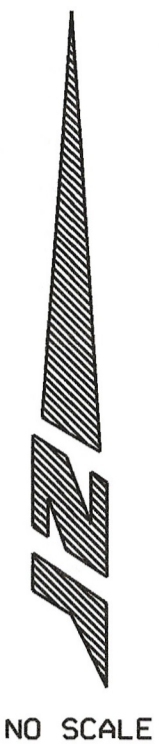


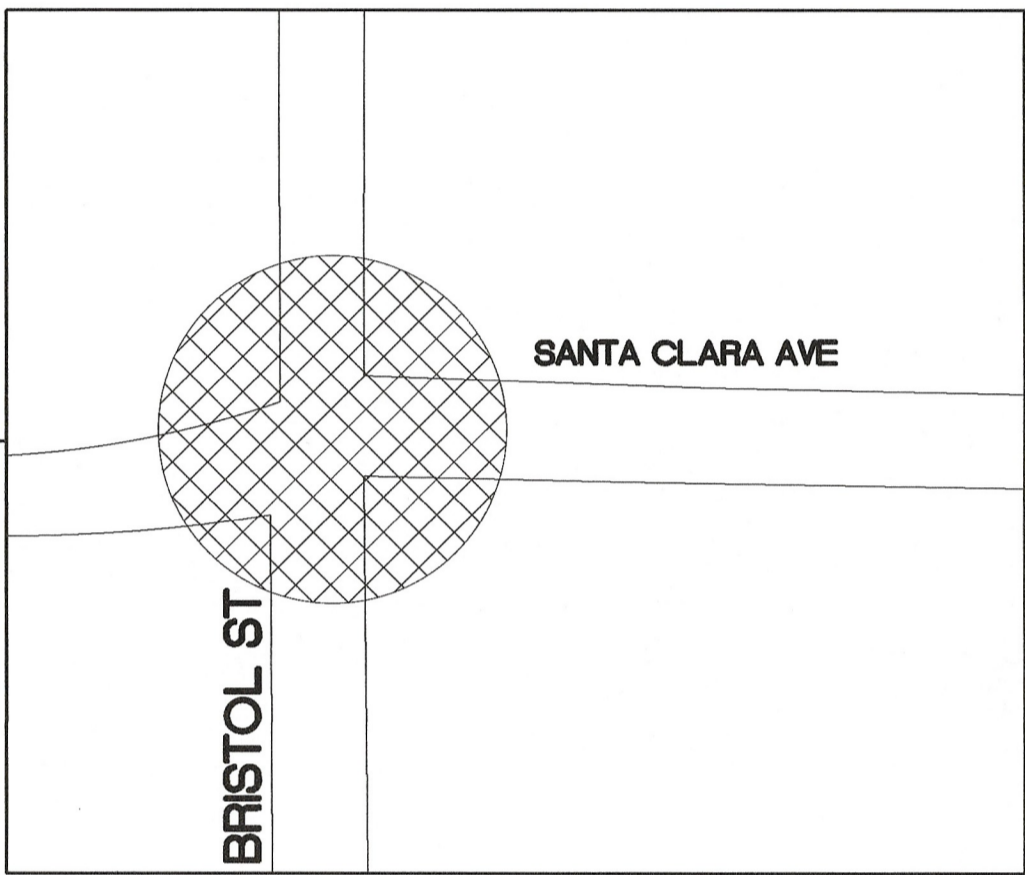
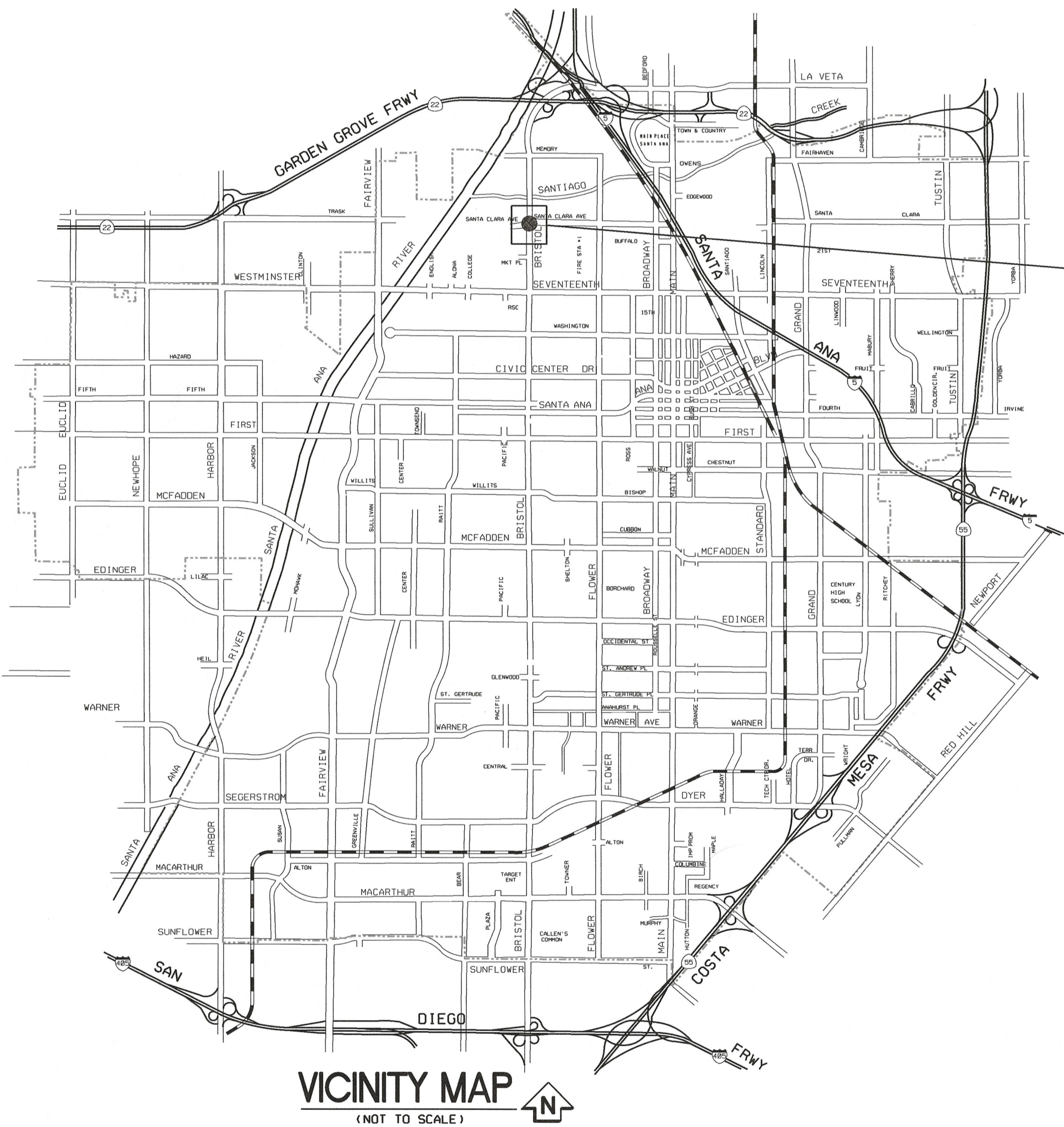


CITY OF SANTA ANA

PUBLIC WORKS AGENCY



PROJECT NO.: 22-6995: HSIPL 5063(204)
BRISTOL STREET AND SANTA CLARA AVENUE TRAFFIC SIGNAL MODIFICATION



SHEET INDEX		
SHEET	DESCRIPTION	PLAN NO.
TITLE SHEET		
1	TRAFFIC SIGNAL MODIFICATION ON BRISTOL ST AND SANTA CLARA AVE	TF-06918

GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AS WRITTEN AND PROMULGATED BY THE 2018 EDITION OF SOUTHERN CALIFORNIA CHAPTER OF THE A.P.W.A., A.G.C.C. JOINT COOPERATIVE COMMITTEE HEREIN REFERRED TO AS THE STANDARD SPECIFICATIONS AND THE CITY OF SANTA ANA STANDARD PLANS & SPECIFICATIONS (UNLESS SPECIFICALLY NOTED OTHERWISE OR IN THE SPECIAL PROVISIONS FOR THIS PROJECT).
- THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY OR STRUCTURE SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS. NO CERTIFICATION IS MADE AS TO ACCURACY OR THOROUGHNESS OF THESE RECORDS. APPROVAL OF THIS PLAN BY THE CITY OF SANTA ANA DOES NOT CONSTITUTE AN EXISTENCE OR NONEXISTENCE OF ANY UNDERGROUND UTILITY OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES (BY POT-HOLING OR OTHER MEANS). THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (811) 48 HOURS BEFORE ANY EXCAVATION.
- THESE CONSTRUCTION DOCUMENTS WERE CREATED FROM DIGITIZED BASE INFORMATION PROVIDED BY THE CITY OF SANTA ANA. EXACT LAYOUTS OF ALL HARDSCAPE ELEMENTS MAY NEED TO BE MODIFIED AND SOME FIELD ADJUSTMENTS MAY BE NECESSARY. THE CONTRACTOR SHALL INCLUDE AS PART OF THE BID, TIME AND LABOR FOR ANY MODIFICATIONS NECESSARY TO IMPLEMENT THE INTENT OF THE DRAWINGS.



Underground Service Alert
of Southern California
CALL: TOLL FREE 811
TWO WORKING DAYS
BEFORE YOU DIG

NOTICE TO CONTRACTOR

PURSUANT TO ASSEMBLY BILL 3019 NO EXCAVATION PERMIT IS VALID UNLESS THE CONTRACTOR CONTACTS AND OBTAINS AN INQUIRY I.D. NUMBER FROM "UNDERGROUND SERVICE ALERT" (1-800-422-4131) AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION.



APPROVALS:

Nabil B. Saba 12/14/2022
NABIL SABA
EXECUTIVE DIRECTOR
PUBLIC WORKS AGENCY
DATE

Rodolfo Rosas, PE 12-15-2022
RODOLFO ROSAS, PE
ACTING CITY ENGINEER
DATE

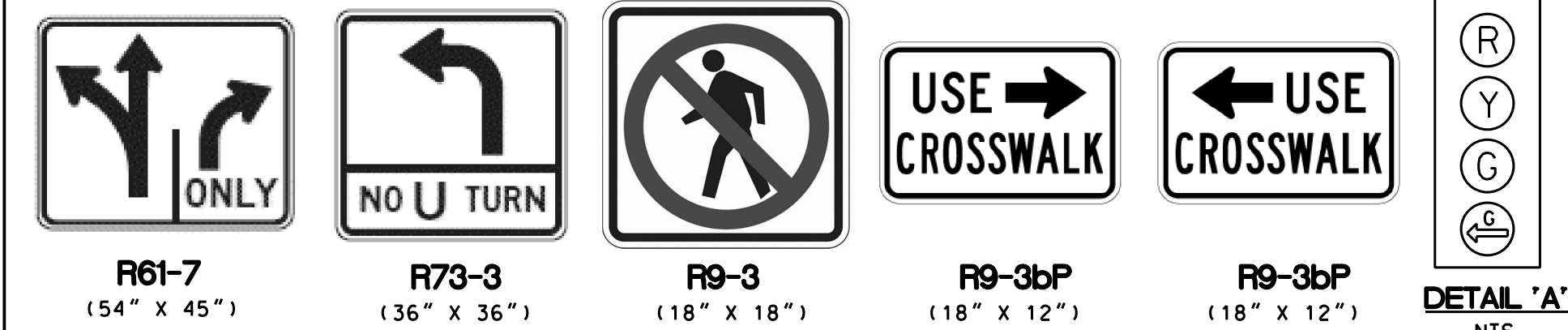
PREPARED UNDER THE SUPERVISION OF:

Zdenek Kekula 12-15-22
ZDENEK KEKULA, PE R.C.E. NO. 66219
PRINCIPAL CIVIL ENGINEER DATE

POLE SCHEDULE																
▲ STANDARD				+ LUMINAIRE	R.S.N.S.	SIGNAL MOUNTING		A.D.A. PPB			POLE LOCATION				REMARKS	
NO.	DESCRIPTION	SIG. MA	LUM. MA		LEGEND	VEHICLE	• PED	TYPE	PHASE	QUAD	A	B	C	ECR/BCR		
①	24-4-100	35'	12'	LED	Santa Clara AVE 1300W	2-NMS	SV-I-T	SP-I-T	APS	2	N	-	7'	3'	ECR	F=14'
②	TYPE I-A	-	-	-	-	-	TV-I-T	SP-I-T	APS	4	E	12'	-	3'-6"	BCR	
③	17-3-100	20'	12'	LED	Bristol ST 2300N	MAS-4C	SV-I-T	-	APS	4	E	-	1'	5'	ECR	
④	TYPE I5TS	-	12'	LED	-	-	SV-I-T	SP-I-T	-	-	-	1'	-	3'	BCR	
⑤	24-4-100	35'	12'	LED	Santa Clara AVE 1200W	2-NMS	SV-I-T	SP-I-T	-	-	-	-	3'	6'	ECR	F=14', STRAIGHT LMA
⑥	TYPE I-A	-	-	-	-	-	TV-I-T	-	APS	8	W	11'	-	11'	BCR	
⑦	17-3-100	20'	12'	LED	Bristol ST 2200N	MAS-4C	SV-I-T	SP-I-T	APS	8	W	-	5'	11'	ECR	
⑧	TYPE I5TS	-	12'	LED	-	-	SV-I-T	SP-I-T	APS	2	N	-3'	-	6'	BCR	STRAIGHT LMA

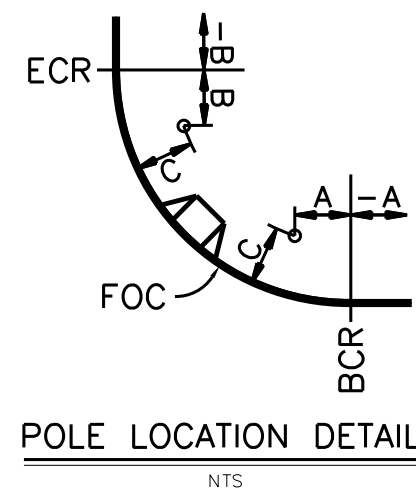
ALL EQUIPMENT IS NEW UNLESS NOTED OTHERWISE.
• PEDESTRIAN HEADS SHALL BE COUNTDOWN TYPE.
* LED LUMINAIRES SHALL BE LEOTEK GREENCOBRA SERIES PER SPECIAL PROVISIONS.
▲ CONTRACTOR SHALL POT HOLE ALL POLE LOCATIONS TO CONFIRM NO UTILITY CONFLICTS PRIOR TO ORDERING POLES.

SIGN LEGEND



SIGN LEGEND

R2-1	SPEED LIMIT	30" x 36"
R5-2	NO TRUCKS	24" x 24"
R26 (CA)	NO PARKING ANYTIME	12" x 18"
R26 (S)	NO STOPPING ANYTIME	12" x 18"
R61-7	INTERSECTION LANE CONTROL	54" x 45"
R30B	NO PARKING STREET SWEEPING	12" x 18"
S5-2	END SCHOOL ZONE	24" x 30"
W14-2	NO OUTLET	36" x 36"
	NEIGHBORHOOD WATCH	12" x 18"



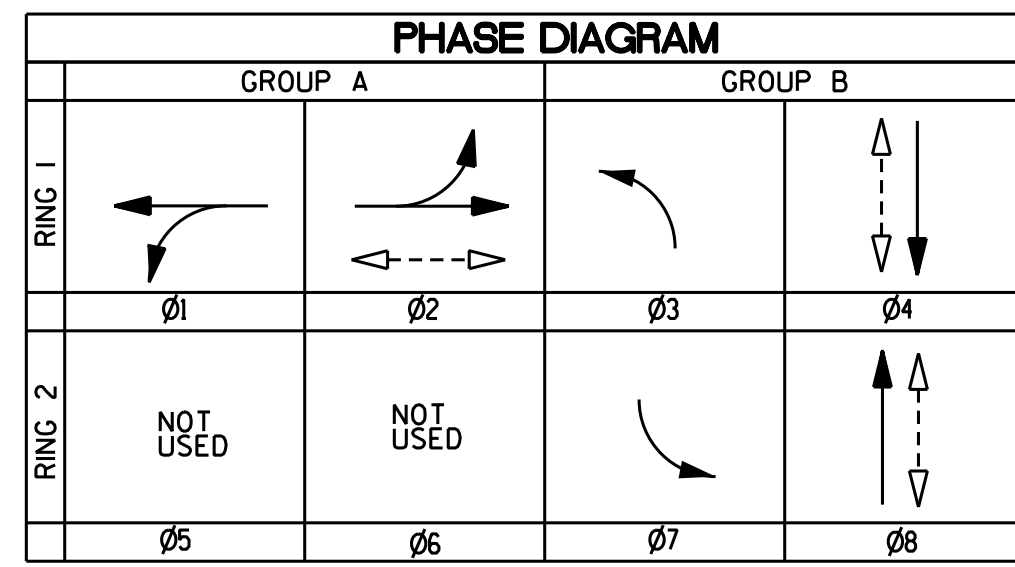
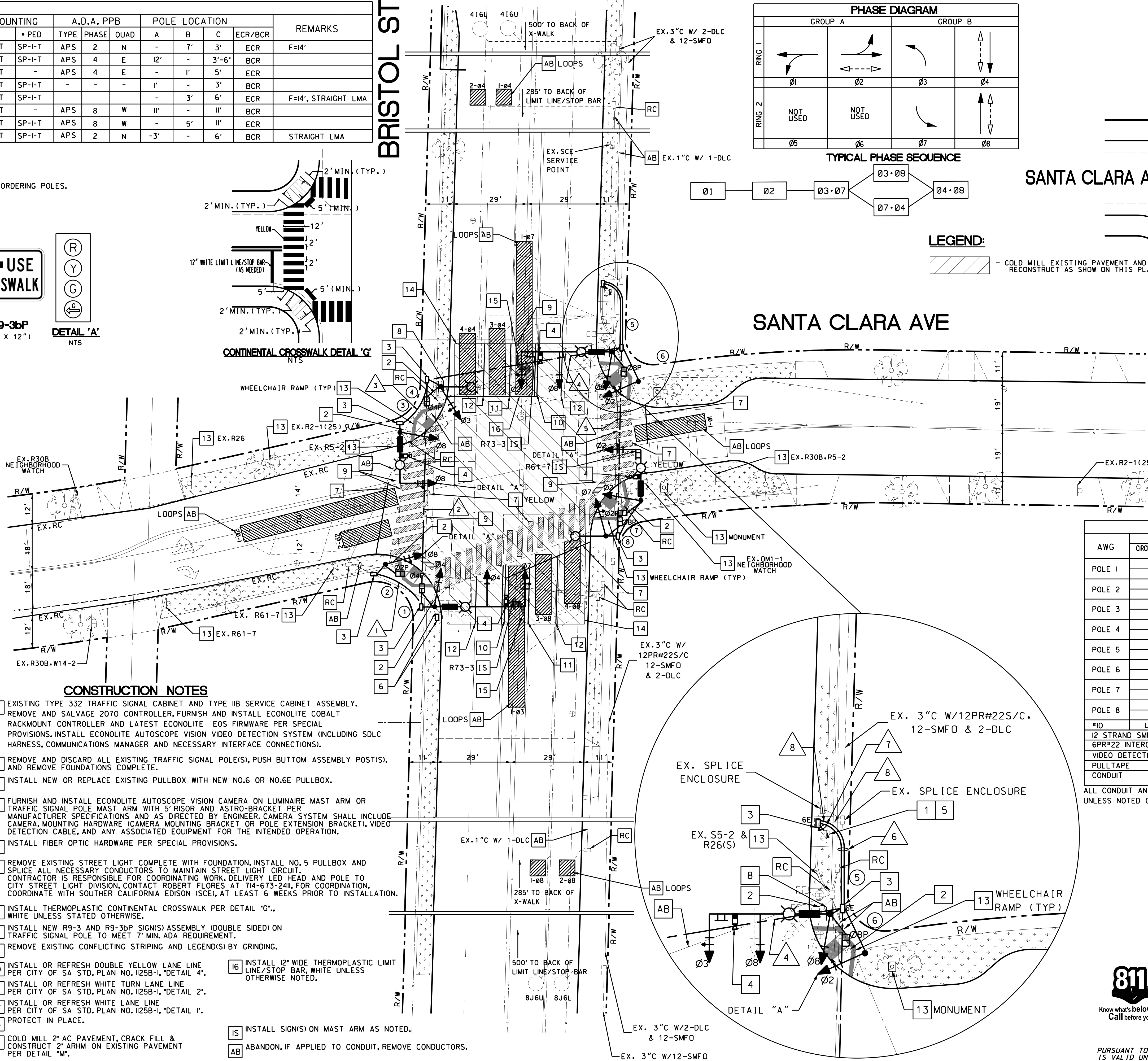
GENERAL NOTES

- ALL TRAFFIC SIGNAL, HIGHWAY LIGHTING, SIGNING AND STRIPING SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD PLANS AND SPECIFICATIONS DATED 2018 EDITION, SANTA ANA STANDARD PLANS AND THE SPECIAL PROVISIONS FOR THE PROJECT.
- ALL ABBREVIATIONS AND SYMBOLS USED ARE SHOWN ON CALTRANS STANDARD PLAN NO.'S A-10A, A-10B, ES-1A, ES-1B AND AS DEFINED ON THE PLAN.
- UTILITIES SHOWN ON THESE PLANS ARE CORRECT AND ACCURATE TO THE EXTENT OF AVAILABLE RECORDS AND KNOWLEDGE. THE CONTRACTOR, HOWEVER, IS REQUIRED TO TAKE STEPS TO ASCERTAIN THE EXACT LOCATION OF UNDERGROUND FACILITIES PRIOR TO DOING WORK THAT MAY DAMAGE OR INTERFERE WITH SUCH FACILITIES. CONTACT USA DIG ALERT AT 811 AT LEAST 2 WORKING DAYS IN ADVANCE.
- ALL NEW CONDUITS SHALL BE PVC SCHEDULE 80. ALL STUB OUT CONDUIT FOR LOOPS, SHALL BE 2". ALL CONDUITS FROM POLE TO ADJACENT PULL BOX SHALL BE PER CALTRANS STD. PLAN. ALL OTHER CONDUITS SHALL BE 3" MINIMUM UNLESS NOTED OTHERWISE. ALL FITTINGS INTO PULL BOX SHALL BE 45-DEGREE SWEEPS.
- ALL SIGNAL CABLES SHALL BE RUN CONTINUOUSLY FROM TERMINAL BLOCK TO CABINET. INDIVIDUAL SIGNAL CONDUCTORS AND MULTIPLE SAFETY LIGHTING CONDUCTORS MAY BE SPLICED IN PULL BOXES. ALL CONDUCTORS, CABLES, LOOP WIRES AND LEAD-INS SHALL BE LABELED PER THE SPECIAL PROVISIONS.
- ALL LOCATIONS OF DETECTOR LOOP, SIGNAL POLE AND CABINET REQUIRE ENGINEER'S APPROVAL PRIOR TO SAW CUTTING OR EXCAVATION.
- DETECTOR LOOPS SHALL BE 6-FOOT DIAMETER, TYPE E PER CALTRANS STD. PLAN ES-5B. FRONT LOOP (CENTER OF LOOP) TO BE PLACED 4-FOOT BEHIND BACK OF CROSSWALK. LOOPS IN THE SAME LANE SHALL BE PLACED 16 FEET APART (CENTER TO CENTER). ALL LOOPS TO BE CENTERED IN THE TRAVEL LANE, EXCEPT WHERE CURB LANE IS WIDER THAN 10 FEET. PLACE LOOP'S CENTER AT 5.5 FEET FROM THE ADJACENT LEFT LANE LINE. ALL LOOPS MUST BE TESTED BEFORE FILLING SAW CUTS.
- ALL PULL BOXES SHALL BE CONCRETE AND PLASTIC LINED. LID SHALL BE LIGHT WEIGHT AND LABELED PER CITY OF SANTA ANA STD. PLAN NO. 1501. PULL BOX SHALL BE NUMBER 6, UNLESS NOTED OTHERWISE. PULL BOXES ADJACENT TO TRAFFIC SIGNAL POLES SHALL HAVE 10 FOOT GROUND ROD WITH GROUND CLAMP AND SHALL BE FASTENED TO BARE GROUNDING CONDUCTOR FROM TRAFFIC SIGNAL POLE.
- ALL NEW VEHICLE AND PEDESTRIAN HEADS SHALL BE OF LIGHT EMITTING DIODE (LED) TYPE PER THE SPECIAL PROVISIONS. ALL NEW VEHICLE HEADS SHALL BE 12" WITH BACKPLATE. MOUNT ALL VEHICLE AND PEDESTRIAN HEADS AWAY FROM THE TRAFFIC SIDE OF THE POLE WHERE POSSIBLE.
- CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS AND CABLES REQUIRED FOR THE INTENDED OPERATION.
- UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT REQUIRED.
- TEMPORARY OVERHEAD WIRING, INCLUDING SIGNAL INTERCONNECT IS REQUIRED TO MAINTAIN SIGNAL OPERATION DURING MODIFICATION OF EXISTING TRAFFIC SIGNAL SYSTEM PER THE SPECIAL PROVISIONS.
- ALL STRIPING SHALL CONFORM TO THE CITY OF SANTA ANA STANDARD PLAN NO. 1125 (A THROUGH E). ALL ITEMS OR DETAILS NOT COVERED IN THE CITY STANDARD PLANS SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE STATE OF CALIFORNIA STANDARD PLANS AND SPECIFICATIONS DATED 2018 EDITION.
- ALL STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC. ALL CURB MARKINGS AND MEDIAN NOSE MARKINGS SHALL BE PAINTED UNLESS NOTED OTHERWISE.
- ALL NEW SIGNS MUST BE INSTALLED ON NEW 2"x2" PERFORATED AND GALVANIZED METAL POST(S) UNLESS NOTED OTHERWISE. ALL SALVAGED SIGNS SHALL BE DELIVERED TO THE CITY CORPORATE YARD, CONTACT CITY MAINTENANCE AT (714) 647-3339 PRIOR TO DELIVERY.
- ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, AND RAISED PAVEMENT MARKERS SHALL BE REMOVED EVEN IF NOT SHOWN ON THE PLAN. REMOVAL OF STRIPING AND PAVEMENT MARKINGS SHALL BE DONE BY GRINDING. ALL DAMAGED PAVEMENT DUE TO REMOVAL SHALL BE REPAIRED WITH SLURRY SEAL AS NECESSARY TO MAINTAIN A SMOOTH AND UNIFORM SURFACE.

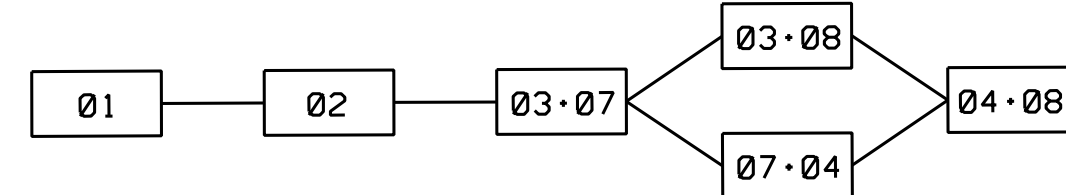
CONSTRUCTION NOTES

- EXISTING TYPE 332 TRAFFIC SIGNAL CABINET AND TYPE 11B SERVICE CABINET ASSEMBLY. REMOVE AND SALVAGE 2070 CONTROLLER, FURNISH AND INSTALL ECONOLITE COBALT RACKMOUNT CONTROLLER AND LATEST ECONOLITE EOS FIRMWARE PER SPECIAL PROVISIONS. INSTALL ECONOLITE AUTOSCOPE VISION VIDEO DETECTION SYSTEM (INCLUDING SDLC HARNESS, COMMUNICATIONS MANAGER AND NECESSARY INTERFACE CONNECTIONS).
- REMOVE AND DISCARD ALL EXISTING TRAFFIC SIGNAL POLE(S). PUSH BUTTOM ASSEMBLY POST(S), AND REMOVE FOUNDATIONS COMPLETE.
- INSTALL NEW OR REPLACE EXISTING PULLBOX WITH NEW NO. 6 OR NO. 6E PULLBOX.
- FURNISH AND INSTALL ECONOLITE AUTOSCOPE VISION CAMERA ON LUMINAIRE MAST ARM OR TRAFFIC SIGNAL POLE MAST ARM WITH 5' RISOR AND ASTRO-BRACKET PER MANUFACTURER SPECIFICATIONS AND AS DIRECTED BY ENGINEER. CAMERA SYSTEM SHALL INCLUDE CAMERA, MOUNTING HARDWARE (CAMERA MOUNTING BRACKET OR POLE EXTENSION BRACKET), VIDEO DETECTION CABLE, AND ANY ASSOCIATED EQUIPMENT FOR THE INTENDED OPERATION.
- INSTALL FIBER OPTIC HARDWARE PER SPECIAL PROVISIONS.
- REMOVE EXISTING STREET LIGHT COMPLETE WITH FOUNDATION. INSTALL NO. 5 PULLBOX AND SPLICE ALL NECESSARY CONDUCTORS TO MAINTAIN STREET LIGHT CIRCUIT. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WORK, DELIVERY LED HEAD AND POLE TO CITY STREET LIGHT DIVISION, CONTACT ROBERT FLORES AT 714-673-2411, FOR COORDINATION. COORDINATE WITH SOUTHERN CALIFORNIA EDISON (SCE), AT LEAST 6 WEEKS PRIOR TO INSTALLATION.
- INSTALL THERMOPLASTIC CONTINENTAL CROSSWALK PER DETAIL 'G', UNLESS NOTED OTHERWISE.
- INSTALL NEW R9-3 AND R9-3bP SIGN(S) ASSEMBLY (DOUBLE SIDED) ON TRAFFIC SIGNAL POLE TO MEET 7 MIN. ADA REQUIREMENT.
- REMOVE EXISTING CONFLICTING STRIPING AND LEGEND(S) BY GRINDING.
- INSTALL OR REFRESH DOUBLE YELLOW LANE LINE PER CITY OF SA STD. PLAN NO. 1125B-1, DETAIL 4.
- INSTALL OR REFRESH WHITE TURN LANE LINE PER CITY OF SA STD. PLAN NO. 1125B-1, DETAIL 2.
- INSTALL OR REFRESH WHITE LANE LINE PER CITY OF SA STD. PLAN NO. 1125B-1, DETAIL 1.
- PROTECT IN PLACE.
- COLD MILL 2" AC PAVEMENT, CRACK FILL & CONSTRUCT 2" ARHM ON EXISTING PAVEMENT PER DETAIL 'M'.
- INSTALL OR REFRESH THERMOPLASTIC LEGEND(S) AS SHOWN.
- INSTALL SIGN(S) ON MAST ARM AS NOTED.
- ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
- EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR.

BRISTOL ST



TYPICAL PHASE SEQUENCE



LEGEND:

— COLD MILL EXISTING PAVEMENT AND RECONSTRUCT AS SHOWN ON THIS PLAN.

BRISTOL ST

SANTA CLARA AVE

SANTA CLARA AVE

COLD MILL 2" AC PAVEMENT DETAIL 'M' NTS

GRAPHIC SCALE: 1"=20'

CONDUCTOR SCHEDULE									
AWG	CIRCUIT/CONDUCTORS/CABLE	RUN NO.							
		1	2	3	4	5	6	7	8
POLE 1	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 2	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 3	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 4	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 5	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 6	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 7	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
POLE 8	CSC 3	-	-	-	-	-	-	-	-
	CSC 12	-	-	-	-	-	-	-	-
#10	LUMINAIRE	-	2	2	2	2	2	2	4
12 STRAND SMFO		-	-	-	-	-	-	-	-
6PR*22 INTERCONNECT		-	-	-	-	-	-	-	-
VIDEO DETECTION CABLE		-	1	1	2	1	4	4	-
PULLTAPE		-	1	1	1	1	2	2	-
CONDUIT		-	4"	4"	4"	4"	4"	2-4"	2-4" (E)

ALL CONDUIT AND CONDUCTORS SHALL BE NEW UNLESS NOTED OTHERWISE. (E)=EXISTING



Underground Service Alert of Southern California
TWO WORKING DAYS BEFORE YOU DIG



Know what's below. Call before you dig.

NOTICE TO CONTRACTOR

PURSUANT TO ASSEMBLY BILL 4216 NO EXCAVATION PERMIT IS VALID UNLESS THE CONTRACTOR OBTAINS A DIG ALERT TICKET NUMBER. CALL 811 AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING EXCAVATION.

FILE NO.:

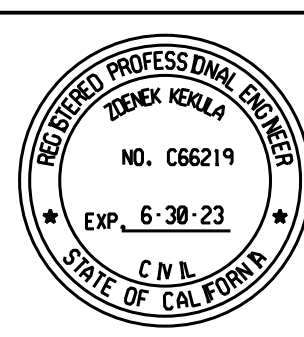
TF-06918

REVISIONS

NUMBER	DATE	INITIALS	DESCRIPTION	APPROVED	INSTALLED	BENCHMARK NO.:

REFERENCES

CONSTRUCTION COMPLETED:	TURN - ON:



PREPARED UNDER THE SUPERVISION OF:

REVIEWED FOR CONSTRUCTABILITY:

RECOMMENDED FOR CONSTRUCTION:

Zdenek Kalkuda PRINCIPAL CIVIL ENGINEER RCE NO. 666219 DESIGNED: MC DRAWN: MC CHECKED: ZK	DATE 12/2022
Zdenek Kalkuda PRINCIPAL CIVIL ENGINEER RCE NO. 62968	DATE 12/2022
Zdenek Kalkuda PRINCIPAL CIVIL ENGINEER RCE NO. 666219	DATE 12/2022

TRAFFIC SIGNAL MODIFICATION

XA-01

BRISTOL STREET AT SANTA CLARA AVENUE

PUBLIC WORKS AGENCY
CITY OF SANTA ANA