

TRAFFIC SIGNAL QUANTITIES

ITEM	UNIT	EST. QUANTITIES (*)
Model 2070 Controller (See Inclusive List Below)	Each	City to Provide
Controller Cabinet	Each	1
Concrete Base for Controller	Each	1
Traffic Signal Pole w/ Mast Arm (See Chart B)	Each	4
Pedestrian Crossing Signal Pole	Each	2
Concrete Base for Signal Pole	Each	4
Concrete Base for Pedestrian Signal Pole	Each	2
Traffic Signal Head (Type A) w/ Reflectorized Backplate & Brkt	Each	6
Traffic Signal Head (Type I) w/ Reflectorized Backplate & Brkt	Each	4
Traffic Signal Head (Type A) (Type III)	Each	4
Traffic Signal Head (Type K) (Type II)	Each	8
R10-12 (Left Turn On Green) w/ Mtg. Brackets	Each	4
D3 Assy. (Street Name Size) w. Mtg. Brackets	Each	4
Pedestrian Pushbutton w/ Sign (**)	Each	8
Ground Rod & Clamp	Each	7
Traffic Manhole	Each	4
TRAFFIC SIGNAL LAMP RED LED KIT	Each	14
TRAFFIC SIGNAL LAMP YELLOW LED KIT	Each	14
TRAFFIC SIGNAL LAMP YELLOW ARROW LED KIT	Each	4
TRAFFIC SIGNAL LAMP GREEN LED KIT	Each	14
TRAFFIC SIGNAL LAMP GREEN ARROW LED KIT	Each	4
PEDESTRIAN LED W/COUNTDOWN	Each	8
3" RGC Conduit	L.F.	544
2" RGC Conduit	L.F.	49
1" RGC Conduit	L.F.	-
Video Detection Camera and Mounting Hardware	Each	4
Video Detection Processor	Each	1
Camera Housing	Each	4
Video Power Cable No. 16 AWG 3/C (V3)	L.F.	633
Video Cable 75 OHM Coaxial (Belden 8281)(CX)	L.F.	633
TV Monitor	Each	1
Camera Charged Coupling Device	Each	4
Multi-Conductor Cable 7C #14 AWG	L.F.	1,500
Ground Wire 1C (THHN #8 AWG)	L.F.	412
Power Supply Wire (THHN #6 AWG)	L.F.	As Required

(*) For Information Only
 (**) Pedestrian Pushbutton
 Polara 4--Wire Navigator Pushbutton Station
 Polara 4--Wire Navigator Ped Head Control Unit

GENERAL NOTES

- The Contractor shall be responsible for furnishing and installing the controller, cabinet, concrete base, and all other equipment necessary for the complete and satisfactory operation of the traffic signal, whether said equipment is specifically mentioned or not.
- Lengths given are to the centerline of poles/boxes and do not include lengths for elbows and risers.
- Signal heads, pedestrian signals, traffic signals, & etc. shall **INCLUDE** all brackets, hardware, & other incidentals necessary for installation.
- 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° 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° Fahrenheit and a maximum of 400° 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 steel substrate in a convection oven to a minimum of 225° 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	TYPE I	6
1	5	I	TYPE I	4
1	3	A	TYPE III	4
1	2	K (SYMB)	TYPE II	8

CHART 'B' - TRAFFIC SIGNAL POLES

STATION	DIST.	SIDE	ARM LENGTH	NO. OF SIGNALS ON ARM	SIGNAL SPACING	TYPE*
Sta. 25+83.18	DOUGLAS	52.4' Lt.	36'	3	14.0' - 11.0' - 7.5'	STD
Sta. 25+93.88	DOUGLAS	31.1' Rt.	35'	2	23.0' - 9.0'	STD
Sta. 26+57.63	DOUGLAS	36.9' Lt.	30'	2	17.0' - 9.0'	STD
Sta. 26+59.50	DOUGLAS	43.0' Rt.	43'	3	21.0' - 11.0' - 7.5'	STD

* The Contractor Shall Verify Signal Pole Types w/ Westar PRIOR to Ordering

CHART 'C' - CONDUIT

CONDUIT SIZE	TRENCHED	PUSHED
1" RGC	As Necessary	-
2" RGC	49'	-
3" RGC	544'	-

CHART 'D' - TRAFFIC MANHOLE SUMMARY

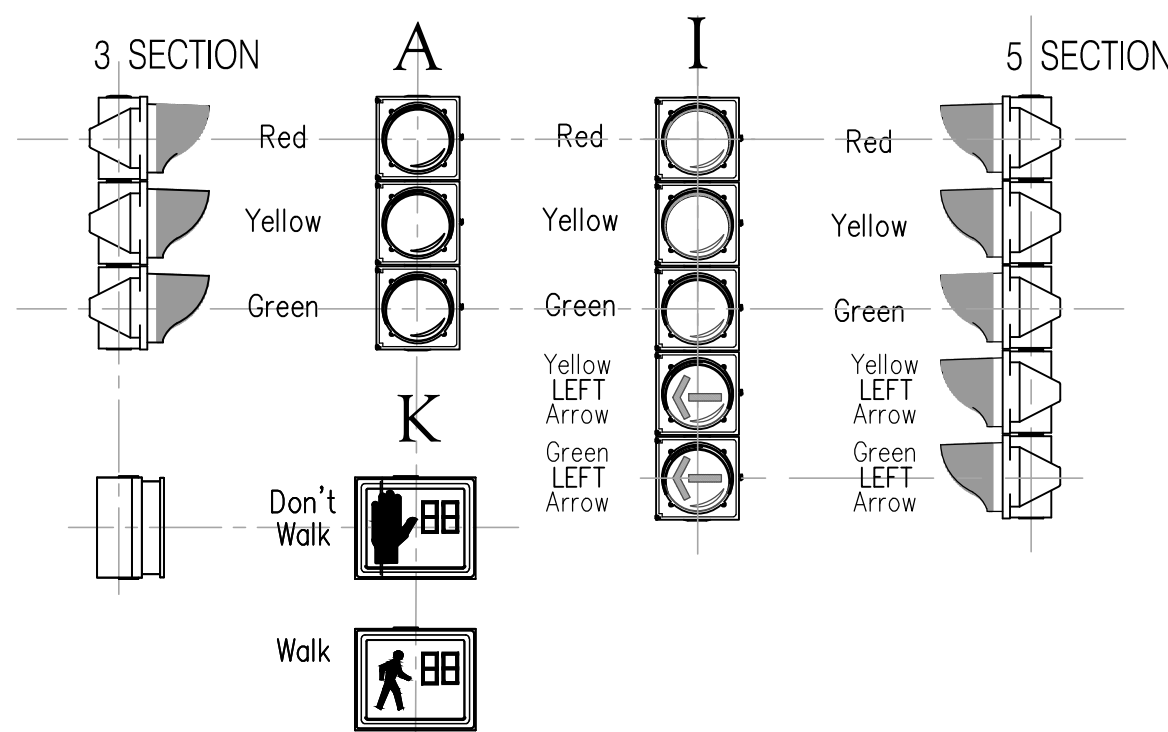
STATION	DISTANCE	SIDE
Sta. 25+86.72	DOUGLAS	48.9' Lt.
Sta. 25+96.71	DOUGLAS	28.3' Rt.
Sta. 26+56.15	DOUGLAS	48.6' Lt.
Sta. 26+55.98	DOUGLAS	39.4' Rt.

CHART 'E' - PEDESTRIAN SIGNAL POLE

STATION	DISTANCE	SIDE
Sta. 25+85.50	DOUGLAS	26.0' Rt.
Sta. 25+95.20	DOUGLAS	57.0' Lt.

CHART 'F' - STREET NAME SIGN SUMMARY

STATION	LEGEND	TYPE	QTY	UNITS	SIZE	ADDRESS
Sta. 25+83.18	HYDRAULIC	D-3	1	EA	2.5' X 5.0'	100 N
Sta. 25+93.88	DOUGLAS	D-3	1	EA	2.5' X 5.0'	1600 E
Sta. 26+57.63	DOUGLAS	D-3	1	EA	2.5' X 5.0'	1700 E
Sta. 26+59.50	HYDRAULIC	D-3	1	EA	2.5' X 5.0'	100 S



TYPE 2070 CONTROLLER SPECIFICATIONS

A. Controller Unit: The 2070L controllers supplied shall meet the requirements outlined in CalTrans TEES 2002 (latest revision), and the following requirements:

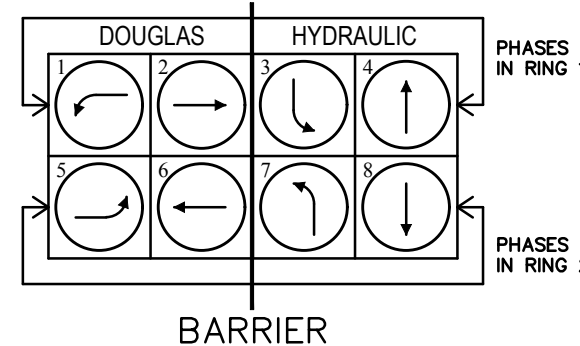
- The 2070L controllers shall have a 19" EIA rack mountable chassis (mated to the 107 cabinet).
- 2070-1B CPU module with RJ-45 Ethernet port.
- 2070-2A C1 field I/O module for compatibility with CalTrans style C1 connector.
- 2070-3B 8X40 front panel with LCD display.
- 2070-4A 10 amp power supply.
- 2070-7A asynchronous serial communications module (RS-232).
- Any unused slot position shall have a cover plate.

B. Conflict Monitors supplied shall be 2010 ECL conflict monitors with Ethernet Capabilities.

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.

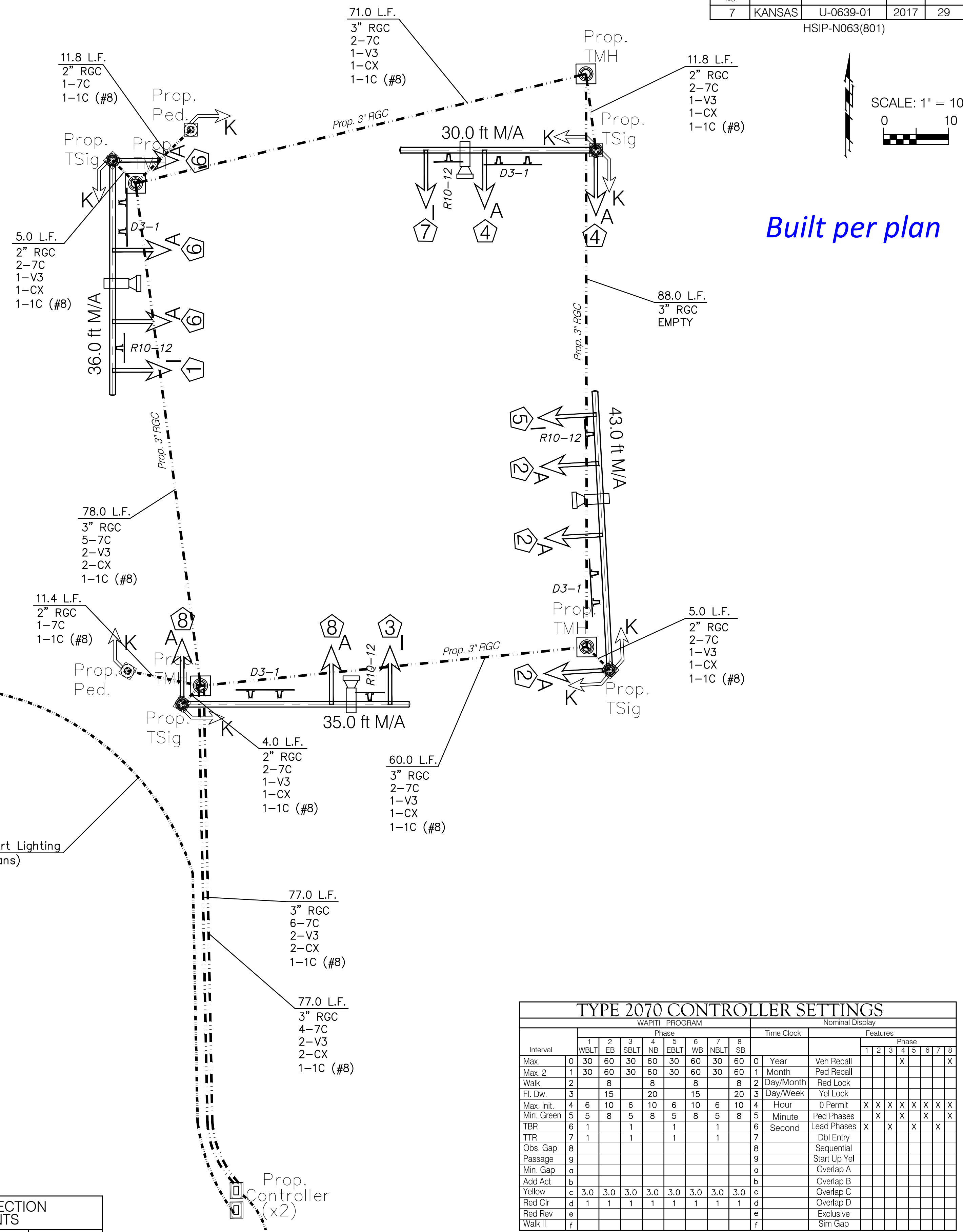
PHASE DIAGRAM



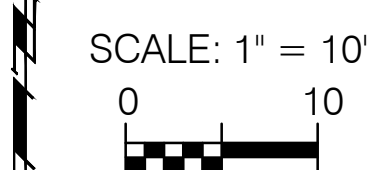
PEAK HOUR INTERSECTION TURN MOVEMENTS

DIRECTION OF TRAVEL	# OF LEFT TURNS (Per Hour)	# OF THRU TRAFFIC (Per Hour)	# OF RIGHT TURNS (Per Hour)
SOUTHBOUND	41	107	95
WESTBOUND	50	454	26
NORTHBOUND	37	139	65
EASTBOUND	45	508	48

For Information Only



Built per plan



TYPE 2070 CONTROLLER SETTINGS

Interval	WAPITI PROGRAM								Time Clock	Nominal Display								
	1	2	3	4	5	6	7	8		Phase				Features				
Max.	0	30	60	30	60	30	60	30	0	Year	Veh Recall				X			X
Max. 2	1	30	60	30	60	30	60	30	1	Month	Ped Recall							
Walk	2	8	8	8	8	8	8	8	2	Day/Week	Red Lock							
Fl. Dw.	3	15	20	20	15	20	20	3	3	Day/Week	Yel Lock							
Max. Init.	4	6	10	6	10	6	10	4	4	Hour	0 Permit	X	X	X	X	X	X	X
Min. Green	5	5	8	5	8	5	8	5	5	Minute	Ped Phases	X	X	X	X	X	X	X
TBR	6	1	1	1	1	1	1	6	6	Second	Lead Phases	X	X	X	X	X	X	X
TTR	7	1	1	1	1	1	1	7	7		Dot Entry							
Oto. Gap	8							8	8		Sequential							
Passage	9							9	9		Start Up Yel							
Min. Gap	a							a	a		Overlap A							
Add Act	b							b	b		Overlap B							
Yellow	c	3.0	3.0	3.0	3.0	3.0	3.0	c	c		Overlap C							
Red Clr	d	1	1	1	1	1	1	d	d		Overlap D							
Red Rev	e							e	e		Exclusive							
Walk II	f							f	f		Sim Gap							

Drawing File: E://Projects/Douglas (Washington to Grove)/Civil 3d/Douglas Base

Design: LP
 Drawn: LP
 Approved: T Azicre
 Scale: NOTED

Project No. 1307-E933

CAPITAL IMPROVEMENT PROJECT

DOUGLAS & HYDRAULIC
 WIRING DIAGRAM

DOUGLAS - WASHINGTON to GROVE

Baughman Company, P.A.
 315 Ellis St. Wichita, KS 67211 P 316-263-7271 F 316-262-0449
 ENGINEERING | SURVEYING | PLANNING | LANDSCAPE ARCHITECTURE

MARCH, 2017

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