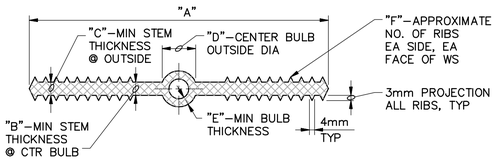
SHEET: COW-A1 (05/2005)

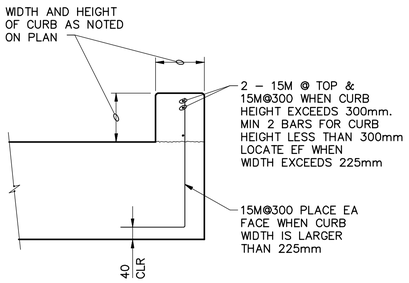


SIZE	"A"	"B"	"C"	"D"	"E"	"F"
100mmx5mm	100mm	5mm	5mm	19mm	6mm	4
150mmx10mm	150mm	10mm	10mm	22mm	6mm	6
225mmx10mm	225mm	10mm	10mm	25mm	6mm	8

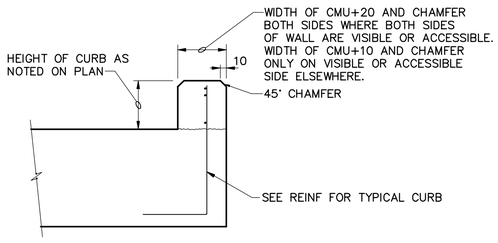
NOTES:

1. NON–ROUND CENTER BULBS SHALL HAVE A MINIMUM OUTSIDE DIMENSION OF 'D'.
2. SEE SPLICE DETAIL (2/–)
3. BULB TYPE WATERSTOP SHOWN IS REQUIRED FOR EXPANSION AND CONTROL JOINTS. SIMILAR WATERSTOPS WITHOUT CENTER BULB MAY BE SUBSTITUTED AT CONSTRUCTION JOINTS.
4. USE 150mm WATERSTOPS IN ALL CONSTRUCTION JOINTS , UNLESS SPECIFICALLY SHOWN OTHERWISE.
5. USE 225mm WATERSTOPS FOR ALL EXPANSION JOINTS TYP.

1 – PVC WATERSTOP
N.T.S.

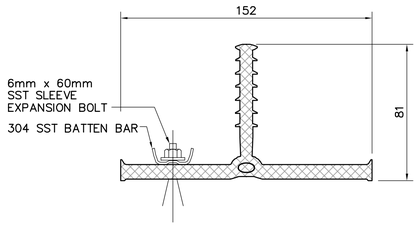


TYPICAL CURB

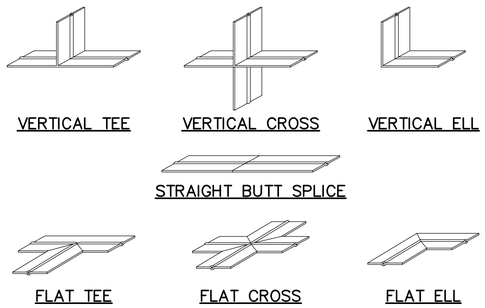


CURB FOR CMU WALLS

5 – CONCRETE CURB
N.T.S.



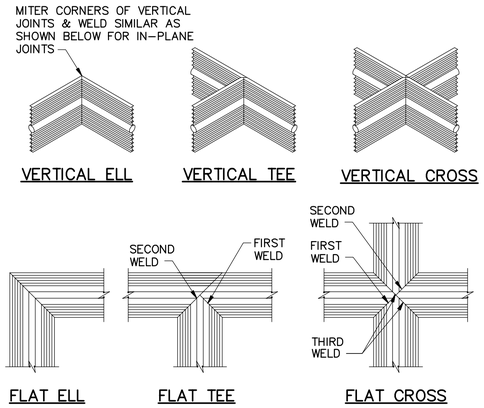
10 – PVC RETROFIT WATERSTOP
N.T.S.



NOTES:

1. JOIN WATERSTOP TO FORM A CONTINUOUS UNBROKEN WATERSEAL.
2. ASSEMBLE 'TEES', 'CROSSES', AND 'ELLS' ACCURATELY.
3. WELD STRAIGHT BUTT SPLICE WATERSTOP IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. WELD TO PENETRATE FULL DEPTH OF THE WATERSTOP MATERIAL AT SPLICES.

2 – PVC WATERSTOP
N.T.S.

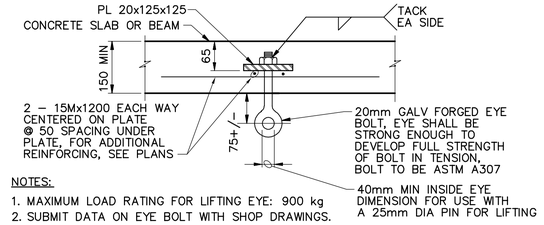


NOTE:

ALL WELDS SHOWN SHALL BE BY WATERSTOP MANUFACTURER (SEE SPECIFICATIONS)

WATERSTOP JOINTS

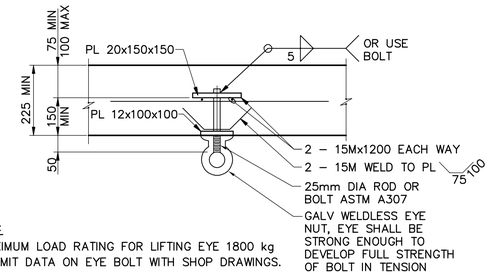
7 – DETAIL
N.T.S.



NOTES:

1. MAXIMUM LOAD RATING FOR LIFTING EYE: 900 kg
2. SUBMIT DATA ON EYE BOLT WITH SHOP DRAWINGS.

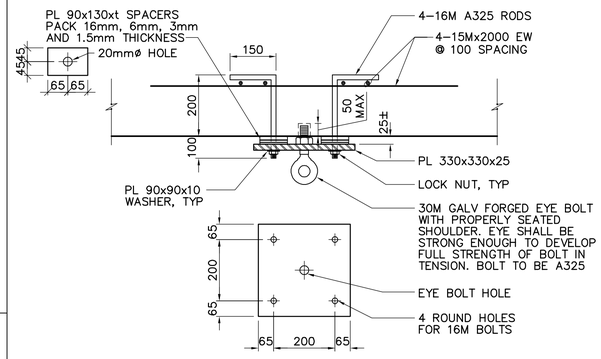
TYPE 1



NOTES:

1. MAXIMUM LOAD RATING FOR LIFTING EYE 1800 kg
2. SUBMIT DATA ON EYE BOLT WITH SHOP DRAWINGS.

TYPE 2

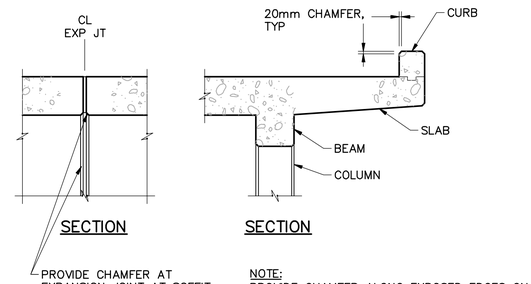


NOTES:

1. MAXIMUM LOAD RATING FOR LIFTING EYE 4000 kg
2. SUBMIT DATA ON EYE BOLT WITH SHOP DRAWINGS.

TYPE 3

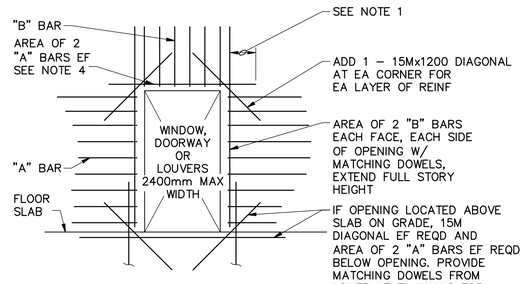
3 – LIFTING EYE – TYPE
N.T.S.



NOTE:

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

6 – CHAMFERS
N.T.S.

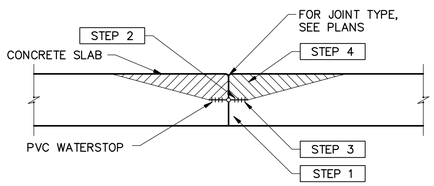


ELEVATION

NOTES:

1. PROVIDE MINIMUM LAP, SEE GENERAL STRUCTURAL NOTES ON DWG WM–S9002.
2. TYPICAL FOR ALL OPENINGS IN ALL CONCRETE WALLS UNLESS INDICATED OTHERWISE ON PLANS.
3. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.
4. IF THE WIDTH OF DOORWAY, LOUVERS, WINDOWS AND OTHER OPENINGS IS GREATER THAN 2400 & LESS THAN 4500 PROVIDE 3–25M OR AREA OF 2A BAR EF, WHICHEVER IS GREATER. LENGTH OF BAR = WIDTH OF OPENING + 600 UNO.

4 – OPENING REINFORCING
N.T.S.



NOTES:

PLACEMENT SEQUENCE SHOWN REQUIRED ON BOTH SIDES OF JOINTS, IN ALL CONCRETE SLAB AND FOOTING POURS WITH HORIZONTALLY PLACED PLASTIC WATERSTOPS.

STEP 1

PLACE CONCRETE BELOW WATERSTOP FIRST, REMOVE ALL AIR VOIDS BY VIBRATING THOROUGHLY.

STEP 2

TO CONFIRM THERE ARE NO AIR VOIDS, LIFT WATERSTOP. A CONTINUOUS IMPRESSION OF THE WATERSTOP, INCLUDING EDGE OF BULB, SHOULD BE VISIBLE IN THE FRESH CONCRETE. CONTINUE THIS PROCEDURE ALONG THE ENTIRE POURED JOINT, END TO END. IF A CONTINUOUS IMPRESSION IS CONFIRMED, PROCEED WITH STEP 4. IF A VOID LARGER THAN 6mm IN DIAMETER IS PRESENT ANYWHERE IN THE WATERSTOP IMPRESSION, PROCEED WITH STEP 3.

STEP 3

IF A VOID LARGER THAN 6mm IN DIAMETER IS PRESENT IN THE WATERSTOP IMPRESSION, ADDITIONAL CONCRETE SHALL BE PLACED UNDER THE WATERSTOP, VIBRATED, AND STEP 2 REPEATED.

STEP 4

FINISH PLACING CONCRETE ABOVE THE WATERSTOP TO TOP OF SLAB.

CONCRETE PLACEMENT SEQUENCE

9 – DETAIL
N.T.S.

APEGM
Certificate of Authorization
CH2M HILL Canada Ltd.
No. 1441 Expiry: April 30, 2006

B.M.
ELEV.

NO.	REVISIONS	DATE	BY
00	ISSUED FOR TENDER	2006/02/03	DK

CH2MHILL
Fredericksen Cooper ARCHITECTS
EarthTech A Tyco International Ltd. Company

DESIGNED BY	DK	CHECKED BY	AP
DRAWN BY	PT	APPROVED BY	DJT
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	R. SOROKOWSKI
DATE	2005/08/31	DATE	2006/02/08

ENGINEER'S SEAL
ORIGINAL SIGNED BY
D. KRUGER
2006/02/06

CONSULTANT DRAWING NO.
WB–S0456

Winnipeg
THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

WATER TREATMENT PLANT
FOUNDATIONS AND CONCRETE STRUCTURES
STRUCTURAL
STANDARD DETAILS

CITY FILE NUMBER
SHEET OF
CITY DRAWING NUMBER
1-0601B-A-S0456-001-00D

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