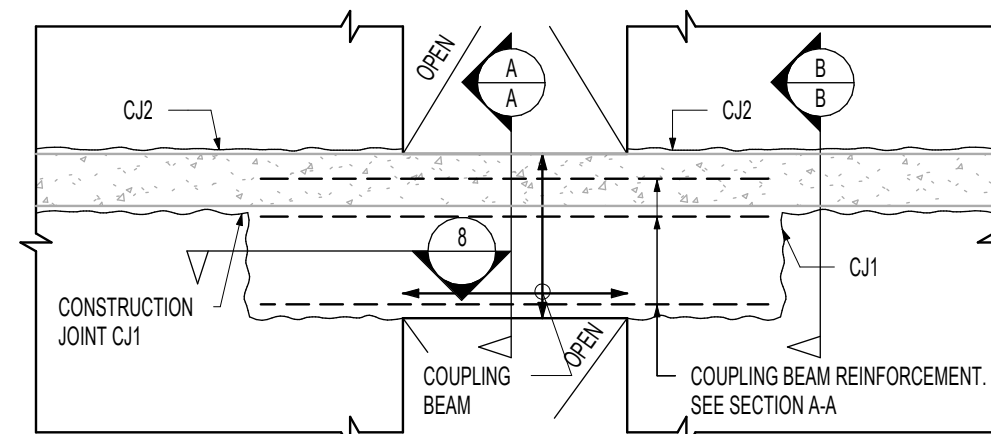


1 TYPICAL COUPLING BEAM REINFORCEMENT DETAIL

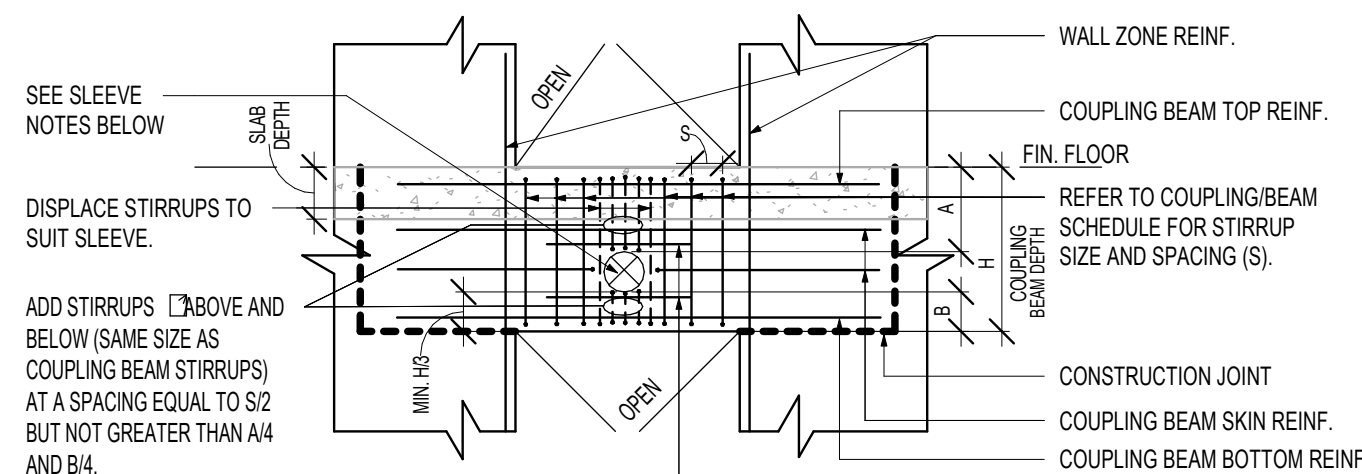


OPTION 1

- NOTES:
- OPTION 1: POUR WALLS FIRST, WITH VERTICAL JOINT C/J BETWEEN THE WALLS AND THE COUPLING BEAM. POUR COUPLING BEAM WITH THE SLAB (NO HORIZONTAL JOINT BETWEEN THE SLAB AND THE COUPLING BEAM). PUDDLE COUPLING BEAM AND SLAB IF f_c SLAB $< f_c$ COUPLING BEAM (SEE DETAIL A-A).
 - OPTION 2: IF APPROVED BY CONSULTANT, POUR COUPLING BEAM TO UNDERSIDE OF SLAB WITH THE WALLS, (HORIZONTAL C/J BETWEEN THE SLAB AND THE WEB OF COUPLING BEAM). PUDDLE SLAB IF f_c SLAB $< f_c$ COUPLING BEAM (SEE DETAIL B-B).

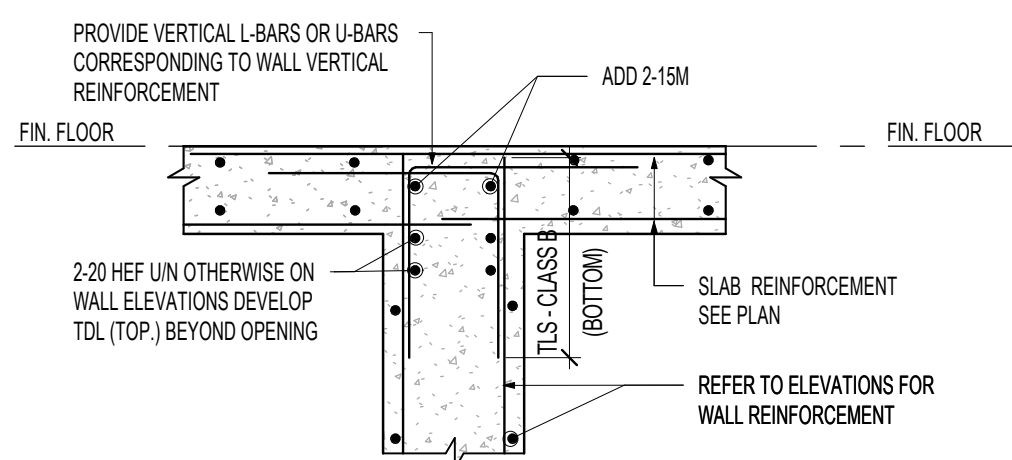
1A TYPICAL SHEAR WALL AND COUPLING (LINTEL) BEAM CONSTRUCTION JOINT DETAIL

OPTION 2

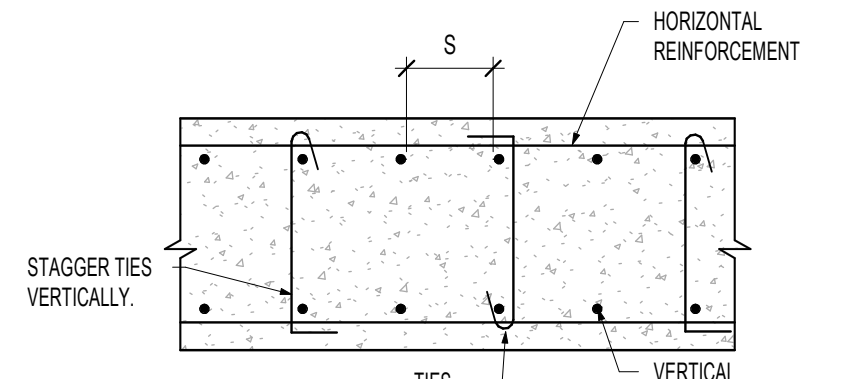


- NOTE:
- APPROVAL MUST BE OBTAINED FROM ENGINEER FOR ALL SLEEVES LARGER THAN H/4.
 - MULTIPLE SLEEVES (MAX 3 SLEEVES WITH $\phi < H/4$) SHALL BE PLACED WITH MIN 250mm CLEAR BETWEEN SLEEVES.

3 TYPICAL ADDITIONAL REINFORCEMENT COUPLING BEAM SLEEVES UP TO H/4

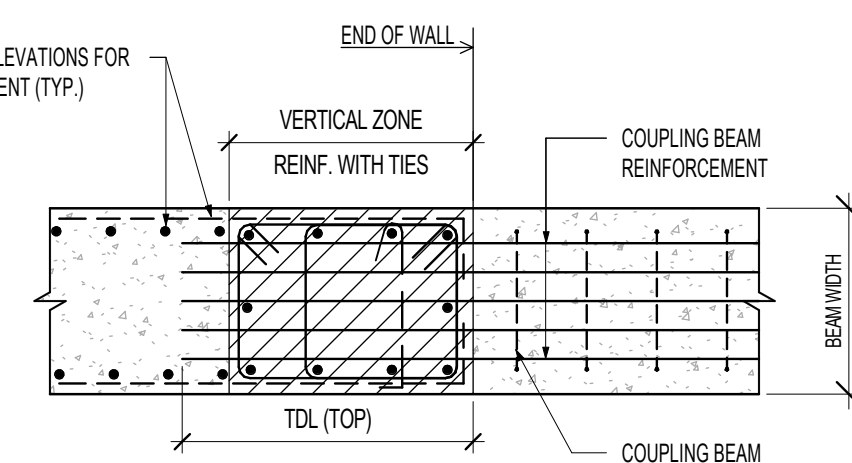


4 TYPICAL DETAIL AT TOP OF WALLS AND BELOW OPENINGS WHERE COUPLING BEAM IS NOT PROVIDED



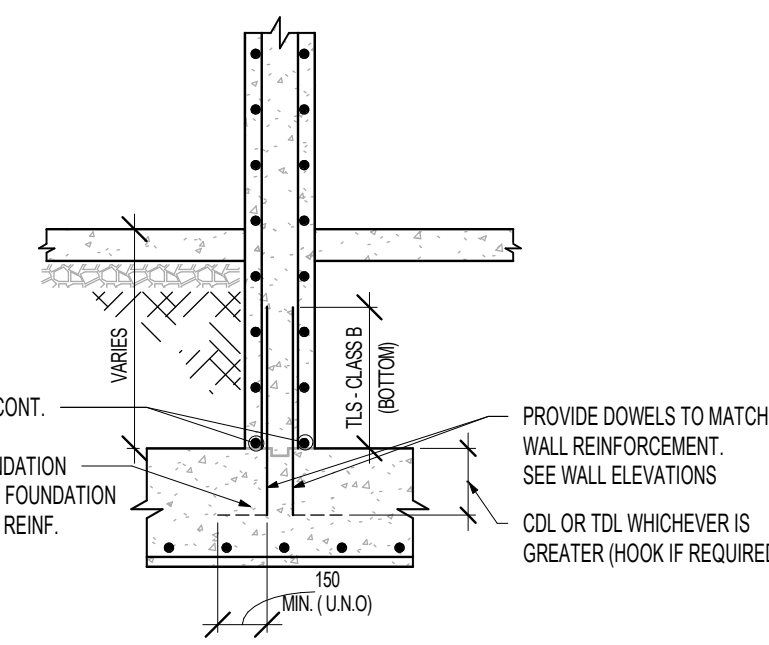
- NOTE:
- PROVIDE TIES TO DISTRIBUTED WALL REINFORCEMENT WITH VERTICAL SPACING AS PER TABLE 2 UNLESS NOTED OTHERWISE ON WALL ELEVATIONS.
 - WHEN CLEAR SPACE (S) BETWEEN VERTICAL DISTRIBUTED REINFORCEMENT IS LARGER THAN 150mm, PROVIDE TIES AT EVERY VERTICAL BAR. WHEN $S \leq 150$, TIES MAY BE PROVIDED AT EVERY OTHER VERTICAL BAR AS SHOWN ABOVE.
 - REFER TO ZONE REINFORCEMENT DETAILS FOR TIES IN THOSE AREAS.

7 TYPICAL TIE DETAIL FOR DISTRIBUTED VERTICAL WALL REINFORCEMENT

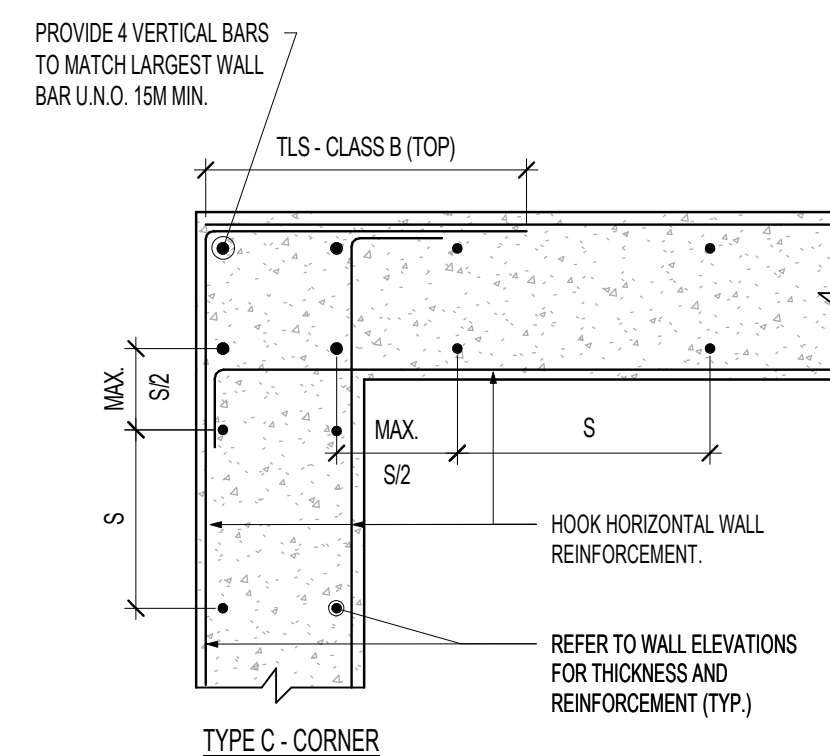


- NOTE:
- COORDINATE WALL ZONE VERTICAL BAR PLACEMENT WITH BEAM HORIZONTAL REINFORCEMENT ARRANGEMENT.

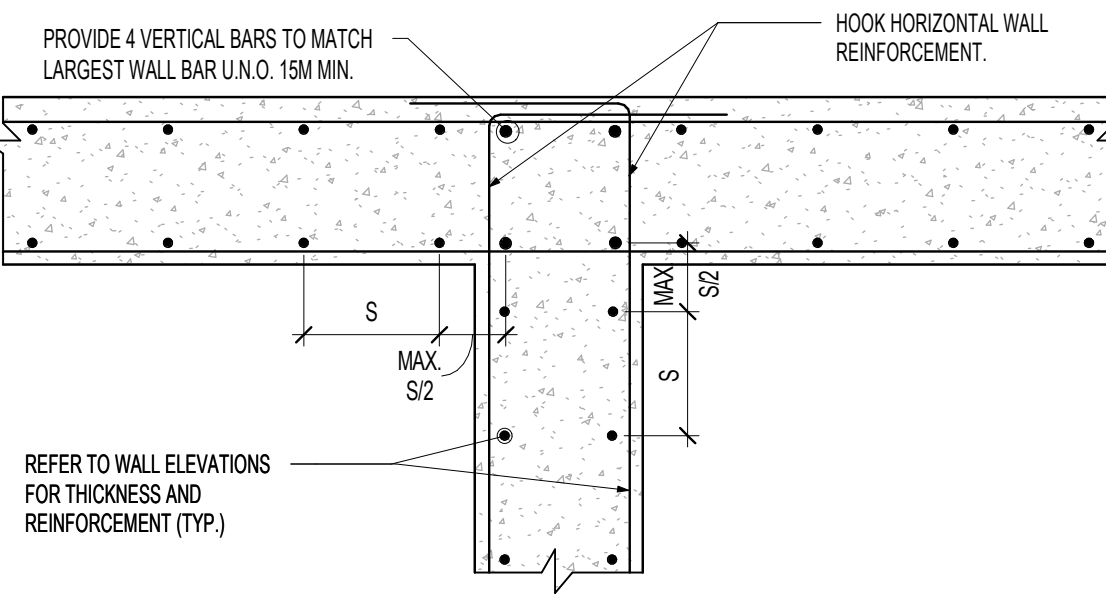
8 TYPICAL COUPLING BEAM DETAIL PLAN DETAIL



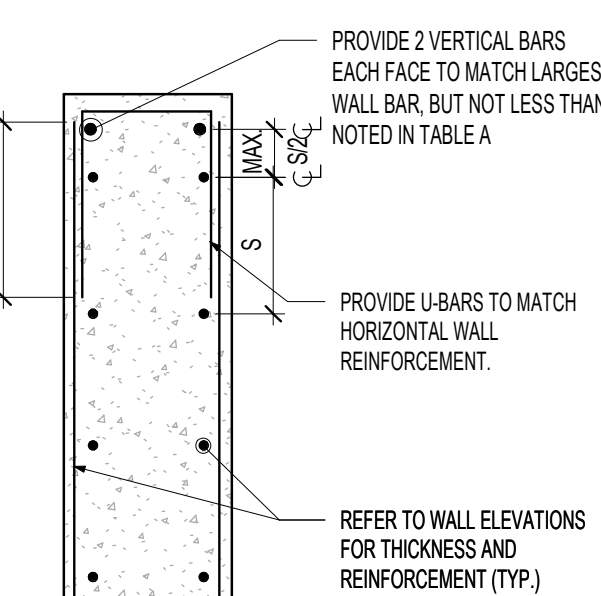
13 TYPICAL SHEAR WALL DOWELS AT FOUNDATION



TYPE C - CORNER



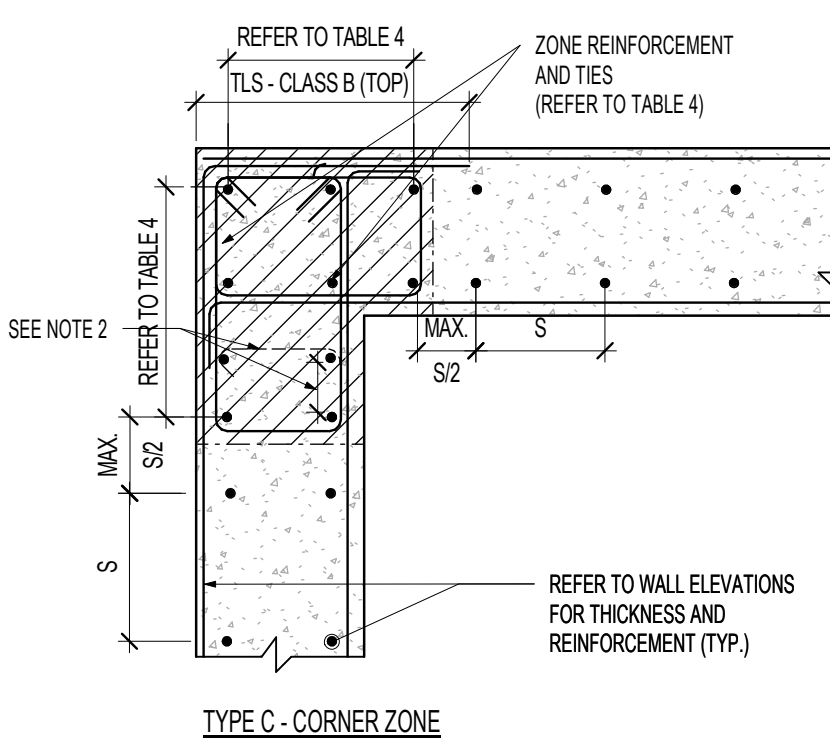
TYPE T - INTERSECTION



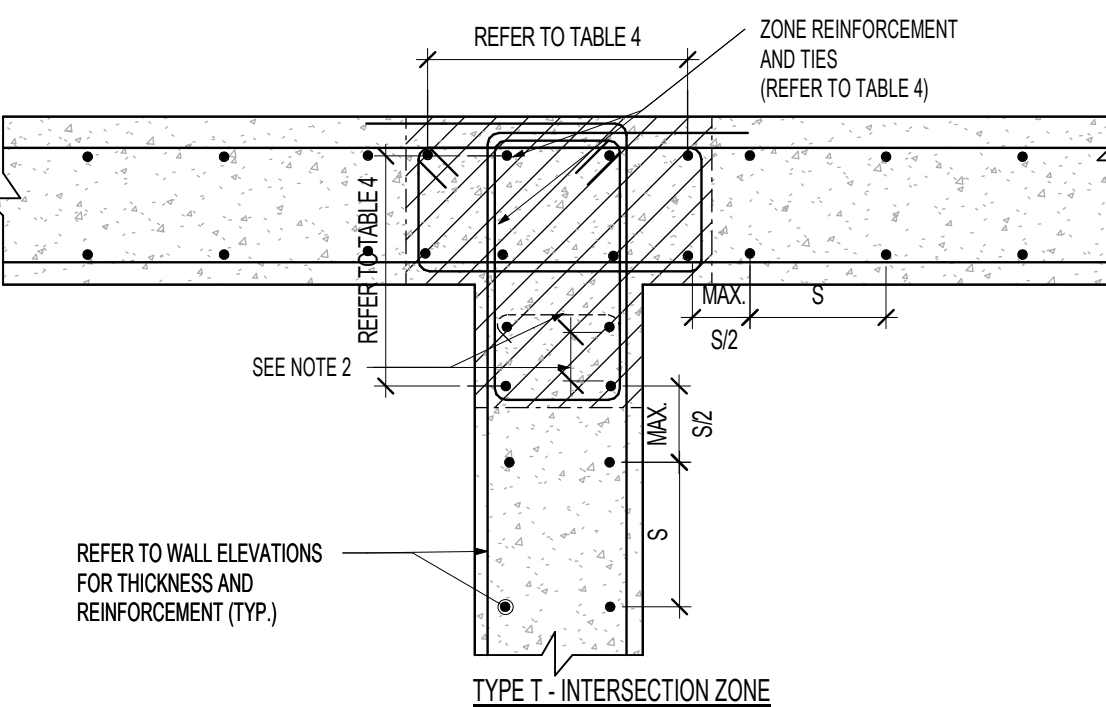
TYPE E - END

- NOTE:
- S - SPACING OF VERTICAL DISTRIBUTED REINFORCEMENT. SEE WALL ELEVATIONS.
 - REFER TO TABLE 2 TO DETERMINE IF TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT ARE REQUIRED. SEE DETAIL 7 WHEN TIES ARE REQUIRED.

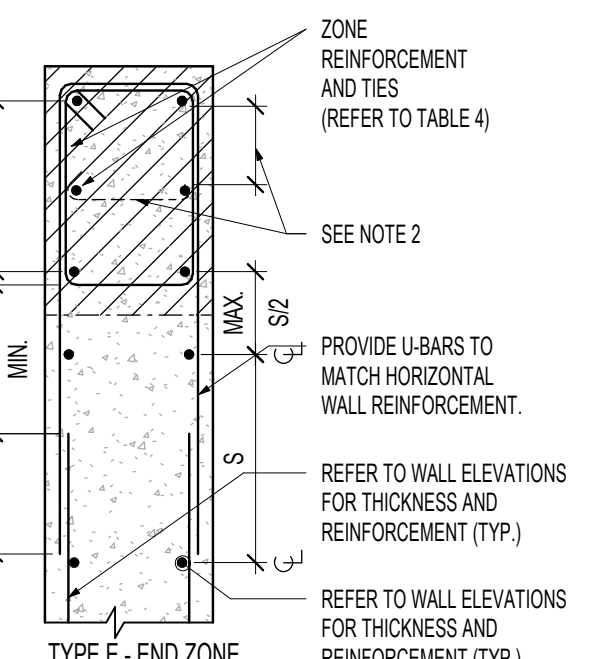
11 TYPICAL WALL DETAILS WITHOUT ZONE REINFORCEMENT



TYPE C - CORNER ZONE



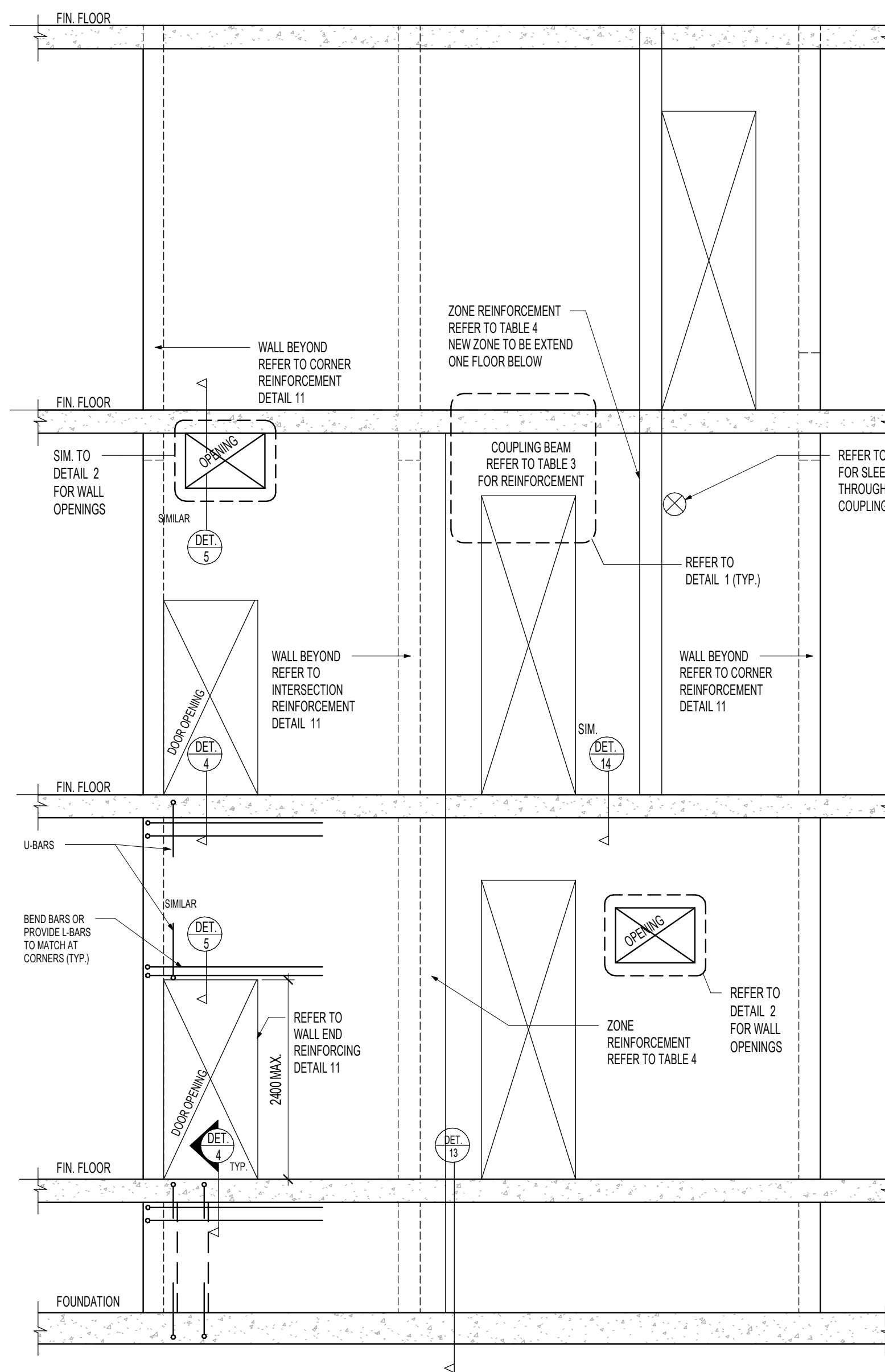
TYPE T - INTERSECTION ZONE



TYPE E - END ZONE

- NOTE:
- S - SPACING OF VERTICAL DISTRIBUTED REINFORCEMENT. SEE TABLE 1 AND WALL ELEVATIONS.
 - REFER TO TABLE 2 TO DETERMINE IF TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT ARE REQUIRED. SEE DETAIL 7 WHEN TIES ARE REQUIRED.
 - WHEN CLEAR SPACE BETWEEN ADJACENT VERTICAL ZONE BARS IS LARGER THAN 150mm, PROVIDE TIES AT EVERY VERTICAL ZONE BAR. WHEN THE CLEAR SPACE IS ≤ 150 mm, TIES MAY BE PROVIDED AT EVERY OTHER VERTICAL ZONE BAR.

12 TYPICAL WALL DETAILS WITH ZONE REINFORCEMENT



15 TYPICAL WALL ELEVATIONS

SHEAR WALL NOTES:

- SHEAR WALL ELEVATIONS SHOULD BE READ IN CONJUNCTION WITH SCHEDULES AND TYPICAL SHEAR WALL DETAILS.
- PROVIDE DISTRIBUTED WALL REINFORCEMENT IN ACCORDANCE WITH THE VALUES SHOWN ON THE WALL SECTIONS. IF NO DISTRIBUTED WALL REINFORCEMENT IS INDICATED, PROVIDE NOMINAL WALL REINFORCEMENT (NWR) AS PER TABLE 1.

TABLE 1: NOMINAL SHEAR WALL REINFORCEMENT (NWR)

WALL THICKNESS (mm)	NOMINAL WALL REINFORCEMENT	
	HORIZONTAL	VERTICAL
200 (8)	10@300 HEF	15@300 VEF
300 (12)	15@300 HEF	15@300 VEF

TABLE A: MINIMUM TRIMMING REBAR AROUND SHEAR WALL OPENING

WALL THICKNESS (mm)	TRIMMING BARS - OPENINGS
150	2-15
200-300	2-15EF
350-450	2-20EF
500-600	2-25EF

- WALL REINFORCEMENT IS VERTICAL AND HORIZONTAL EACH FACE (H&VEF) UNLESS NOTED OTHERWISE.
- PROVIDE TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT IF THE BAR SIZE IS LARGER THAN 20M OR IF BAR SPACING IS LESS THAN THAT OUTLINED IN TABLE 2. REFER TO DETAIL 7 FOR ADDITIONAL INFORMATION.
- UNLESS OTHERWISE SHOWN, PROVIDE DOWELS FROM SHEAR WALL, CAPS, OR FOOTINGS INTO SHEAR WALLS TO MATCH VERTICALS IN FIRST LIFT OF WALLS. SEE DETAIL 13.
- UNLESS NOTED OTHERWISE AT TOPS OF ALL SHEAR WALLS PROVIDE 15 @ 400 DOWELS FROM WALL TO SLAB. WHERE WALL IS CONTINUOUS ABOVE SLAB SEE DETAIL 14.
- PROVIDE TLS CLASS B (BOTTOM) FOR ALL VERTICAL BARS (REFER TO DETAIL C02B (fy = 400MPa) OR C02B (fy = 500MPa) FOR LENGTHS).
- PROVIDE TLS CLASS B (TOP) FOR ALL HORIZONTAL BARS (REFER TO DETAIL C02B (fy = 400MPa) OR C02B (fy = 500MPa) FOR LENGTHS).
- MINIMUM DOWEL LENGTH SHALL BE $2 \times$ TLS (BOTTOM).
- PLACE HORIZONTAL REINFORCING ON OUTSIDE FACE OF WALL UNLESS NOTED OTHERWISE.
- FOR WALLS THAT ARE UNBRACED FOR TWO STORIES OR MORE PROVIDE EITHER CONTINUOUS VERTICAL REINFORCEMENT FOR THE ENTIRE UNSUPPORTED HEIGHT OR USE MECHANICAL COUPLER AT THE LOCATION OF THE INTERMEDIATE SPLICE. PROVIDE TENSION LAP SPLICE (TOP) FOR ALL HORIZONTAL WALL REINFORCEMENT. IF BARS OF DIFFERENT DIAMETER ARE SPLICED, USE THE SPLICE LENGTH OF THE LARGER BAR.
- UNLESS NOTED OTHERWISE, REFER TO THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXACT DIMENSIONS AND LOCATIONS OF WALL OPENINGS. THE CONTRACTOR SHALL PROVIDE, FOR THE ENGINEERS REVIEW, SLEEVING DRAWINGS SHOWING THE PROPOSED LOCATION AND INVERT DIMENSIONS FROM THE SLAB DATUMS AND GRIDS) FOR ALL SLEEVES 75mm DIAMETER AND LARGER. NO OPENINGS OTHER THAN THOSE WHICH ARE INDICATED ON PLAN OR ELEVATION SHALL BE MADE WITHOUT THE APPROVAL OF THE ENGINEER.
- WHERE MASONRY VENEER FACES A WALL, PROVIDE STANDARD DOVETAIL ANCHOR SLOTS. REFER TO TYPICAL DETAILS.
- REFER TO TYPICAL DETAIL C01 FOR CLEAR CONCRETE COVER.

TABLE 2: TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT

WALL THICKNESS (mm)	TIE SPACING FOR DISTRIBUTED VERTICAL REINFORCEMENT $f_c \leq 50$ MPa							
	10M	15M	20M	25M	30M	35M	40M	45M
200	< 200	180	< 400	200	< 600	200	-	-
250	< 160	160	< 320	240	< 480	250	-	-
300	< 140	160	< 270	240	< 400	300	300	-
350	< 120	160	< 230	240	< 350	320	350	350
400	< 100	160	< 200	240	< 300	320	400	400
450	-	-	< 180	240	< 270	320	400	450
500	-	-	< 160	240	< 240	320	400	480
600	-	-	< 140	240	< 200	320	400	480

NOTES:

- TIES FOR DISTRIBUTED VERTICAL REINFORCEMENT ARE 10M.
- THIS TABLE IS BASED ON $f_c \leq 50$ MPa. FOR $f_c > 50$ MPa REDUCE THE VERTICAL SPACING IN TABLE BY MULTIPLYING BY 0.75.
- DISTRIBUTED VERTICAL REINFORCEMENT WITH BAR SPACING LESS THAN THAT INDICATED FOR 10M, 15M AND 20M BARS SHALL BE TIED WITH MINIMUM TIE VERTICAL SPACING AS INDICATED.
- DISTRIBUTED VERTICAL REINFORCEMENT WITH BAR SIZE LARGER THAN 20M SHALL BE TIED AT MINIMUM TIE VERTICAL SPACING INDICATED.
- SEE ALSO DETAIL 7.

APPROVAL STAMP

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ISSUE OR REVISION

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DATE DEC/01/23

CITY OF VAUGHAN
FIRE STATION 7-12

9511 WESTON ROAD, VAUGHAN

VAUGHAN

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF THE WORK. ANY DISCREPANCIES ARE TO BE REPORTED TO THE CONSULTANT.

Salas O'Brien

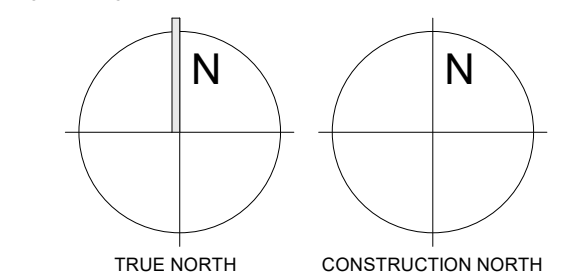
2235 Sheppard Ave. E. Suite No. 1100
Toronto, ON M2J 8B5
Stephenson Engineering, a company of Salas O'Brien

PROFESSIONAL SEAL

DWG TITLE

SHEAR WALL NOTES AND DETAILS

ORIENTATION



DATE DEC. 2023

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DWG STATUS

TENDER ISSUE

PROJECT NO. 20210932

DRAWING NO. S2-01
REVISION 2

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