

ELECTRICAL

SIGNALS

&

LIGHTING

STANDARD NOTES

- AB ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
- BC INSTALL PULL BOX IN EXISTING CONDUIT RUN.
- CB INSTALL CONDUIT INTO EXISTING PULL BOX.
- CC CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED.
- CF CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL WIRE OR ROPE.
- DH DETECTOR HANDHOLE.
- MT CONDUIT WITH PULL WIRE OR ROPE.
- PEU PHOTOELECTRIC UNIT.
- R REMOVE EQUIPMENT.
- RS REMOVE AND SALVAGE EQUIPMENT
- RI REMOVE EXISTING CONDUCTORS. INSTALL NEW CONDUCTORS AS INDICATED.
- RL RELOCATE EQUIPMENT.
- RR REMOVE AND REUSE EQUIPMENT.
- SC SPLICE NEW TO EXISTING CONDUCTORS.

ABBREVIATIONS (CON'T)

- DMS DYNAMIC MESSAGE SIGN
- E EXISTING TO REMAIN
- EMS EXTINGUISHABLE MESSAGE SIGN
- FB FLASHING BEACON
- HPS HIGH PRESSURE SODIUM
- COM TRAFFIC SIGNAL COMMUNICATIONS CABLE
- LED LIGHT EMITTING DIODE
- LPS LOW PRESSURE SODIUM
- PB PULL BOX
- PEC PHOTOELECTRIC CONTROL
- PED PEDESTRIAN
- PEU PHOTOELECTRIC UNIT
- PGS PARKING GUIDANCE SIGN
- PPB PEDESTRIAN PUSH BUTTON
- PT POST TOP
- R REMOVE (TO BECOME PROPERTY OF CONTRACTOR)
- RRFB RAPID RECTANGULAR FLASHING BEACON
- S SALVAGE (DELIVER TO CSJ)
- SNS STREET NAME SIGN
- SP SERVICE POINT
- TSP TRANSIT SIGNAL PRIORITY
- UNO UNLESS NOTED OTHERWISE
- USO UNLESS SPECIFIED OTHERWISE
- WP WEATHER PROOF
- XFMR TRANSFORMER

ABBREVIATIONS

- APS AUDIBLE/ACCESSIBLE PEDESTRIAN SIGNAL (AS IDENTIFIED ON SCHEDULE)
- C CONSTRUCT. SUPPLIED AND INSTALLED BY CONTRACTOR, UNLESS SPECIFIED OTHERWISE.
- CKT CIRCUIT
- CMS CHANGEABLE MESSAGE SIGN
- CSJ INSTALLED BY CITY
- DLC LOOP DETECTOR LEAD IN CABLE

APPROVED BY

[Signature]

DATE

4-20-19

TRAFFIC SIGNAL AND STREETLIGHTING NOTES AND ABBREVIATIONS

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-01a

STREETLIGHT LEGEND			
LUMINAIRE SYMBOL	LAMP DESIGNATION	LUMINAIRE I.E.S./ANSI LIGHT DISTRIBUTION DESIGNATIONS	LAMP WATTAGE & TYPE
(A) (AP)	SOX 18		18 WATT LPS
(B) (BP)	SOX 35		35 WATT LPS
(C) (CP)	SOX 55	TYPE III, SHORT, NON-CUTOFF	55 WATT LPS
(D) (DP)	SOX 90	TYPE IV, MEDIUM, SEMI-CUTOFF	90 WATT LPS
(E) (EP)	SOX 135	TYPE IV, MEDIUM, SEMI-CUTOFF	135 WATT LPS
(F) (FP)	SOX 180	TYPE IV, MEDIUM, SEMI-CUTOFF	180 WATT LPS
(M) (MP)	LU 50	TYPE III, MEDIUM, SEMI-CUTOFF	50 WATT HPS
(Q) (QP)	LU 70	TYPE III, MEDIUM, SEMI-CUTOFF	70 WATT HPS
(U) (UP)	LU 100	TYPE III, MEDIUM, SEMI-CUTOFF	100 WATT HPS
(V) (VP)	LU 310	TYPE III, MEDIUM, SEMI-CUTOFF	310 WATT HPS
(W) (WP)	LU 150	TYPE III, MEDIUM, SEMI-CUTOFF	150 WATT HPS
(X) (XP)	LU 250	TYPE III, MEDIUM, SEMI-CUTOFF	250 WATT HPS
(Y) (YP)	LU 400	TYPE III, MEDIUM, SEMI-CUTOFF	400 WATT HPS
(Z)	FLUORESCENT		

NOTES:

1. LETTER "P" IN SYMBOL INDICATES THAT A NEMA TWIST-LOCK RECEPTACLE, RATED 15A WITH PHOTOELECTRIC CONTROL DEVICE SHALL BE PROVIDED.
2. ALL BALLASTS SHALL BE OF MULTIPLE VOLTAGE TYPE.
3. ALL HPS LAMPS SHALL BE DESIGNED FOR "BASE DOWN" (BO) OR "ANY POSITION" OPERATION.
4. LU 100 AND LU 150 LAMPS SHALL BE 55V TYPE.
5. BALLAST POWER FACTOR SHALL EXCEED .90.
6. BALLASTS SHALL BE MOUNTED ON TRAY OR ACCESS DOOR.

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DATE

3/3/92

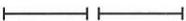
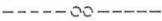
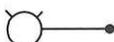
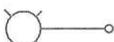
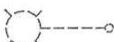
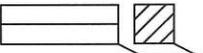
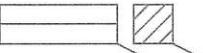
STREETLIGHTING LEGEND

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-01b

TO BE CONST.	EXISTING	REMOVE, SALVAGE OR RELOCATE	DESCRIPTION
			ELECTRICAL CONDUIT
			OVERHEAD CONDUCTORS
			PULL BOX
			REPLACE EXISTING BOX WITH NEW BOX. SIZE AS SPECIFIED.
			UTILITY POLE
			TRAFFIC SIGNAL OR STREETLIGHT STANDARD
			LUMINAIRE
			STREETLIGHT STANDARD WITH MAST ARM AND LUMINAIRE (ELECTROLIER)
			ORNAMENTAL STREET LIGHT (SINGLE HEAD)
			ORNAMENTAL STREET LIGHT (DOUBLE HEAD)
			OVERHEAD STREET NAME SIGN
			SIGNAL POLE MOUNTED STREET NAME SIGN
			OVERHEAD REGULATORY SIGN
			POLE MOUNTED SMALL STREET NAME SIGN
			INDUCTIVE DETECTOR LOOP
			INDUCTIVE DETECTOR LOOP (BIKE LANE)
			VIDEO DETECTION ZONE
			BIKE DETECTION SYMBOL

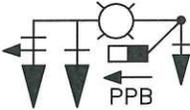
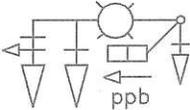
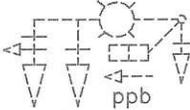
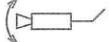
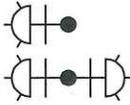
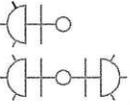
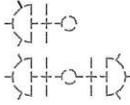
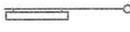
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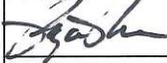
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TRAFFIC SIGNAL AND
 STREETLIGHT LEGEND
 DEPARTMENT OF PUBLIC WORKS



DRAWING
 NO.
 E-01c

TO BE CONST.	EXISTING	REMOVE, SALVAGE OR RELOCATE	DESCRIPTION
			12" RED, YELLOW AND GREEN TRAFFIC SIGNAL HEAD WITH BACKPLATE
			8" RED, YELLOW AND GREEN TRAFFIC SIGNAL HEAD WITH BACKPLATE
			12" RED ARROW, YELLOW ARROW AND GREEN ARROW TRAFFIC SIGNAL HEAD WITH BACKPLATE
			PEDESTRIAN SIGNAL HEAD
			PEDESTRIAN PUSH BUTTON (ARROW ON SIGN PLATE AS SHOWN)
			EMERGENCY VEHICLE PREEMPTION
			WIRELESS COMMUNICATION
			TSP ANTENNA
			TRAFFIC SIGNAL STANDARD WITH LUMINAIRE, MAST ARMS AND SIGNAL HEADS
			AUDIBLE PEDESTRIAN SIGNAL
			VIDEO DETECTION CAMERA
			CCTV PTZ CAMERA
			TRAFFIC SIGNAL CONTROLLER CABINET (DOOR SWING AS SHOWN)
			ELECTRICAL SERVICE CABINET (DOOR SWING AS SHOWN)
			IRRIGATION CONTROLLER CABINET
			RAPID RECTANGULAR FLASHING BEACON
			CMS/DMS/PGS AS INDICATED
			BLANK OUT SIGN

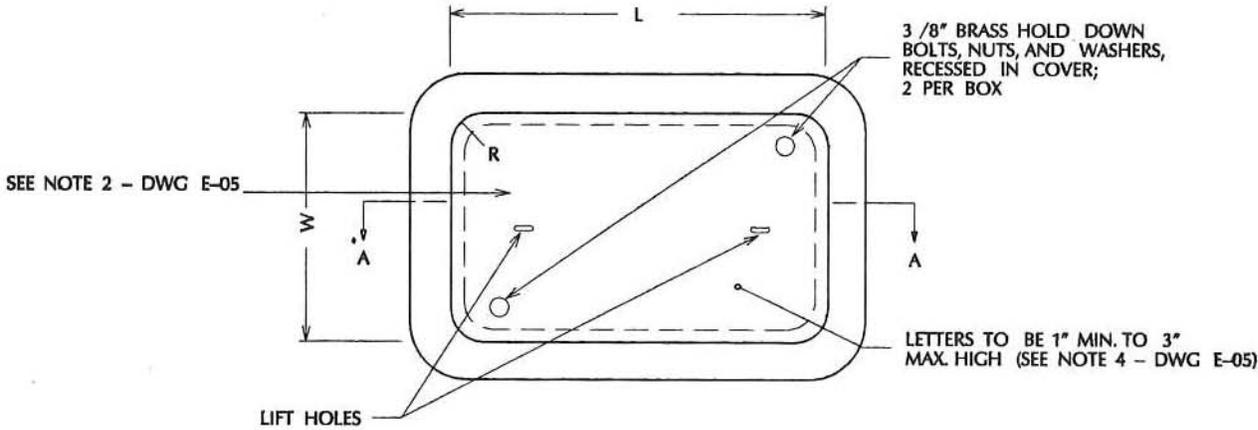
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**TRAFFIC SIGNAL AND
STREETLIGHT LEGEND**

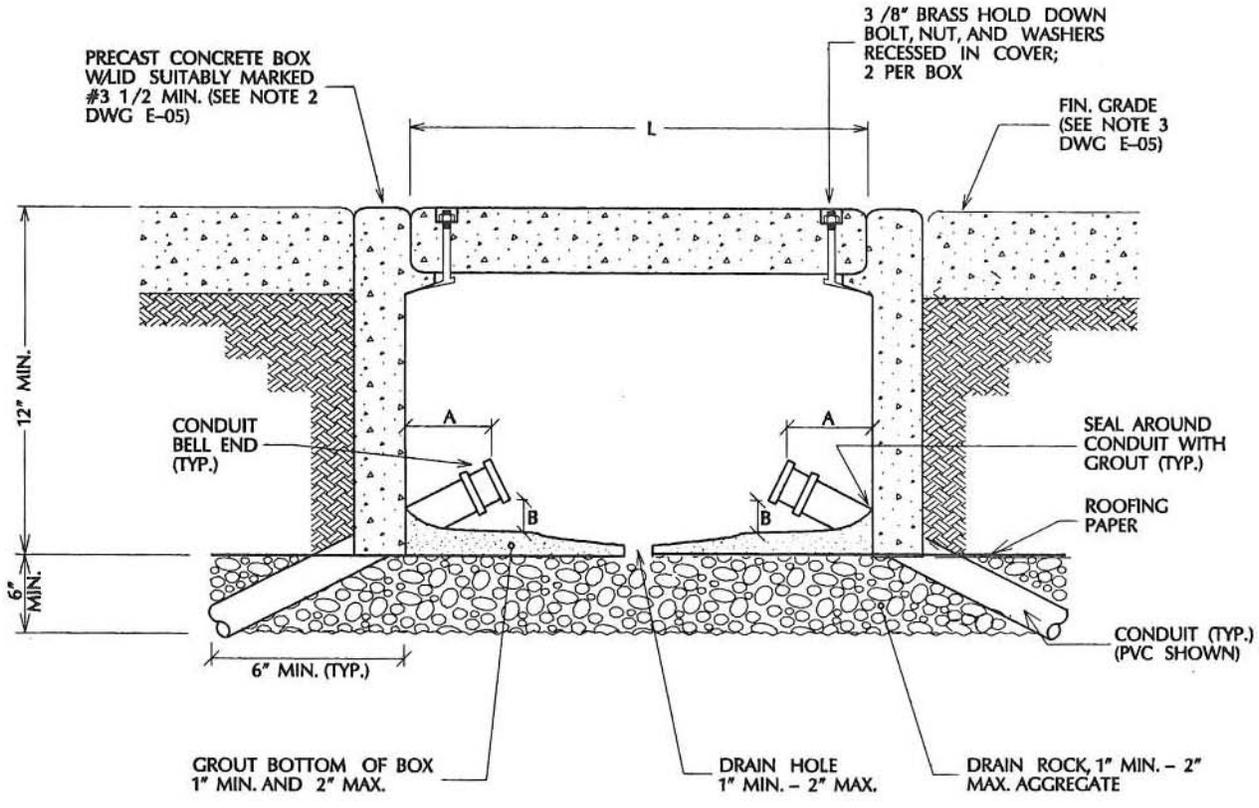
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DRAWING NO.
E-01d



TOP VIEW



SECTION A - A

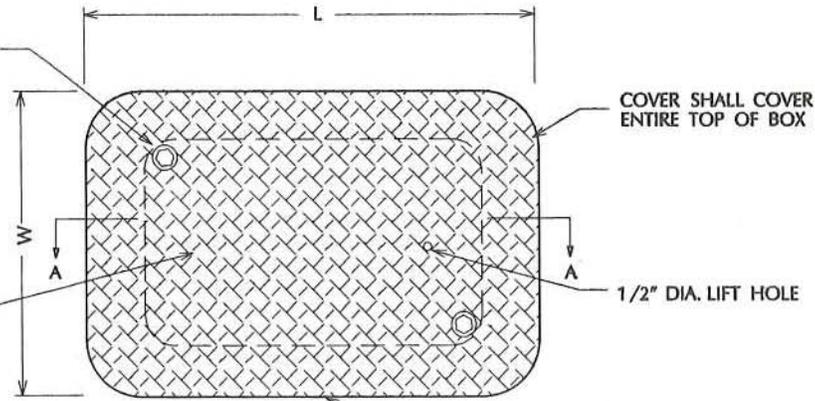
DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
 B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:
 APPLICATION: PLACED IN CONDUIT RUNS IN AREAS WHERE BOX IS NOT SUBJECT TO VEHICULAR TRAFFIC LOAD.
 SEE DRAWINGS E-04, E-05, AND E-06 FOR PULL BOX DETAILS AND NOTES.

APPROVED BY 	CONCRETE PULLBOX NON-TRAFFIC		DRAWING NO.
DATE 3/3/92			E-02
DEPARTMENT OF PUBLIC WORKS			

BOLT HOLE SHALL MATCH STANDARD BOLTS; RECESS IN COVER FOR NUT

SEE NOTE 4 - DWG E-05



TOP VIEW

FIN. GRADE (SEE NOTE 3 DWG E-04)

CONDUIT BELL END (TYP.)

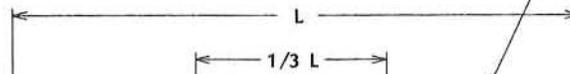
3" MIN. PCC ON ALL SIDES OF BOX (POUR IN FIELD)

12" MIN.
6" MIN.
6" MIN.

3" MIN. ALL AROUND

3" MIN. ALL AROUND

GROUT BOTTOM OF BOX 1" MIN. AND 2" MAX.



SECTION A - A

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
" B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:

1. APPLICATION: PLACED IN CONDUIT RUNS IN AREAS WHERE BOX IS SUBJECT TO VEHICULAR TRAFFIC LOAD.
2. SEE DRAWINGS E-04, E-05, AND E-06 FOR PULL BOX DETAILS AND NOTES.

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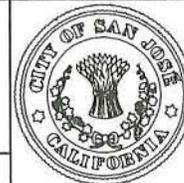
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DATE

3/3/92

CONCRETE PULLBOX
TRAFFIC

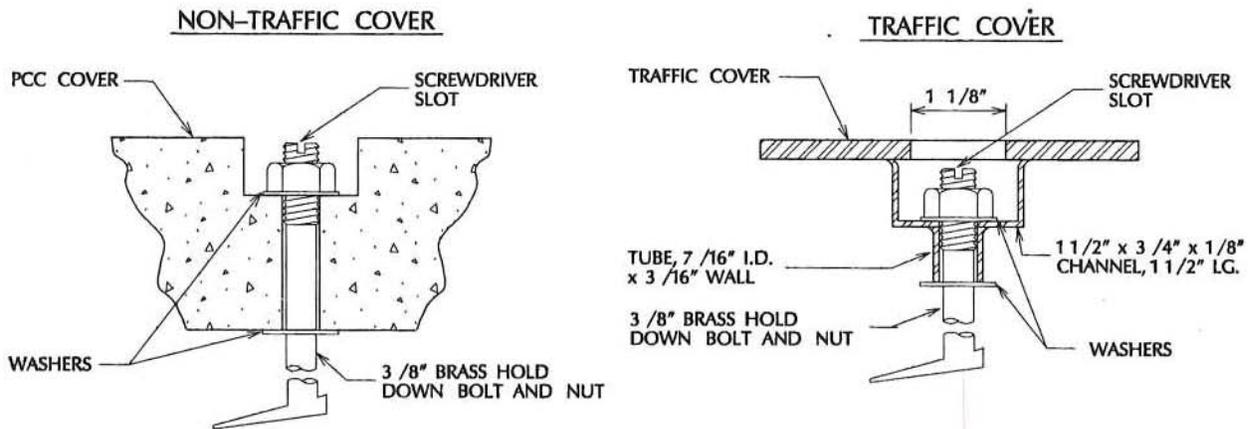
DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-03

HOLD DOWN BOLT DETAIL



DIMENSION TABLE

PULL BOX	CONCRETE BOX		CONCRETE COVER					TRAFFIC COVER			△ ROCK SUMP
	MIN. THICKNESS	MIN. DEPTH	L	W	R	EDGE THICKNESS	EDGE TAPER	L	W	PLATE THICKNESS	
NO. 3 1/2	1"	12"	15 3/8"	10 1/8"	1 1/8"	1 3/4"	1/8"	19 1/8"	14"	1/4"	1.8
NO. 5	1"	12"	23 1/4"	13 3/4"	1 1/4"	2"	1/8"	24 5/8"	15 1/8"	1/4"	2.6
NO. 6	1 1/2"	12"	30 5/8"	17 5/8"	1 1/4"	2"	1/8"	34 5/8"	21 7/8"	1/4"	5.3
NO. 7	1 1/2"	14"	35 3/4"	24"	1 1/4"	3"	1/8"	39 3/4"	28 1/8"	1/4"	7.7
NO. 8	1 1/2"	14"	47 3/4"	30 1/8"	1 1/4"	3"	1/8"	51 3/4"	33 5/8"	1/4"	12.2

△ = MINIMUM CUBIC FEET OF DRAIN ROCK FOR DRY WELL. DOES NOT APPLY TO TRAFFIC BOX. PROVIDE DRAIN ROCK FOR TRAFFIC BOX IN ACCORDANCE WITH DWG. E-03.

APPROVED BY

AWB

DATE

3/3/92

CONCRETE PULLBOX DETAILS AND DIMENSIONS

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-04

1. USE STEEL COVER AND SPECIAL CONCRETE FOOTING, AS SHOWN, WHEN BOX IS APPROVED BY THE ENGINEER TO BE INSTALLED WHERE SUBJECT TO VEHICULAR TRAFFIC LOADS. STEEL COVER SHALL HAVE EMBOSSED NON-SKID PATTERN.
2. STEEL REINFORCING SHALL BE AS REGULARLY USED IN THE STANDARD PRODUCTS OF THE RESPECTIVE MANUFACTURER.
3. TOP OF PULL BOXES SHALL BE FLUSH WITH SURROUNDING GRADE, SIDEWALK, OR TOP OF ADJACENT CURB, EXCEPT THAT IN UNPAVED AREAS WHERE PULL BOX IS NOT IMMEDIATELY ADJACENT TO AND PROTECTED BY A CONCRETE FOUNDATION, POLE OR OTHER PROTECTIVE CONSTRUCTION, THE BOX SHALL BE PLACED WITH ITS TOP 0.10 FOOT ABOVE SURROUNDING GRADE. WHERE PRACTICABLE, PULL BOXES SHOWN IN THE VICINITY OF CURBS SHALL BE PLACED ADJACENT TO THE BACK OF CURB, AND PULL BOXES SHOWN ADJACENT TO STANDARDS SHALL BE PLACED IN ACCORDANCE WITH DETAIL E-14.
4. PULL BOX COVERS SHALL BE MARKED AS FOLLOWS:
 CSJ TRAFFIC SIGNAL: FOR TRAFFIC SIGNAL SYSTEMS WITH OR WITHOUT STREET LIGHTING SYSTEMS.
 CSJ STREETLIGHTING: FOR STREETLIGHTING SYSTEMS ONLY
 CSJ COMMUNICATION: FOR TRAFFIC SIGNAL COMMUNICATIONS SYSTEMS ONLY.
 CSJ TREE LIGHTING: FOR TREE LIGHTING SYSTEMS ONLY.
 CSJ SPRINKLER CONTROL: FOR SPRINKLER CONTROL SYSTEMS ONLY.
 CSJ COUNT STATION: FOR TRAFFIC COUNT STATION SYSTEMS ONLY.
 CSJ SERVICE: FOR SERVICE LATERALS TO UTILITY FACILITIES TERMINATION POINT ONLY.
 CSJ ELECTRICAL: FOR MISCELLANEOUS ELECTRICAL SYSTEMS ONLY.
5. ALL METAL COVERS, METAL Z-BAR FRAME, METAL RINGS OR ANY METALLIC COMPONENT OF A PULLBOX SHALL BE BONDED TO A #8 AWG OR LARGER COPPER EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS SHALL BE BRAIDED COPPER EQUIVALENT TO #8 AWG COPPER AND 36" IN LENGTH, MINIMUM, AND SHALL BE ATTACHED WITH 1/4" - 20 STAINLESS STEEL SCREW (DRILL AND TAP AS REQUIRED) AND APPROVED GROUNDING LUG.
6. THE NOMINAL DIMENSIONS OF THE OPENING IN WHICH THE COVER SETS SHALL BE THE SAME AS THE COVER DIMENSIONS EXCEPT THE LENGTH AND WIDTH DIMENSIONS SHALL BE 1/8" GREATER.
7. ALL COVERS AND BOXES SHALL BE INTERCHANGEABLE WITH CITY OF SAN JOSE MALE AND FEMALE GAGES. WHEN INTERCHANGED WITH A STANDARD MALE OR FEMALE GAGE, THE TOP SURFACES SHALL BE FLUSH WITHIN 1/8". TOP OUTSIDE EDGE OF ALL CONCRETE COVERS AND PULL BOXES SHALL HAVE A 1/4" MIN. RADIUS.
8. WHEN PULLBOX IS INSTALLED IN SIDEWALK AREA, THE DEPTH OF THE PULL BOX SHALL BE ADJUSTED SO THAT THE TOP OF THE BOX IS FLUSH WITH THE TOP OF THE SIDEWALK.
9. PULL BOX SHALL NOT BE INSTALLED WITHIN THE BOUNDARIES OF NEW OR EXISTING WHEELCHAIR RAMPS OR DRIVEWAYS.
10. ALL PULL BOXES SHALL BE LOCATED WITHIN CITY RIGHT-OF-WAY.
11. DRAIN ROCK CUSHION SHALL EXTEND A MIN. OF 6" BEYOND INSIDE WALLS OF NON-TRAFFIC BOX.
12. CONDUITS SHALL TERMINATE NOT MORE THAN 2" AND NOT LESS THAN 1" INSIDE THE BOX, AND SHALL BE NOT LESS THAN 1" NOR MORE THAN 2" CLEAR FROM THE GROUTED BOTTOM OF THE BOX.

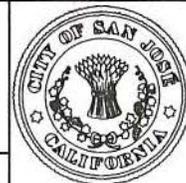
APPROVED BY <i>aws</i>	CONCRETE PULLBOX NOTES		DRAWING NO. E-05
DATE 3/3/92			

13. CONDUITS SHALL ENTER THE BOX WITH MANUFACTURED LONG RADII TYPE OR STANDARD 45° ELBOW.
14. FACTORY BOTTOM WITH 2" DRAIN HOLE IS ACCEPTABLE IN LIEU OF GROUTED BOTTOM AND ROOFING PAPER.
15. PULL BOX SHALL BE SIZE #3 1/2 MIN. UNLESS SHOWN OTHERWISE ON PLANS OR REQUIRED.
16. PULL BOXES SHALL BE PLACED AT INTERVALS NOT EXCEEDING 200 FEET IN CONDUIT RUNS.
17. INSTALL PULL BOX EXTENSION(S) AS REQUIRED TO SET TOP OF PULL BOX FLUSH WITH SURROUNDING GRADE.

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DATE <i>3/3/92</i>

**CONCRETE PULLBOX
NOTES - CONTINUED**

DEPARTMENT OF PUBLIC WORKS

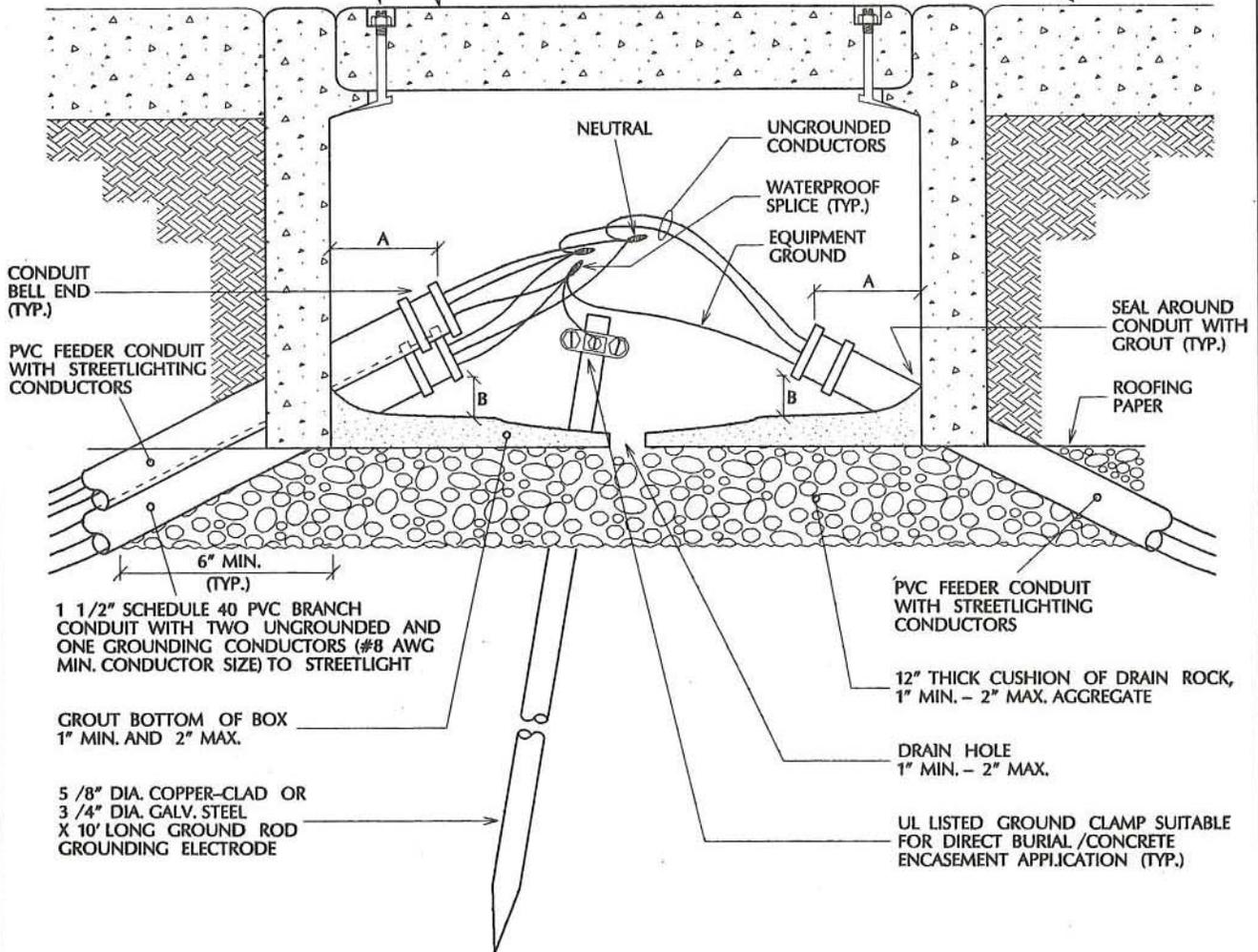


DRAWING
NO.
E-06

CITY OF SAN JOSE #3 1/2
 PRECAST CONCRETE BOX WITH
 LID MARKED "CSJ STREETLIGHTING"

3/8" BRASS HOLD DOWN BOLT
 NUT AND WASHER RECESSED
 IN COVER (2 PER BOX)

SIDEWALK OR TOP
 OF CURB GRADE



1 1/2" SCHEDULE 40 PVC BRANCH
 CONDUIT WITH TWO UNGROUNDED AND
 ONE GROUNDING CONDUCTORS (#8 AWG
 MIN. CONDUCTOR SIZE) TO STREETLIGHT

GROUT BOTTOM OF BOX
 1" MIN. AND 2" MAX.

5/8" DIA. COPPER-CLAD OR
 3/4" DIA. GALV. STEEL
 X 10' LONG GROUND ROD
 GROUNDING ELECTRODE

PVC FEEDER CONDUIT
 WITH STREETLIGHTING
 CONDUCTORS

12" THICK CUSHION OF DRAIN ROCK,
 1" MIN. - 2" MAX. AGGREGATE

DRAIN HOLE
 1" MIN. - 2" MAX.

UL LISTED GROUND CLAMP SUITABLE
 FOR DIRECT BURIAL / CONCRETE
 ENCASEMENT APPLICATION (TYP.)

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
 " B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:

1. SEE NOTES DRAWINGS E-04, E-05, AND E-06.
2. PVC CONDUIT SHOWN; IF RIGID STEEL CONDUIT IS USED, BONDING SHALL BE AS PER CITY OF SAN JOSE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. SEE DRAWINGS E-46 AND E-47 FOR BONDING REQUIREMENTS.
4. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS (SLACK NOT SHOWN).
5. 240V STREETLIGHTING CIRCUIT SHOWN. 120V STREETLIGHTING SIMILAR EXCEPT NEUTRAL CONDUCTOR IS PRESENT.

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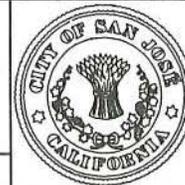
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DATE

3/3/92

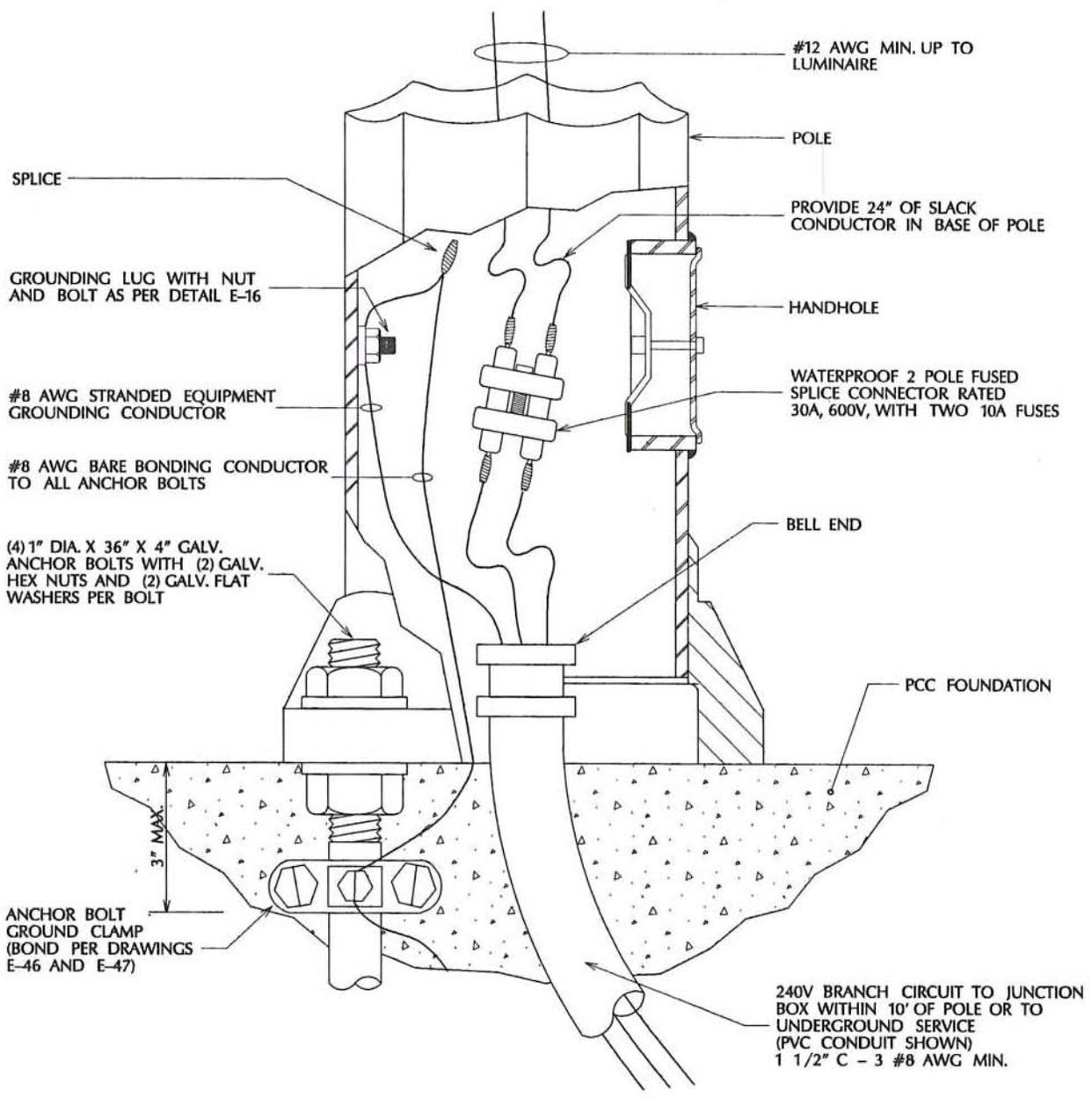
**STREETLIGHT - BRANCH CIRCUIT
 PULLBOX**

DEPARTMENT OF PUBLIC WORKS



DRAWING
 NO.

E-07

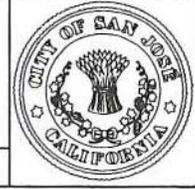


NOTES:
 1. SEE DRAWINGS E-46 AND E-47 FOR POLE BONDING REQUIREMENTS.
 2. 240V CIRCUIT SHOWN. 120V IS SIMILAR EXCEPT USE 1P FUSED CONNECTOR WITH ONE 10A FUSE, IN UNGROUNDED CIRCUIT CONDUCTOR, AND BOND GROUNDED CONDUCTOR TO GROUNDING CONDUCTOR.

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 DATE
 3/3/92

**STREETLIGHT - UNDERGROUND
 BRANCH CIRCUIT CONNECTION**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-08

REMOVEABLE ORNAMENTAL
POLE TOP FINIAL

LPS LUMINAIRE
(WATTAGE AS SPECIFIED)

PHOTO-CONTROL OR
SHORTING CAP WITH LOCKING
RECEPTACLE AS REQUIRED

HPS LUMINAIRE
(WATTAGE AS SPECIFIED)

GALVANIZED MASTARM
(TYPE C-8 STANDARD)

STANDARD (TYPE 10-B, GALVANIZED
FINISH STANDARD)

POLE LABEL

GROUT

#3 1/2 PULL BOX

HANDHOLE

FINISH GRADE

P.C.C. FOUNDATION CAP

P.C.C. FOUNDATION

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3/3/92

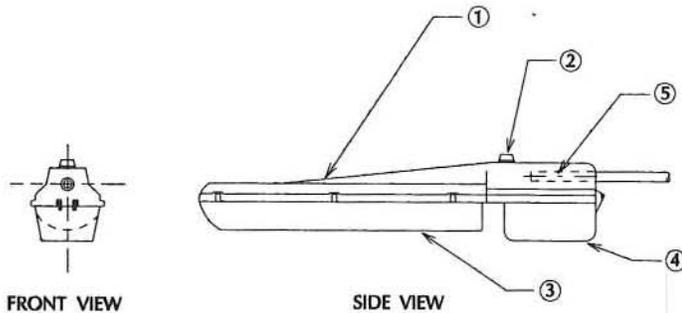
**TYPICAL ELECTROLIER
LOW PRESSURE SODIUM
HIGH PRESSURE SODIUM**

DEPARTMENT OF PUBLIC WORKS

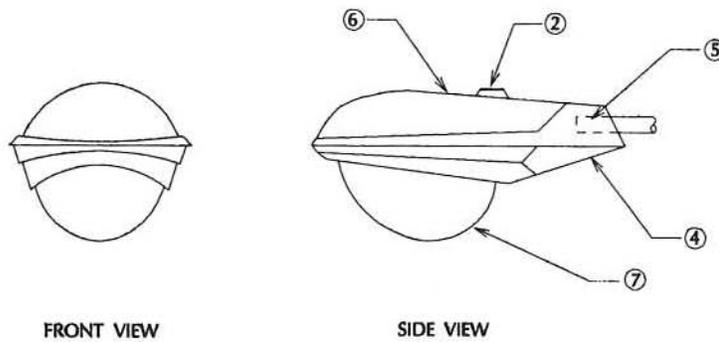


DRAWING
NO.

E-09



LOW PRESSURE SODIUM



HIGH PRESSURE SODIUM

NOTES:

- ① NON-CORROSIVE ABS PLASTIC HOUSING WITH U.V. INHIBITING KORADE FILM.
- ② EEI NEMA 3 PRONG PHOTOCONTROL WITH LOCKING RECEPTACLE OR SHORTING CAP AS REQUIRED
- ③ PRISMATIC ACRYLIC REFRACTOR WITH HIGH TEMPERATURE POLYESTER FIBER GASKET.
- ④ LATCHED AND HINGED DIE CAST ALUMINUM POWER POD ASSEMBLY WITH QUICK BALLAST DISCONNECT
- ⑤ INTERNAL FOUR BOLT SLIPFITTER ASSEMBLY ADJUSTABLE FOR 1 1/4" AND 2" MAST ARMS.
- ⑥ DIE CAST ALUMINUM HOUSING (UPPER AND LOWER SECTIONS)
- ⑦ PRISMATIC BOROSILICATE GLASS REFRACTOR WITH HIGH TEMPERATURE POLYESTER FIBER GASKET.

APPROVED BY

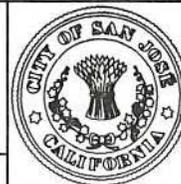
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DATE

2/3/92

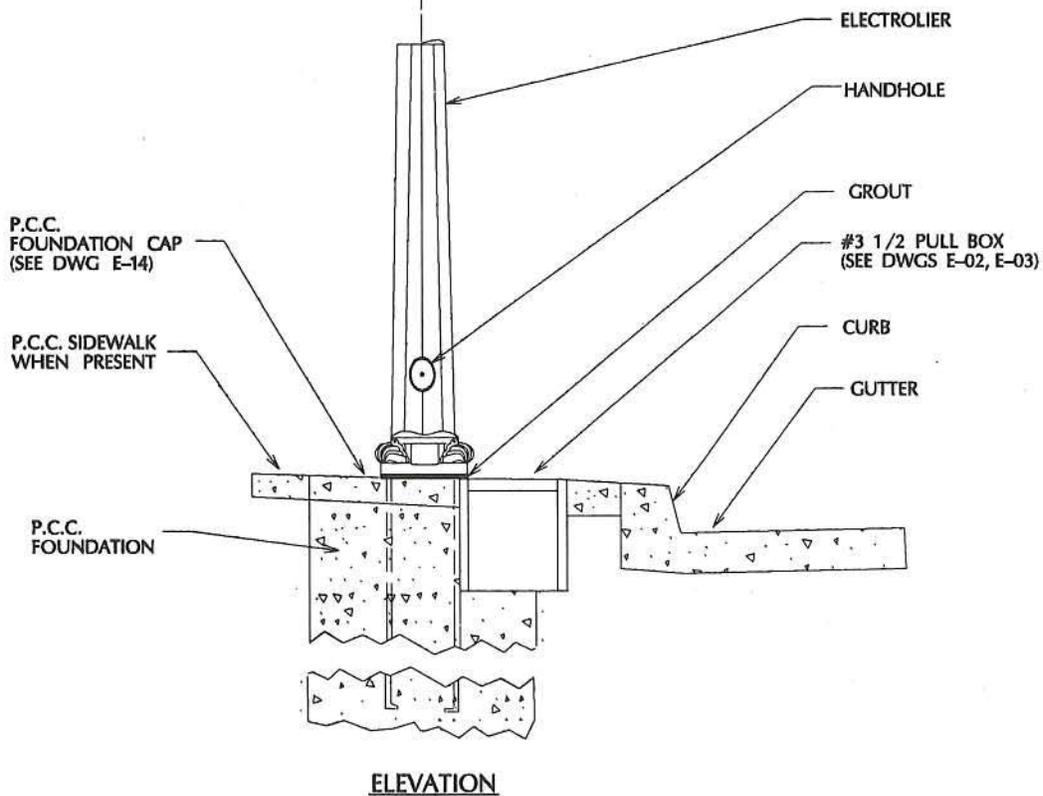
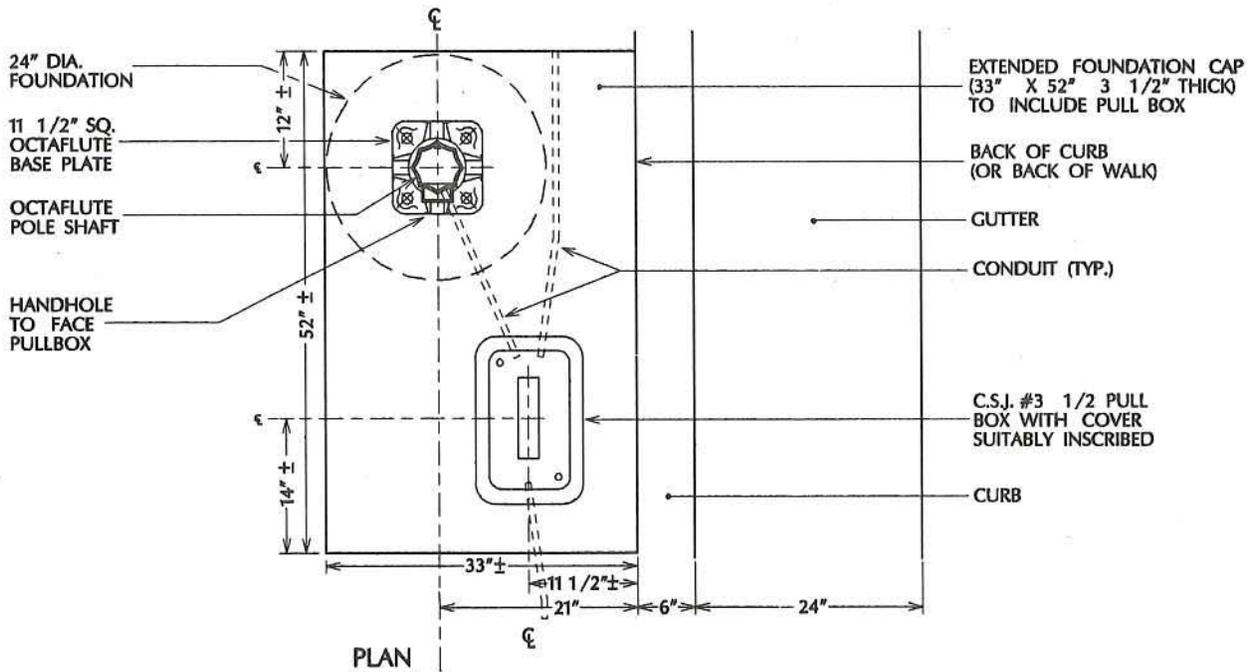
**TYPICAL LUMINARE
LOW PRESSURE SODIUM
HIGH PRESSURE SODIUM**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

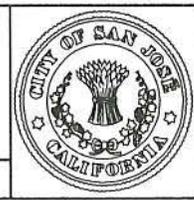
E-10



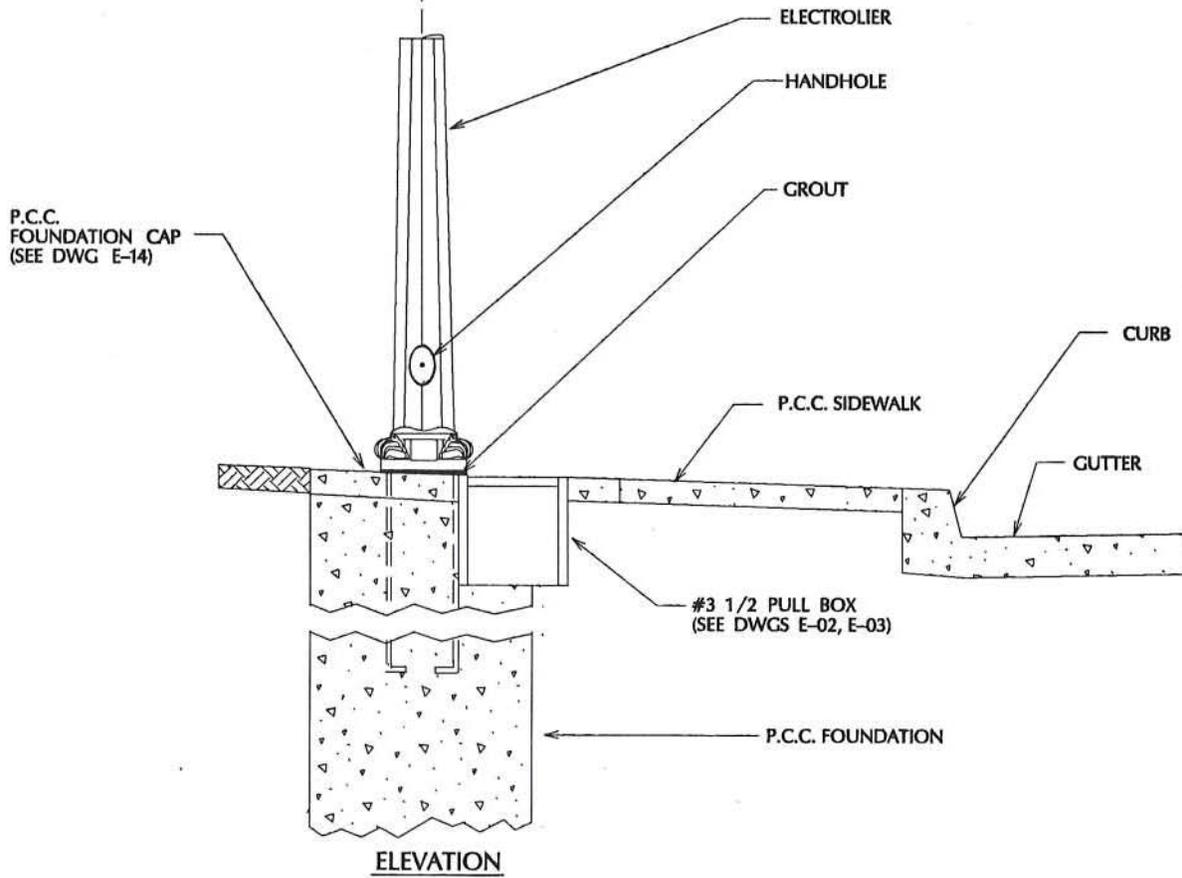
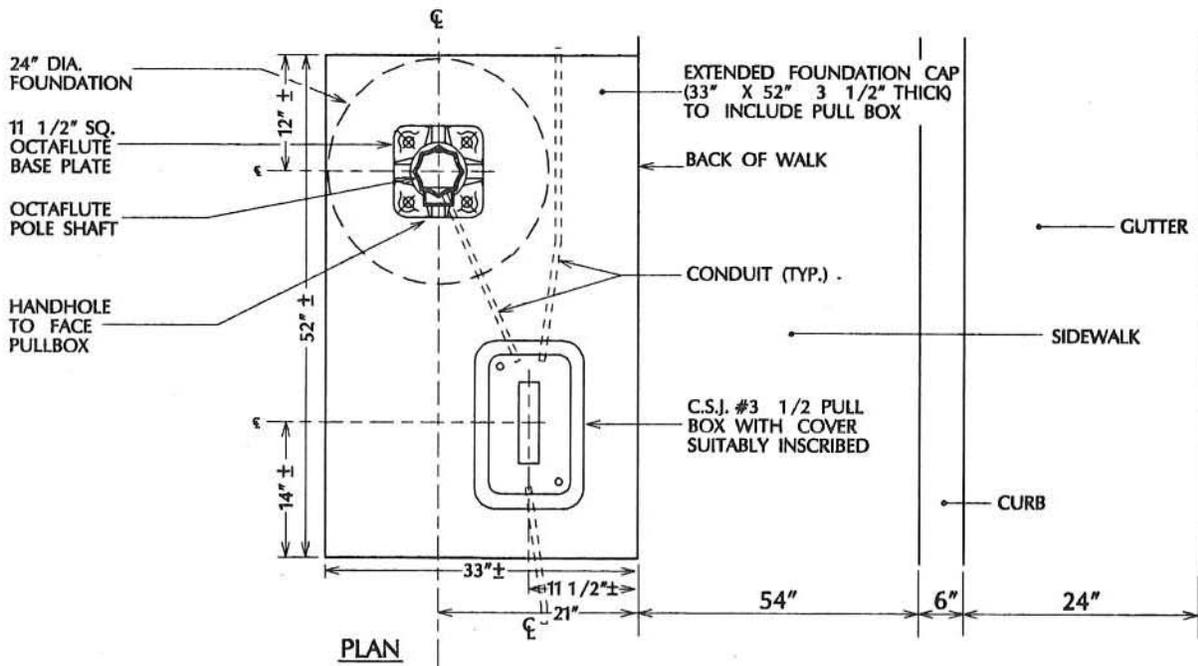
APPROVED BY
[Signature]
 DATE
 3/3/92

**ELECTROLIER LOCATION
 WIDE ATTACHED OR
 DETACHED WALK**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
 E-11



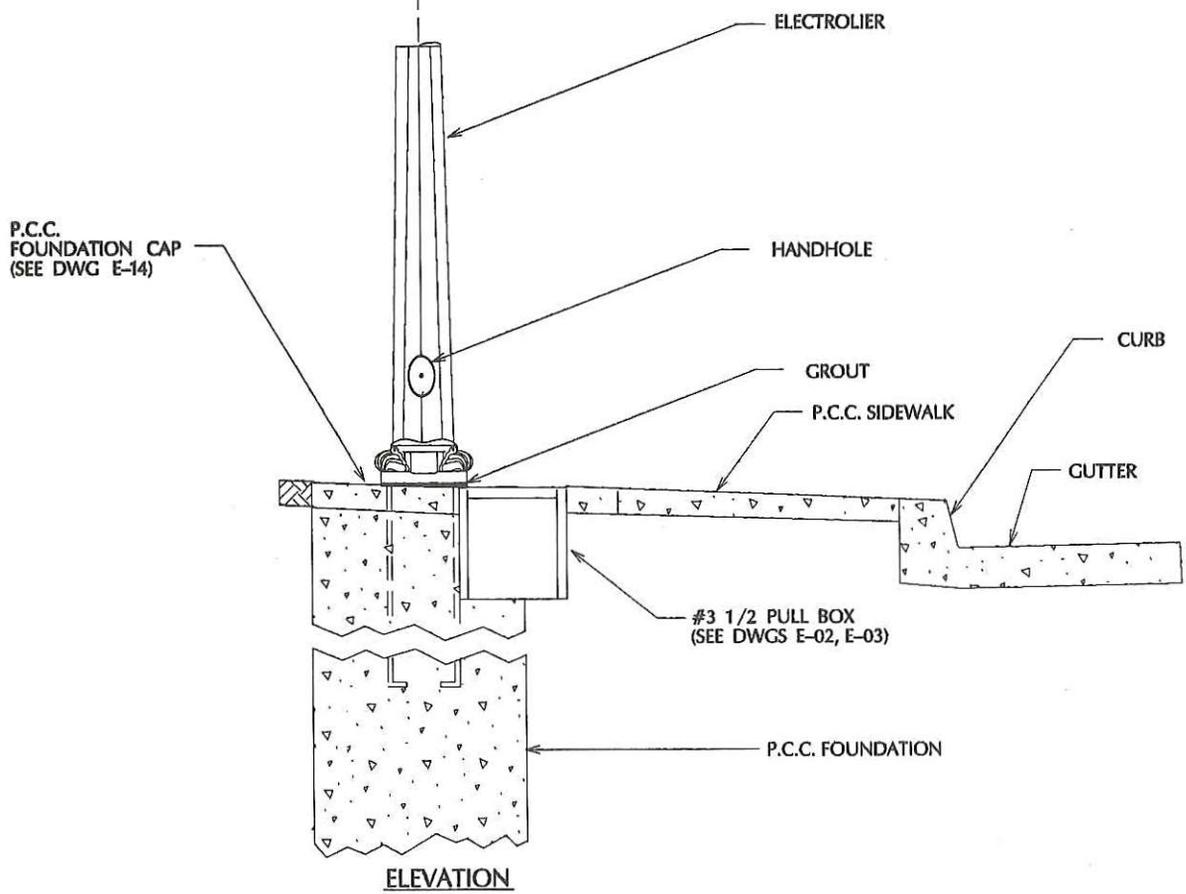
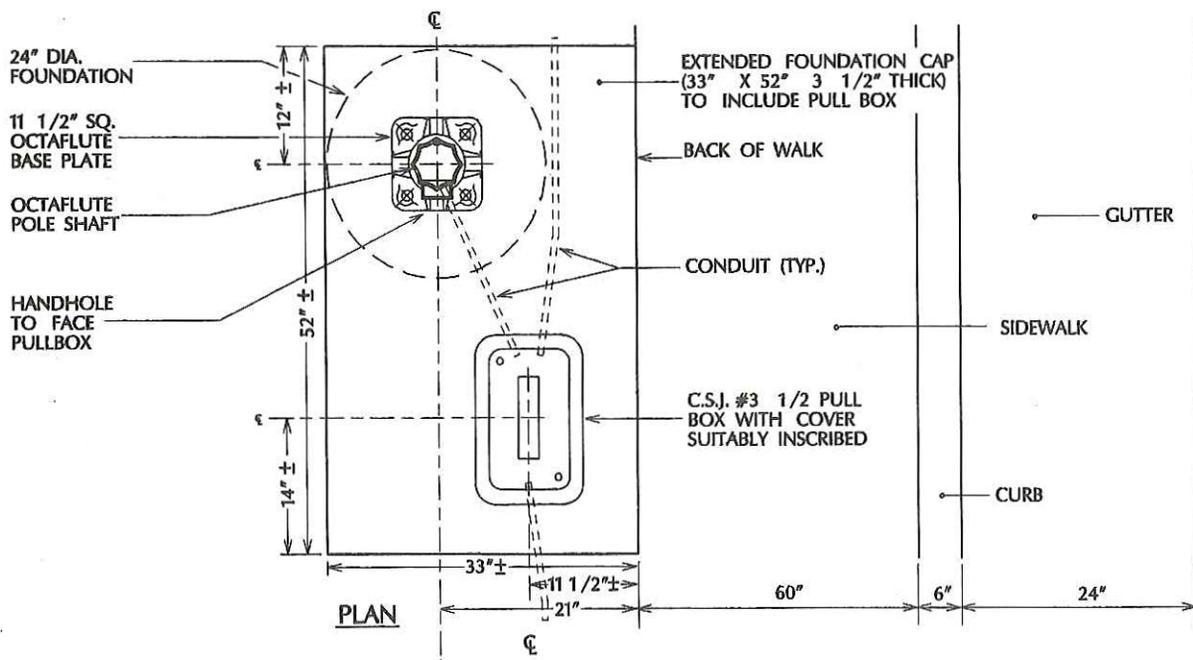
APPROVED BY
aws
 DATE
 3/3/92

**ELECTROLIER LOCATION
 4'6" ATTACHED SIDEWALK**

DEPARTMENT OF PUBLIC WORKS

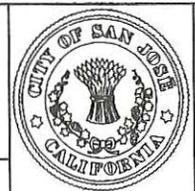


DRAWING NO.
E-12

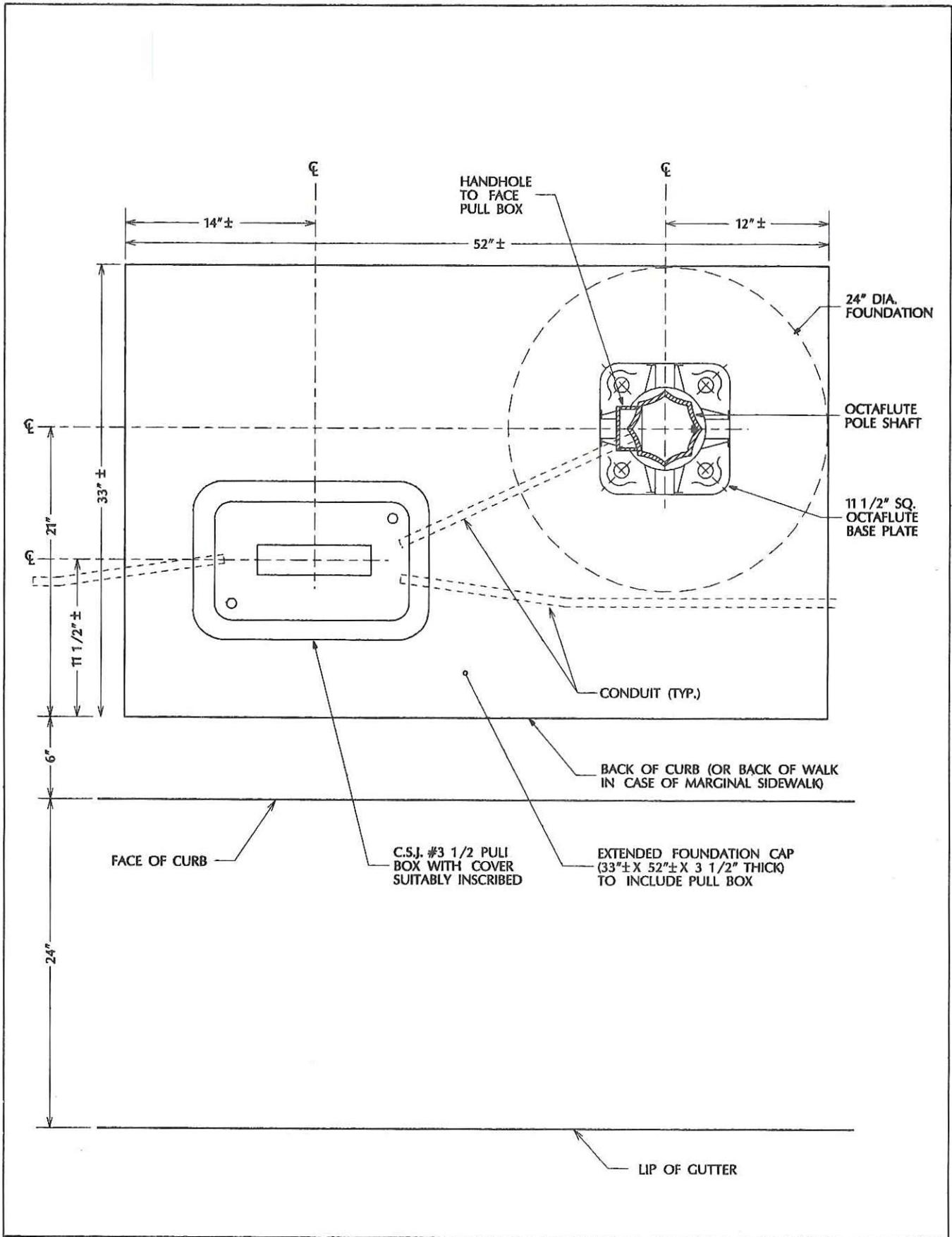


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AWP
 DATE
 3/3/92

**ELECTROLIER LOCATION
 INDUSTRIAL DEVELOPMENT**
 DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-13



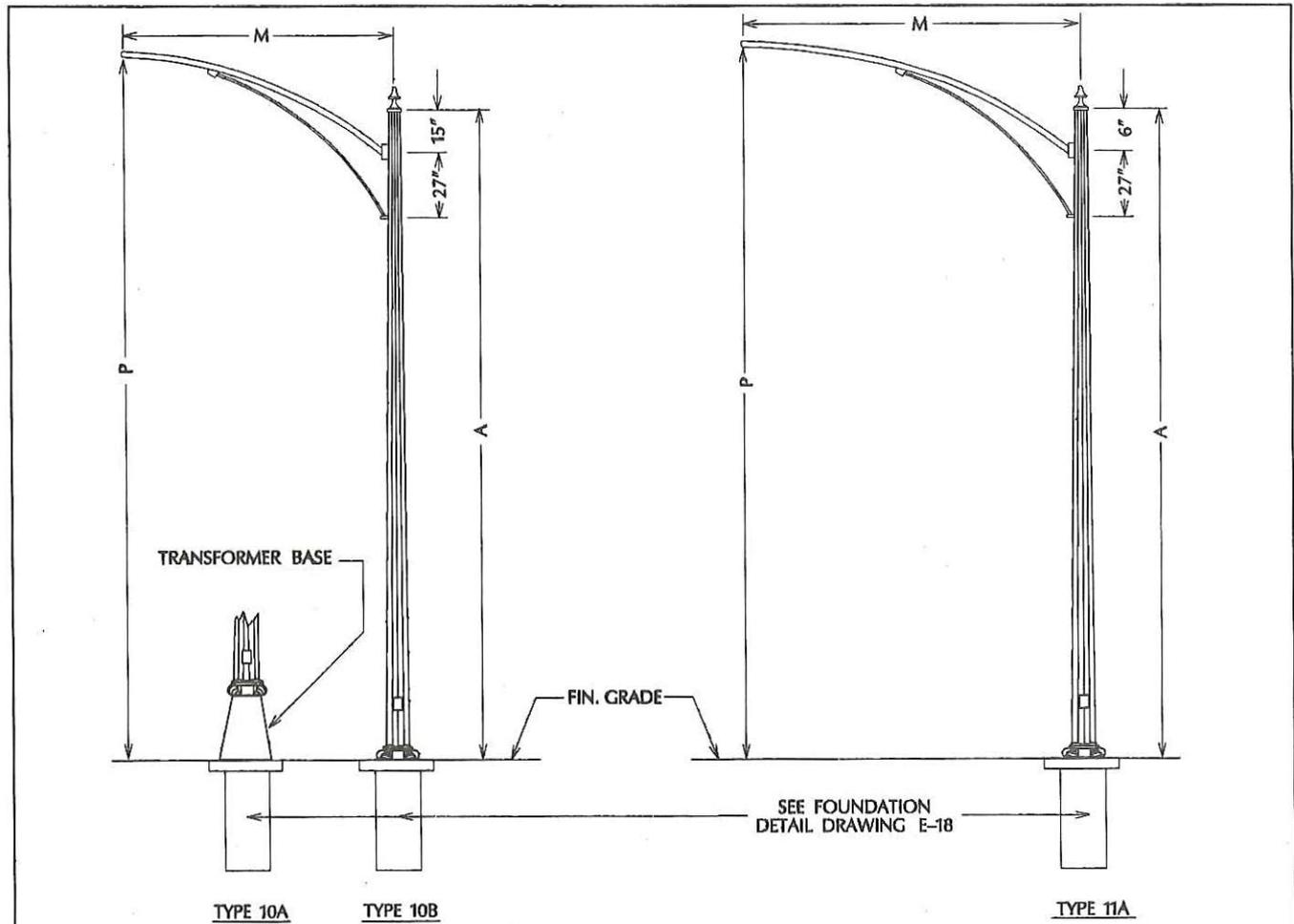
APPROVED BY
aws
 DATE
 3/3/92

**ELECTROLIER /PULL BOX AND
 FOUNDATION CAP DETAIL**

DEPARTMENT OF PUBLIC WORKS



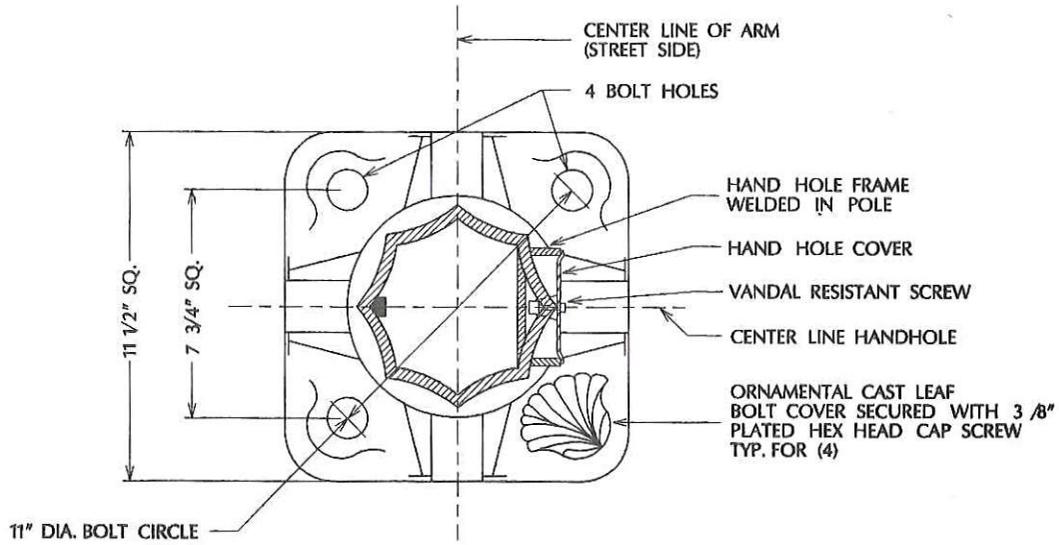
DRAWING
 NO.
 E-14



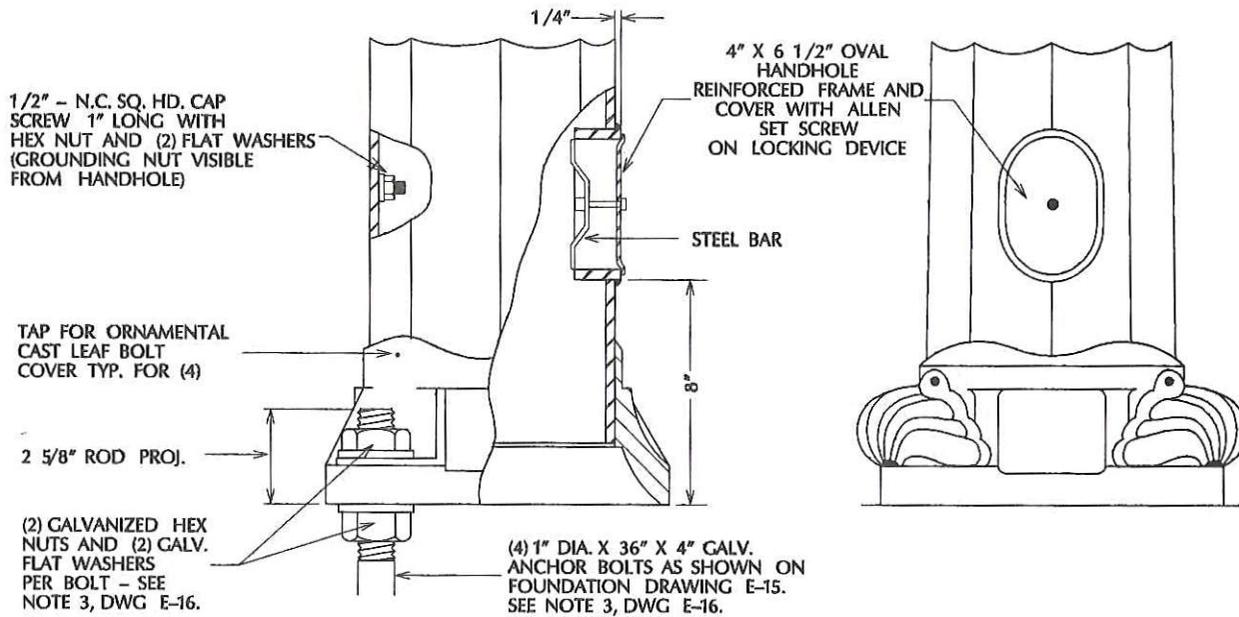
TYPE	POLE DATA				ANCHOR BOLT DATA		LUMINAIRE ARM DATA			TRANSFORMER BASE	FOUNDATION TYPE
	A HEIGHT	THICKNESS	MIN. O.D. AT BASE	MIN. O.D. AT TOP	BC BOLT CIRCLE	ANCHOR BOLT SIZE	M PROJECTED LENGTH	P MOUNTING HEIGHT	ARM TYPE		
10A	30'0"	11 GAGE	8"	3.8"	SEE NOTE (3)	1" x 36" x 4"	8'	33'6" ±	C	YES	2
10B	30'0"		8"	3.8"	11"		8'	31'9" ±		NO	2
11A	28'9"	7 GAGE	8"	3.98"	11"		12'	31'9" ±	E	2	

- NOTES:
 1. USE 10B STANDARD WITH TYPE 'C' ARM UNLESS SPECIFIED OTHERWISE.
 2. STANDARD FINISH SHALL BE GALVANIZED UNLESS SPECIFIED OTHERWISE.
 3. SEE DRAWING E-17 FOR TRANSFORMER BASE REQUIREMENTS.
 4. USE TYPE 2 FOUNDATION WITH 1" x 36" x 4" ANCHOR BOLTS FOR SINGLE/TWIN UNIT LUMINAIRE(S) ON ORNAMENTAL POLES.
 5. SEE DRAWING E-16 FOR BASE REFERENCES.

APPROVED BY <i>[Signature]</i>	LIGHTING STANDARDS TYPE 10A, 10B AND 11A - OCTAFLUTE		DRAWING NO.
DATE 3/2/92			E-15
DEPARTMENT OF PUBLIC WORKS			



PLAN VIEW



SIDE VIEW

HAND HOLE VIEW

NOTES:

1. HAND HOLE SHALL BE LOCATED ON LEFT SIDE OF POLE WHEN FACING POLE FROM STREET AND MAST ARM AT RIGHT ANGLE TO STREET.
2. SEE DRAWING E-15 FOR POLE DETAILS.
3. SEE DRAWING E-17 FOR POLE TYPE 10A TRANSFORMER BASE CONNECTING BOLT AND ANCHOR BOLT REQUIREMENTS.

APPROVED BY

AWB
DATE

3/3/92

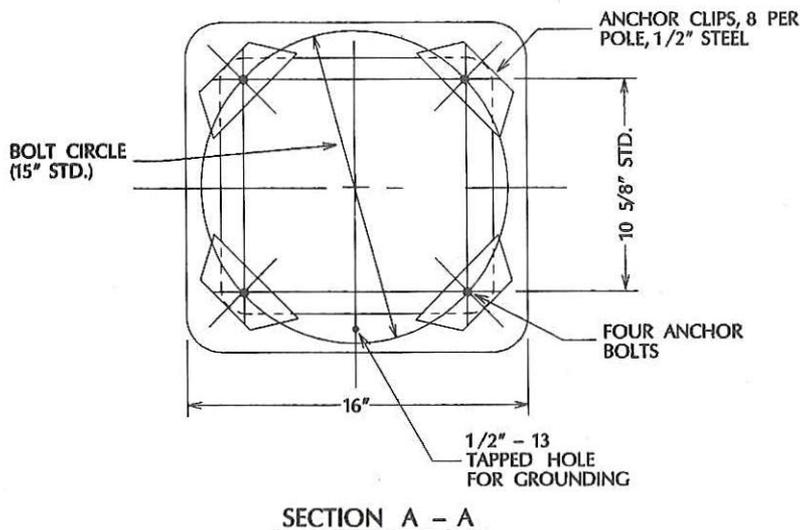
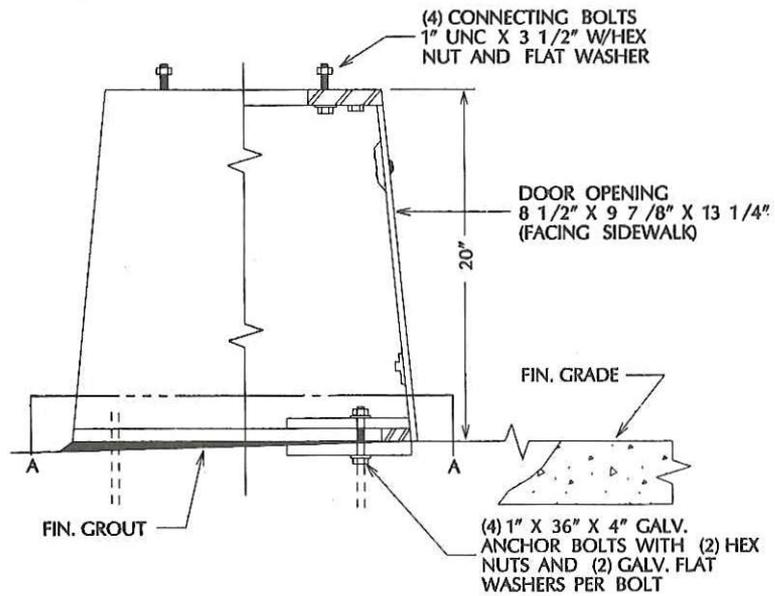
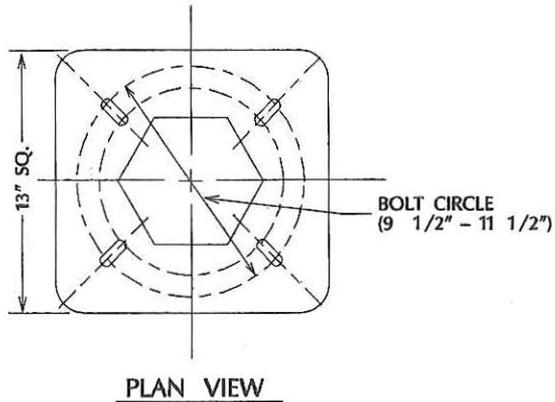
**LIGHTING STANDARDS TYPE 10A, 10B,
AND 11A BASE DETAILS**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-16



NOTE:
INSTALL DOOR OPENING ON SAME SIDE AS HAND HOLE ON POLE.

APPROVED BY

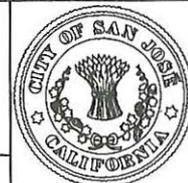
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DATE

3/3/92

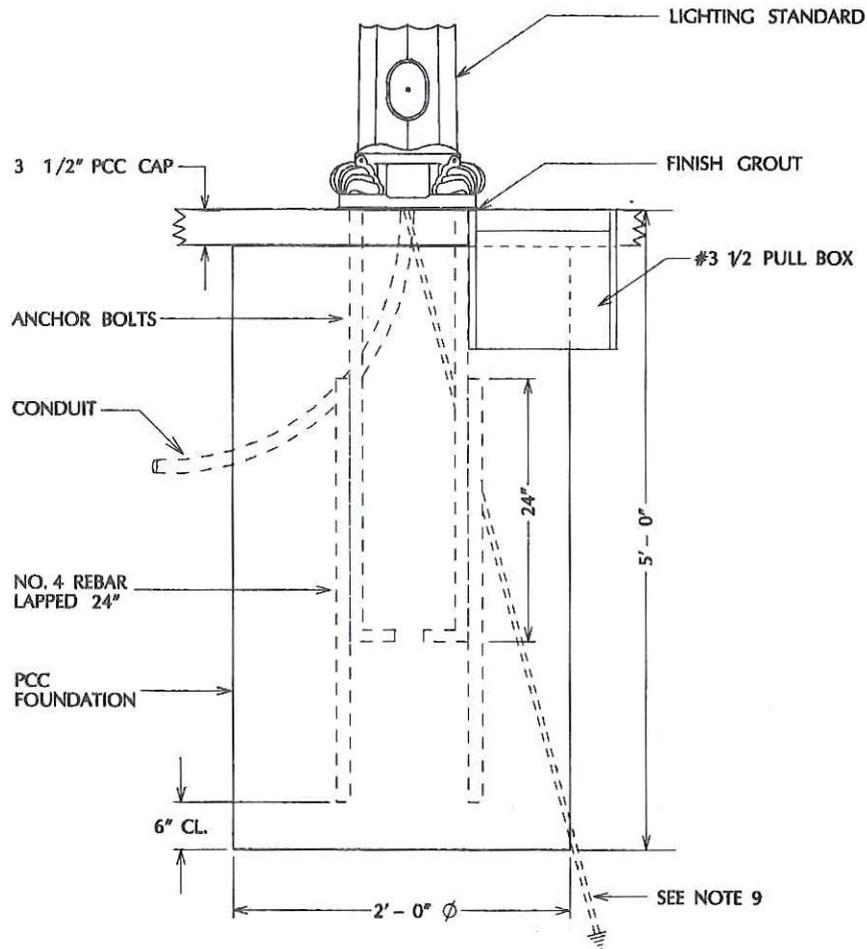
LIGHTING STANDARD TYPE 10A
TRANSFORMER BASE DETAIL

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-17



TYPE 2

NOTES:

1. STOP FOUNDATION POUR 3 1/2" BELOW GRADE. PLACE FINISH CAP AFTER STANDARD IS SET AND PLUMBED. BUILD UP GROUT UNDER STANDARD BASE ON LOW SIDE (TYP.).
2. SURFACE OF FINISH CAP TO BE AT GRADE AND SLOPED TO MATCH EXISTING OR FUTURE SIDEWALK (TYP.).
3. ANCHOR BOLT SIZE AND LENGTH AS INDICATED ON CHART (TYP.).
4. 1/2" REINFORCED STEEL (#4 REBAR) WIRED TO ANCHOR BOLT WITH 24" OVERLAP (TYP.).
5. 4" SECTION OF ANCHOR BOLT BENT AT 90 RIGHT ANGLE (TYP.).
6. STANDARDS TO BE SET AT 1'-9" TO CENTER FROM BACK OF CURB UNLESS SHOWN OTHERWISE
7. SEE DRAWING E-15 FOR BOLT CIRCLE INFORMATION.
8. SEE DRAWING E-14 FOR PLAN LOCATION AND FOUNDATION CAP DETAIL REQUIREMENTS OF STREETLIGHT.
9. GROUND ROD SET OBLIQUELY THROUGH FOUNDATION IN UNDISTURBED SOIL FOR STREETLIGHTS FED OVERHEAD AND SET IN PULL BOX FOR STREETLIGHTS FED UNDERGROUND.

APPROVED BY

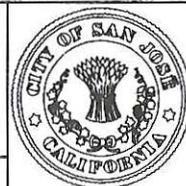
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DATE

3/3/92

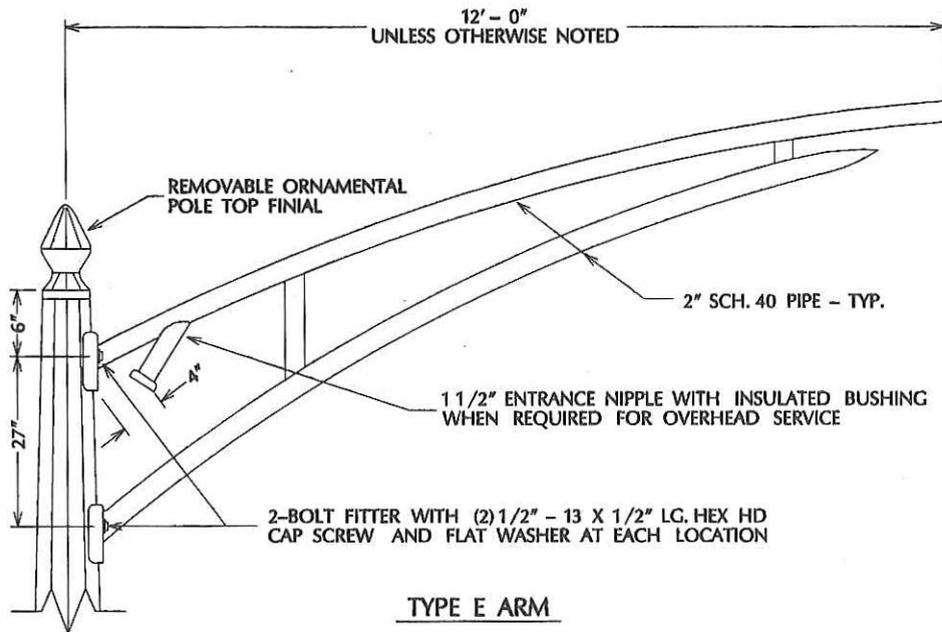
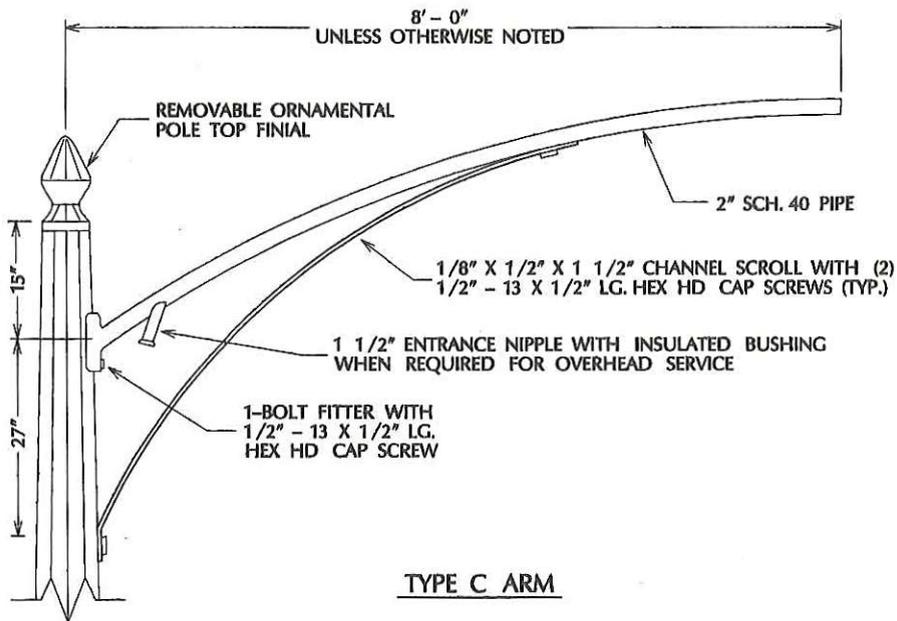
LIGHTING STANDARD - OCTAFLUTE
TYPE 2 FOUNDATION DETAIL

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-18



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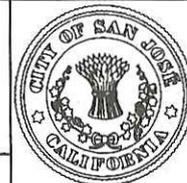
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DATE

3/3/92

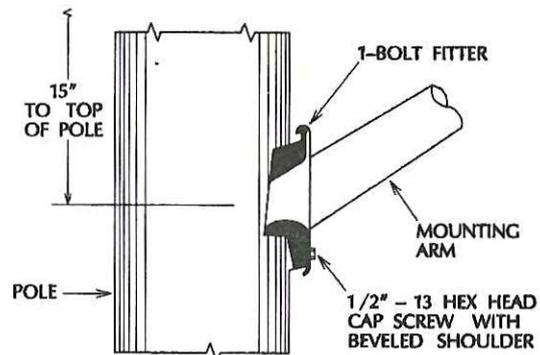
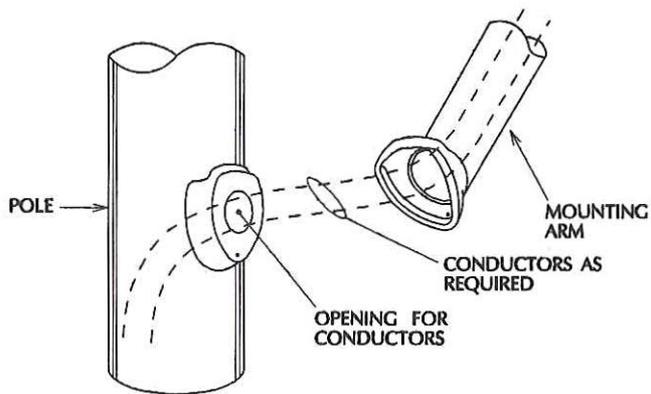
LIGHTING STANDARD - OCTAFLUTE
MOUNTING ARMS
TYPES C AND E

DEPARTMENT OF PUBLIC WORKS

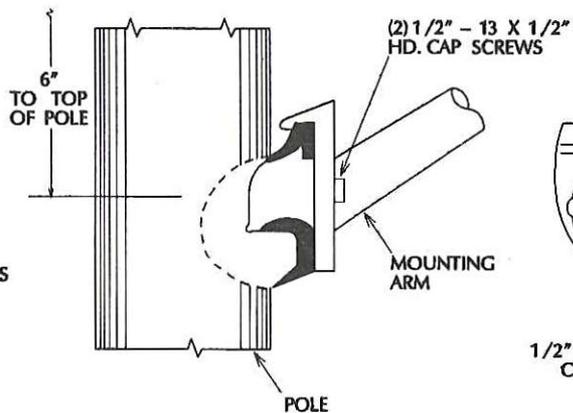
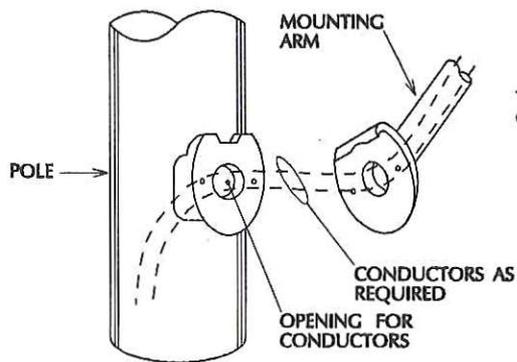


DRAWING
NO.

E-19



TYPE C



TYPE E

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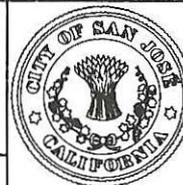
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DATE

3/3/92

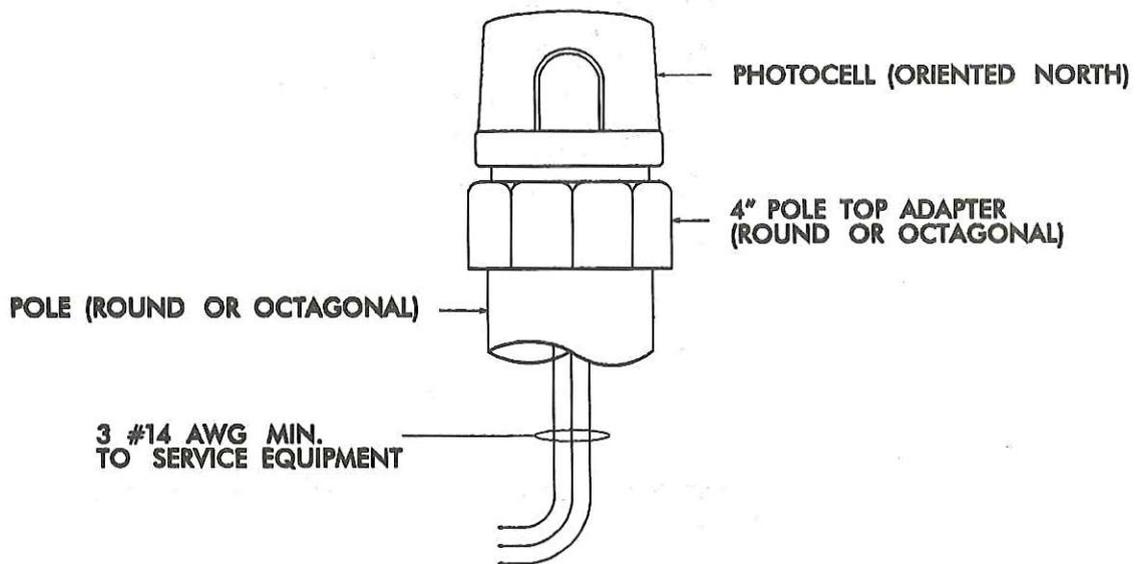
**LIGHTING STANDARD - OCTAFLUTE
BRACKET ATTACHMENTS FOR
TYPE C AND E MOUNTING ARMS**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-20



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DATE

3/3/92

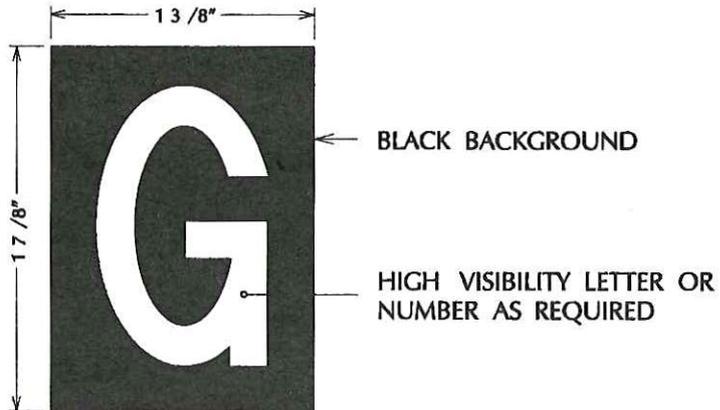
POLE TOP MOUNTED PHOTOCELL

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-21



TYPE AND CHARACTER SIZE

STICK-ON TYPE, YELLOW REFLECTORIZED NUMBERS AND LETTERS ON BLACK BACKGROUND, MEASURING 1 3/8" WIDE AND 1 7/8" HIGH.

INSTALLATION

VERTICALLY ARRANGED WITH SPACE ON EITHER SIDE OF THE MIDDLE LETTER. BOTTOM HEIGHT OF THE NUMBER SHALL BE AT 7' (MIN.) FROM GROUND.

MANUFACTURER

BRADY LABEL COMPANY, 727 WEST GLENDALE AVE., MILWAUKEE, WISCONSIN, OR APPROVED EQUAL. THE CATALOG NUMBER FOR THE BRADY LABEL IS #5890.

SPECIFICATION FOR NUMBERING
STREETLIGHT /TRAFFIC SIGNAL POLES

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awj

DATE

3/3/92

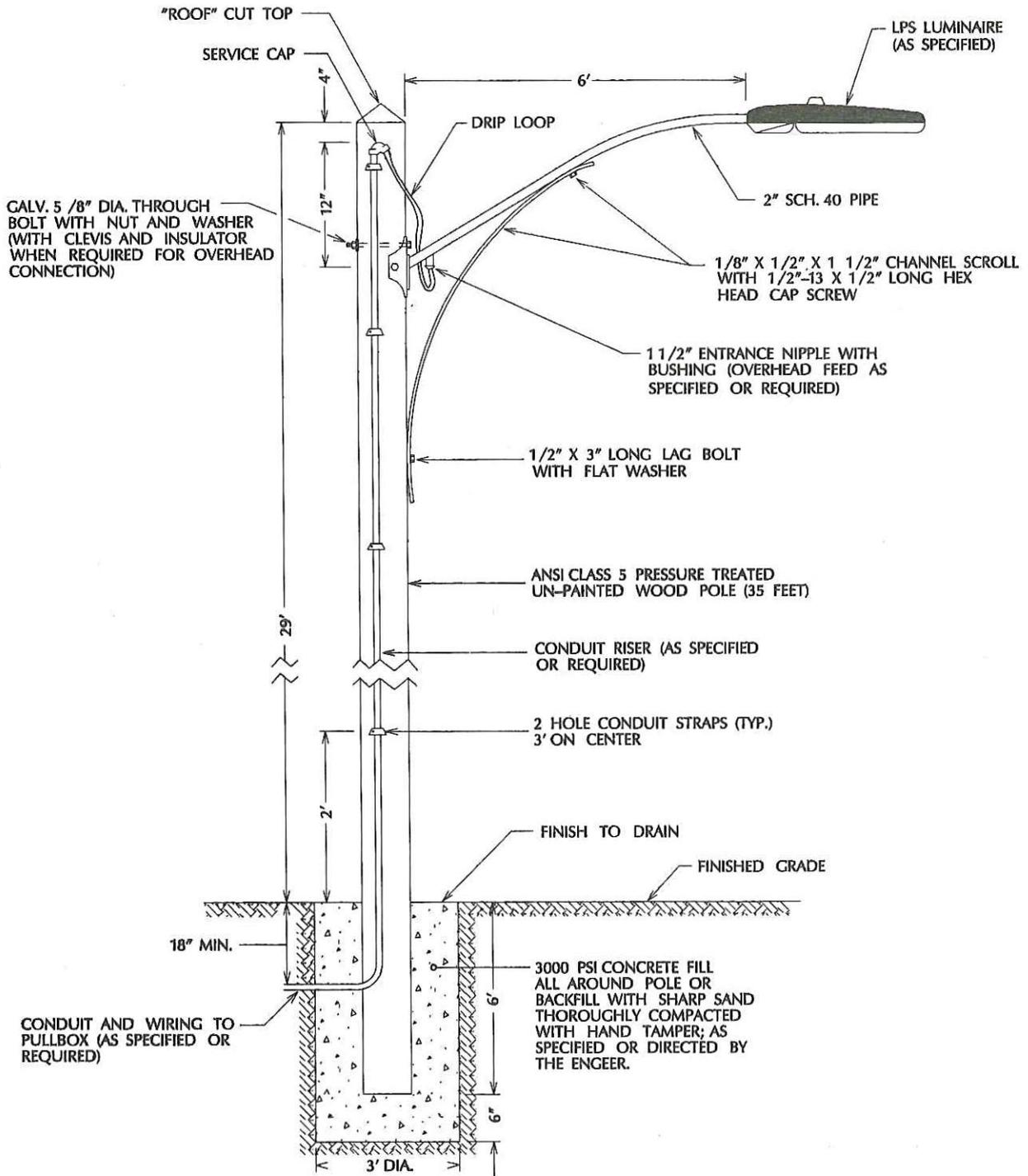
POLE LABELS

DEPARTMENT OF PUBLIC WORKS



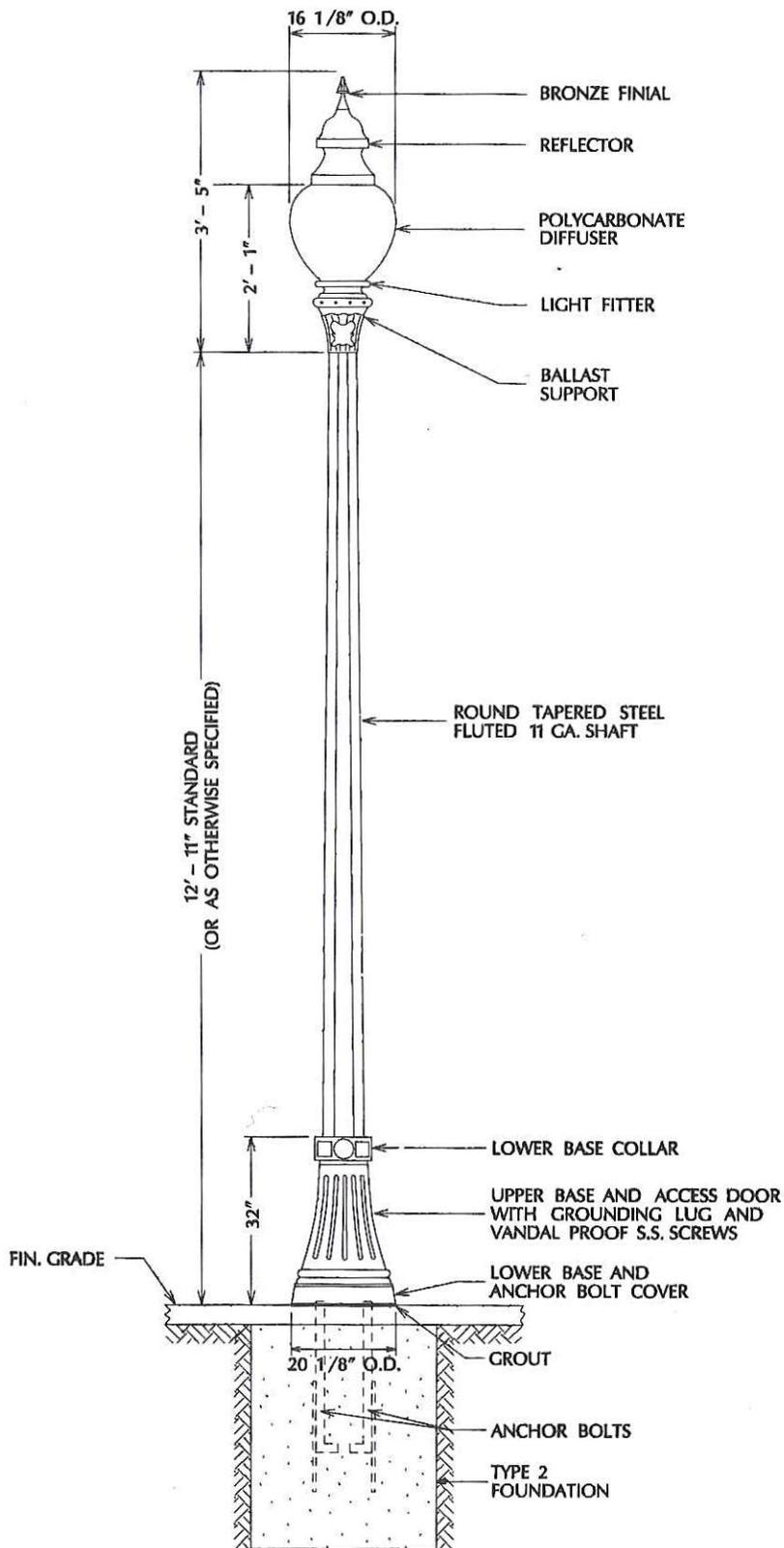
DRAWING NO.

E-22



- NOTES:
1. PROVIDE OVERHEAD OR UNDERGROUND FEED AS SPECIFIED ON DRAWINGS OR AS DIRECTED BY THE ENGINEER.
 2. POLE BAND WITH MOUNTING HARDWARE WIRING AND FUSED CONNECTORS FOR OVERHEAD FEED WHEN REQUIRED SHALL BE PROVIDED IN ACCORDANCE WITH DETAILS E-41 OR E-42 AS SPECIFIED OR AS DIRECTED BY THE ENGINEER.

APPROVED BY 	<h2 style="text-align: center;">WOOD POLE WITH L.P.S. LUMINAIRE</h2>		DRAWING NO. <h3 style="text-align: center;">E-23</h3>
DATE 3/3/92			DEPARTMENT OF PUBLIC WORKS



NOTES:
 1. SEE DRAWINGS E-46 AND E-47 FOR POLE BONDING REQUIREMENTS.
 2. SEE DRAWINGS E-15 AND E-18 FOR FOUNDATION REQUIREMENTS.

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DATE

3/3/92

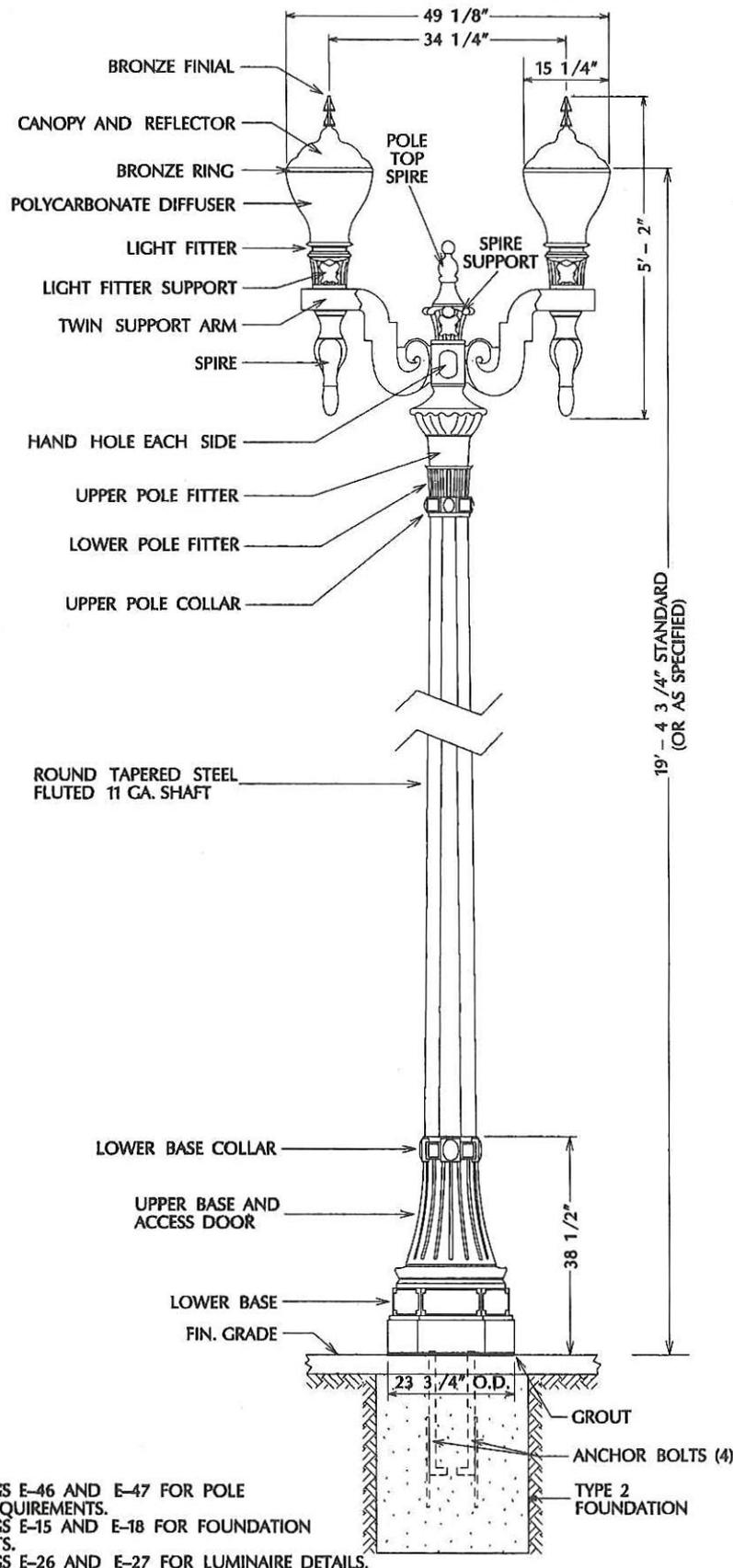
**ORNAMENTAL POLE
 SINGLE LUMINAIRE**

DEPARTMENT OF PUBLIC WORKS



DRAWING
 NO.

E-24



NOTES:

1. SEE DRAWINGS E-46 AND E-47 FOR POLE BONDING REQUIREMENTS.
2. SEE DRAWINGS E-15 AND E-18 FOR FOUNDATION REQUIREMENTS.
3. SEE DRAWINGS E-26 AND E-27 FOR LUMINAIRE DETAILS.

APPROVED BY

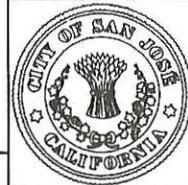
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DATE

3/3/92

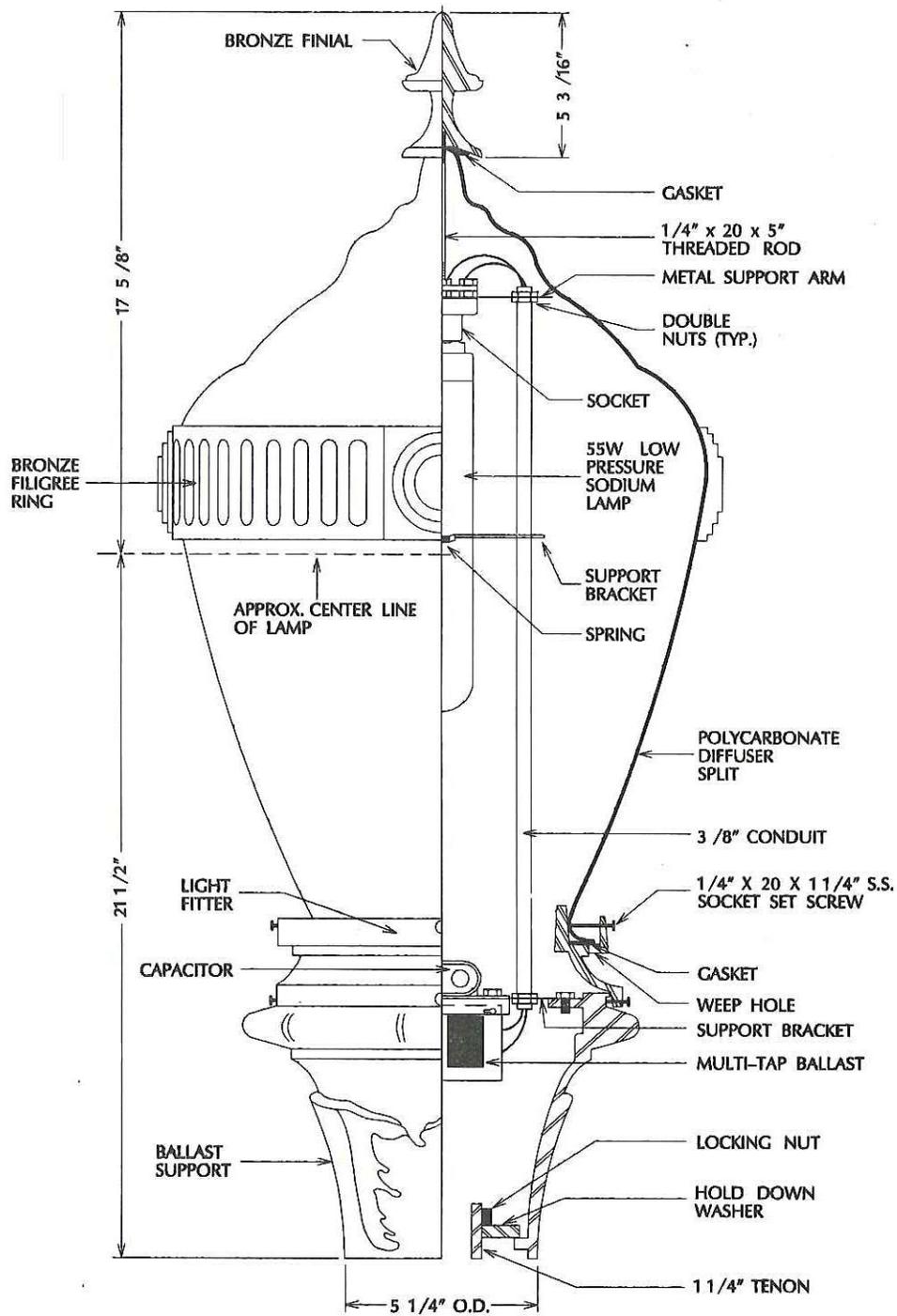
ORNAMENTAL POLE
TWIN LUMINAIRE

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-25



APPROVED BY

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DATE

3/3/92

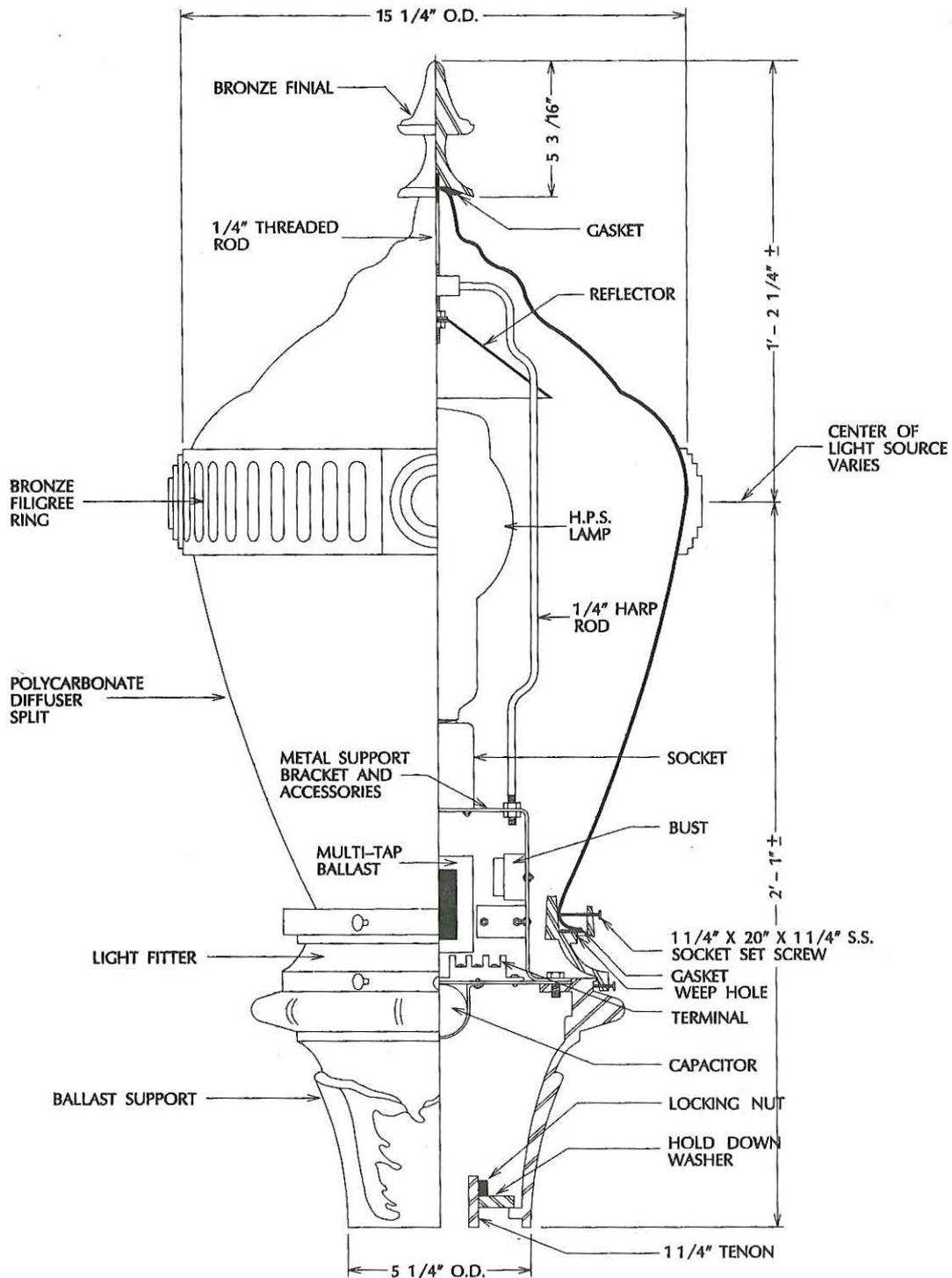
ORNAMENTAL L.P.S.
LUMINAIRE ASSEMBLY
FOR TWIN UNIT

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-26



APPROVED BY

Quel

DATE

3/3/92

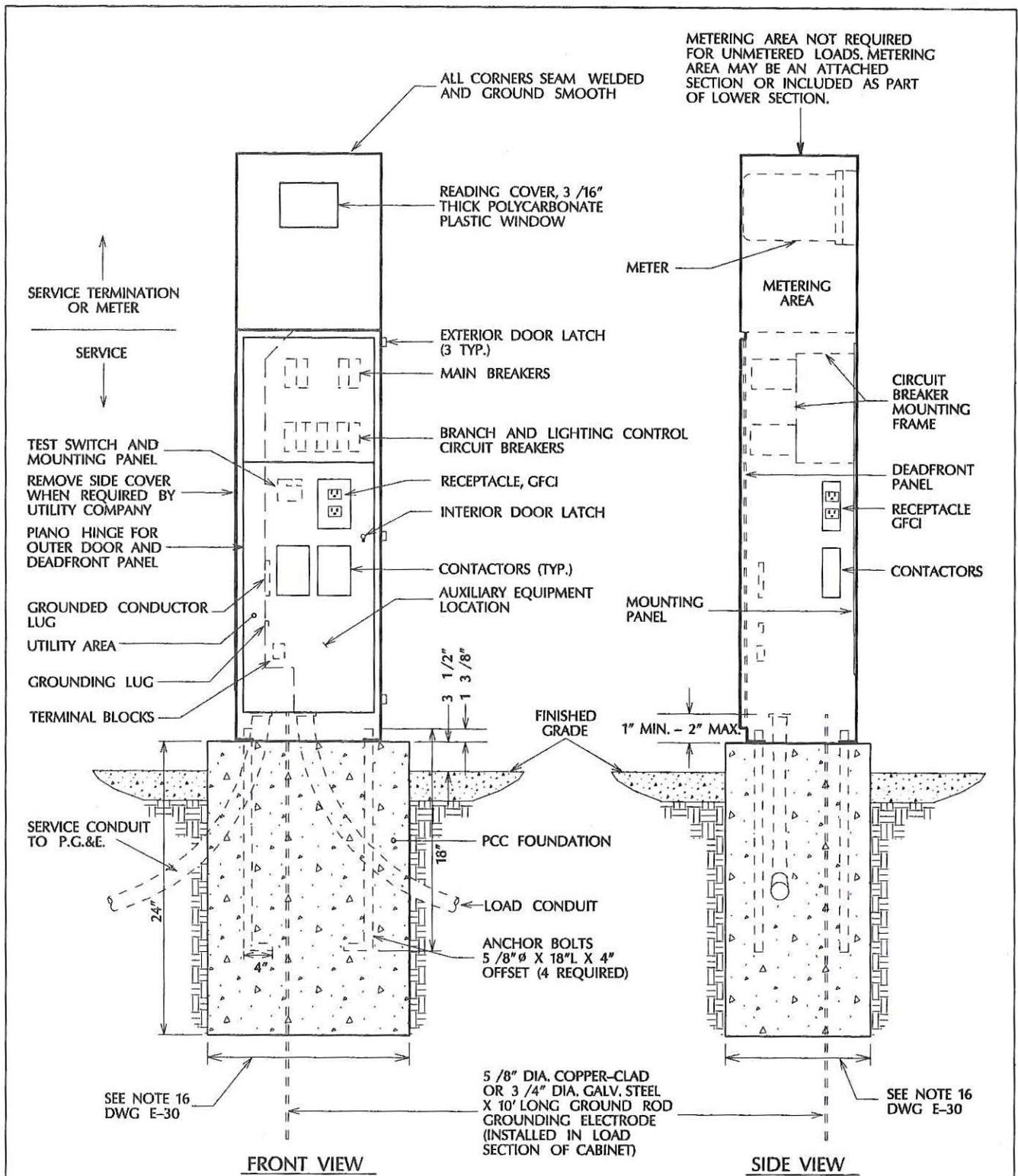
**ORNAMENTAL H.P.S.
LUMINAIRE ASSEMBLY
FOR TWIN UNIT**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-27



- NOTES:
1. TERMINATE CONDUIT 1' MIN. - 2" MAX. ABOVE TOP OF FOUNDATION.
 2. FOR TYPICAL SERVICE WIRING DIAGRAM SEE DRAWING E-31.
 3. SEE NOTES DRAWING E-29 & E-30.

APPROVED BY
and
 DATE
 3/3/92

**SERVICE EQUIPMENT
 TYPE III (III M)**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-28

1. SERVICE EQUIPMENT ENCLOSURES AND METERING EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE SERVING UTILITY. WHEN THE SERVING UTILITY PROVIDES BOTH METERED AND UNMETERED CIRCUITS, A SEPARATE BUS SHALL BE PROVIDED FOR EACH CIRCUIT. THE METER AREA SHALL HAVE A SEALABLE, LOCKABLE, RAIN-TIGHT COVER THAT CAN BE REMOVED WITHOUT THE USE OF TOOLS.
2. SERVICE EQUIPMENT ENCLOSURES SHALL BE FACTORY WIRED AND CONFORM TO NEMA STANDARDS.
3. SERVICE EQUIPMENT ENCLOSURES SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL OR FABRICATED FROM SHEET STEEL AND ZINC OR CADMIUM PLATED AFTER FABRICATION.
4. SERVICE EQUIPMENT ENCLOSURES SHALL BE CONSTRUCTED OF 12 GAGE OR THICKER COLD ROLLED STEEL. CABINET COVERS SHALL BE CONSTRUCTED OF 14 GAGE OR THICKER COLD ROLLED STEEL. INTERIOR PANELS SHALL BE CONSTRUCTED OF 16 GAGE OR THICKER COLD ROLLED STEEL, FINISHED WITH A GREEN BAKED ENAMEL, AND CONFORM TO SECTION 86 - 2.11 "SERVICE" OF THE STANDARD SPECIFICATIONS.
5. THE DEAD FRONT PANELS ON SERVICE EQUIPMENT ENCLOSURES SHALL HAVE A CONTINUOUS STAINLESS STEEL PIANO HINGE. THE PANEL IN FRONT OF THE BREAKERS SHALL BE SECURED WITH CAPTIVE SCREWS; THE LOWER PANEL SHALL BE SECURED WITH A LATCH OR CAPTIVE SCREWS.
6. THE EXTERIOR DOOR SHALL HAVE PROVISIONS FOR PADLOCKING WITH A CITY-FURNISHED LOCK. THE PADLOCK HOLE SHALL BE A MINIMUM DIAMETER OF 7 /16 INCH.
7. FASTENERS ON THE EXTERIOR OF THE ENCLOSURE SHALL BE VANDAL-RESISTANT AND SHALL NOT BE REMOVABLE FROM THE EXTERIOR. ALL SCREWS, NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL.
8. TERMINAL LUGS SHALL BE COPPER OR TIN-PLATED ALUMINUM. SOLID NEUTRAL TERMINAL STRIP SHALL BE RATED FOR 200 AMPERES AND FOR USE WITH COPPER CONDUCTORS. ALL TERMINALS SHALL BE COMPATIBLE WITH COPPER CONDUCTORS TO SUIT THE CONDUCTORS SHOWN ON THE PLAN. THE TERMINALS SHALL INCLUDE BUT ARE NOT LIMITED TO:
 - A) INCOMING TERMINALS (LANDING LUGS).
 - B) NEUTRAL LUGS.
 - C) SOLID NEUTRAL TERMINAL STRIP.
 - D) TERMINAL STRIPS FOR CONDUCTORS WITHIN THE ENCLOSURE.
9. AT LEAST 6 STANDARD SINGLE POLE CIRCUIT BREAKER SPACES (3 /4" NOMINAL) SHALL BE PROVIDED.
10. ALL CONTROL WIRING SHALL BE 600-VOLT NO. 14 STRANDED MACHINE TOOL WIRE. WHERE SUBJECT TO FLEXING, 19 STRAND WIRE SHALL BE USED.
11. ALL MAIN BUSSING INCLUDING P.G.&E. LANDING LUGS SHALL BE RATED FOR 200 AMPERES UNLESS SHOWN OTHERWISE ON DRAWINGS AND FOR USE WITH COPPER CONDUCTORS.
12. A PLASTIC LAMINATED WIRING DIAGRAM SHALL BE PROVIDED WITH BRASS MOUNTING EYELETS AND ATTACHED TO THE INSIDE OF THE ENCLOSURE OR THE WIRING DIAGRAM SHALL BE MOUNTED TO THE INTERIOR OF THE DOOR WITH AN UL OR ETL APPROVED METHOD.

APPROVED BY <i>WCS</i>	SERVICE EQUIPMENT TYPE III (III M) NOTES		DRAWING NO.
DATE <i>3/2/92</i>			E-29
DEPARTMENT OF PUBLIC WORKS			

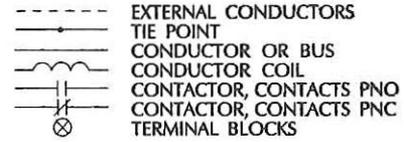
13. AN ENGRAVED PHENOLIC NAMEPLATE ON THE DEAD FRONT PANEL INDICATING THE FUNCTION OF EACH CIRCUIT WITHIN THE ENCLOSURE SHALL BE INSTALLED WITH STAINLESS STEEL RIVETS OR STAINLESS STEEL SCREWS:
 - A) ADJACENT TO THE BREAKER OR DEVICE. CHARACTER SIZE SHALL BE A MINIMUM OF 1/8".
 - B) AT TOP OF THE EXTERIOR DOOR PANEL INDICATING SYSTEM NO., VOLTAGE LEVEL, AND NUMBER OF PHASES. CHARACTER SIZE SHALL BE A MINIMUM OF 3/16".
14. THE PLAN SHOWS THE APPROXIMATE LOCATION OF DEVICES WITHIN THE ENCLOSURE. COMPONENTS MAY BE REARRANGED. HOWEVER, THE "WORKING" CLEARANCES WITHIN THE ENCLOSURE SHALL BE MAINTAINED.
15. IN UNPAVED AREAS A RAISED PCC PAD 24" X 3 1/2" X WIDTH OF FOUNDATION SHALL BE PLACED IN FRONT OF NEW SERVICE INSTALLATION. PAD SHALL BE SET TO ELEVATION OF FOUNDATION UNLESS SHOWN OTHERWISE.
16. FOUNDATION SHALL EXTEND 2" MINIMUM BEYOND EDGE OF ENCLOSURE.
17. INTERNAL BUSSING, WHERE SHOWN, IS TYPICAL ONLY. ALTERNATIVE DESIGNS OF PROPOSED SERVICE EQUIPMENT ENCLOSURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
18. CIRCUIT BREAKERS MAY BE MOUNTED IN THE VERTICAL OR HORIZONTAL POSITION.
19. ON TYPE III M SERVICE EQUIPMENT ENCLOSURES, THE METER VIEWING WINDOWS SHALL BE LOCATED ON THE FRONT SIDE OF THE SERVICE EQUIPMENT ENCLOSURE.
20. ALL ANCHOR BOLTS SHALL BE BONDED IN ACCORDANCE WITH DRAWINGS E-83 OR E-84.

APPROVED BY <i>Acad</i>	<p style="text-align: center;">SERVICE EQUIPMENT TYPE III (III M) NOTES - CONTINUED</p> <p style="text-align: center;">DEPARTMENT OF PUBLIC WORKS</p>		DRAWING NO. E-30
DATE 3/3/92			

TYPE III (III M) SERVICE (120 /240V) EQUIPMENT SCHEDULE		
ITEM NO.	COMPONENT	NAME PLATE DESCRIPTION
①	NEUTRAL LUG, 200A	
②	LANDING LUG, 200A	
③	TEST BYPASS FACILITIES	
④	METER SOCKET AND SUPPORT	
⑤	TERMINAL BLOCKS	
⑥	SOLID NEUTRAL LUG	
⑦	GROUND LUG	
⑧	GROUND ROD	
⑨	ANCHOR BOLT BONDING ALL 4 ANCHOR BOLTS (TYP.)	
⑩	100A, 240V, 2P, CKT BKRS	MAIN BREAKERS (UNMETERED, METERED)
⑪	30A, 240V, 2P, CKT BKR	STREETLIGHTING
⑫	60A, 120V, 1P, CKT BKR	SIGNALS
⑬	15A, 120V, 1P, CKT BKR	IRRIGATION
⑭	15A, 120V, 1P, CKT BKR	STREETLIGHTING CONTROL
⑮	PHOTO ELECTRIC UNIT	
⑯	15A, 1P, TEST SWITCH	STREETLIGHTING TEST SWITCH
⑰	30A, 4P CONTACTOR	
⑱	15A, 120V, 1P GFCI BKR	GFCI RECEPTACLE
⑲	20A, 120V, 1P, BKR	SPACE

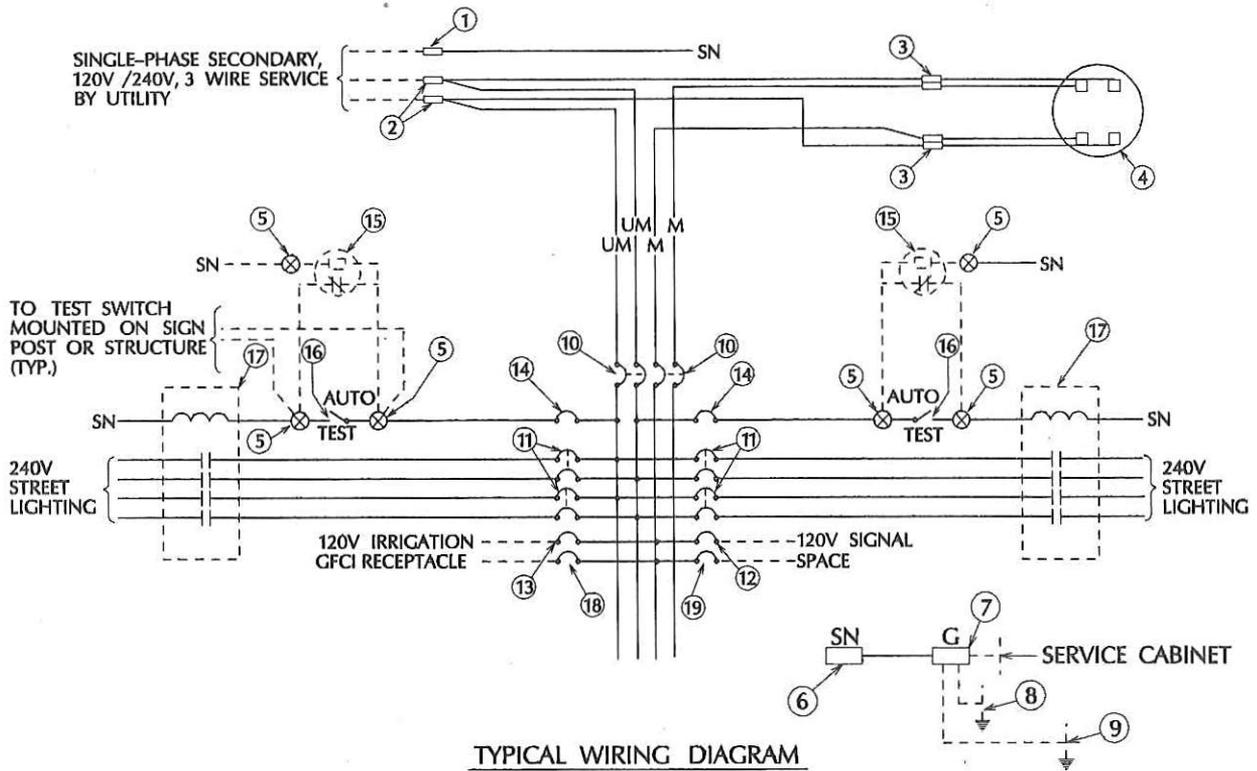
ABBREVIATION /SYMBOL LEGEND

- P POLE
- CKT BKR CIRCUIT BREAKER
- A AMPERE
- V VOLTS
- UM UNMETERED
- M METERED
- SN SOLID NEUTRAL
- PNO POLE NORMALLY OPEN
- PNC POLE NORMALLY CLOSED
- UG UNDERGROUND



NOTES (FOR SERVICE EQUIPMENT):

- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN ON DRAWING E-28.
- DIMENSIONS OF SERVICE EQUIPMENT ENCLOSURES MEET THE REQUIREMENTS OF THE SERVING UTILITY.
- MOUNT PHOTOELECTRIC UNIT ON NEAREST ELECTROLIER WITH A POST-TOP ADAPTOR.
- PROVIDE ONE TEST SWITCH WITH SEPARATE CIRCUIT BREAKER FOR EACH LIGHTING CONTACTOR AND CORRESPONDING CONTROL CIRCUIT.



TYPICAL WIRING DIAGRAM

APPROVED BY

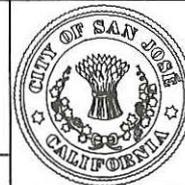
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DATE

3/2/92

SERVICE EQUIPMENT - TYPE III (III M)
TYPICAL WIRING DIAGRAM /SCHEDULE

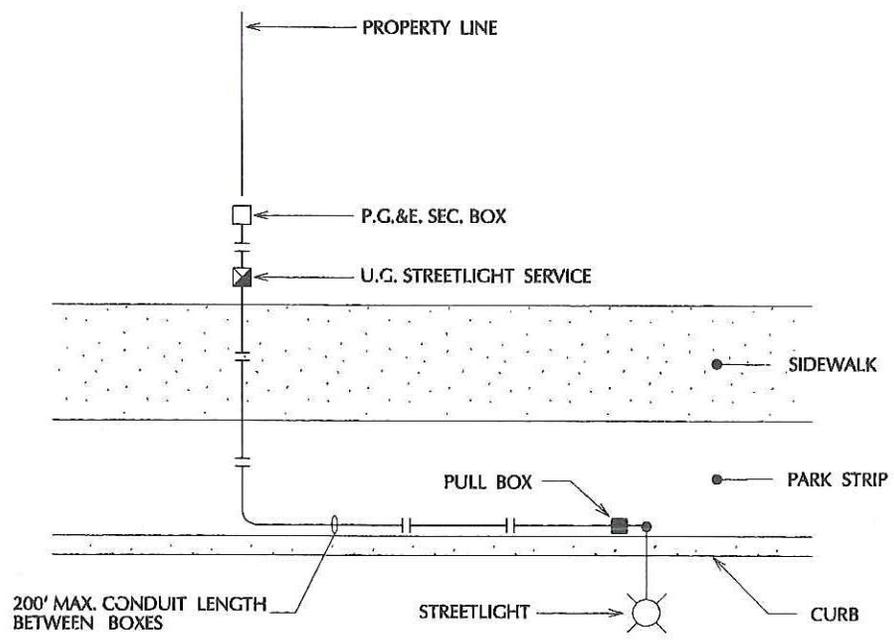
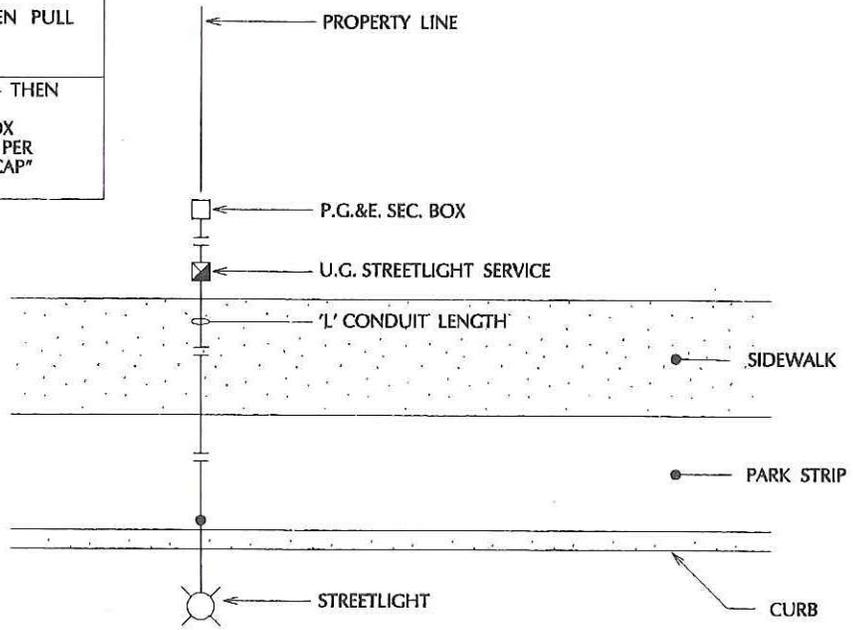
DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

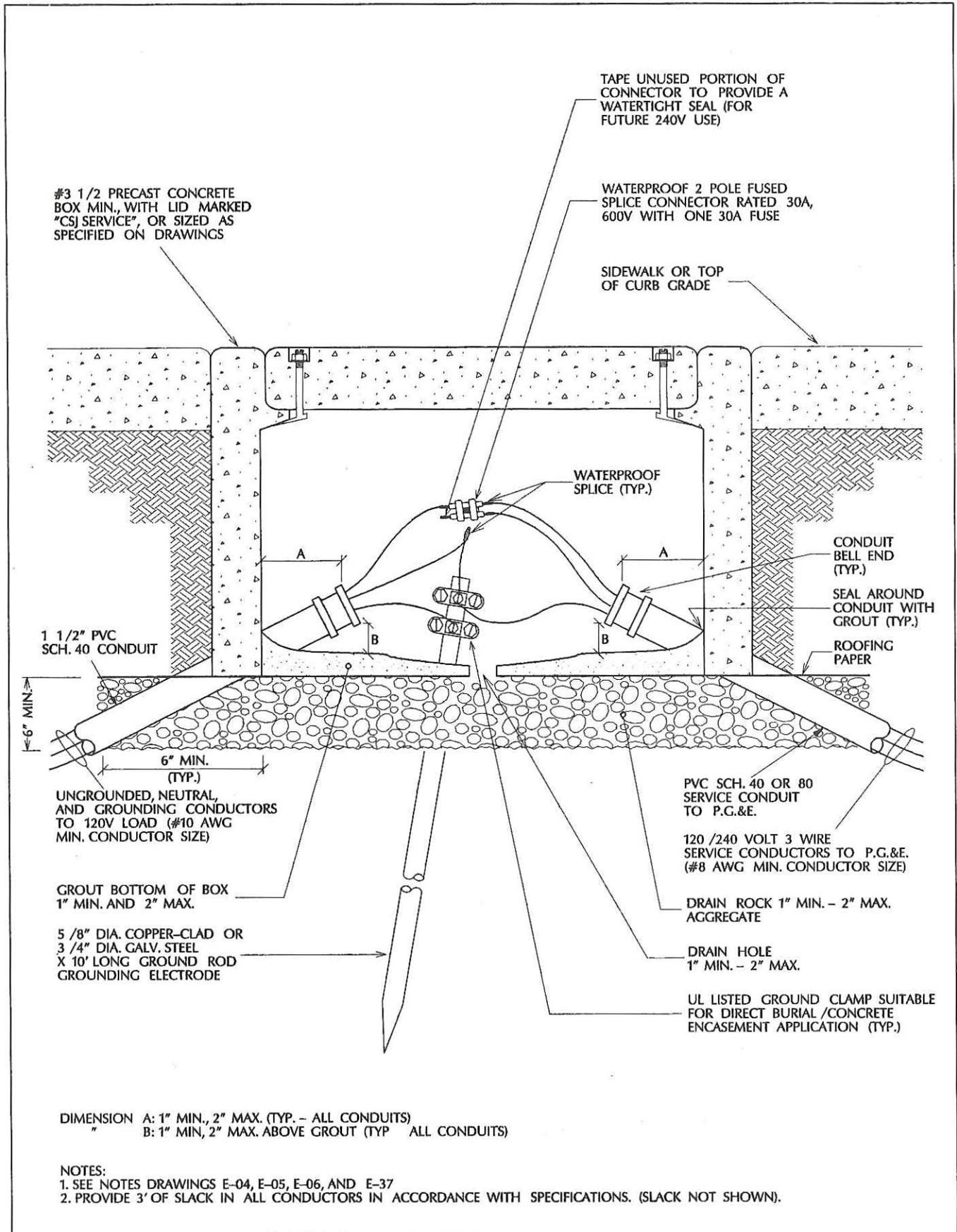
E-31

CONDUIT LENGTH 'L' TABLE	
IF 'L' IS LESS THAN 10' - THEN PULL BOX IS NOT REQUIRED AT ELECTROLIER	
IF 'L' IS GREATER THAN 10' - THEN PULL BOX IS REQUIRED AT ELECTROLIER. PLACE PULL BOX ADJACENT TO ELECTROLIER, PER "EXTENDED FOUNDATION CAP" DRAWING E-14	



NOTE:
SEE DRAWINGS E-33, E-34, E-35, AND E-36 FOR UNDERGROUND SERVICE REQUIREMENTS.

APPROVED BY <i>Acid</i>	P.G.&E. SECONDARY /U.G. STREETLIGHT SERVICE PULL BOX LOCATION FOR NEW U.G. RESIDENTIAL DEVELOPMENT		DRAWING NO. E-32
DATE 3/3/92			DEPARTMENT OF PUBLIC WORKS



APPROVED BY

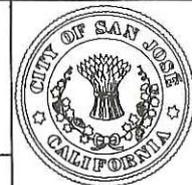
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DATE

3/3/92

**UNDERGROUND STREETLIGHT SERVICE
 TYPE IA - 120V**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-33

#3 1/2 PRECAST CONCRETE BOX MIN., WITH LID MARKED "CSJ SERVICE", OR SIZED AS SPECIFIED ON DRAWINGS

WATERPROOF 2 POLE FUSED SPLICE CONNECTOR RATED 30A, 600V WITH TWO 30A FUSES

SIDEWALK OR TOP OF CURB GRADE

WATERPROOF SPLICE (TYP.)

36" TAIL WITH TAPED END

CONDUIT BELL END (TYP.)

SEAL AROUND CONDUIT WITH GROUT (TYP.)

ROOFING PAPER

1 1/2" PVC SCH. 40 CONDUIT

6" MIN.

6" MIN. (TYP.)

2 UNGROUND AND ONE GROUNDING CONDUCTORS TO 240V LOAD (#10 AWG MIN. CONDUCTOR SIZE)

PVC SCH. 40 OR 80 SERVICE CONDUIT TO P.G.&E.

120 /240 VOLT 3 WIRE SERVICE CONDUCTORS TO P.G.&E. (#8 AWG MIN. CONDUCTOR SIZE)

GROUT BOTTOM OF BOX 1" MIN. AND 2" MAX.

DRAIN ROCK 1" MIN. - 2" MAX. AGGREGATE

5 /8" DIA. COPPER-CLAD OR 3 /4" DIA. GALV. STEEL X 10' LONG GROUND ROD GROUNDING ELECTRODE

DRAIN HOLE 1" MIN. - 2" MAX.

UL LISTED GROUND CLAMP SUITABLE FOR DIRECT BURIAL /CONCRETE ENCASEMENT BELOW GRADE APPLICATION (TYP.)

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
 " B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:
 1. SEE NOTES DRAWINGS E-04, E-05, E-06, AND E-37.
 2. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).

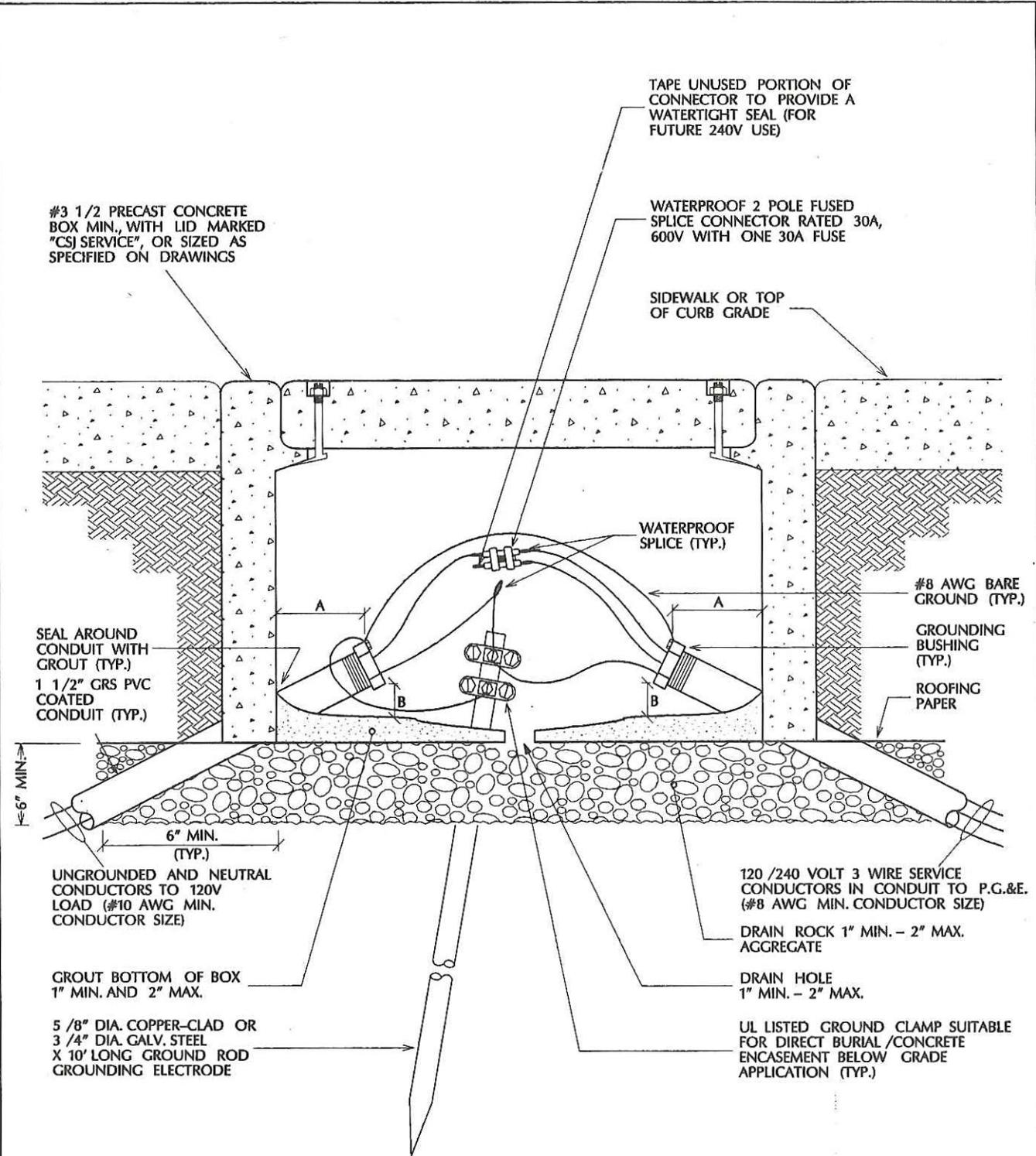
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AWJ
 DATE
 3/3/92

**UNDERGROUND STREETLIGHT SERVICE
 TYPE IB - 240V**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-34



#3 1/2 PRECAST CONCRETE BOX MIN., WITH LID MARKED "CSI SERVICE", OR SIZED AS SPECIFIED ON DRAWINGS

TAPE UNUSED PORTION OF CONNECTOR TO PROVIDE A WATERTIGHT SEAL (FOR FUTURE 240V USE)

WATERPROOF 2 POLE FUSED SPLICE CONNECTOR RATED 30A, 600V WITH ONE 30A FUSE

SIDEWALK OR TOP OF CURB GRADE

WATERPROOF SPLICE (TYP.)

#8 AWG BARE GROUND (TYP.)

GROUNDING BUSHING (TYP.)

ROOFING PAPER

SEAL AROUND CONDUIT WITH GROUT (TYP.)
1 1/2" GRS PVC COATED CONDUIT (TYP.)

6" MIN.

6" MIN. (TYP.)

UNGROUND AND NEUTRAL CONDUCTORS TO 120V LOAD (#10 AWG MIN. CONDUCTOR SIZE)

120 /240 VOLT 3 WIRE SERVICE CONDUCTORS IN CONDUIT TO P.G.&E. (#8 AWG MIN. CONDUCTOR SIZE)

DRAIN ROCK 1" MIN. - 2" MAX. AGGREGATE

GROUT BOTTOM OF BOX 1" MIN. AND 2" MAX.

DRAIN HOLE 1" MIN. - 2" MAX.

5/8" DIA. COPPER-CLAD OR 3/4" DIA. GALV. STEEL X 10' LONG GROUND ROD GROUNDING ELECTRODE

UL LISTED GROUND CLAMP SUITABLE FOR DIRECT BURIAL/CONCRETE ENCASEMENT BELOW GRADE APPLICATION (TYP.)

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:
1. SEE NOTES DRAWINGS E-04, E-05, E-06, AND E-37.
2. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).

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DATE
3/3/92

**UNDERGROUND STREETLIGHT SERVICE
TYPE IC - 120V**

DEPARTMENT OF PUBLIC WORKS

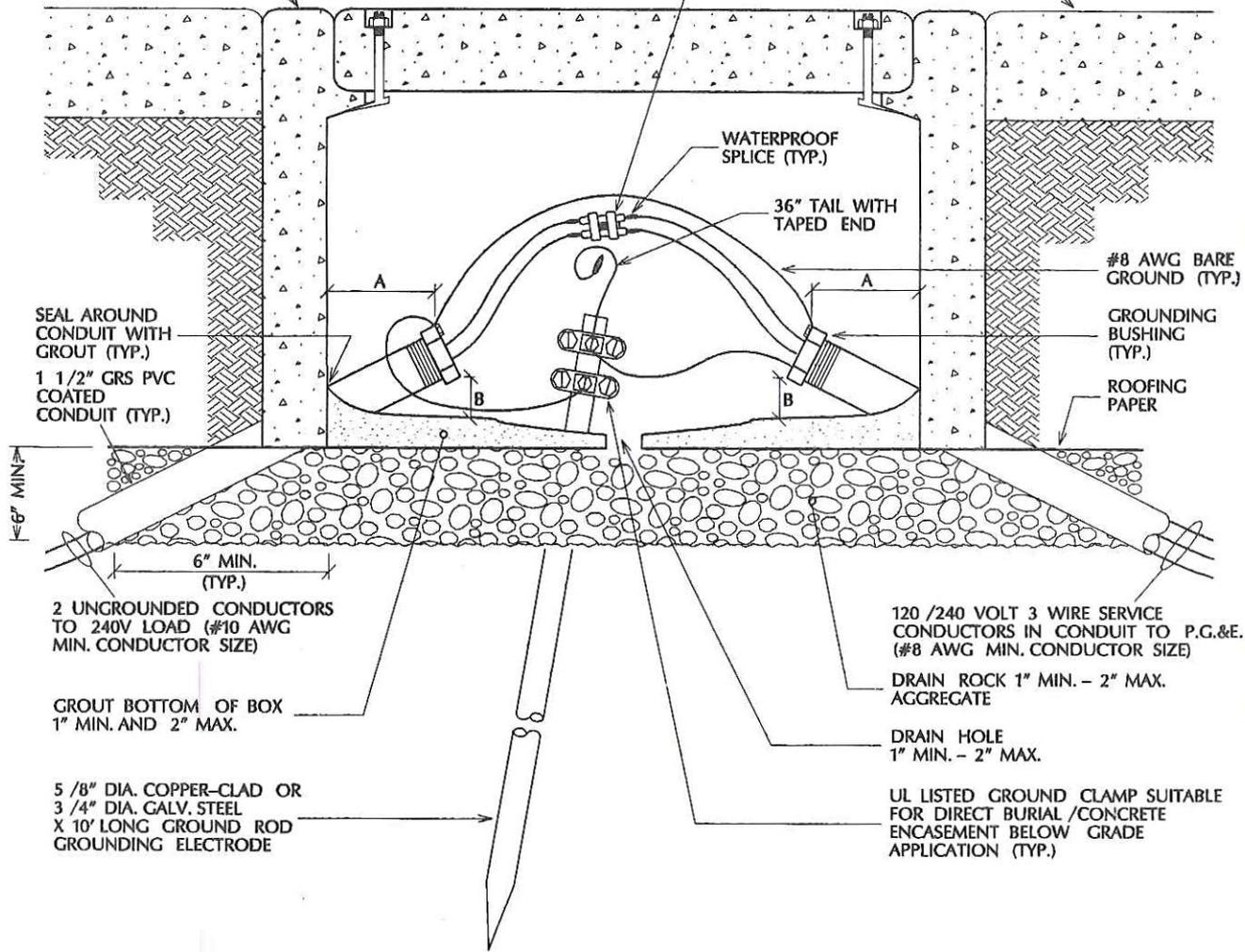


DRAWING NO.
E-35

#3 1/2 PRECAST CONCRETE BOX MIN., WITH LID MARKED "CSJ SERVICE", OR SIZED AS SPECIFIED ON DRAWINGS

WATERPROOF 2 POLE FUSED SPLICE CONNECTOR RATED 30A, 600V WITH TWO 30A FUSES

SIDEWALK OR TOP OF CURB GRADE



SEAL AROUND CONDUIT WITH GROUT (TYP.)
1 1/2" GRS PVC COATED CONDUIT (TYP.)

WATERPROOF SPLICE (TYP.)

36" TAIL WITH TAPED END

#8 AWG BARE GROUND (TYP.)

GROUNDING BUSHING (TYP.)

ROOFING PAPER

6" MIN.

6" MIN. (TYP.)

2 UNGROUNDED CONDUCTORS TO 240V LOAD (#10 AWG MIN. CONDUCTOR SIZE)

GROUT BOTTOM OF BOX 1" MIN. AND 2" MAX.

5/8" DIA. COPPER-CLAD OR 3/4" DIA. GALV. STEEL X 10' LONG GROUND ROD GROUNDING ELECTRODE

120/240 VOLT 3 WIRE SERVICE CONDUCTORS IN CONDUIT TO P.G.&E. (#8 AWG MIN. CONDUCTOR SIZE)

DRAIN ROCK 1" MIN. - 2" MAX. AGGREGATE

DRAIN HOLE 1" MIN. - 2" MAX.

UL LISTED GROUND CLAMP SUITABLE FOR DIRECT BURIAL / CONCRETE ENCASEMENT BELOW GRADE APPLICATION (TYP.)

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
" B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:

1. SEE NOTES DRAWINGS E-04, E-05, E-06, AND E-37.
2. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).

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DATE

3/3/92

UNDERGROUND STREETLIGHT SERVICE
TYPE ID - 240V

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-36

1. ALL MATERIALS AND WORK SHALL COMPLY WITH CITY OF SAN JOSE STANDARD PLANS AND SPECIFICATIONS.
2. SEE STANDARD PLAN DETAIL E-02 AND E-03 FOR BOX REQUIREMENTS.
3. SEE STANDARD PLAN DETAIL E-53 FOR FUSE AND CONNECTOR REQUIREMENTS.
4. ALL SERVICES SHALL BE LOCATED WITHIN CITY RIGHT-OF-WAY.
5. EXTEND ROCK CUSHION A MINIMUM OF 6 INCHES BEYOND INSIDE EDGE OF BOX.
6. CONDUITS SHALL TERMINATE NOT MORE THAN 2 INCHES AND NOT LESS THAN 1 INCH INSIDE THE BOX, AND SHALL BE NOT LESS THAN 1 INCH NOR MORE THAN 2 INCHES CLEAR FROM THE BOTTOM OF THE BOX.
7. CONDUITS SHALL ENTER THE BOX WITH MANUFACTURED LONG RADII TYPE OR STANDARD 45° ELBOWS.
8. GROUT AROUND ALL CONDUITS ENTERING BOX TO FORM A TIGHT SEAL BETWEEN CONDUITS AND BOX.
9. FACTORY BOTTOM WITH 1" DRAIN HOLE IS ACCEPTABLE IN LIEU OF GROUTED BOTTOM AND ROOFING PAPER.
10. ALL CURRENT CARRYING CONDUCTORS ARE TO HAVE THW INSULATION, UNLESS NOTED OTHERWISE.
11. PROVIDE AT LEAST 3 FEET OF SLACK FOR EACH CONDUCTOR OUTSIDE OF BOX.
12. WHEN SERVICE FEEDS A SINGLE ELECTROLIER AND IS WITHIN 10' OF ELECTROLIER THEN REDUCE SERVICE FUSE TO 10 AMPERES AND DELETE FUSE IN BASE OF POLE.
13. WHEN SERVICE FEEDS A SINGLE ELECTROLIER AND IS WITHIN 10' OF ELECTROLIER THEN PULL BOX AT BASE OF ELECTROLIER MAY BE DELETED.

APPROVED BY <i>aws</i>	U.G. STREETLIGHT SERVICE TYPE I A, B, C, D SERIES – NOTES		DRAWING NO.
DATE <i>3/3/92</i>			E-37
DEPARTMENT OF PUBLIC WORKS			

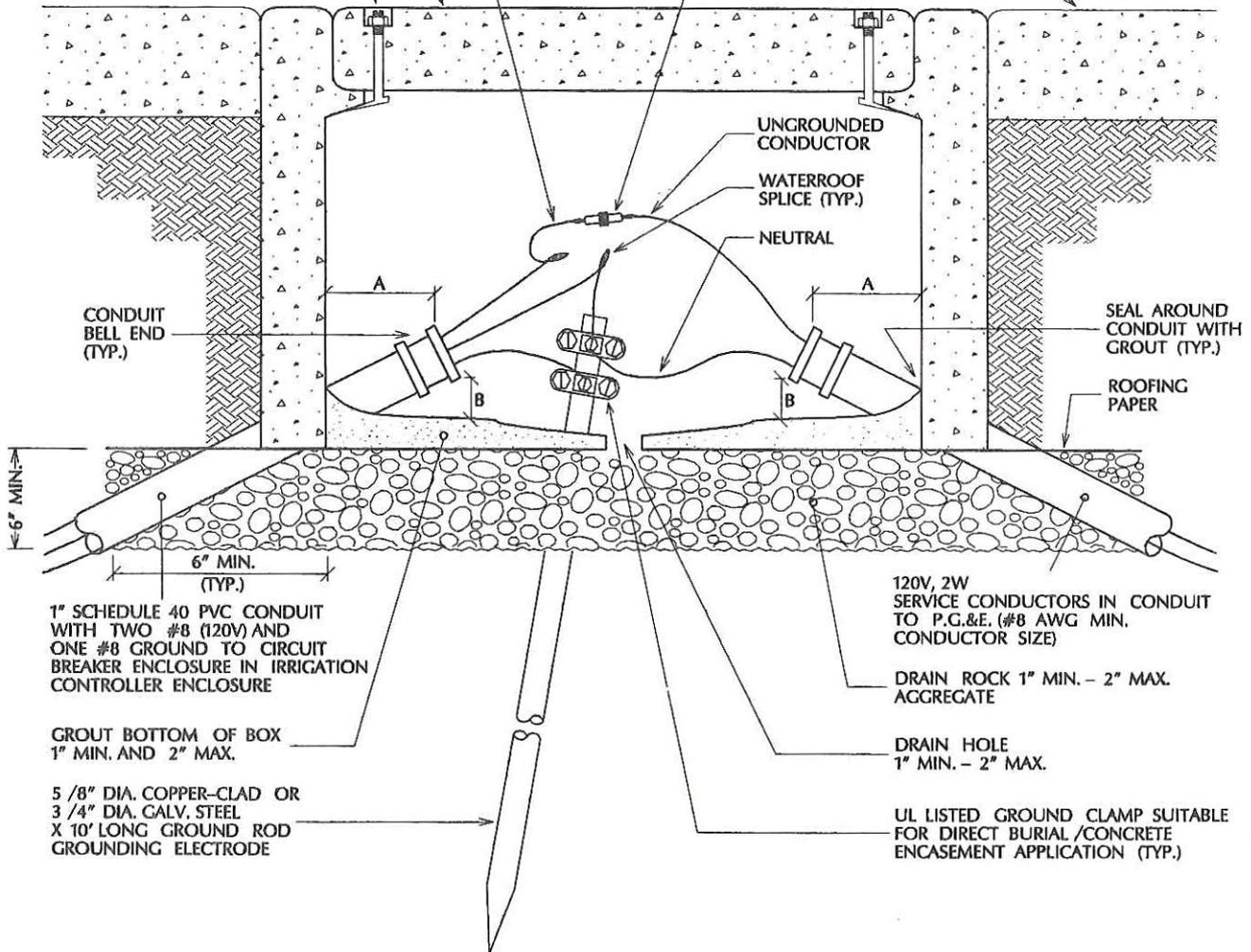
IDENTIFY CONDUCTORS AS
"IRRIGATION" CIRCUIT

CITY OF SAN JOSE #3 1/2
PRECAST CONCRETE BOX WITH
LID MARKED "CSJ SERVICE"

3/8" BRASS HOLD DOWN BOLT,
NUT AND WASHER RECESSED
IN COVER (2 PER BOX)

WATERPROOF 1 POLE FUSED
SPLICE CONNECTOR RATED 30A,
600V WITH 15A FUSE

SIDEWALK OR TOP
OF CURB GRADE



1" SCHEDULE 40 PVC CONDUIT
WITH TWO #8 (120V) AND
ONE #8 GROUND TO CIRCUIT
BREAKER ENCLOSURE IN IRRIGATION
CONTROLLER ENCLOSURE

GROUT BOTTOM OF BOX
1" MIN. AND 2" MAX.

5/8" DIA. COPPER-CLAD OR
3/4" DIA. CALV. STEEL
X 10' LONG GROUND ROD
GROUNDING ELECTRODE

120V, 2W
SERVICE CONDUCTORS IN CONDUIT
TO P.G.&E. (#8 AWG MIN.
CONDUCTOR SIZE)

DRAIN ROCK 1" MIN. - 2" MAX.
AGGREGATE

DRAIN HOLE
1" MIN. - 2" MAX.

UL LISTED GROUND CLAMP SUITABLE
FOR DIRECT BURIAL/CONCRETE
ENCASEMENT APPLICATION (TYP.)

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

NOTES:

1. ALL WORK SHALL COMPLY WITH CITY OF SAN JOSE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. IF RIGID STEEL CONDUIT IS PRESENT, BONDING SHALL BE AS PER CITY OF SAN JOSE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).
4. SEE NOTES DRAWINGS E-04, E-05, E-06, AND E-37.

APPROVED BY

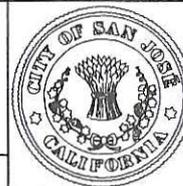
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3/3/92

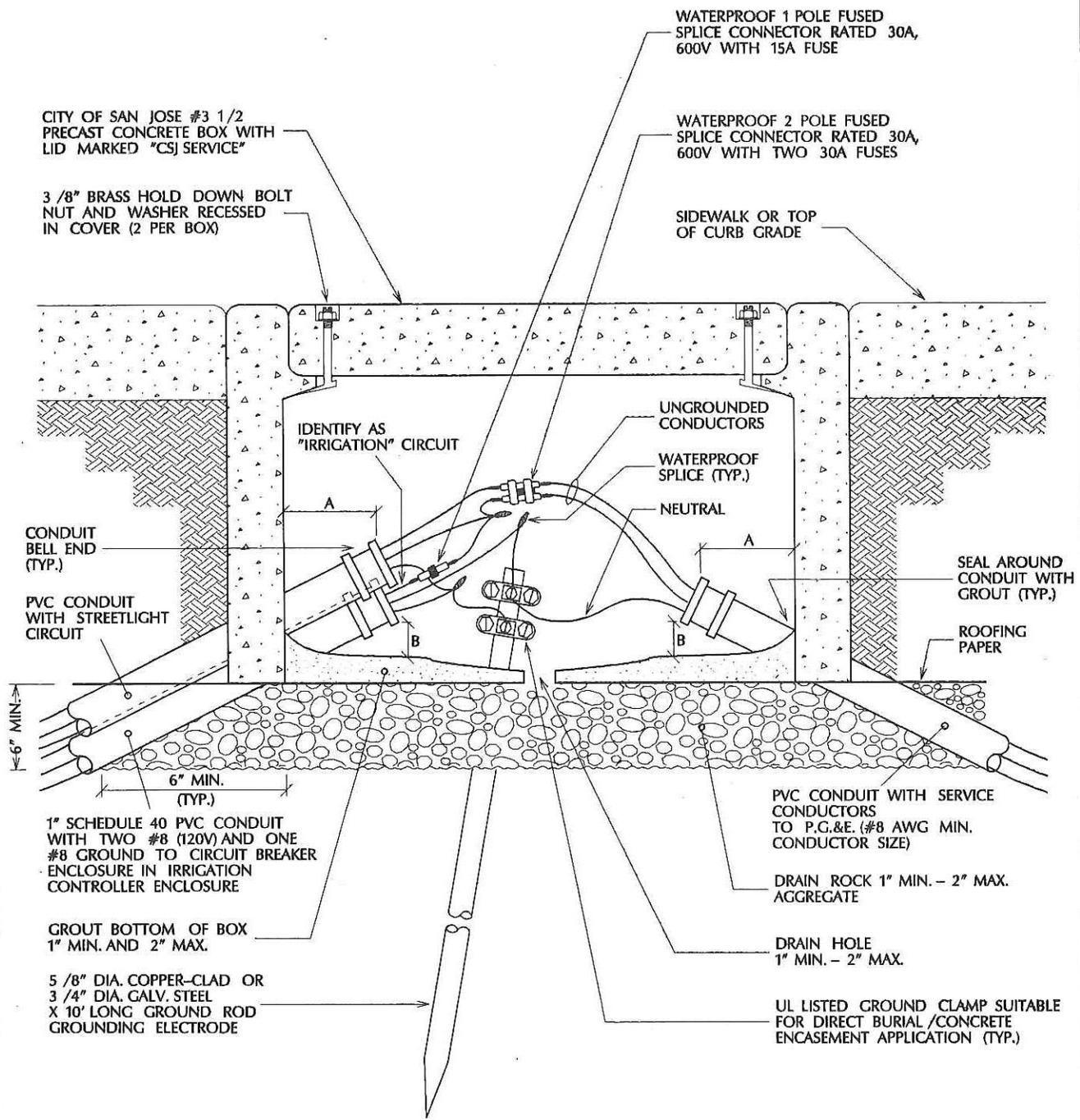
UNDERGROUND
IRRIGATION CONTROLLER SERVICE

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-38



CITY OF SAN JOSE #3 1/2
PRECAST CONCRETE BOX WITH
LID MARKED "CSJ SERVICE"

3/8" BRASS HOLD DOWN BOLT
NUT AND WASHER RECESSED
IN COVER (2 PER BOX)

WATERPROOF 1 POLE FUSED
SPLICE CONNECTOR RATED 30A,
600V WITH 15A FUSE

WATERPROOF 2 POLE FUSED
SPLICE CONNECTOR RATED 30A,
600V WITH TWO 30A FUSES

SIDEWALK OR TOP
OF CURB GRADE

IDENTIFY AS
"IRRIGATION" CIRCUIT

UNGROUND
CONDUCTORS

WATERPROOF
SPLICE (TYP.)

NEUTRAL

CONDUIT
BELL END
(TYP.)

PVC CONDUIT
WITH STREETLIGHT
CIRCUIT

SEAL AROUND
CONDUIT WITH
GROUT (TYP.)

ROOFING
PAPER

6" MIN.

6" MIN.
(TYP.)

1" SCHEDULE 40 PVC CONDUIT
WITH TWO #8 (120V) AND ONE
#8 GROUND TO CIRCUIT BREAKER
ENCLOSURE IN IRRIGATION
CONTROLLER ENCLOSURE

PVC CONDUIT WITH SERVICE
CONDUCTORS
TO P.G.&E. (#8 AWG MIN.
CONDUCTOR SIZE)

DRAIN ROCK 1" MIN. - 2" MAX.
AGGREGATE

GROUT BOTTOM OF BOX
1" MIN. AND 2" MAX.

DRAIN HOLE
1" MIN. - 2" MAX.

5/8" DIA. COPPER-CLAD OR
3/4" DIA. GALV. STEEL
X 10' LONG GROUND ROD
GROUNDING ELECTRODE

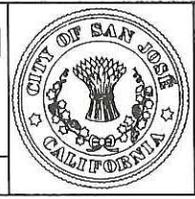
UL LISTED GROUND CLAMP SUITABLE
FOR DIRECT BURIAL/CONCRETE
ENCASEMENT APPLICATION (TYP.)

DIMENSION A: 1" MIN., 2" MAX. (TYP. - ALL CONDUITS)
B: 1" MIN., 2" MAX. ABOVE GROUT (TYP. - ALL CONDUITS)

- NOTES:
1. IF PULLBOX IS EXISTING, THE GROUT SHALL BE REPAIRED.
 2. IF RIGID STEEL CONDUIT IS PRESENT, BONDING SHALL BE AS PER CITY OF SAN JOSE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 3. ALL WORK SHALL COMPLY WITH CITY OF SAN JOSE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. PROVIDE 3' OF SLACK IN ALL CONDUCTORS IN ACCORDANCE WITH SPECIFICATIONS. (SLACK NOT SHOWN).
 4. SEE NOTES DRAWINGS E-04, E-05, E-06, AND E-37.

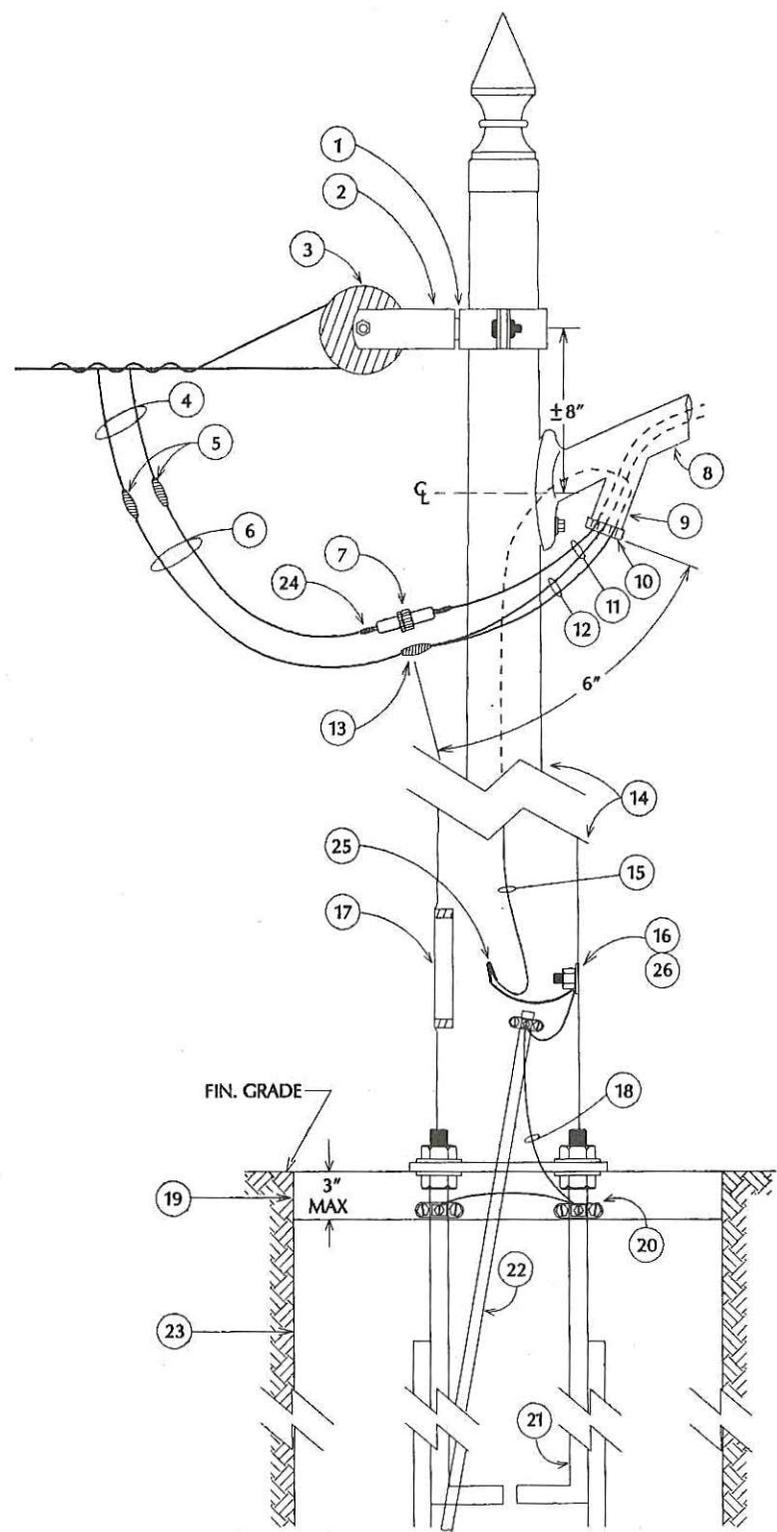
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awd
DATE
3/3/92

**IRRIGATION CONTROLLER CONNECTION
AT UNDERGROUND
STREETLIGHT SERVICE**
DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-39

- ① 1/4" X 1 1/2" GALVANIZED STEEL POLE BAND WITH MOUNTING HARDWARE
- ② 3 /16" X 1 1/2" GALVANIZED STEEL CLEVIS
- ③ 10KV, 1500 LB. TEST SPOOL
- ④ SERVICE DROP BY P.G.&E.
- ⑤ WATERPROOF SPLICES BY P.G.&E.
- ⑥ 2 #10 AWG X 24" LEADS MINIMUM
- ⑦ WATERPROOF SINGLE POLE FUSED SPLICE CONNECTOR RATED 30A, 600V WITH 10 A FUSE
- ⑧ MAST ARM
- ⑨ 1 1/2" DIA. IPS ENTRANCE NIPPLE
- ⑩ 1 1/2" DIA. INSULATING METAL BUSHING
- ⑪ 2 #10 AWG (120V) TO LUMINAIRE
- ⑫ 2 #10 AWG NEUTRALS, ONE TO LUMINAIRE AND ONE TO GROUNDING CLAMP ON GROUND ROD VIA POLE GROUNDING LUG
- ⑬ C-TAP WATERPROOF SPLICE
- ⑭ POLE
- ⑮ #10 AWG NEUTRAL CONDUCTOR
- ⑯ 1/2" - N.C. SQ. HD. CAP SCREW X 1" LONG GROUNDING LUG W/HEX NUT AND FLAT WASHER
- ⑰ HANDHOLE WITH COVER
- ⑱ #8 AWG BARE BONDING CONDUCTOR TO ALL ANCHOR BOLT GROUNDING CLAMPS
- ⑲ PCC FOUNDATION CAP
- ⑳ GROUNDING CLAMP (TYP.) UL LISTED AS SUITABLE FOR CONCRETE ENCASEMENT OR DIRECT BURIAL; INSTALL GROUNDING CLAMPS ON ALL ANCHOR BOLTS
- ㉑ GALV. ANCHOR BOLT (TYP.)
- ㉒ 5/8" X 10' COPPERCLAD OR 3/4" X 10' GALVANIZED GROUND ROD; INSTALL TOP OF GROUND ROD EVEN W/BOTTOM OF HANDHOLE OPENING
- ㉓ PCC FOUNDATION
- ㉔ WATERPROOF SPLICE (TYP.)
- ㉕ SPLICE
- ㉖ TERMINATE BONDING CONDUCTOR WITH UL APPROVED GROUNDING LUG

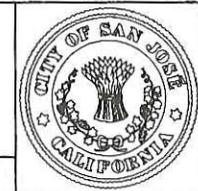


NOTE:
THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION IN UNDISTURBED SOIL.

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DATE
3/3/92

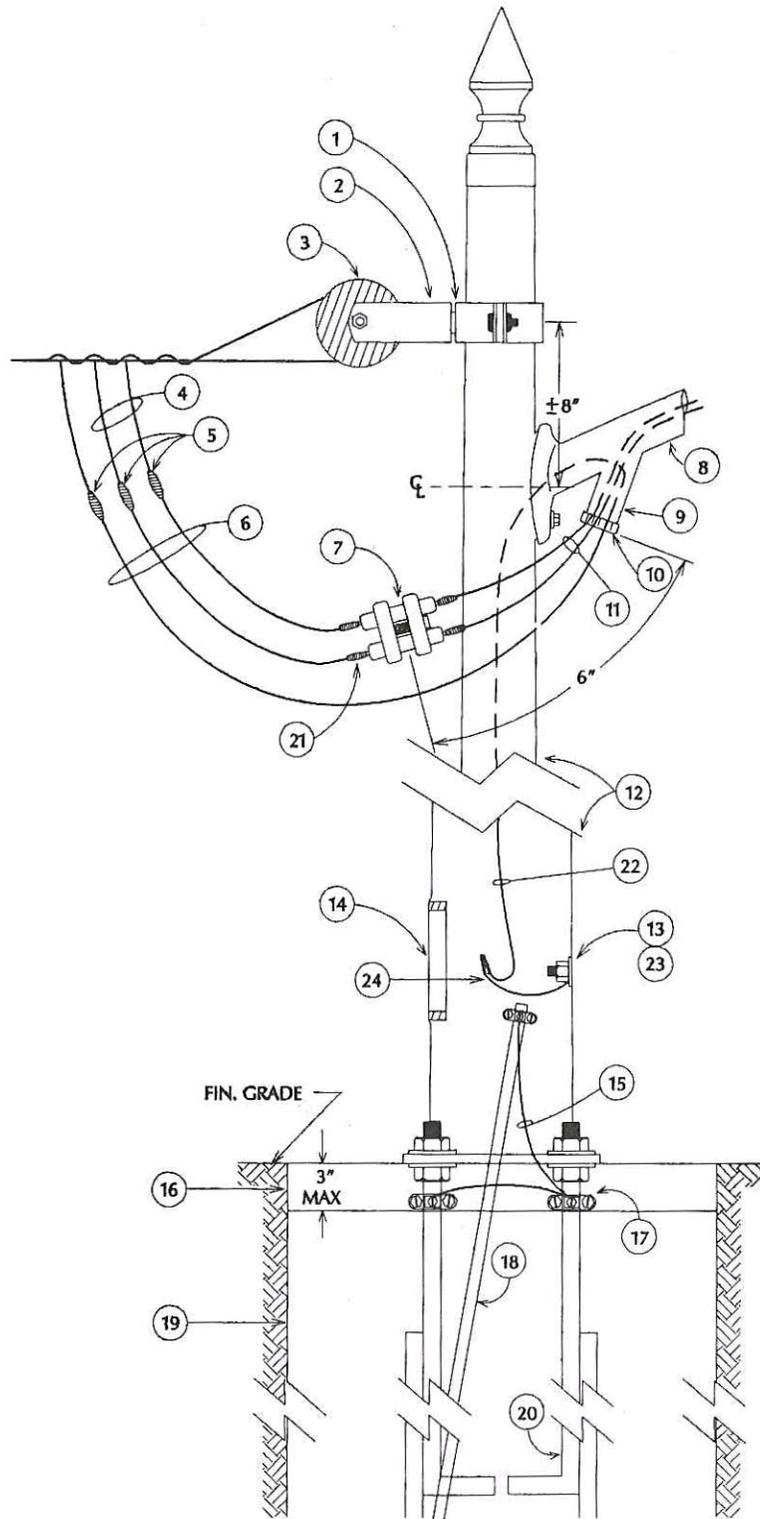
120V OVERHEAD STREETLIGHT SERVICE - TYPE IIA

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-41

- ① 1/4" X 1 1/2" GALVANIZED STEEL POLE BAND WITH MOUNTING HARDWARE
- ② 3/16" X 1 1/2" GALVANIZED STEEL CLEVIS
- ③ 10KV, 1500 LB. TEST SPOOL
- ④ SERVICE DROP BY P.G.&E.
- ⑤ WATERPROOF SPLICES BY*P.G.&E.
- ⑥ 3 #10 AWG X 24" LEADS MINIMUM
- ⑦ WATERPROOF TWO POLE FUSED SPlice CONNECTOR RATED 30A, 600V WITH TWO 10 AMP FUSES
- ⑧ MAST ARM
- ⑨ 1 1/2" DIA. IPS ENTRANCE NIPPLE
- ⑩ 1 1/2" DIA. INSULATING BUSHING
- ⑪ 2 #10 AWG (240V) TO LUMINAIRE
- ⑫ POLE
- ⑬ 1/2" - N.C. SQ. HD. CAP SCREW X 1" GROUNDING LUG W/HEX NUT AND FLAT WASHER
- ⑭ HANDHOLE W/COVER
- ⑮ #8 AWG BARE BONDING CONDUCTOR TO ALL ANCHOR BOLT GROUNDING CLAMPS
- ⑯ PCC FOUNDATION CAP
- ⑰ GROUNDING CLAMP (TYP.) UL LISTED AS SUITABLE FOR CONCRETE ENCASEMENT OR DIRECT BURIAL; INSTALL GROUNDING CLAMPS ON ALL ANCHOR BOLTS
- ⑱ 5/8" X 10' COPPERCLAD OR 3/4" X 10' GALVANIZED GROUND ROD; INSTALL TOP OF GROUND ROD EVEN W/BOTTOM OF HANDHOLE OPENING
- ⑲ PCC FOUNDATION
- ⑳ GALV. ANCHOR BOLT (TYP.)
- ㉑ WATERPROOF SPLICE (TYP.)
- ㉒ #10 AWG NEUTRAL CONDUCTOR
- ㉓ TERMINATE BONDING CONDUCTOR WITH UL APPROVED GROUNDING LUG
- ㉔ SPLICE



NOTE:

THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION IN UNDISTURBED SOIL

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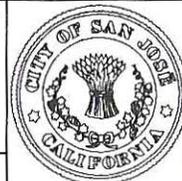
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3/3/92

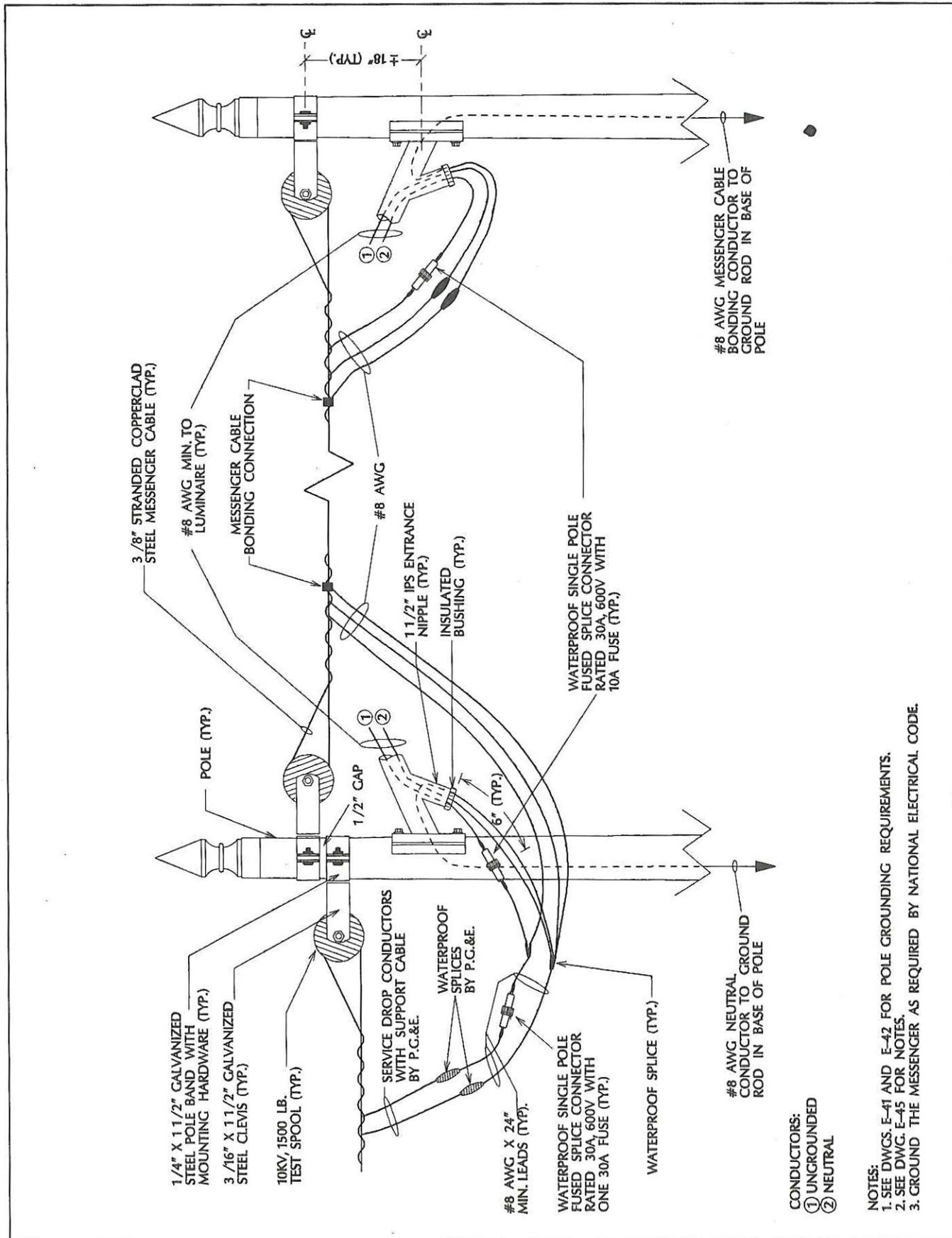
240V OVERHEAD STREETLIGHT SERVICE - TYPE IIB

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

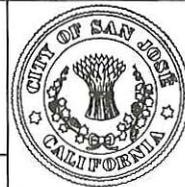
E-42



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**120V OVERHEAD MULTIPLE STREETLIGHT
 SERVICE TYPE - IIC**

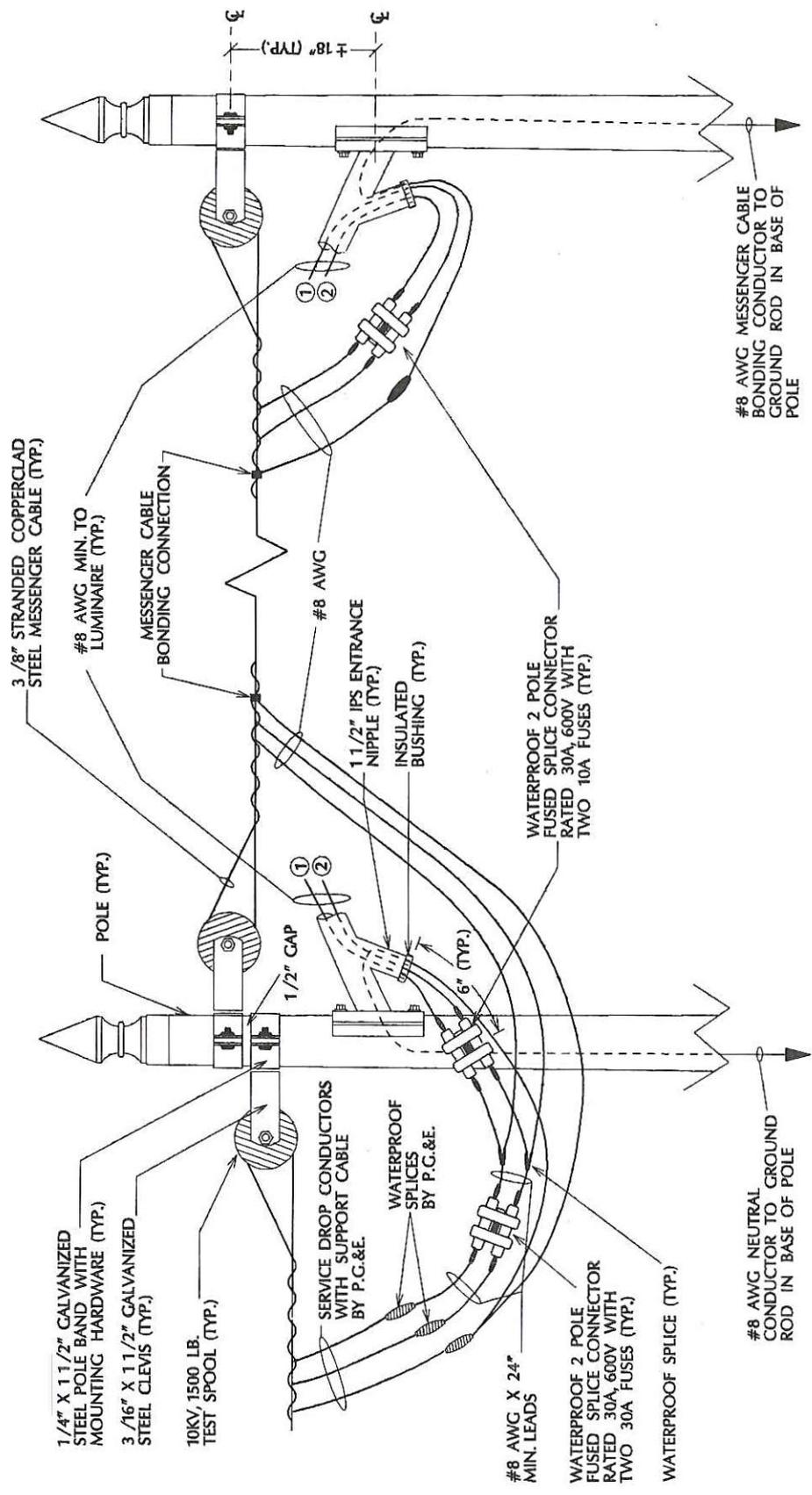
DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-43

- NOTES:
 1. SEE DWGS. E-41 AND E-42 FOR POLE GROUNDING REQUIREMENTS.
 2. SEE DWG. E-45 FOR NOTES.
 3. GROUND THE MESSENGER AS REQUIRED BY NATIONAL ELECTRICAL CODE.

CONDUCTORS:
 ① UNGROUNDED
 ② NEUTRAL



APPROVED BY
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 DATE
 3/3/92

**240V OVERHEAD MULTIPLE STREETLIGHT
 SERVICE TYPE - IID**
 DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-44

- NOTES:
 1. SEE DRAWINGS E-41 AND E-42 FOR POLE GROUNDING REQUIREMENTS.
 2. SEE DRAWING E-45 FOR NOTES.
 3. GROUND THE MESSENGER AS REQUIRED BY NATIONAL ELECTRICAL CODE.

- CONDUCTORS:
 ① UNGROUNDED
 ② UNGROUNDED

1. INSTALL 5 /8" DIA. COPPER-CLAD OR 3 /4" DIA. GALV. STEEL X 10' LONG GROUND ROD IN FOUNDATION OF EACH POLE.
2. BOND ALL FOUR ANCHOR BOLTS.
3. TERMINATE NEUTRAL AND GROUNDING CONDUCTORS ON GROUND ROD IN BASE OF FIRST POLE RECEIVING P.G.&E. SERVICE.
4. TERMINATE GROUNDING CONDUCTORS ON GROUNDING LUG IN BASE OF ALL OTHER POLES.
5. APPLICATION: 120V OR 240V OVERHEAD SERVICE FEEDING MULTIPLE STREETLIGHTS.
6. GROUND THE MESSENGER AS REQUIRED BY NATIONAL ELECTRICAL CODE.

APPROVED BY

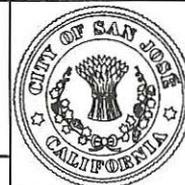
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3/3/92

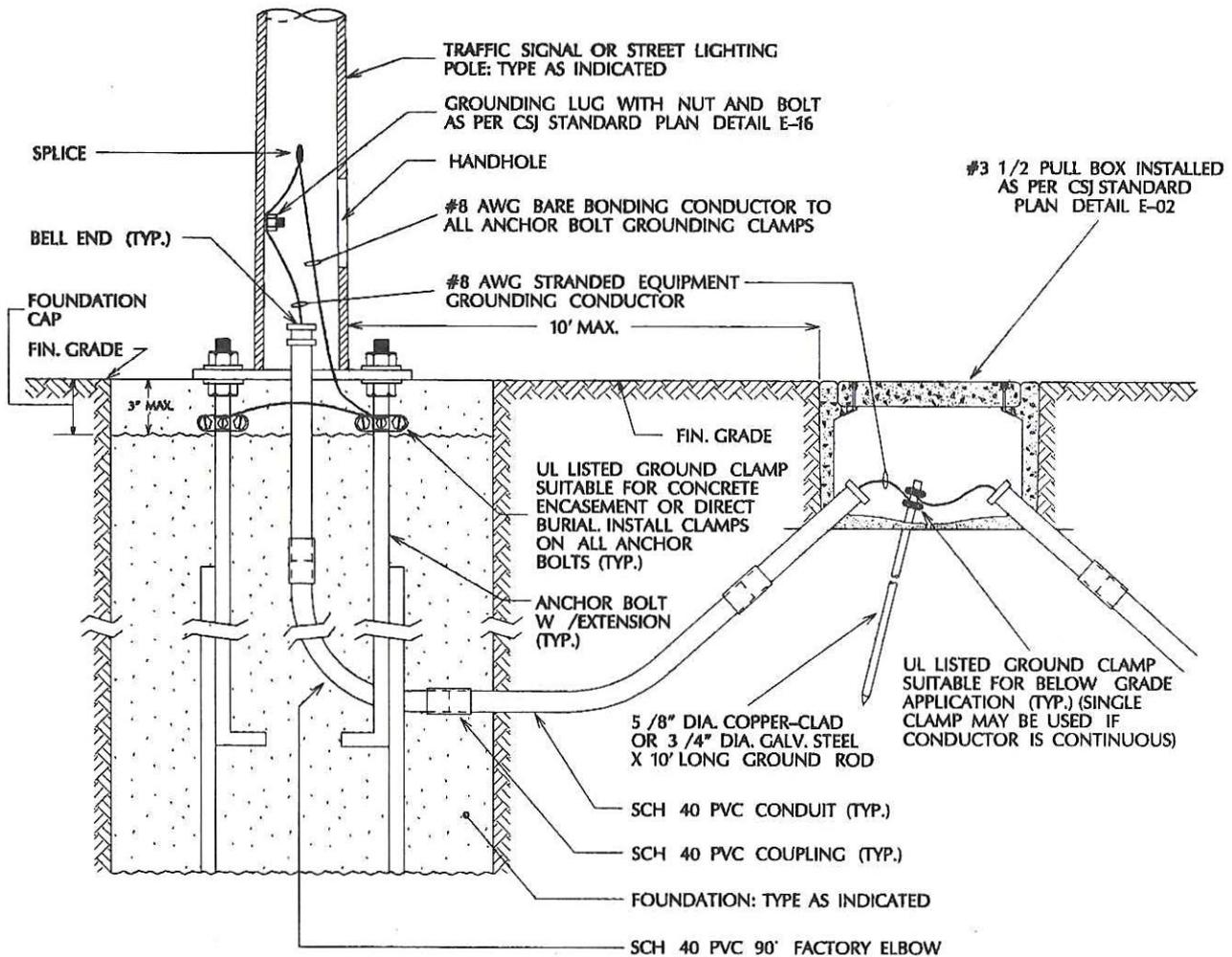
**OVERHEAD STREETLIGHT MULTIPLE
SERVICE TYPE IIC / IID - NOTES**

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-45



NOTES:

1. BONDING /GROUNDING DETAIL FOR USE WITH SCH. 40 PVC CONDUIT AND PULL BOX WITHIN 10' FROM POLE.
2. THE GROUND ROD SHALL BE INSTALLED AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
3. TERMINATE BONDING CONDUCTOR AT POLE GROUNDING LUG WITH UL APPROVED GROUNDING LUG.

APPROVED BY

Ans

DATE

3/3/92

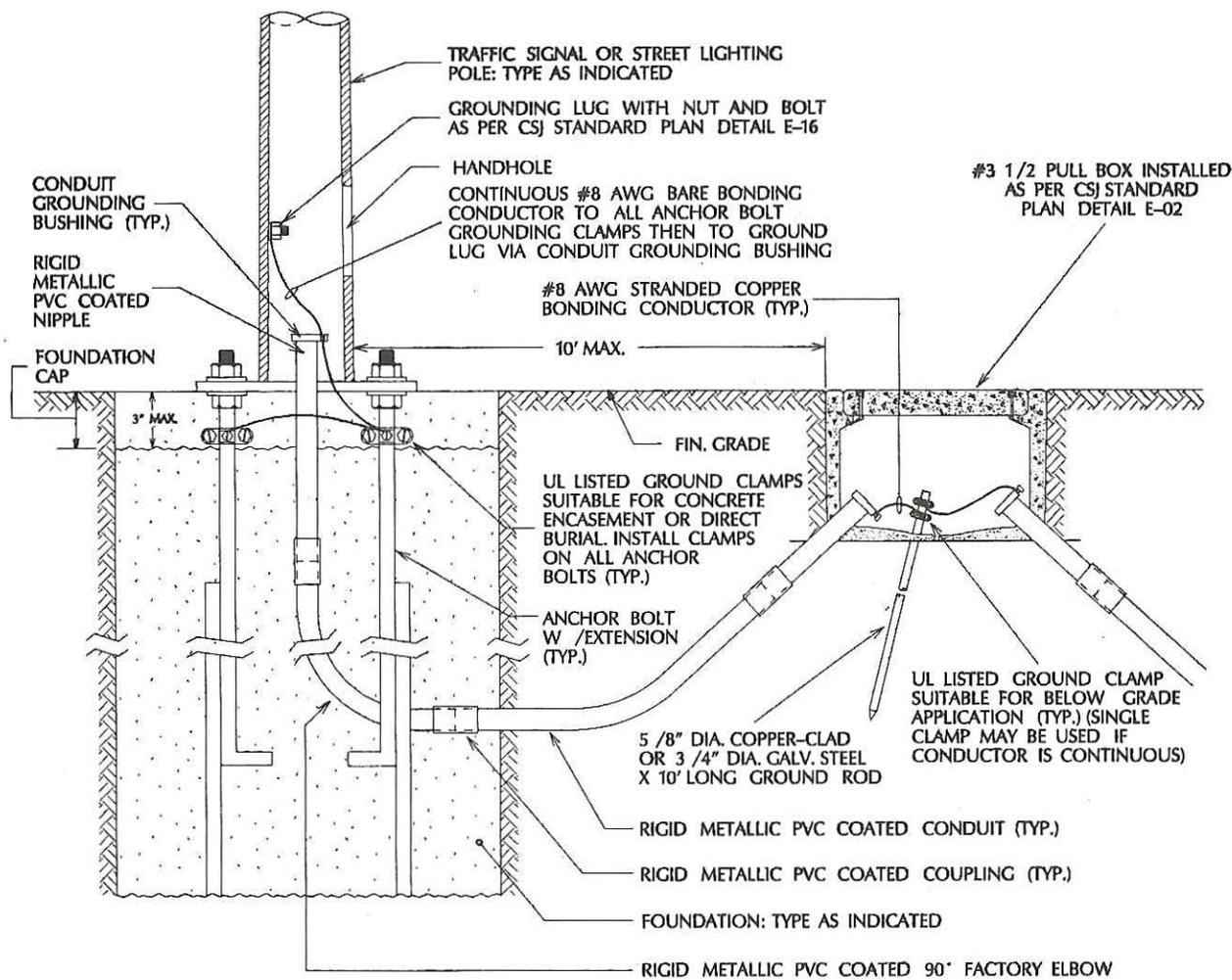
POLE BONDING - METHOD A

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-46



NOTES:

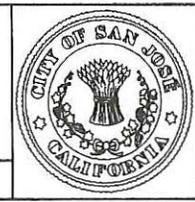
1. BONDING /GROUNDING DETAIL FOR USE WITH GALVANIZED RIGID STEEL PVC COATED CONDUIT AND PULL BOX WITHIN 10' FROM POLE.
2. THE GROUND ROD SHALL BE INSTALLED AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
3. TERMINATE BONDING CONDUCTOR AT POLE GROUNDING LUG WITH UL APPROVED GROUNDING LUG.

APPROVED BY

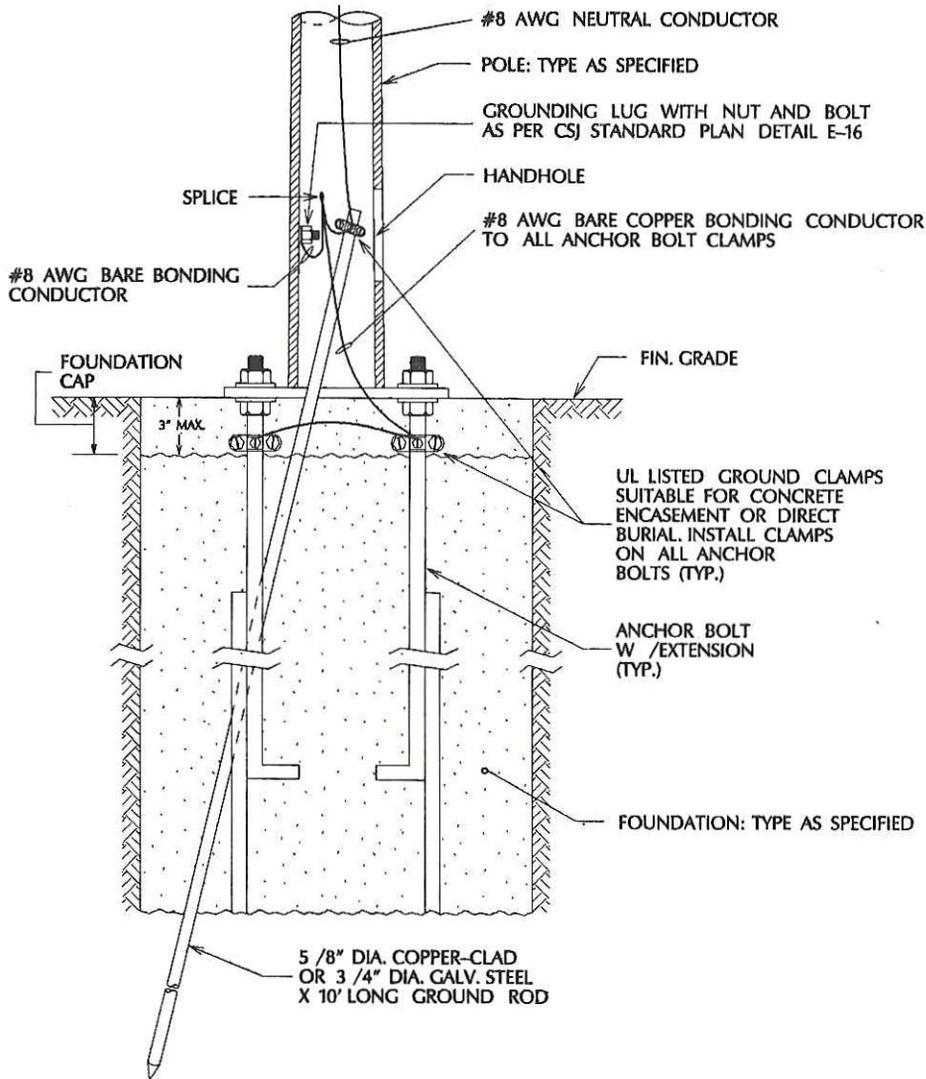
 DATE
 3/3/92

POLE BONDING - METHOD B

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-47



NOTES:

1. INSTALL TOP OF GROUND ROD EVEN WITH BOTTOM OF HANDHOLE OPENING.
2. THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION IN UNDISTURBED SOIL.
3. POLE BONDING METHOD 'C' SHALL BE USED FOR OVERHEAD FEED ONLY UNLESS APPROVED OTHERWISE BY THE ELECTRICAL ENGINEER.
4. TERMINATE BONDING CONDUCTOR AT POLE GROUNDING LUG WITH UL APPROVED GROUNDING LUG.

APPROVED BY

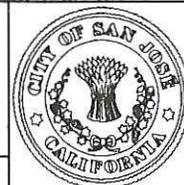
Carl

DATE

3/3/92

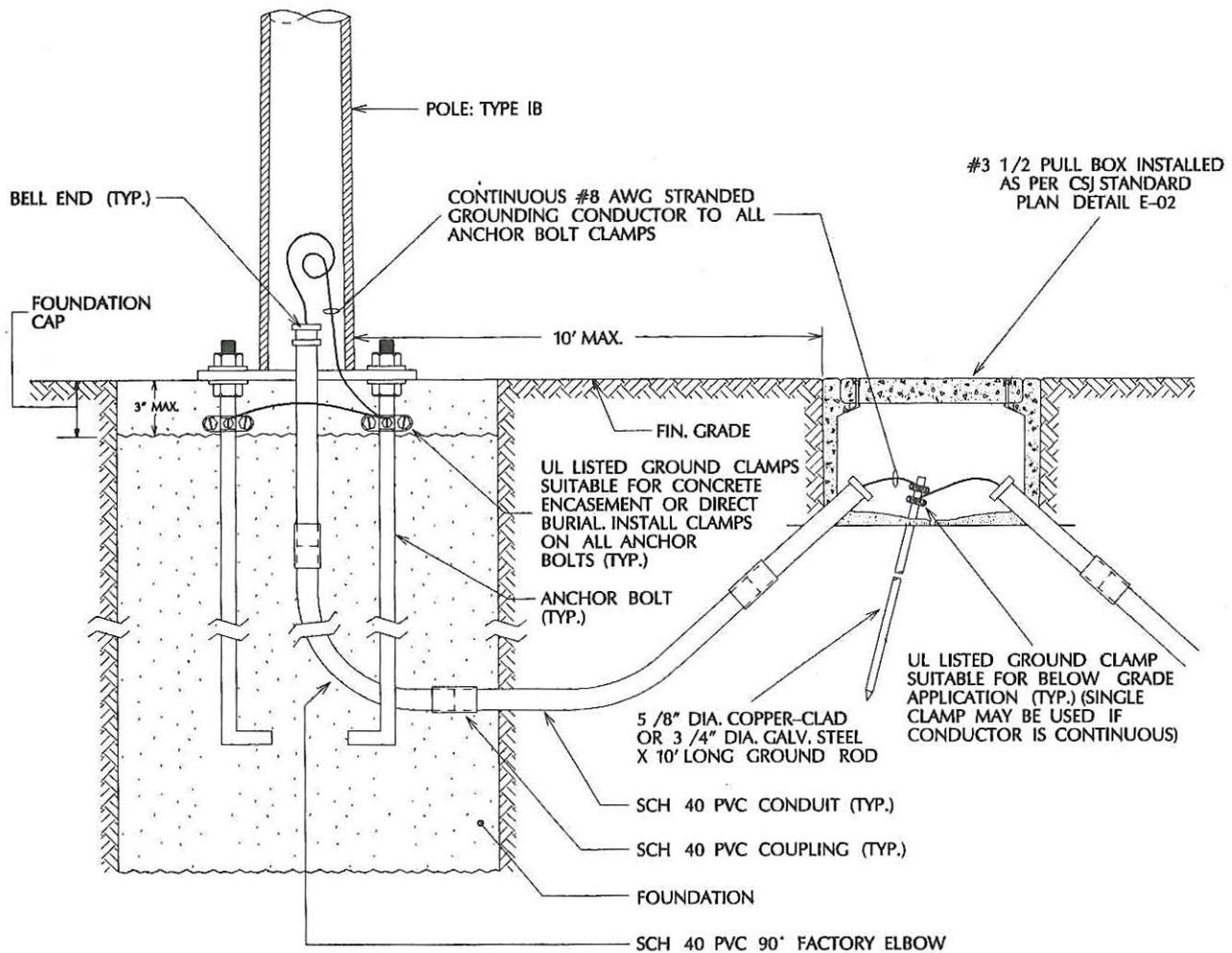
POLE BONDING - METHOD C

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-48



NOTES:

1. BONDING /GROUNDING DETAIL FOR USE WITH SCH. 40 PVC CONDUIT AND PULL BOX WITHIN 10' FROM POLE.
2. THE GROUND ROD SHALL BE INSTALLED AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
3. POLE STANDARD TYPE 1B AND FOUNDATION REQUIREMENTS SHALL CONFORM TO SECTION 86-2.04 OF THE STATE SPECIFICATIONS AND STATE STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).

APPROVED BY

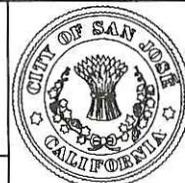
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DATE

3/3/92

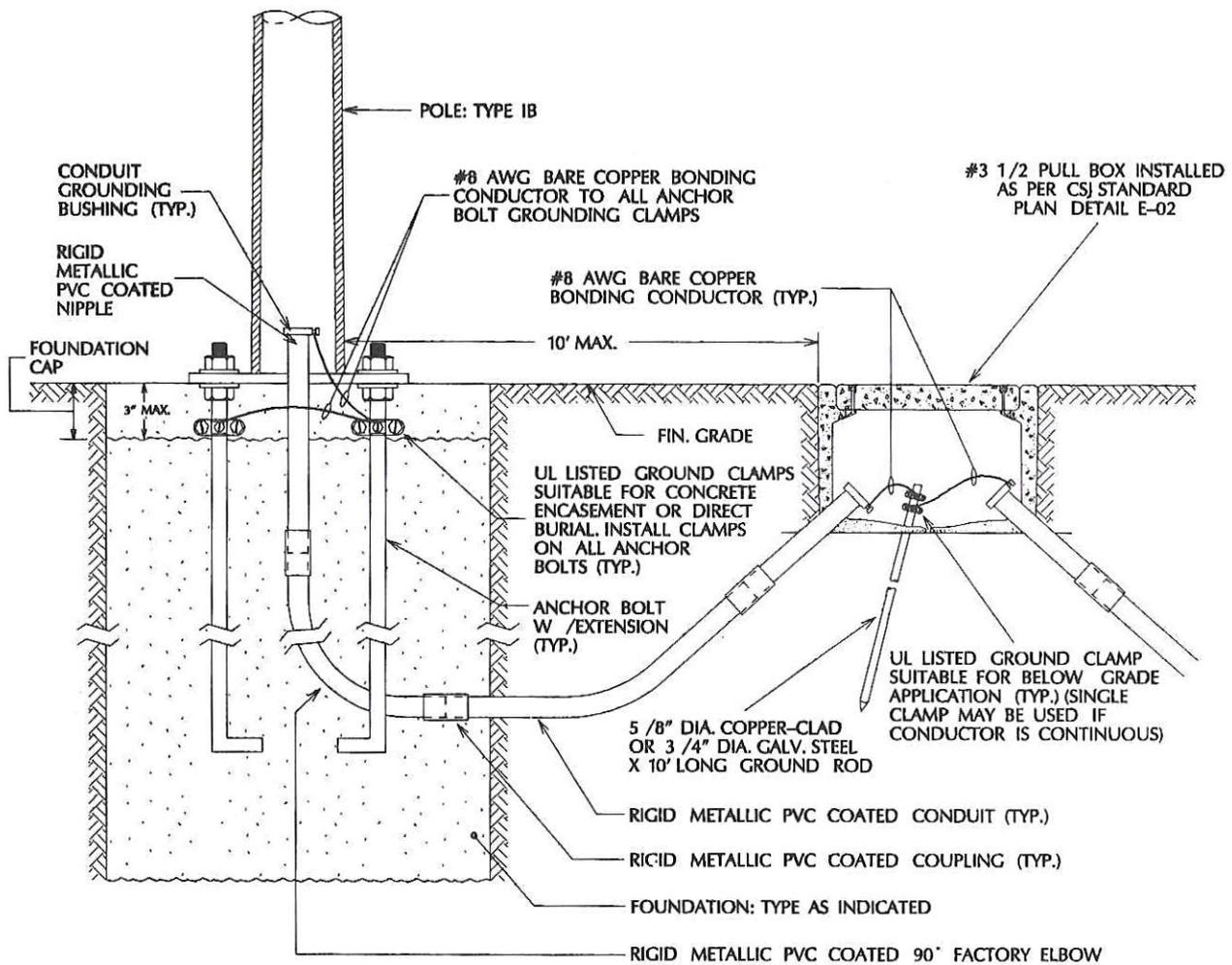
POLE TYPE 1B BONDING - METHOD A

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-49



NOTES:

1. BONDING /GROUNDING DETAIL FOR USE WITH GALVANIZED RIGID STEEL PVC COATED CONDUIT AND PULL BOX WITHIN 10' FROM POLE.
2. THE GROUND ROD SHALL BE INSTALLED AT AN OBLIQUE ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

APPROVED BY

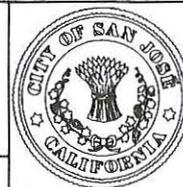
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DATE

3/3/92

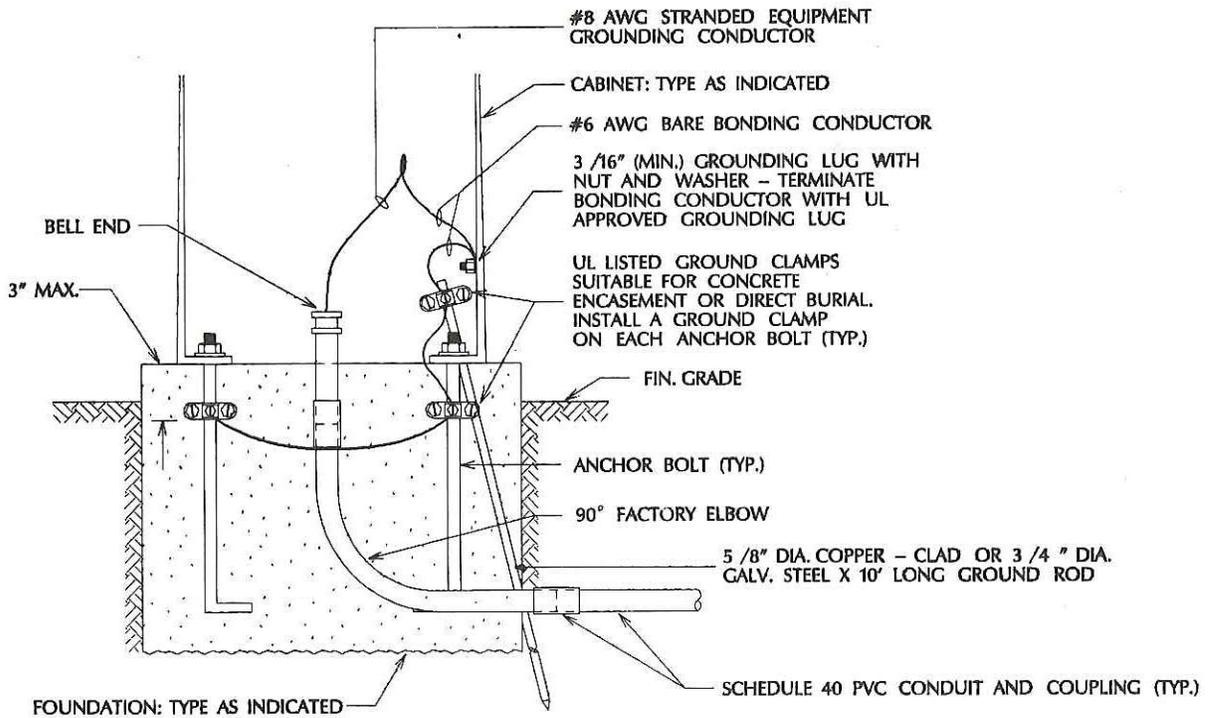
POLE TYPE IB BONDING - METHOD B

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-50



NOTES:

1. BONDING /GROUNDING DETAIL FOR USE WITH SCH. 40 PVC CONDUIT.
2. THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION IN UNDISTURBED SOIL AT AN ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

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DATE

3/3/92

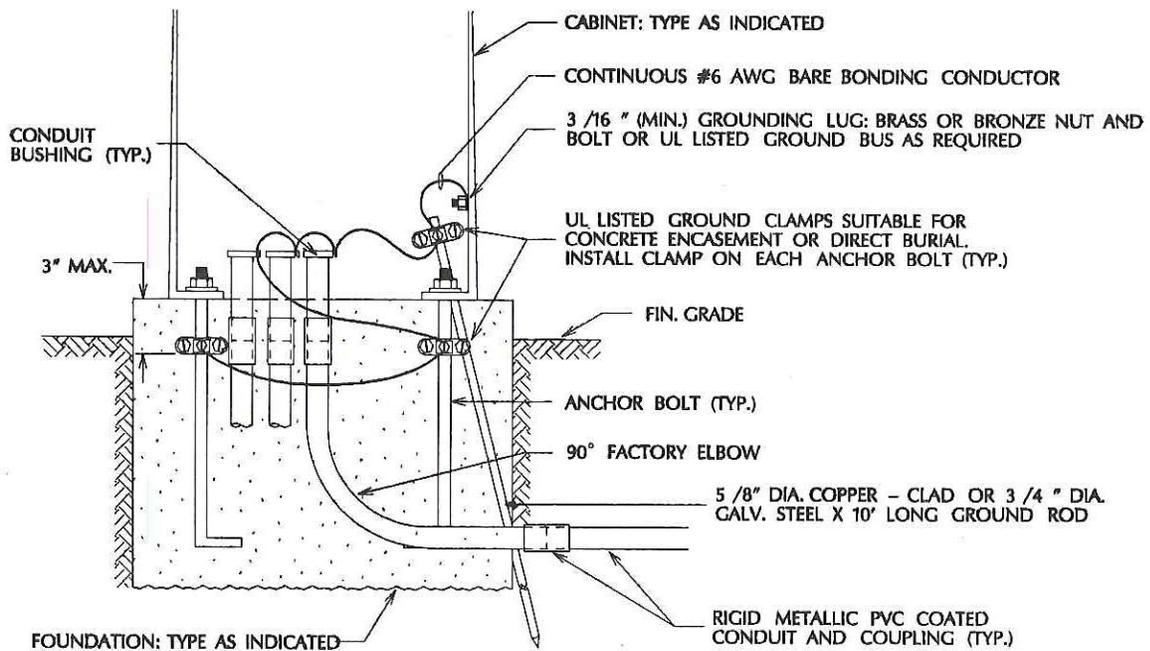
**CABINET BONDING /GROUNDING
METHOD A**

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-51



NOTES:

1. BONDING /GROUNDING DETAIL FOR USE WITH GALVANIZED RIGID STEEL PVC COATED CONDUIT.
2. THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION IN UNDISTURBED SOIL AT AN ANGLE NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.

APPROVED BY

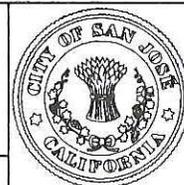
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DATE

3/3/92

**CABINET BONDING /GROUNDING
METHOD B**

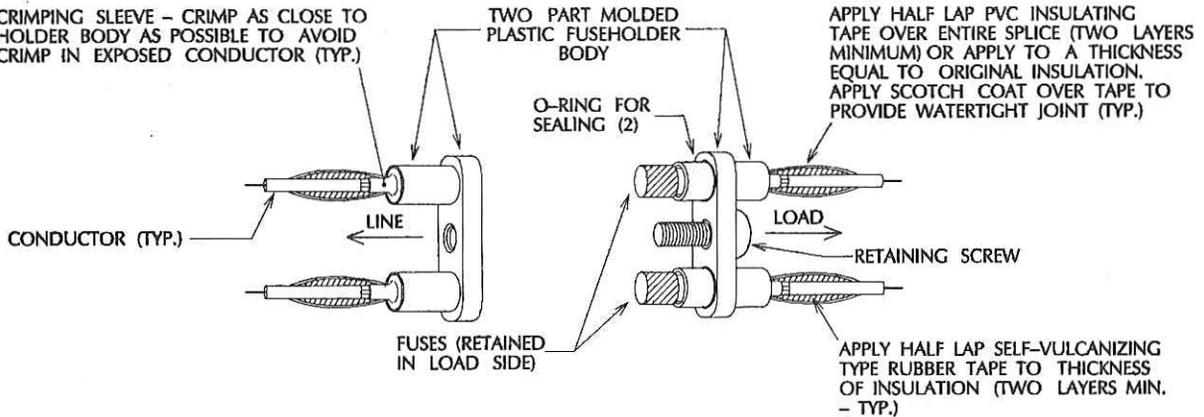
DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

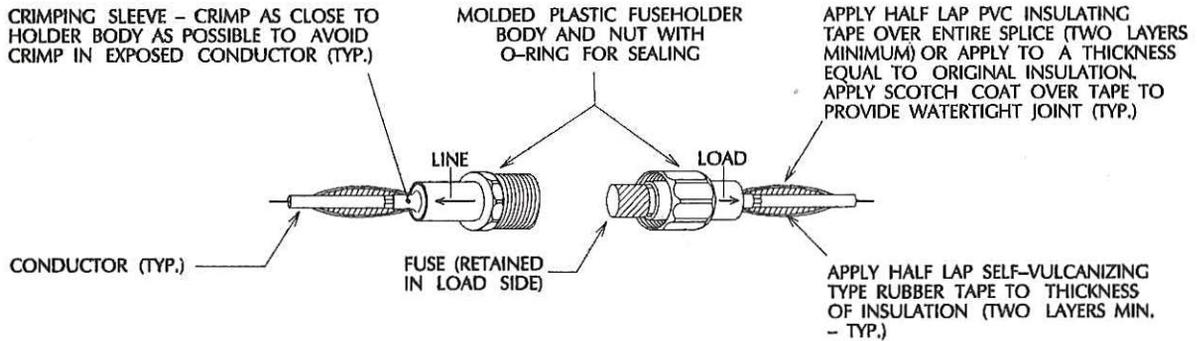
E-52

CRIMPING SLEEVE - CRIMP AS CLOSE TO HOLDER BODY AS POSSIBLE TO AVOID CRIMP IN EXPOSED CONDUCTOR (TYP.)

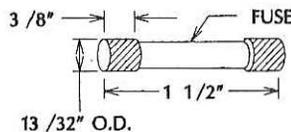


2 POLE 30A, 600V

CRIMPING SLEEVE - CRIMP AS CLOSE TO HOLDER BODY AS POSSIBLE TO AVOID CRIMP IN EXPOSED CONDUCTOR (TYP.)



1 POLE 30A, 600V



FUSE DETAIL

NOTES:

1. STRIP ENDS OF CONDUCTOR INSULATION.
2. CRIMP CONNECTOR WITH TOOL DESIGNED FOR THIS PURPOSE.
3. AMPERE RATING OF FUSEHOLDERS SHALL BE RATED 30A MIN.
4. VOLTAGE RATING OF FUSEHOLDERS SHALL BE 600V MIN.
5. PAINT ALL FINISHED TAPED CONNECTIONS WITH ELECTRICAL INSULATING COMPOUND (COATING) TO PROVIDE WATER TIGHT JOINTS.
6. FUSEHOLDERS SHALL BE TRON TYPE "HEX" (240V) OR "HEB" (120V) AS MANUFACTURED BY BUSSMAN DIV., MCGRAW-EDISON CO. OR APPROVED EQUAL REJECTION TYPE FUSEHOLDERS ARE NOT ACCEPTABLE.
7. USE 10A, 250V A.C. RATED, GENERAL PURPOSE NON-TIME DELAY TYPE "BAF" OR "BAN" FUSES AS MANUFACTURED BY BUSSMAN DIV. OR APPROVED EQUAL FOR INDIVIDUAL STREETLIGHT FUSING APPLICATIONS.
8. FUSE EACH 240V OR 120V STREETLIGHT LUMINAIRE INDIVIDUALLY WITH 10A FUSE.
9. USE 15A, 500V AC RATED, TRON TIME-DELAY TYPE "FNQ" FUSES AS MANUFACTURED BY BUSSMAN DIV. OR APPROVED EQUAL FOR IRRIGATION CONTROLLER APPLICATIONS.
10. USE 10A OR 30A, 500V A.C. RATED, TRON TIME-DELAY TYPE "FNQ" FUSES AS MANUFACTURED BY BUSSMAN DIV. OR APPROVED EQUAL FOR SERVICE APPLICATIONS AS REQUIRED.
11. FUSES FOR UNDERGROUND FED ELECTROLIERS SHALL BE INSTALLED IN THE POLE BASE OF THE ELECTROLIER.

APPROVED BY

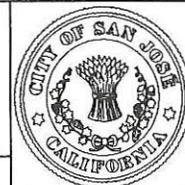
AWB

DATE

3/3/92

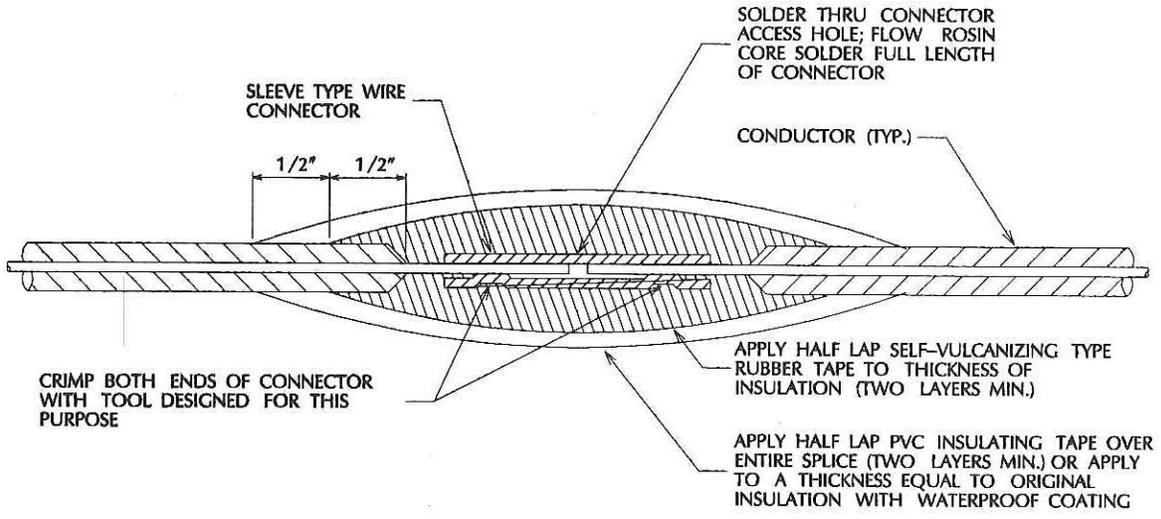
**FUSED SPLICE
CONNECTORS**

DEPARTMENT OF PUBLIC WORKS

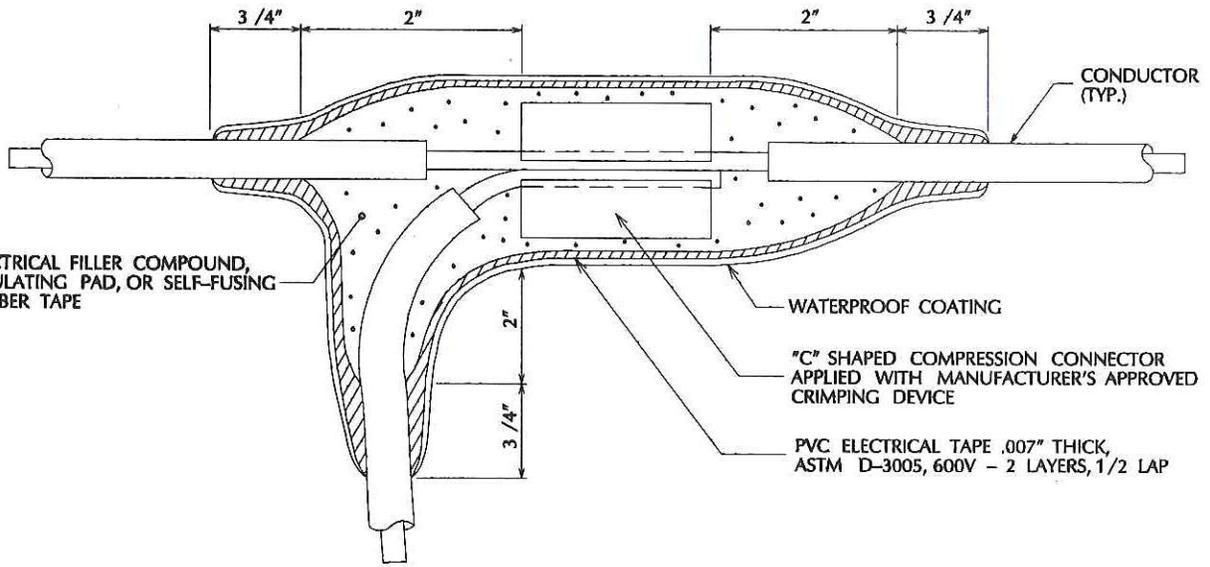


DRAWING
NO.

E-53



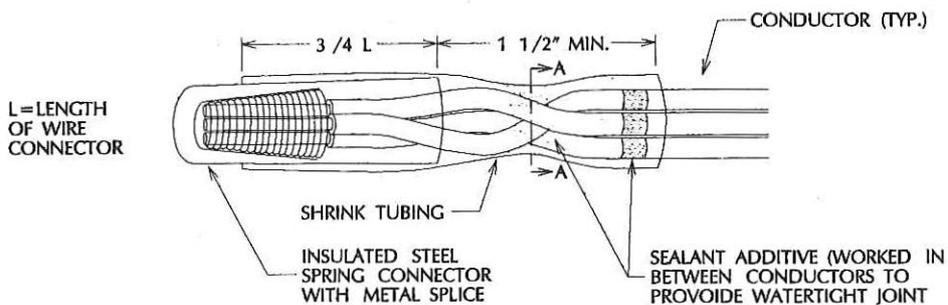
SINGLE CONDUCTOR TYPE
(BETWEEN TWO CONDUCTORS - END TO END CONNECTION)



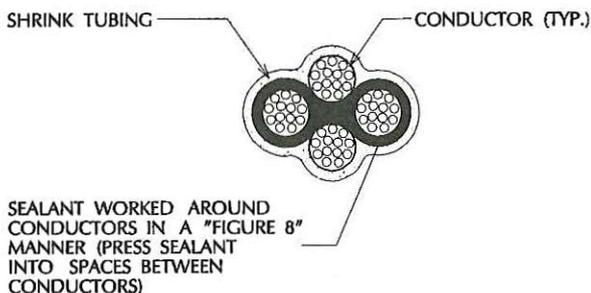
TYPE "C" TAP SPLICE
(BETWEEN ONE "FREE END" AND ONE "THROUGH" CONDUCTOR)

- NOTES:
1. DO NOT EXCEED CONNECTOR MANUFACTURER'S AWG COPPER WIRE SPLICING COMBINATIONS.
 2. ALL DIMENSIONS ARE MINIMAL.

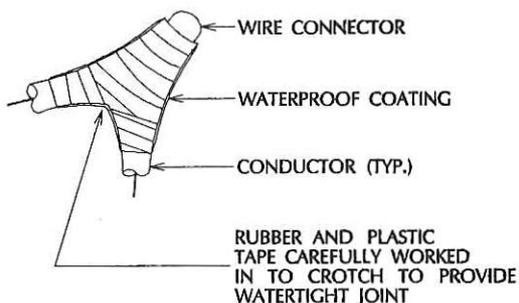
APPROVED BY <i>aus</i>	CONDUCTOR SPLICING		DRAWING NO.
DATE 3/3/92			DEPARTMENT OF PUBLIC WORKS



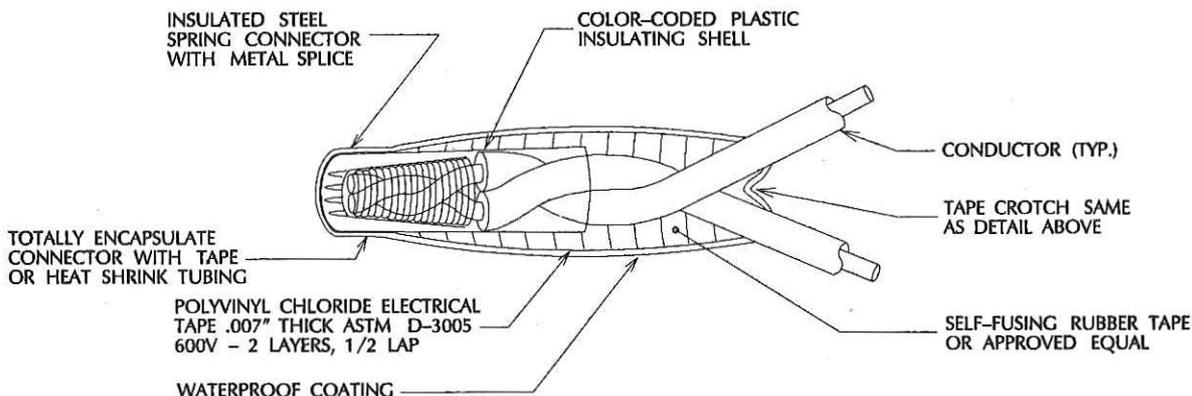
SPLICE WITH SHRINK TUBING AND INSULATED SPRING CONNECTOR



SECTION A - A



CROTCH DETAIL



SPLICE WITH INSULATED SPRING CONNECTOR

NOTES:

1. PAINT ALL TAPED SPLICES WITH ELECTRICAL WATERPROOF COATING.
2. HEAT SHRINK TUBING (RATED 600V AC) MAY BE USED IN LIEU OF PVC ELECTRICAL TAPE FOR INSULATED SPRING CONNECTORS.
3. DO NOT EXCEED SPRING CONNECTOR MANUFACTURER'S AWG COPPER WIRE SPLICING COMBINATION RECOMMENDATIONS.

APPROVED BY

aus

DATE

3/3/92

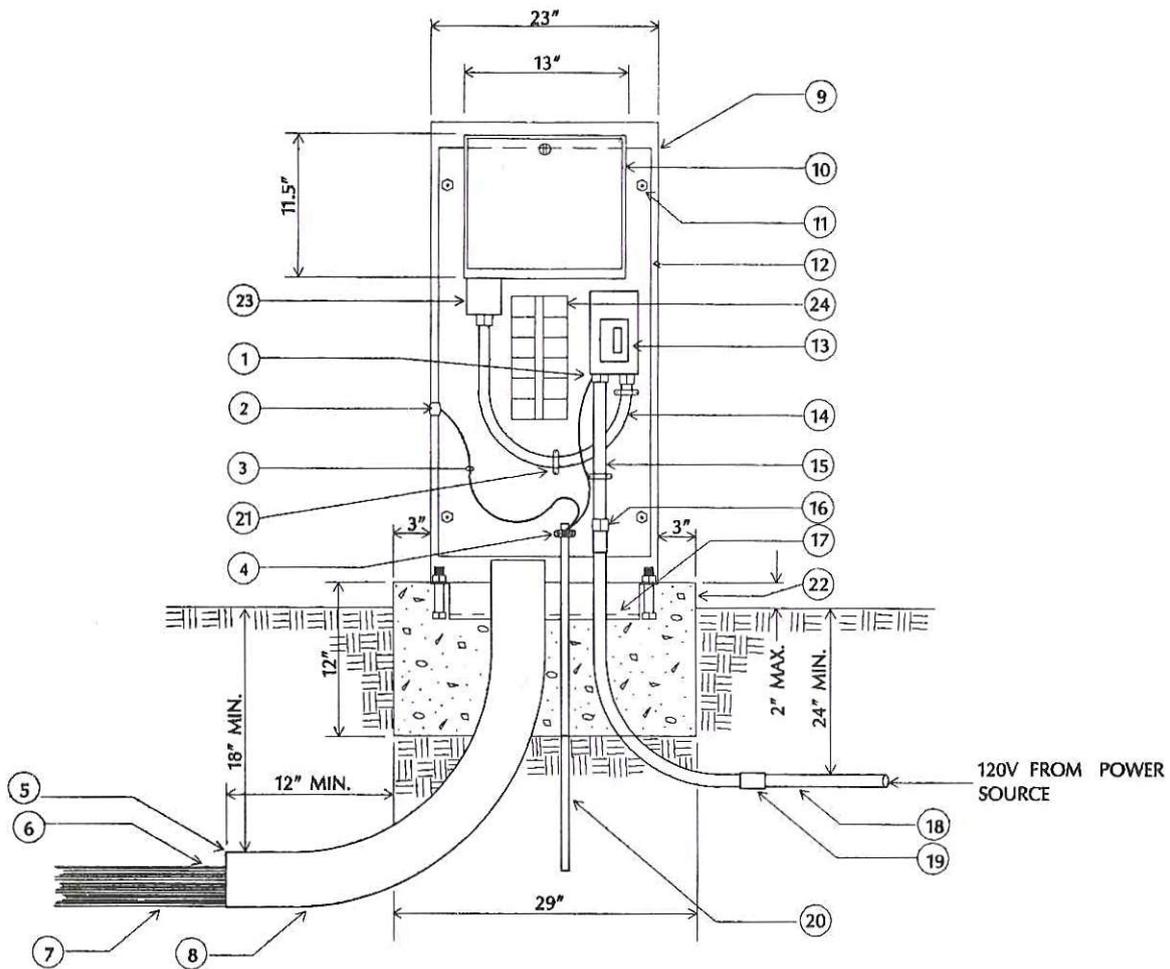
**CONDUCTOR SPLICING
SPRING CONNECTORS**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-55



- ① UL LISTED GROUNDING FITTING
- ② GROUND LUG WELDED TO ENCLOSURE
- ③ #8 BARE COPPER GROUND
- ④ GROUND CLAMP
- ⑤ SEAL ALL ENDS WITH DUCT SEAL (TYP.)
- ⑥ TIE CONDUCTORS AT 20' INTERVALS (TYP.)
- ⑦ DIRECT BURIAL LOW VOLTAGE CONTROLLER CONDUCTORS
- ⑧ 4" SCH. 40 PVC CONDUIT (INSTALL TO ALIGN WITH OPENING ON BOTTOM OF CONTROLLER)
- ⑨ CONTROLLER ENCLOSURE (SEE LANDSCAPE PLANS FOR MANUFACTURER & MODEL NO.)
- ⑩ IRRIGATION CONTROLLER (SEE LANDSCAPE PLANS FOR MANUFACTURER & MODEL NO.)
- ⑪ MOUNTING NUT AND BOLT (4 TYPICAL)
- ⑫ MOUNTING BACKBOARD
- ⑬ 120V CIRCUIT BREAKER DISCONNECT IN NEMA 1 ENCLOSURE (I-T-E CAT # W0204ML1060 WITH 15A, IP, 10,000 A.I.C. RATED CIRCUIT BREAKER AND GROUNDING KIT OR APPROVED EQUAL)
- ⑭ 1/2" SEALTITE FLEXIBLE CONDUIT WITH 3 #12 AWG. THW COPPER CONDUCTORS
- ⑮ 1" SEALTITE FLEXIBLE CONDUIT WITH 3 #8 AWG. THW COPPER CONDUCTORS
- ⑯ 1" FLEX INSULATED THROAT CONDUIT CONNECTOR WITH FEMALE ADAPTOR
- ⑰ ZINC PLATED STEEL BASE WITH STAINLESS MOUNTING STUDS
- ⑱ 1" SCH. 40 PVC CONDUIT WITH 3 #8 AWG, THW COPPER CONDUCTORS
- ⑲ PVC COUPLING (TYP.)
- ⑳ 5/8" DIA. COPPER-CLAD OR 3/4" DIA. GALV. STEEL X 10' LONG GROUND ROD
- ㉑ CONDUIT FASTENER SECURED TO BACKBOARD (TYP.)
- ㉒ PCC FOUNDATION
- ㉓ APPROVED JUNCTION BOX - SPLICE CONTROLLER LINE VOLTAGE WIRING TO CIRCUIT AS REQUIRED
- ㉔ 36 STATION TERMINAL STRIPS

APPROVED BY

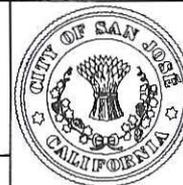
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3/3/92

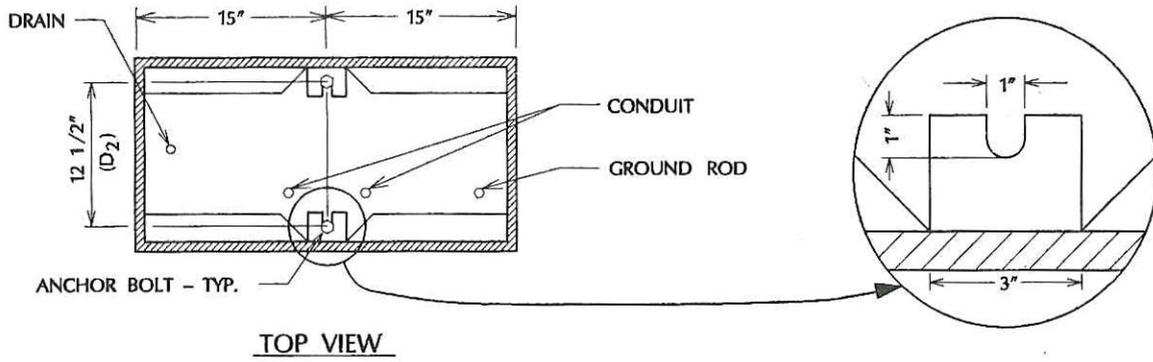
IRRIGATION CONTROLLER ENCLOSURE FOR MEDIAN ISLAND

DEPARTMENT OF PUBLIC WORKS

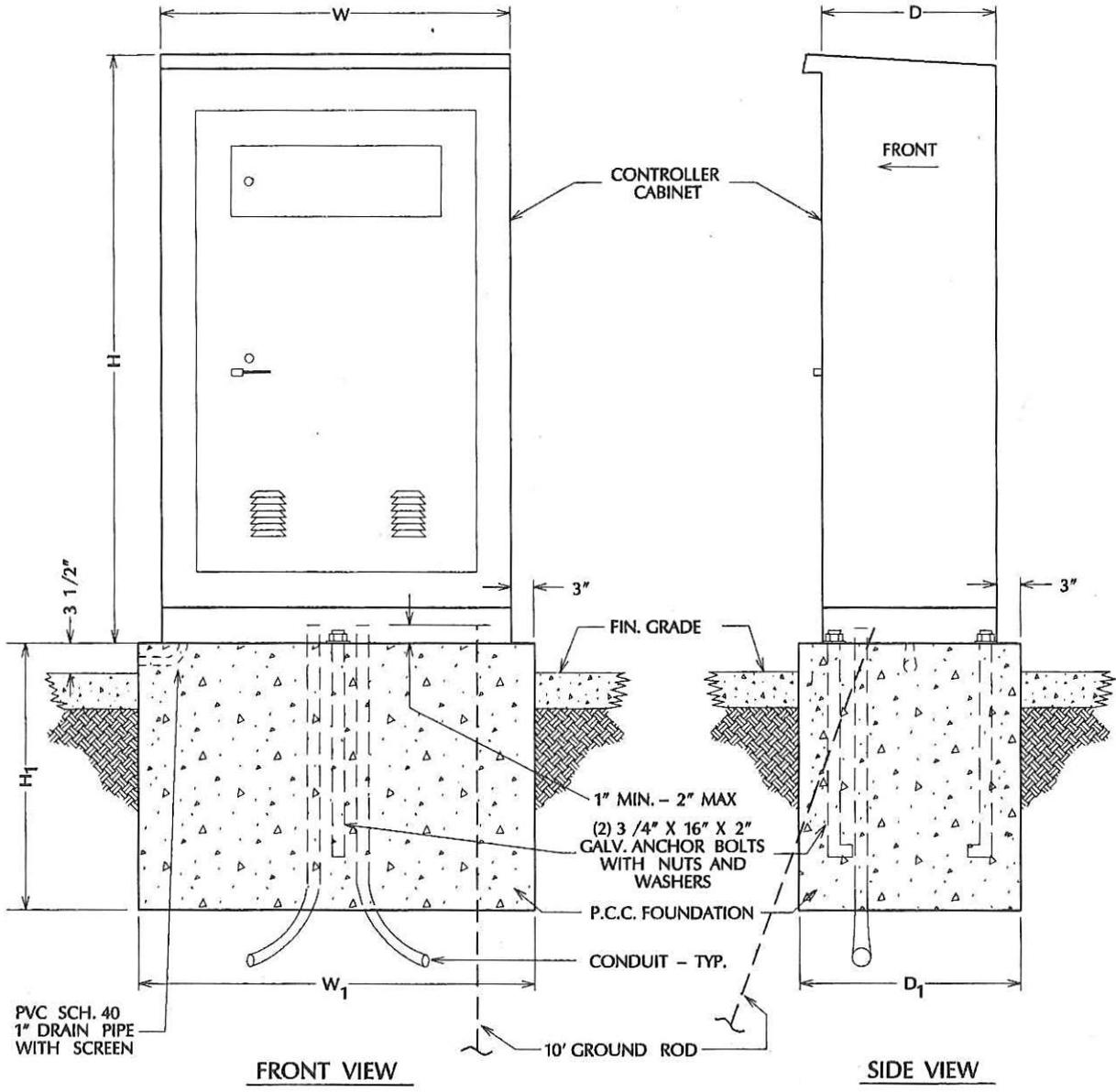


DRAWING
NO.

E-56



TOP VIEW



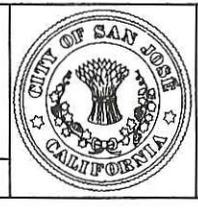
FRONT VIEW

SIDE VIEW

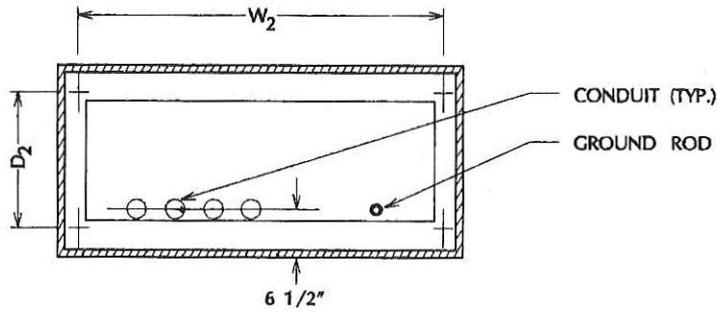
NOTES:
 1. SEE DRAWINGS E-51 AND E-52 FOR GROUNDING /BONDING REQUIREMENTS AND DRAWING E-59 FOR DIMENSIONS.
 2. THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION FOR MAXIMUM CONTACT IN UNDISTURBED SOIL.

APPROVED BY
[Signature]
 DATE
 3/3/92

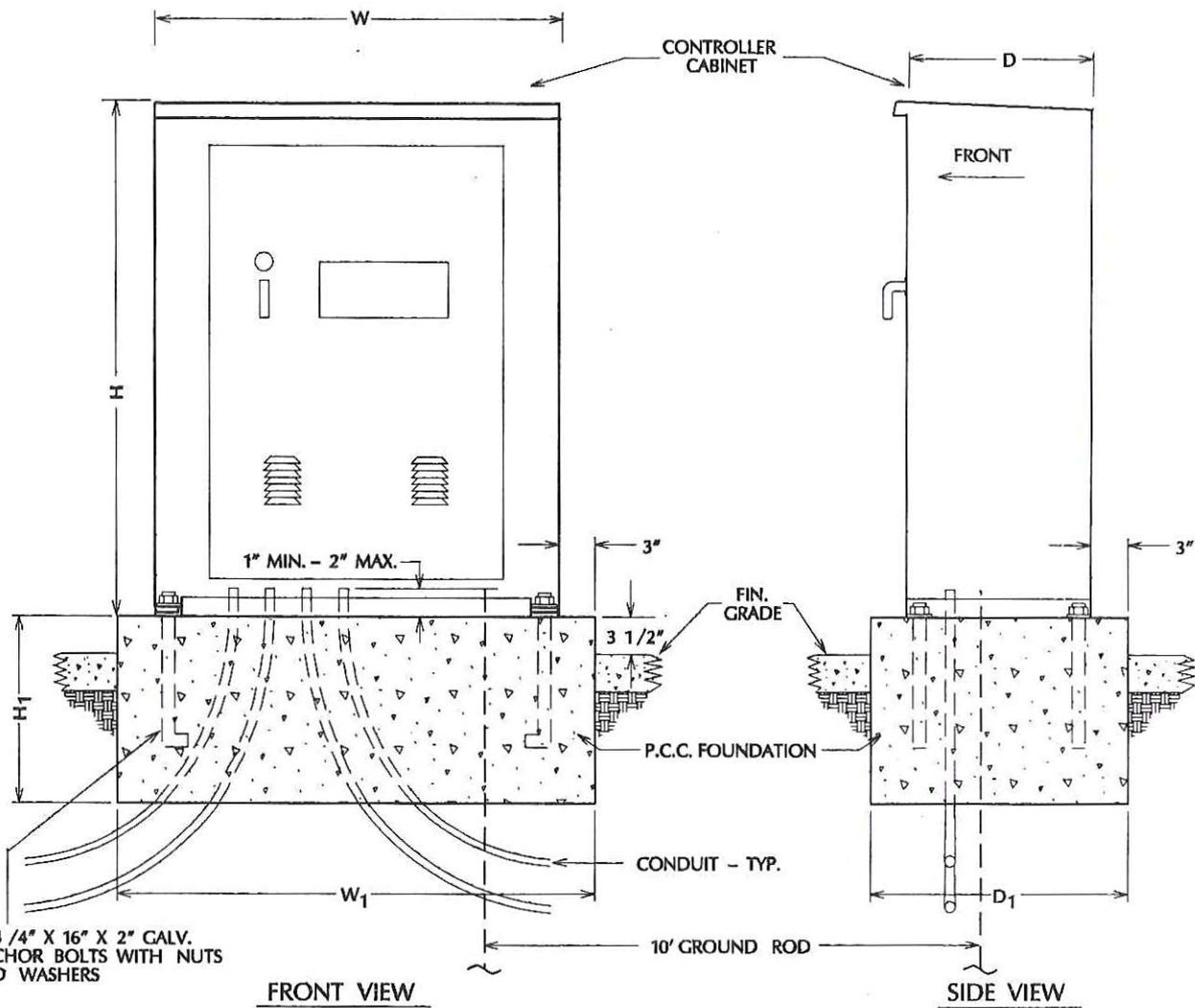
CONTROLLER CABINET /FOUNDATION
TYPE M
 DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-57



TOP VIEW



NOTE:
SEE DRAWINGS E-51 AND E-52 FOR GROUNDING /BONDING REQUIREMENTS AND DRAWING E-59 FOR DIMENSIONS.

APPROVED BY <i>cus</i>	CONTROLLER CABINET /FOUNDATION TYPE P		DRAWING NO. E-58
DATE 3/3/92			

CONTROLLER CABINET /FOUNDATION DIMENSION TABLE

TYPE	CABINET			FOUNDATION			BOLT MOUNTING	
	H	W	D	H ₁	W ₁	D ₁	D ₂	W ₂
M	57 1/2"	30"	17"	24"	36"	23"	12 1/2"	-
P	55 9/16"	44"	26"	24"	50"	32"	18 1/2"	40 1/2"

NOTES - CONTROLLER CABINET /FOUNDATION

1. ALL CABINET DIMENSIONS ARE NOMINAL.
2. EXACT LOCATION OF CONTROLLER CABINET SHALL BE DETERMINED BY CSJ DEPT. OF PUBLIC WORKS DURING CONSTRUCTION.
3. ALL ANCHOR BOLTS SHALL BE BONDED IN ACCORDANCE WITH DRAWINGS E-51 AND E-52.
4. IN UNPAVED AREAS, A RAISED P.C.C. PAD SHALL BE PLACED IN FRONT OF EACH CONTROLLER CABINET. PAD SHALL BE A MINIMUM OF 3'-0" X 0'-4" THICK X WIDTH OF FOUNDATION FOR TYPE 'M', 'M' (MODIFIED) AND 'P' CABINETS.
5. IN UNPAVED AREAS, THE TOP OF FOUNDATION FOR TYPE 'P' CABINETS SHALL BE 6" ABOVE SURROUNDING GRADE. TOP OF FOUNDATION FOR TYPE 'M' CABINET SHALL BE 18" ABOVE SURROUNDING GRADE.
6. IN SIDEWALKS AND OTHER PAVED AREAS, TOP OF FOUNDATION FOR TYPE 'P' AND 'M'(MODIFIED) CABINETS SHALL BE 3 1/2" ABOVE SURROUNDING GRADE.
7. A 1" DRAIN SHALL BE PROVIDED THROUGH THE FOUNDATION OF TYPE 'M'/'M'(MODIFIED) CABINETS. DRAIN PIPE SHALL BE SCREENED.
8. SEE TABLE FOR CABINET AND FOUNDATION DIMENSIONS; "D" = DEPTH, "H" = HEIGHT, AND "W" = WIDTH. SEE TABLE FOR ANCHOR BOLT SPACING; "D₂" = DEPTH AND "W₂" = WIDTH.
9. AN APPROVED MASTIC OR CAULKING COMPOUND SHALL BE PLACED ON THE FOUNDATION PRIOR TO PLACING THE CABINET TO SEAL ALL OPENINGS BETWEEN BOTTOM OF CABINET AND FOUNDATION.

APPROVED BY

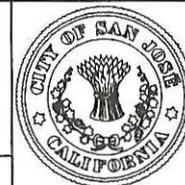
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3/3/92

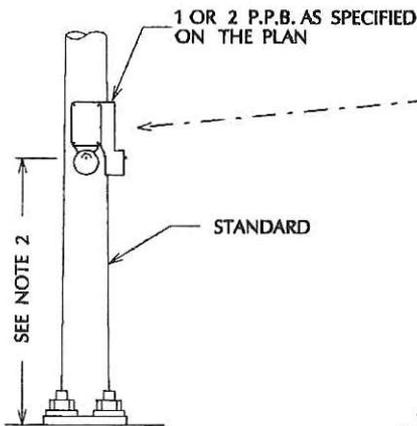
CONTROLLER CABINET /FOUNDATION

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

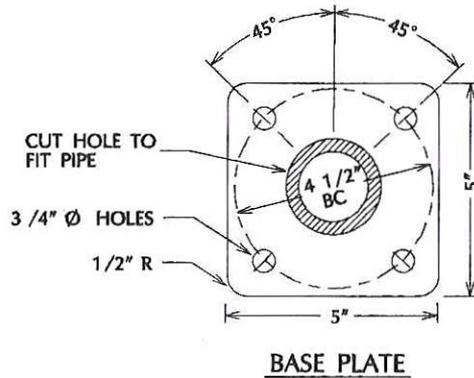
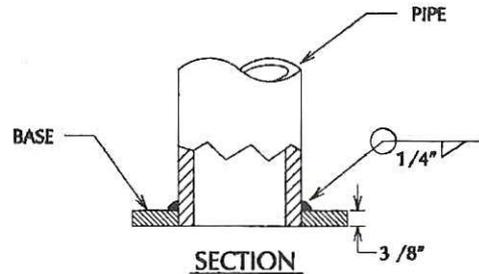
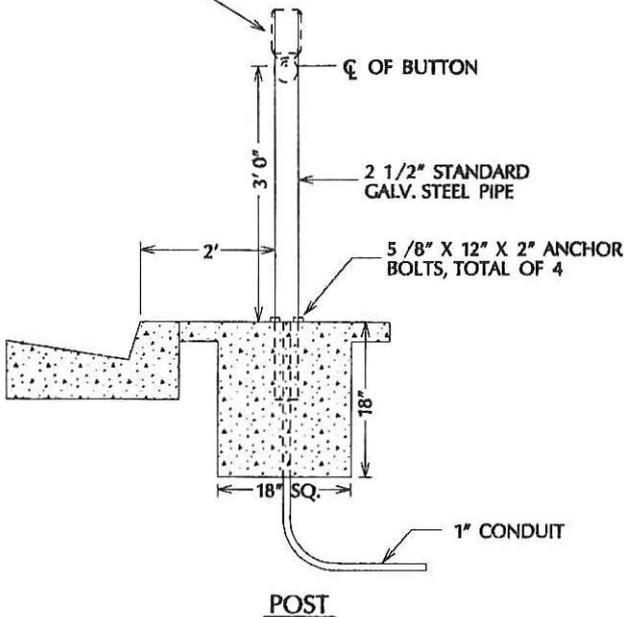
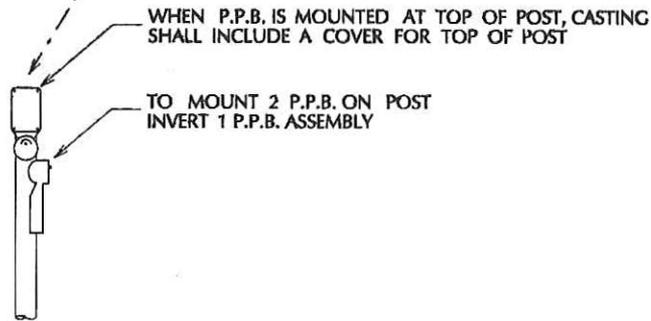
E-59



SEE E-61 FOR PEDESTRIAN PUSH BUTTON SIGN DETAILS

TYPICAL MOUNTING ON STANDARD

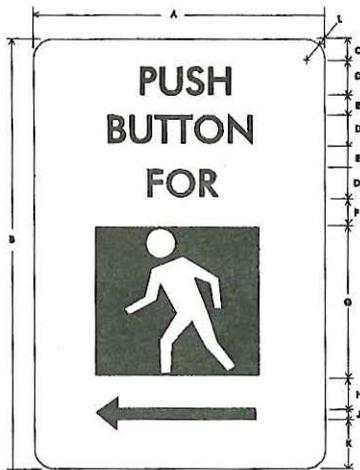
MOUNT P.P.B. ON CROSS WALK SIDE OF POST OR STANDARD, OR AS DIRECTED BY THE ENGINEER



NOTES:

1. CONDUIT SHALL PROTRUDE 2" MAX. ABOVE FINISHED SURFACE FOUNDATION.
2. WHERE INSTALLED IN SIDEWALK AREAS, PEDESTRIAN PUSH BUTTONS SHALL BE MOUNTED 36 INCHES ABOVE THE BASE OF THE POLE. WHERE INSTALLED ON A RAISED (6 INCH) TRAFFIC ISLAND WITH WHEELCHAIR OPENINGS, PEDESTRIAN PUSH BUTTONS SHALL BE MOUNTED 30 INCHES ABOVE THE BASE OF THE POLE.
3. BACK OF PUSHBUTTON CASTING TO BE SHAPED TO FIT CURVATURE OF POST OR STANDARDS.

APPROVED BY  DATE 3/3/92	PEDESTRIAN PUSHBUTTON MOUNTING DEPARTMENT OF PUBLIC WORKS		DRAWING NO. E-60
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ALTERNATE SYMBOL AND ARROW DIRECTIONS: LEFT, RIGHT OR BOTH



SIGN	DIMENSIONS (INCHES)										
	A	B	C	D	E	F	G	H	J	K	L
MIN.	5	7-1/2	9/16	3/4	3/8	7/16	2-1/8	3/8	1/4	3/4	3/4

COLORS

LEGEND & ARROW - BLACK
 BACKGROUND & SYMBOLS - WHITE

PEDESTRIAN PUSH BUTTON SIGN



TYPE B

PEDESTRIAN PUSH BUTTON

1. SHAPE BACK OF CASTING TO FIT CURVATURE OF POST.
2. PROVIDE COVER FITTING FOR TOP OF POST, WHEN PPB IS MOUNTED ON PEDESTRIAN PUSH BUTTON POST.
3. INSTALL PUSHBUTTON ON CROSSWALK SIDE OF STANDARD.

APPROVED BY

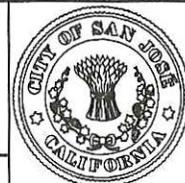
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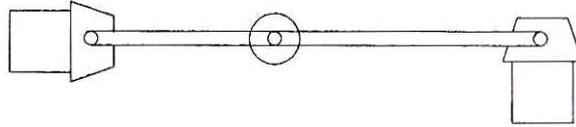
PEDESTRIAN PUSHBUTTON SIGNS

DEPARTMENT OF PUBLIC WORKS

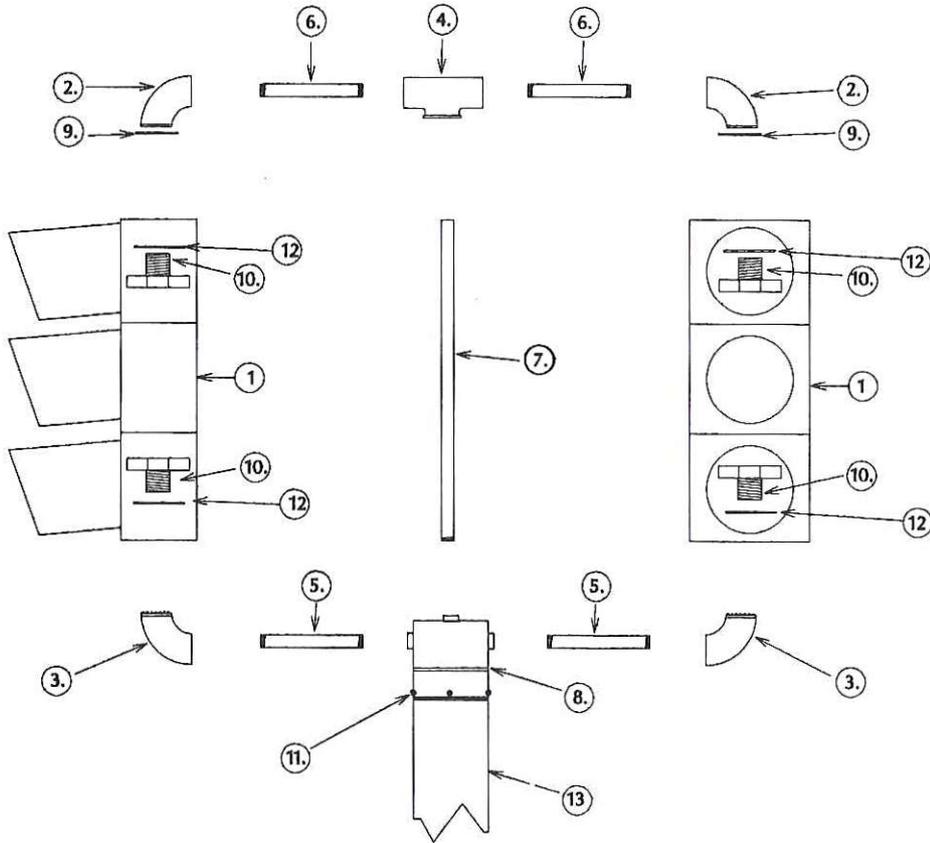


DRAWING NO.

E-61



PLAN VIEW



ELEVATION

MOUNTING HARDWARE		
NO.	DESCRIPTION	QTY.
1.	TRAFFIC SIGNAL HEAD ASSEMBLY WITH THREE 8" SECTIONS	2
2.	1 1/2" ELBOW WITH FLANGE	2
3.	1 1/2" ELBOW, SHURLOCK	2
4.	1 1/2" TEE, REAMED WITH SET SCREW	1
5.	1 1/2" x 11" NIPPLE	2
6.	1 1/2" x 12" NIPPLE	2
7.	1 1/2" x 32" CENTERPIPE	1
8.	ADAPTOR, BRONZE	1
9.	WASHER, NEOPRENE	2
10.	1 1/2" LOCKNIPPLE	4
11.	3/8" x 5/8" ALLEN HEAD SET SCREW	6
12.	WASHER, GALVANIZED	4
13.	POLE TOP	

APPROVED BY

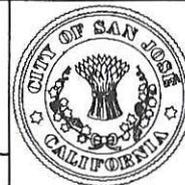
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DATE

3/3/92

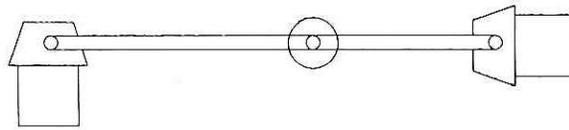
VEHICULAR SIGNAL
TWO 8" HEAD ASSEMBLIES
TYPE TV2

DEPARTMENT OF PUBLIC WORKS

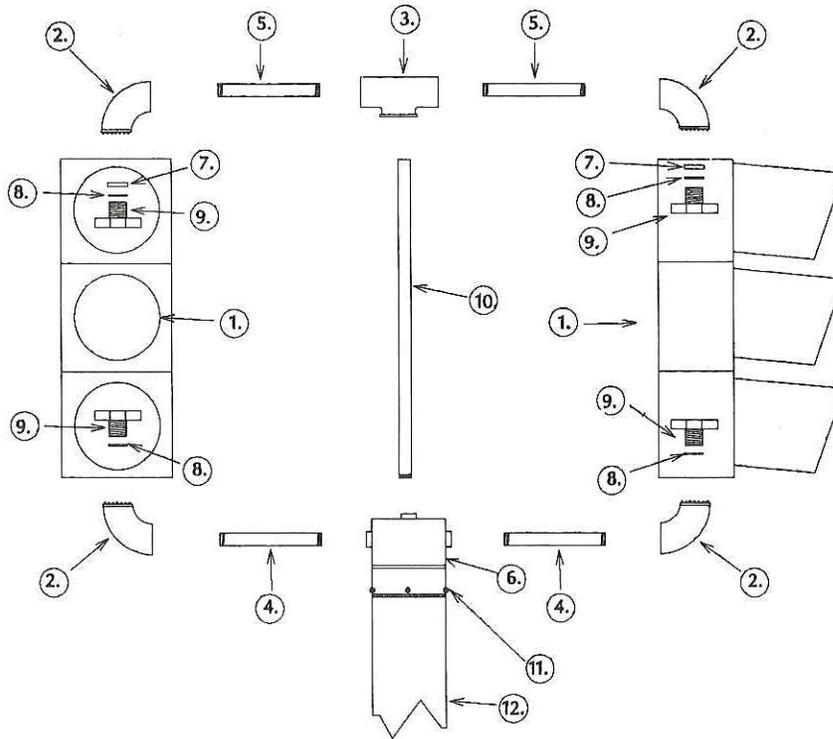


DRAWING NO.

E-62



PLAN VIEW



ELEVATION

MOUNTING HARDWARE		
NO.	DESCRIPTION	QTY.
1.	TRAFFIC SIGNAL HEAD ASSEMBLY WITH THREE 12" SECTIONS	2.
2.	1 1/2" ELBOW, SHURLOCK	4.
3.	1 1/2" TEE, REAMED WITH SET SCREW	1.
4.	1 1/2" x 11" NIPPLE	2.
5.	1 1/2" x 12" NIPPLE	2.
6.	ADAPTOR, BRONZE	1.
7.	WASHER, NEOPRENE	2.
8.	WASHER, GALVANIZED	4.
9.	1 1/2" LOCKNIPPLE	4.
10.	1 1/2" x 46" CENTERPIPE	1.
11.	3/8" x 5/8" ALLEN HEAD SET SCREW	6.
12.	POLE TOP	

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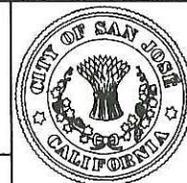
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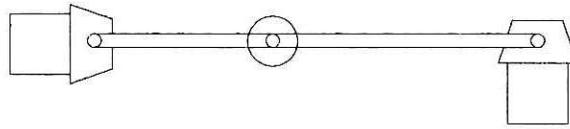
VEHICULAR SIGNAL
TWO 12" HEAD ASSEMBLIES
TYPE TV2

DEPARTMENT OF PUBLIC WORKS

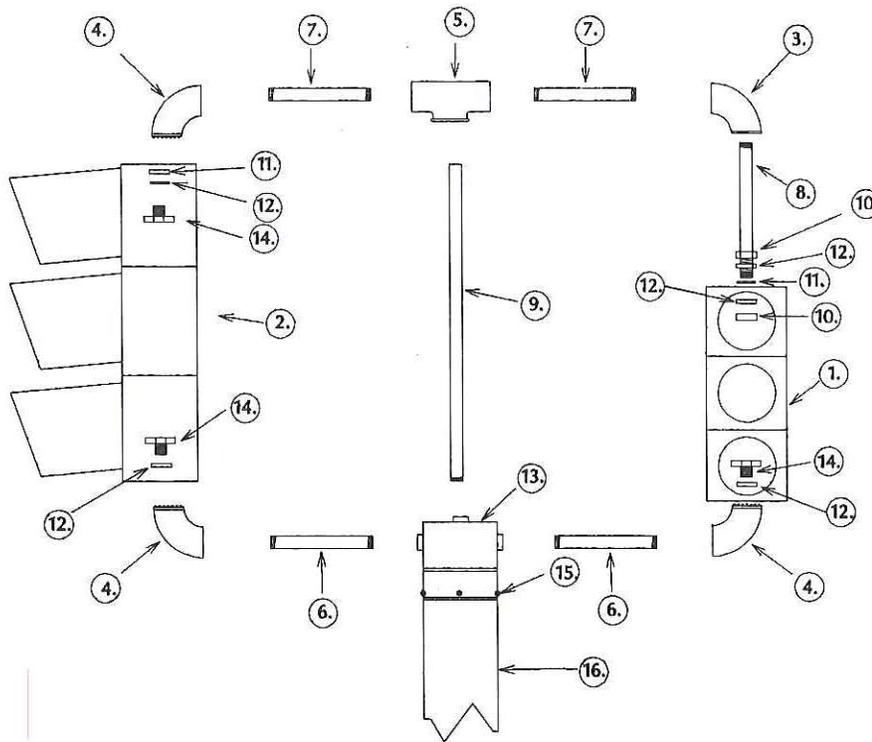


DRAWING NO.

E-63



PLAN VIEW



ELEVATION

MOUNTING HARDWARE		
NO.	DESCRIPTION	QTY.
1.	TRAFFIC SIGNAL HEAD ASSEMBLY WITH THREE 8" SECTIONS	1.
2.	TRAFFIC SIGNAL HEAD ASSEMBLY WITH THREE 12" SECTIONS	1.
3.	1 1/2" ELBOW, PLAIN	1.
4.	1 1/2" ELBOW, SHURLOCK	3.
5.	1 1/2" TEE, REAMED WITH SET SCREW	1.
6.	1 1/2" x 11" NIPPLE	2.
7.	1 1/2" x 12" NIPPLE	2.
8.	1 1/2" x 16 3/4" NIPPLE WITH 3" T.O. E.	1.
9.	1 1/2" x 46" CENTERPIPE	1.
10.	1 1/2" LOCKNUT	2.
11.	WASHER, NEOPRENE	2.
12.	WASHER, GALVANIZED	5.
13.	ADAPTOR BRONZE	1.
14.	1 1/2" LOCKNIPPLE	3.
15.	3/8" x 5/8" ALLEN HEAD SET SCREW	6.
16.	POLE TOP	

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VEHICULAR SIGNAL
8" / 12" COMBINATION HEAD ASSEMBLY
TYPE TV-2

DEPARTMENT OF PUBLIC WORKS

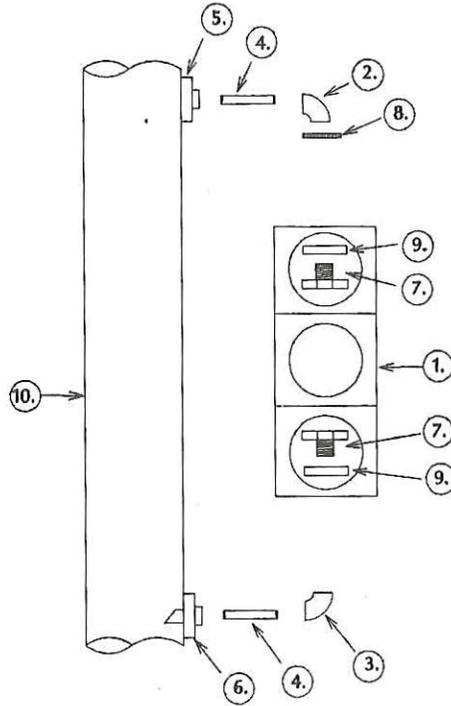


DRAWING NO.

E-64



PLAN VIEW



ELEVATION

MOUNTING HARDWARE		
NO.	DESCRIPTION	QTY.
1.	TRAFFIC SIGNAL HEAD ASSEMBLY WITH THREE 8" SECTIONS	1.
2.	1 1/2" ELBOW WITH FLANGE	1.
3.	1 1/2" ELBOW, SHURLOCK	1.
4.	1 1/2" x 8" NIPPLE	2.
5.	POLE PLATE, PLAIN BRONZE	1.
6.	POLE PLATE WITH CABLE GUIDE, BRONZE	1.
7.	1 1/2" LOCKNIPPLE	2.
8.	WASHER, NEOPRENE	1.
9.	WASHER, GALVANIZED	2.
10.	STANDARD	

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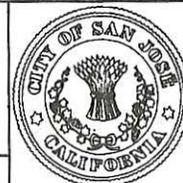
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**VEHICULAR SIGNAL
ONE 8" HEAD ASSEMBLY
TYPE SV-1**

DEPARTMENT OF PUBLIC WORKS

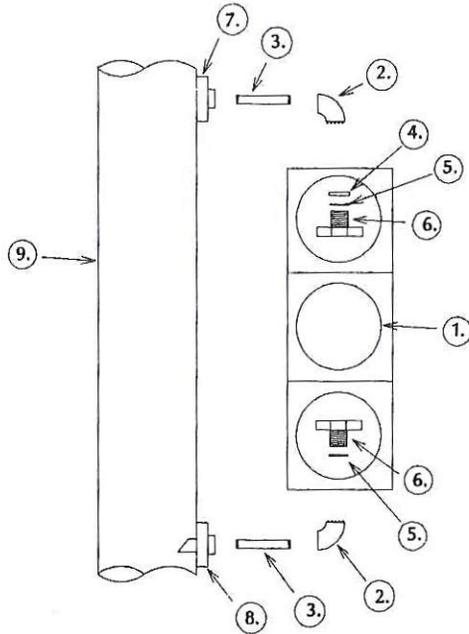


DRAWING
NO.

E-65



PLAN VIEW



ELEVATION

MOUNTING HARDWARE		
NO.	DESCRIPTION	QTY.
1.	TRAFFIC SIGNAL HEAD ASSEMBLY WITH THREE 12" SECTIONS	1.
2.	1 1/2" ELBOW, SHURLOCK	2.
3.	1 1/2" x 10" NIPPLE	2.
4.	WASHER, NEOPRENE	1.
5.	WASHER, GALVANIZED	2.
6.	1 1/2" LOCKNIPPLE	2.
7.	POLE PLATE, PLAIN, BRONZE	1.
8.	POLE PLATE WITH CABLE GUIDE, BRONZE	1.
9.	STANDARD	

APPROVED BY

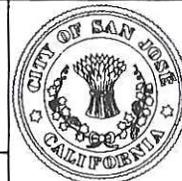
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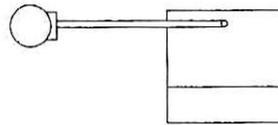
**VEHICULAR SIGNAL
ONE 12" HEAD ASSEMBLY
TYPE SV-1**

DEPARTMENT OF PUBLIC WORKS

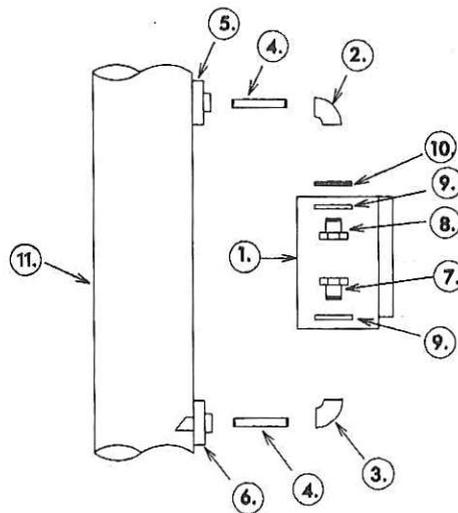


DRAWING
NO.

E-66



PLAN VIEW



ELEVATION

MOUNTING HARDWARE		
NO.	DESCRIPTION	QTY.
1.	PEDESTRIAN SIGNAL HEAD ASSEMBLY	1.
2.	1 1/2" ELBOW WITH FLANGE	1.
3.	1 1/2" ELBOW, SHURLOCK	1.
4.	1 1/2" x 10" NIPPLE	2.
5.	POLE PLATE, PLAIN, BRONZE	1.
6.	POLE PLATE WITH CABLE GUIDE, BRONZE	1.
7.	LOCKNIPPLE, SHORT	1.
8.	1 1/2" LOCKNIPPLE	1.
9.	WASHER, GALVANIZED	2.
10.	WASHER, NEOPRENE	1.
11.	STANDARD	

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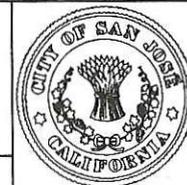
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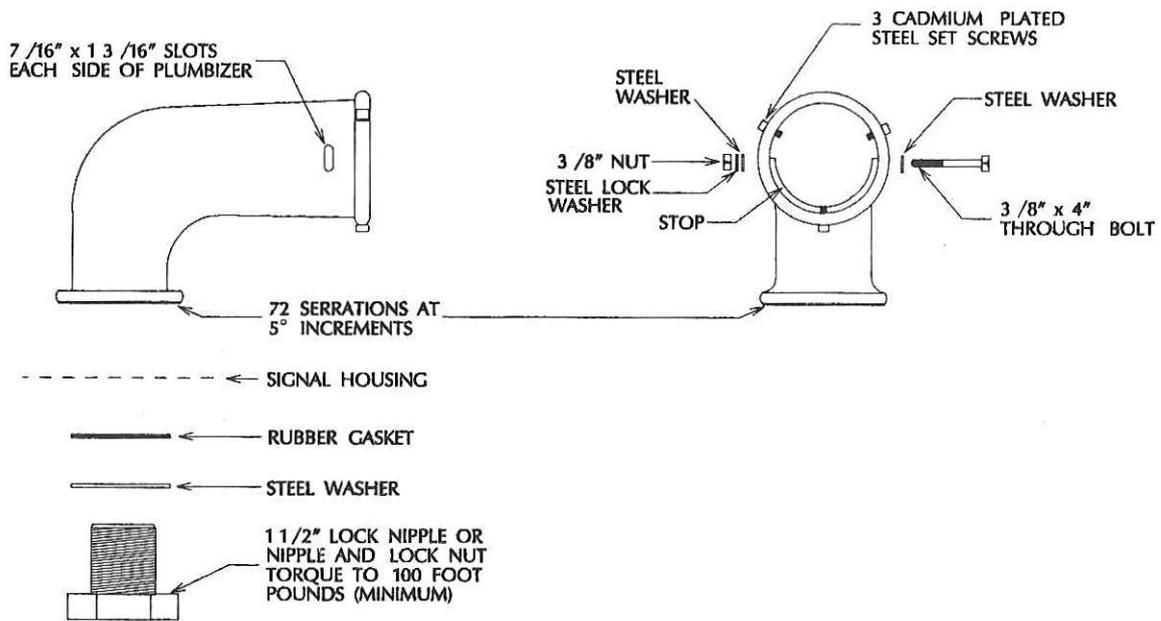
PEDESTRIAN SIGNAL HEAD
TYPE SP-1

DEPARTMENT OF PUBLIC WORKS

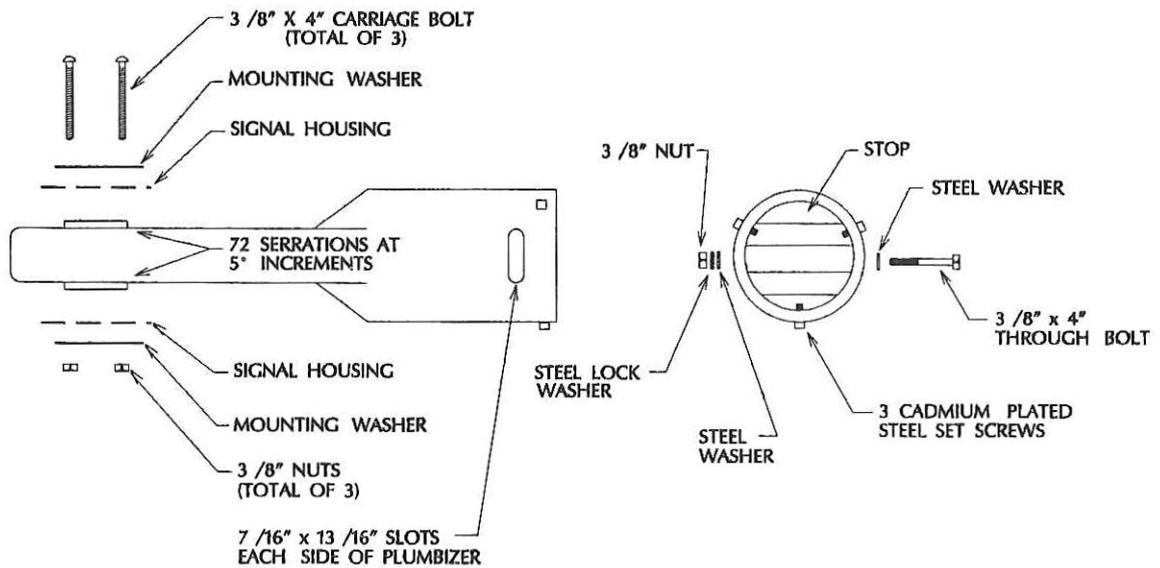


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E-67



TYPE 'MAT' MOUNTING - MAST ARM PLUMBIZER



TYPE 'MAS' MOUNTING - MAST ARM PLUMBIZER

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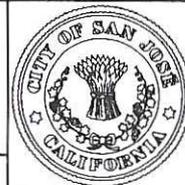
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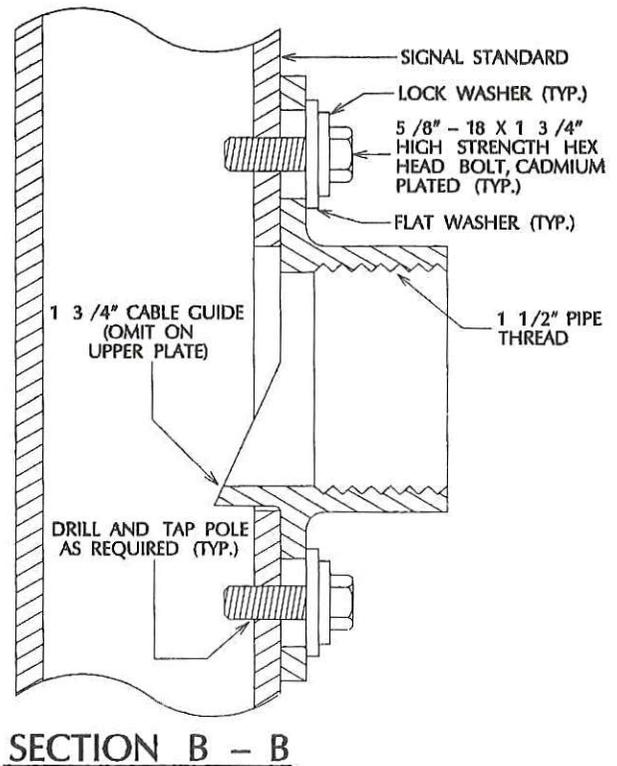
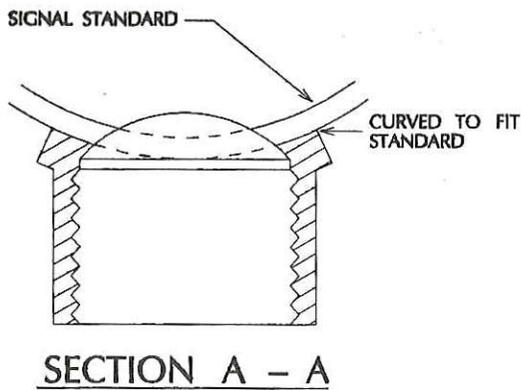
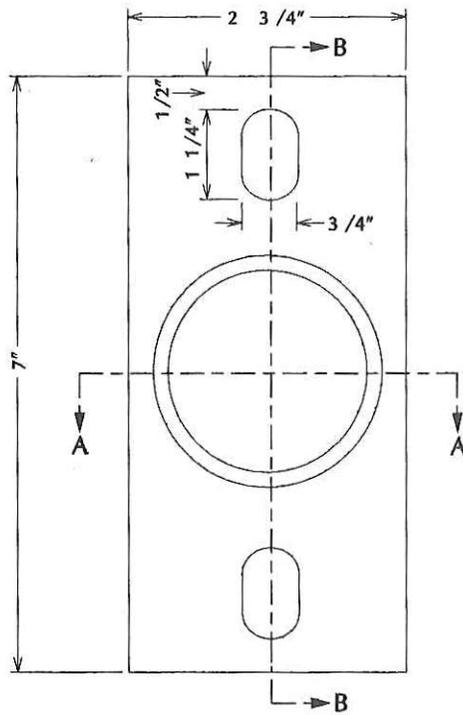
TYPE 'MAT' AND "MAS" MOUNTING
MAST ARM PLUMBIZERS

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-68



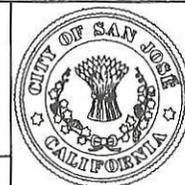
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DATE

3/3/92

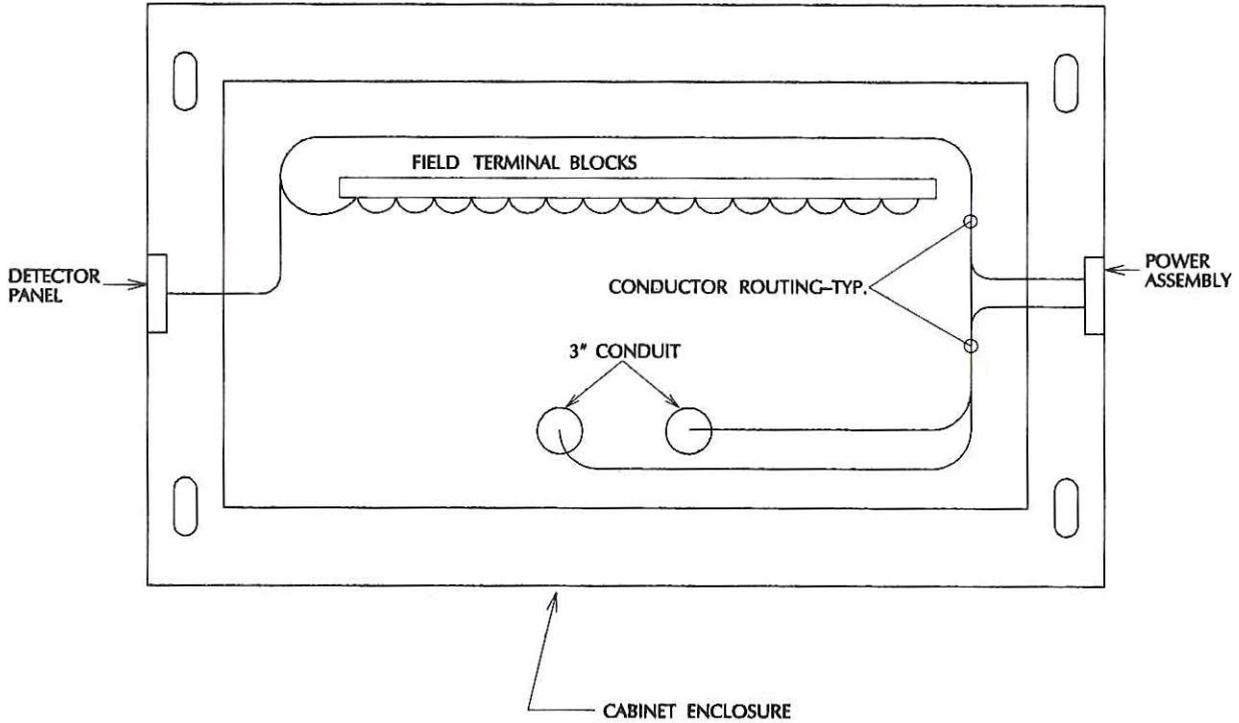
**POLE PLATE FOR SIDE
SIGNAL HEAD MOUNTINGS**

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-69



PLAN VIEW

- NOTES:
 1. ROUTE CABLES AROUND INSIDE PERIMETER OF CABINET.
 2. TERMINATE WIRES ALLOWING LOAD BAY BACK PLANE ASSEMBLY TO BE LOWERED WITHOUT DISCONNECTING ANY WIRES.

APPROVED BY

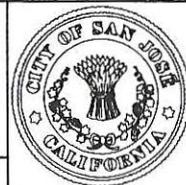
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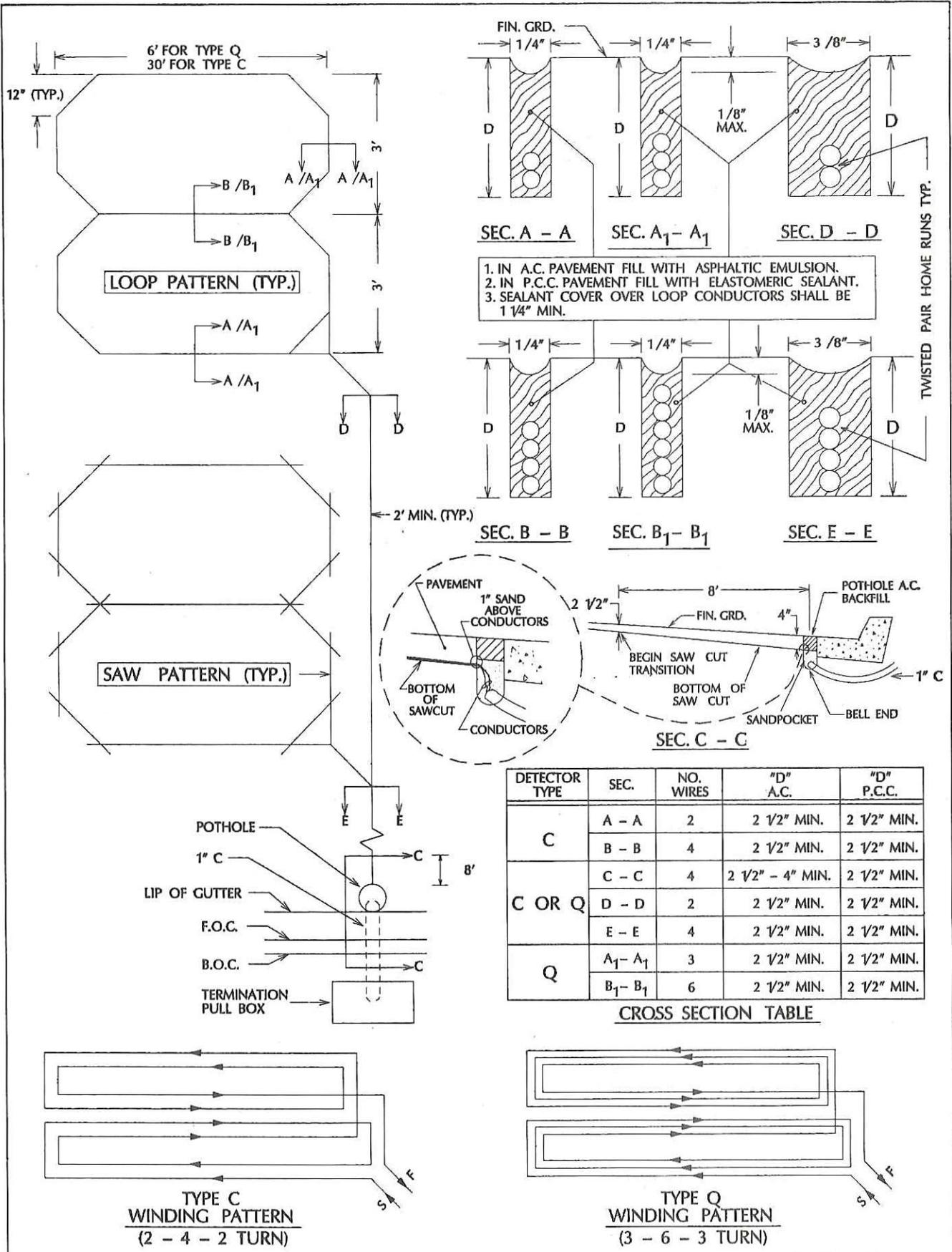
**TRAFFIC SIGNAL
 CONTROLLER CABINET
 CONDUCTOR ROUTING**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.

E-70



APPROVED BY *aws*

DATE *3/3/92*

**INDUCTIVE LOOP DETECTORS
TYPE C AND Q**

DEPARTMENT OF PUBLIC WORKS



DRAWING NO.
E-71

1. Inductive loop detector installations shall conform to Section 86-5 DETECTORS of the specifications, these notes and the Standard Plan Details.
2. Loop conductors shall be installed without splices and shall terminate in the pull box indicated on the plans. Each loop shall be provided with its own detector lead-in cable. Detector lead-in cables shall be continuous, without splices between the loop termination pull box and the detector panel terminal block in the controller cabinet.
3. All loop conductors and lead-in cables shall be labeled in accordance with CSJ specifications Section 86-2.09, "Wiring".
4. The end of the lead-in cable shall be taped and waterproofed prior to installing in conduit to prevent moisture from entering the cable. Where loop conductors are not immediately to be spliced to a lead-in cable, the ends of both the loop conductors and lead-in cable shall be taped and waterproofed with an electrical insulating coating.
5. All adjacent loops shall be wound in the same direction. No more than 4 loop conductors (2 twisted pairs) shall be installed in one home-run slot. Loop conductors for more than one signal phase shall not be combined in a common home-run slot.
6. Loops shall be centered in lanes and set back 2 feet from stop bar unless specified otherwise. The distance between the side of the loop and the home-run saw cut from the adjacent loops shall be 2 feet minimum. The distance between home-run saw cuts shall be 6 inches minimum. Loop conductors shall be installed a minimum of 3 feet from any metal obstacles in the street such as metal manhole covers.
7. Sawcut slots, of the width and to the depths shown on the Standard Plan Details, shall be cut into the pavement of the locations laid out by the Engineer.
8. Before installing loop conductors in the sawed slots, the slots shall be thoroughly washed out with water and then blown out with compressed air and allowed to dry thoroughly.
9. The loop conductor shall be installed into the slot using a 3/16-inch to 1/4-inch thick wood paddle or roller designed and approved for the purpose.
10. The loop shall be wound in accordance with the standard plan details unless otherwise specified.
11. Four feet of loop conductor slack for each loop, shall be left in the loop termination pull box.
12. The loop conductor home-run for each loop shall have its start (S) and finish (F) conductors twisted together into a pair (at least 3 turns per foot) before being placed in the home-run slot, conduit, and termination pull box.
13. Each loop shall be tested at the termination pull box before the slots are filled with sealant. Each loop shall not exceed 0.5 ohms circuit resistance and not less than 200 meg-ohms insulation resistance. As measured with a 500 VDC megger.
14. All detector loop circuits shall be tested for circuit resistance, insulation resistance, and inductance at the controller cabinet with the drain wires terminated before final termination of the detector lead-in cable to detector panel terminal blocks.
15. The detector loop circuit resistance shall not exceed 0.5 ohms plus 0.35 ohms per 100 feet of lead-in cable. The detector loop circuit insulation resistance shall not be lower than 100 meg-ohms between any conductor and earth ground. The detector loop circuit inductance shall be between 250 and 450 micro-henries for type "C" loops and between 150 and 300 micro-henries for type "Q" loops.

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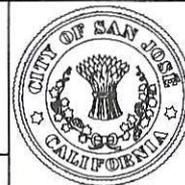
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**INDUCTIVE LOOP DETECTORS
TYPE C AND Q
NOTES**

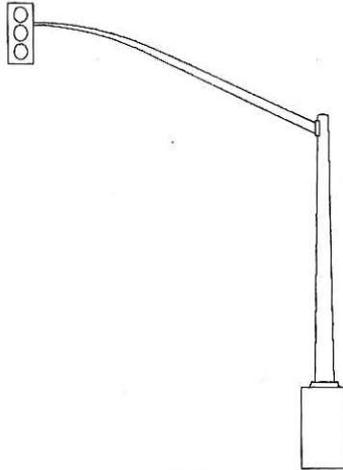
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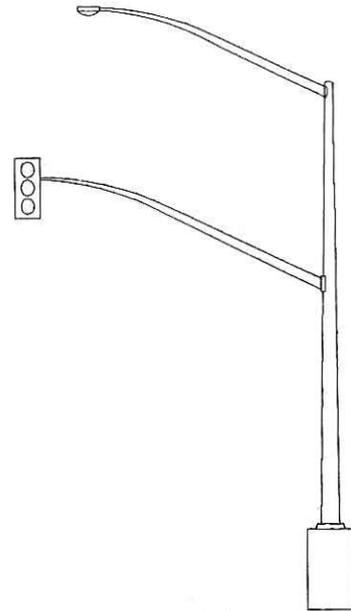
DRAWING
NO.

E-72

STANDARD TYPE
16-1-70
17A-1-70
17B-1-70
17C-1-70
17D-1-70
17E-1-70
18-1-70
19-1-70
19A-1-70
18-1-80
19-1-80
19A-1-80

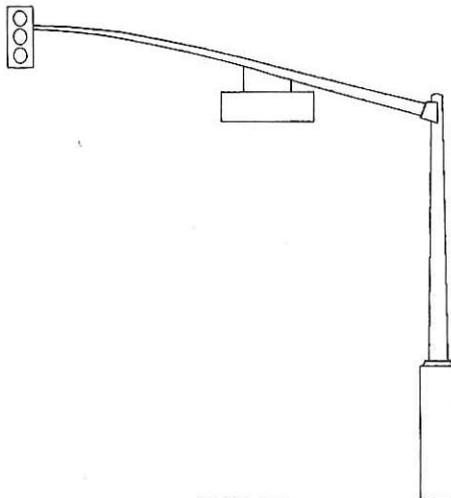


ELEVATION
TYPE 16-1-70, 18-1-70, 18-1-80

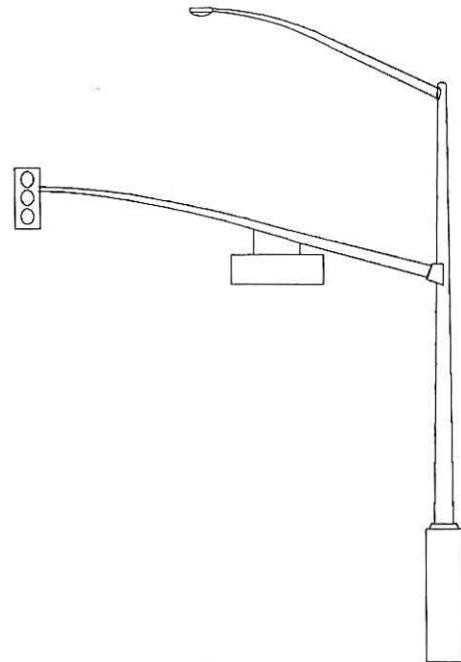


ELEVATION
TYPE 17A-1-70, 17B-1-70,
17C-1-70, 17D-1-70, 17E-1-70
19-1-70, 19A-1-70, 19-1-80, 19A-1-80

STANDARD TYPE
16-2-70
17A-2-70
17B-2-70
18-2-70
19-2-70
19A-2-70
16-2-80
17-2-80
17A-2-80
18-2-80
19-2-80
19A-2-80



ELEVATION
TYPE 16-2-70, 18-2-70, 16-2-80, 18-2-80



ELEVATION
TYPE 17B-2-70, 19-2-70,
17A-2-70, 19A-2-70, 17-2-80
17A-2-80, 19-2-80, 19A-2-80

NOTES:

- STANDARDS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS STANDARD SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).
- SEE CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE) FOR FABRICATION AND STANDARD IDENTIFICATION DETAILS.
- LUMINAIRES SHALL BE HIGH PRESSURE SODIUM OR LOW PRESSURE SODIUM AS SPECIFIED.
- ALL SIGNAL HEAD ASSEMBLIES SHALL BE INSTALLED WITH ELEVATOR PLUMBIZER MOUNTING BRACKET UNLESS NOTED OTHERWISE.
- FOUNDATIONS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).

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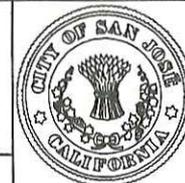
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SIGNAL STANDARDS
TAPERED ROUND

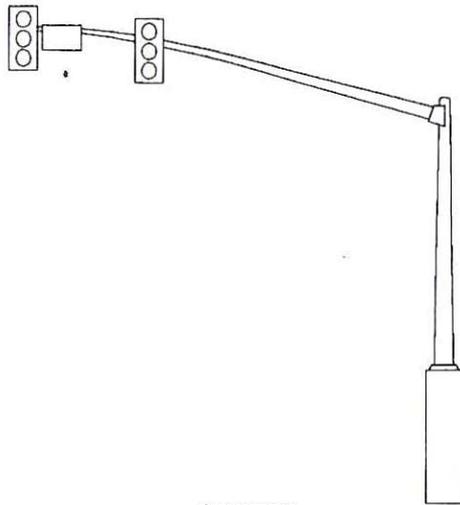
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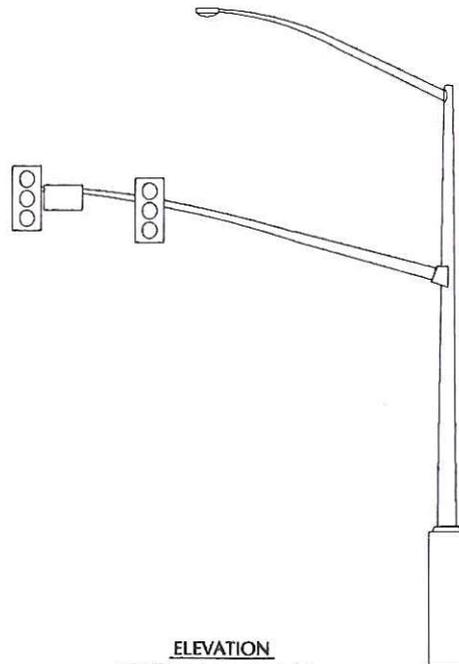
DRAWING NO.

E-73

STANDARD TYPE
17-3-70
18-3-70
19-3-70
19A-3-70
23-3-70
24-3-70
24A-3-70
26-3-70
26A-3-70
27-3-70
17-3-80
18-3-80
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24A-3-80
26-3-80
26A-3-80
27-3-80

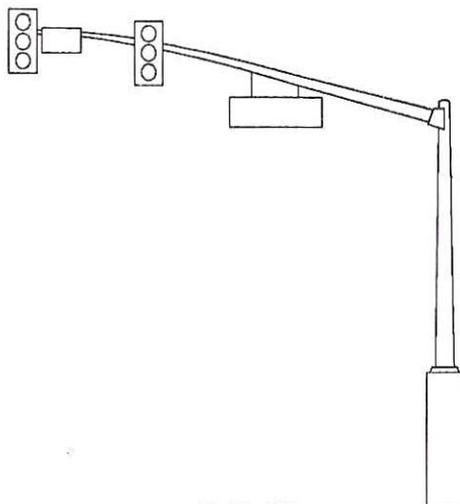


ELEVATION
 TYPE 18-3-70, 23-3-70,
 27-3-70, 18-3-80, 23-3-80, 27-3-80

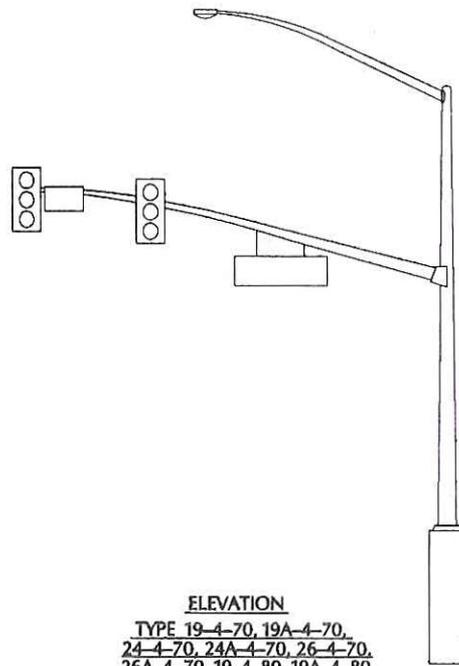


ELEVATION
 TYPE 17-3-70, 19-3-70,
 19A-3-70, 24-3-70, 24A-3-70,
 26-3-70, 26A-3-70, 17-3-80,
 19-3-80, 19A-3-80, 24-3-80,
 24A-3-80, 26-3-80, 26A-3-80

STANDARD TYPE
18-4-70
19-4-70
19A-4-70
23-4-70
24-4-70
24A-4-70
26-4-70
26A-4-70
27-4-70
18-4-80
19-4-80
19A-4-80
23-4-80
24-4-80
24A-4-80
26-4-80
26A-4-80
27-4-80



ELEVATION
 TYPE 18-4-70, 23-4-70,
 27-4-70, 18-4-80, 23-4-80, 27-4-80



ELEVATION
 TYPE 19-4-70, 19A-4-70,
 24-4-70, 24A-4-70, 26-4-70,
 26A-4-70, 19-4-80, 19A-4-80,
 24-4-80, 24A-4-80, 26-4-80, 26A-4-80

- NOTES:
- STANDARDS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS STANDARD SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).
 - SEE CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE) FOR FABRICATION AND STANDARD IDENTIFICATION DETAILS.
 - LUMINAIRES SHALL BE HIGH PRESSURE SODIUM OR LOW PRESSURE SODIUM AS SPECIFIED.
 - ALL SIGNAL HEAD ASSEMBLIES SHALL BE INSTALLED WITH ELEVATOR PLUMBIZER MOUNTING BRACKET UNLESS NOTED OTHERWISE.
 - FOUNDATIONS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCEMENT ISSUE).

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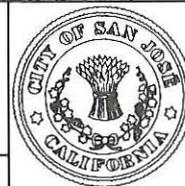
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**SIGNAL STANDARDS
 TAPERED ROUND**

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DRAWING NO.

E-74

STANDARD TYPE
28-5-70
29-5-70
29A-5-70
28-5-80
29-5-80
29A-5-80

STANDARD TYPE
40-0-80

ELEVATION
TYPE 28-5-70, 28-5-80

ELEVATION
TYPE 29-5-70, 29A-5-70,
29-5-80, 29A-5-80

ELEVATION
TYPE 40-0-80

- NOTES:
1. STANDARDS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS STANDARD SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).
 2. SEE CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE) FOR FABRICATION AND STANDARD IDENTIFICATION DETAILS.
 3. LUMINAIRES SHALL BE HIGH PRESSURE SODIUM OR LOW PRESSURE SODIUM AS SPECIFIED.
 4. ALL SIGNAL HEAD ASSEMBLIES SHALL BE INSTALLED WITH ELEVATOR PLUMBIZER MOUNTING BRACKET UNLESS NOTED OTHERWISE.
 5. FOUNDATIONS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).

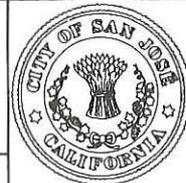
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DATE

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SIGNAL STANDARDS TAPERED ROUND

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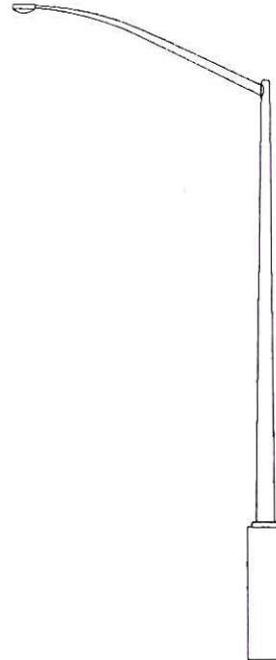
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E-75

STANDARD TYPE
1-B
15



ELEVATION
TYPE 1-B



ELEVATION
TYPE 15

NOTES:

1. STANDARDS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).
2. SEE CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE) FOR FABRICATION AND STANDARD IDENTIFICATION DETAILS.
3. LUMINAIRES SHALL BE HIGH PRESSURE SODIUM OR LOW PRESSURE SODIUM AS SPECIFIED.
4. ALL SIGNAL HEAD ASSEMBLIES SHALL BE INSTALLED WITH ELEVATOR PLUMBIZER MOUNTING BRACKET UNLESS NOTED OTHERWISE.
5. FOUNDATIONS FOR TRAFFIC SIGNALS SHALL CONFORM TO SECTION 86 OF THE CALTRANS SPECIFICATIONS AND CALTRANS STANDARD PLAN DETAILS (LATEST ENFORCED ISSUE).

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DATE

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MISCELLANEOUS
SIGNAL STANDARDS

DEPARTMENT OF PUBLIC WORKS



DRAWING
NO.

E-76