

BILL OF MATERIALS (For Information Only)		
ITEM	QUANTITY	UNIT
Traffic Signal Pole Steel w/Mastarm (Std.)	2	Each
Traffic Signal Pedestal Aluminum (15')	2	Each
Concrete Footing - Pole	2	Each
Concrete Footing - Pedestal	2	Each
Service Box - 36" Dia.	2	Each
Ground Rod and Clamp	4	Each
Conduit Clamp	As Needed	Each
Pedestrian Signal Lamp L.E.D. (12" Combination)	4	Each
12" L.E.D. Unit	22	Each
Back Plate for Signal Head (Type A)	4	Each
Entrance Head	1	Each
Circuit Breaker and Box	1	Each
Traffic Signal Head - 12" (Type A) w/Mounting Bracket	6	Each
Traffic Signal Head - 12" (Type A,W,F.) w/Mounting Bracket	2	Each
Pedestrian Signal - 12" (Type K) w/Mounting Bracket	2	Each
Pedestrian Pushbutton w/Sign	2	Each
Pole Mounted Cabinet and Controller System - Type 2070 (See Note)	1	Each
Lead-In Wire No. 8 Awg 1/c (Type THHN)	96	L.F.
Multi-Conductor Cable No. 14 Awg 2/c	7	L.F.
Multi-Conductor Cable No. 14 Awg 3/c	471	L.F.
Multi-Conductor Cable No. 14 Awg 5/c	216	L.F.
Multi-Conductor Cable No. 14 Awg 7/c	227	L.F.
Stranded No. 8 Awg 1/c (Type THHN)(Ground)	557	L.F.
Conduit 1" (RG)	42	L.F.
Conduit 2" (RG)	319	L.F.
Conduit 3" (RG)	91	L.F.
School Crossing Sign (S1-1) w/Mounting Hardware	2	Each
School Speed Limit Sign (S5-1) w/Mounting Hardware	2	Each
End School Zone (S5-2) w/Mounting Hardware	2	Each
Supplemental Warning Arrow (W16-pL) w/Mounting Hardware	2	Each
Remove Existing Traffic Signals	1	Lump Sum

EQUIPMENT SPECIFICATIONS 2070 CONTROLLER

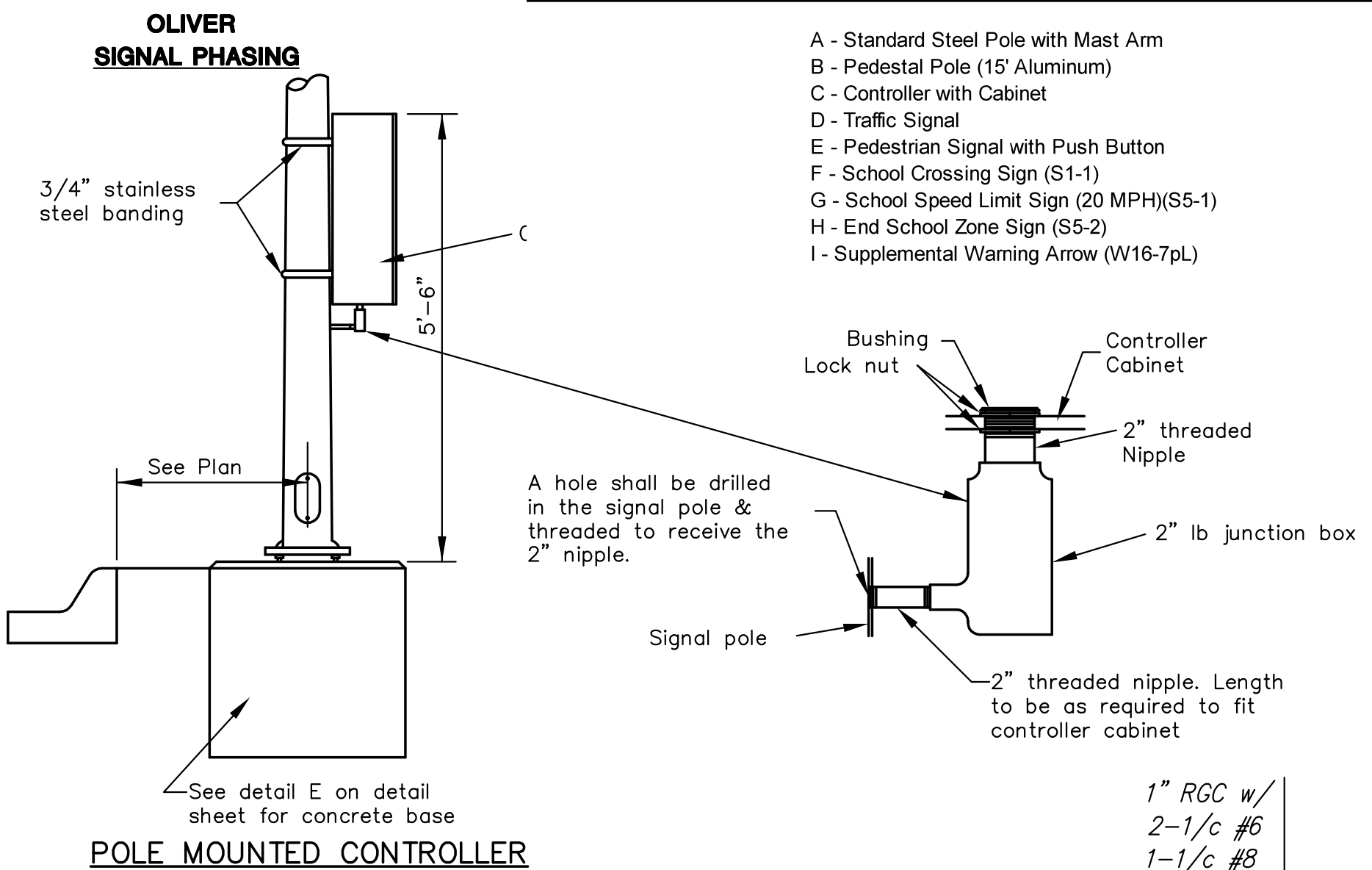
- Controller Units: The 2070L controllers supplied shall meet the requirements:
- The 2070L controllers shall have a 19" EIA rack mountable chassis (mated to the 170 cabinet). Controllers shall be EAGLE or ECONOLITE.
 - 2070-1B CPU module with RJ45 Ethernet port.
 - 2070-2A C1 field I/O module for compatibility with CalTrans style C1 connector.
 - 2070-3B 8x40 front panel with LCD display.
 - 2070-4A 10 amp power supply.
 - 2070-7A asynchronous serial communications module (RS-232).
 - Any unused slot position shall have a cover plate.
- B. Conflict monitors:
The Conflict Monitors supplied shall be 2010 ECL conflict monitors.
- C. 1-Loop-back cable for 2070-2A Field I/O (Type 170, 104 pin and 37 pin connector).
- D. 1-Loop-back cable for 2070-7A port.

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.

TYPE 2070 CONTROLLER SETTINGS																	
INTERVAL	"WAPITI PROGRAM"								NORMAL DISPLAY								
	1	2	3	4	5	6	7	8	TIME CLOCK	FEATURES							
	WBLT	EB	SBLT	NB	EBLT	WB	NBLT	SB		1	2	3	4	5	6	7	8
MAX	0		30		30				0	YEAR	VEH RECALL		X				
MAX 2	1		30		30				1	MONTH	PED RECALL						
WALK	2		0		0				2	DAY/MONTH	RED LOCK						
FL DW	3		0		0				3	DAY/WEEK	YEL LOCK	X	X				
MAX INIT.	4		30		30				4	HOUR	Ø PERMIT	X	X				
MIN GREEN	5		30		30				5	MINUTE	PED PHASES			X			
TBR	6		10		10				6	SECOND	LEAD PHASES	X	X				
TTR	7		10		10				7		DBL ENTRY						
	8								8		SEQUENTIAL						
PASSAGE	9	0.0		0.0					9		START UP YEL						
MIN GAP	a	0.0		0.0					a		OVERLAP A						
ADD ACT	b	0.0		0.0					b		OVERLAP B						
YELLOW	c	4.0		4.0					c		OVERLAP C						
RED CLR.	d	1.5		1.5					d		OVERLAP D						
RED REV.	e	0.0		0.0					e		EXCLUSIVE						
WALK II	f	0.0		0.0					f		SIM GAP						

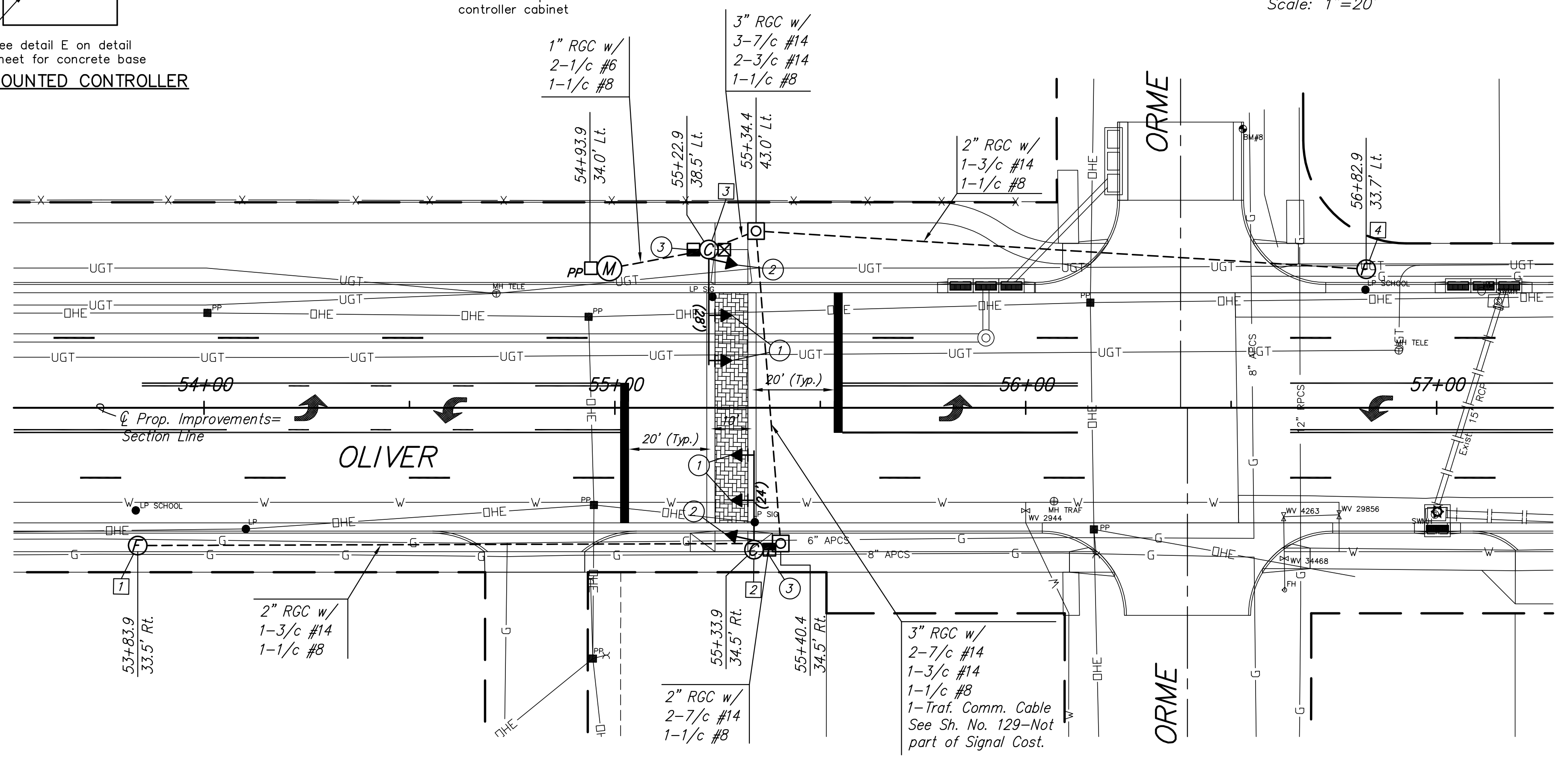
TRAFFIC SIGNAL POLE SUMMARY						
POLE NO.	STATION	TYPE	ARM LENGTH	SIGNALS ON ARM	SIGNALS/EQUIPMENT ON POLE	SIGNALS ON POLE
1	53+83.9, 33.5' Rt.	C	-	-	1-D	1-G, 1-H
2	55+33.9, 34.5' Rt.	A	24'	2-D	1-D, 1-E	1-F, 1-I
3	55+22.9, 38.5' Lt.	A	28'	2-D	1-C, 1-D, 1-E	1-F, 1-I
4	56+82.9, 33.7' Lt.	C	-	-	1-D	1-G, 1-H

- A - Standard Steel Pole with Mast Arm
- B - Pedestal Pole (15' Aluminum)
- C - Controller with Cabinet
- D - Traffic Signal
- E - Pedestrian Signal with Push Button
- F - School Crossing Sign (S1-1)
- G - School Speed Limit Sign (20 MPH)(S5-1)
- H - End School Zone Sign (S5-2)
- I - Supplemental Warning Arrow (W16-7pL)



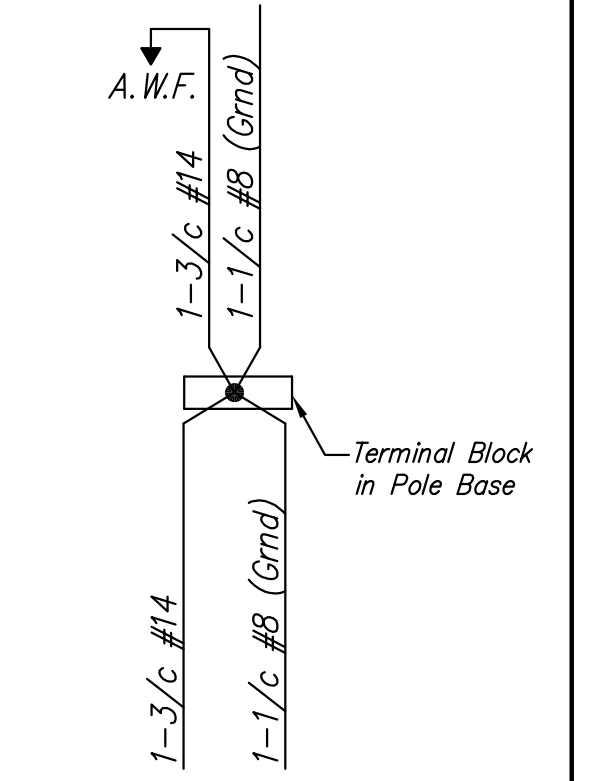
- GENERAL NOTES**
- Conduit shall be jacked or bored under existing pavement and under new pavement that has been placed prior to conduit installation.
 - Placement of Service/Junction Boxes, Conduit Runs and Controller are typical and may be adjusted as directed by the Engineer to facilitate installation.
 - The Contractor shall contact utility companies which may be affected by the installation of Traffic Signalization prior to any construction.
 - Westar Power Pole Baseline Sta. 54+93.9, 34.0' Lt. Install Meter and Power Disconnect. See Power Pole Details.
 - Contractor shall install a 1" rigid galvanized conduit from the pole located at Sta. 54+93.9, 34.0' Lt., to the traffic signal controller located at Sta. 55+22.9, 38.5' Lt., to carry the metered conductor from the meter to the traffic signal controller. Meter address is 600 S. Oliver.
 - See Signal Pole Details for additional Traffic Signal Structures requirement. See Pavement Marking Plan for pavement marking lay-out.
 - All poles, mastarms and cabinet shall be powder coated black.
 - Installation of signs called-out on this sheet shall be Subsidiary to Pedestrian Signal.
 - Contractor shall provide Temporary Signal at Crosswalk Location or provide Flag Persons during School Crossing Periods.

All Poles, Mastarms and Cabinet shall be Powder Coated Black.

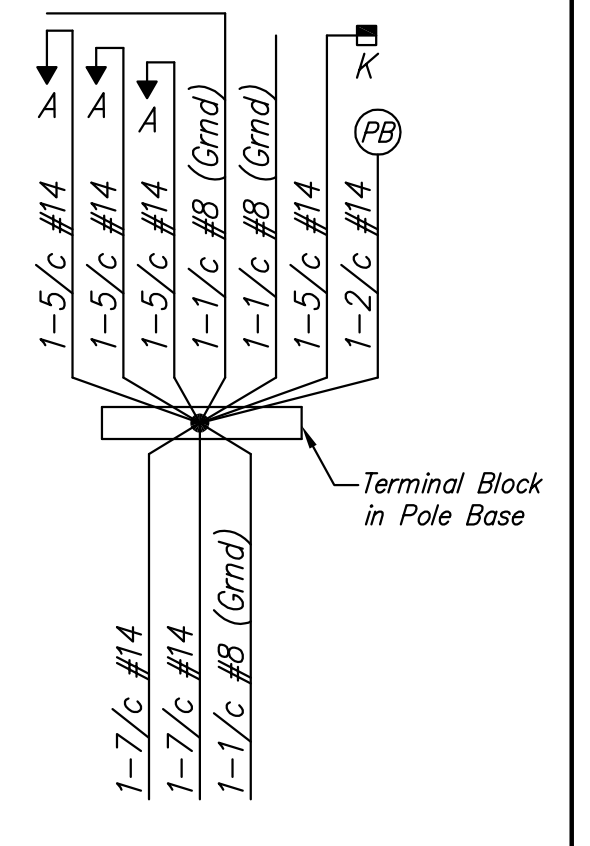


STATE	PROJECT NO.	YEAR	SHEET NO.	SHEETS
KANSAS	87 N-0357-01	2008	120	185

- LEGEND**
- ⊕ Advance Warning Flasher on Signal Pedestal with Signs S5-1(24"x48") and S5-2(24"x30")
 - ⊙ Crosswalk Signal Pole, Mastarm and Sign S1-1 (36"x36") with W16-7pL (24"x12")
 - Traffic Signal Indication (Type A) w/Backplate
 - ↓ Mast Arm Suspended Traffic Signal
 - Service Box
 - ⊠ Controller
 - ⊞ Pedestrian Indication
 - Rigid Galvanized Conduit (RGC)
 - Ⓜ Meter Box and Power Disconnect
 - PP Power Pole



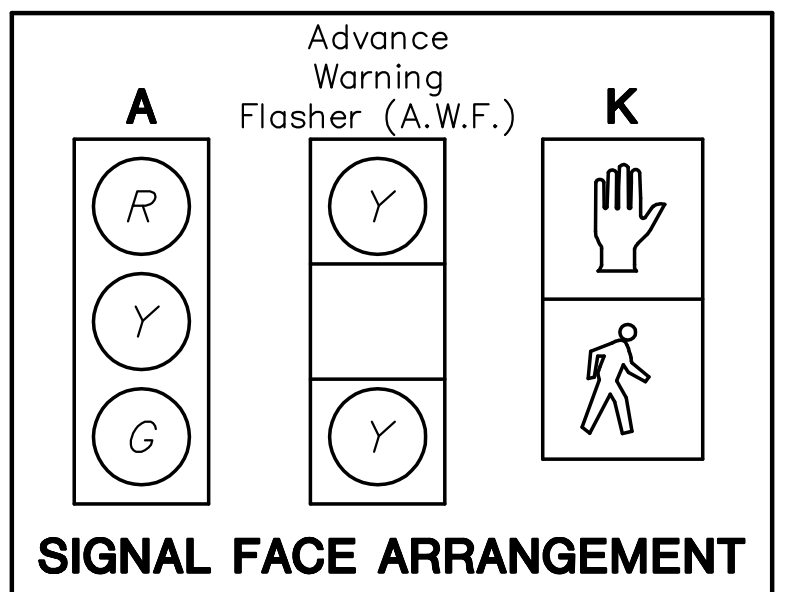
Pole 1 & 4



Pole 2 & 3

TRAFFIC SIGNAL HEAD SUMMARY				
SIGNAL NO.	TYPE	SIZE	MOUNTING BRACKET	QUANTITY
1	A	3-12"	TYPE I	4
2	A	3-12"	TYPE IV*	2
3	K	2-12"	TYPE IV*	2
4	A.W.F.	3-12"	TYPE V	2

* One Type IV Bracket will support 1 Type A and 1 Type K Signal Head.
All Signal Heads to be L.E.D.



All lenses in each head shall be L.E.D. unit per note.

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.

J:\Civil\04221\dwg\signal\04221sig03.dwg 06/15/2007 05:30:36 AM CST

KANSAS DEPARTMENT OF TRANSPORTATION

OLIVER IMPROVEMENTS

SCHOOL CROSSING

SIGNAL PLAN

PROJECT NO. 87 N-0357-01 SEDGWICK CO.

M K E C ENGINEERING CONSULTANTS, INC.

WICHITA, KANSAS

DESIGNED BY: JRA	CHECKED BY: JRA
DRAWN BY: JSB	DATE: JUN 07

SHEET 120 OF 185