

CONTROLLER NOTES FOR RAMP "CR2", "CR3", SANDHILL RD. AND CHARLESTON BLVD.

FED. RD. REG. NO.	STATE	PROJECT NO.	COUNTY	SHEET NO.
8	NEVADA	BI-BIG-515-1(17)1	CLARK	T-2

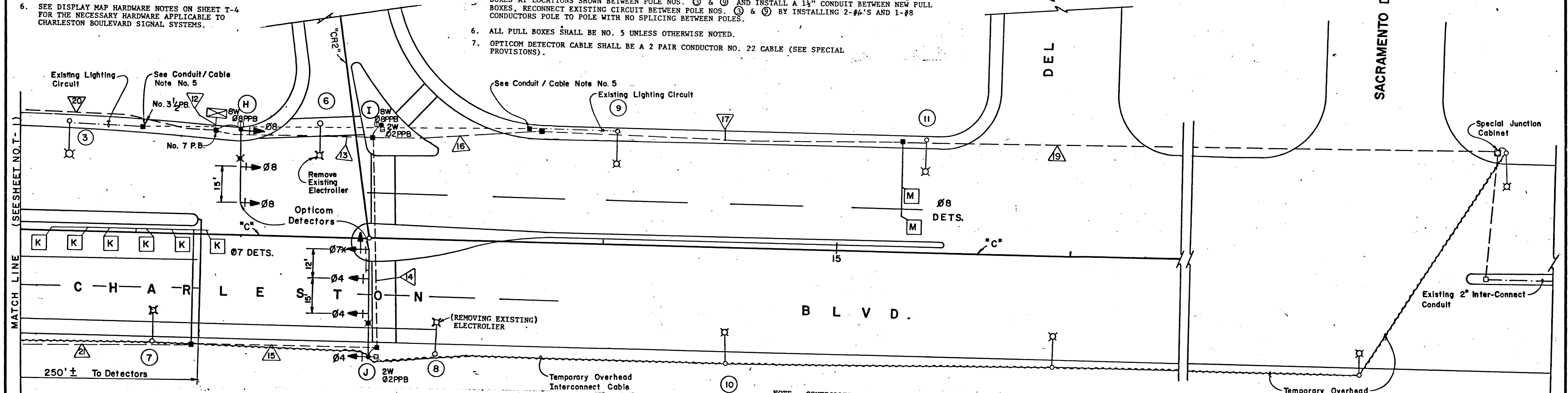
RUN NO.	FROM	TO	CONDUIT SIZE	SIGNAL CABLE	DET. LEADS	LIGHTING CIRCUIT	GRND WIRE	INTER-CONNECT	SERVICE	OPTICOM CABLE
12	CONTROLLER	PULL BOX CONTROLLER	2-3"	⊙⊗	XXX	2-#10	1-#2 1-#8	XX	2-#2 2-#6	XX
13	PULL BOX CONTROLLER	PULL BOX POLE	3"	⊙⊗	XXX	2-#10	1-#8	X		X
14	PULL BOX POLE	PULL BOX POLE	3"	⊙	XX	2-#10	1-#8			X
15	PULL BOX POLE	PULL BOX POLE	3"	⊙	XX	2-#10	1-#8			X
16	PULL BOX POLE	PULL BOX POLE	3"	⊙	XX	2-#10	1-#8			X
17	PULL BOX JCT.	PULL BOX JCT.	1 1/2"		X			X		
18	PULL BOX JCT.	PULL BOX JCT.	1 1/2"		X			X		
19	PULL BOX JCT.	PULL BOX JCT.	1 1/2"		X			X		
20	PULL BOX JCT.	PULL BOX JCT.	1 1/2"		X			X		
21	PULL BOX JCT.	PULL BOX JCT.	1 1/2"		X			X		
22	PULL BOX POLE	PULL BOX POLE	1 1/2"				1-#8		2-#4	

- EACH CONTROLLER SHALL BE A TYPE 90 HOUSED IN A TYPE "R" CABINET WITH EXHAUST FAN AND FLOURESCENT LIGHT FIXTURE. THE CABINET SHALL BE PAINTED WHITE INSIDE AND OUT. THE CONTROLLER AND CABINET SHALL MEET CURRENT NEMA STANDARDS, SPECIAL PROVISIONS, AND BE FUNCTIONAL AS SHOWN IN PHASE DIAGRAMS.
- EACH LOOP DETECTOR LEAD-IN CABLE (IDENTIFIED BY A LOWER CASE ALPHABETICAL LETTER) REPRESENTS A SEPARATE SENSOR UNIT OR CHANNEL AS DESCRIBED IN "VEHICLE DETECTORS" SECTION OF THE SPECIAL PROVISIONS. SENSOR UNITS SHALL BE DETECTOR SYSTEM, CANOGA CONTROLS OR APPROVED EQUAL. COST OF SENSOR UNITS WILL BE PAID FOR UNDER BID ITEM "LOOP DETECTOR AMPLIFIER CHANNELS (NEW CABINET)" EACH. (SEE NOTES ON PLANS FOR TYPES.)
- PREEMPTION OF SIGNALS BY EMERGENCY VEHICLES ENTERING THE INTERSECTION SHALL BE PROVIDED BY INSTALLING OPTICOM EQUIPMENT IN THE CONTROLLER CABINET AS DESCRIBED IN THE SPECIAL PROVISIONS. THE COST OF THE OPTICOM EQUIPMENT SHALL BE INCLUDED WITH THE COST OF THE CONTROLLER CABINET. THE COST OF THE OPTICAL DETECTORS SHALL BE PAID FOR UNDER BID ITEM "EMERGENCY VEHICLE DETECTORS" EACH.
- EACH CONTROLLER, INTERFACE UNIT, MODIFICATION KIT, AND OTHER EQUIPMENT SHALL BE COMPATIBLE WITH THE AREA WIDE TRAFFIC CONTROL SYSTEM INTERSECTION OPERATION AND MONITORING. THE FOLLOWING ITEMS ARE REQUIRED TO BE WIRED IN THE CONTROLLER CABINET TO BRING IT "ON LINE" WITH THE SYSTEM.
 - A LOCAL CONTROLLER INTERFACE UNIT (LCIU) OF THE TYPE AND MANUFACTURER DESCRIBED IN SECTIONS 623.02.31 SUBSECTION (1) OF THE SPECIAL PROVISIONS.
 - AN INTERFACE UNIT (MODIFICATION KIT) IS ALSO REQUIRED FOR CONTROLLER CABINETS THAT ARE NOT WIRED TO ACCEPT THE LCIU DESCRIBED ABOVE. THIS INTERFACE UNIT WILL REQUIRE HARNESSES AND CONNECTORS FOR THE LCIU AND PHONE JACKS FOR VOICE COMMUNICATION.
- THE TWO CONTROLLERS SHALL BE COORDINATED FOR THE PURPOSE OF OFFSETTING THE 04 YELLOW AT THE EAST INTERSECTION FROM THE 04 YELLOW AT THE WEST INTERSECTION. DURING PERIODS OF CALL INACTIVITY AT THE WEST INTERSECTION AND DURING PROGRAMMED PERIODS "ON LINE" WITH THE MASTER SYSTEM, THE EAST INTERSECTION SHALL BE ON FULL TRAFFIC ACTUATED OPERATION. THE WEST INTERSECTION CONTROLLER SHALL BE EQUIPPED WITH A SOLID STATE TIMER (0-120 SECONDS) AND CIRCUITRY TO DETECT THE 04 YELLOW WHICH THEN SHALL BE TRANSMITTED TO THE EAST INTERSECTION WHICH SHALL OFFSET THE EAST INTERSECTION FROM THE WEST INTERSECTION. THE WEST INTERSECTION SHALL ALSO BE EQUIPPED WITH A SOLID STATE AUXILIARY TIMER (0-120 SECONDS) AND CIRCUITRY TO SENSE THE EXISTENCE OR LACK OF CALLS IN PHASES CONFLICTING WITH 04 AS WELL AS THE CALL CONDITION IN THE PHASE ITSELF. CONDITIONS SUCH THAT WILL NOT CAUSE A DISPLAY OF THE 04 YELLOW SHALL START THE AUXILIARY TIMER. THE TIME OUT OF WHICH WILL CALL FOR FULL ACTUATED OPERATIONS AT THE EAST INTERSECTION. IF 04 YELLOW IS TO BE DISPLAYED, THE AUXILIARY TIMER AND CIRCUITRY SHALL BE AT THE INACTIVE POSITIONS.
- SEE DISPLAY MAP HARDWARE NOTES ON SHEET T-4 FOR THE NECESSARY HARDWARE APPLICABLE TO CHARLESTON BOULEVARD SIGNAL SYSTEMS.

- IN THE SIGNAL CABLE COLUMN ⊙ INDICATES 20 CONDUCTOR NO. 14 CABLE AND ⊗ INDICATES 10 CONDUCTORS NO. 14 CABLE, SIGNAL CABLE SHALL CONFORM TO I.M.S.A. SPEC 20-1.
- ALL CABLE SHALL BE INSTALLED TERMINAL TO TERMINAL. NO SPLICES ALLOWED. NO 14 CONDUCTORS SHALL BE USED BETWEEN TERMINAL BLOCK AND INDIVIDUAL SIGNAL HEADS.
- LOOP DETECTOR CABLE SHALL BE ONE TWISTED PAIR OF NO. 12 A.W.G. CABLE I.M.S.A. SPEC 19-2.
- THE CONTRACTOR SHALL INSTALL AND CONNECT A 6 PAIR NO. 22 AWG CONDUCTOR CABLE FROM THE SPECIAL JUNCTION CABINET ON SACRAMENTO DR. TO THE CONTROLLER WITH NO SPLICING ALLOWED. (Interconnect Cable)
- INTERCEPT EXISTING LIGHTING CIRCUIT FOR CHARLESTON BLVD. BY INSTALLATION OF TWO NEW NO. 3 1/2 PULL BOXES AT LOCATIONS SHOWN BETWEEN POLE NOS. ③ & ④ AND INSTALL A 1 1/2" CONDUIT BETWEEN NEW PULL BOXES, RECONNECT EXISTING CIRCUIT BETWEEN POLE NOS. ③ & ④ BY INSTALLING 2-#4'S AND 1-#8 CONDUCTORS POLE TO POLE WITH NO SPLICING BETWEEN POLES.
- ALL PULL BOXES SHALL BE NO. 5 UNLESS OTHERWISE NOTED.
- OPTICOM DETECTOR CABLE SHALL BE A 2 PAIR CONDUCTOR NO. 22 CABLE (SEE SPECIAL PROVISIONS).

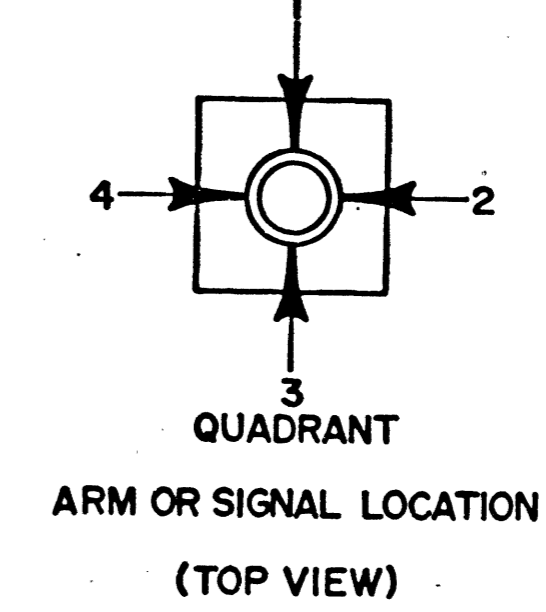
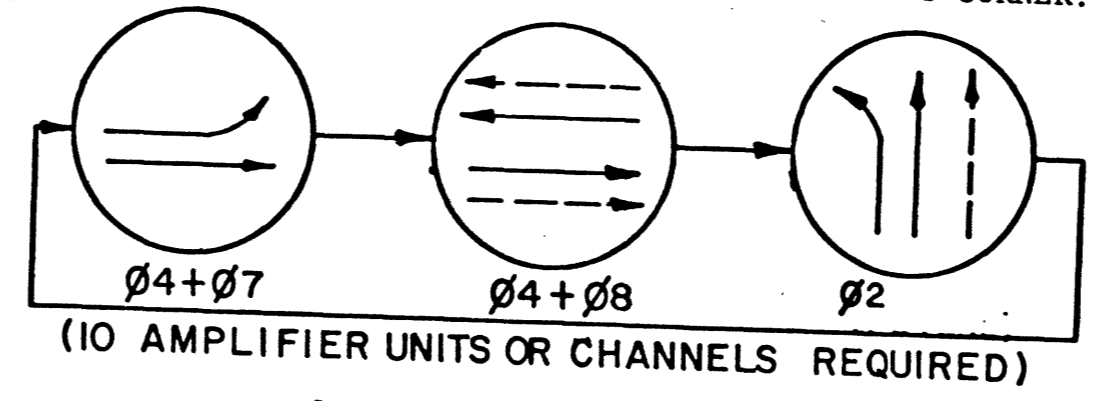
NO.	STATION	TYPE	SIGNAL ARM			LUM. ARM			TYPE	MOUNT	VEH.	SIGNALS PED.		PED. BUTTON
			QUAD.	LENGTH	QUAD.	LENGTH	QUAD.	LENGTH				QUAD.	ARROW	
H	"C" 12+43+45' LT.	35	3	30	3	15	1W3C 1W3C 1W3C	M-2 M-2 B-1	MAST ARM MAST ARM 1	WS-1	1	3	RT.	
I	"C" 13+05+48' LT.	1-B	-	-	-	-	-	-	-	-	WT-2	POST TOP	4 3	RT. LT.
J	"C" 13+00+50' RT.	35	1	45	1	15	1W3C* 1W3C 1W3C	M-2 M-2 B-1	MAST ARM MAST ARM MAST ARM	WS-1	3	2	RT.	

- POLE SCHEDULE NOTES
- * INDICATES PROGRAMMED VISIBILITY HEAD.
 - ALL SIGNAL POLES TO BE PRIME PAINTED BY MFG. AND FINISH PAINTED BY CONTRACTOR (SEE SPECIAL PROVISIONS).
 - LUMINAIRES SHALL BE 400 WATT HIGH PRESSURE SODIUM, CUT OFF TYPE (SIMILAR TO G.E. M-4000A CUTOFF POWER/DOOR OR APPROVED EQUAL). WITHIES III DISTRIBUTION AND INDIVIDUAL P.E. CONTROL AND INTEGRAL BALLAST (120 V.A.C.).
 - THE PEDESTRIAN SIGNAL HEADS SHALL BE INTERNATIONAL SYMBOL (HAND AND MAN) NEON MODULES. CLAMSHELL MOUNTINGS MAY BE USED (WITH A 12 POSITION TERMINAL STRIP).
 - A R10-5(S) (36" X 24") SIGN SHALL BE INSTALLED ON POLE ①. OPTICOM DETECTORS ARE REQUIRED ON POLES ④ AND ⑤ AS SHOWN ON SHEET T-4.
 - THE NEW TYPE 35 POLES SHALL BE EQUIPPED WITH HIGHRISE LUMINAIRE ARM.



- SPECIAL JUNCTION CABINETS WILL BE INSTALLED FOR PERMANENT LOCATIONS AT THE N.E. QUADRANTS OF CHARLESTON BLVD. INTERSECTIONS WITH HONOLULU ST. AND SACRAMENTO DR. NEAR EXISTING ELECTROLIERS. INSTALL 1 1/2" CONDUIT BETWEEN CABINETS AND PULLBOXES IN BOXES IN THE ISLANDS TO THEIR RESPECTIVE SPECIAL JUNCTION CABINET.
- A 6 PAIR NO. 22 AWG CONDUCTOR CABLE SHALL BE USED AS A TEMPORARY OVERHEAD CABLE TO CONNECT THE TWO SPECIAL JUNCTION CABINETS. THE EXISTING ELECTROLIERS ADJACENT TO THE SPECIAL JUNCTION CABINETS AND ON THE SOUTH SIDE OF CHARLESTON BLVD. WILL BE USED FOR SUPPORTING THE OVERHEAD CABLE.
- THE CABLE SHALL BE ROUTED FROM THE SPECIAL JUNCTION CABINETS UP THE ADJACENT ELECTROLIERS THROUGH A 1 1/2" CONDUIT (STUB-OUTS BETWEEN CABINET AND POLE), THEN ROUTED FROM ELECTROLIER TO ELECTROLIER AS ILLUSTRATED ON PLANS SHEETS T-1 & T-2. THE METHOD OF ATTACHING THE RISER CONDUIT & CABLE TO ELECTROLIERS SHALL BE AS APPROVED BY THE ENGINEER.
- THE COST OF FURNISHING AND INSTALLATION OF THE SPECIAL JUNCTION CABINET, 6 PAIR NO. 22 AWG CONDUCTOR CABLE AND THE 1 1/2" CONDUIT SHALL BE PAID FOR UNDER UNIT PRICE BID FOR RESPECTIVE ITEMS.
- THE SPECIAL JUNCTION CABINET REQUIRED SHALL BE SIMILAR TO TESCO CATALOG NO. 2200 NR (43" X 20" X 11") WITH 3 TYPE 66 TELEPHONE STRIPS (SPECIAL PROVISIONS SEC. 623.02.09(C)).

NOTE: CONTROLLER NOTES FOR BOTH CHARLESTON INTERSECTIONS ARE SHOWN ON THIS SHEET IN UPPER LEFT CORNER.



STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION
SIGNAL SYSTEM FOR
CHARLESTON BLVD. &
"CR2"

- SEE NOTE NO. 2 OF CONTROLLER NOTES ON THIS SHEET.
- THE FOLLOWING CHANNELS SHALL BE FURNISHED FOR EACH CONTROLLER AT THIS INTERCHANGE.
 - ON SHEET T-1 LOOPS "a", "b", "c", "d", "e", & "g" AND TWO SPARE CHANNELS FOR FUTURE PHASE 1 WILL REQUIRE A SINGLE CHANNEL EACH FOR LOCAL USE. LOOPS "f", "h" AND FOUR SPARE CHANNELS (TWO FOR PHASE 1, ONE FOR PHASE 4, AND ONE FOR PHASE 8) SHALL BE DUAL USAGE TYPES FOR BOTH THE SYSTEM AND THE LOCAL CONTROLLER USE.
 - ON SHEET T-2 LOOPS "k", "m" AND "n" AND TWO SPARE CHANNELS FOR PHASE 6 WILL REQUIRE A SINGLE CHANNEL EACH FOR LOCAL USE. LOOPS "l", "o" AND "p" AND THREE SPARE CHANNELS (ONE FOR PHASE 7 AND TWO FOR PHASE 2) WILL BE DUAL USAGE TYPES FOR BOTH THE MASTER SYSTEM AND LOCAL CONTROLLER USE.

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