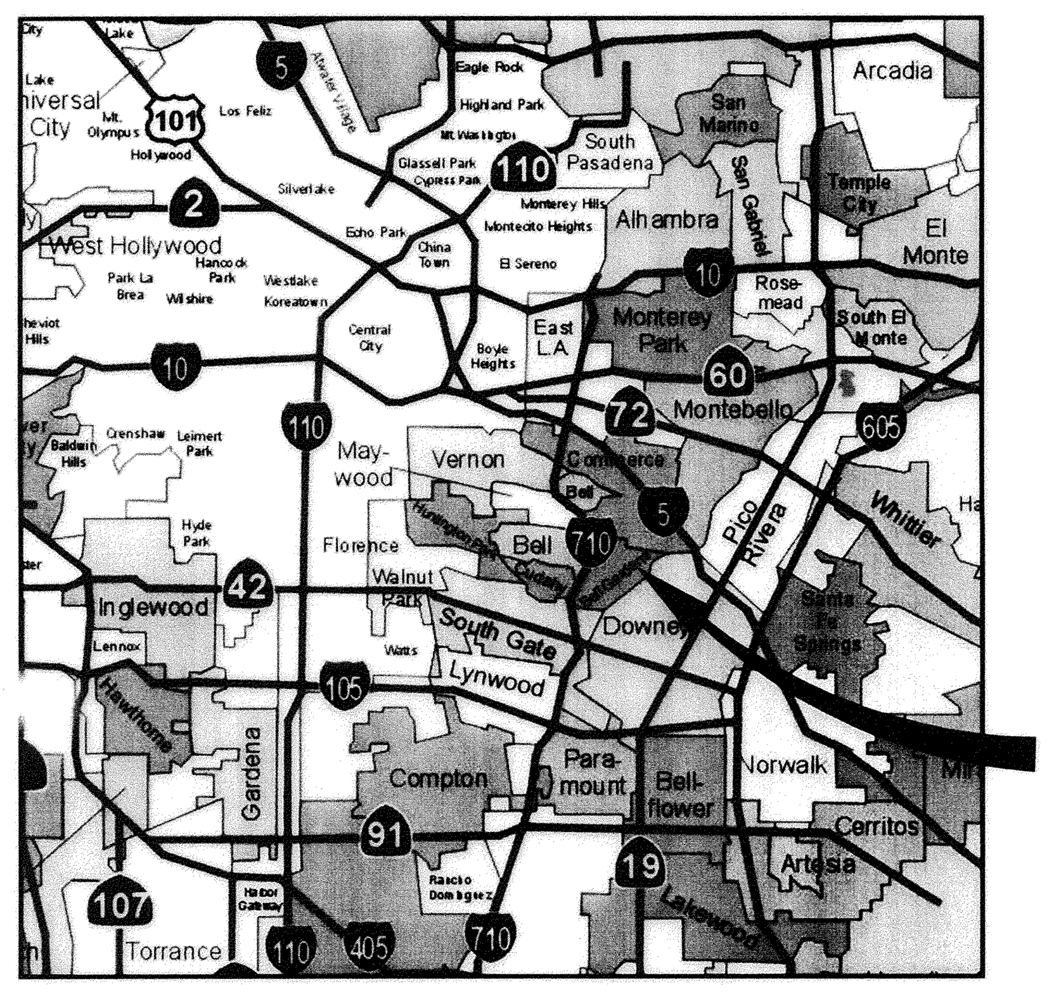
CITY OF BELL GARDENS

DEPARTMENT OF PUBLIC WORKS
HSIP CYCLE 8 PROJECT
VARIOUS INTERSECTION IMPROVEMENTS
(FY 2019-2020)
HSIPL-5373 (025)



VICINITY MAP
NOT TO SCALE

INDEX OF DRAWINGS

DWG. NO.	SHEET NO.	DESCRIPTION
TS-1	1 OF 3	TITLE SHEET
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TS-3	3 OF 3	TRAFFIC SIGNAL MODIFICATION PLAN GARFIELD AVENUE AND LOVELAND STREET

TOTAL SHEETS = 3

PROJECT UTILITY CONTACTS

AT&T-DISTRIBUTION
CONSTRUCTION & ENGINEERING (510) 645-2929

CHEVRON
CHUCK JOHNSON (714) 984-5168

CITY OF BELL GARDENS
MR. SID MOUSAVI, CITY ENGINEER (562) 806-7770

CITY OF BELL
MR. ABEL HERNANDEZ (323) 923-5630

CRIMSON PIPELINE
MR. ERNIE CATELLON (562) 285-4117

CROWN CASTLE- LA & VEN
MR. BRYANT LOWE (724) 416-2193

GOLDEN STATE WATER COMPANY
MR. RAY BURK (562) 907-9200

MCI COMMUNICATIONS/ VERIZON BUSINESS
MR. DEAN BOYERS (469) 886-4238

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
MR. KEN CHUNG (213) 217-6679

PARK WATER CO/LIBERTY UTLILITES
MS. JANELLE RELLOSA (562) 299-5122

PLAINS ALL AMERICAN PIPELINE
PAULA BAWDEN (562) 728-2371

SOUTHERN CALIFORNIA GAS COMPANY-BELVEDERE
MR. GAMALIEL VAZQUEZ (310) 605-2116

SOUTHERN CALIFORNIA GAS COMPANY-DOWNEY
MR. RYAN LOPEZ (714) 634-5067

SOUTHERN CALIFORNIA GAS COMPANY-TRANSMISSION
MS. ROSALYN SQUIRES (818) 701-4546

UTILIQUEST FOR CHARTER-DOWNEY
MR. ANTHONY XANTHIS (562) 701-4546

UNDERGROUND SERVICE ALERT 811

CITY OF BELL GARDENS
HUB OF PROGRESS
INCORPORATED 1961
CALIFORNIA

PROFESSIONAL ENGINEER'S NOTE:

THE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED BY INFRASTRUCTURE ENGINEERS USING AVAILABLE RECORD PLANS AND MAPS AND BASED ON FIELD RECONNAISSANCE OF EXISTING CONDITIONS. KNOWN UTILITIES AND OWNERS OF OTHER STRUCTURES IN THE STREET RIGHT OF WAYS HAVE BEEN GIVEN WRITTEN NOTICE OF THE PROJECT. HOWEVER, INFRASTRUCTURE ENGINEERING AND CITY OF BELL GARDENS ARE NOT RESPONSIBLE FOR THE TOTAL ACCURACY AND/OR CORRECTNESS OF THE SHOWN INFORMATION. THE CONTRACTOR BY SIGNING THE CONSTRUCTION CONTRACT FOR THIS PROJECT ACCEPTS AND ASSUMES FULL RESPONSIBILITY FOR THE WORK AND ITS IMPACT ON THE EXISTING FACILITIES SHOWN OR NOT SHOWN ON THESE PLANS AND DESCRIBED IN THE SPECIFICATIONS.

THE CONTRACTOR IS RESPONSIBLE TO MAKE HIS OWN INVESTIGATION AND INSPECTION INCLUDING POT HOLING AND SUCH OTHER METHODS HE DEEMS NECESSARY TO ALLOW HIM TO PROCEED ON THE CONSTRUCTION OF THIS PROJECT IN COMPLIANCE WITH THE LAWS, ORDINANCES AND REGULATIONS APPLICABLE TO THE PROJECT, INCLUDING STATE SAFETY ORDERS AND PROCEDURES OF USA.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY SURVEYS REQUIRED TO ESTABLISH HORIZONTAL AND VERTICAL CONTROLS PRIOR AND DURING CONSTRUCTION, AND TO REPLACE DISTURBED OR COVERED EXISTING STREET SURVEY MONUMENTS.

UNAUTHORIZED CHANGES AND USES:

CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS.

NOTICE TO CONTRACTOR:

ALL CONTRACTORS AND SUBCONTRACTORS PERFORMING WORK SHOWN IN OR RELATED TO THESE PLANS SHALL CONDUCT THEIR OPERATIONS SO THAT EMPLOYEES ARE PROVIDED A SAFE PLACE TO WORK AND THE PUBLIC IS PROTECTED. ALL CONTRACTORS AND SUBCONTRACTORS SHALL COMPLY WITH THE "OCCUPATIONAL SAFETY AND HEALTH REGULATIONS" THE U.S. DEPARTMENT OF LABOR, AND WITH THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS "CONSTRUCTION SAFETY ORDERS". THE CITY ENGINEER SHALL NOT BE RESPONSIBLE IN ANY WAY FOR THE CONTRACTOR OR SUBCONTRACTOR'S COMPLIANCE WITH SAID REGULATIONS AND ORDERS. CONTRACTOR FURTHER AGREES THAT HE SHALL ASSUME SOLE COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO THE NORMAL WORKING HOURS, AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, THE CITY AND CITY ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

TG PG 705, GRIDS: G1 AND J1

LEGEND:

PROJECT LOCATION
CITY LIMT

LOCATION MAP
NOT TO SCALE

811 Know what's below. Call before you dig.	NO.	REVISION DESCRIPTION	DATE	APPROVED BY:	UNDER THE SUPERVISION OF:	INFRASTRUCTURE ENGINEERS	CITY OF BELL GARDENS	Sheet Number:
				CITY ENGINEER 10/9/19 DATE	REGISTERED PROFESSIONAL ENGINEER MOHAMMAD YUNUS RAHI No. 59183 Exp. 06/30/21 CIVIL STATE OF CALIFORNIA	3060 Saturn Street, Suite 250 Brea, CA 92821 Tel: (714) 940-0100 Fax: (714) 940-0700 www.infrastructure-engineers.com	Department of Public Works	TS-1
						DESIGNED BY: B. CORONA	HSIP CYCLE 8 PROJECT - VARIOUS INTERSECTION IMPROVEMENTS (FY 2019 - 2020)	
						DRAWN BY: B. CORONA	TITLE SHEET	Sheet 1 of 3
						CHECKED BY: D. BARNES DATE: 10/2/19		

J. N. 6027.223

HSIP CYCLE 8 PROJECT - VARIOUS INTERSECTION IMPROVEMENTS (FY 2018-2019)

INFRASTRUCTURE ENGINEERS Q:\Bell Gardens\6027_223-HSIP Cycle 8 project - Two Signal Mods\CAD\Sheets\C01-TS1-GE01-6027223 2/1/2019 2:13:04 PM Shawnt Babakhanian

✳ CONDUCTOR SCHEDULE

	CIRCUIT	RUNS 1	2	3	4	5	6	7	8
#14	Ø2	5	5	5	–	–	–	–	–
	Ø3	5	5	5	5	–	–	–	–
	Ø4	3	3	3	3	3	–	–	–
	Ø6	5	5	5	5	5	5	5	5
	Ø7	5	5	5	5	5	5	5	5
	Ø8	3	–	–	–	–	–	3	–
	Ø2 PED	2	–	–	–	–	–	2	–
	Ø4 PED	2	2	2	–	–	–	–	–
	Ø6 PED	2	2	2	2	2	–	–	–
	Ø8 PED	2	2	2	2	2	2	–	–
	Ø2 PPB	1	–	–	–	–	–	1	–
	Ø4 PPB	1	1	1	–	–	–	–	–
	Ø6 PPB	1	1	1	1	1	–	–	–
	Ø8 PPB	1	1	1	1	1	1	–	–
	PPB COMMON	1	1	1	1	1	1	1	1
	SPARES	1	1	1	1	1	1	1	1
	TOTAL #14	40	34	34	26	21	15	18	12
#12	I.S.N.S	–	4	4	4	4	4	4	–
#10	LUMINAIRE	2	2	2	2	2	2	2	2
	SIGNAL COMMON	1	1	1	1	1	1	1	1
	TOTAL #10	3	3	3	3	3	3	3	3
#8	SERVICE	2	–	–	–	–	–	–	–
DLC	Ø2 DETECTOR	2	–	–	–	–	–	2	2
	Ø3 DETECTOR	1	–	–	–	–	–	1	1
	Ø4 DETECTOR	3	–	–	–	–	–	–	–
	Ø6 DETECTOR	4	4	4	–	–	–	–	–
	Ø7 DETECTOR	1	1	1	–	–	–	–	–
	Ø8 DETECTOR	3	3	3	3	3	–	–	–
	TOTAL DLC	14	8	8	3	3	–	3	3
	CONDUIT SIZE	2–3"	3"	3"	3"	2.5"	2"	2.5"	2"
	PERCENT FILL	16%	23%	23%	23%	20%	18%	19%	19%

*** CONTRACTOR SHALL INSTALL NEW CONDUCTORS IN EXISTING CONDUITS PER CONDUCTOR SCHEDULE.**

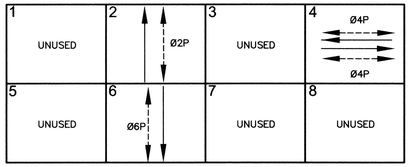
SHOWN FOR INFORMATION PURPOSE ONLY

DETECTOR SCHEDULE

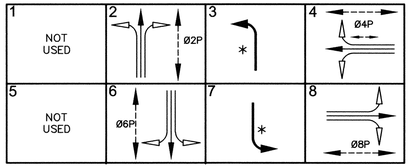
SENSOR UNIT	CHANNEL	DETECTOR	OPERATION
#1	1	1-N-Ø6	PRESENCE
	2	**2-N-Ø6**	**PULSE**
#2	**3**	**3-N-Ø6**	**PULSE**
	4	**4-N-Ø6**	**PULSE**
#3	5	1-N-Ø7	PRESENCE
	6	1-E-Ø4	PRESENCE
#4	**7**	**2-E-Ø4**	**PULSE**
	8	1-S-Ø2	PRESENCE
#5	**9**	**2-S-Ø2**	**PULSE**
	10	1-S-Ø3	PRESENCE
#6	11	1-W-Ø8	PRESENCE
	12	**2-W-Ø8**	**PULSE**
#7	**13**	**1-S-Ø2**	**PULSE**
	14	–	–

BOLD = NEW SENSOR UNIT TO BE INSTALLED IN THE CABINET

EXISTING SIGNAL PHASE DIAGRAM:



PROPOSED SIGNAL PHASE DIAGRAM:



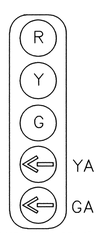
Ø2 AND Ø6 ON RECALL

PEDESTRIAN PHASE

PERMISSIVE PHASE

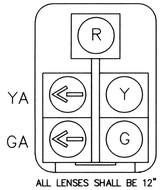
PROTECTED PHASE

*PROTECTED/PERMISSIVE LEFT-TURN PHASE



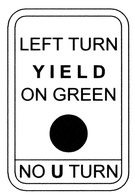
ALL LENSES SHALL BE 12"

DETAIL "A"
NOT TO SCALE

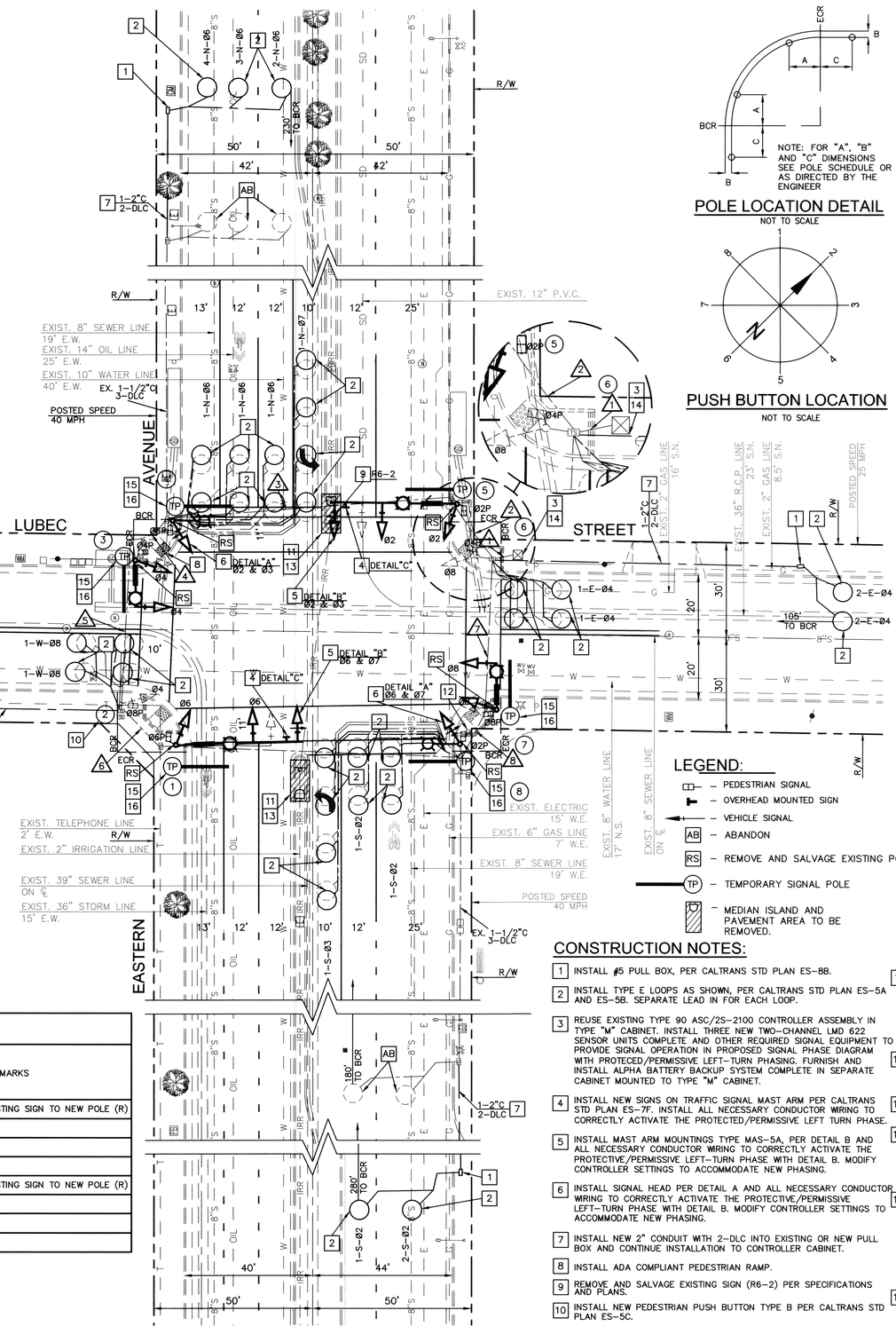


ALL LENSES SHALL BE 12"

DETAIL "B"
NOT TO SCALE
(MAS-5A) (N)



DETAIL "C"
NOT TO SCALE
R10-12 WITH
"NO U TURN"
(30" X 36")



TRAFFIC SIGNAL PLAN

SCALE 1" = 20'

POLE LOCATION DETAIL

NOT TO SCALE

PUSH BUTTON LOCATION

NOT TO SCALE

LEGEND:

- PEDESTRIAN SIGNAL
- OVERHEAD MOUNTED SIGN
- VEHICLE SIGNAL
- AB – ABANDON
- RS – REMOVE AND SALVAGE EXISTING POLE
- TP – TEMPORARY SIGNAL POLE
- MEDIAN ISLAND AND PAVEMENT AREA TO BE REMOVED.

CONSTRUCTION NOTES:

1. INSTALL #5 PULL BOX, PER CALTRANS STD PLAN ES-8B.
2. INSTALL TYPE E LOOPS AS SHOWN, PER CALTRANS STD PLAN ES-5A AND ES-5B. SEPARATE LEAD IN FOR EACH LOOP.
3. REUSE EXISTING TYPE 90 ASC/2S-2100 CONTROLLER ASSEMBLY IN TYPE "M" CABINET. INSTALL THREE NEW TWO-CHANNEL LMD 622 SENSOR UNITS COMPLETE AND OTHER REQUIRED SIGNAL EQUIPMENT TO PROVIDE SIGNAL OPERATION IN PROPOSED SIGNAL PHASE DIAGRAM WITH PROTECED/PERMISSIVE LEFT-TURN PHASING. FURNISH AND INSTALL ALPHA BATTERY BACKUP SYSTEM COMPLETE IN SEPARATE CABINET MOUNTED TO TYPE "M" CABINET.
4. INSTALL NEW SIGNS ON TRAFFIC SIGNAL MAST ARM PER CALTRANS STD PLAN ES-7F. INSTALL ALL NECESSARY CONDUCTOR WIRING TO CORRECTLY ACTIVATE THE PROTECTED/PERMISSIVE LEFT TURN PHASE.
5. INSTALL MAST ARM MOUNTINGS TYPE MAS-5A, PER DETAIL B AND ALL NECESSARY CONDUCTOR WIRING TO CORRECTLY ACTIVATE THE PROTECTIVE/PERMISSIVE LEFT-TURN PHASE WITH DETAIL B. MODIFY CONTROLLER SETTINGS TO ACCOMMODATE NEW PHASING.
6. INSTALL SIGNAL HEAD PER DETAIL A AND ALL NECESSARY CONDUCTOR WIRING TO CORRECTLY ACTIVATE THE PROTECTIVE/PERMISSIVE LEFT-TURN PHASE WITH DETAIL B. MODIFY CONTROLLER SETTINGS TO ACCOMMODATE NEW PHASING.
7. INSTALL NEW 2" CONDUIT WITH 2-DLC INTO EXISTING OR NEW PULL BOX AND CONTINUE INSTALLATION TO CONTROLLER CABINET.
8. INSTALL ADA COMPLIANT PEDESTRIAN RAMP.
9. REMOVE AND SALVAGE EXISTING SIGN (R6-2) PER SPECIFICATIONS AND PLANS.
10. INSTALL NEW PEDESTRIAN PUSH BUTTON TYPE B PER CALTRANS STD PLAN ES-5C.

CONSTRUCTION NOTES (CONTINUED):

11. REMOVE EXISTING MEDIAN, PAVEMENT, AND MEDIAN NOSE TO 8' FROM EXISTING CROSSWALK LINE AND CONSTRUCT A NEW 2.5' RADIUS CURB MEDIAN NOSE AS NOTED ON THIS PLAN. MATCH TOP ELEVATION OF NEW CURB TO EXISTING MEDIAN CURB AT SAWCUT JOIN LINE. REMOVE EXISTING PAVEMENT TO 12" BELOW ADJACENT EXISTING A.C. PAVEMENT AND CONSTRUCT 12" OF NEW A.C. DEEPLIFT PAVEMENT. FEATHER AND JOIN TO EXISTING PAVEMENT.
12. RELOCATE EXISTING PULL BOX PER SPPWC 405-1 OR PER CITY ENGINEER'S INSTRUCTIONS. FINAL LOCATION TO BE DETERMINED BY CITY ENGINEER IN THE FIELD.
13. INSTALL MEDIAN ISLAND STRIPING PER CALTRANS STANDARD PLAN A20B, DETAIL 29 USING YELLOW PAINT.
14. CONTRACTOR SHALL REWIRE THE INTERSECTION PER THE CONDUCTOR SCHEDULE SHOWN ON THIS PLAN SHEET, COMPLETE, TO PROVIDE SIGNAL OPERATION SHOWN IN THE PROPOSED SIGNAL PHASE DIAGRAM. CONTRACTOR SHALL LABEL NEW CONDUCTORS PER SECTION 701-13.1 IN THE APWA SPECIFICATION AND IDENTIFY SIGNAL PHASE ON THE CONDUCTOR IN EACH PULL BOX WITH LABEL AND SIGNAL CABINET.
15. CONTRACTOR SHALL INSTALL TEMPORARY SIGNAL POLES PER CITY OF LA STANDARD PLAN S-57.2D AT LOCATION SHOWN ON THE PLANS 5 FEET FROM EXISTING POLE. THE CONTRACTOR SHALL MAKE ALL NECESSARY ELECTRICAL POWER CONNECTIONS TO TEMPORARY POLES PRIOR TO REMOVAL OF EXISTING SIGNAL POLES.TEMPORARY SIGNAL POLES MUST OPERATE PER THE EXISTING SIGNAL PHASE DIAGRAM TO MAINTAIN EXISTING SIGNAL OPERATION DURING CONSTRUCTION. TEMPORARY POLES CANNOT BE PLACED ON CATCH BASINS. ADJUST IN FIELD TO FIT EXISTING CONDITIONS PER CITY ENGINEER.
16. CONTRACTOR SHALL REMOVE TEMPORARY SIGNAL POLE, AND AUXILIARY EQUIPMENT COMPLETE, AFTER NEW SIGNAL POLES ARE INSTALLED PER POLE SCHEDULE AND FULLY FUNCTIONAL AND OPERATING PER PROPOSED SIGNAL PHASE DIAGRAM.

GENERAL NOTES:

1. TRAFFIC SIGNAL LIGHTING, STRIPPING AND MARKING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS – SECTION 86, LATEST EDITION AND THE STANDARD PLANS LATEST EDITION, UNLESS OTHERWISE NOTED ON THE PLAN OR SPECIAL PROVISIONS.
2. TRAFFIC SIGNAL AND SAFETY LIGHTING CONSTRUCTION SHALL CONFORM TO CALTRANS STANDARD PLANS. STANDARD SPECIFICATIONS LATEST EDITION, AND THE THE CALIFORNIA MUTCD, LATEST EDITION. THE SPECIAL PROVISIONS, AND ALL REVISIONS AND DOCUMENTS REFERENCED THEREBY.
3. REFER TO THE "STANDARD PLANS" OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, 2015 EDITION THE SPECIAL PROVISIONS, AND CALTRANS STANDARD DRAWING FOR COMPLETE TRAFFIC SIGNAL AND HIGHWAY LIGHTING INSTALLATION DETAILS AS INDICATED IN THESE PLANS.
4. THE TRAFFIC SIGNAL CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN PER THE WATCH MANUAL TO CITY OF BELL GARDENS ENGINEERING SECTION, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO START OF WORK.
5. ALL MATERIALS AND EQUIPMENT IDENTIFIED SHALL BE NEW AND THEY SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR EXCEPT AS NOTED HEREON AND IN THE SPECIAL PROVISIONS.
6. ALL WIRING, WHETHER EXISTING OR NEW, SHALL BE MARKED (TAGGED) WITHIN THE CONTROLLER CABINET AND EACH PULL BOX FOR PHASE IDENTIFICATION.
7. ALL SIGNAL EQUIPMENT SHALL BE WIRED IN ACCORDANCE WITH THE PROPOSED SIGNAL PHASE DIAGRAM.
8. DETECTORS SHALL BE WIRED PER DETECTOR ASSIGNMENTS SHOWN ON THIS PLAN.
9. (X–X–XX) INDICATED LOOPS ASSIGNMENT IN THE CONTROLLER CABINET. EACH NEW LOOP ASSIGNMENT SHALL HAVE A SEPARATE LEAD–IN CABLE TO THE CONTROLLER UNLESS OTHERWISE NOTHED ON PLANS.
10. ALL TYPE E LOOPS AND DETECTION ZONES SHALL BE CENTERED IN THE MIDDLE OF THE LANE. FRONT LOOPS AND VIDEO DETECTION ZONES SHALL BE PLACED BEHIND THE EDGE OF THE CROSSWALK OR LIMIT LINE, UNLESS OTHERWISE NOTED.
11. ALL NEW LOOPS SHALL BE ROUND (6' DIAMETER), UNLESS OTHERWISE NOTED.
12. ALL NEW UNDERGROUND CONDUITS SHALL BE SCHEDULE 80 PVC, CONFORMING TO 700–3.5.4 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE ENGINEER.
13. ALL NEW SIGNAL POLES WITH PEDESTRIAN PUSH BUTTONS SHALL BE INSTALLED NO FURTHER THAN 5 FEET FROM THE BACK OF CROSSWALK OR LIMIT LINE UNLESS OTHERWISE NOTED.
14. ALL NEW POLES, CONDUIT, AND PULL BOXES SHALL BE INSTALLED OUTSIDE OF CURB RAMPS.
15. ALL NEW VEHICLE HEADS SHALL BE 12" L.E.D. (LIGHT EMITTING DIODE) PER LOS ANGELES COUNTY DPW SPECIFICATIONS.
16. ALL NEW PULL BOXES SHALL BE NEW NO. 5 TYPE PER APWA PLAN NO. 460–1 UNLESS OTHERWISE INDICATED.
17. ALL NEW SIGNS SHALL BE MOUNTED ON POLES AS SHOWN ON PLANS.
18. ALL EXISTING CONFLICTING SIGNS SHALL BE REMOVED AND SALVAGED TO CITY'S YARD.
19. ALL EXISTING UNDERGROUND SIGNAL AND LIGHTING CONDUCTORS SHALL NOT BE SPLICED.
20. ALL EXISTING LIGHTING SHALL BE PROTECTED IN–PLACE UNLESS INSTRUCTED OTHERWISE BY THE CITY OR NOTED ON PLANS. CONTRACTOR MAY MAKE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING LIGHTING AT THEIR CONVENIENCE AND EXPENSE.
21. ALL EXISTING CONFLICTING POWER POLES AND GUY WIRES WILL BE RELOCATED BY SCE AND COORDINATED BY THE CONTRACTOR.
22. POLE LOCATIONS SHOWN HEREIN ARE APPROXIMATE. PRECISE LOCATIONS SHALL BE ESTABLISHED IN THE FIELD AND VERIFIED BY THE PROJECT ENGINEER. CONTRACTOR SHALL POTHOLE EACH SIGNAL POLE LOCATION PRIOR TO ORDERING POLES.
23. POTHOLING OF UTILITIES SHALL BE GOVERNED BY SECTION 5–1 SSPWC, LATEST EDITION.
24. ALL MAST ARM MOUNTINGS SHALL BE TYPE MAS, PER CALTRANS STD ES–4E UNLESS OTHERWISE STATED ON PLANS.
25. POLE 4 AND 8 SHALL USE A CUSTOM VEHICLE SIGNAL THAT IS DISPLAYED IN DETAIL "A."
26. ALL SIGNS SHALL HAVE DIAMOND GRADE SHEETING AND BE PER THE CALIFORNIA MUTCD LATEST EDITION AND SHALL BE STANDARD SIZE UNLESS OTHERWISE INDICATED.
27. (TWO–PAIR) DLC CABLE SHALL BE USED THROUGHOUT UNLESS OTHERWISE NOTED ON PLANS.

POLE AND EQUIPMENT SCHEDULE

NO.	STANDARD *TYPE	HEIGHT	SIGNAL M.A.	LUM M.A.	LUMINAIRE HPSV	**SIGNAL MOUNTING POLE VEHICLE	MAST ARM VEHICLE	PEDESTRIAN SIGNAL MOUNTING	PLACEMENT DIMENSION "A"	"B"	"C"	***PED/BIKE PUSH BUTTON PHASE	ARROW	POLE QUAD	LOC	****I.S.N.S. LEGEND	REMARKS
(1)	26–4–100 (N)	30'	40'	12'	400W (N)	SV–1–T (N)	MAS–5A (N) MAS (N)	SP–1–T (E/R)	3.8'	*	–	8	←	NORTH	1	LUBEC ST (E)	□REINSTALL EXISTING SIGN TO NEW POLE (R)
(2)	1A (E)	10'	–	–	–	TV–1–T (E)	–	SP–1–T (E)	–	2.5'	1.5'	6	→	EAST	3	–	□
(3)	17–2–100 (N)	30'	15'	12'	250W (N)	SV–1–T (N)	MAS (N)	SP–1–T (E/R)	2'	2.5'	–	6	→	EAST	3	GARFIELD AVE (N)	□
(4)	15TS (N)	10'	–	12'	250W (N)	SV–1–T (N)	–	SP–1–T (E/R)	–	*	3.5'	4	↓	SOUTH	5	–	□
(5)	26–4–100 (N)	30'	40'	12'	400W (N)	SV–1–T (N)	MAS–5A (N) MAS (N)	SP–1–T (E/R)	3'	*	–	4	↓	SOUTH	5	LUBEC ST (E)	□REINSTALL EXISTING SIGN TO NEW POLE (R)
(6)	1A (E)	10'	–	–	–	TV–1–T (E)	–	SP–1–T (E)	–	2.5'	3'	2	→	WEST	7	–	□
(7)	17–2–100 (N)	30'	15'	12'	250W (N)	SV–1–T (N)	MAS (N)	SP–1–T (E/R)	1.5'	2.5'	–	2	→	WEST	7	GARFIELD AVE (N)	□
(8)	15TS (N)	10'	–	12'	250W (N)	SV–1–T (N)	–	SP–1–T (E/R)	–	*	3'	8	→	NORTH	1	–	□

* EXACT LOCATION OF POLE IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER (MIN. 45' FROM CENTERLINE FOR FUTURE STREET WIDENING).
** ALL NEW SIGNAL POLES AND MAST ARMS SHALL BE PER CALTRANS STANDARDS 2015 EDITION
*** INSTALL ACCESIBLE PEDESTRIAN SIGNAL (APS) AND PUSH BUTTON PER PLAN. ALL PEDESTRIAN PUSH BUTTONS (PPB) SHALL HAVE INTERNATIONAL SYMBOL PLATES AND BE 2" BUTTON. PPB SHALL BE TYPE B.
**** IISNS SHALL BE MANUFACTURED TO COMPLY WITH CITY STANDARDS AND HAVE DIAMOND GRADE SHEETING FOR INSERT PANELS.
(N) NEW EQUIPMENT OR POLE
(R) RELOCATE TO NEW LOCATION (IF POLE) OR POLE (IF EQUIPMENT)
(E) EXISTING EQUIPMENT OR POLE TO BE REUSE
(E/R) EXISTING PEDESTRIAN VEHICLE HEAD RELOCATED TO NEW POLE
(M) MODIFY AS REQUIRED
(!) NEW FOUNDATION IS AT THE SAME LOCATION AS EXISTING AND REQUIRES TEMPORARY SIGNAL POLE AND EQUIPMENT BEFORE INSTALLATION OF NEW POLE

20 10 0 20 40
Scale: 1 inch = 20 ft.

811 Know what's below. Call before you dig.

NO.	REVISION DESCRIPTION	DATE

APPROVED BY:

CITY ENGINEER DATE 10/9/19

UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER MOHAMMAD YUNUS RAHI No. 59183 Exp. 06/30/21 CIVIL STATE OF CALIFORNIA

INFRASTRUCTURE ENGINEERS
3060 Saturn Street, Suite 250
Brea, CA 92821
Tel: (714) 940-0100
Fax: (714) 940-0700
www.infrastructure-engineers.com

DESIGNED BY: B. CORONA
DRAWN BY: B. CORONA
CHECKED BY: D. BARNES DATE: 10/2/19

CITY OF BELL GARDENS
Department of Public Works

HSIP CYCLE 8 PROJECT - VARIOUS INTERSECTION IMPROVEMENTS
(FY 2019 - 2020)
TRAFFIC SIGNAL MODIFICATION PLAN
EASTERN AVENUE AND LUBEC STREET

Sheet Number: TS-2
Sheet 2 of 3

J. N. 6027.223

HSIP CYCLE 8 PROJECT – VARIOUS INTERSECTION IMPROVEMENTS (FY 2018–2019)

INFRASTRUCTURE ENGINEERS
C:\Bell Gardens\6027_223-HSIP Cycle 8 project – Two Signal Mods\CAD\Sheets\C02-TS2-ELO1-6027223 2/1/2019 2:13:04 PM Shawnt Babakhanian

∗ CONDUCTOR SCHEDULE

	CIRCUIT	RUNS 1	2	3	4	5	6	7	8
#14	Ø2	5	–	–	–	5	–	5	–
	Ø3	5	5	5	5	5	–	5	–
	Ø4	3	3	3	–	–	–	–	–
	Ø6	5	5	–	–	5	–	–	–
	Ø7	5	5	5	5	5	–	–	–
	Ø8	3	–	–	–	3	3	3	3
	Ø2 PED	2	–	–	–	2	–	2	–
	Ø4 PED	2	2	2	–	2	–	2	2
	Ø6 PED	2	2	2	2	–	–	–	–
	Ø8 PED	2	2	–	–	2	2	–	–
	Ø2 PPB	1	–	–	–	1	–	1	–
	Ø4 PPB	1	1	1	–	1	–	1	1
	Ø6 PPB	1	1	1	1	–	–	–	–
	Ø8 PPB	1	1	–	–	1	1	–	–
	PPB COMMON	1	1	1	1	1	1	1	1
	SPARES	1	1	1	1	1	1	1	1
	TOTAL #14	40	29	21	15	32	8	21	8
#12	I.S.N.S	4	4	4	4	4	–	4	–
#10	LUMINAIRE	2	2	2	2	2	2	2	2
	SIGNAL COMMON	1	1	1	1	1	1	1	1
	TOTAL #10	3	3	3	3	3	3	3	3
#8	SERVICE	2	–	–	–	–	–	–	–
DLC	Ø2 DETECTOR	4	–	–	–	4	–	–	–
	Ø3 DETECTOR	1	–	–	–	1	–	1	1
	Ø4 DETECTOR	3	–	–	–	3	–	3	3
	Ø6 DETECTOR	4	4	4	4	–	–	–	–
	Ø7 DETECTOR	1	1	1	4	–	–	–	–
	Ø8 DETECTOR	3	3	–	–	–	–	–	–
	TOTAL DLC	16	8	5	8	8	–	4	4
CONDUIT SIZE		2–3"	3"	3"	3"	3	2"	3"	2"
PERCENT FILL		18%	21%	15%	17%	22%	9%	14%	19%

*** CONTRACTOR SHALL INSTALL NEW CONDUCTORS IN EXISTING CONDUITS PER CONDUCTOR SCHEDULE.**

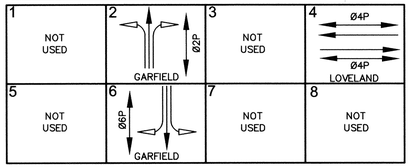
SHOWN FOR INFORMATION PURPOSE ONLY

DETECTOR SCHEDULE

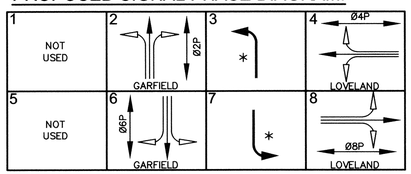
SENSOR UNIT	CHANNEL	DETECTOR	DETECTOR INPUT ASSIGNMENT
#1	1	1-N-Ø6	PULSE
	2	2-N-Ø6	PRESENCE
#2	1	3-N-Ø6	PRESENCE
	2	4-N-Ø6	PRESENCE
#3	1	1-N-Ø7	PRESENCE
	2	**1-E-Ø4**	**PULSE**
#4	1	2-E-Ø4	PRESENCE
	2	1-S-Ø2	PULSE
#5	1	2-S-Ø2	PRESENCE
	2	3-S-Ø2	PRESENCE
#6	1	4-S-Ø2	PRESENCE
	2	1-S-Ø3	PRESENCE
#7	**1**	**1-W-Ø8**	**PULSE**
	2	2-W-Ø8	PRESENCE

BOLD = NEW SENSOR UNIT TO BE INSTALLED IN THE CABINET

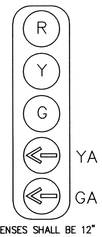
EXISTING SIGNAL PHASE DIAGRAM:



PROPOSED SIGNAL PHASE DIAGRAM:

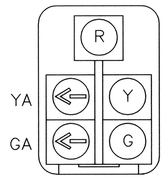


Ø2 AND Ø6 ON RECALL
PEDESTRIAN PHASE
PERMISSIVE PHASE
PROTECTED PHASE
∗PROTECTED/PERMISSIVE LEFT-TURN PHASE



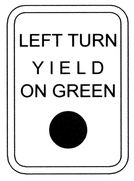
ALL LENSES SHALL BE 12"

DETAIL "A"
NOT TO SCALE



ALL LENSES SHALL BE 12"

DETAIL "B"
NOT TO SCALE
(MAS–5A) (N)



DETAIL "C"
NOT TO SCALE
(R10–12)

TRAFFIC SIGNAL PLAN
SCALE 1" = 20'

NOTE: FOR "A", "B" AND "C" DIMENSIONS SEE POLE SCHEDULE OR AS DIRECTED BY THE ENGINEER

POLE LOCATION DETAIL
NOT TO SCALE

PUSH BUTTON LOCATION
NOT TO SCALE

LEGEND:

- PEDESTRIAN SIGNAL
- VEHICLE SIGNAL
- VIDEO DETECTION ZONE
- REUSE EXISTING CAMERA
- VIDEO DETECTION ZONE FOR BICYCLE
- AB – ABANDON
- RS – REMOVE AND SALVAGE EXISTING POLE
- TP – TEMPORARY SIGNAL POLE
- MEDIAN ISLAND AND PAVEMENT AREA TO BE REMOVED.

GENERAL NOTES:

1. TRAFFIC SIGNAL LIGHTING, STRIPPING AND MARKING SHALL CONFORM TO THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION – SECTION 86, LATEST EDITION AND THE STANDARD PLANS LATEST EDITION, UNLESS OTHERWISE NOTED ON THE PLAN OR SPECIAL PROVISIONS.
2. TRAFFIC SIGNAL AND SAFETY LIGHTING CONSTRUCTION SHALL CONFORM TO CALTRANS STANDARD PLANS, STANDARD SPECIFICATIONS LATEST EDITION, AND THE THE CALIFORNIA MUTCD, LATEST EDITION, THE SPECIAL PROVISIONS, AND ALL REVISIONS AND DOCUMENTS REFERENCED THEREBY.
3. REFER TO THE "STANDARD PLANS" OF THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION, 2015 EDITION THE SPECIAL PROVISIONS, AND CALTRANS STANDARD DRAWING FOR COMPLETE TRAFFIC SIGNAL AND HIGHWAY LIGHTING INSTALLATION DETAILS AS INDICATED IN THESE PLANS.
4. THE TRAFFIC SIGNAL CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN PER THE WATCH MANUAL TO CITY OF BELL GARDENS ENGINEERING SECTION, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO START OF WORK.
5. ALL MATERIALS AND EQUIPMENT IDENTIFIED SHALL BE NEW AND THEY SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR EXCEPT AS NOTED HEREON AND IN THE SPECIAL PROVISIONS.
6. ALL WIRING, WHETHER EXISTING OR NEW, SHALL BE MARKED (TAGGED) WITHIN THE CONTROLLER CABINET AND EACH PULL BOX FOR PHASE IDENTIFICATION.
7. ALL SIGNAL EQUIPMENT SHALL BE WIRED IN ACCORDANCE WITH THE PROPOSED SIGNAL PHASE DIAGRAM.
8. DETECTORS SHALL BE WIRED PER DETECTOR ASSIGNMENTS SHOWN ON THIS PLAN.
9. (X–X–XX) INDICATED LOOPS ASSIGNMENT IN THE CONTROLLER CABINET. EACH NEW LOOP ASSIGNMENT SHALL HAVE A SEPARATE LEAD–IN CABLE TO THE CONTROLLER.
10. ALL TYPE E LOOPS AND DETECTION ZONES SHALL BE CENTERED IN THE MIDDLE OF THE LANE. FRONT LOOPS AND VIDEO DETECTION ZONES SHALL BE PLACED BEHIND THE EDGE OF THE CROSSWALK OR LIMIT LINE, UNLESS OTHERWISE NOTED.
11. ALL NEW LOOPS SHALL BE ROUND (6' DIAMETER), UNLESS OTHERWISE NOTED.
12. ALL NEW UNDERGROUND CONDUITS SHALL BE SCHEDULE 80 PVC, CONFORMING TO 700–3.5.4 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE APPROVED BY THE ENGINEER.
13. ALL NEW SIGNAL POLES WITH PEDESTRIAN PUSH BUTTONS SHALL BE INSTALLED NO FURTHER THAN 5 FEET FROM THE BACK OF CROSSWALK OR LIMIT LINE UNLESS OTHERWISE NOTED.
14. ALL NEW POLES, CONDUIT, AND PULL BOXES SHALL BE INSTALLED OUTSIDE OF CURB RAMPS.
15. ALL NEW VEHICLE HEADS SHALL BE 12" L.E.D. (LIGHT EMITTING DIODE) PER LOS ANGELES COUNTY DPW SPECIFICATIONS.
16. ALL NEW PULL BOXES SHALL BE NEW NO. 5 TYPE PER APWA PLAN NO. 460–1 UNLESS OTHERWISE INDICATED.
17. ALL NEW SIGNS SHALL BE MOUNTED ON POLES AS SHOWN ON PLANS.
18. ALL EXISTING CONFLICTING SIGNS SHALL BE REMOVED AND SALVAGED TO CITY'S YARD.
19. ALL EXISTING UNDERGROUND SIGNAL AND LIGHTING CONDUCTORS SHALL NOT BE SPLICED.
20. ALL EXISTING LIGHTING SHALL BE PROTECTED IN–PLACE UNLESS INSTRUCTED OTHERWISE BY THE CITY OR NOTED ON PLANS. CONTRACTOR MAY MAKE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING LIGHTING AT THEIR CONVENIENCE AND EXPENSE.
21. ALL EXISTING CONFLICTING POWER POLES AND GUY WIRES WILL BE RELOCATED BY SCE AND COORDINATED BY THE CONTRACTOR.
22. POLE LOCATIONS SHOWN HEREIN ARE APPROXIMATE. PRECISE LOCATIONS SHALL BE ESTABLISHED IN THE FIELD AND VERIFIED BY THE PROJECT ENGINEER. CONTRACTOR SHALL POTHOLE EACH SIGNAL POLE LOCATION PRIOR TO ORDERING POLES.
23. POTHOLING OF UTILITIES SHALL BE GOVERNED BY SECTION 5–1 SSPWC, LATEST EDITION.
24. ALL MAST ARM MOUNTINGS SHALL BE TYPE MAS, PER CALTRANS STD ES–4E UNLESS OTHERWISE STATED ON PLANS.
25. POLE 4 AND 8 SHALL USE A CUSTOM VEHICLE SIGNAL THAT IS DISPLAYED IN DETAIL "A."
26. ALL SIGNS SHALL HAVE DIAMOND GRADE SHEETING AND BE PER THE CALIFORNIA MUTCD LATEST EDITION AND SHALL BE STANDARD SIZE UNLESS OTHERWISE INDICATED.
27. REUSE EXISTING CAMERAS ON MAST ARM. DETECTION ZONES SHALL FOLLOW EXISTING VIDEO DETECTION ZONES.
28. (TWO–PAIR) DLC CABLE SHALL BE USED THROUGHOUT UNLESS OTHERWISE NOTED.

CONSTRUCTION NOTES:

1. INSTALL #5 PULL BOX, PER CALTRANS STD PLAN ES–8B.
2. INSTALL TYPE E LOOPS AS SHOWN, PER CALTRANS STD PLAN ES–5A AND ES–5B. SEPARATE LEAD IN FOR EACH LOOP.
3. REUSE EXISTING CABINET TYPE M WITH EXISTING ECONOLITE COBALT ATC CONTROLLER ASSEMBLY IN TYPE M CABINET. INSTALL TWO SHELF MOUNT SENSOR UNITS COMPLETE AND OTHER REQUIRED SIGNAL EQUIPMENT TO PROVIDE SIGNAL OPERATION IN THE PROPOSED SIGNAL PHASE DIAGRAM WITH PROTECTED/PERMISSIVE LEFT–TURN PHASING DIAGRAMS. FURNISH AND INSTALL ALPHA BATTERY BACKUP SYSTEM COMPLETE IN SEPARATE CABINET MOUNTED TO TYPE "M" CABINET.
4. INSTALL NEW SIGNS ON TRAFFIC SIGNAL MAST ARM PER CALTRANS STD PLAN ES–7F. INSTALL ALL NECESSARY CONDUCTOR WIRING TO CORRECTLY ACTIVATE THE PROTECTED/PERMISSIVE LEFT TURN PHASE.
5. INSTALL MAST ARM MOUNTINGS TYPE MAS–5A, PER DETAIL B AND ALL NECESSARY CONDUCTOR WIRING TO CORRECTLY ACTIVATE THE PROTECTIVE/PERMISSIVE LEFT–TURN PHASE WITH DETAIL B. MODIFY CONTROLLER SETTINGS TO ACCOMMODATE NEW PHASING.
6. INSTALL SIGNAL HEAD PER DETAIL A AND ALL NECESSARY CONDUCTOR WIRING TO CORRECTLY ACTIVATE THE PROTECTIVE/PERMISSIVE LEFT–TURN PHASE WITH DETAIL B. MODIFY CONTROLLER SETTINGS TO ACCOMMODATE NEW PHASING.
7. INSTALL NEW 2" CONDUIT WITH 2–DLC INTO EXISTING OR NEW PULL BOX AND CONTINUE INSTALLATION TO CONTROLLER CABINET.
8. PLACE RAISED BLUE REFLECTIVE PAVEMENT MARKER FOR FIRE HYDRANT PER SPECIFICATIONS AND PLANS.
9. REMOVE AND SALVAGE EXISTING SIGN (R6–2) PER SPECIFICATIONS AND PLANS.
10. INSTALL NEW PEDESTRIAN PUSH BUTTON TYPE B PER CALTRANS STD PLAN ES–5C.

CONSTRUCTION NOTES (CONTINUED):

11. REMOVE EXISTING MEDIAN, PAVEMENT, AND MEDIAN NOSE TO 8' FROM EXISTING CROSSWALK LINE AND CONSTRUCT A NEW 2.5' RADIUS CURB MEDIAN NOSE AS NOTED ON THIS PLAN. MATCH TOP ELEVATION OF NEW CURB TO EXISTING MEDIAN CURB AT SAWCUT JOIN LINE. REMOVE EXISTING PAVEMENT TO 12" BELOW ADJACENT EXISTING A.C. PAVEMENT AND CONSTRUCT 12" OF NEW A.C. DEEPLIFT PAVEMENT. FEATHER AND JOIN TO EXISTING PAVEMENT.
12. INSTALL MEDIAN ISLAND STRIPING PER CALTRANS STANDARD PLAN A20B, DETAIL 29 USING YELLOW PAINT.
13. CONTRACTOR SHALL REWIRE THE INTERSECTION PER THE CONDUCTOR SCHEDULE SHOWN ON THIS PLAN SHEET, COMPLETE, TO PROVIDE SIGNAL OPERATION SHOWN IN THE PROPOSED SIGNAL PHASE DIAGRAM. CONTRACTOR SHALL LABEL NEW CONDUCTORS PER SECTION 701–13.1 IN THE APWA SPECIFICATION AND IDENTIFY SIGNAL PHASE ON THE CONDUCTOR IN EACH PULL BOX WITH LABEL AND SIGNAL CABINET.
14. CONTRACTOR SHALL INSTALL TEMPORARY SIGNAL POLES PER CITY OF LA STANDARD PLAN S–57.2D AT LOCATION SHOWN ON THE PLANS 5 FEET FROM EXISTING POLE. THE CONTRACTOR SHALL MAKE ALL NECESSARY ELECTRICAL POWER CONNECTIONS TO TEMPORARY POLES PRIOR TO REMOVAL OF EXISTING SIGNAL POLES.TEMPORARY SIGNAL POLES MUST OPERATE PER THE EXISTING SIGNAL PHASE DIAGRAM TO MAINTAIN EXISTING SIGNAL OPERATION DURING CONSTRUCTION. TEMPORARY POLES CANNOT BE PLACED IN CATCH BASINS. ADJUST IN FIELD TO FIT EXISTING CONDITIONS PER CITY ENGINEER.
15. CONTRACTOR SHALL REMOVE TEMPORARY SIGNAL POLE, AND AUXILIARY EQUIPMENT COMPLETE, AFTER NEW SIGNAL POLES ARE INSTALLED PER POLE SCHEDULE AND FULLY FUNCTIONAL AND OPERATING PER PROPOSED SIGNAL PHASE DIAGRAM.

POLE AND EQUIPMENT SCHEDULE

NO.	STANDARD *TYPE	HEIGHT	SIGNAL M.A.	LUM M.A.	LUMINAIRE HPSV	∗SIGNAL MOUNTING POLE VEHICLE	MAST ARM VEHICLE	POLE PEDESTRIAN	PLACEMENT DIMENSION "A"	"B"	"C"	**PED/BIKE PUSH BUTTON PHASE	ARROW	POLE QUAD	LOC	***I.S.N.S. LEGEND	REMARKS
1	26–4–100 (N)	30'	40'	12'	400W (N)	SV–1–T (N)	MAS–5A (N) MAS (N)	SP–1–T (N)	2	2	–	8	←	NORTH	1	LOVELAND ST (E)	□
2	1A (E)	10'	–	–	–	TV–1–T (E)	–	SP–1–T (E)	10	2	–	6	→	EAST	3	–	□
3	17–2–100 (N)	30'	15'	12'	250W (N)	SV–1–T (N)	MAS (N)	SP–1–T (N)	1	5	–	6	←	EAST	3	GARFIELD AVE (N)	□
4	15TS (N)	10'	–	12'	250W (N)	SV–1–T (N)	–	SP–1–T (N)	1	1	–	4	→	SOUTH	5	–	□
5	26–4–100 (N)	30'	40'	12'	400W (N)	SV–1–T (N)	MAS–5A (N) MAS (N)	SP–1–T (N)	4	3	–	4	←	SOUTH	5	LOVELAND ST (E)	□
6	1A (E)	10'	–	–	–	TV–1–T (E)	–	SP–1–T (E)	3	1	–	2	←	WEST	7	–	□
7	17–2–100 (N)	30'	15'	12'	250W (N)	SV–1–T (N)	MAS (N)	SP–1–T (N)	4	2	–	2	←	WEST	7	GARFIELD AVE (N)	□
8	15TS (N)	10'	–	12'	250W (N)	SV–1–T (N)	–	SP–1–T (N)	3	1	–	8	→	NORTH	1	–	□

∗ ALL NEW SIGNAL POLES AND MAST ARMS SHALL BE PER CALTRANS STANDARDS 2015 EDITION.
∗∗ INSTALL ACCESIBLE PEDESTRIAN SIGNAL (APS) AND PUSH BUTTON PER PLAN. ALL PEDESTRIAN PUSH BUTTONS (PPB) SHALL HAVE INTERNATIONAL SYMBOL PLATES AND BE 2" BUTTON. PPB SHALL BE TYPE B.
∗∗∗ IISNS SHALL BE MANUFACTURED TO COMPLY WITH CITY STANDARDS AND HAVE DIAMOND GRADE SHEETING FOR INSERT PANELS.
(N) NEW EQUIPMENT OR POLE.
(E) EXISTING EQUIPMENT OR POLE TO BE REUSE.
(□) NEW FOUNDATION IS AT THE SAME LOCATION AS EXISTING AND REQUIRES TEMPORARY SIGNAL POLE AND EQUIPMENT BEFORE INSTALLATION OF NEW POLE.

Scale: 1 inch = 20 ft.

811 Know what's below. Call before you dig.

NO.	REVISION DESCRIPTION	DATE

APPROVED BY:

CITY ENGINEER DATE 10/4/19

UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER MUHAMMAD YUNUS RAMEEZ No. 58183 Exp. 06/30/21 CIVIL STATE OF CALIFORNIA

INFRASTRUCTURE ENGINEERS
3060 Saturn Street, Suite 250
Brea, CA 92821
Tel: (714) 940-0100
Fax: (714) 940-0700
www.infrastructure-engineers.com

DESIGNED BY: B. CORONA
DRAWN BY: B. CORONA
CHECKED BY: D. BARNES DATE: 10/2/19

CITY OF BELL GARDENS
Department of Public Works

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TRAFFIC SIGNAL MODIFICATION PLAN
GARFIELD AVENUE AND LOVELAND STREET

Sheet Number: TS-3
Sheet 3 of 3
J. N. 6027.223

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