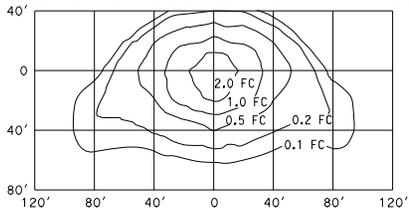


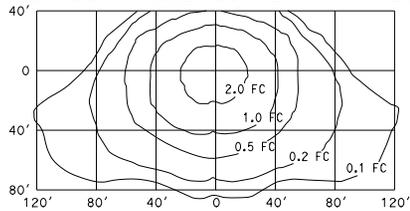
ISOFOOTCANDLE CURVE - MINIMUM



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
34' Mounting Height  
Lamp operated at 22,000 lm  
200-W high pressure sodium lamp  
ANSI Designation S66

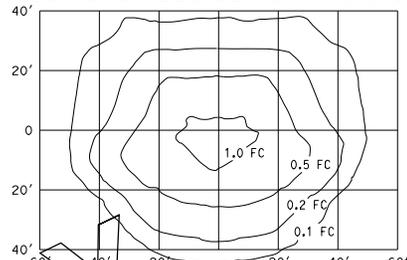
ISOFOOTCANDLE CURVE - MINIMUM



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
40' Mounting Height  
Lamp operated at 37,000 lm  
310-W high pressure sodium lamp  
ANSI Designation S67

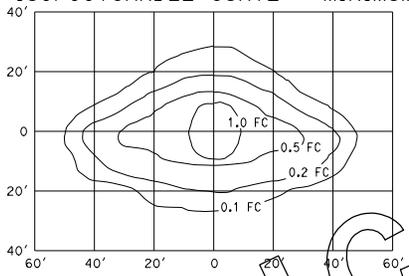
ISOFOOTCANDLE CURVE - MINIMUM



**FLUSH SOFFIT LUMINAIRE**

17' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

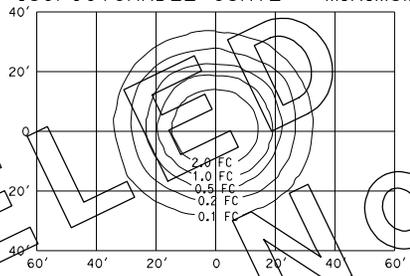
ISOFOOTCANDLE CURVE - MINIMUM



**PENDANT SOFFIT LUMINAIRE**

TYPE III SHORT  
17' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

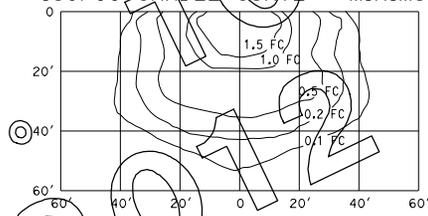
ISOFOOTCANDLE CURVE - MINIMUM



**PENDANT SOFFIT LUMINAIRE**

17' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

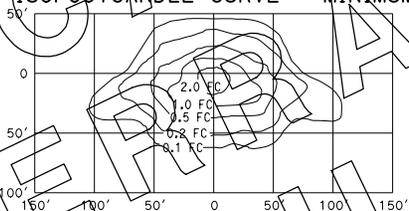
ISOFOOTCANDLE CURVE - MINIMUM



**WALL LUMINAIRE**

15' Mounting Height  
Lamp operated at 9,500 lm  
100-W high pressure sodium lamp  
ANSI Designation S54

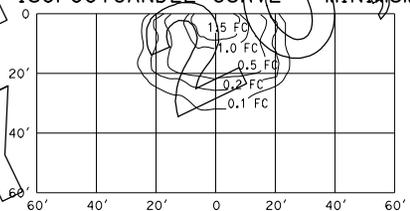
ISOFOOTCANDLE CURVE - MINIMUM



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
30' Mounting Height  
Lamp operated at 16,000 lm  
150-W high pressure sodium lamp  
ANSI Designation S55

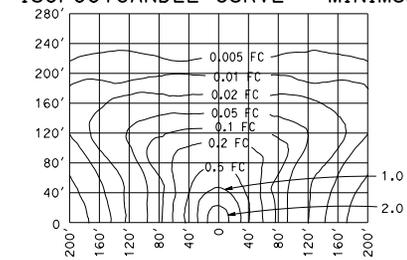
ISOFOOTCANDLE CURVE - MINIMUM



**WALL LUMINAIRE**

15' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

ISOFOOTCANDLE CURVE - MINIMUM

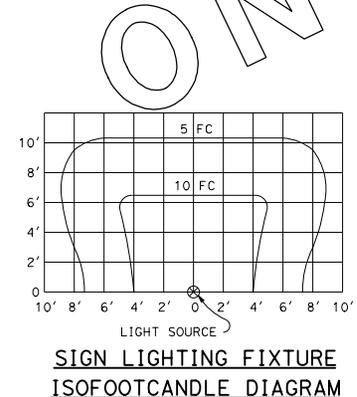


**LOW PRESSURE SODIUM LUMINAIRE**

40' Mounting Height  
Lamp operated at 33,000 lm  
180-W low pressure sodium lamp

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 May 20, 2011  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



**NOTES:**

1. Curves represent the minimum footcandle (FC) of initial illumination on a 10'-0" x 20'-0" panel.
2. The FC shown are with the fixture attached to the light fixture mounting channel which places the center of the source 4'-8" in front of panel and 1'-0" below the bottom edge.
3. Applicable lamp: 85-W fluorescent phosphor coated induction lamp.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

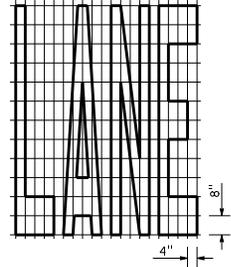
*Robert L. McLaughlin*  
 REGISTERED CIVIL ENGINEER

July 20, 2012  
 PLANS APPROVAL DATE

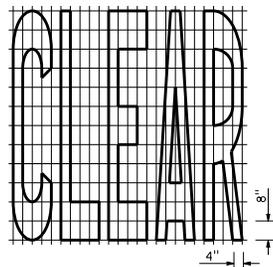
REGISTERED PROFESSIONAL ENGINEER  
 Robert L. McLaughlin  
 No. C40375  
 Exp. 3-31-13  
 CIVIL  
 STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS  
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
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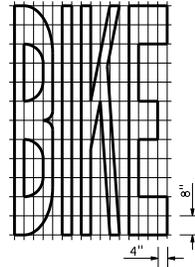
TO ACCOMPANY PLANS DATED \_\_\_\_\_



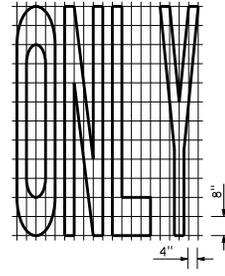
A=24 f+2



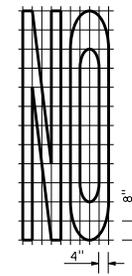
A=27 f+2



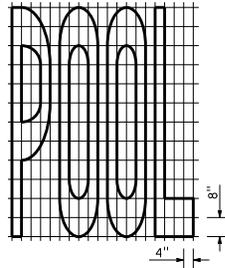
A=21 f+2



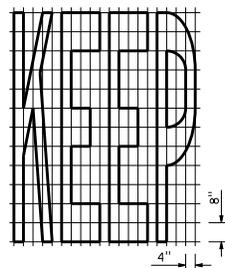
A=22 f+2



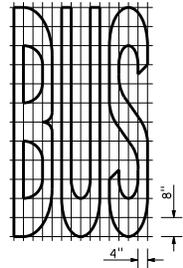
A=14 f+2



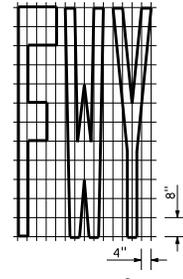
A=23 f+2



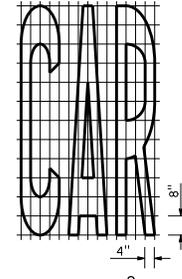
A=24 f+2



A=20 f+2



A=16 f+2

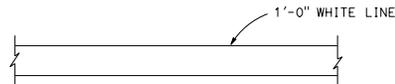
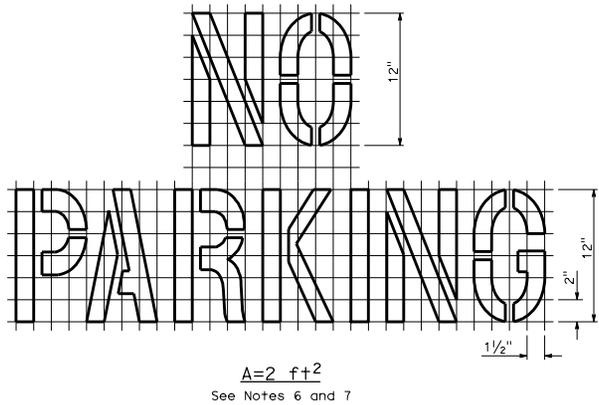


A=17 f+2

WORD MARKINGS			
ITEM	f+2	ITEM	f+2
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16

**NOTES:**

- If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
- The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
- Minor variations in dimensions may be accepted by the Engineer.
- Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
- The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
- The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.



**LIMIT LINE (STOP LINE)**



DIRECTION OF TRAVEL

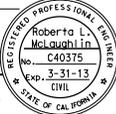
**YIELD LINE**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS**  
**WORDS, LIMIT AND YIELD LINES**

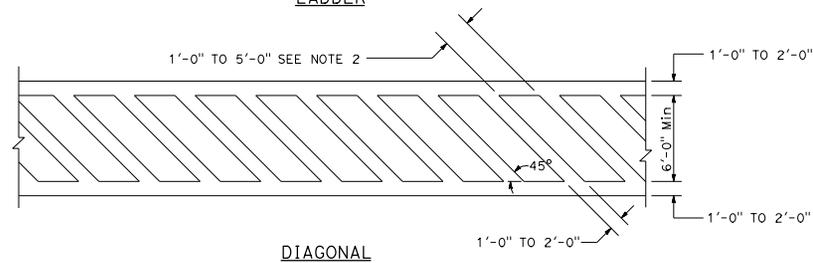
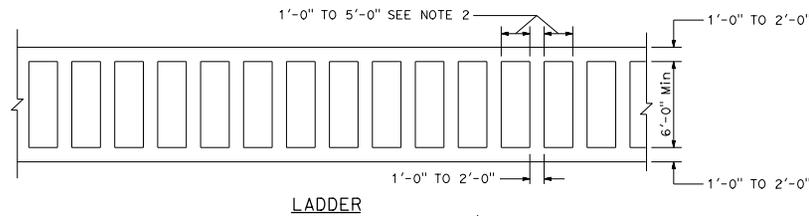
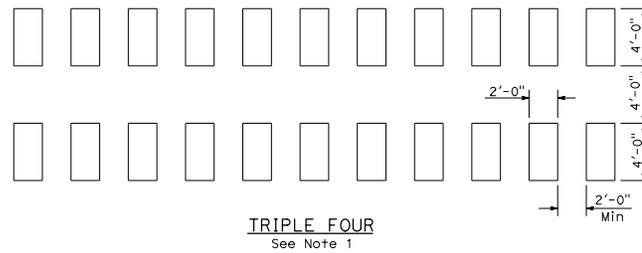
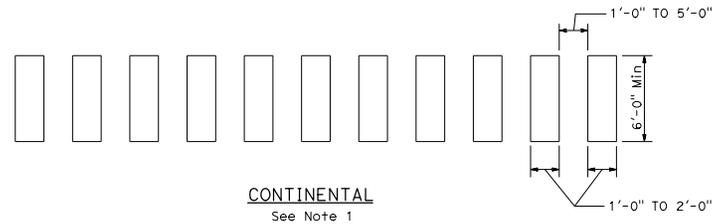
NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E  
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24E**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
					
REGISTERED CIVIL ENGINEER July 20, 2012 PLANS APPROVAL DATE THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

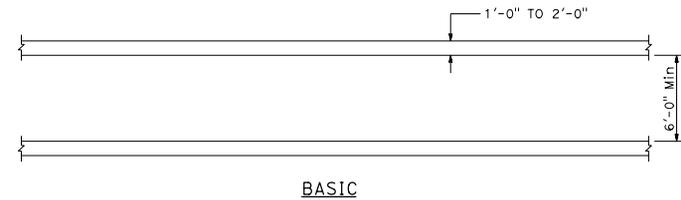
TO ACCOMPANY PLANS DATED \_\_\_\_\_



**HIGHER VISIBILITY CROSSWALKS**

**NOTES:**

1. Spaces between markings should be placed in wheel tracks of each lane.
2. Spacings not to exceed 2.5 times width of longitudinal line.
3. All crosswalk markings must be white except for those near schools must be yellow.



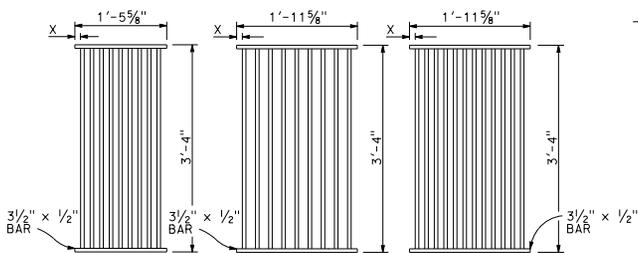
**BASIC**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
CROSSWALKS**

NO SCALE  
RSP A24F DATED JULY 20, 2012 SUPPLEMENTS THE  
STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24F**

**2010 REVISED STANDARD PLAN RSP A24F**

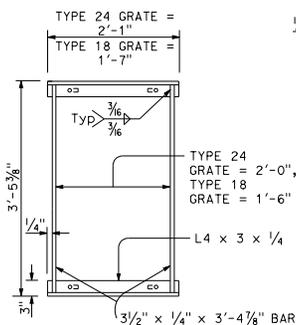


**TYPE 18-9**  
1 3/8" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

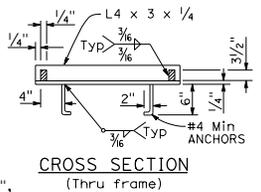
**TYPE 24-9**  
2" Clear spacing. Use in locations off the roadbed on all types of highways where bicycles and pedestrians are excluded.

**TYPE 24-12**  
1 3/8" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

**RECTANGULAR GRATE DETAILS**  
(See table below)



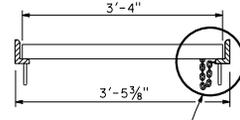
**TYPICAL FRAME**



**CROSS SECTION**  
(Thru frame)

TYPE 24 GRATE = 2'-1"  
TYPE 18 GRATE = 1'-7"

TYPE 24 GRATE = 2'-0",  
TYPE 18 GRATE = 1'-6"



**LONGITUDINAL SECTION**  
(Thru frame and grate)

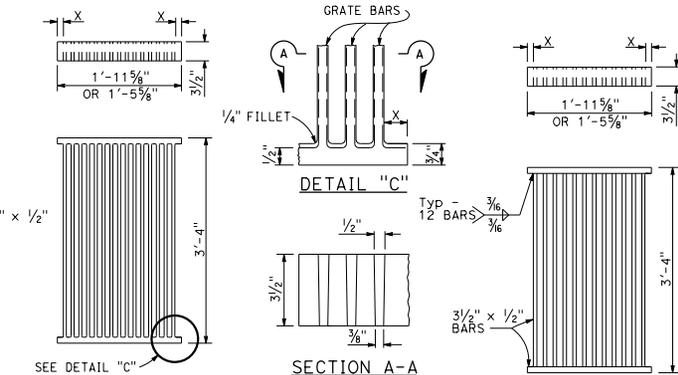
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

TYPE	No. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 3/16"
24-12	12	1 3/8"	1 1/4"

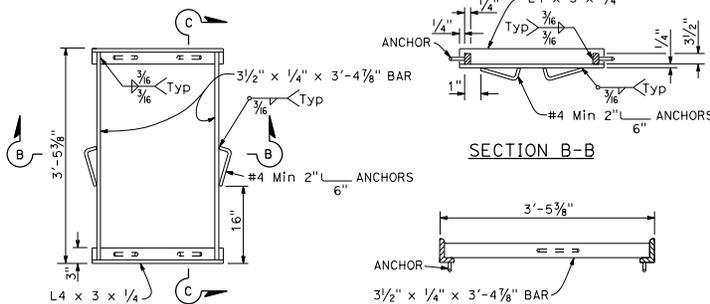
INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCF	PLATE	112
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**  
(See Note 7)



**ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE**

**ALTERNATIVE WELDED GRATE**

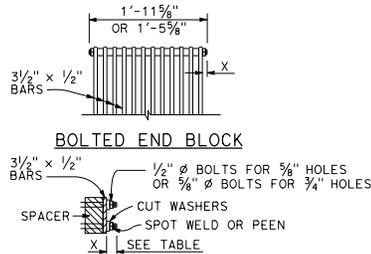


**TYPICAL FRAME**

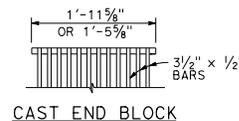
**SECTION B-B**

**ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME**  
(For details not shown, See Rectangular Frame Details)

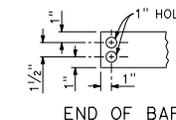
INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
GO,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



**BOLTING DETAIL**  
**ALTERNATIVE BOLTED GRATE**

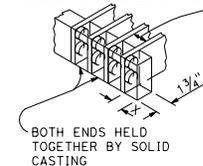


**CAST END BLOCK**

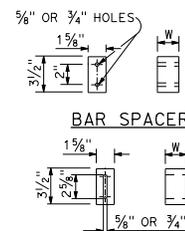


**END OF BAR**

SPACING SAME AS FOR WELDED OR BOLTED GRATE

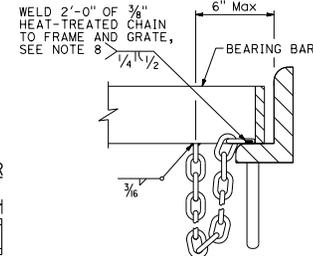


**ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE**



**BAR SPACER**

**ALTERNATIVE SPACER**  
W = 1 3/8" or 2"



**DETAIL "D"**  
(Steel grates only)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**GRATE DETAILS**

NO SCALE  
RSP D77A DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN D77A  
DATED MAY 20, 2011 - PAGE 164 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D77A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Raymond Don Isztos  
REGISTERED CIVIL ENGINEER

July 20, 2012  
PLANS APPROVAL DATE

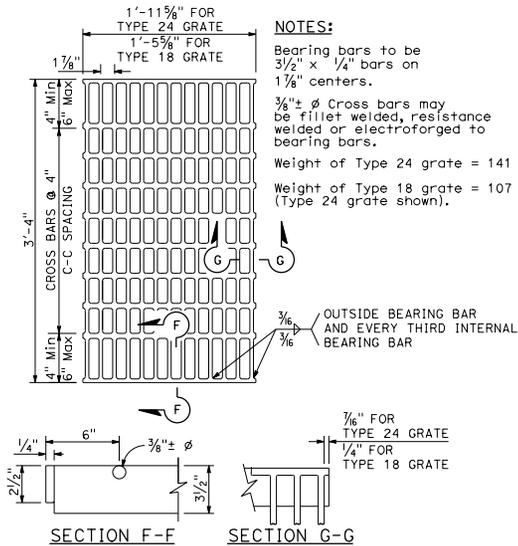
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Raymond Don Isztos  
No. C37332  
Exp. 6-30-14  
CIVIL  
STATE OF CALIFORNIA

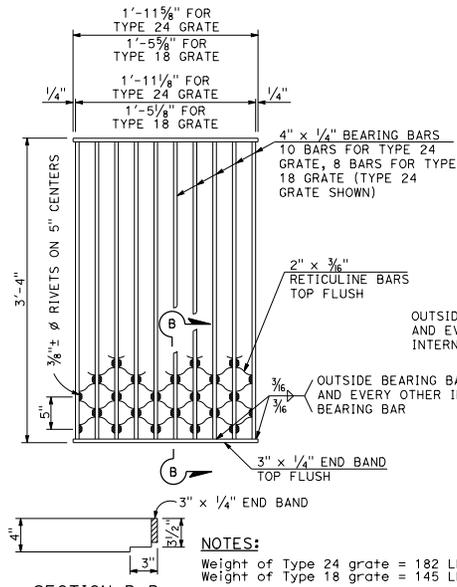
TO ACCOMPANY PLANS DATED \_\_\_\_\_

**NOTES:**

1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast ductile iron, cast carbon steel, welded, bolted, or cast end block grate.
3. Rounded top of bars optional on all grates.
4. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
5. Complete joint penetration butt welds may be substituted for the fillet welds on all anchors.
6. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
7. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).
8. Connect chain to grate and frame only at locations shown on the plans. When chain is required, do not use cast ductile iron grates.



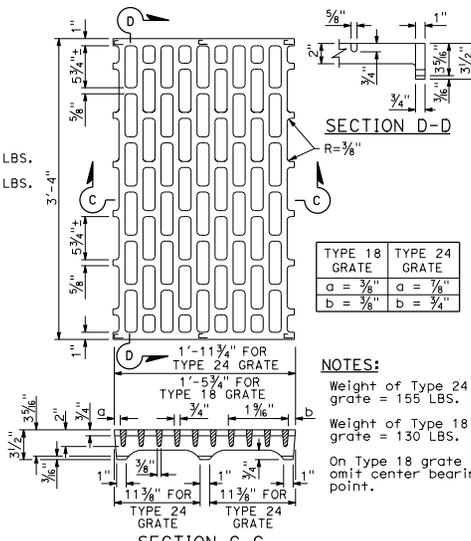
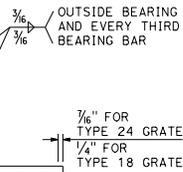
**TYPE 18-10 AND 24-13 GRATE**  
(Welded Steel)



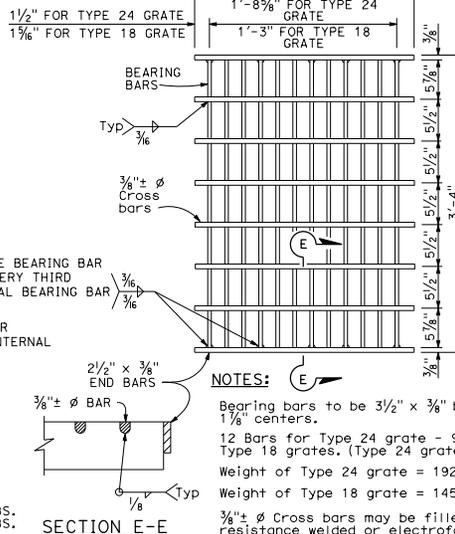
**TYPE 18-8S AND 24-10S GRATE**  
(Welded Steel) Reticuline type

**NOTES:**

Bearing bars to be  $3\frac{1}{2}$ " x  $\frac{1}{4}$ " bars on 1" centers.  
 $\frac{3}{8}$ "  $\pm$   $\phi$  Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.  
Weight of Type 24 grate = 141 LBS.  
Weight of Type 18 grate = 107 LBS. (Type 24 grate shown).



**TYPE 18-8C AND 24-10C GRATE**  
(Cast ductile iron)

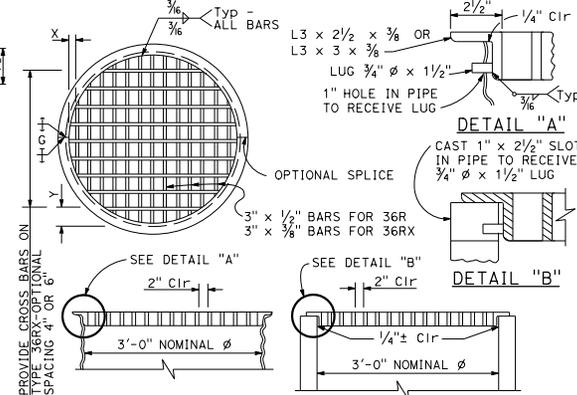


**TYPE 18-9X AND 24-12X GRATE**  
(Welded Steel)

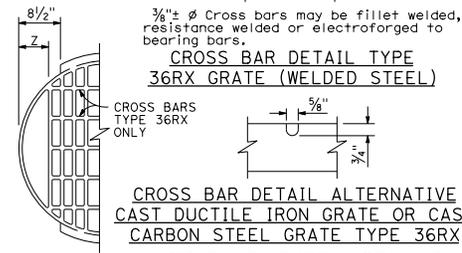
**NOTES:**

Weight of Type 24 grate = 155 LBS.  
Weight of Type 18 grate = 130 LBS.  
On Type 18 grate omit center bearing point.

TYPE 18 GRATE	TYPE 24 GRATE
a = $\frac{3}{8}$ "	a = $\frac{7}{8}$ "
b = $\frac{3}{8}$ "	b = $\frac{3}{4}$ "



**TYPE 36R AND 36RX GRATE DETAILS**



**NOTES:**

- When alternative grates are allowed - Final pay based on alternative with the lesser weight.
- Use frame shown on Standard Plan D74A, D74B or RSP D77A as appropriate.
- When Type 24-10S, 24-12X or 24-13 grates are used with G00 Inlets, a  $\frac{1}{4}$ " x  $\frac{3}{2}$ " x  $3'-4\frac{1}{8}$ " steel bar shall be welded across the center of inlet frame to separate the individual grates.
- See Revised Standard Plan RSP D77A for connecting chain to welded grate and frame. When chain is required, do not use cast ductile iron grate.

**GRATE BAR SPACING TABLE**

TYPE	No. OF BARS	CLEAR BAR SPACING	X	Y	Z
36R	13	2"	$2\frac{1}{8}$ "	-	-
36RX (STEEL)	15	2"	$\frac{3}{8}$ "	$3\frac{3}{4}$ "	$5\frac{3}{4}$ "
36RX (CAST)	13	2"	$2\frac{1}{8}$ "	$3\frac{3}{4}$ "	$5\frac{3}{4}$ "
36R Mod	12	2"	$2\frac{1}{8}$ "	-	5"
36RX Mod (STEEL)	13	2"	$\frac{3}{8}$ "	$3\frac{3}{4}$ "	$5\frac{3}{4}$ "
36RX Mod (CAST)	12	2"	$2\frac{1}{8}$ "	$3\frac{3}{4}$ "	$5\frac{3}{4}$ "

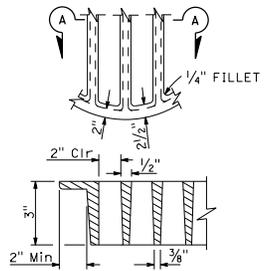
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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Raymond On Jester  
REGISTERED CIVIL ENGINEER  
No. C37332  
Exp. 6-30-14  
CIVIL  
STATE OF CALIFORNIA

July 20, 2012  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED \_\_\_\_\_



**ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE TYPE 36R AND 36RX**

**BASIS FOR MISCELLANEOUS IRON AND STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**

INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
G00	24-10C	2	391
	24-10S	2	456
	24-12X	2	473
	24-13	2	374
G0, G0L, G1, G2, G3, G4 (TYPE 24)	24-10C	1	202
	24-10S	1	229
	24-12X	1	239
	24-13	1	188
G4 (TYPE 18)	18-8S	1	187
	18-9X	1	187
	18-10	1	149
GT1, GT2	18-8S	2	374
	18-9X	2	374
	18-10	2	298
GT3, GT4	24-10C	2	404
	24-10S	2	458
	24-12X	2	478
	24-13	2	376
ODI	36RX (Mod)	1	196
GMP, GCP, GCPI	36RX	1	215
ODI	36R (Mod)	1	220
GMP, GCP, GCPI	36R	1	236
TRASH RACK			22
GRATE CHAIN			3

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**BICYCLE TRAVERSABLE GRATE DETAILS**  
NO SCALE

RSP D77B DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN D77B  
DATED MAY 20, 2011 - PAGE 165 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D77B**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

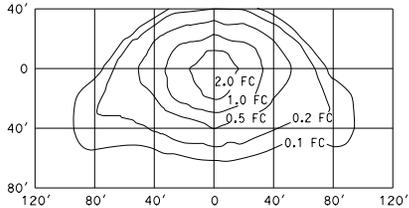
*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-14  
 PROFESSIONAL ENGINEER  
 ELECTRICAL  
 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED \_\_\_\_\_

2010 REVISED STANDARD PLAN RSP ES-10A

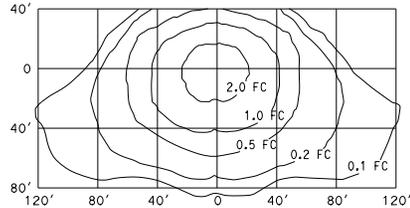
**ISOFOOTCANDLE CURVE - MINIMUM**



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
34' Mounting Height  
Lamp operated at 22,000 lm  
200-W high pressure sodium lamp  
ANSI Designation S66

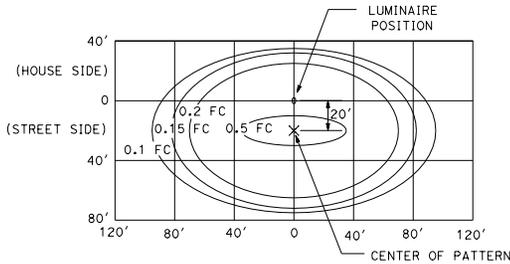
**ISOFOOTCANDLE CURVE - MINIMUM**



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
40' Mounting Height  
Lamp operated at 37,000 lm  
310-W high pressure sodium lamp  
ANSI Designation S67

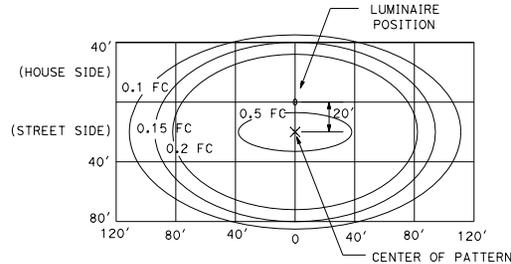
**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 1**

200-W HPS Equivalent at 34' Mounting Height

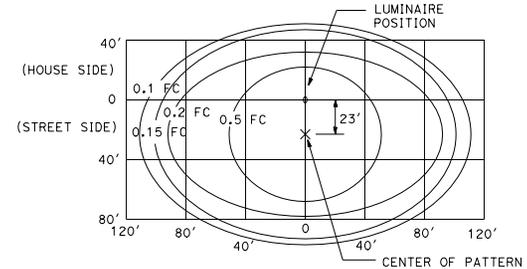
**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 2**

310-W HPS Equivalent at 40' Mounting Height

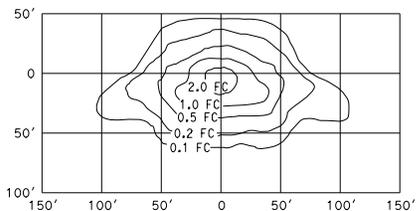
**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 4**

400-W HPS Equivalent at 40' Mounting Height

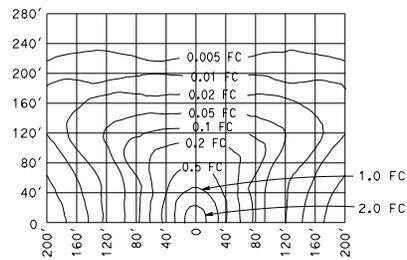
**ISOFOOTCANDLE CURVE - MINIMUM**



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
30' Mounting Height  
Lamp operated at 16,000 lm  
150-W high pressure sodium lamp  
ANSI Designation S55

**ISOFOOTCANDLE CURVE - MINIMUM**



**LOW PRESSURE SODIUM LUMINAIRE**

40' Mounting Height  
Lamp operated at 33,000 lm  
180-W low pressure sodium lamp

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

RSP ES-10A DATED JULY 20, 2012 SUPPLEMENTS THE  
STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-10A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

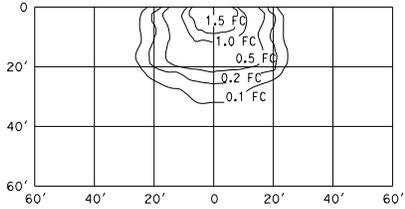
*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-14  
 PROFESSIONAL ENGINEER  
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 STATE OF CALIFORNIA

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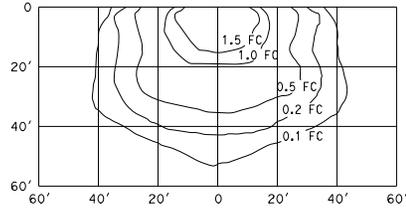
**ISOFOOTCANDLE CURVE - MINIMUM**



**WALL LUMINAIRE**

15' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

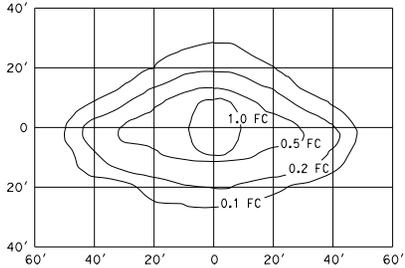
**ISOFOOTCANDLE CURVE - MINIMUM**



**WALL LUMINAIRE**

15' Mounting Height  
Lamp operated at 9,500 lm  
100-W high pressure sodium lamp  
ANSI Designation S54

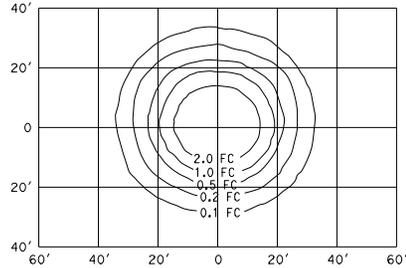
**ISOFOOTCANDLE CURVE - MINIMUM**



**PENDANT SOFFIT LUMINAIRE  
TYPE III SHORT**

17' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

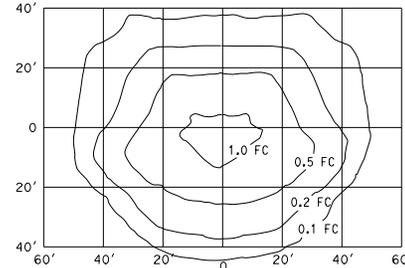
**ISOFOOTCANDLE CURVE - MINIMUM**



**PENDANT SOFFIT LUMINAIRE**

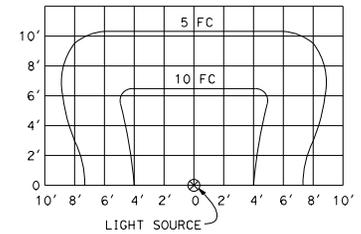
17' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62

**ISOFOOTCANDLE CURVE - MINIMUM**



**FLUSH SOFFIT LUMINAIRE**

17' Mounting Height  
Lamp operated at 5,800 lm  
70-W high pressure sodium lamp  
ANSI Designation S62



**SIGN LIGHTING FIXTURE  
ISOFOOTCANDLE DIAGRAM**

**NOTES:**

1. Curves represent the minimum footcandle (FC) of initial illumination on a 10'-0" x 20'-0" panel.
2. The FC shown are with the fixture attached to the light fixture mounting channel which places the center of the source 4'-8" in front of panel and 1'-0" below the bottom edge.
3. Applicable lamp: 85-W fluorescent phosphor coated induction lamp.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

RSP ES-10B DATED JULY 20, 2012 SUPPLEMENTS THE  
STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-10B**

2010 REVISED STANDARD PLAN RSP ES-10B