

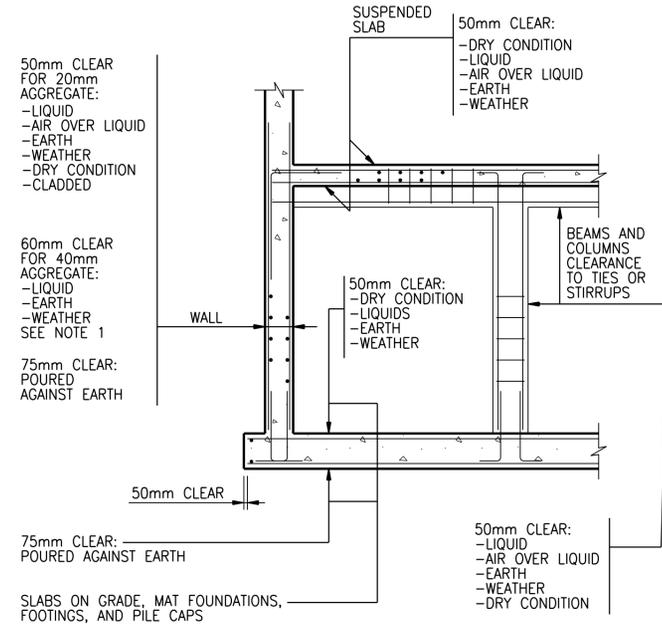
REINFORCING BAR YIELD STRENGTH = 400MPa

SPECIFIED CONCRETE STRENGTH	BAR LOCATION	LAP TYPE	BAR SIZE						
			10M	15M	20M	25M	30M	35M	
F <sub>c</sub> =20MPa	TOP	CLASS A	450	650	850	1350	1600	2000	
	OTHER	CLASS B	550	850	1100	1750	2050	2600	
F <sub>c</sub> =25MPa	TOP	CLASS A	350	500	650	1050	1250	1550	
	OTHER	CLASS B	450	650	850	1350	1600	2000	
F <sub>c</sub> =30MPa 32MPa	TOP	CLASS A	400	600	750	1200	1450	1800	
	OTHER	CLASS B	500	750	1000	1550	1850	2300	
F <sub>c</sub> =35MPa	TOP	CLASS A	300	450	600	900	1100	1400	
	OTHER	CLASS B	400	600	750	1200	1450	1800	
F <sub>c</sub> =40MPa	TOP	CLASS A	350	550	700	1100	1300	1650	
	OTHER	CLASS B	450	700	900	1400	1700	2100	
F <sub>c</sub> =35MPa	TOP	CLASS A	300	400	500	800	950	1150	
	OTHER	CLASS B	350	500	650	1000	1200	1500	
F <sub>c</sub> =40MPa	TOP	CLASS A	300	450	600	950	1150	1400	
	OTHER	CLASS B	300	350	500	750	900	1100	

- NOTES:**
- TOP BARS ARE:
    - ALL BARS IN CONCRETE WITH MORE THAN 300mm CONCRETE BELOW.
    - ALL HORIZONTAL BARS IN WALLS.
  - PROVIDE CLASS B LAP UNLESS NOTED OTHERWISE.
  - LAP SPLICE LENGTHS SHOWN IN THE TABLE ARE BASED ON HEAVIER CONFINED BARS.
  - TABLE APPLIES UNLESS SHOWN OTHERWISE.
  - DEVELOPMENT LENGTHS ARE EQUAL TO CLASS A LAP SPLICES.

**REINFORCING BAR TENSION LAP SPLICE TABLE**

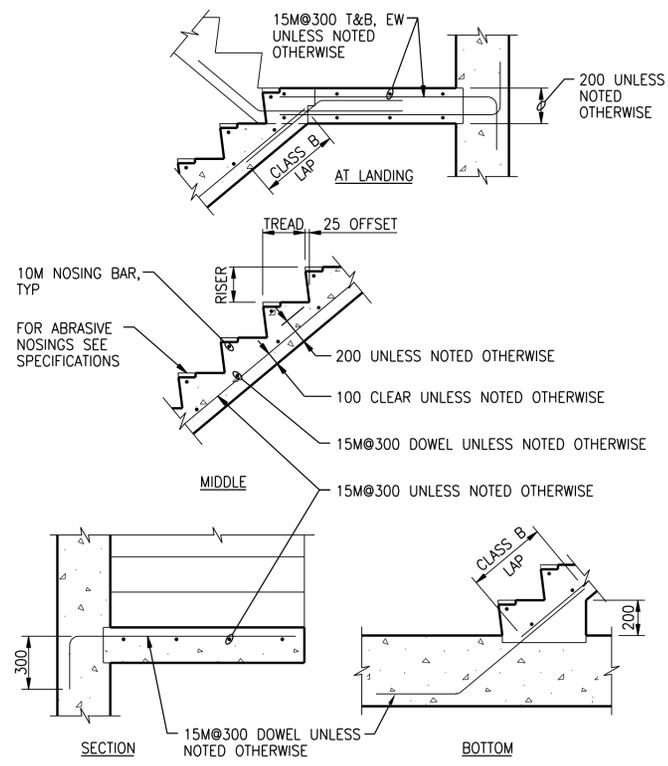
NTS (0330-801)



- NOTES:**
- PROVIDE 50mm CLEARANCE ON FACE EXPOSED TO DRY CONDITION.
  - SPECIFIED COVER WILL PROVIDE MINIMUM 3 HOUR FIRE RATING. WHERE 4 HOUR FIRE RATING IS REQUIRED, AS NOTED ON DRAWINGS, INCREASE CLEAR COVER FOR WALLS AND COLUMNS TO 62.5mm.

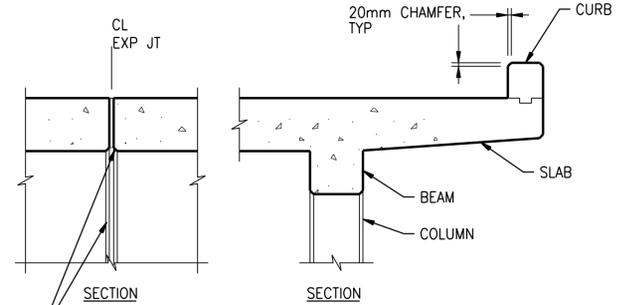
**CONCRETE COVER TO REINFORCING**

NTS (0330-803)



**TYPICAL CONCRETE STAIR REINFORCING**

NTS (0330-805)

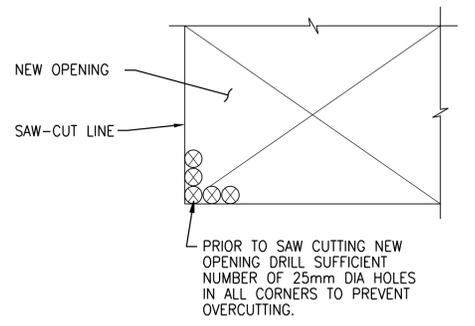


PROVIDE CHAMFER AT EXPANSION JOINT AT SOFFIT OF SLABS AND ON WALLS IN DRY AREAS.

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

**CHAMFERS**

NTS (0330-806)

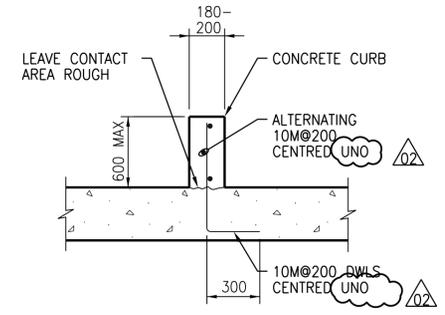


EXISTING WALL ELEVATION OR SLAB PLAN DETAIL

- NOTES:**
- LOCATE ANY EXISTING UTILITIES THAT COULD BE AFFECTED WITH DEMOLITION. REPORT TO THE ENGINEER IF ANY UTILITIES ARE FOUND.
  - STAY WITHIN LIMITS OF OPENING, DO NOT OVERCUT.
  - BURN BACK EXPOSED REINFORCING 25mm AND DRY PACK WITH NON SHRINK GROUT.
  - REFER TO DETAIL (0330-143).

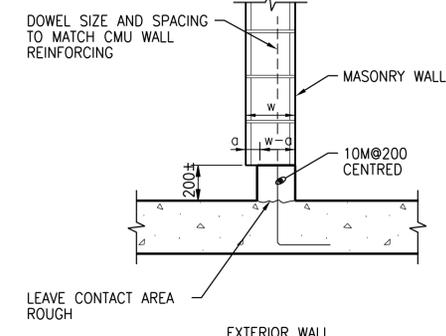
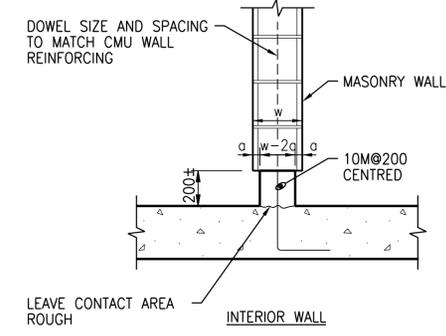
**NEW OPENING THROUGH EXISTING OR SLAB**

NTS (0330-808)



**CONCRETE CONTAINMENT CURB**

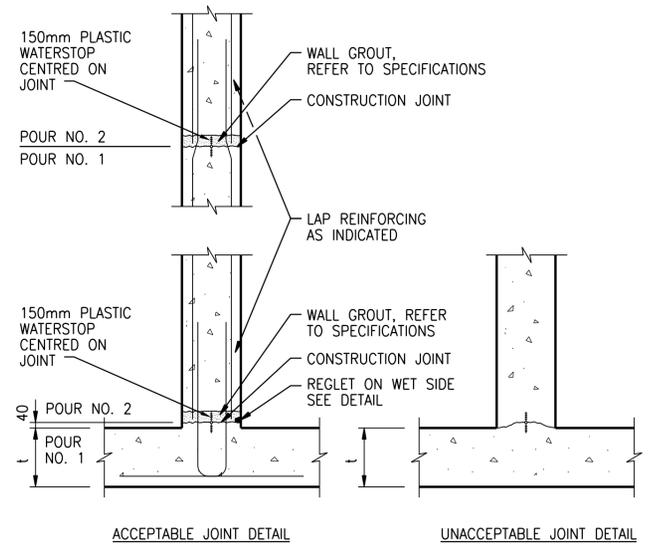
NTS (0330-810)



**NOTE:**  
1. a = OVERHANG  
w = WIDTH OF MASONRY WALL

**CONCRETE CURB UNDER MASONRY**

NTS (0330-811)



**WALL CONSTRUCTION JOINTS**

NTS (0330-812)



NO.	REVISIONS	DATE	DESIGN	CHECK
02	ISSUED FOR ADD. 2 - B.O. 899-2015	02/2016	G.O. J.C.	
01	ISSUED FOR CONSTRUCTION	10/2015	G.O. J.C.	
00	ISSUED FOR TENDER	08/2015	G.O. J.C.	

**CH2MHILL**

SNC-LAVALIN

DESIGNED BY: J. THANNICKAL

CHECKED BY: E. LUI

DRAWN BY: G. OMORI

APPROVED BY: H.T. FREIHAMMER

SCALE: NTS

ISSUED FOR CONSTRUCTION BY: T. TURZAK

DATE: 2015/08/13

DATE: 2016/00/00

CONSULTANT NO.: 474248

ENGINEER'S SEAL

24/02/2016

PROVINCE OF MANITOBA

S.L.E. LUI

Member 37003

REGISTERED PROFESSIONAL ENGINEER

THE CITY OF WINNIPEG

Winnipeg WATER AND WASTE DEPARTMENT

SOUTH END WATER POLLUTION CONTROL CENTRE

SEWPCU UPGRADING/EXPANSION PROJECT

STRUCTURAL STANDARD DETAILS (6)

CITY DRAWING NUMBER: 1-0102-SDTL-A007

SHEET: 02

REV: A1

SIZE: A1