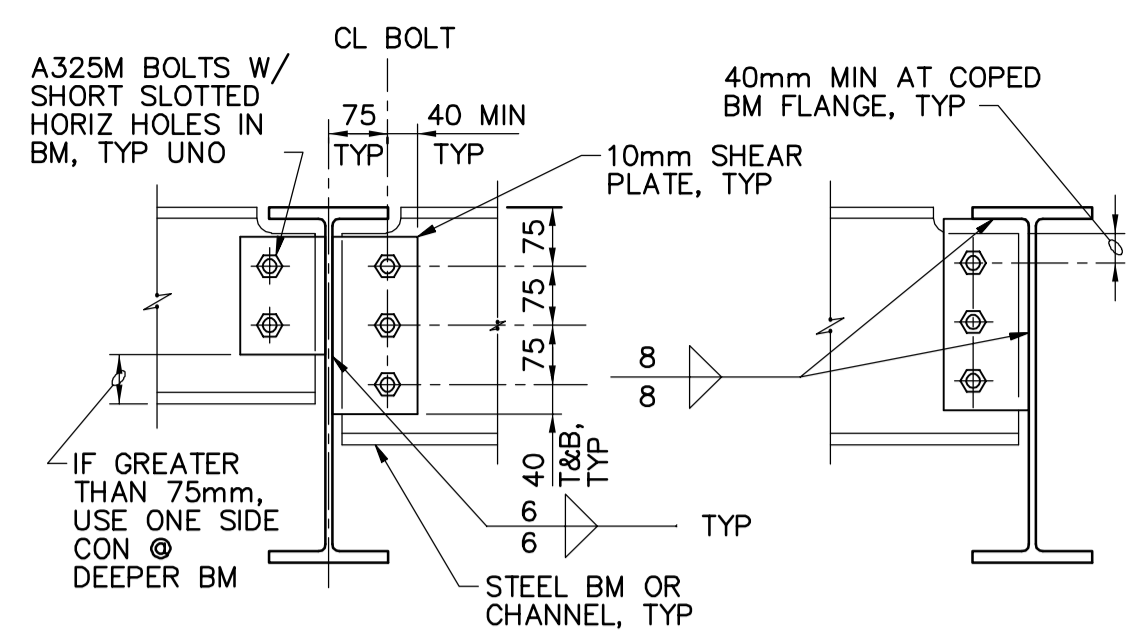


NOMINAL BM DEPTH, mm	ROWS OF BOLTS	BOLT DIA, mm	DOUBLE ANGLE, LENGTH, mm	COMMENTS
920	10	22	750	ANGLE THK = 10
840	9	22	675	ANGLE THK = 10
760	8	22	600	ANGLE THK = 10
690	7	20	520	-
610	6	20	445	-
530	5	20	365	-
410-460	4	20	290	-
310-380	3	20	215	-
200-250	2	20	140	-
150	1	20	75	SEE NOTE 3
100	1	20	65	SEE NOTE 3

**NOTES**

- UNLESS OTHERWISE NOTED, NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS TO ENCLOSE BM WEB.
- ALL BM FRAMING CONNECTIONS SHALL CONFORM TO THIS DETAIL UNLESS SPECIFICALLY NOTED OTHERWISE OR APPROVED IN WRITING BY THE ENGINEER.
- FOR NOMINAL BM DEPTHS LESS THAN 200mm, EXTEND LONG LEG OF DOUBLE ANGLE ALONG BM WEB AND PROVIDE ADDITIONAL BOLT TO ENCLOSE BM WEB AS SHOWN.
- PROVIDE ADDITIONAL 40mm LENGTH TO DOUBLE ANGLE FOR STAGGERED BOLT CONNECTIONS WHEN REQUIRED OR USED.
- DIMENSION SHALL BE 75mm UNLESS OTHERWISE REQUIRED FOR PROPER FABRICATION.

1 TYPICAL BM CONNECTION  
N.T.S.

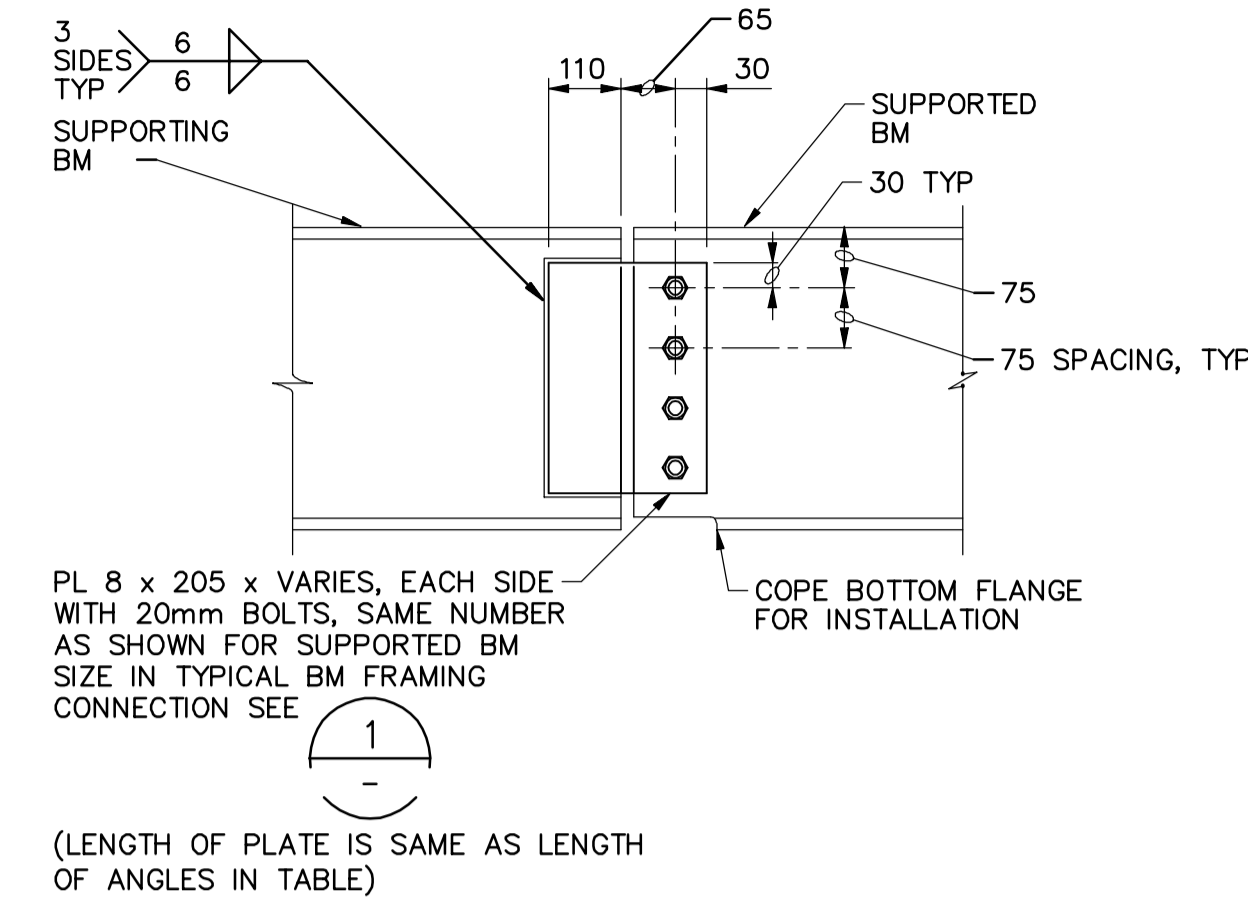


NOMINAL BM DEPTH, mm	ROWS OF BOLTS	BOLT DIA, mm	LENGTH OF SHEAR PLATE, mm, SEE NOTE 3
690	8	22	610
610	7	20	530
530	6	20	460
460	5	20	380
410	4	20	300
310-380	3	20	225
200-250	2	20	150

**NOTES**

- NUMBER OF ROWS IS EQUAL TO NUMBER OF BOLTS CONNECTING SHEAR PLATE TO BM.
- THIS DETAIL APPLIES ONLY WHERE SPECIFICALLY SHOWN ON DRAWINGS.
- AT ONE-SIDE CONNECTIONS, EXTEND TOP OF SHEAR PLATE TO UNDERSIDE OF BM TOP FLANGE AS SHOWN.

2 BM SINGLE PLATE SHEAR CONNECTION  
N.T.S.



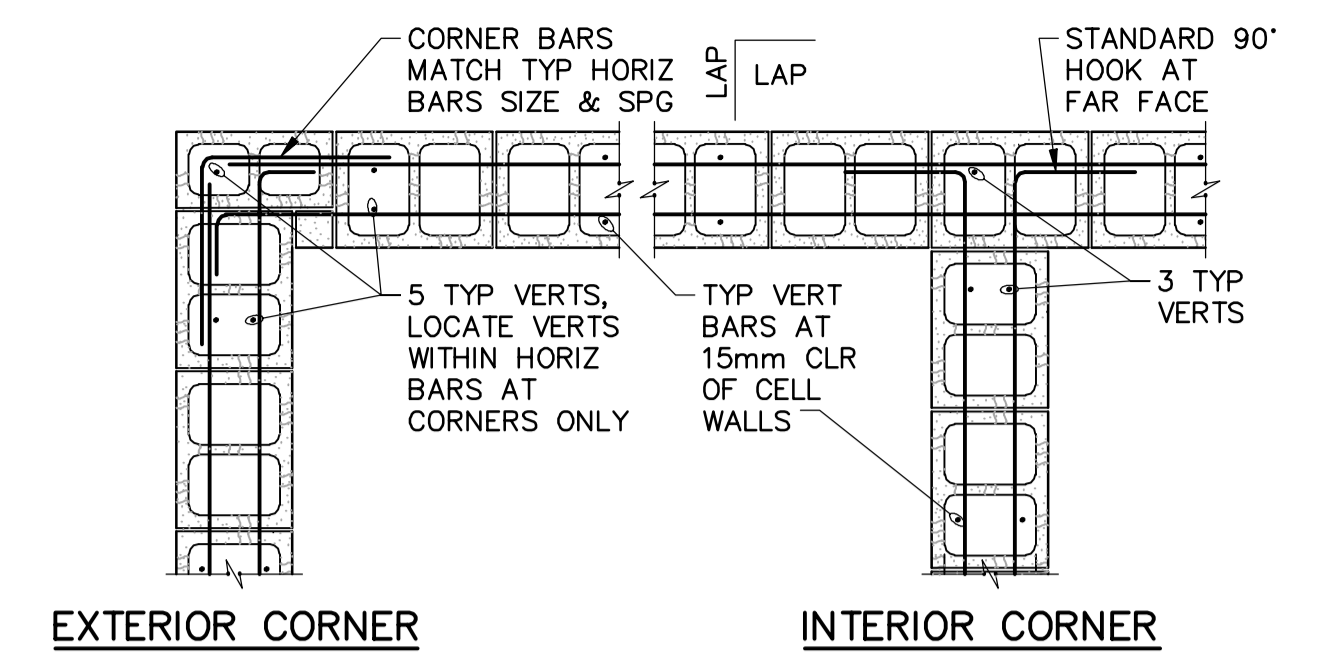
PL 8 x 205 x VARIES, EACH SIDE WITH 20mm BOLTS, SAME NUMBER AS SHOWN FOR SUPPORTED BM SIZE IN TYPICAL BM FRAMING CONNECTION SEE

(LENGTH OF PLATE IS SAME AS LENGTH OF ANGLES IN TABLE)

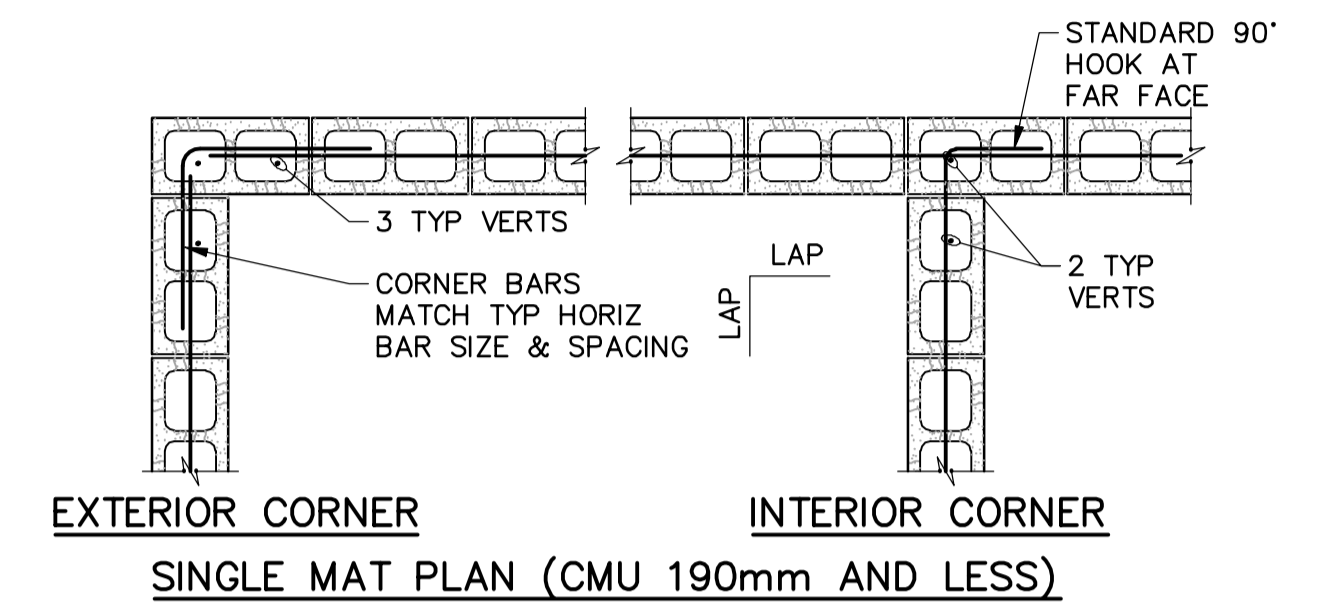
**NOTE:**

PROVIDE SHIM PLATES AS REQUIRED.

3 BM SPLICE  
N.T.S.



EXTERIOR CORNER INTERIOR CORNER  
DOUBLE MAT PLAN (CMU 240mm AND MORE)

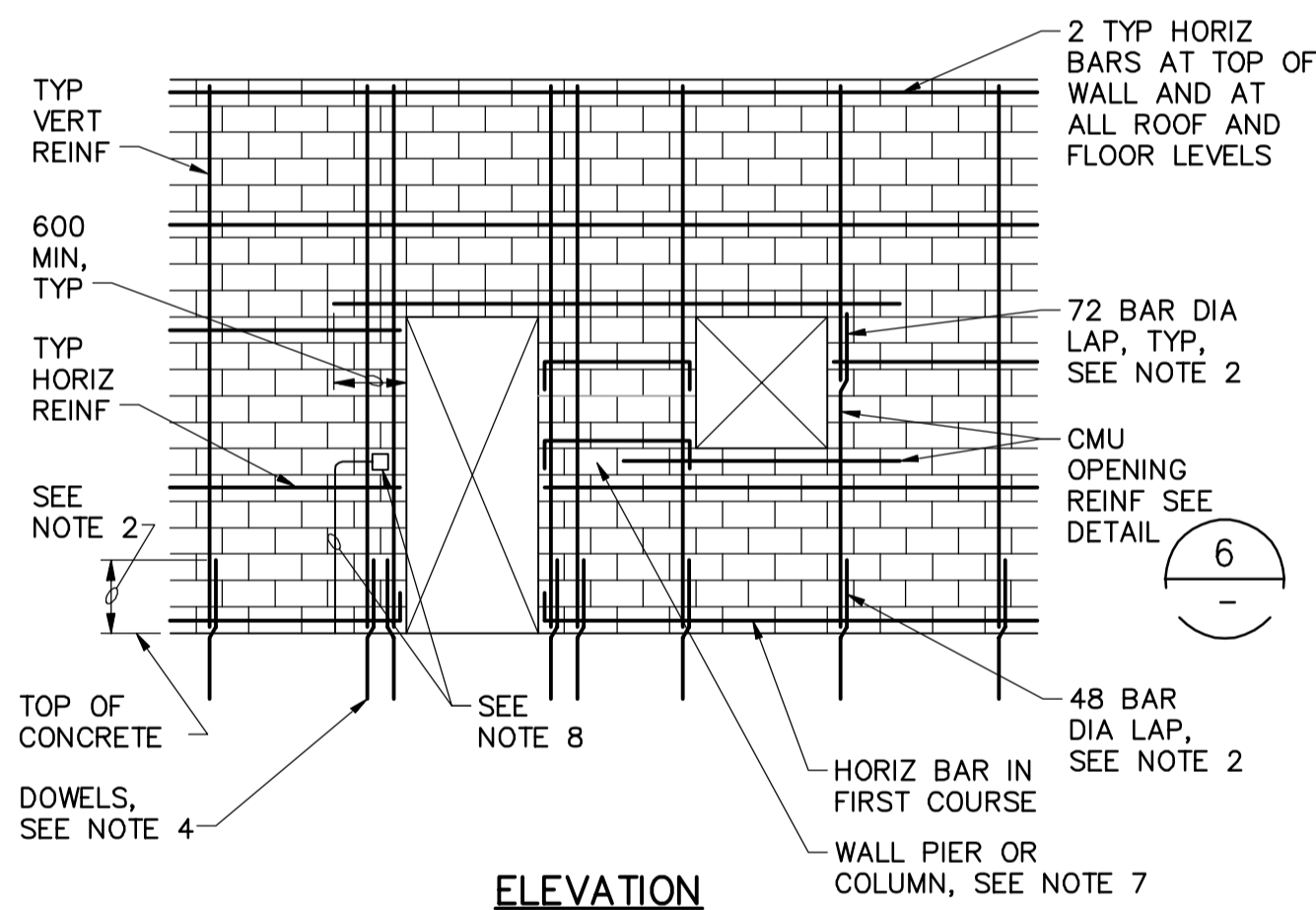


EXTERIOR CORNER INTERIOR CORNER  
SINGLE MAT PLAN (CMU 190mm AND LESS)

**NOTES:**

- LAP = 48 BAR DIAMETERS OR 600 MINIMUM UNLESS OTHERWISE NOTED.
- PROVIDE A STANDARD 90° HOOK EACH END ON ANY HORIZONTAL BAR BETWEEN OPENINGS, CONTROL JOINTS, OR CORNERS LESS THAN 1800 IN LENGTH.

4 CMU WALL CORNERS  
N.T.S.



**ELEVATION**

**NOTES:**

- FOR TYPICAL WALL REINFORCING, SEE WALL SECTIONS AND DETAILS FOR EACH FACILITY.
- LAP VERTICAL REINFORCING WITH WALL DOWELS 48 BAR DIAMETERS (600mm MIN), LAP ALL OTHER VERTICAL BARS 72 BAR DIAMETERS.
- STAGGER SPLICES IN ADJACENT HORIZONTAL BARS IN THE SAME COURSE BY 600mm.
- DOWEL BARS IN FOUNDATION.
- FOR ADDED REINFORCING AT WALL INTERSECTIONS AND CORNERS, SEE DETAIL 4.
- GROUT EACH SIDE OF OPENING AS NOTED IN TYPICAL OPENING REINFORCING, SEE DETAIL 6.
- FOR HORIZONTAL REINFORCING AT OPENINGS SEE COLUMN AND PIER DETAILS.
- DO NOT PLACE VERTICAL CONDUIT IN THE SAME CELL AS VERTICAL REINFORCING.

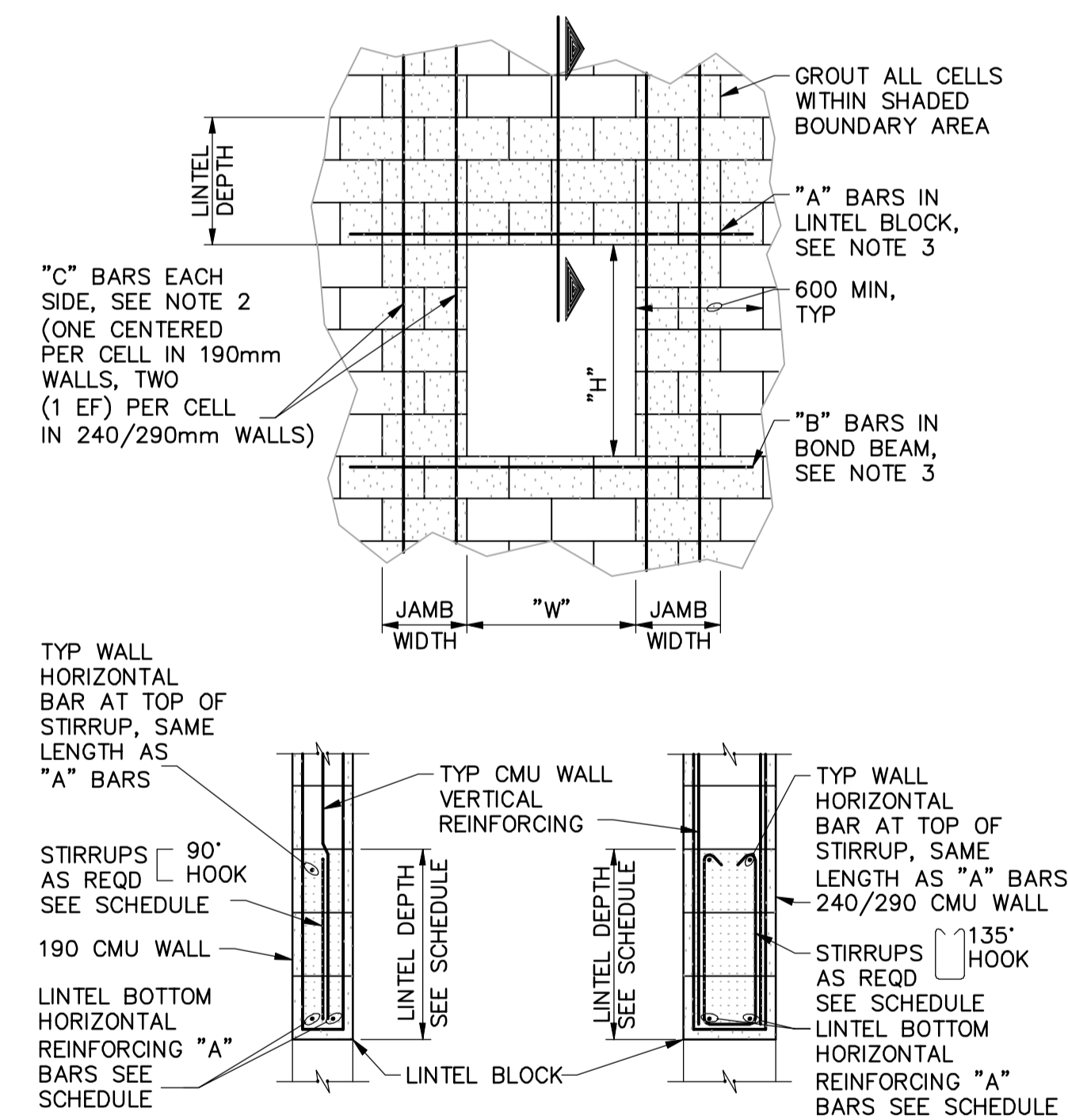
5 REINFORCED CMU WALL  
N.T.S.

CMU OPENING REINF SCHEDULE						
190mm WALLS						
W	LINTEL DEPTH	STIRRUP SIZE, SPG	"A" BARS	"B" BARS	"C" BARS	JAMB WIDTH
≤800	200mm	-	1	1	1	200mm
>800≤1200	400mm	-	2	1	1	200mm
>1200≤1800	600mm	10M@200	2	1	2	400mm
>1800≤2400	800mm	10M@400	2	2	3	600mm
>2400≤3000	1200mm	10M@600	2	2	3	600mm
240/290mm WALLS						
W	LINTEL DEPTH	STIRRUP SIZE, SPG	"A" BARS	"B" BARS	"C" BARS	JAMB WIDTH
≤800	200mm	-	2	2	2	200mm
>800≤1200	400mm	-	2	2	2	200mm
>1200≤1800	600mm	10M@200	2	2	4	400mm
>1800≤2400	800mm	10M@400	2	2	6	600mm
>2400≤3000	1200mm	10M@600	2	2	6	600mm

**NOTES:**

- USE BAR QUANTITIES AND SIZES GIVEN IN LINTEL SCHEDULE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- EXTEND "C" BARS 48 BAR DIAMETERS OR 600mm MINIMUM BEYOND TOP AND BOTTOM OF OPENING EXCEPT THAT WHEN "H" OR "W" EXCEEDS 600mm, "C" BARS SHALL EXTEND FULL HEIGHT. WHERE THERE IS LESS THAN 2400mm BETWEEN ADJACENT OPENINGS, EXTEND REINFORCING CONTINUOUS TO 800mm BEYOND FURTHEST OPENING.
- "A" AND "B" BARS SHALL EXTEND 48 BAR DIAMETERS OR 600mm MINIMUM EACH SIDE OF THE OPENINGS.
- FOR BAR SIZES, MATCH TYPICAL WALL REINFORCING AS SHOWN ON THE BUILDING WALL SECTIONS.
- BAR A = 20M DIA, BAR B & C = 15M DIA

6 CMU OPENING REINFORCING  
N.T.S.



190mm LINTEL SECTION 240/290mm LINTEL SECTION

<p>Certificate of Authorization CH2M HILL Canada Ltd. No. 1441 Expiry: April 30, 2007</p>	<p>B.M. ELEV.</p>	<p>CH2MHILL Frederickson Cooper ARCHITECTS</p>	<p>EarthTech A 100 International Ltd. Company</p>	<p>ENGINEER'S SEAL</p>	<p>THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT ENGINEERING DIVISION</p> <p>WATER TREATMENT PLANT SODIUM HYPOCHLORITE BUILDING SODIUM HYPOCHLORITE AND CHEMICAL STORAGE BUILDINGS</p> <p>STRUCTURAL SODIUM HYPOCHLORITE BUILDING STANDARD DETAILS</p>
	<p>DESIGNED BY MH</p>	<p>CHECKED BY AP</p>	<p>ORIGINAL SIGNED BY D. KRUGER</p>	<p>CITY FILE NUMBER</p>	
	<p>DRAWN BY CR</p>	<p>APPROVED BY AHL</p>	<p>2007/01/31</p>	<p>SHEET OF</p>	
	<p>SCALE: NTS</p>	<p>RELEASED FOR CONSTRUCTION BY: R. SOROKOWSKI</p>	<p>CONSULTANT DRAWING NO. WJ-S0456</p>	<p>CITY DRAWING NUMBER 1-0601J-A-S0456-001-000</p>	
<p>00 ISSUED FOR TENDER 07/01/31 MH</p>	<p>DATE BY DATE 2006/08/22</p>	<p>DATE 2007/01/31</p>	<p>DATE 2007/01/31</p>	<p>DATE 2007/01/31</p>	<p>DATE 2007/01/31</p>