

| BILL OF MATERIALS | | |
|--|---------|----------|
| ITEM | UNIT | QTY |
| PAD MOUNTED CONTROLLER & CABINET | EACH | 1 |
| TRAFFIC SIGNAL HEAD (SEE CHART A) W/ MOUNTING HARDWARE | EACH | 24 |
| TRAFFIC SIGNAL POLE (SEE CHART B) STEEL | EACH | 4 |
| CONCRETE CONTROLLER PAD | EACH | 1 |
| 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 | 4 |
| SERVICE BOX | EACH | 5 |
| GROUND ROD & CLAMP | EACH | 6 |
| CONDUIT CLAMP | EACH | As Req'd |
| TRAFFIC SIGNAL LAMP RED LED KIT | EACH | 12 |
| TRAFFIC SIGNAL LAMP YELLOW LED KIT | EACH | 12 |
| TRAFFIC SIGNAL LAMP GREEN LED KIT | EACH | 12 |
| TRAFFIC SIGNAL LAMP GREEN ARROW LED KIT | EACH | 4 |
| TRAFFIC SIGNAL LAMP YELLOW ARROW LED KIT | EACH | 4 |
| TRAFFIC SIGNAL LAMP WALK LED KIT | EACH | 8 |
| TRAFFIC SIGNAL LAMP DON'T WALK LED KIT | EACH | 8 |
| ENTRANCE HEAD | EACH | 1 |
| CIRCUIT BREAKER & BOX | EACH | 1 |
| PEDESTRIAN PUSHBUTTON W/SIGN | EACH | 8 |
| LEAD-IN WIRE No. 4 A.W.G. 1/C (TYPE THNN) | LIN. Ft | 572 |
| STANDARD 1C #8 (GROUND) | LIN. Ft | 792 |
| MULTI-CONDUCTOR CABLE No. 16 A.W.G. 3/C (V3) | LIN. Ft | 572 |
| MULTI-CONDUCTOR CABLE No. 14 A.W.G. 7/C | LIN. Ft | 1144 |
| VIDEO CABLE 75 OHM COAXIAL (BELDON 8281) (CX) | LIN. Ft | 572 |
| CONDUIT 1-1/4" | LIN. Ft | 220± |
| CONDUIT 2" | LIN. Ft | 39 |
| CONDUIT 3" | LIN. Ft | 428 |
| CAMERA HOUSING | EACH | 4 |
| VIDEO DETECTION CAMERA and MOUNTING HARDWARE | EACH | 4 |
| VIDEO DETECTION PROCESSOR UNIT | EACH | 4 |
| VIDEO MONITOR | EACH | 1 |
| CAMERA CHARGED COUPLING DEVICE | EACH | 4 |
| REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT ** | L.S. | 1 |
| STREET NAME SIGNS W/MOUNTING HARDWARE (D-3) | EACH | 4 |
| LEFT TURN YIELD ON GREEN W/MOUNTING HARDWARE (R10-12) | EACH | 4 |

GENERAL NOTES

- 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.
- LENGTHS GIVEN ARE TO CENTERLINE OF POLE/BOX AND DO NOT INCLUDE LENGTHS FOR ELBOWS AND RISERS.
- SIGNAL HEADS, PEDESTRIAN SIGNALS, TRAFFIC SIGNS & ETC. INCLUDE ALL BRACKETS, HARDWARE & OTHER INCIDENTALS NECESSARY FOR INSTALLATION.
- SEE CITY OF WICHITA STANDARD SPECIFICATIONS FOR ADDITIONAL WIRING NOTES.
- SALVAGABLE EQUIPMENT (CONTROLLERS, CABINETS, MANHOLE LIDS, POLES, MAST ARMS, ETC.) SHALL BE DELIVERED TO THE CENTRAL MAINTENANCE FACILITY, 1801 S. MCLEAN.

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 & PEDESTAL 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 a 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 'A' - SIGNAL INVENTORY | | | | |
|------------------------------|-------------------------|-------------------------|------------------|-----|
| NO. WAYS | NO. SECTIONS (Per Face) | SIGNAL FACE ARRANGEMENT | MOUNTING TYPE | QTY |
| 1 | 3 | A | RIGID MAST ARM | 8 |
| 1 | 3 | A | VERTICAL BRACKET | 4 |
| 1 | 5 | I | RIGID MAST ARM | 4 |
| 1 | 2 | K (SYMB) | VERTICAL BRACKET | 8 |

TOTAL SIGNAL HEADS THIS PROJECT

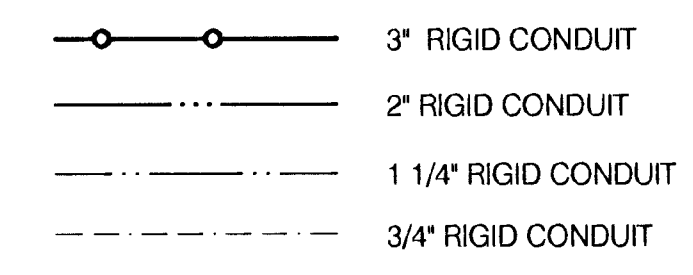
| CHART 'C' - CONDUIT SUMMARY | | | |
|-----------------------------|------------------------|----------------------|--|
| CONDUIT SIZE (Inches) | TRENCHED (Lineal Feet) | PUSHED (Lineal Feet) | |
| 1 1/4" | Rigid Galv 220± | - | |
| 2" | Rigid Galv 38.6 | - | |
| 3" | Rigid Galv 427.6 | - | |

| CHART 'D' - TRAFFIC MANHOLE SUMMARY | | | |
|-------------------------------------|--------|-------|--|
| STATION | DIST. | SIDE | |
| 168+23.79 | 40.17' | LEFT | |
| 168+90.05 | 50.47' | LEFT | |
| 169+49.63 | 31.30' | LEFT | |
| 168+34.47 | 55.69' | RIGHT | |
| 169+36.45 | 66.55' | RIGHT | |

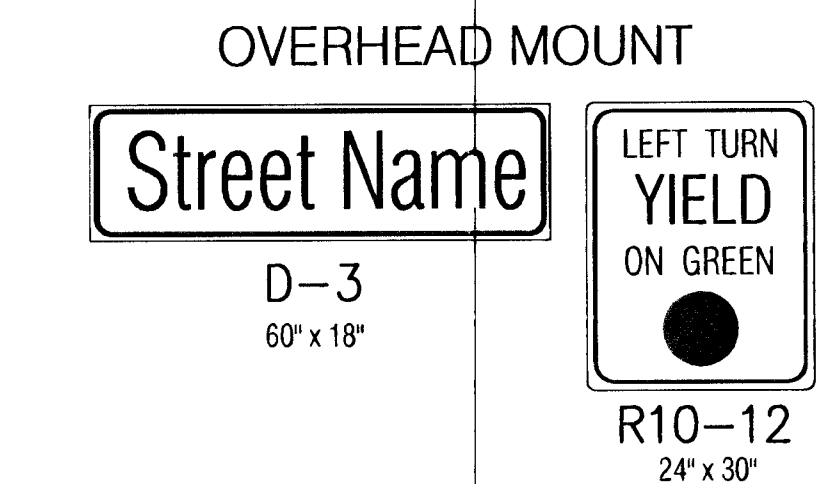
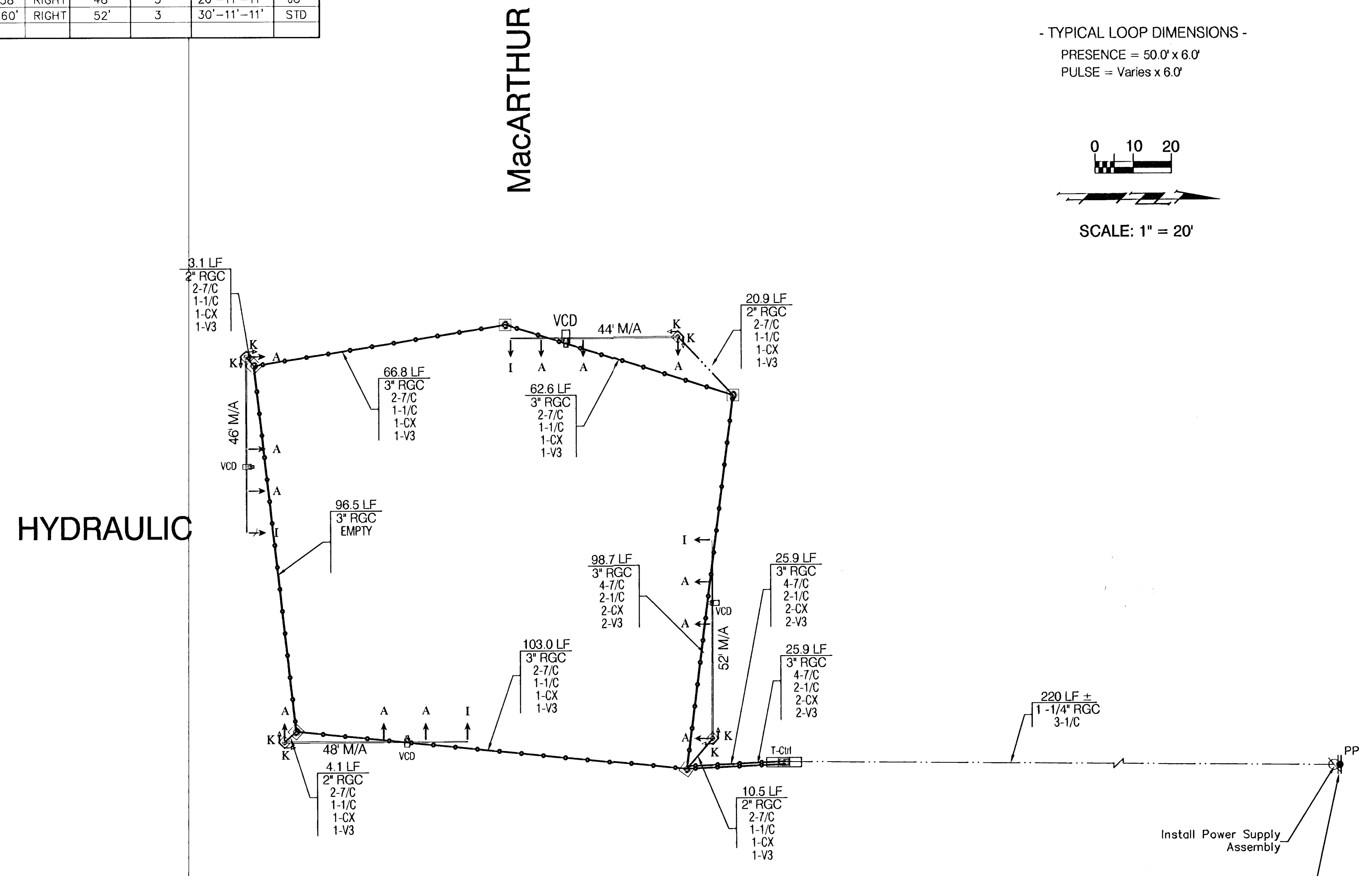
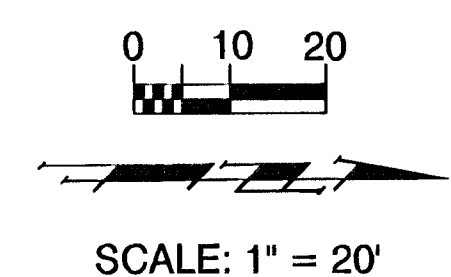
| CHART 'E' - STREET NAME SIGN SUMMARY | | | | |
|--------------------------------------|------|-----|-------|---------------|
| LEGEND | TYPE | QTY | UNITS | SIZE (Inches) |
| HYDRAULIC | D-3 | 2 | EA | 30" x 60" |
| MacARTHUR | D-3 | 2 | EA | 30" x 60" |

- 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.
- ** Removal of existing traffic signal equipment shall include removal of foundations, old service risers, service boxes, and junction boxes to be paid as INCIDENTAL to R/W Clearing & Site Preparation. See construction traffic control regarding removal of existing signals.

| CHART 'B' - TRAFFIC SIGNAL POLES | | | | | | |
|----------------------------------|--------|-------|------------|-----------------------|----------------|------|
| STATION | DIST. | SIDE | ARM LENGTH | NO. OF SIGNALS ON ARM | SIGNAL SPACING | TYPE |
| 168+21.74 | 42.47' | LEFT | 46' | 3 | 24'-11"-11" | STD |
| 169+35.33 | 46.65' | LEFT | 44' | 3 | 25'-11"-8" | STD |
| 168+58.60 | 31.38' | RIGHT | 48' | 3 | 26'-11"-11" | JU |
| 169+43.36 | 58.60' | RIGHT | 52' | 3 | 30'-11"-11" | STD |



- TYPICAL LOOP DIMENSIONS -
 PRESENCE = 50.0' x 6.0'
 PULSE = Varies x 6.0'



- Type 170 Controller System to include:
- Model 170E controller unit complete with W4IKS (56A or Latest Revisions) traffic program on 412B system memory module with a 400 modem.
 - One (1) Model 332 Cabinet complete with all accessories & shall include:
 - One (1) Model 210ECL or 210MS Conflict Monitor with software.
 - Four (4) Model 430 Transfer Relays.
 - Two (2) Model 204 Flashing Units.
 - Twelve (12) Model 200 Switch Packs.
 - Three (3) Model 242 DC Isolators.
 - One (1) Surge Arrester.

