

ONLY FOR : 30 MPa CONCRETE, NORMAL WEIGHT
400 MPa REINFORCING BAR

BAR SIZE	TOP BARS (mm)		OTHER BARS (mm)	
	DEVELOPMENT LENGTH	TENSION LAP LENGTH	DEVELOPMENT LENGTH	TENSION LAP LENGTH
10M	350	440	300	350
15M	510	670	400	510
20M	690	890	550	690
25M	1080	1400	830	1080
30M	1290	1670	990	1290
35M	1500	1950	1160	1500

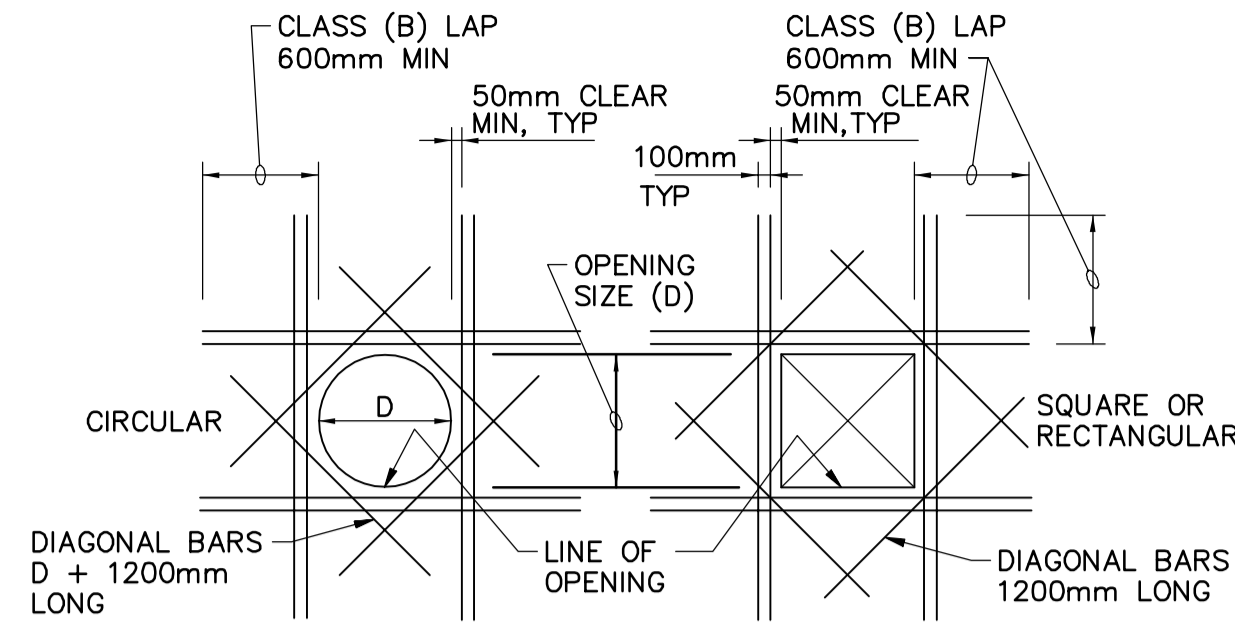
ONLY FOR : 35 MPa CONCRETE, NORMAL WEIGHT
400 MPa REINFORCING BAR

BAR SIZE	TOP BARS (mm)		OTHER BARS (mm)	
	DEVELOPMENT LENGTH	TENSION LAP LENGTH	DEVELOPMENT LENGTH	TENSION LAP LENGTH
10M	330	410	300	330
15M	480	620	370	480
20M	640	830	490	640
25M	990	1290	790	990
30M	1200	1550	920	1200
35M	1390	1800	1070	1390

NOTES:

- TOP BARS ARE:
 - ALL BARS IN CONCRETE WITH MORE THAN 300mm CONCRETE BELOW.
 - ALL HORIZONTAL BARS IN WALLS.
- TABLE APPLIES UNLESS SHOWN OTHERWISE.

1 REINFORCEMENT DEVELOPMENT LENGTH AND TENSION LAP LENGTH FOR SLABS AND WALLS
N.T.S.



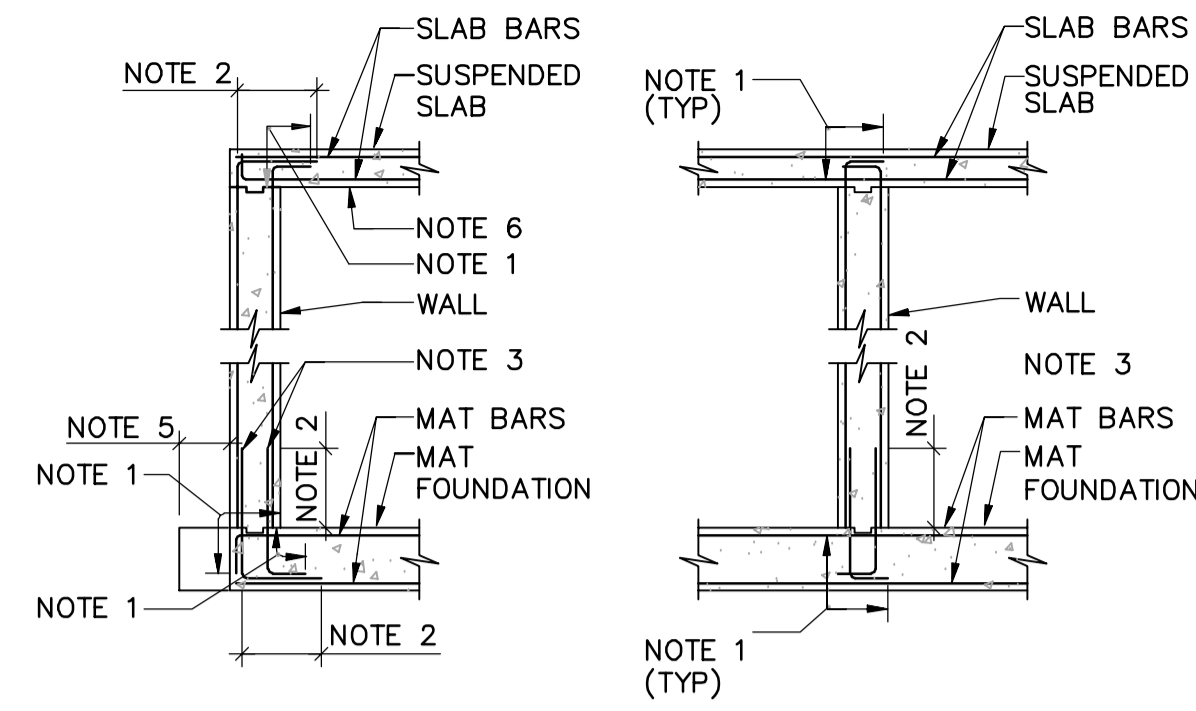
PLAN OR ELEVATION

NOTES:

- 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.
- FOR OPENINGS LESS THAN 400mm: NO EXTRA BARS ARE REQUIRED ADJUST REGULAR REINFORCING AROUND OPENINGS.

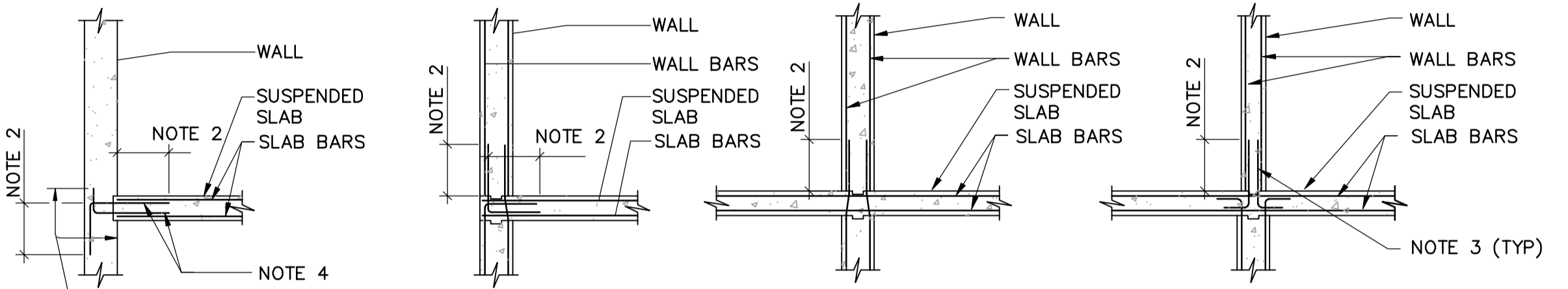
WALL OR SLAB THICKNESS t (mm)	DIAGONAL REINFORCING		
	t < 200	t < 250	t > 250
LAYERS OF REINFORCING	1	1	2
REINFORCING FOR OPENINGS D ≥ 600mm	1-15M IN EACH CORNER IN CENTRE OF WALL OR SLAB (4 TOTAL)	1-15M IN CENTER OF WALL OR SLAB (4 TOTAL)	2-15M IN EACH CORNER IN EACH LAYER WALL OR SLAB (8 TOTAL)

2 EXTRA REINFORCING AT OPENINGS IN WALLS AND SLABS
N.T.S.

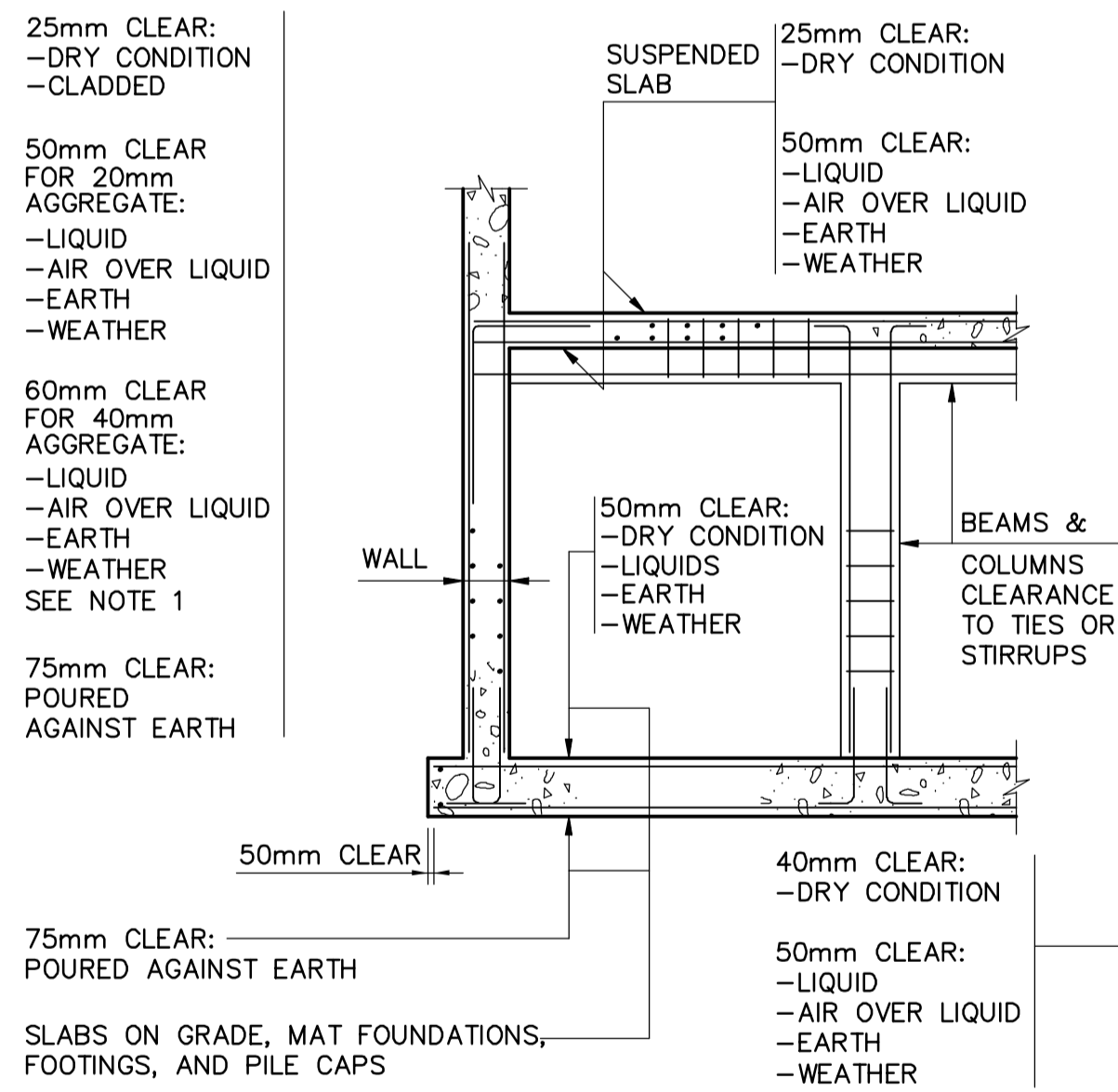


(EXTERIOR WALL CONDITION)

(INTERIOR WALL CONDITION)



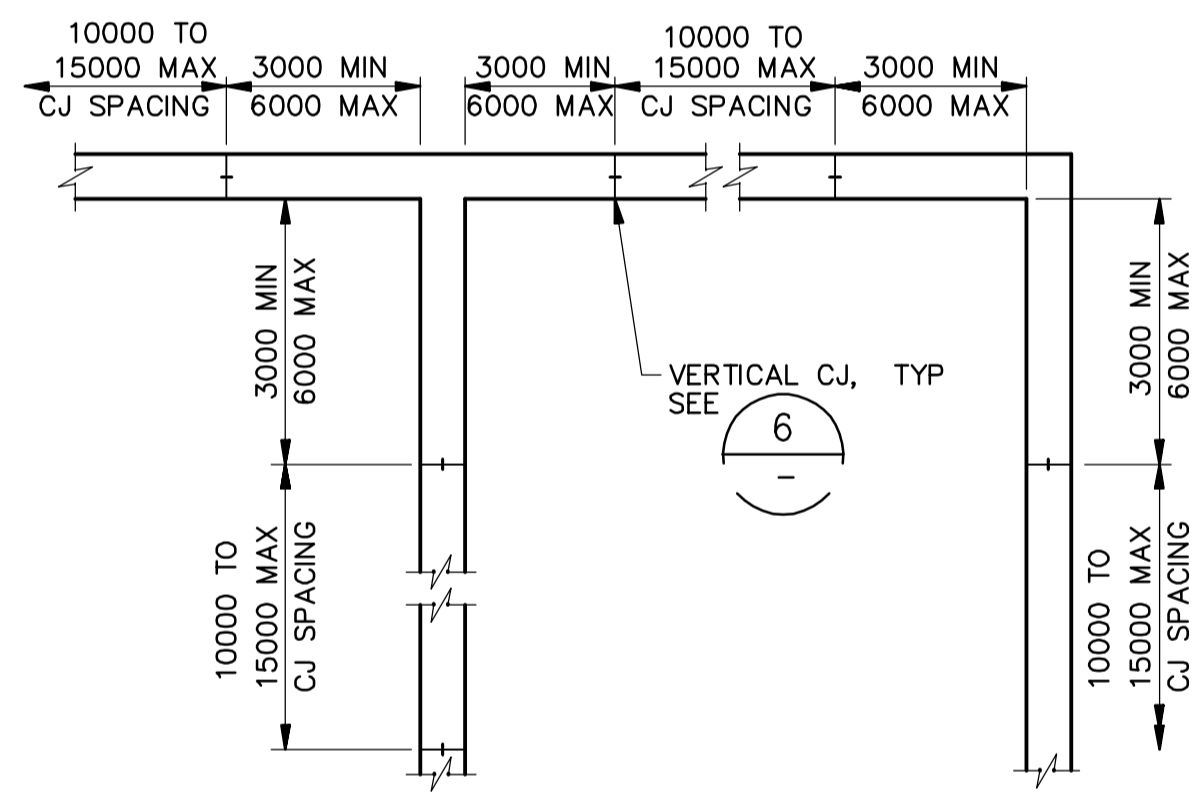
3 REINFORCING AT WALL AND SLAB INTERSECTIONS
N.T.S.



NOTE:

- PROVIDE 50mm CLEAR COVER ON FACE EXPOSED TO DRY CONDITION.

4 CONCRETE COVER TO REINFORCING
N.T.S.

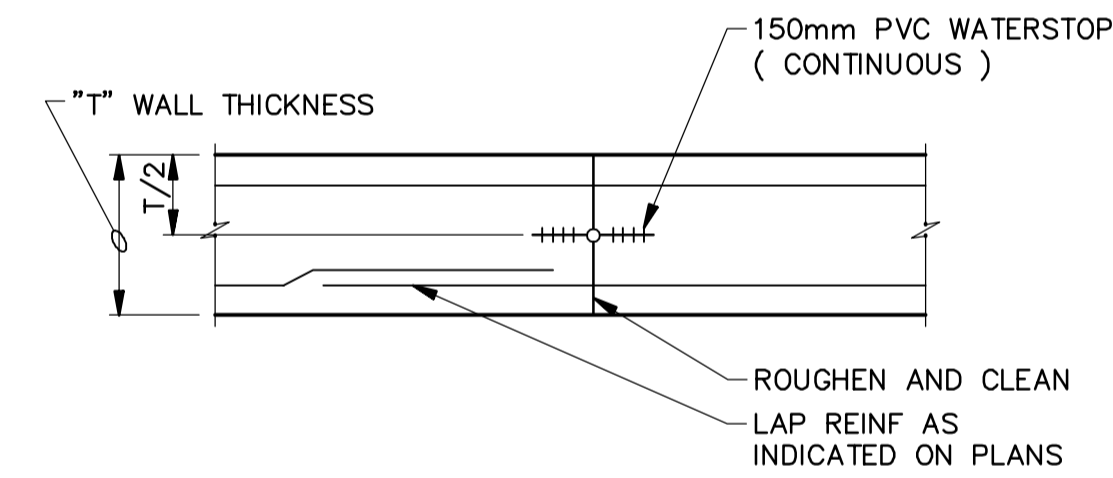


PLAN

NOTES:

- COORDINATE CJ LOCATIONS AND TIME BETWEEN CONCRETE POURS WITH SPECIFICATION 3300.
- LOCATE WALL CJS AS SHOWN, UNLESS INDICATED OTHERWISE.
- THE EXACT SPACING OF CJS VARIES FROM 10 000 TO 15 000, BASED ON APPLICATION. SEE SPECIFICATION.

5 WALL CONSTRUCTION JOINT SPACING
N.T.S.



PLAN

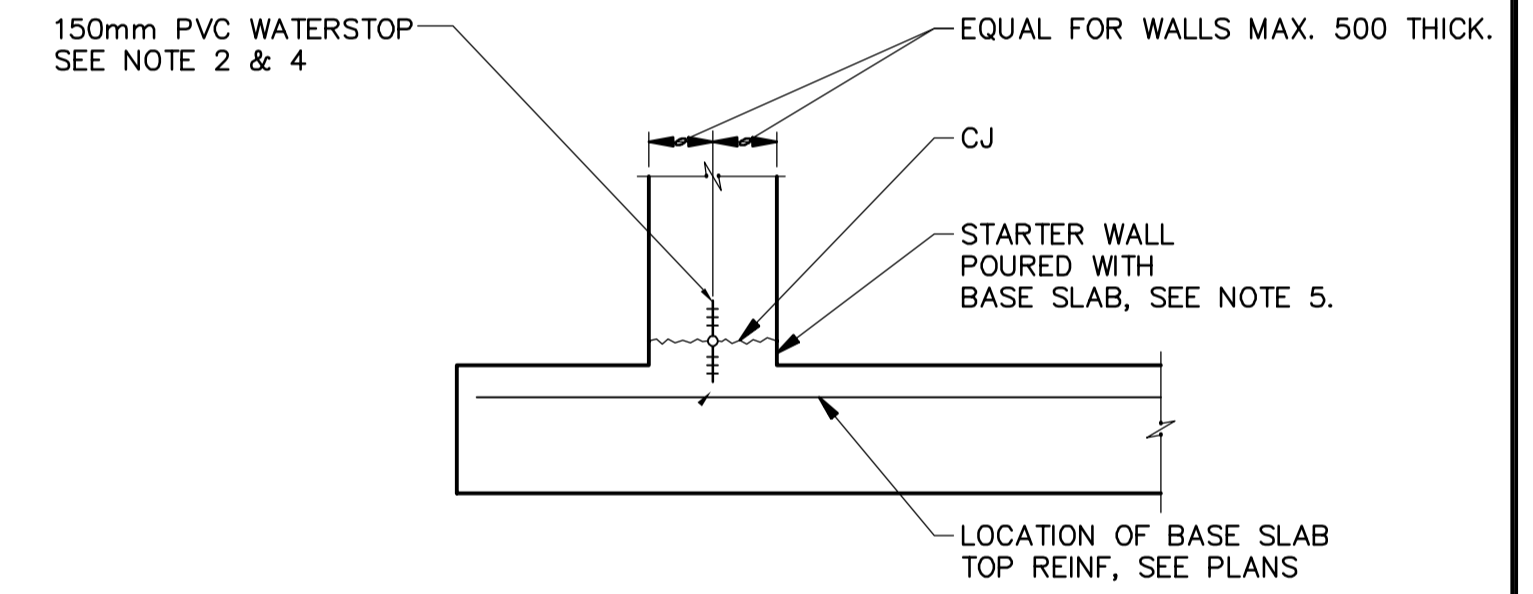
NOTES:

- ALL REINFORCING CONTINUOUS ACROSS JOINT.
- FOR LOCATIONS, SEE **5**.
- FOR PROPERTIES OF WATERSTOP, SEE **7** WB-S0452.

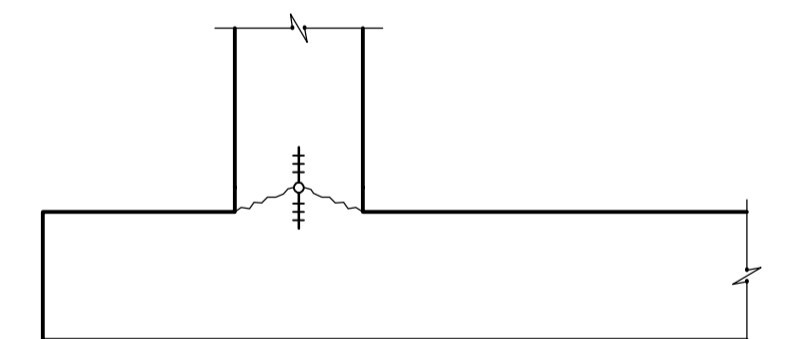
6 WALL VERTICAL CONSTRUCTION JOINT
N.T.S.

NOTES:

- EMBEDMENT LENGTH Ld = CLASS B LAP LENGTH (TOP BARS) BUT NOT LESS THAN A STANDARD HOOK.
- CLASS B LAP UNLESS NOTED OTHERWISE.
- DOWELS TO MATCH WALL REINFORCING UNLESS NOTED OTHERWISE.
- DOWELS TO MATCH SLAB REINFORCING UNLESS NOTED OTHERWISE.
- APPLY DETAIL TO EXTERIOR WALLS WITH UP TO 300mm OF FOOTING PROJECTION.
- PROVIDE SLAB BOTTOM BARS WITH STANDARD HOOK WHERE INDICATED.
- FOR RE-BAR LAP TABLE SEE WB-S0451



TYPICAL BASE



UNACCEPTABLE BASE

NOTES:

- STARTER WALL REQUIRED FOR ALL CJS WITH WATERSTOPS, UNLESS SPECIFICALLY INDICATED OTHERWISE.
- FOR WALLS W/SINGLE MAT OF REINFORCING OR FOR THICK WALLS LOCATE WATERSTOP ON LIQUID FACE, 25mm CLEAR OF REINFORCING.
- SECURE WATERSTOP IN-PLACE AS SPECIFIED.
- FOR PROPERTIES OF WATERSTOP, SEE DETAIL **7** WB-S0452.
- HEIGHT OF STARTER WALL 90mm. PROVIDE MIN 10mm CLEARANCE BETWEEN U/S OF WS & TOP OF REBAR.

7 WALL BASE CONSTRUCTION JOINT
N.T.S.



NO.	REVISIONS	DATE	BY
00	ISSUED FOR TENDER	07/01/31	MH

CH2MHILL Frederickson Cooper ARCHITECTS		EarthTech A 100 International Ltd. Company	
DESIGNED BY	MH	CHECKED BY	AP
DRAWN BY	CR	APPROVED BY	AHL
SCALE:	NTS	RELEASED FOR CONSTRUCTION BY:	R. SOROKOWSKI
DATE	2006/08/18	DATE	2007/01/31

ENGINEER'S SEAL	ORIGINAL SIGNED BY	D. KRUGER
	DATE	2007/01/31
CONSULTANT DRAWING NO.	WJ-S0451	

THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

WATER TREATMENT PLANT
SODIUM HYPOCHLORITE BUILDING
SODIUM HYPOCHLORITE AND CHEMICAL STORAGE BUILDINGS

STRUCTURAL
SODIUM HYPOCHLORITE BUILDING
STANDARD DETAILS

CITY FILE NUMBER
SHEET OF
CITY DRAWING NUMBER
1-0601J-A-S0451-001-000