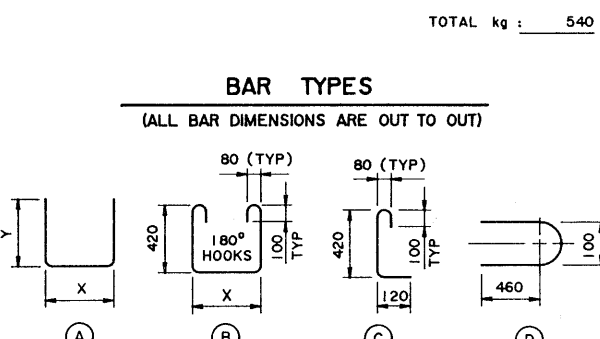


| BAR LIST: FOR SQUARE GIRDER |      |    |      |        |     |        |      |
|-----------------------------|------|----|------|--------|-----|--------|------|
| MARK                        | SIZE | NO | TYPE | X      | Y   | LENGTH | MASS |
| G1001                       | 10   | 52 | A    | 1 125  | 300 | 1 725  | 70   |
| G1003                       | 10   | 67 | B    | 1 125  |     | 2 220  | 117  |
| G1004                       | 10   | 65 | B    | 420    |     | 1 520  | 76   |
| G1006                       | 10   | 6  | D    |        |     | 1 020  | 5    |
| G1007                       | 10   | 2  | A    | 1 000  | 300 | 1 600  | 3    |
| G1012                       | 10   | 5  | STR  |        |     | 11 900 | 47   |
| G1013                       | 10   | 2  | STR  |        |     | 11 800 | 19   |
| G1024                       | 10   | 6  | STR  |        |     | 1 100  | 5    |
| G1025                       | 10   | 2  | C    |        |     | 670    | 1    |
| G2502                       | 25   | 4  | A    | 11 850 | 350 | 12 550 | 197  |

TOTAL kg : 540



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**DESIGN**

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  - ALLOWABLE TENSION AT MIDSPAN IS 40% OF MODULUS OF RUPTURE WITH 50 mm WEARING SURFACE (52% WITH 90 mm WEARING SURFACE).
  - NO TENSION ALLOWED IN DECK SURFACE.

**LOADING:**

- LIVE LOAD - CAN/CSA-S6-88; CS-750 ONE WHEEL LINE PER GIRDER
- DEAD LOAD - GIRDER = 0.93 t/m
- WEARING SURFACE = 0.24 t/m

**MATERIALS**

- CONCRETE SHALL CONTAIN SILICA FUME AND BE MADE OF LIGHTWEIGHT COARSE AGGREGATE AND NATURAL SAND FINES. UNIT WEIGHT OF SEMI-LIGHTWEIGHT CONCRETE SHALL BE 1920 kg/m<sup>3</sup>.
- 28 DAY CONCRETE STRENGTH - 35 MPa
- RELEASE STRENGTH - 28 MPa
- PRESTRESSING STEEL SHALL BE 13 φ, 7 WIRE LOW RELAXATION STRAND (f<sub>pu</sub> = 1860 MPa).
- REINFORCING STEEL SHALL BE GRADE 400W (YIELD STRENGTH OF GRADE 300 USED IN DESIGN TO ALLOW TACK WELDING OF SHEAR REINFORCEMENT).

**FABRICATION**

- GIRDERS SHALL CONFORM TO THE CURRENT REQUIREMENTS OF THE BRIDGE MATERIALS SPECIFICATION FOR THE MANUFACTURE OF PRESTRESSED CONCRETE BRIDGE UNITS (SPEC B190).
- FORCE IN PRESTRESSING STEEL:
  - INITIAL TENSIONING LOAD = 129 kN/STRAND
  - DESIGN LOAD AFTER LOSSES = 104 kN/STRAND
- ALL GALVANIZING SHALL CONFORM TO ASTM SPEC A123.
- BEND OR SHIFT REINFORCING WHERE REQUIRED TO CLEAR GIRDER CONNECTORS AND LIFTING HOOK ASSEMBLIES. STIRRUP SPACING IS TO BE MAINTAINED.

**ERECTION**

- ANY FREE SPACE BETWEEN CONNECTORS SHALL BE FILLED WITH DROP-IN WASHERS.
- CALCULATED MASS OF ONE GIRDER IS 11.34 t.

WORK THESE DRAWINGS TOGETHER : S-1544, S-1545 AND S-1546

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|                                       |       |                         |         |  |        |          |         |
|---------------------------------------|-------|-------------------------|---------|--|--------|----------|---------|
| ORIGINAL DRAWING APPROVED BY          |       |                         |         | Albarta TRANSPORTATION AND UTILITIES BRIDGE ENGINEERING BRANCH |        |          |         |
| N. BOYD                               |       |                         |         | PRESTRESSED CONCRETE   |        |          |         |
| EXECUTIVE DIRECTOR BRIDGE ENGINEERING |       |                         |         | 12 m TYPE SC-510   |        |          |         |
| AUG 23, 1990                          |       |                         |         | INTERIOR GIRDER  |        |          |         |
| REV                                   | DATE  | REVISIONS               |         | BY   | STREAM | LOCATION | HIGHWAY |
| 94-04-05                              |       | LIFTING HOOK POCKET     |         | LEA  |        |          |         |
| 92-01-10                              |       | CONCRETE MATERIALS NOTE |         | DHO  |        |          |         |
| DESIGNED                              | DRAWN | DATE                    | CHECKED | DATE   | FILE   | SHEET    | DRAWING |
| LEA                                   | VMV   | 90-07-02                | TJS     | 90-08-23   |        | 1 of 4   | S-1544  |