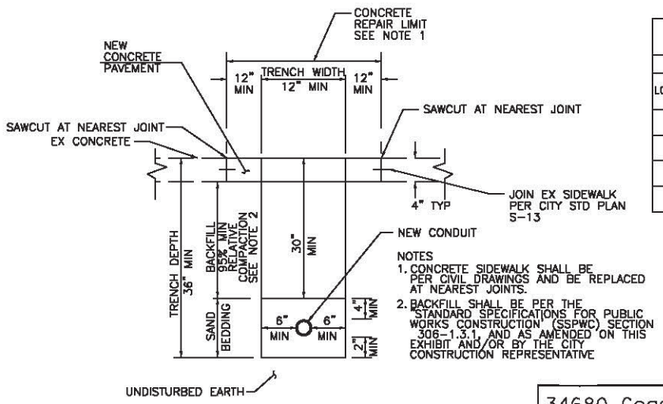
CONSTRUCTION NOTES

1. FURNISH AND INSTALL ECONOLITE TS2 TYPE 2 ASC-3/2100 CONTROLLER IN A CONTRACTOR FURNISHED TYPE O CABINET (ALUMINUM) AND PROVIDE ALL OTHER ANCILLARY EQUIPMENT AS APPROPRIATE TO PROVIDE INTENDED OPERATION. INSTALL SENSATA/DIMENSIONS M11-WBE BATTERY BACK-UP SYSTEM IN SEPARATE THERMOSTATICALLY CONTROLLED CABINET, WITH GEL BATTERIES BY DEKA OR APPROVED EQUAL. FURNISH AND INSTALL OPTICOM MODEL 764 MULTIMODE PHASE SELECTOR & 754 AUX PANEL IN CABINET. CONTRACTOR SHALL ALSO INSTALL COMMUNICATION EQUIPMENT AS NOTED ON THE SIGNAL PLANS AT CITY DIRECTED LOCATION/POLE. CONTRACTOR SHALL CONTACT CROSSTOWN ELECTRIC AT (626) 813-6693 AND RETAIN THEIR SERVICES TO ESTABLISH/INSTALL COMMUNICATOINS EQUIPMENT. PROTECT IN PLACE. PAINT EXTERIOR WITH VITROCEM BY BITHEL INC. A CITY FOREST GREEN COLOR.
2. INSTALL TYPE III-CF 120V/240V TYPE 316 STAINLESS STEEL DUAL METER SERVICE EQUIPMENT ENCLOSURE. BOTH METER SERVICES WILL BE 100A. SIGNAL TO BE CONNECTED TO ONE METER AND SAFETY LIGHTING SHALL BE UNMETERED. THE CONTRACTOR SHALL WORK WITH SDG&E TO PROVIDE FOR ALL REQUIRED ELECTRIC SERVICE HOOK-UPS. FURNISH AND INSTALL TYPE V PEC UNIT IN SERVICE CABINET. PAINT EXTERIOR WITH VITROCEM BY BITHEL, INC. A CITY FOREST GREEN. LOCATION OF DUAL METER ENCLOSURES SHALL BE PER CONTRACT PLANS AND AS APPROVED BY CITY ENGINEER IN THE FIELD.
3. INSTALL NEW 3" CONDUIT WITH CONDUCTORS AS SHOWN ON THE PLAN. TRENCHING SHALL BE PER CONDUIT INSTALLATION TRENCH DETAILS 1 AND 2 THIS SHEET. RESTORE SURFACE PER CITY STANDARD ENCROACHMENT CONDITIONS AND STANDARDS.
4. FURNISH AND INSTALL SIGNAL MASTARM-MOUNTED SIGN AS NOTED PER CALTRANS STD. PLAN RS4 OR ES-7N, DETAIL U.
5. FURNISH AND INSTALL TRAFFIC LOOPS AS SHOWN ON THE PLAN.
6. FURNISH AND INSTALL A NEW GLOBAL TRAFFIC TECHNOLOGIES OPTICOM DETECTOR MODEL 721 ON SIGNAL FACE PER CALTRANS STD PLAN ES-4E.

PHASE DIAGRAM



NOTES
1. CONCRETE SIDEWALK SHALL BE PER CIVIL DRAWINGS AND BE REPLACED AT NEAREST JOINTS.
2. BACKFILL SHALL BE PER THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (SSPWC) SECTION 306-1.3.1, AND AS AMENDED ON THIS EXHIBIT AND/OR BY THE CITY CONSTRUCTION REPRESENTATIVE

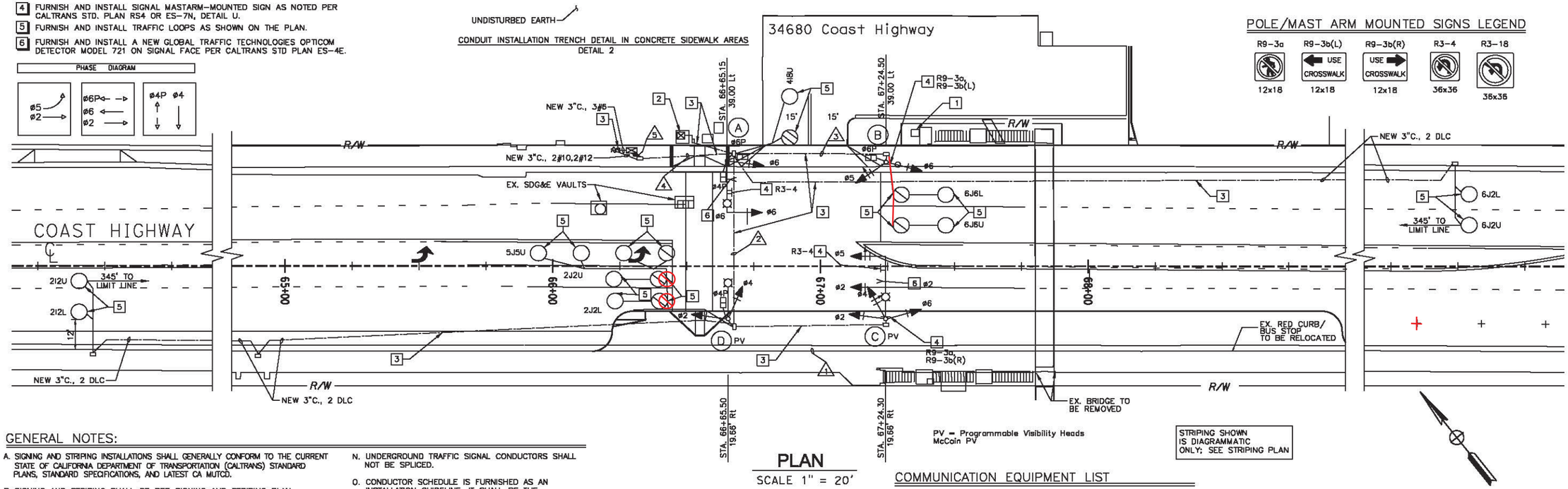
CONDUIT INSTALLATION TRENCH DETAIL IN CONCRETE SIDEWALK AREAS
DETAIL 2

EQUIPMENT SCHEDULE

LOCATION	SIGNAL STANDARD: POLE TYPE	MAST ARM: SIG.	MAST ARM: LUM.	LUMINAIRE SIZE/TYPE	MOUNTINGS: VEHICLE: POLE	MOUNTINGS: VEHICLE: MAST ARM	MOUNTINGS: PEDESTRIAN*	PEDESTRIAN PUSH BUTTON**: PHASE	PEDESTRIAN PUSH BUTTON**: TYPE	PEDESTRIAN PUSH BUTTON**: QUAD	POLE ▲ LOCATION: A	POLE ▲ LOCATION: B	LED I.I.S.N.S. ♦	REMARKS
(A)	19-4-100	30'	15'	LEOTEK EC9-30M-NW-700	SV-1-T	MAS	SP-2-T	4/6	B/B	W/N	AS SHOWN	3'	-	-
(B)	1-A	10'	-	-	TV-2-T	-	SP-1-T	6	B	N	AS SHOWN	3'	-	-
(C)	26-4-100	40'	15'	LEOTEK EC9-30M-NW-700	SV-3-TA	2 MAS	-	-	-	-	AS SHOWN	3'	-	-
(D)	15TS	-	12'	LEOTEK EC9-30M-NW-700	SV-2-T	2 MAS	SP-1-T	4	B	W	AS SHOWN	3'	-	-

ALL EQUIPMENT IS NEW UNLESS NOTED OTHERWISE.
▲ EXACT POLE LOCATIONS TO BE DETERMINED BY FIELD ENGINEER AND CITY CONSTRUCTION REPRESENTATIVE; POTHOLE FOUNDATIONS PRIOR TO ORDERING POLES.
♦ LED I.I.S.N.S. SHALL BE MANUFACTURED BY NUART SIGNING PRODUCTS. I.I.S.N.S. SHALL BE EDGE LIT (SLIM) TYPE, SHALL INCLUDE CITY LOGO, AND BE APPROVED IN ADVANCE OF PROCUREMENT BY THE CITY ENGINEER.
(E) = EXISTING
* = PEDESTRIAN PUSH BUTTON ASSEMBLIES SHALL BE EZ COMMUNICATOR NAVIGATOR APS, BLACK COLOR, WITH CUSTOM PROGRAMMING CAPABILITY, MANUFACTURED BY POLARA
** = ALL NEW PEDESTRIAN INDICATIONS SHALL BE DIALIGHT COUNTDOWN HEADS, PART NO. 4306479001X WITH 9" MUTCD COMPLIANT DIGIT.
NOTE: ALL HARDWARE AND FRAMEWORK SHALL BE BLACK IN COLOR.

POLE/MAST ARM MOUNTED SIGNS LEGEND



PV = Programmable Visibility Heads
McCain PV

STRIPING SHOWN IS DIAGRAMMATIC ONLY; SEE STRIPING PLAN

PLAN
SCALE 1" = 20'

GENERAL NOTES:

A. SIGNING AND STRIPING INSTALLATIONS SHALL GENERALLY CONFORM TO THE CURRENT STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS) STANDARD PLANS, STANDARD SPECIFICATIONS, AND LATEST CA MUTCD.

B. SIGNING AND STRIPING SHALL BE PER SIGNING AND STRIPING PLAN.

C. ALL NEW SIGNS SHALL BE HIGH INTENSITY REFLECTIVE GRADE.

D. CONTRACTOR SHALL ENSURE THAT ALL NEW SIGNS INSTALLED MEETS THE MINIMUM CLEARANCE OF 7'-0". CONTRACTOR SHALL MAKE ANY NECESSARY ADJUSTMENTS TO MEET THIS CLEARANCE.

E. TRAFFIC SIGNAL AND HIGHWAY LIGHTING CONSTRUCTION SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD PLANS (2010 EDITION) AND SPECIFICATIONS, SECTION 86 (2010 EDITION), AND THESE PLANS.

F. TEMPORARY CONSTRUCTION SIGNING, STRIPING, AND PAVEMENT MARKINGS WILL BE FURNISHED BY THE CONTRACTOR.

G. LOOP DETECTOR LOCATIONS SHALL BE APPROVED BY THE CITY CONSTRUCTION REPRESENTATIVE PRIOR TO SAWCUTTING.

H. ALL INDUCTIVE LOOPS TO BE TAGGED PER PLAN. EACH GROUP OF LOOPS WITHIN A SINGLE LANE SHALL BE WIRED IN SERIES IN THE PULLBOX.

I. TRAFFIC AND BICYCLE LOOPS SHALL BE CIRCULAR SIGNAL LOOP DETECTORS PER CALTRANS STANDARD ES-5B, TYPE E, 6' DIAMETER. INSTALL 1' BEHIND CROSSWALK OR LIMIT LINE, CENTERED IN THE LANE, WITH 10' MINIMUM SPACING BETWEEN LOOPS IN THE DIRECTION OF TRAVEL. BICYCLE LOOPS SHALL BE SINGLE CENTER CUT. LOOPS SHALL BE TESTED AND APPROVED PRIOR TO FILLING SAWCUTS.

J. INSTALL LOOP CURB TERMINATION PER CALTRANS STD. PLAN ES-5E, TYPE A. CONDUIT DIAMETER SHALL BE 2" MINIMUM.

K. ALL NEW VEHICLE INDICATIONS SHALL BE 12" DIAMETER WITH LED TYPE AND BACKPLATES. ALL NEW VEHICLE INDICATIONS, VISORS AND BACKPLATES SHALL BE METAL (ALUMINUM), BLACK IN COLOR.

L. ALL NEW PULLBOXES SHALL BE NO. 6, PLASTIC LINED, WITH FIBERGLASS LIDS, UNLESS OTHERWISE SHOWN ON THE PLAN. ALIGN PULLBOXES WITH THE CURB AND PLACE WITHIN THE SIDEWALK SCORE JOINT RETURN.

M. ALL NEW CONDUIT SHALL BE PVC PER STATE STANDARDS, UNLESS SHOWN OTHERWISE ON THE PLANS. ALL NEW CONDUIT BETWEEN PULLBOXES SHALL BE 2"-DIAMETER UNLESS SHOWN OTHERWISE ON THE PLANS. SEE PROJECT SPECIFICATIONS FOR INSTALLATION DETAILS.

N. UNDERGROUND TRAFFIC SIGNAL CONDUCTORS SHALL NOT BE SPLICED.

O. CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.

P. CONTRACTOR SHALL REPAIR ANY DAMAGED SIDEWALK, CURB AND GUTTER, HANDICAP RAMP, AND STREET ASPHALT PER THE CITY'S STANDARD ENCROACHMENT CONDITIONS TO THE SATISFACTION OF THE CITY ENGINEER (OR REPRESENTATIVE OF) AS A RESULT OF CONDUIT, SIGNAL STANDARD, AND/OR PULLBOX INSTALLATION/REMOVAL (IF NECESSARY).

Q. CONTRACTOR SHALL COORDINATE ELECTRICAL SERVICE DETAILS, SCHEDULING & INSPECTION WITH SDG&E WELL IN ADVANCE OF CONSTRUCTION. CONTACT MS. PATTI GOOD AT (949) 861-8047. SDG&E SHALL INSPECT ALL WORK INVOLVING SERVICE CONNECTION. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS NOTED ON THE SDG&E SERVICE ORDER.

R. LOCATION OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATIONS AND VERIFY ALL CONDITION ON THE JOB SITE. HAND DIG FOUNDATION UNTIL CLEAR OF ALL OBSTRUCTIONS. CALL UNDERGROUND SERVICE ALERT. POTHOLING REQUIRED FOR UTILITIES SHOWN OR NOT SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COST FOR SAME SHALL BE INCLUDED IN THE CONTRACT BID PRICE.

S. A MINIMUM OF 15 FEET OF CLEARANCE SHALL BE MAINTAINED BETWEEN THE CONTROLLER CABINET AND THE SERVICE EQUIPMENT ENCLOSURE.

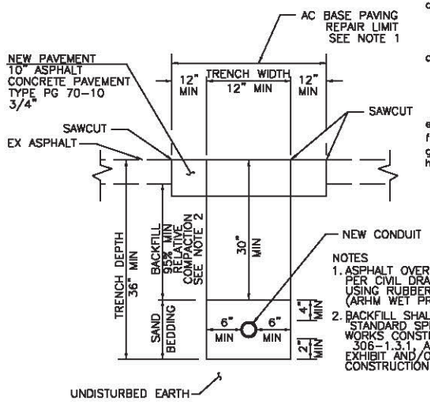
T. A MINIMUM OF 2 FEET OF CLEARANCE SHALL BE MAINTAINED BETWEEN TELEPHONE CONDUIT AND ELECTRICAL CONDUITS.

U. OBTAIN APPROVAL FROM CITY CONSTRUCTION REPRESENTATIVE FOR EXACT EQUIPMENT LOCATIONS PRIOR TO FINAL PLACEMENT.

COMMUNICATION EQUIPMENT LIST

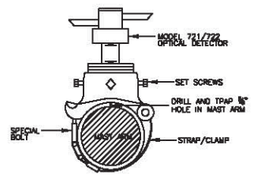
CONTRACTOR SHALL FURNISH AND INSTALL THE FOLLOWING COMMUNICATOIN EQUIPMENT IN THE TRAFFIC SIGNAL CONTROLLER.

a. (1) WIRELESS MESH RADIO. MANUFACTURER/MODEL NUMBER TO BE DETERMINED BY CITY ENGINEER
b. (1) AXIS Q6045 MX II
c. (1) DOTWORKZ D2 CAMERA ENCLOSURE HTTP://WWW.DOTWORKZ.COM/PRODUCTS/D_SERIES_CAMERA_ENCLOSURE/ AND DOTWORKZ EZ LOCK POLE MOUNT ADAPTER BR-MPM1
d. (1) SET OF MISCELLANEOUS PARTS: ENCLOSURE FOR PARTS ON POLE, UPS, RADIO POWER CABLES, ETC.
1. (1) OCULARIS CS RECORDER SOFTWARE LICENSE
2. ETHERNET RUNS FROM TOP OF POLE TO CABINET (TWO PER LOCATION)
e. (2) POE POWER INJECTOR/SUPPLY - 43-10-008
f. (1) UPS (UNINTERRUPTED POWER SUPPLY)
g. (2) CAT5E OR CAT6 PATCH CABLES
h. OUTDOOR CAT5E OR CAT6 FOR CAMERA & RADIOS COMMUNICATION TO CONTROLLER CABINET



NOTES
1. ASPHALT OVERLAY SHALL BE PER CIVIL DRAWINGS AND BE DONE USING RUBBERIZED ASPHALT (ARHM WET PROCESS)
2. BACKFILL SHALL BE PER THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (SSPWC) SECTION 306-1.3.1 AND AS AMENDED ON THIS EXHIBIT AND/OR BY THE CITY CONSTRUCTION REPRESENTATIVE

CONDUIT INSTALLATION TRENCH DETAIL IN ASPHALT AREAS
DETAIL 1



EVP DETECTOR MOUNTING DETAIL

CONDUCTOR SCHEDULE

AWG SIZE OR CABLE TYPE	POLE	PHASE		CONDUIT SIZE AND RUN 1	2	3	4	5
NO.14 CABLES	(A)	ø6,ø4P,ø6P	/ø4PPB,ø6PPB	-	-	-	1	2
12 CONDUCTOR	(B)	ø5,ø6,ø6P	/ø6PPB	-	-	1	1	1
	(C)	ø2,ø4,ø5,ø6		2	0	2	0	2
	(D)	ø2,ø4,ø4P	/ø4PPB	-	1	-	1	1
3 CONDUCTOR				-	-	-	-	-
				-	-	-	-	-
TOTAL CABLES - 12 CON / 3 CON				2	0	3	1	5
#10	LUMINAIRES			2	2	-	2	-
#8	GROUND			1	1	1	1	1
TYPE "B" DLC	ø2			-	2	-	2	2
	ø4			-	-	-	1	1
	ø5			-	1	-	1	1
	ø6			-	-	2	2	2
	TOTAL			-	3	2	6	6
CONDUIT SIZES (INCHES)				3"	4"	3"	4"	2-4"

ALL CONDUCTORS AND CONDUITS ARE NEW.
PPB = PED PUSH BUTTON

Contractor shall verify all controlling field dimensions before ordering or fabricating any materials

COUNTY OF ORANGE CALIFORNIA

MARK	DESCRIPTION	DATE	APPR.

PREPARED UNDER THE RESPONSIBLE CHARGE OF: LARRY CIVIL ENGINEER No. C078951 REGISTERED CIVIL ENGINEER STATE OF CALIFORNIA — 4/1/16 DATE — L. QUACH

DESIGNED BY: LARRY QUACH | CHECKED BY: | DRAWN BY: LQ | DRAWING CODE: | FILE NAME: | PLOT DATE: | SCALE: AS SHOWN

ORANGE COUNTY PUBLIC WORKS

PREPARED BY: BRIDGE DESIGN SECTION

SURFSIDE PEDESTRIAN OVERCROSSING

Traffic Signal

SHEET REFERENCE NUMBER 5

Sheet 5 of 13