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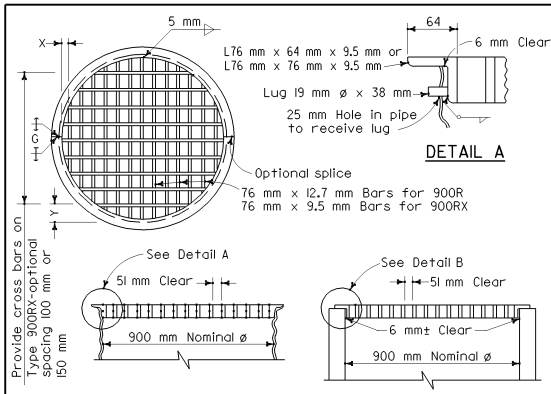
Caltrans Metric

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

REGISTERED CIVIL ENGINEER

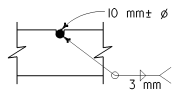
July 1, 2004
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Glenn DeCou No. C34547 Exp. 9-30-05 CIVIL STATE OF CALIFORNIA



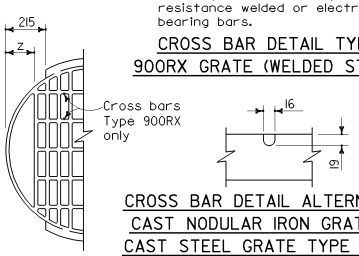
TYPE 900R AND 900RX GRATE DETAILS

ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE TYPE 900R AND 900RX



10 mm± ø Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.

CROSS BAR DETAIL TYPE 900RX GRATE (WELDED STEEL)



CROSS BAR DETAIL ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE TYPE 900RX

MODIFIED TYPE 900R AND 900RX GRATE FOR ODI INLET

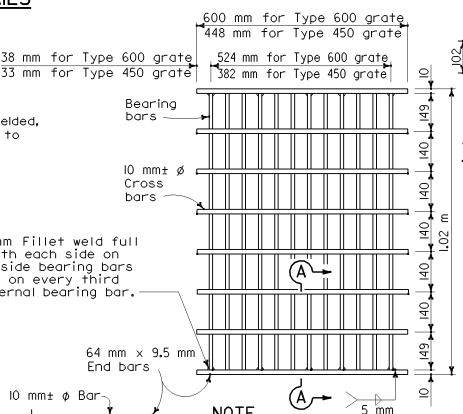
NOTES

1. When alternative grates are allowed - Final pay based on alternative with the lesser mass.
2. Seal welding at all surfaces not required when grates are galvanized.
3. Use frame shown on Standard Plan D74A, D74B or D77A as appropriate.
4. When type 600-10S, 600-12X or 600-13 grates are used with GDO inlets, a 6.4 mm x 89 mm x 1.04 m steel bar shall be welded across the center of inlet frame to separate the individual grates.

GRATE BAR SPACING TABLE

TYPE	NO. OF BARS	CLEAR BAR SPACING	X (mm)	Y (mm) 100 mm SPACING	Y (mm) 150 mm SPACING	Z (mm)
900R	13	51 mm	54	-	-	-
900RX (Steel)	15	51 mm	14	95	146	-
900RX (Cast)	13	51 mm	54	95	146	-
900R Mod	12	51 mm	54	-	-	127
900RX Mod (Steel)	13	51 mm	14	95	146	144
900RX Mod (Cast)	12	51 mm	54	95	146	127

INLET TYPE	GRATE TYPE	NO. OF GRATES	MASS (kg)
ODI	900RX (Mod)	1	89
GMP, GCP, GCPI	900RX	1	98
ODI	900R (Mod)	1	100
GMP, GCP, GCPI	900R	1	107



NOTE

Bearing bars to be 89 mm x 9.5 mm bars on 48 mm centers.

12 Bars for Type 600 grate - 9 bars for Type 450 grates. (Type 600 grate shown.)

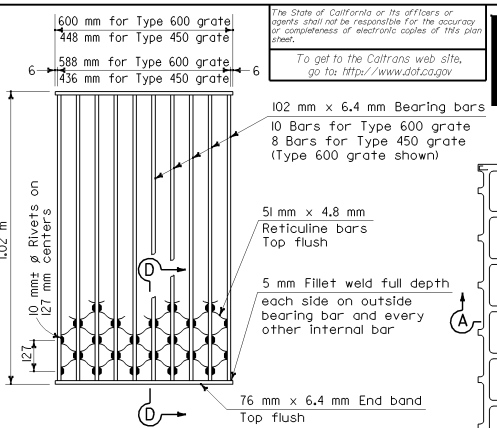
Mass of Type 600 grate = 87 kg.

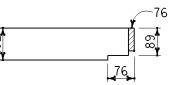
Mass of Type 450 grate = 66 kg.

10 mm± ø Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.

TYPE 450-9X AND 600-12X GRATE

(Welded Steel)



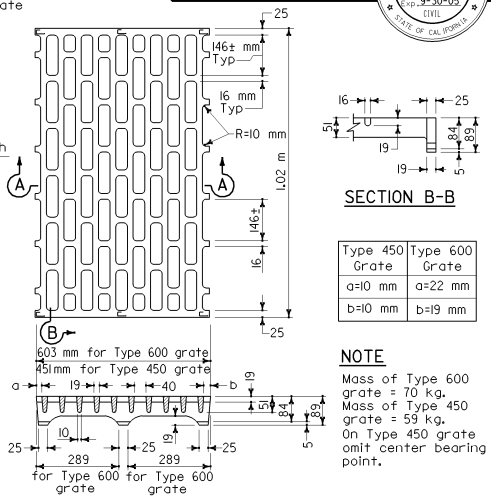


NOTE

Mass of Type 600 grate = 83 kg.
Mass of Type 450 grate = 66 kg.

TYPE 450-8S AND 600-10S GRATE

(Welded Steel)
Reticuline type



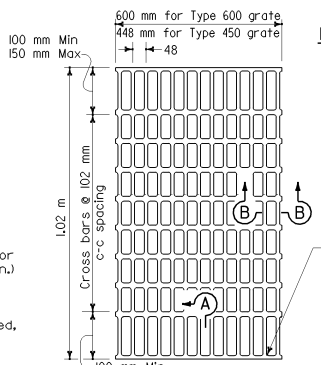
Type 450 Grate	Type 600 Grate
a=10 mm	a=22 mm
b=10 mm	b=19 mm

NOTE

Mass of Type 600 grate = 70 kg.
Mass of Type 450 grate = 59 kg.
On Type 450 grate omit center bearing point.

TYPE 450-8C AND 600-10C GRATE

(Cast nodular iron)



NOTE

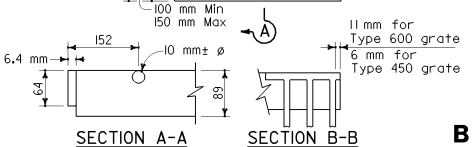
Bearing bars to be 89 mm x 6.4 mm bars on 48 mm centers.

10 mm± ø Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.

Mass of Type 600 grate = 64 kg.

Mass of Type 450 grate = 49 kg. (Type 600 grate shown)

5 mm Fillet weld full depth each side on outside bearing bars and on every third internal bearing bar.



TYPE 450-10 AND 600-13 GRATE

(Welded Steel)

BASIS FOR MISC IRON & STEEL FINAL PAY MASSES FOR DRAINAGE INLETS

INLET TYPE	GRATE TYPE	NO. GRATES	MASS (kg)
GDO (SEE NOTE 4)	600-10C	2	177
	600-10S	2	207
	600-12X	2	215
	600-13	2	170
GO, GOL, G1, G2, G3, G4 (TYPE 600)	600-10C	1	92
	600-10S	1	104
	600-12X	1	108
	600-13	1	85
G4 (TYPE 450) G5, G6	450-8S	1	85
	450-9X	1	85
	450-10	1	68
GT-1, GT-2	450-8S	2	170
	450-9X	2	170
	450-10	2	135
GT-3, GT-4	600-10C	2	183
	600-10S	2	208
	600-12X	2	217
	600-13	2	171

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

BICYCLE PROOF GRATE DETAILS

NO SCALE

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

D77B

2004 Std PLAN D77B

08-05-04