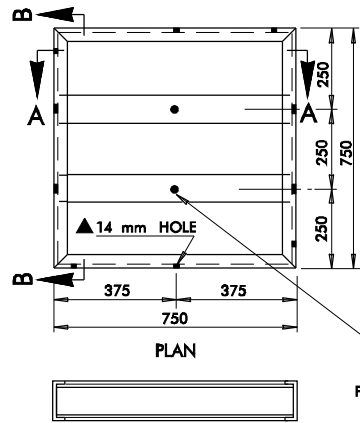
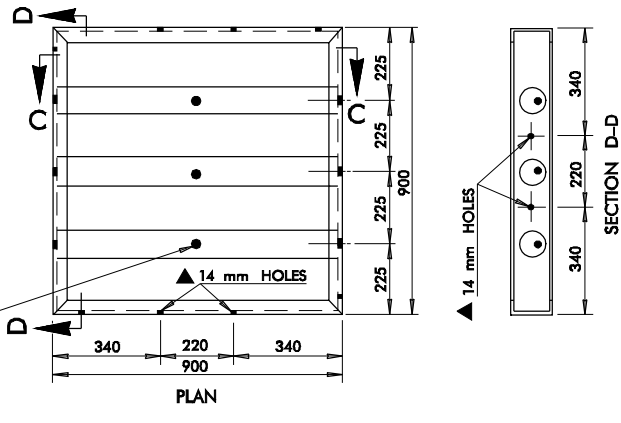


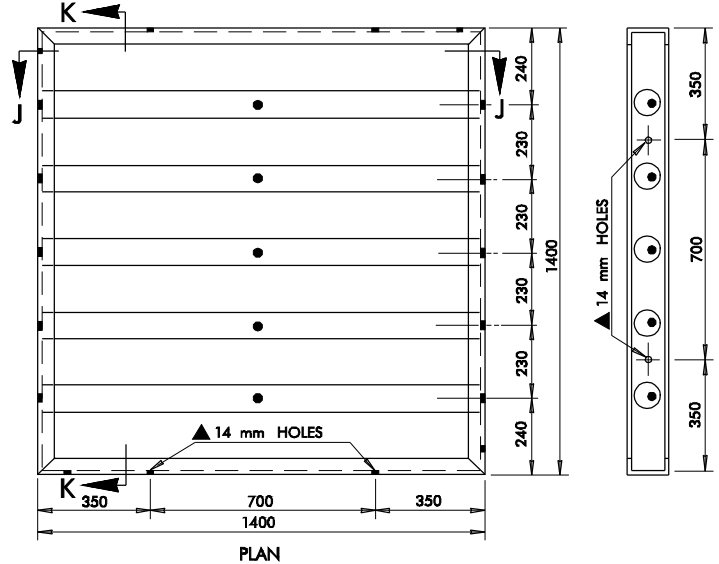
| DESCRIPTION  | REVISIONS | DATE |
|--|-----------|------|
| RE-ISSUE W/METRIC, 1999 SPECS.<br>Rev. Pay Item No. for Welded Grates lgc 7/99 |           |      |



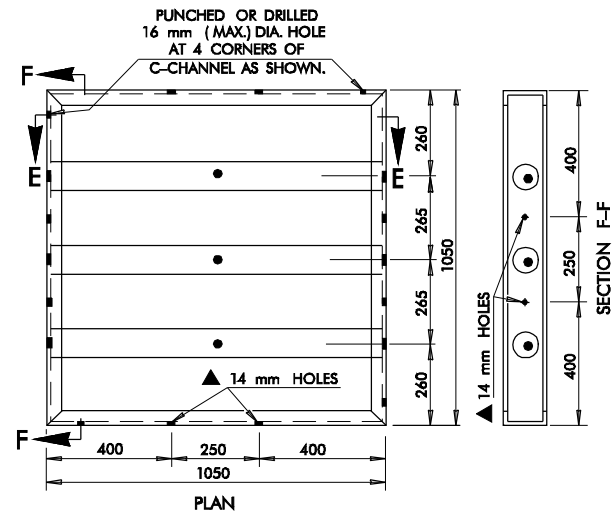
SECTION A-A  
750 mm GRATE



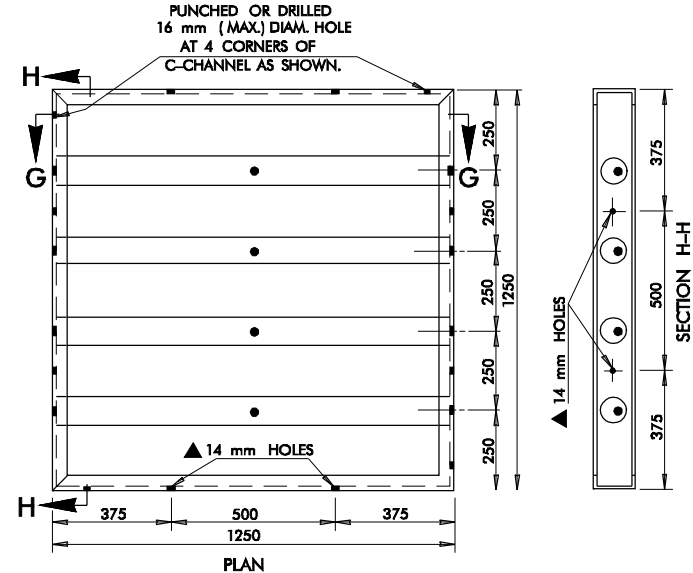
SECTION C-C  
900 mm GRATE



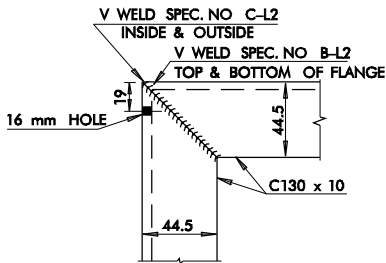
SECTION J-J  
1400 mm GRATE



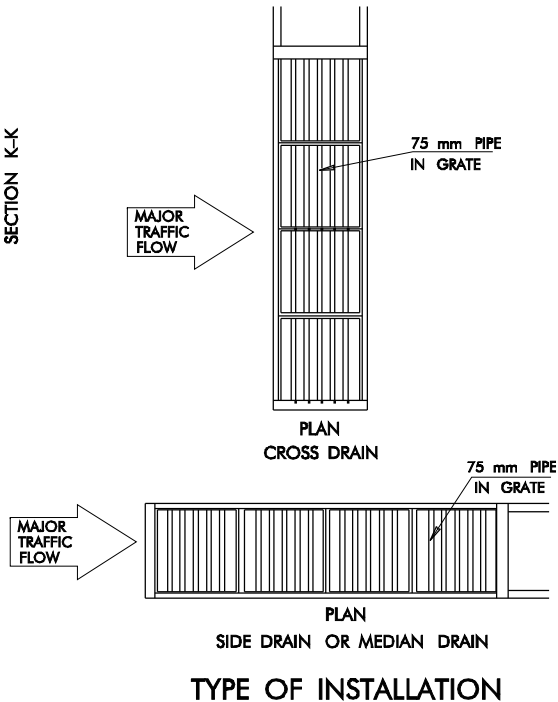
SECTION E-E  
1050 mm GRATE



SECTION G-G  
1250 mm GRATE



MITERED CORNER DETAIL



TYPE OF INSTALLATION

#### GENERAL NOTES

- ALL CONSTRUCTION AND MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE 1999 METRIC STANDARD SPECIFICATIONS.
- CONNECTION BOLTS SHALL BE 13 mm x 38 mm GALVANIZED BOLT AND WILL BE USED WITH A 13 mm GALVANIZED NUT (SQUARE OR HEX HEAD ) WITH A STANDARD 13 mm GALVANIZED LOCK WASHER. CONNECTION DEVICES SHALL BE PLACED IN EACH DRILLED HOLE WHERE SECTIONS OF GRATES BUTT TO EACH OTHER OR WHERE GRATES TOUCH THE END AND BACK OF RECEIVING STRUCTURE (NONE IN SIDES ). COST OF CONNECTION DEVICES SHALL BE INCLUDED IN COST OF GRATE SECTIONS.
- MATERIALS AND GALVANIZATION SHALL BE IN ACCORDANCE WITH 1999 METRIC STANDARD SPECIFICATIONS SEC. 721.01 & 721.02 AND SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING SPECIFICATIONS:

|        |        |                 |
|--------|--------|-----------------|
| ASTM   | A-53   | FOR PIPES       |
| AASHTO | M-183M | FOR 'C' CHANNEL |

- IF 'USED PIPE' IS PERMITTED, IT SHALL CONFORM TO MINIMUM STRENGTH REQUIREMENTS OF NEW PIPE OF THE SAME CLASSIFICATION.

#### BASIS OF PAYMENT

| ITEM NO.  | ITEM                            | UNIT |
|-----------|---------------------------------|------|
| 611.06(N) | WELDED STEEL GRATE ( ■ mm SQ. ) | EACH |

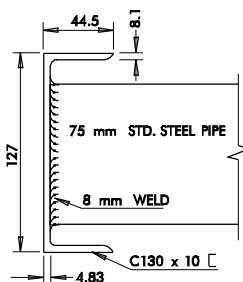
- DIMENSIONS OF GRATE SHALL BE SPECIFIED.

NOTE: BID FOR WELDED STEEL GRATE SHALL BE FULL COMPENSATION FOR ALL MATERIALS AND LABOR NECESSARY TO CONSTRUCT (FABRICATE ) GRATE AND INSTALL ON DESIGNATED STRUCTURES.

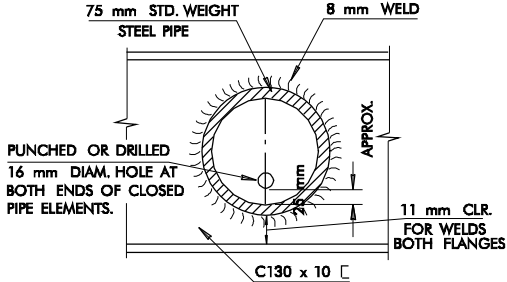
| MATERIALS FOR GRATE |             |                   |                       |                   |  |
|---------------------|-------------|-------------------|-----------------------|-------------------|--|
| GRATE SIZE (mm)     | C130 x 10 C |                   | 75 mm STD. STEEL PIPE |                   | PIPE & FRAME STEEL EST. @ kg PER GRATE |
|                     | NO.         | TOTAL LENGTH (mm) | NO.                   | TOTAL LENGTH (mm) |  |
| 750                 | 4           | 3000              | 2                     | 1480              | 46.72                                  |
| 900                 | 4           | 3600              | 3                     | 2670              | 66.17                                  |
| 1050                | 4           | 4200              | 3                     | 3120              | 77.25                                  |
| 1250                | 4           | 5000              | 4                     | 4960              | 106.50                                 |
| 1400                | 4           | 5600              | 5                     | 6950              | 134.53                                 |

NOTE: 130 mm x 45 mm (NOM.) CHANNEL EST. @ 10.0 kg/m  
75 mm STD. WEIGHT STEEL PIPE EST. @ 11.3 kg/m

GRATES WEIGHTS ESTIMATED FOR UNASSEMBLED MATERIALS, PRIOR TO DRILLING, WELDING AND GALVANIZATION. WEIGHTS DO NOT INCLUDE WEIGHT OF CONNECTION OR ANCHOR DEVICES.



WELD DETAILS



WELD DETAILS

|  |              |
|--|--------------|
| APPROVED BY ROADWAY ENGINEER   | DATE         |
| OKLAHOMA DEPT. OF TRANSPORTATION<br>ROADWAY STANDARD ( METRIC )<br>WELDED STEEL GRATES<br>750, 900, 1050, 1250 & 1400 mm SQ. |              |
| 1999 SPECIFICATIONS  | WSG-2        |
| ALL DIMENSIONS ON THIS SHEET IN MILLIMETERS UNLESS OTHERWISE NOTED.  | 00M<br>R-58M |