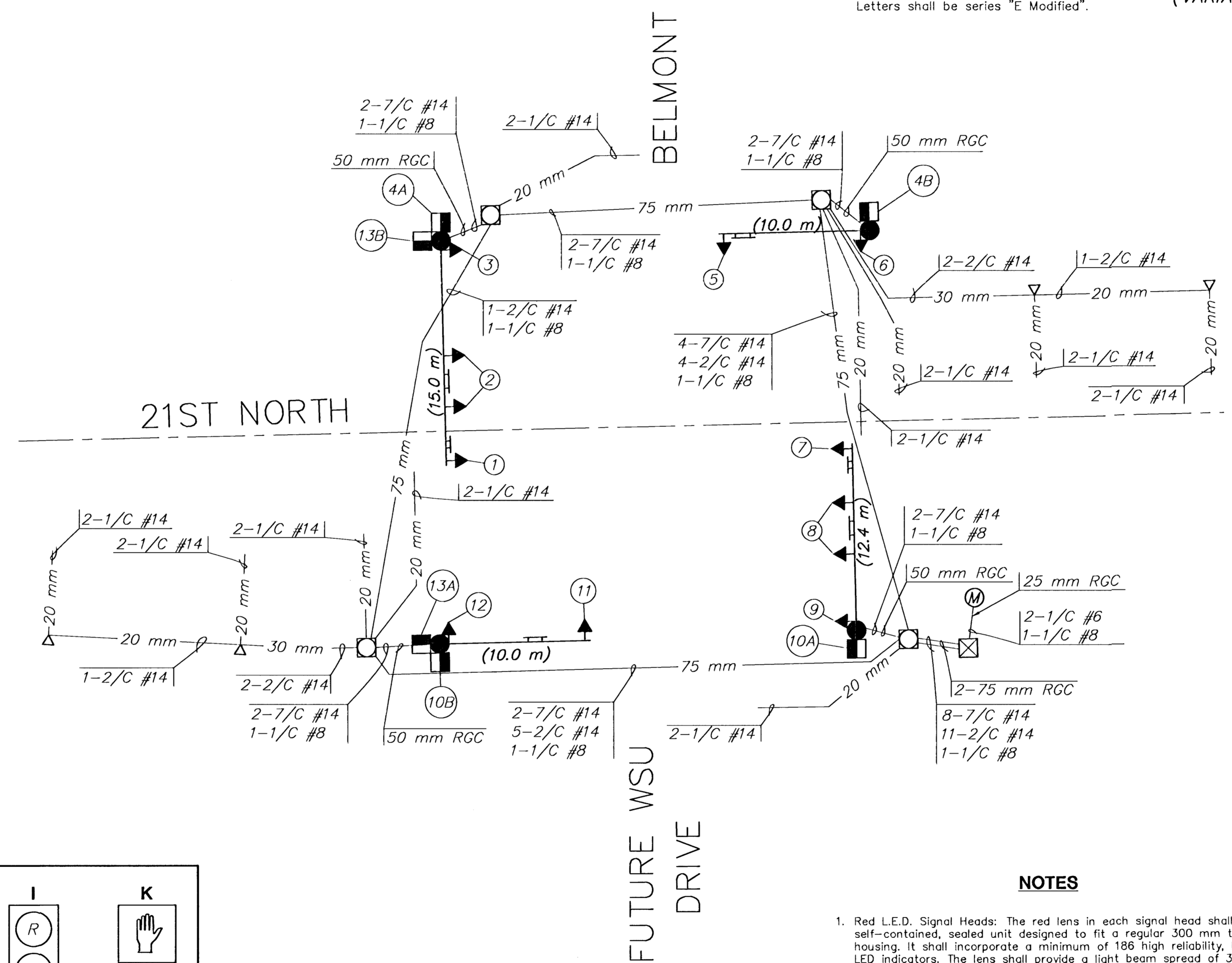


D1-2  
(VARIABLE SIZE)

FHWA REG. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87-N-0200-01	2001	46	78

**LEGEND**

- Steel Traffic Signal Pole (Joint use)
- Steel Traffic Signal Pole (Std. Pole)
- Traffic Signal Indication (Type A)
- ↔ Mast Arm Suspended Traffic Signal
- Service Box
- ⊗ Controller
- ⊠ Pedestrian Indication
- ◁ Junction Box
- Rigid Galvanized Conduit (RGC)
- ⊕ Meter Box and Power Disconnect
- ⊔ Overhead Street Name Sign
- ⊔ Overhead Sign R10-10L or R10-12



NO SCALE

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES		
BID ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL INSTALLATION (21ST. & BELMONT)	LUMP SUM	L.S.

REMOVAL OF EXISTING STRUCTURES		
STATION	OFFSET	DESCRIPTION
0+754.3	4.4 m Lt.	SIGNAL LOOP
1+720.7	3.4 m Rt.	SIGNAL LOOP

**NOTES**

- 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 300 mm 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, 300 mm 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.
- Terminate conduit at KGE riser pole with vertical stub extended above grade. Coordinate with KGE.
- Install 50 mm RGC and junction boxes every 45 m from 21st; Belmont to 21st; Oliver. Install continuous communication cable between controllers.

DESIGNED BY:	DFL	CHECKED BY:	GJA
DRAWN BY:	DAG	DATE:	JUNE 2001
KANSAS DEPARTMENT OF TRANSPORTATION 21ST STREET NORTH 21ST & BELMONT DR. TRAFFIC SIGNAL SUMMARY PROJ. NO. 87-N-0200-01 SEDGWICK CO.		MKEC ENGINEERING CONSULTANTS, INC. WCHITA, KANSAS	
SHEET 46 OF 78		SHEET 46 OF 78	