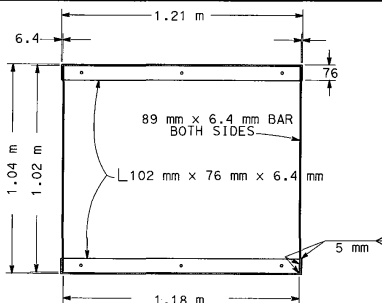
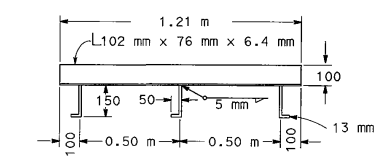


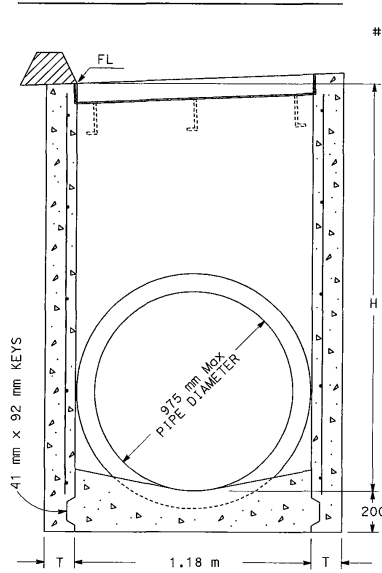
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 HYDRAULICS  
 FUNCTIONAL SUPERVISOR  
 DAVE BHALLA  
 CHECKED BY  
 DAVE BHALLA  
 CALCULATED-DESIGNED BY  
 DAVE BHALLA  
 FUSING CHANG  
 DATE REVISOR  
 DATE REVISOR



**GRATE FRAME DETAIL**



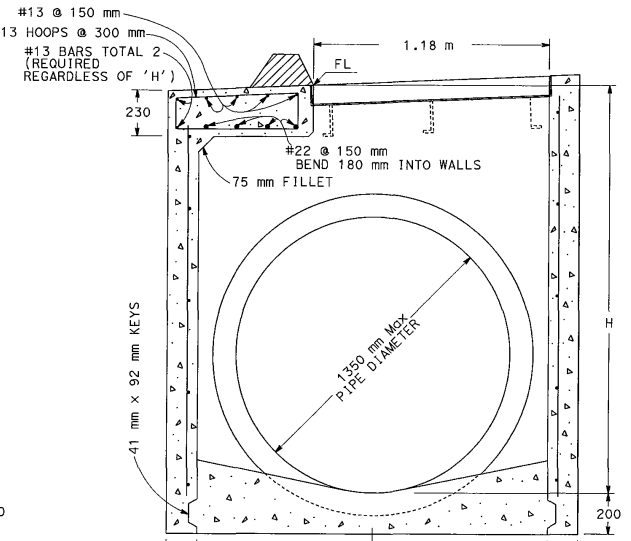
**ANCHOR PLACEMENT DETAIL**



**SECTION A-A**

(FOR PIPE DIAMETERS 975 mm OR LESS)

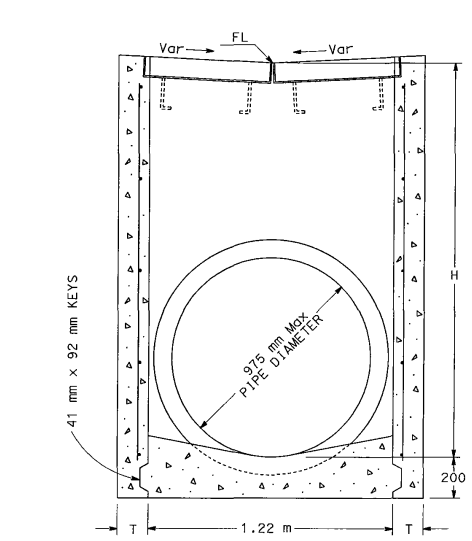
**GD-1**



**SECTION A-A**

1.18 m Min  
 1/2 OUTSIDE Dia + 40 mm TO 0.87 m Max

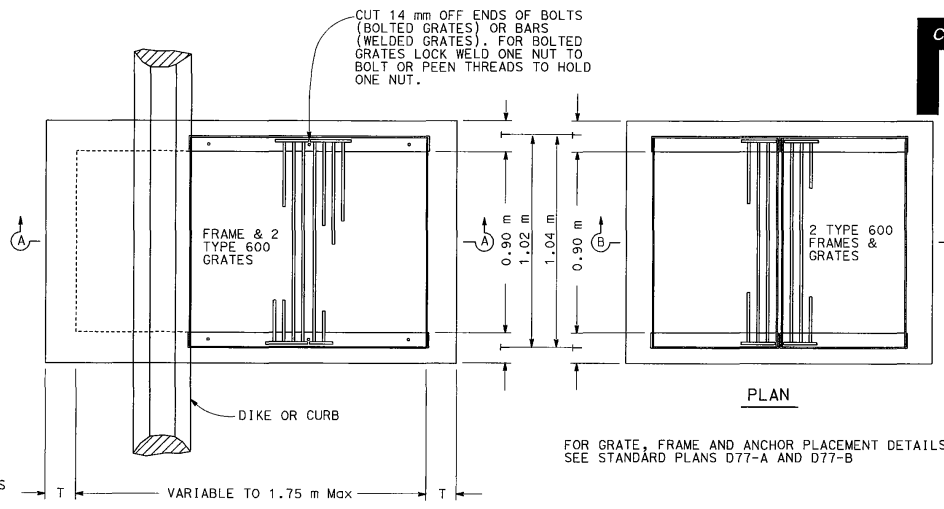
**GD-2**



**SECTION B-B**

(FOR PIPE DIAMETERS 975 mm OR LESS)

**GD-3**



**PLAN**

FOR GRATE, FRAME AND ANCHOR PLACEMENT DETAILS SEE STANDARD PLANS D77-A AND D77-B



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	5	63.5/68.5	79	466

REGISTERED CIVIL ENGINEER DATE 3-25-08  
 FUSING CHANG  
 1-5-09  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 F.S. CHANG  
 No. 54884  
 Exp. 6-30-09  
 CIVIL  
 STATE OF CALIFORNIA

**NOTES:**

- 'H' IS THE DIFFERENCE IN ELEVATION BETWEEN THE OUTLET PIPE FLOW LINE AND THE FLOW LINE OF THE GRATES.
- STEPS - NONE REQUIRED WHEN 'H' IS 1.07 m OR LESS. INSTALL ONE STEP 400 mm ABOVE FLOOR WHEN 'H' IS MORE THAN 1.07 m AND LESS THAN 1.52 m. WHERE 'H' IS MORE THAN 1.52 m STEPS SHALL BE EVENLY SPACED @ 300 mm INTERVALS FROM 400 mm ABOVE FLOOR TO WITHIN 300 mm OF THE TOP OF THE BOX. PLACE STEPS IN WALL WITHOUT PIPE OPENINGS. SEE STANDARD PLAN D74C FOR STEP DETAIL.
- PIPES CAN BE PLACED IN ANY WALL.
- REINFORCING STEEL NOT REQUIRED IN WALLS WHEN H=1.83 m OR LESS.
- REINFORCING STEEL IN WALLS SHALL BE #13 BARS @ 460 mm CENTERS PLACED 40mm CLEAR TO INSIDE OF BOX.

**MISCELLANEOUS IRON & STEEL**

INLET TYPE	GRATE TYPE	MASS(kg)
GD-1	600 - 12	264
	600 - 10C	172
	600 - 10S	197
	600 - 12X	206
	600 - 13	160

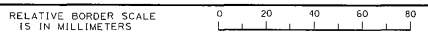
H	T
2.44 m OR LESS	150 mm
2.46 m TO 6.10 m	200 mm

**DRAINAGE DETAILS**

NO SCALE

**DD-10**

BORDER LAST REVISED 3/1/2007



USERNAME => trim  
 DGN FILE => 7235501c010.dgn

CU 07314

EA 235501

DATE PLOTTED => 08-JAN-2009  
 TIME PLOTTED => 15:19