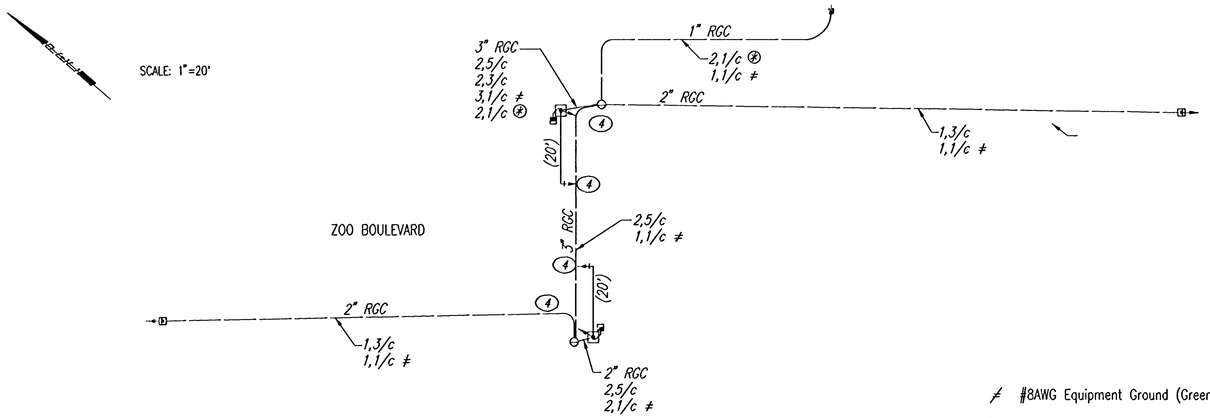
PROJECT NO.	SHEET NO.	TOTAL SHEETS
472-83247 87-TE-0159-01	13	24

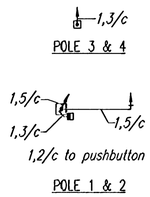


WIRING DIAGRAM

≠ #8AWG Equipment Ground (Green)

⊛ Power Supply

All splices to be in pole base, no splices permitted within servce box.



POLE WIRING DIAGRAMS

Top Coat Finish for Traffic Signal Poles
All visually exposed exterior surfaces shall be coated with a urethane or triglycidyl isocyanurate (TGIC) polyester powder to a minimum dry film thickness (DFT) of 2.0 mils. Prior to application of the top coat, the surface shall be mechanically etched and pre-heated to 450 degrees F for a minimum of one hour. The coating shall be electro-statically applied and cured at a minimum temperature of 400 degrees F. The finished color for the poles shall be black and approved by the Engineer prior to application on the basis of color chip submittals.

Special Finish for Traffic Signal Equipment
The traffic signal controller cabinet, mounting brackets, signal head backs, sign backs, meter box, disconnect box, and miscellaneous hardware shall be shop painted with an aerosol lacquor celulose ester to match the traffic signal pole color. The Contractor shall submit two copies of the proposed coating system to the Engineer for approval prior to application. In addition to the requirements stipulated in the Standard Specifications, banding material shall be coated with ethylene-vinly-alcohol (EVA) copolymer. The color shall be black.

NOTE:
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.

BILL OF MATERIALS

ITEM	UNIT	QUANTITY
POLE MOUNTED CONTROLLER & CABINENT	EACH	1
TRAFFIC SIGNAL HEAD W/MOUNTING HARDWARE	EACH	8
TRAFFIC SIGNAL POLE STEEL (20')	EACH	2
TRAFFIC SIGNAL POLE (JOINT USE) STEEL (35')	EACH	–
CONCRETE CONTROLLER PAD	EACH	–
CONCRETE FOOTING – PEDESTAL	EACH	2
CONCRETE FOOTING – POLE	EACH	2
CONDUIT ELBOW 90°2"	EACH	As Req.
CONDUIT ELBOW 90°3"	EACH	As Req.
BACK PLATE 5" 3 SECTION	EACH	2
BACK PLATE 5" 5 SECTION	EACH	–
TERMINAL BLOCK	EACH	–
SERVICE BOX	EACH	–
JUNCTION BOX (PRE-FAB)	EACH	2
GROUND ROD & CLAMP	EACH	5
TRAFFIC SIGNAL LAMP 135 WATT	EACH	–
LED LENSE	EACH	20
ENTRANCE HEAD	EACH	1
CIRCUIT BREAKER & BOX 30 AMP.	EACH	1
SURGE ARRESTOR – A.C.SERVICE	EACH	1
SURGE ARRESTOR – DETECTOR	EACH	1
PEDESTRIAN PUSHBUTTON W/SIGN	EACH	2
6 PR. COMMUNICATION CABLE	LIN.FT.	–
DETECTOR LOOP WIRE NO. 14 AWG 1/c	LIN.FT.	–
LEAD-IN WIRE NO.6 AWG /c	LIN.FT.	–
MULTI-CONDUCTOR CABLE NO.14 AWG 7/c	LIN.FT.	–
MULTI-CONDUCTOR CABLE NO.14 AWG 5/c	LIN.FT.	400
MULTI-CONDUCTOR CABLE NO.14 AWG 3/c	LIN.FT.	500
SHEILDED DETECTOR LEAD-IN NO.14 AWG 2/c	LIN.FT.	–
CONDUIT 3/4"(RGC)	LIN.FT.	–
CONDUIT 1"(RGC)	LIN.FT.	120
CONDUIT 2"(PVC)	LIN.FT.	–
CONDUIT 2"(RGC)	LIN.FT.	320
CONDUIT 3"(RGC)	LIN.FT.	100
#8 AWG GROUND (GREEN)	LIN.FT.	650
STREET NAME SIGN	EACH	–
VIDEO DETECTION CAMERA (VANTAGE OZ2), MOUNTING HARDWARE	EACH	–
VIDEO DETECTION UNIT (VANTAGE EDGE MODULE)	EACH	–
VIDEO POWER CABLE #16 A.W.G. 3/C	LIN.FT.	–
VIDEO CABLE 75 OHM COAXIAL (BELDON #8281 OR APPROVED EQUAL)	LIN.FT.	–
TV MONITOR	EACH	–

–QUANTITIES FOR INFORMATION ONLY–

NOTE: The traffic signal system shall be complete and the contractor shall furnish and install all equipment and materials necessary for the satisfactory operation of electrical apparatus and for the complete operation of the traffic signal system whether specifically mentioned or not.

TRAFFIC SIGNAL POLE SUMMARY

POLE NO	TYPE①	ARM LENGTH	NO.OF SIGNALS ON ARM	BRACKET TYPE	X1	X2	X3	NO.OF SIGNALS ON POLE	BRACKET TYPE	NO.OF PUSH BUTTONS ON POLE	REMARKS
1	B	20'	1	I	20	—	—	2	2-III	1	
2	B	20'	1	I	20	—	—	2	2-III	1	
3	A	——	——	——	—	—	—	1	III	——	
4	A	——	——	——	—	—	—	1	III	——	

① A–15'Pedestal (Alum.)
B–20'Steel with Mast Arm(s)
C–35'Steel (Joint Use) with Mast Arm(s)
D–40'Steel with Mast Arm

TYPE 170 CONTROLLER SETTINGS

INTERVAL	PHASE 1	2	3	4	5	6	7	8
MAX 1	——	——		80				
MAX 2	——	——		80				
WALK	——	7.0		——				
FLASH DW	——	13.7		——				
MAX. INITTIAL	——	——		——				
MIN. GREEN	——	20		40				
T B R	——	——		——				
T T R	——	——		——				
PASSAGE	——	——		2.0				
MIN. GAP	——	——		——				
ADDED ACTUATION	——	——		——				
YELLOW	——	——		4.0				
RED CLEAR	——	——		1.0				
RED REVERT	——	——		——				

SUMMARY OF TRAFFIC SIGNAL HEADS

NUMBER	# SECTIONS	SIZE	QUANTITY
4	3	12"	4
2A	2	12"	2
F	2	12"	2
TOTAL			8

FUNCTION TABLE

FUNCTION	PHASE 1	2	3	4	5	6	7	8
VEHICLE RECALL				X				
PED RECALL								
RED LOCK								
YELLOW LOCK		X		X				
PERMIT		X		X				
PED PHASES		X						
LEAD PHASES	X		X		X		X	
DOUBLE ENTRY								
SEQUENCIAL TIMING								
START-UP YELLOW				X				
OVERLAP A								
OVERLAP B								
OVERLAP C								
OVERLAP D								
EXCLUSIVE								
SIMULTANEOUS GAP								

SERVICE BOX SUMMARY

STATION	DIST.–SIDE
72+70.3	110' Rt.
72+77.9	43.9' Rt.

RECAPITULATION OF TRAFFIC SIGNAL QUANTITIES

ITEM	UNIT	QUANTITY
TRAFFIC SIGNAL INSTALLATION (Zoo Blvd. & 9th Street) ⊕	LUMP SUM	LUMP SUM

⊕ Non-Participating

ZOO BOULEVARD BIKE PATH
CENTRAL TO WESTDALE

TRAFFIC SIGNAL WIRING AND QUANTITIES

Professional Engineering Consultants, P.A.
303 S. TOPEKA • WICHITA, KANSAS 67202
316-262-2691 • FAX 316-262-3003

Designed by	BER	Checked by	
Drawn by	SAW	Date	SEPTEMBER 2001
		Job No.	96450-002

DSNR: SAD OPER: SAD SCALE: 1=20.00
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