GENERAL NOTES

1. ALL WORK TO BE PERFORMED SHALL BE IN ACCORDANCE WITH THE LATEST STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS AS ADOPTED BY THE COUNCIL OF THE CITY OF SACRAMENTO AND LATEST CALTRANS STANDARD PLANS AND SPECIFICATIONS.


3. ALL MATERIALS TO BE REMOVED AND SALVAGED, SHALL BE DELIVERED TO THE CITY, THE CITY CORPORATE CENTER NORTH, 918 DEL PASO RD. SACRAMENTO, CALIFORNIA WITHOUT DAMAGE.

4. ALL TERMINAL COMPARTMENTS LOCATED ON STANDARDS SHALL BE MOUNTED ON THE SIDE FARthest FROM VEHICULAR TRAFFIC, UNLESS OTHERWISE SPECIFIED, OR DIRECTED BY THE ENGINEER.

5. PULL BOXES SHALL BE PLACED IN SIDEWALK AREAS AND SHALL NOT BE PLACED IN DRIVEWAYS, IN VEHICLE TRAFFIC LANES, OR IN SIDEWALK HANDICAPPED RAMP AREAS.

6. CONDUCTORS BETWEEN BASE OF ELECTROLIER AND LUMINAIRE SHALL BE NO. 10 THW MINIMUM.

7. THREE FEET OF SLACK SHALL BE PROVIDED IN EACH PULL BOX FOR EACH CONDUCTOR.

8. EXACT LOCATIONS OF ALL STANDARDS, PEDESTAL AND CABINET WILL BE DETERMINED BY THE ENGINEER PRIOR TO INSTALLATION, AND SHALL BE AT LEAST 3 FEET FROM THE FACE OF CURB OR AT BACK EDGE OF SIDE WALK.

9. LUMINAIRE MAST ARMS SHALL BE 12 FEET IN LENGTH UNLESS OTHERWISE SPECIFIED.

10. ALL TRAFFIC SIGNAL HEADS SHALL HAVE A LOUVERED BACK PLATE AND TUNNEL VISORS.

11. ALL EXPOSED RIGID METALLIC CONDUIT STUBS/CAPS AND ALL METAL TREADS AND STANDARD SCREW JOINT SHALL BE PAINTED EITHER WITH HIGH ZINC DUST CONTENT PAINT CONFORMING TO THE REQUIREMENTS OF THE MILITARY SPECIFICATION: MIL-P-21035 OR WITH PRIMER CONFORMING TO THE LATEST STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS SECTION 91-2.01 ZINC RICH PRIMER, ORGANIC VEHICLE TYPE EXCEPT THAT PRIMER SHALL NOT BE THINNED.

12. AT ALL JUNCTIONS SUCH AS A PULL BOXES BASES, AND PEDESTALS WHERE PVC CONDUITS ARE INSTALLED, ALL RIGID GALVANIZED CONDUITS AT THESE LOCATIONS SHALL BE PROVIDED WITH GROUNDING BUSHINGS AND CONNECTED TO THE GROUNDING CONDUCTORS.

13. ALL LUMINAIRESHALL BE SUPPLIED WITHOUT PHOTO CELL RECEPTACLES UNLESS OTHERWISE SPECIFIED.

14. PULL ROPES USED TO PULL CONDUCTORS IN CONDUIT SHALL BE A MINIMUM OF 1/4" DIAMETER.

15. SEE SPECIAL PROVISIONS FOR LOOP CONDUCTOR AND LEAD-IN A SPECIFICATIONS.

16. LOOP DIMENSIONS SHALL BE 6' x 6' SQUARES OR 6' DIAMETER CIRCULAR LOOP UNLESS OTHERWISE SHOWN ON THE PLANS.
1. EXTERIOR 14 GAUGE #304D STAINLESS STEEL, INTERIOR DEAD FRONT PANEL & BACK PAN SHALL BE 14 GAUGE STEEL PAINTED WHITE ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.

2. CONSTRUCTION IS NEMA 3R AND 12, RAIN TIGHT AND DUST TIGHT.

3. ALL NUTS, BOLTS, SCREWS AND HINGES SHALL BE STAINLESS STEEL.

4. NUTS, BOLTS & SCREWS ARE NOT USED ON THE OUTSIDE PEDESTAL.

5. PHENOLIC NAMEPLATES TO IDENTIFY ALL OPERATOR CONTROLS.

6. CONTROL WIRING WILL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.

7. A PLASTIC COVERED WIRING DIAGRAM WILL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.

8. PEDESTAL WILL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.

9. PEDESTAL(S) WILL BE U.L. LISTED AS INDUSTRIAL CONTROL PANELS, U.L. 508 FILE NO. E62062

10. WIRING BETWEEN CIRCUIT BREAKER AND CONTACTOR SHALL BE A #6 THWN OR THHN MINIMUM.

11. SERVICE SHALL BE OF TWO PIECE CONSTRUCTION.

12. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.

13. SERVICE MUST CARRY A NEUTRAL TO STREET LIGHTS FOR 120 OPERATION
1. EXTERIOR 14 GAUGE #304D STAINLESS STEEL, INTERIOR DEAD FRONT PANEL & BACK PAN SHALL BE 14 GAUGE STEEL PAINTED WHITE ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.

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10. WIRING BETWEEN CIRCUIT BREAKER AND CONTACTOR SHALL BE A #8 THWN OR THHN MINIMUM.

11. SEE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
LANDING LUGS

"LIGHTING MAIN"

100A TWO POLE MAIN BREAKER
WITH INTERNAL COMMON TRIP,
EACH POLE WITH INDIVIDUAL,
ON-OFF CONTROL & HANDLE
TIE FOR COMMON OPERATION

PHOTOCELL
(EXTERNAL TO
CABINET)

TERMINAL
BLOCK

H

A

S/N

LIGHTING CONTROL

40/1 LIGHTING 1
40/1 LIGHTING 2
40/1 LIGHTING 3

40/1 LIGHTING 4
40/1 LIGHTING 5
40/1 LIGHTING 6

ONE POLE BREAKERS FOR STREET LIGHTING.

60A THREE POLE MERCURY DISPLACEMENT LIGHTING CONTACTORS.

120/208, 120/240, 277/480
1 PHASE, 3 WIRE SERVICE

BASE PLATE DETAIL

SECTION A-A

SECTION B-B

5/8"x18" ANCHOR BOLT (TYPICAL)

SEE DETAIL 'A' FOR ANCHOR BOLTS

METAL BARRIER

PIANO HINGE LOCATION FOR DEAD FRONT DOOR (DOOR TO SWING OPEN AT LEAST 90° FROM CLOSED POSITION)

HINGED FRONT DOOR ON THIS SIDE (3 CONCEALED HINGES)

PROVIDE 4 HOLES FOR MOUNTING REMOVABLE RAIN CAP WHEN METER PANEL NOT REQUIRED.

OPEN AREA

REV. DATE DESCRIPTION

CITY OF SACRAMENTO
DEPARTMENT OF TRANSPORTATION

UNMETERED SERVICE PEDESTAL

APPR'D BY: MAY 2007 DWG. NO. E - 50
ALUMINUM FINIAL OR APPROVED EQUAL.

LEXALITE VIRGIN ACRYLIC 424 PRISMATIC TOP OR APPROVED EQUAL.

LEXALITE VIRGIN ACRYLIC 424 TYPE III (UNLESS OTHERWISE NOTED) BOTTOM REFRACTOR OR APPROVED EQUAL.

100W COATED HPS LAMP WITH MOGUL BASE

ALUMINUM CAPITAL FOR 100W COATED HPS WITH HID BALLAST AND MOGUL SOCKET OR APPROVED EQUAL.

ALUMINUM STREETLIGHT STANDARD TYPE I WITH 16 FLUTE, TAPERED SHAFT, ONE PIECE, AND 3" O.D. TENON OR APPROVED EQUAL.

(4) 3/4"x30" ANCHOR BOLTS ON A 12" BOLT CIRCLE

BOLT-CIRCLE PATTERN

INSTALL WITH HAND HOLE FACING STREET SIDE

EXISTING GRADE
ALUMINUM FINIAL OR APPROVED EQUAL.

LEXALITE VIRGIN ACRYLIC 424 PRISMATIC TOP OR APPROVED EQUAL.

LEXALITE VIRGIN ACRYLIC 424 TYPE III (UNLESS OTHERWISE NOTED) BOTTOM REFRACTOR OR APPROVED EQUAL.

100W COATED HPS LAMP WITH MogUL BASE

ALUMINUM CAPITAL FOR 100W COATED HPS WITH HID BALLAST AND MOGUL SOCKET OR APPROVED EQUAL.

ALUMINUM STREETLIGHT STANDARD TYPE II WITH 16 FLUTE, TAPERED SHAFT, ONE PIECE, AND 3" O.D. TENON OR APPROVED EQUAL.

(4) 3/4"x30" ANCHOR BOLTS ON A 12" BOLT CIRCLE

BOLT-CIRCLE PATTERN

INSTALL WITH HAND HOLE FACING STREET SIDE

EXISTING GRADE
STREETLIGHT IN PLANter

SEE DETAIL FOR MOUNTING

SIDEWALK

INSTALL WITH HAND HOLE FACING STREET SIDE

3'-0" MIN. FROM BOC IF CONCRETE

3/4"x30" GALVANIZED ANCHOR BOLTS

CONCRETE FOUNDATION, (fc=2,500 PSI)

STREET LIGHT POLE

3/4"x30" GALVANIZED ANCHOR BOLTS WITH LEVELING NUTS AND FLAT WASHERS.
(4 SETS REQUIRED)

CONCRETE CAP. GROUT EVEN WITH SIDES OF THE POLE BASE

DRAIN HOLE IN GROUT

TOP OF FOUNDATION

BASEPLATE
10 GAUGE STEEL
IF MIN. YIELD
STRENGTH IS
33,000 PSI (GALV.)

11 GAUGE STEEL
IF MIN. YIELD
STRENGTH IS
48,000 PSI (GALV.)

4" X 6-1/2"
REINFORCED
HAND HOLE

MAX. OD 5.85"
MIN. OD 5.61"

SQUARE OR ROUND
FOUNDATION

FOUR 1" X 36"
ANCHOR BOLTS

MOLDED TENON 3" x 3-1/2"
(NO TAPER) WITH 16 GAUGE,
STEEL SLEEVE CAST ALUMINUM
TENON OR APPROVED DESIGN
IS ALSO AVAILABLE.

HANDHOLE REINFORCED WITH NO.3 GAUGE
RING 1-1/2" WIDE WELD TO OUTSIDE OF
POLE COVER OF 10 GAUGE PLATE
HANDHOLE FACING STREET SIDE

BOND WIRE (No.8 COPPER)
GROUND BUSHING

GALVANIZED
HOLD DOWN

2-3/4"

GALVANIZED
LEVEL NUT
AND WASHER

CONDUIT COUPLING
TO BE FLUSH WITH
TOP OF CONCRETE

BASE PLATE

1-1/2" R
1-1/4"
3-1/4"
3-1/2"
20"
26"
28"

BASE DETAIL

1/4"
1/4"
1/4"

GROUT

1/4"
2-3/4"

1/2" NC
SQ. NUT
FOR GROUND
MANY 2 PHASE FIXED TIME ARE TYPE 390'S WITH
Ø1 AS MAJOR DIRECTION AND Ø2 AS MINOR DIRECTION
**NOTES:**

1. NOMINAL LOOP SIZE TO BE 6'x6': IF LANE WIDTH IS 11' OR LESS LOOP SIZE TO BE 5'x5'.

2. DRIVEWAYS WITH LOWER APPROACH SPEEDS MAY USE LESS DISTANCE TO BACK MOST LOOP LOCATION.

**MINOR STREET LOOP DISTANCES**

**30 MPH**

- 154' FOR 6'x6' LOOPS
- 150' FOR 5'x5' LOOPS

**25 MPH**

- 124' FOR 6'x6' LOOPS
- 120' FOR 5'x5' LOOPS

**5 SEC RULE LOOP DISTANCE**

<table>
<thead>
<tr>
<th>MPH</th>
<th>D1</th>
<th>D2</th>
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<tbody>
<tr>
<td>*25</td>
<td>95'</td>
<td>185'</td>
</tr>
<tr>
<td>*30</td>
<td>110'</td>
<td>220'</td>
</tr>
<tr>
<td>35</td>
<td>130'</td>
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<td>50</td>
<td>185'</td>
<td>370'</td>
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<td>55</td>
<td>200'</td>
<td>405'</td>
</tr>
<tr>
<td>60</td>
<td>220'</td>
<td>440'</td>
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</table>

""" INDICATES DISTANCES TO BE USED IF 25 AND 30 MPH STREETS ARE MAIN STREETS. IF NOT MAIN STREETS, SEE "MINOR STREET LOOP DISTANCE" DETAIL ON THIS SHEET.
5' X 5' LOOP

SECTION A-A

6' X 6' LOOP

LOOP WINDING PATTERNS

1. LOOP DETECTOR INSTALLATION SHALL CONFORM TO THE LATEST ADOPTED VERSION OF THE TRAFFIC SIGNAL AND HIGHWAY LIGHTING INSTALLATION DETAILS ES-5A STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION. UNLESS OTHERWISE INDICATED.

2. THE CONDUCTOR FOR EACH INDUCTIVE DETECTOR LOOP SHALL BE CONTINUOUS, UNSPLICED, TYPE RHW-USE NEOPRENE JACKED OR TYPE USE CROSS-LINKED POLYETHYLENE INSULATED No. 12. STRANDED COPPER WIRE WITH A MINIMUM INSULATION THICKNESS OF 45 MILS.

3. THE LOOP DETECTOR LEAD IN CABLE FROM THE PULL BOX ADJACENT TO THE DETECTOR LOOPS TO THE CONTROLLER SHALL BE CONTINUOUS WITH NO SPLICES. DETECTOR CABLE SHALL BE SHIELDED, TWO TWISTED PAIR No. 18 CANOGA TYPE 30005 OR APPROVED EQUAL.

4. ALL DETECTOR LOOP SPLICES SHALL BE MADE IN THE ASSOCIATED PULL BOX AND ALL LEADS SHALL BE TAGGED.

5. INSULATION RESISTANCE TO GROUND SHALL BE GREATER 200 MEGAOHMS.

6. FOR TYPE C VEHICLE DETECTORS, EACH TURN (LAYER) SHALL BE TERMINATED AND SPLICED IN THE TERMINATION PULL BOX OR HANDHOLE IF SPECIFIED.

7. HANDHOLES SHALL BE INSTALLED AT LOCATIONS AS DESIGNATED BY THE ENGINEER.
TYPE 'B' DETECTOR HANDHOLE INSTALLATION REQUIREMENTS:

1. OUTLINE OF TRENCH SHALL BE SAW CUT TO A MINIMUM DEPTH OF 3" EXCEPT WHERE AC OVERLAY IS TO BE PLACED.

2. THE PRECAST VALVE BOX WITH CAST IRON LID SHALL BE FABRICATED OF CALCIUM CARBONATE AND POLYESTER RESINS WITH FIBERGLASS REINFORCING AND DESIGNED FOR HEAVY TRAFFIC LOADS.

3. CAST IRON LID SHALL BE MARKED "DETECTOR" AND SHALL BE SECURED IN PLACE BY APPLYING WATERPROOF SILICONE SEALANT. VALVE BOX SHALL BE CENTERED ON LANE LINE, UNLESS OTHERWISE SHOWN ON THE PLANS.

4. THE EXCAVATION AROUND THE HANDHOLE SHALL BE BACKFILLED WITH P.C.C. EXCEPT THE TOP 2" IN AC SURFACED ROADWAYS SHALL BE BACKFILLED WITH AC.

5. THE HANDHOLE SHALL BE PROTECTED WITH COLD PATCH OR OTHER SUITABLE PROTECTION UNTIL PERMANENT AC BACKFILL IS PLACED.

---

SECTION A-A

9" DIA. ID x 12" HIGH VALVE BOX WITH CAST IRON LID

A.C. OVERLAY IF REQUIRED

SILICONE SEALANT

2" MIN. A.C. AROUND HANDBOLE

0.1" MIN. A.C. OVER CONDUIT TRENCH

LOOP WIRES IN SAWED SLOT

45° ELBOW

1-1/2" MIN. P.V.C.

9" MIN. DEPTH

2" MIN.

P.C.C.

1" MIN.

2" MIN.

TWIST LOOP CONDUCTOR PAIRS. 2-FT. OF SLACK IN EACH CONDUCTOR.

SAWED SLOTS TO LOOPS

TYPE 'B' DETECTOR

---

CITY OF SACRAMENTO
DEPARTMENT OF TRANSPORTATION

DETECTOR HANDHOLE

APPR'D BY: Phone: 916-353-4587

DATE: MAY 2007   DWG. NO. E-150
FOUR LOOPS IN THRU LANE

FOUR LOOPS TWO LANES
2-1/2" STANDARD GALVANIZED PIPE

CONDUIT SHALL PROTRUDE 2" MAX. ABOVE FINISHED SURFACE OF FOUNDATION

5/8" x 12" ANCHOR BOLTS. ONE ANCHOR BOLT SHALL BE BONDED TO CONDUIT

3/8"R.
4-1/2" DIA.
CUT HOLE TO FIT STEEL PIPE
3/4" DIA.
**TYPICAL OPTICAL DETECTOR LAYOUT**

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<thead>
<tr>
<th>EV</th>
<th>PHASE</th>
<th>DIRECTION</th>
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<tbody>
<tr>
<td>A</td>
<td>1, 6</td>
<td>EASTBOUND</td>
</tr>
<tr>
<td>B</td>
<td>2, 5</td>
<td>WESTBOUND</td>
</tr>
<tr>
<td>C</td>
<td>3, 8</td>
<td>NORTHBOUND</td>
</tr>
<tr>
<td>D</td>
<td>4, 7</td>
<td>SOUTHBOUND</td>
</tr>
</tbody>
</table>

**OPTICAL DETECTOR**

- DRILL AND TAP
- EXISTING OR NEW MAST ARM
- 'C' CONDULETE

CITY OF SACRAMENTO
DEPARTMENT OF TRANSPORTATION

OPTICAL DETECTOR LAYOUT

REV. DATE DESCRIPTION

APPR'D BY: MAY 2007 DWG. NO. E - 180
EXISTING STREET CONSTRUCTION

LIP OF GUTTER

18"  6" MAX.  6"  2" OVERLAY

4" A.C. (MIN. SEE NOTE 2)

24" MIN. COVER FROM TOP OF CONDUIT TO TOP OF NEW A.C. PAVEMENT.

3 SACK SLURRY (RED OXIDE MIXTURE) (SEE ELECTRICAL SPECIFICATIONS)

SEE CONSTRUCTION NOTES FOR QUANTITY AND SIZE OF CONDUITS. (SEE ELECTRICAL SPECIFICATIONS)

6" MAX.

"T" TRENCH

NOTES:
1. 2" OVERLAY FOR STREET WITH 4" AC OR GREATER IN DEPTH.
2. REMOVE AND REPLACE AC AS SHOWN ABOVE, IF AC SECTION IS LESS THAN 4".
3. EXACT LIMITS OF PAVEMENT OVERLAY / REMOVAL / REPLACEMENT TBD BY ENGINEER BASED ON FIELD CONDITIONS.

EXISTING GRADE

30" UNDER STREET SECTION
30" UNDER PLANTER AREA
18" UNDER SIDEWALK

TOP OF CONDUIT

CONDUIT

DIRECTION DRILL

CITY OF SACRAMENTO
DEPARTMENT OF TRANSPORTATION
"T" TRENCH DETAIL & DIRECTIONAL DRILL
APPR'D BY:  NIGHTHAWK NO. SCALE
DATE:  MAY 2007  DWG. NO. E - 190
DESCRIPTION - 'STREETLIGHT', 'INTERCONNECT', 'TRAFFIC SIGNAL', 'COMMUNICATION' IN LANDSCAPE OR PLANTA AREA

TYPICAL FOR ALL PULL BOXES.
6" THICK CONCRETE COLLAR.
TYPICAL FOR ALL PULL BOXES.

COVER SHALL BE BOLTED DOWN. TWO BOLTS REQUIRED.
TYPICAL FOR ALL PULL BOXES.

1/4" (±1/8")

GROUND BUSHING BOND,
WHERE REQUIRED.

GROUND BUSHING

EXTENSION, WHERE NEEDED.

MAX. 4" TO MIN. 3"
PRECAST REINFORCED CONCRETE PULL BOX.

PLACE CRUSHED ROCK
BELOW PULL BOX OR
EXTENSION BEFORE
INSTALLATION OF
CONDUCTORS.

<table>
<thead>
<tr>
<th>PULL BOX</th>
<th>Wo</th>
<th>Lo</th>
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<tbody>
<tr>
<td>5</td>
<td>18&quot;</td>
<td>26&quot;</td>
</tr>
<tr>
<td>6</td>
<td>23&quot;</td>
<td>36&quot;</td>
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CITY OF SACRAMENTO
DEPARTMENT OF TRANSPORTATION

CONCRETE PULL BOX

APPR'D BY:  

DATE: MAY 2007  
DWG. NO. E - 210