FHWA REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87N-0094-01	1998	144	202

BILL OF MATERIALS

ITEM	UNIT	QTY
POLE MOUNTED CONTROLLER & CABINET	EACH	–
PEDESTAL MOUNTED CONTROLLER & CABINET	EACH	–
PAD MOUNTED CONTROLLER & CABINET	EACH	1
TRAFFIC SIGNAL HEAD (SEE CHART A) W/ MOUNTING HARDWARE	EACH	10
TRAFFIC SIGNAL POLE (SEE CHART B) STEEL	EACH	4
TRAFFIC SIGNAL POLE (SEE CHART B) ALUMINUM	EACH	–
TRAFFIC SIGNAL PEDESTAL ALUMINUM 10'	EACH	–
PEDESTRIAN SIGNAL HEAD w/ MOUNTING HARDWARE	EACH	8
CONCRETE CONTROLLER PAD	EACH	1
CONCRETE FOOTING – PEDESTAL	EACH	–
CONCRETE FOOTING – POLE	EACH	4
CONDUIT ELBOW 90°	EACH	As Req'd.
CONDUIT ELBOW 90° 3"	EACH	As Req'd.
BACK PLATE 5" – 3 SECTION	EACH	8
BACK PLATE 5" – 4 SECTION	EACH	–
BACK PLATE 5" – 5 SECTION	EACH	2
SERVICE BOX	EACH	4
JUNCTION BOX	EACH	2
GROUND ROD & CLAMP	EACH	6
CONDUIT CLAMP	EACH	As Req'd.
TRAFFIC SIGNAL LAMP 135 WATT	EACH	50
TRAFFIC SIGNAL LAMP 60 WATT	EACH	–
CLASS 4 – WOOD POLE	EACH	–
ENTRANCE HEAD	EACH	–
METER & BOX	EACH	1
GUY WIRE GUARD	EACH	–
GUY WIRE CLAMP	EACH	–
THIMBLE EYE ANCHOR ROD	EACH	–
POWER DISCONNECT w/ 40 amp BREAKER	EACH	1
PEDESTRIAN PUSHBUTTON W/SIGN	EACH	8
DETECTOR LOOP WIRE No. 14 A.W.G. 1/C (TYPE THHN)	LIN. M	1775
LEAD-IN WIRE No. 6 A.W.G. 1/C (TYPE THNN)	LIN. M	130
MULTI-CONDUCTOR CABLE No. 14 A.W.G. 5/C	LIN. M	130
MULTI-CONDUCTOR CABLE No. 14 A.W.G. 7/C	LIN. M	200
MULTI-CONDUCTOR CABLE No. 14 A.W.G. 2/C	LIN. M	250
SHIELDED DETECTOR LEAD-IN No. 14 A.W.G. 2/C	LIN. M	As Req'd.
6 Pr #19 AWG COMM CABLE (Interconnect)	LIN. M	
CONDUIT 20mm	LIN. M	97
CONDUIT 30mm	LIN. M	70
CONDUIT 50mm	LIN. M	13
CONDUIT 75mm	LIN. M	104
STANDARD 1C #8 (GROUND)	LIN. M	130
TETHER WIRE 1/4" ASTM A475 SIEMENS-MARTIN GRADE MIN.	LIN. M	–
REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT **	L.S.	1
STREET NAME SIGNS	EACH	4
LEFT TURN YIELD ON GREEN W/MOUNTING HARDWARE (R10-12)	EACH	2

GENERAL NOTES

1. SIGNAL TIMING BY THE CITY OF WICHITA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE CONTROLLER, CABINET, CONCRETE BASE, AND FOR ALL EQUIPMENT NECESSARY FOR THE COMPLETE AND SATISFACTORY OPERATION OF THE TRAFFIC SIGNAL, WHETHER SAID EQUIPMENT IS SPECIFICALLY MENTIONED OR NOT.
2. LENGTHS GIVEN ARE TO CENTERLINE OF POLE/BOX AND DO NOT INCLUDE LENGTHS FOR ELBOWS AND RISERS.
3. SIGNAL HEADS, PEDESTRIAN SIGNALS, TRAFFIC SIGNS & ETC. INCLUDE ALL BRACKETS, HARDWARE & OTHER INCIDENTALS NECESSARY FOR INSTALLATION.
4. SEE CITY OF WICHITA STANDARD SPECIFICATIONS FOR ADDITIONAL WIRING NOTES.

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 degrees 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 minimum of 350 degrees and a maximum of 400 degrees 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 substrate in a convection oven to a minimum of 225 degrees fahrenheit. The final top coating color shall be black.

CHART B - TRAFFIC SIGNAL POLES

STATION	ARM SIZE	NO. OF SIGNALS ON ARM	NO. OF SIGNALS ON POLE	SIGNAL SPACING ON ARM	TYPE
1+186.7 (•)	13.0m	3		Varies	A,I
1+189.4	6.0m	1	1	Varies	A
1+204.0	13.0m	3		Varies	A,I
1+207.0 (•)	9.0m	1	1	Varies	A

• Joint Use Pole

CHART `A - SIGNAL INVENTORY

NO. WAYS	NO. SECTIONS (Per Face)	SIGNAL FACE ARRANGEMENT	MOUNTING TYPE	QTY
1	3	A	RIGID MAST ARM	6
1	5	I	RIGID MAST ARM	2
1	3	A	VERTICAL BRACKET	2
1	2	L	VERTICAL BRACKET	8

CHART `D - STREET NAME SIGN SUMMARY

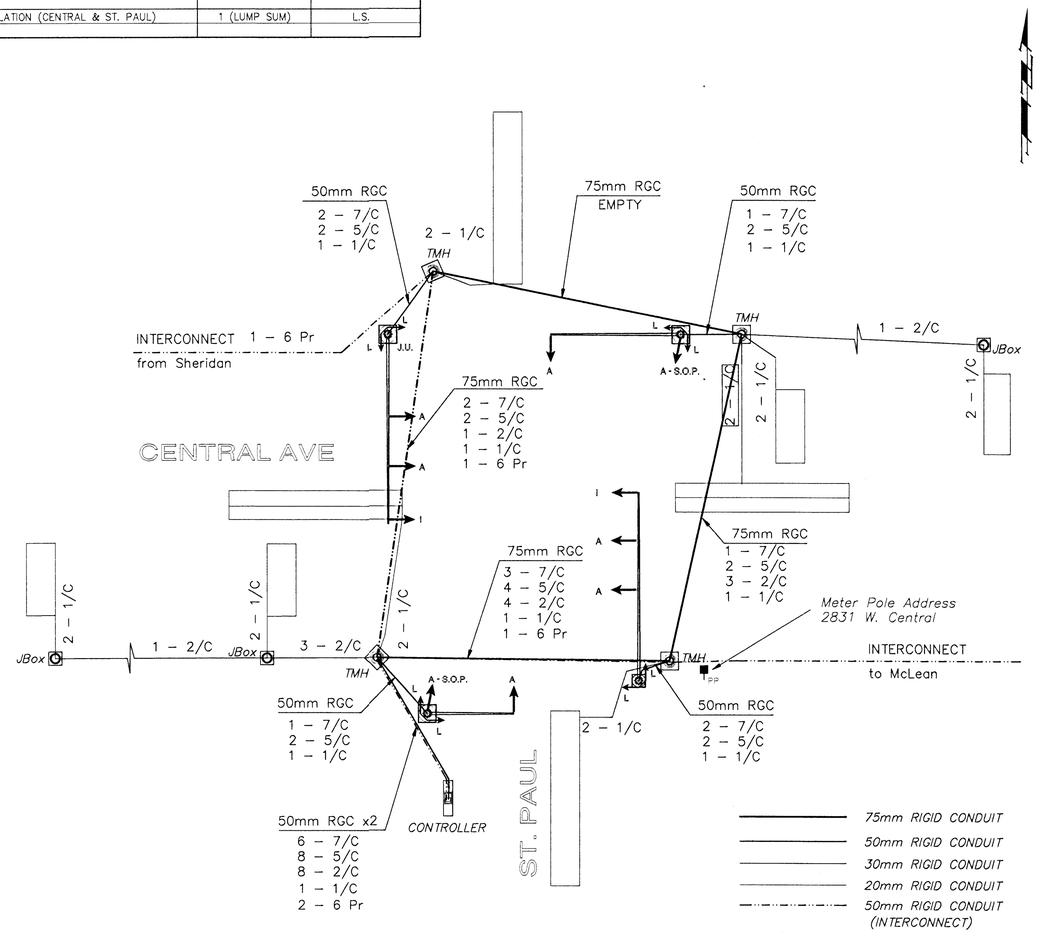
LEGEND	TYPE	QTY	UNITS	SIZE (Millimeters)
Central	D-3	2	EA	450 x 1200
St Paul	D-3	2	EA	450 x 1200

BILL OF MATERIALS (INTERCONNECT SYSTEM)

ITEM	UNIT	QTY
SERVICE BOX	EACH	1
JUNCTION BOX	EACH	22
6 Pr #19 AWG COMM CABLE (Interconnect)	LIN. M	1426
CONDUIT 50mm	LIN. M	1312

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES

BID ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL INSTALLATION (CENTRAL & ST. PAUL)	1 (LUMP SUM)	L.S.

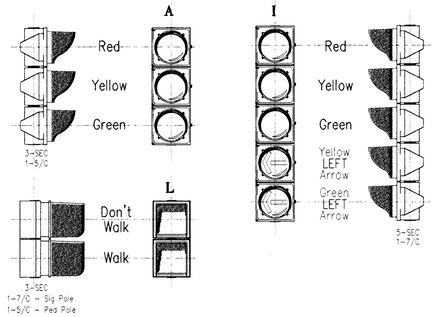


– TYPICAL LOOP DIMENSIONS –
PRESENCE = 12.0m x 2.0m
PULSE = 5.0m x 2.0m

Type 170 Controller System to include:

1. Model 170E controller unit complete with W4IKS (Latest Revisions) traffic program on 412B2 system memory module and (1) Model 400 Modem
2. One (1) Model 332 Cabinet complete with all accessories and shall include:
   - A. One (1) Model 210ECL or 210MS Conflict Monitor and software
   - B. Four (4) Model 430 Transfer Relays.
   - C. Two (2) Model 204 Flashing Units.
   - D. Six (6) Model 200 Switch Packs.
   - E. Three (3) Model 242 DC Isolators.
   - F. One (1) Surge Arrester.
   - G. Eight (8) Model 222 (C-400) 2 Channel Loop Detectors

TYPICAL TRAFFIC SIGNAL HEADS



1. QUANTITIES ARE FOR INFORMATION ONLY. The Contractor shall supply and install all necessary materials and equipment for the complete installation and operation of the traffic signal system whether specifically mentioned or not.
2. ** Removal of existing traffic signal equipment shall include removal of foundations, service boxes, and junction boxes. See construction traffic control regarding removal of existing signals.

RECAPITULATION OF TRAFFIC SIGNAL INSTALLATIONS

BID ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL INSTALLATION (CENTRAL & SHERIDAN)	LUMP SUM	L.S.
TRAFFIC SIGNAL INSTALLATION (CENTRAL & ST. PAUL)	LUMP SUM	L.S.
TRAFFIC SIGNAL INTERCONNECT (WEST ST. TO MCLEAN)	LUMP SUM	L.S.

PROJECT NUMBER	PROJ NUMBER	CAPITAL IMPROVEMENT PROJECT		SHEET
472 - 82906	95 05 E026	WIRING DIAGRAM	BOHMAN COMPANY P.A.	144
DESIGN STAFF · DRAWN STAFF · APPROVED JFB · DATE NOV 98 · SCALE NONE	DIRECTORY CENTZOO · SHEET NAME WIR02R	SIGNALIZATION - CENTRAL and ST PAUL	ENGINEERING, SURVEYING, & PLANNING 316-262-7271 • 315 ELLIS • WICHITA, KANSAS 67211	OF 202