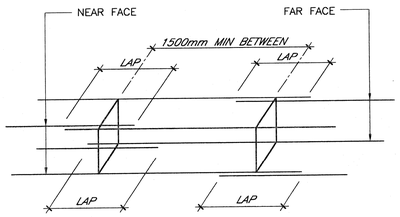
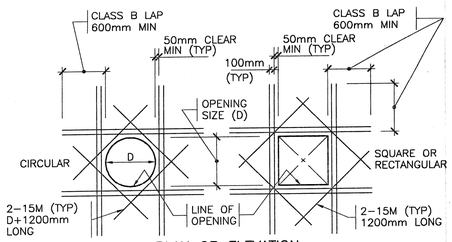


ISOMETRIC VIEW

NOTE:
LAP LENGTH CLASS B UNLESS NOTED OTHERWISE

TYPICAL LAP ARRANGEMENT FOR HORIZONTAL REINFORCING BARS

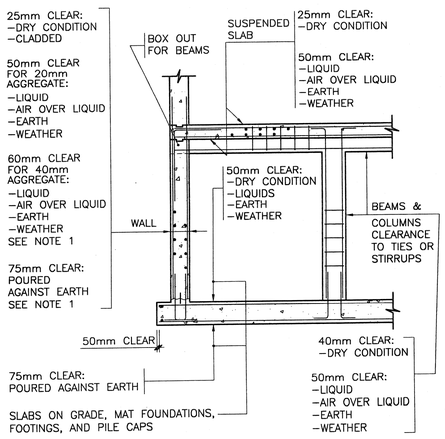


PLAN OR ELEVATION

NOTES:

1. FOR OPENINGS D=400mm OR LARGER: ADD EXTRA BARS ON EACH SIDE OF THE OPENING, EQUIVALENT TO HALF THE TOTAL AREA OF REINFORCING CUT IN EACH DIRECTION, EACH FACE, UNLESS NOTED OTHERWISE.
2. FOR OPENINGS LESS THAN 400mm: NO EXTRA BARS ARE REQUIRED ADJUST REGULAR REINFORCING AROUND OPENINGS.

EXTRA REINFORCING BARS AT OPENINGS IN WALLS AND SLABS



NOTE:
1. PROVIDE 50mm CLEARANCE ON FACE EXPOSED TO DRY CONDITION.

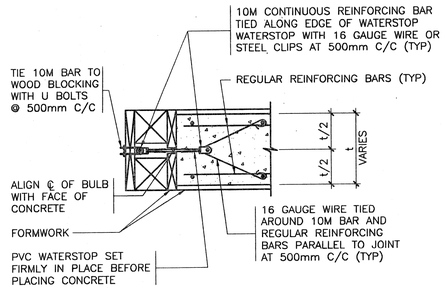
CONCRETE COVER TO REINFORCEMENT

ONLY FOR : 30 MPa CONCRETE , NORMAL WEIGHT 400 MPa REINFORCING BAR				
BAR SIZE	TOP BARS (mm)		OTHER BARS (mm)	
	CLASS A	CLASS B	CLASS A	CLASS B
10M	390	500	300	390
15M	550	710	420	550
20M	670	870	520	670
25M	1080	1400	830	1080
30M	1280	1660	990	1280
35M	1530	1990	1180	1530

NOTES:

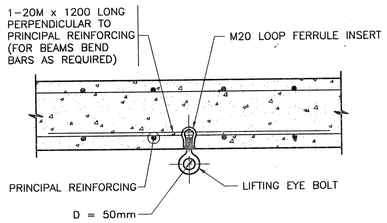
1. TOP BARS ARE:
   a) ALL BARS IN CONCRETE WITH MORE THAN 300mm CONCRETE BELOW.
   b) ALL HORIZONTAL BARS IN WALLS.
2. PROVIDE CLASS B LAP UNLESS NOTED OTHERWISE.
3. DEVELOPMENT LENGTHS SHOWN IN THE TABLE ARE BASED ON HEAVIER CONFINED BARS.
4. TABLE APPLIES UNLESS SHOWN OTHERWISE.

REINFORCING BAR TENSION LAP TABLE



PLAN/SECTION

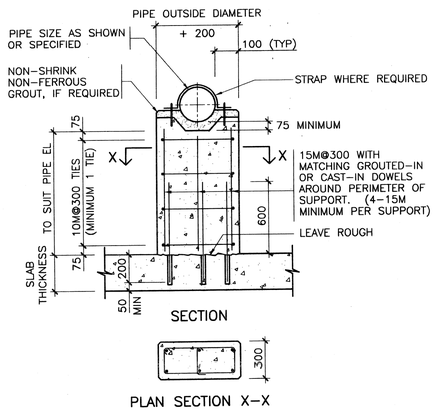
WATERSTOP ANCHORAGE FOR FIRST PLACEMENT



SECTION

NOTE:
MAXIMUM LIFTING CAPACITY 6kN

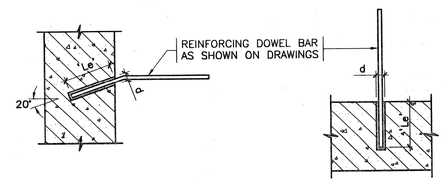
LIFTING RING IN CONCRETE



SECTION

PLAN SECTION X–X

TYPICAL CONCRETE PIPE SUPPORT



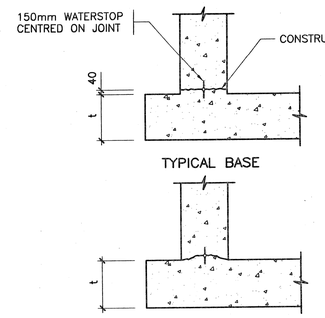
FOR HORIZONTAL BARS FOR VERTICAL BARS

HYDRAULIC CEMENT GROUT	EPOXY GROUT
d = BAR DIA + 20mm Le : 15M – 200mm 20M – 250mm 25M – 300mm	d AND Le IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.

NOTES;

1. DRILL HOLE OF DIAMETER AND DEPTH AS REQUIRED.
2. CLEAN HOLE OF DUST AND DEBRIS.
3. FILL HOLE WITH DOWELLING GROUT.
4. INSTALL REINFORCING DOWEL BAR AND WIPE AWAY OVERFLOW.
5. SECURE DOWEL BAR FIRMLY IN POSITION AND DO NOT DISTURB BAR FOR 24 HOURS AFTER INSTALLATION.

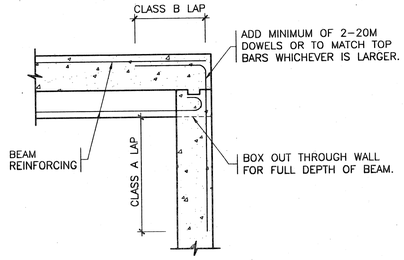
DOWELLING IN EXISTING CONCRETE (GID)



TYPICAL BASE

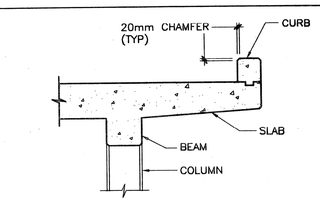
UNACCEPTABLE JOINT DETAIL

WALLS BASE CONSTRUCTION JOINT



SECTION

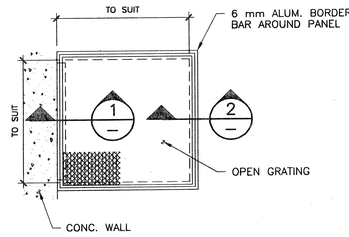
CONCRETE BEAM END REINFORCING



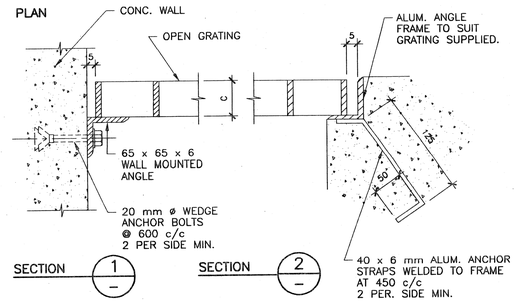
SECTION

NOTE:
PROVIDE CHAMFER ALONG EXPOSED EDGES ON CONCRETE SLABS, BEAMS, CURBS, COLUMNS, WALL OPENINGS AND SIMILAR ITEMS UNLESS OTHERWISE NOTED OR DIRECTED.

CHAMFERS



C	ANGLE SIZE
19 mm	∠ 25 x 25 x 6
25 mm	∠ 31 x 31 x 6
31 mm	∠ 38 x 38 x 6
38 mm	∠ 44 x 44 x 6
45 mm	∠ 50 x 50 x 6



ALUMINUM OPEN GRATING

These record documents have been prepared based on information provided by others. The design professional has not verified the accuracy and/or the completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result.

RECORD DRAWING

FOR ABBREVIATIONS SEE DWG A1

NO.	REVISIONS	DATE	BY
R1	RECORD DRAWING	98.05.29	DHG

B.M. ELEV.

CG&S CH2M GORE & STORRIE LIMITED

DESIGNED BY	YTC	CHECKED BY	ARP, RPP
DRAWN BY	MKG	APPROVED BY	
HOR. SCALE	NTS	RELEASED FOR CONSTRUCTION	
VERTICAL	NTS		
DATE	1996.08.12	DATE	

ENGINEER'S SEAL

ORIGINAL TENDER DRAWING SEALED

CONSULTANT DRAWING NO. 60010–53–A1–15509

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
WATER AND WASTE DEPARTMENT

SHOAL LAKE AQUEDUCT
MILE 12.86 DRAIN CHAMBER AND OUTFALL

MISCELLANEOUS DETAILS

CITY DRAWING NUMBER D–4356A
SHEET 9 OF 23
S3 REV. R1

AutoCAD Version:14