

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)	Each	2
Model 170E Controller	Each	1
Cabinet	Each	1
Concrete Footing - Pole	Each	4
Service Box - 36" Dia.	Each	4
Ground Rod & Clamp	Each	5
Conduit Clamp	Each	As Needed
Pedestrian Signal Lamp L.E.D. (12" Combination)	Each	8
L.E.D. Unit	Each	56
Back Plate For Signal Head (Type A)	Each	8
Back Plate For Signal Head (Type I)	Each	4
Traffic Signal Head - 12" (Type A) w/Mounting Bracket	Each	12
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
Lead-In Wire No. 6 Awg 1/c (Type THHN)	Lin. Ft.	300
Multi-Conductor Cable No. 14 Awg 2/c	Lin. Ft.	30
Multi-Conductor Cable No. 14 Awg 5/c	Lin. Ft.	522
Multi-Conductor Cable No. 14 Awg 7/c	Lin. Ft.	1216
Stranded No. 8 Awg 1/c (Type THHN)(Ground)	Lin. Ft.	885
Traffic Signal Removal (Subsidiary)	Each	1
Conduit 1"	Lin. Ft.	34
Conduit 2"	Lin. Ft.	42
Conduit 3"	Lin. Ft.	362
Video Detection Camera And Mounting Hardware (Riser Brackets)	Each	4
Video Detection Processor Unit (Iteris Vantage Or Apr'vd Equal)	Each	1
Video Power Cable No. 16 Awg 3/c	Lin. Ft.	710
Video Cable 75 ohm Coaxial (Beldon #8281)	Lin. Ft.	710
TV Monitor	Each	1
Street Name Signs	Each	4
No Right Turn on Red (R10-11) w/Mounting Hardware	Each	1
Left Turn Yield On Green (R10-12) w/Mounting Hardware	Each	4
Wind Damper w/Mounting Hardware	Each	4

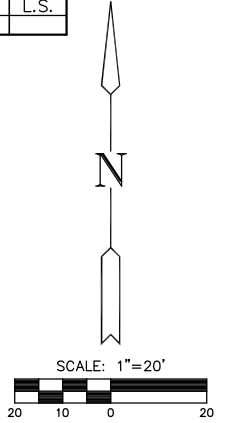
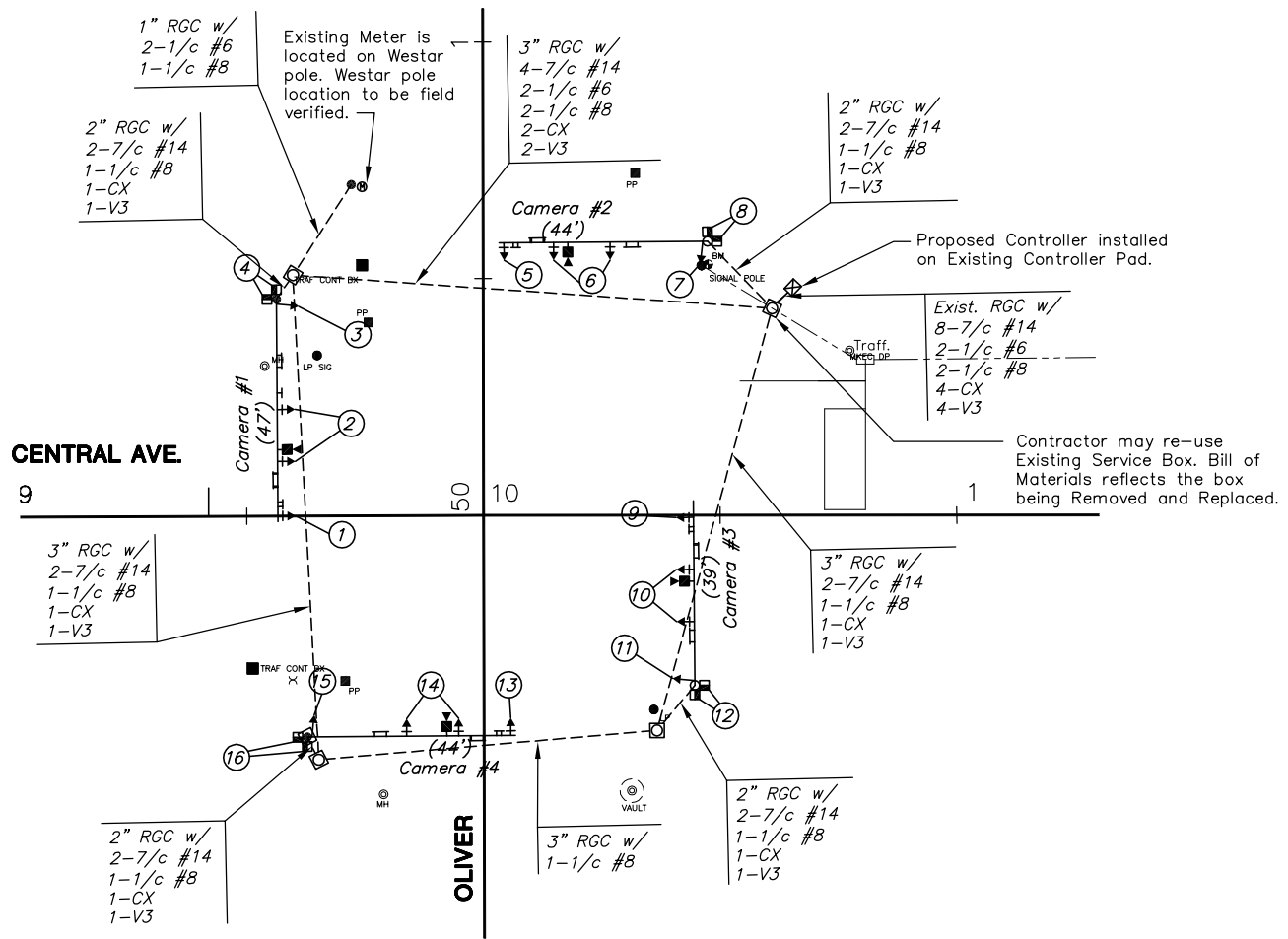
TRAFFIC SIGNAL POLE SUMMARY							
STATION	TYPE	ARM LENGTH	SIGNALS ON ARM	X1	X2	OTHER EQUIP. ON ARM	SIGNALS ON POLE
49+53.18, Lt.	B	44'	3-D	11	10.5	1C, 1F, 1G, 1H	1-D, 2-E
49+63.92, Rt.	B	39'	3-D	11.5	11	1C, 1F, 1G, 1H	1-D, 2-E
50+45.72, Lt.	A	47'	3-D	11.5	11	1C, 1F, 1G, 1H, 1I	1-D, 2-E
50+57.79, Rt.	A	44'	3-D	11	10.5	1C, 1F, 1G, 1H	1-D, 2-E

STREET NAME SIGN SUMMARY	
LEGEND	QUANTITY
Central	2
Oliver	2
TOTAL	4

Letters shall be series "E Modified".

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES		
BID ITEM	QUANTITY	UNIT
TRAFFIC SIGNAL INSTALLATION (CENTRAL AND OLIVER)	1	L.S.
TEMPORARY TRAFFIC SIGNAL	1	L.S.

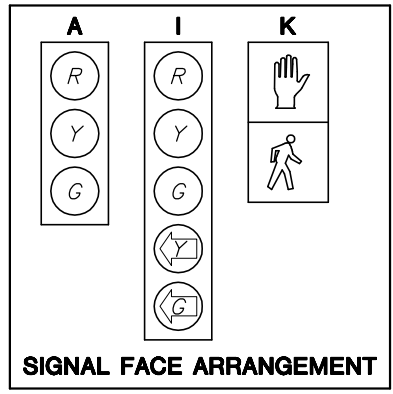
- A Joint Use Steel Pole With Mast Arm
- B Standard Steel Pole With Mast Arm
- C Left Turn Sign
- D Traffic Signal
- E Pedestrian Signal With Push Button
- F Street Name Sign
- G Video Detection Camera
- H Wind Damper
- I No Right Turn Sign



- LEGEND**
- Existing Traffic Signal Pole
  - ◀ Existing Mast Arm w/Signals
  - ▣ Existing Service Box
  - ▣ Existing Controller
  - ▣ Existing Pedestrian Signal
  - △ Existing Junction Box
  - Existing Conduit
  - Ⓜ Existing Meter Box and Power Disconnect
  - Steel Traffic Signal Pole (Joint use)
  - Steel Traffic Signal Pole (Std. Pole)
  - ▶ Traffic Signal Indication (Type A) w/Backplate
  - ▶ Mast Arm Suspended Traffic Signal
  - Video Detection Camera
  - Service Box
  - ▣ Pedestrian Indication
  - ◁ Junction Box
  - Vehicle Detection Zone
  - ① Detector Number
  - Rigid Galvanized Conduit (RGC)
  - PVC Conduit
  - TT Overhead Street Name Sign
  - T Overhead Sign (No Rt. Turn on Red)(R10-11)
  - T Overhead Sign R10-12 (Lt. Turn yield on Green)
  - TT Wind Damper
  - PP Power Pole
  - CX Video Coax Cable
  - V3 Video Power Cable (#16 AWG 3/c)

- CONTROLLER NOTES:**  
The Controller and Cabinet shall include the following:
- Model 170E Controller unit complete with W41KS (53A) Traffic Program on 412B system-memory module, 400 Modem
  - 332 Cabinet with 1-Model 210PC Conflict Monitor (ms)
  - 3-Model 242 Two Channel Isolators
  - 4-Model 430 Transfer Relays
  - 4-Model 200 Switch Panels
  - 2-Model 204 Flasher Units

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	K	2-12"	TYPE II	2
5	I	5-12"	TYPE I	1
6	A	3-12"	TYPE I	2
7	A	3-12"	TYPE III	1
8	K	2-12"	TYPE II	2
9	I	5-12"	TYPE I	1
10	A	3-12"	TYPE I	2
11	A	3-12"	TYPE III	1
12	K	2-12"	TYPE II	2
13	I	5-12"	TYPE I	1
14	A	3-12"	TYPE I	2
15	A	3-12"	TYPE III	1
16	K	2-12"	TYPE II	2



**SIGNAL FACE ARRANGEMENT**  
All lenses in each head shall be L.E.D. unit per note.

\* All Poles, 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.

All portions of the existing traffic signal at the intersection of Central and Edgemoor shall be removed including the traffic signal manholes along all approaches. Refer to the previous note on this page concerning salvaging of portions of the signal.

J:\civil\05709\dwg\signals\05709sig2.dwg 01/29/2007 10:58:27 AM CST

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

**CENTRAL AND OLIVER INTERSECTION**  
PROJECT NAME  
**CENTRAL AND OLIVER INTERSECTION**  
**WIRING PLAN**  
SHEET TITLE

JRA DESIGN BY. JSB DRAWN BY. JRA CHECKED BY.

JAN. 2007 DATE 05709 JOB NO. 46 / 68 SHEET/OF