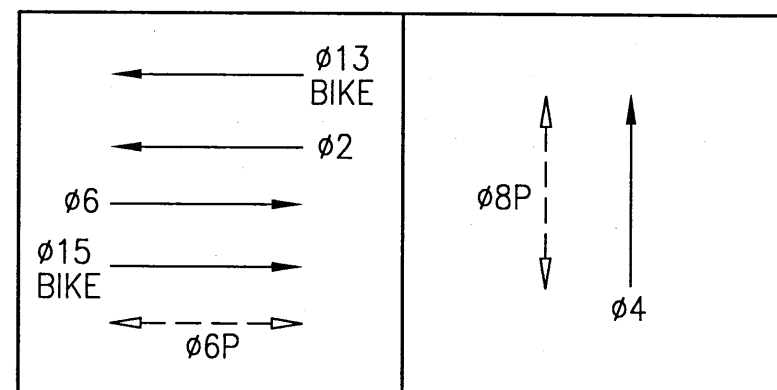


PHASE DIAGRAM



PHASE SEQUENCE

G		Y	R			2ND ST. (NB & SB) – ø2 & ø6			
R			G		Y	R	NATOMA ST. (EB) – ø4		
G		Y	R			2ND ST. (NB & SB BIKE) – ø13 & ø15			
WM		FRH	RH			PED XING NATOMA ST. (WS) – ø6P			
RH			WM		FRH	RH	PED XING 2ND ST. (NS) – ø8P		

POLE AND EQUIPMENT SCHEDULE

POLE No.	TYPE OF POLE	LUMINAIRE VOLTAGE/WATTAGE	VEHICLE SIGNAL					PEDESTRIAN SIGNAL			REMARKS
			No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING	
①	CITY STANDARD STREET LIGHT W/NEW LUMINAIRE FIXTURE	⑧									
②	16-2-100 W/20' MAST		131 42 24	3S12" BIKE 3S12" 3S12"	SV-2-TC MAS	T T T		89 ④	1S-COUNT	SP-1	ACTUATED APS BACKPLATE ①
③	1-A (13')		135 41 62	3S8" BIKE 3S12" 3S12"	SV-1 TV-2-T	T T T					MOUNT 135 AT 8' ⑩
④	19-2-100 W/25' MAST ARM & 6' LUMINAIRE ARM	⑧	151 64	3S12" BIKE 3S12"	SV-1-T MAS	T T		68 ④	1S-COUNT	SP-1	APS BACKPLATE ① ⑩
⑤	CITY STANDARD STREET LIGHT							69 ④	1S-COUNT	SP-1	EXTERNAL CONDUIT APS ①
⑥	PPB POLE										ACTUATED APS ①
⑦	1-A (13')		22 155	3S12" 3S8" BIKE	TV-1-T SV-1	T T		88 ④	1S-COUNT	SP-1	MOUNT 155 AT 8' ①

SHEET NOTES:

- F/I APS BUTTON PROVIDED BY CITY FORCES.
- R/S EXISTING SIGN POLE AND RELOCATE SIGN ONTO POLES 1. CONTACT SFMTA SIGN SHOP AT 1508 BANCROFT AVENUE, SAN FRANCISCO; (415) 554-9786 PRIOR TO DELIVERY AND CONTACT TRAFFIC ENGINEER THROUGH THE CITY REPRESENTATIVE FOR SIGN RELOCATION.
- R/C BOLLARD.
- CONTRACTOR SHALL FURNISH ONE SECTION PEDESTRIAN SIGNAL HOUSING AND INSTALL CITY FURNISHED ONE SECTION LED PEDESTRIAN MODULE.
- SPLICE NEW 12C TO EXISTING 12C TO MAINTAIN INTERCONNECT SYSTEM AND EXTEND TO NEW CONTROLLER.
- INTERSECTION SIGNAL CONTROLLER CABINET FURNISHED BY CITY.
- F/I 4 NEW BOLLARDS AROUND POLE 7.
- REFER TO E SERIES DWG AND FIXTURE SCHEDULE E-0.2 FOR LUMINAIRE TYPE, VOLTAGE AND WATTAGE.
- F/I TWO SETS OF 40A INLINE FUSE. ONE FOR TRAFFIC SIGNAL DISCONNECT AND ONE FOR STREET LIGHTING DISCONNECT.
- POLE ON SUBSIDEWALK BASEMENT.

NOTE:
THIS AUTOCAD DRAWING HAS BEEN REVISED AND REPLOTED SUBSEQUENT TO INTERNAL ENGINEERING APPROVAL AND SIGN-OFF. FOR THOSE SIGNATURES, SEE THE DRAWING PLOTTED AND ISSUED PREVIOUSLY DURING BIDDING. THE SIGNED DRAWING REMAINS VALID EXCEPT FOR THE CHANGES ONLY AS CLEARLY MARKED ON THIS DRAWING AND ISSUED UNDER THIS LATEST REVISION NUMBER AS SHOWN IN THE TABLE OF REVISIONS LOCATED AT THE LOWER LEFT CORNER OF THE DRAWING. ALL ISSUED REVISIONS SUBSEQUENT TO PREVIOUSLY PLOTTED DRAWING DURING BIDDING REMAIN VALID UNLESS SUPERSEDED BY LATER ISSUED REVISIONS. CHECK ALL ISSUED REVISIONS OF THIS DRAWING.

NO.	DATE	DESCRIPTION	BY	APP.
1	7/26/18	PCO #17 Basement GRS Conduit	ST	SL

TABLE OF REVISIONS

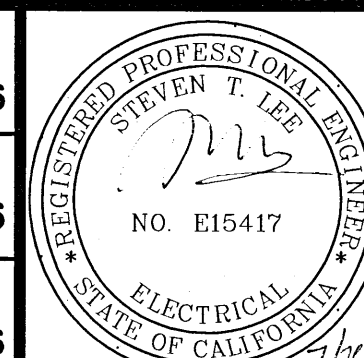
REFERENCE INFORMATION
& FILE NO. OF SURVEYS



DESIGN & ENGINEERING
PUBLIC WORKS
CITY & COUNTY OF SAN FRANCISCO
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

Section Mgr:	Philip Thwin
Deputy Division Mgr:	Iqbal Dhapa
Division Mgr:	Patrick Rivera

DESIGNED:	DATE:
SS/ZH	09/16
DRAWN:	DATE:
SS/ZH	09/16
CHECKED:	DATE:
GD/SL	9/16



SCALE:
NONE
SHEET OF SHEETS
OF

2ND STREET STREETSCAPE IMPROVEMENTS PROJECT
2ND STREET AND NATOMA STREET TRAFFIC SIGNAL WORK

CONTRACT NO.	1064J
DRAWING NO.	ET-2.0
FILE NO.	106,268
REV. NO.	1



CONDUIT AND WIRING SCHEDULE (FURNISH AND INSTALL CONDUIT AND WIRES)																										
CONDUIT RUN NUMBER		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
CONDUIT SIZE (INCH)		2	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	3	2	2	2	3	2
NOTES		1	GRS	GRS	GRS	GRS	GRS	GRS	GRS	GRS		SP	GRS	GRS	GRS			SP	GRS			SP	SP	HDPE		
VEHICLE SIGNAL 64		3		3				3			3															
BIKE SIGNAL 151		3		3				3			3															
PED SIGNAL 68		2		2				2			2															
APS PPB XING NATOMA ON POLE 4		2		2				2			2															
VEHICLE SIGNAL 41							3	3			3															
VEHICLE SIGNAL 62							3	3			3															
BIKE SIGNAL 135							3	3			3															
PED SIGNAL 69												2		2			2				2					
APS PPB XING NATOMA ON POLE 5												2		2			2				2					
VEHICLE SIGNAL 22																3	3				3					
BIKE SIGNAL 155																3	3				3					
PED SIGNAL 88																2	2				2					
APS PPB XING 2ND ST ON POLE 6													2	2			2				2					
VEHICLE SIGNAL 24																			3	3						
VEHICLE SIGNAL 42																			3	3						
BIKE SIGNAL 131																			3	3						
PED SIGNAL 89																			2	2						
APS PPB XING 2ND ST ON POLE 2																			2	2						
#14 NEUTRAL		3					3					1			3				3							
#14 SPARE				3			3			3					3					3						
TOTAL #14 WIRES		13		13			11	22		22		5	2	6	11	17			16	30						
#10 WIRES NEUTRAL				1			2			2				1		2				3						
#10 WIRES STREET LIGHT			2																							
#8 WIRES STREET LIGHT						2				2								2								
#8 WIRES (120 V SERVICE)																										
#6 BSCW																								2		
INTERCONNECT 12C CABLE																						2				

NOTE;
THIS AUTOCAD DRAWING HAS BEEN REVISED AND REPLOTTED
SUBSEQUENT TO INTERNAL ENGINEERING APPROVAL AND
SIGN-OFF. FOR THOSE SIGNATURES, SEE THE DRAWING
PLOTTED AND ISSUED PREVIOUSLY DURING BIDDING. THE
SIGNED DRAWING REMAINS VALID EXCEPT FOR THE CHANGES
ONLY AS CLEARLY MARKED ON THIS DRAWING AND ISSUED
UNDER THIS LATEST REVISION NUMBER AS SHOWN IN THE
TABLE OF REVISIONS LOCATED AT THE LOWER LEFT CORNER
OF THE DRAWING. ALL ISSUED REVISIONS SUBSEQUENT TO
PREVIOUSLY PLOTTED DRAWING DURING BIDDING REMAIN
VALID UNLESS SUPERSEDED BY LATER ISSUED REVISIONS.
CHECK ALL ISSUED REVISIONS OF THIS DRAWING.

1	7/26/18	PCO #17 Basement GRS Conduit	ST	SL
NO.	DATE	DESCRIPTION	BY	APP.

TABLE OF REVISIONS

REFERENCE INFORMATION
& FILE NO. OF SURVEYS

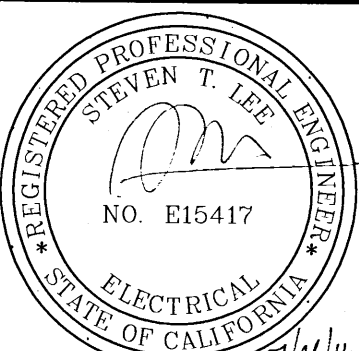


DESIGN & ENGINEERING
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CITY & COUNTY OF SAN FRANCISCO
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

Section Mgr: Philip Thwin
Deputy Division Mgr: Iqbal Dhapa
Division Mgr: Patrick Rivera

Date: _____

DESIGNED: SS/ZH 09/16
DRAWN: SS/ZH 09/16
CHECKED: GD/SL 9/16



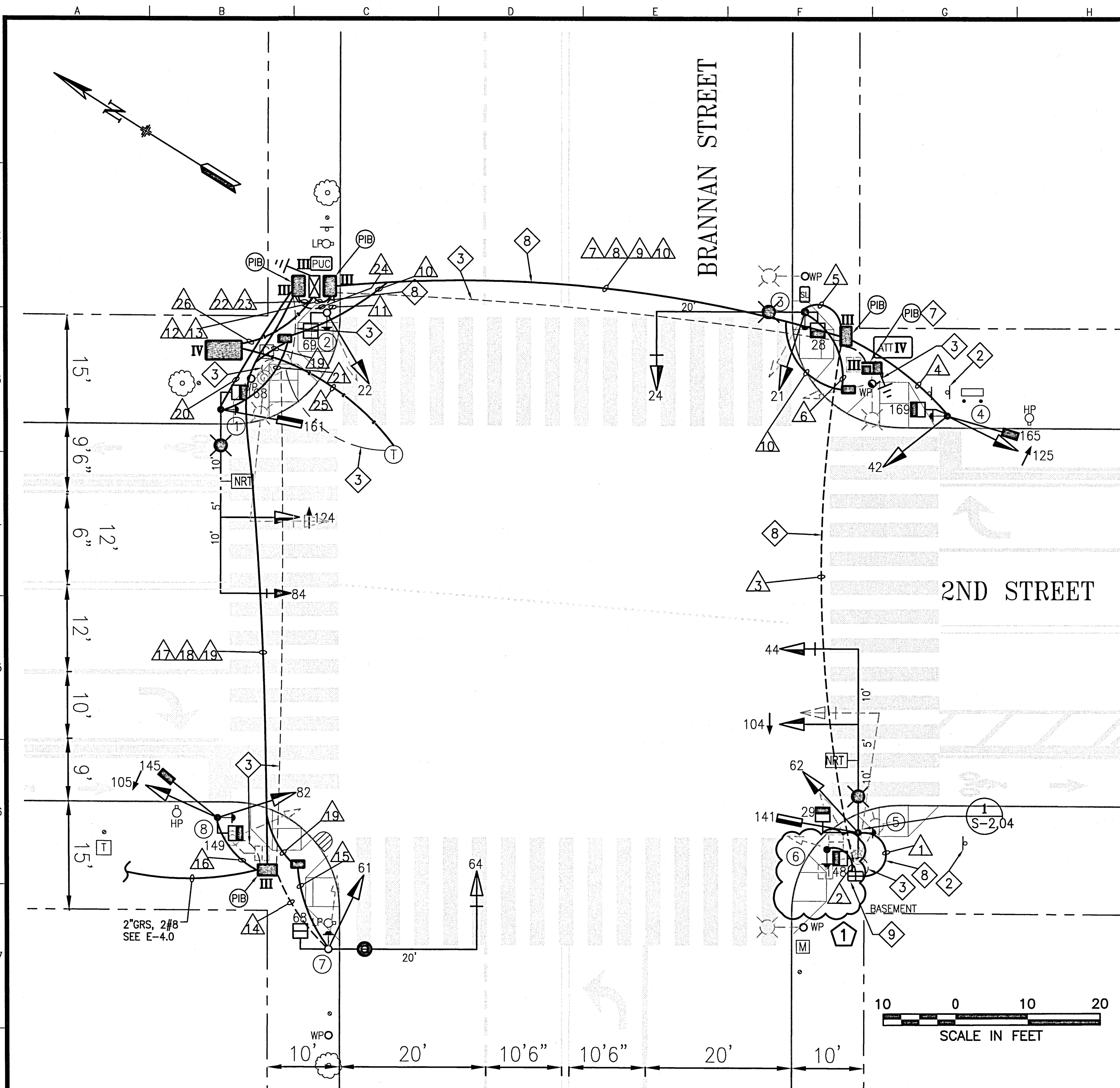
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SHEET OF SHEETS OF

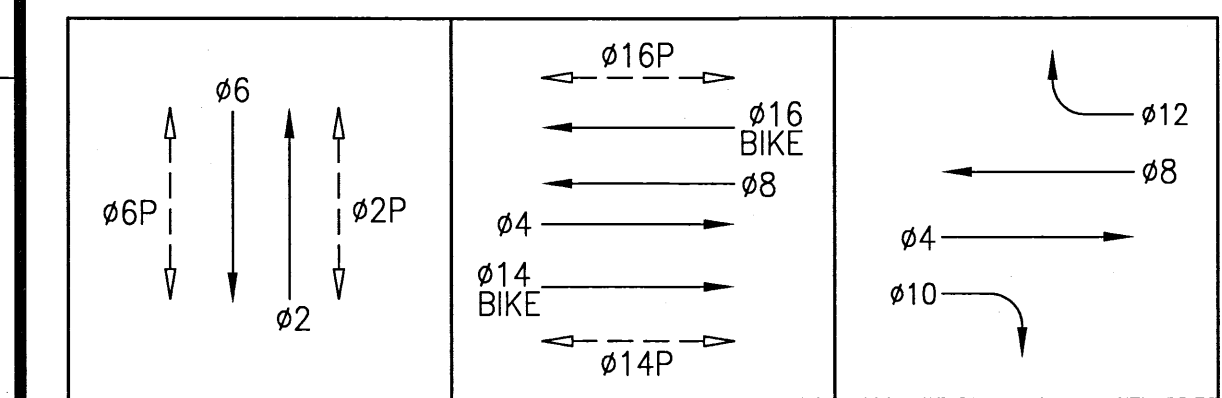
2ND STREET STREETSCAPE IMPROVEMENTS PROJECT

2ND STREET AND NATOMA STREET CONDUIT & WIRING SCHEDULE

CONTRACT NO. 1064J
DRAWING NO. ET-2.1
FILE NO. 106,269
REV. NO. 1



PHASE DIAGRAM



PHASE SEQUENCE

G	Y	R	MISSION ST. (EB & WB) - 02 & 06		
R		G	Y	R	2ND ST. (SB & NB) - 04 & 08
R		R	G	Y	2ND ST. (SBRT & NBRT) - 010 & 012
R		G	Y	R	2ND ST. (SB & NB BIKE) - 014 & 016
WM	FRH	RH		PED XING 2ND ST. (SS & NS) - 02P & 06P	
RH		WM	FRH	RH	PED XING BRANNAN ST. (WS & ES) - 014P & 016P

POLE AND EQUIPMENT SCHEDULE											
POLE No.	TYPE OF POLE	LUMINAIRE VOLTAGE/WATTAGE	VEHICLE SIGNAL					PEDESTRIAN SIGNAL			REMARKS
			No.	TYPE	MOUNTING	VISORS	LOUVERS	No.	TYPE	MOUNTING	
①	19-4-100 W/25' MAST ARM & 6' LUMINAIRE ARM	5	161 124 84	3S12" BIKE 3S12" RA 3S12" NRT	SV-1-T MAS MAS MAS	T T T		168	1S-COUNT	SP-1	BACKPLATE BACKPLATE APS
②	1-A (10')		22	3S12"	SV-1-T	T		69	1S-COUNT	SP-1	APS
③	17-2-100 W/20' MAST ARM & 6' LUMINAIRE ARM	5	24 21	3S12" 3S12"	MAS SV-1-T	T T		28	1S-COUNT	SP-1	BACKPLATE APS
④	1-A (13')		42 125 165	3S12" 3S12" RA 3S8" BIKE	TV-2-T SV-1	T T T		169	1S-COUNT	SP-1	APS MOUNT 165 AT 8'
⑤	19-4-100 W/25' MAST ARM & 6' LUMINAIRE ARM	5	141 62 104 44	3S12" BIKE 3S12" 3S12" RA 3S12" NRT	SV-2-T-SF MAS MAS MAS	T T T T		148 29	1S-COUNT 1S-COUNT	SP-1 (22") SP-1-SF (12")	BACKPLATE BACKPLATE APS
⑥	PPB POLE										APS
⑦	17-1-70 W/20' MAST ARM & 6' NEW LUMINAIRE FIXTURE	5	61 64	3S12" 3S12"	SV-1-T MAS	T T		68	1S-COUNT	SP-1	APS BACKPLATE
⑧	1-A (13')		145 82 105	3S8" BIKE 3S12" 3S12" RA	SV-1 TV-2-T	T T T		149	1S-COUNT	SP-1	APS MOUNT 145 AT 8'

GENERAL NOTES:

- CONTRACTOR SHALL CONTACT SFMTA SIGNAL SHOP TO UNINSTALL AND REINSTALL TRANSIT SIGNAL PRIORITY EQUIPMENT.

SHEET NOTES:

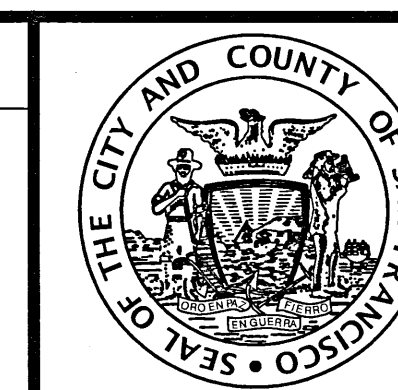
- F/I APS BUTTON PROVIDED BY CITY FORCES.
- R/S EXISTING SIGN POLE AND RELOCATE SIGN ONTO POLES 4. CONTACT SFMTA SIGN SHOP AT 1508 BANCROFT AVENUE, SAN FRANCISCO; (415) 554-9786 PRIOR TO DELIVERY AND CONTACT TRAFFIC ENGINEER THROUGH THE CITY REPRESENTATIVE FOR SIGN RELOCATION.
- ABANDON EXISTING CONDUIT AND WIRING. CUT EXISTING CONDUIT AND WIRING TO PULL BOX WALL AND CAP ENDS. PRIOR TO ABANDONING OF EXISTING CABLES IN EXISTING CONDUIT, CONTRACTOR TO FIELD VERIFY AND MAINTAIN SERVICES TO STREET LIGHTS AND TRAFFIC CONTROLLER.
- CONTRACTOR SHALL FURNISH ONE SECTION PEDESTRIAN SIGNAL HOUSING AND INSTALL CITY FURNISHED ONE SECTION LED PEDESTRIAN MODULE.
- REFER TO E SERIES DWG AND FIXTURE SCHEDULE E-0.2 FOR LUMINAIRE TYPE, VOLTAGE AND WATTAGE.
- POLE ON SUBSIDEWALK BASEMENT.
- F/I TWO SETS OF 40A INLINE FUSE. ONE FOR TRAFFIC SIGNAL DISCONNECT AND ONE FOR STREET LIGHTING DISCONNECT.
- EXISTING ELECTRICAL WIRING WHICH WILL NOT BE MADE OBSOLETE AND WHICH WILL BE MAINTAIN OR DISTURBED OR DUE TO CONSTRUCTION CHANGES REQUIRED BY THIS CONTRACT SHALL BE RESTORED TO OPERATING CONDITION, AS REQUIRED AND/OR DIRECTED.
- SPLICE NEW WIRE INTO THE EXISTING WIRES AS PER CONDUIT AND WIRING SCHEDULE (I.E: STREETLIGHT AND SIGNAL). PROVIDE NEW WIRES FOR ALL ADDITIONAL SIGNALS PER CONDUIT AND WIRING SCHEDULE.

NOTE:
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NO.	DATE	DESCRIPTION	BY	APP.
1	7/26/18	PCO #17 Basement GRS Conduit	ST	SL

TABLE OF REVISIONS

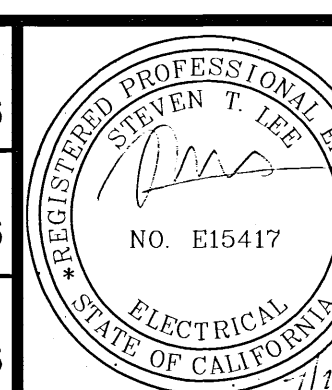
REFERENCE INFORMATION & FILE NO. OF SURVEYS
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DESIGN & ENGINEERING
PUBLIC WORKS
CITY & COUNTY OF SAN FRANCISCO
30 VAN NESS AVENUE, 5TH FLOOR
SAN FRANCISCO, CA 94102 - 6028

Section Mgr:	Philip Thwin	Date:	
Deputy Division Mgr:	Iqbal Dhapa		
Division Mgr:	Patrick Rivera		

DESIGNED:	DATE:
SS/ZH	09/16
DRAWN:	DATE:
SS/ZH	09/16
CHECKED:	DATE:
GD/SL	9/16



SCALE:	AS SHOWN
SHEET OF SHEETS	OF

2ND STREET STREETSCAPE IMPROVEMENTS PROJECT

2ND STREET AND BRANNAN STREET TRAFFIC SIGNAL WORK

CONTRACT NO.	1064J
DRAWING NO.	ET-8.0
FILE NO.	106,279
REV. NO.	1

A vertical ruler with a black scale bar and white tick marks, numbered 1 through 9 from top to bottom.

1
2
3
4
5
6
7

9

Date:

A circular professional engineer seal for Steven T. Lee, No. E15417, State of California. The seal features the text "REGISTERED PROFESSIONAL ENGINEER" at the top, "STEVEN T. LEE" in the center, "NO. E15417" below the name, and "ELECTRICAL" and "STATE OF CALIFORNIA" at the bottom. A signature is written across the center of the seal.

1