

DRAWING LIST OF SEB TYPICAL DETAILS (1)

DRAWING No.	DRAWING TITLE
SD/001F	DRAWING LIST OF SEB TYPICAL DETAILS (1)
SD/002B	GENERAL NOTES
SD/003B	CRANKING OF BARS, STANDARD HOOKS AND BENDS
SD/004B	STEEL REINFORCEMENT ANCHORAGE AND LAP LENGTH REQUIREMENT
SD/005C	TYPICAL DETAIL OF SPACER BARS AND STIRRUPS AT BEAMS
SD/006D	TYPICAL DETAIL OF TORSION STIRRUPS AND COLUMN BINDERS
SD/007	TYPICAL WALL JUNCTION DETAILS
SD/008	TYPICAL DETAIL OF BRICK OR R.C. PARTITION WALL AND WALL BASE
SD/009	TYPICAL DETAIL OF R.C. STRUCTURAL WALL
SD/010	TYPICAL DETAIL OF TRIMMING BARS FOR WALL OPENING
SD/011	TYPICAL DETAIL OF TRIMMING BARS FOR PERMANENT SLAB OPENING
SD/012	TYPICAL DETAIL OF TRIMMING BARS FOR TEMPORARY SLAB OPENING
SD/013	TYPICAL DETAIL FOR TEMPORARY PIPE DUCT OPENING IN SLAB
SD/014	REQUIREMENT OF SPACER BLOCK, 'U' BARS AND STEEL CHAIRS FOR STRUCTURAL ELEMENTS
SD/015B	ANCHORAGE AND LAPPING ARRANGEMENT OF BEAM LONGITUDINAL BARS
SD/016	TYPICAL DETAIL OF BEAM AND BEAM 'L' JUNCTION
SD/017C	TYPICAL DETAIL OF COLUMNS
SD/018A	TYPICAL DETAIL OF ROOF BEAM & EXTERIOR COLUMN JUNCTION
SD/019B	TYPICAL DETAIL OF 100 THICK GROUND SLAB ON GRADE
SD/020C	TYPICAL DETAIL OF 150 THICK GROUND SLAB ON GRADE
SD/021C	TYPICAL DETAIL OF 200 THICK GROUND SLAB ON GRADE
SD/022A	TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (1 OF 5)
SD/023A	TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (2 OF 5)
SD/024A	TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (3 OF 5)
SD/025A	TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (4 OF 5)
SD/026B	TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (5 OF 5)

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drawing title DRAWING LIST OF SEB TYPICAL DETAILS (1)	checked CSE/1 <u>M.K. WONG</u> MAR., 2020 approved AD(SE) <u>K.L. TSE</u> MAR., 2020	drawing no. SD/001	rev. F	scale N.T.S.
STRU. ENGG. BRANCH ARCH. SERVICES DEPT.				

GENERAL NOTES:

1. DRAWINGS SD/001 TO SD/026 (FIG. 1 TO 16 INCLUSIVE) AND MH/01 TO MH/11 INDICATE THE REQUIREMENT AND DETAILS GENERALLY ADOPTED IN R.C. WORKS. IF DIFFERENT DETAILS ARE GIVEN IN R.C. DRAWINGS ISSUED IN THE CONTRACT, THE DETAILS IN THE LATTER SHALL TAKE PRECEDENCE.

2. ABBREVIATIONS:-

a) GENERAL:

DIA DIAMETER
 VERT VERTICAL
 HOR HORIZONTAL
 TYP TYPICAL

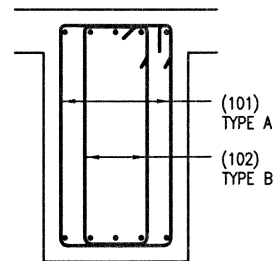
b) RELATING TO REINFORCEMENT:

AS AREA OF STEEL
 B1 BOTTOM LAYER OF BOTTOM REINFORCEMENT
 B2 SECOND LAYER OF BOTTOM REINFORCEMENT
 T1 TOP LAYER OF TOP REINFORCEMENT
 T2 SECOND LAYER OF TOP REINFORCEMENT
 EF BARS IN EACH FACE
 NF BARS IN NEAR FACE OF WALL
 FF BARS IN FAR FACE OF WALL
 BW BOTH WAYS
 LV LENGTH VARIES
 DS DOUBLE STIRRUPS
 TS TRIPLE STIRRUPS
 ALT PLACED ALTERNATELY
 STGD STAGGERED
 CAL COMPRESSION ANCHORAGE LENGTH
 CLL COMPRESSION LAP LENGTH
 TAL TENSION ANCHORAGE LENGTH
 TLL TENSION LAP LENGTH
 b BREADTH OF BEAM OR WALL OR COLUMN
 h DEPTH OF BEAM OR COLUMN OR WALL THICKNESS
 L SPAN OF BEAM OR SLAB
 ϕ DIAMETER

3. TYPE OF BEAM STIRRUPS AND COLUMN BINDERS ARE SHOWN ON TYPICAL DETAIL DRAWING Nos. SD/005 AND SD/006 RESPECTIVELY.

e.g.

T10-101(A),102(B)-200 DS



4. ALL DIMENSIONS SHOWN ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

5. i) PLAIN BARS TO CS2 : 2012 DENOTED BY R

ii) RIBBED BARS TO CS2 : 2012 DENOTED BY T

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drawing title

GENERAL NOTES

checked

CSE/1 M.K. WONG

date

MAR., 2020

drawing no.

SD/002

rev.

B

scale

N.T.S.

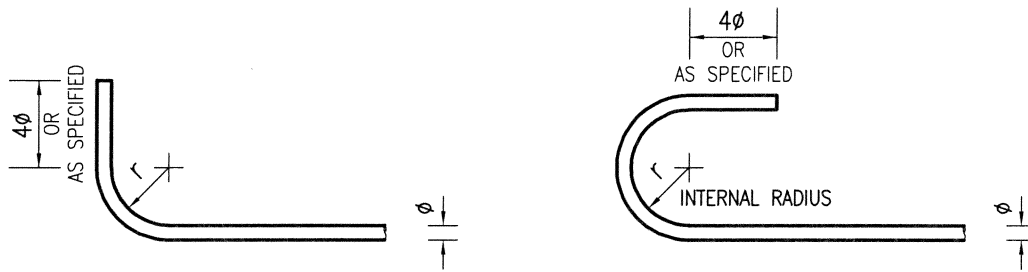
approved

AD(SE) K.L. TSE

date

MAR., 2020

**STRU. ENGG. BRANCH
 ARCH. SERVICES DEPT.**



90° BEND

STANDARD HOOK

BAR SIZE (mm)	MINIMUM INTERNAL RADIUS (r) OF BEND (mm) FOR REBARS TO CS2 : 2012
10	20
12	24
16	48
20	80
25	100
32	128
40	160

TABLE 1 STANDARD HOOKS AND BENDS REQUIREMENT

(FOR BEAM STIRRUPS AND COLUMN BINDERS, SEE DRAWING Nos. SD/005 & SD/006)

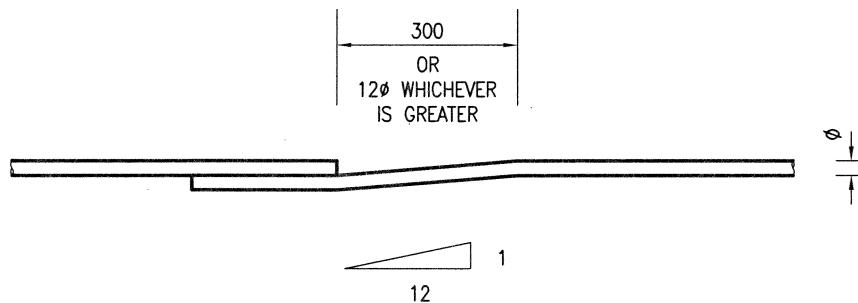


FIG. 1 CRANKING OF BARS

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drawing title CRANKING OF BARS, STANDARD HOOKS AND BENDS	checked CSE/1 <u>M.K. WONG</u>	date MAR., 2020	drawing no. SD/003	rev. B	scale N.T.S.
	approved AD(SE) <u>K.L. TSE</u>	date MAR., 2020	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

FOR REBARS TO CS2 : 2012	CONCRETE GRADE	SIZE OF BAR						
		10	12	16	20	25	32	40
TENSION ANCHORAGE LENGTH (TAL) OR TENSION LAP LENGTH (TLL) OR COMPRESSION LAP LENGTH (CLL)	30	400	500	650	800	1000	1300	1600
	35	400	450	600	750	950	1200	1500
	40	350	450	550	700	900	1100	1400
	45	350	400	550	650	850	1050	1300
	50	350	400	500	650	800	1000	1250
	≥60	300	350	450	600	700	900	1150
COMPRESSION ANCHORAGE LENGTH (CAL)	30	350	400	500	650	800	1050	1300
	35	300	350	500	600	750	950	1200
	40	300	350	450	550	700	900	1100
	45	300	350	450	550	650	850	1050
	50	250	300	400	500	650	800	1000
	≥60	250	300	400	450	600	750	900



SIZE AND LENGTH ALL IN MILLIMETRES

NOTES:

1. FOR ANCHORAGE OR LAP BETWEEN BARS OF SAME BAR SIZE, USE ϕ = SIZE OF BARS.
2. FOR LAP BETWEEN BARS OF DIFFERENT BAR SIZE, USE ϕ = SIZE OF SMALLER BARS.

TABLE 2 ANCHORAGE & LAP LENGTH REQUIREMENT

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drawing title STEEL REINFORCEMENT ANCHORAGE AND LAP LENGTH REQUIREMENT	checked CSE/1 <u>M.K. WONG</u> 	date MAR., 2020	drawing no. SD/004	rev. B	scale N.T.S.
	approved AD(SE) <u>K.L. TSE</u> 	date MAR., 2020	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

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NOTE : IN LIEU OF THE TYPES OF BEAM STIRRUPS SHOWN ON THE R.C. DRAWINGS, THE CONTRACTOR MAY PROPOSE FOR SO'S APPROVAL ALTERNATIVE TYPES OF BEAM STIRRUPS.

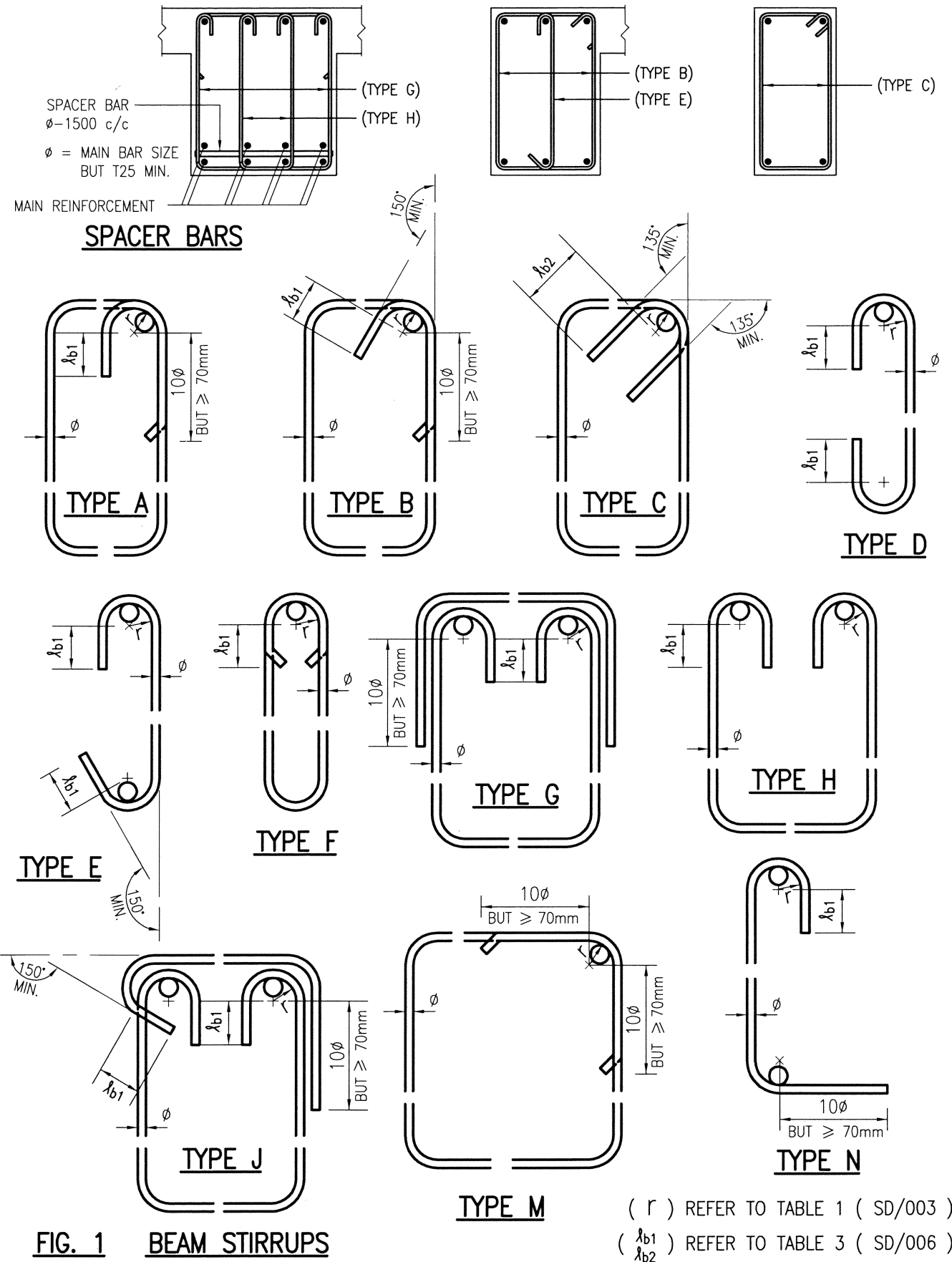


FIG. 1 BEAM STIRRUPS

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drawing title TYPICAL DETAIL OF SPACER BARS AND STIRRUPS AT BEAMS	checked CSE/1 M.K. WONG	date FEB., 2018	drawing no. SD/005	rev. C	scale N.T.S.
	approved AD(SE) K.L. TSE	date FEB., 2018	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

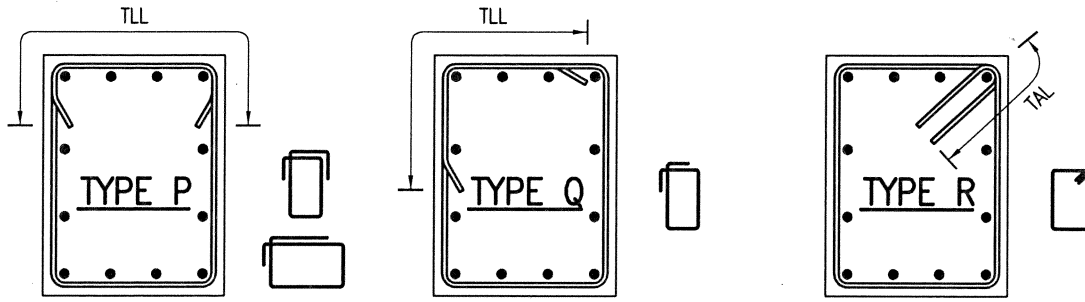


FIG. 2a TORSION STIRRUPS

NOTE : 1. IN LIEU OF THE TYPES OF COLUMN BINDERS SHOWN ON THE R.C. DRAWINGS, THE CONTRACTOR MAY PROPOSE FOR SO'S APPROVAL ALTERNATIVE TYPES OF COLUMN BINDERS.
 2. TYPE F CROSSTIES ENGAGING THE SAME LONGITUDINAL BAR SHALL HAVE THEIR 90-DEG HOOKS ALTERNATIVELY FIXED ON OPPOSITE SIDES OF COLUMN.

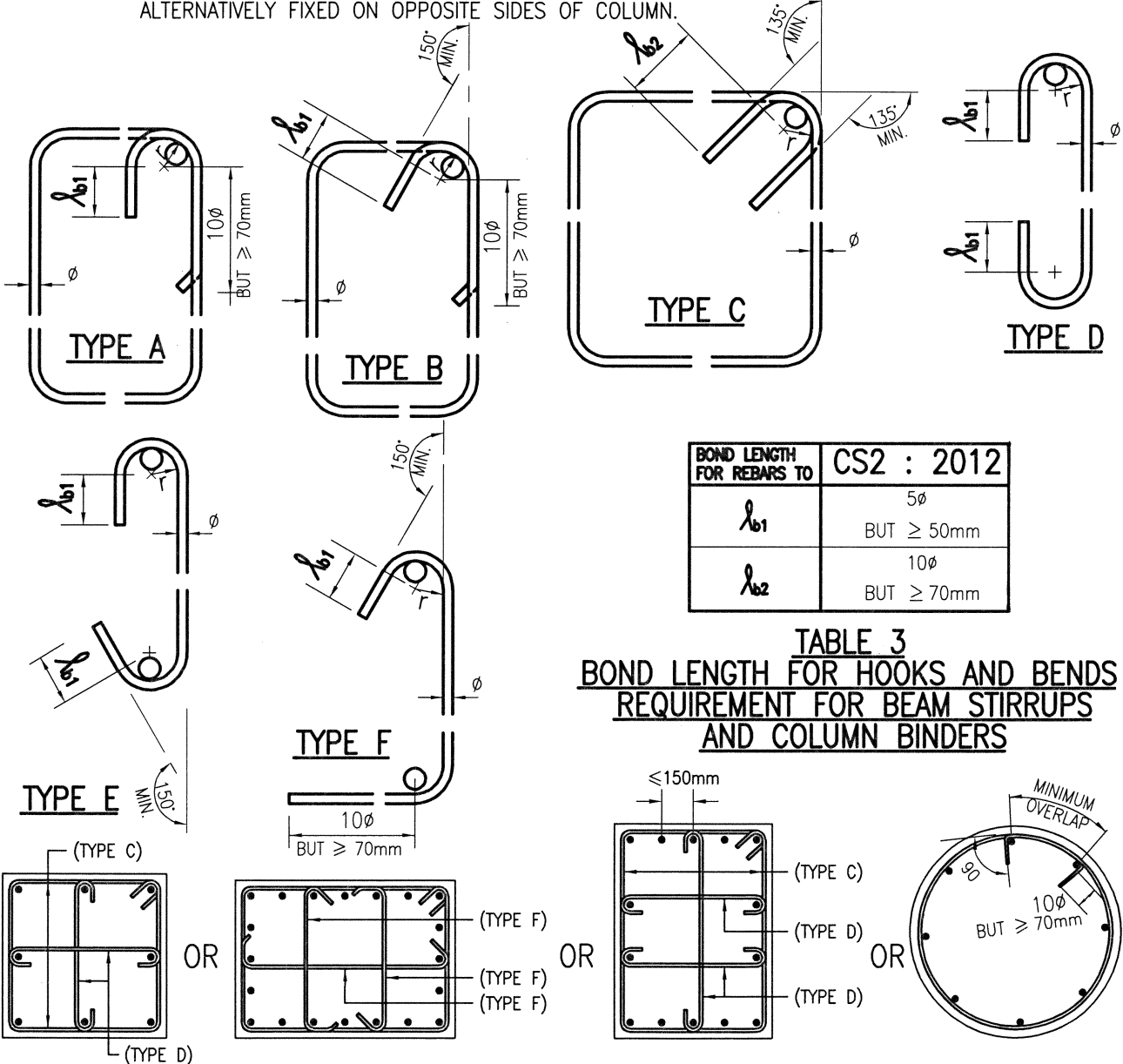
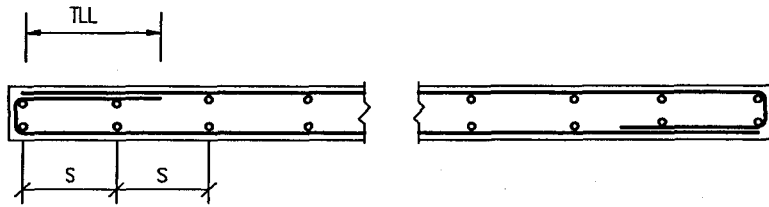


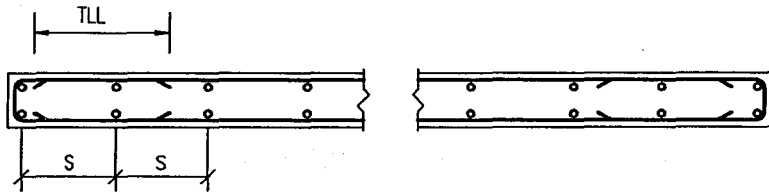
FIG. 2b TYPICAL DETAIL OF COLUMN BINDERS

FOR COLUMN BINDERS : (r) REFER TO TABLE 1 (SD/003)

drawing title TYPICAL DETAIL OF TORSION STIRRUPS AND COLUMN BINDERS	checked CSE/1 M.K. WONG	date MAR., 2020	drawing no. SD/006	rev. D	scale N.T.S.
	approved AD(SE) K.L. TSE	date MAR., 2020	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

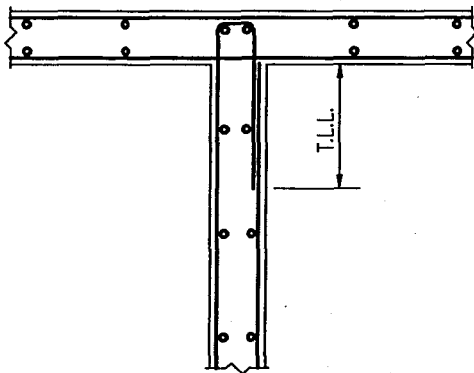


OR

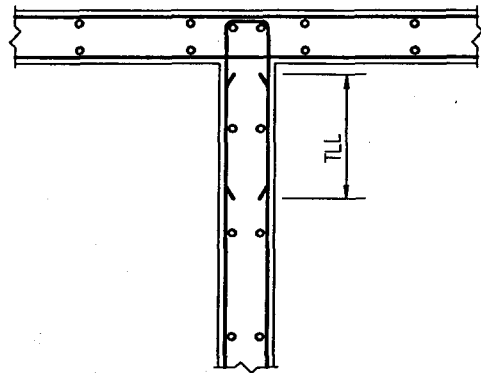


S = SPACING OF BARS

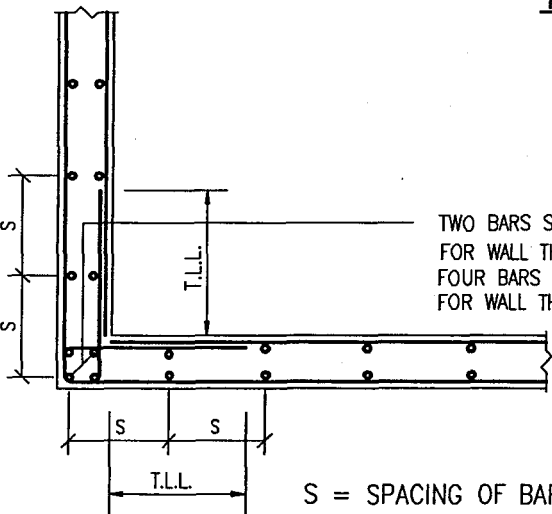
WALL END



OR

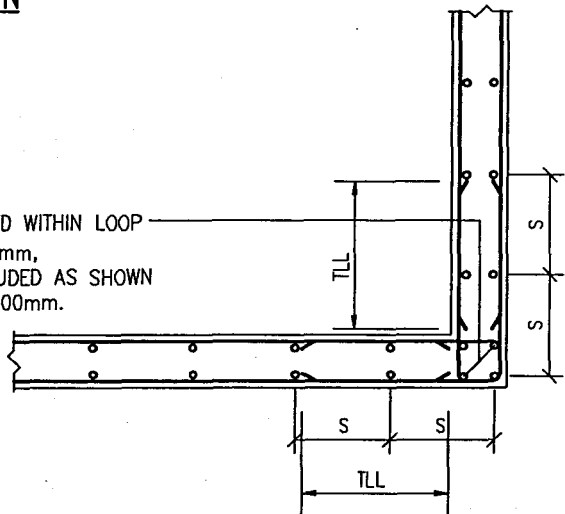


TEE JUNCTION



TWO BARS SHOULD BE PLACED WITHIN LOOP
FOR WALL THICKNESS ≤ 200 mm,
FOUR BARS SHOULD BE INCLUDED AS SHOWN
FOR WALL THICKNESS OVER 200mm.

OR



S = SPACING OF BARS

"L" JUNCTION

FIG. 3 TYPICAL WALL JUNCTION DETAILS (PLAN)

drawing title TYPICAL WALL JUNCTION DETAILS	checked CSE/1 C.T. WONG <i>C.T. Wong</i>	date JULY, 2008	drawing no. SD/007	scale N.T.S.
	approved AD(SE) W.W. LI <i>W.W. Li</i>	date JULY, 2008	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	



WALL THICKNESS, h (mm)	VERT. REINF'T			HORI. REINF'T	
	NO FRP REQUIREMENT	COMPARTMENT WALL WITH FIRE RESISTING PERIOD (FRP) REQUIREMENTS			ALL CASES
		1 HOUR	2 HOUR	4 HOUR	
$100 \leq h < 120$	T10-250	T12-150	T16-200	WALL THICKNESS NOT ALLOWED	T10-250
$120 \leq h < 160$	T10-300 EF	T10-300 EF	T12-220 EF		T10-300 EF
$160 \leq h < 180$	T10-300 EF	T10-300 EF	T10-300 EF		T10-250 EF
$180 \leq h < 200$	T10-250 EF	T10-250 EF	T10-250 EF		T10-250 EF
$200 \leq h < 240$	T10-200 EF	T10-200 EF	T10-200 EF		T10-200 EF
$240 \leq h \leq 250$	T10-200 EF	T10-200 EF	T10-200 EF		T10-200 EF



INDICATES THAT WALL THICKNESS IS NOT PREFERRED AS 1% REINFORCEMENT OF THE MIN. WALL THICKNESS IS NEEDED FOR THE FRP REQUIREMENT. WALL THICKNESS SHOULD BE INCREASED IN THIS CASE IF POSSIBLE SO THAT NORMAL REINFORCEMENT RATIO COULD BE USED.

TABLE 3 BAR SIZES AND SPACING FOR NON-LOADBEARING PARTITION WALL

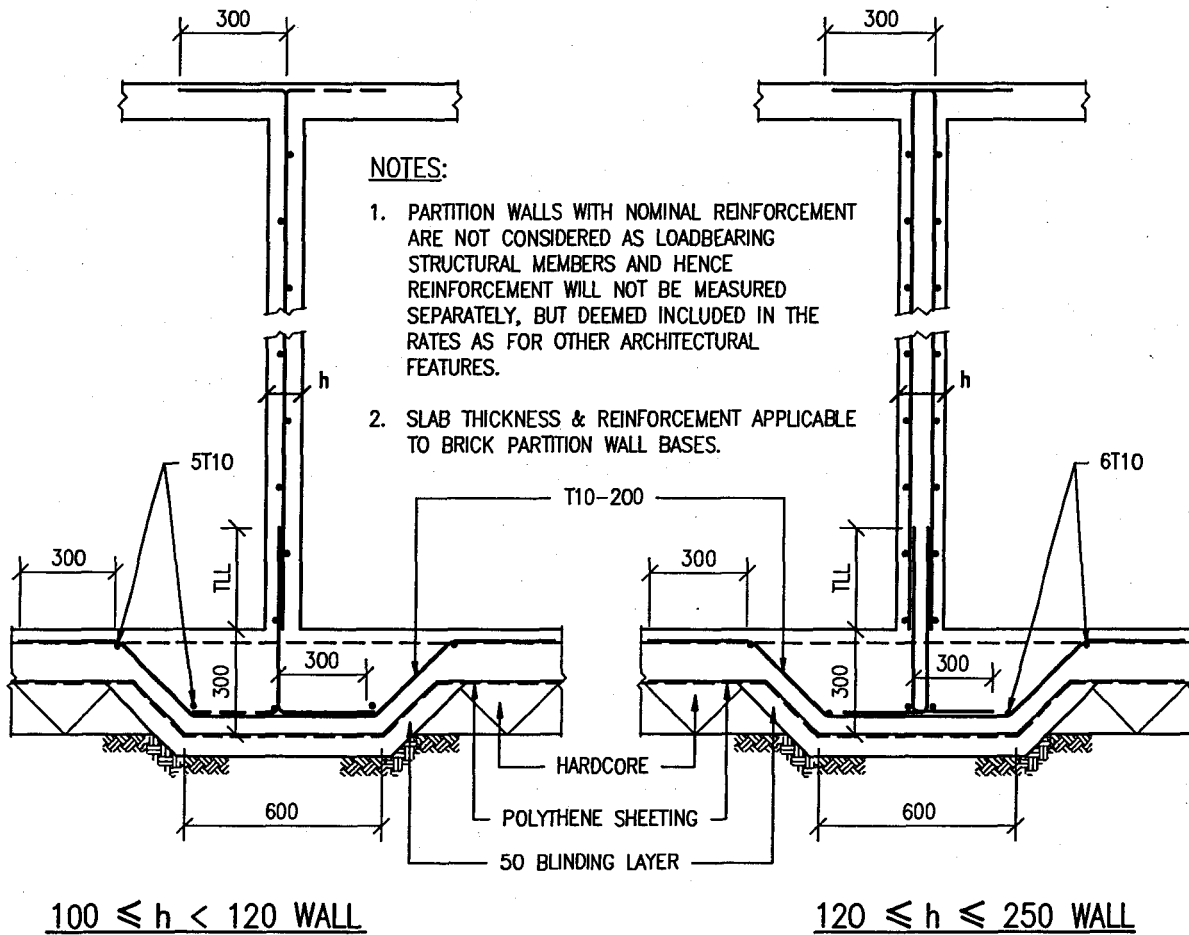
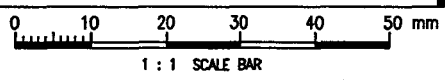


FIG. 4 TYPICAL DETAIL OF BRICK OR R.C. PARTITION WALL & WALL BASE

drawing title	checked	date	drawing no.	scale
TYPICAL DETAIL OF BRICK OR R.C. PARTITION WALL & WALL BASE	CSE/1 C.T. WONG <i>C.T. Wong</i>	JULY, 2008	SD/008	N.T.S.
	approved	date	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	
AD(SE) W.W. LI <i>W.W. Li</i>	JULY, 2008			



WALL THICKNESS, h (mm)	VERT. REINF'T				HORI. REINF'T
	NO FRP REQUIREMENT	FIRE RESISTING PERIOD (FRP) REQUIREMENTS			ALL CASES
		1 HOUR	2 HOUR	4 HOUR	
$150 \leq h < 160$	T10-200 EF	T10-200 EF	T12-140 EF	WALL THICKNESS NOT ALLOWED	T10-300 EF
$160 \leq h < 180$	T10-200 EF	T10-200 EF	T10-200 EF		T10-250 EF
$180 \leq h < 200$	T12-250 EF	T12-250 EF	T12-250 EF	T16-200 EF	T10-250 EF
$200 \leq h < 240$	T12-200 EF	T12-200 EF	T12-200 EF	T16-160 EF	T10-200 EF
$240 \leq h \leq 250$	T12-170 EF	T12-170 EF	T12-170 EF	T12-170 EF	T12-250 EF



INDICATES THAT WALL THICKNESS IS NOT PREFERRED AS 1% REINFORCEMENT OF THE WALL THICKNESS IS NEEDED FOR THE FRP REQUIREMENT. WALL THICKNESS SHOULD BE INCREASED IN THIS CASE IF POSSIBLE SO THAT NORMAL REINFORCEMENT RATIO COULD BE USED.

TABLE 4 BAR SIZES AND SPACING FOR R.C. STRUCTURAL WALL

(SEE ALSO DETAIL DRAWINGS WHICH SHALL TAKE PRECEDENCE OVER THIS TABLE.)

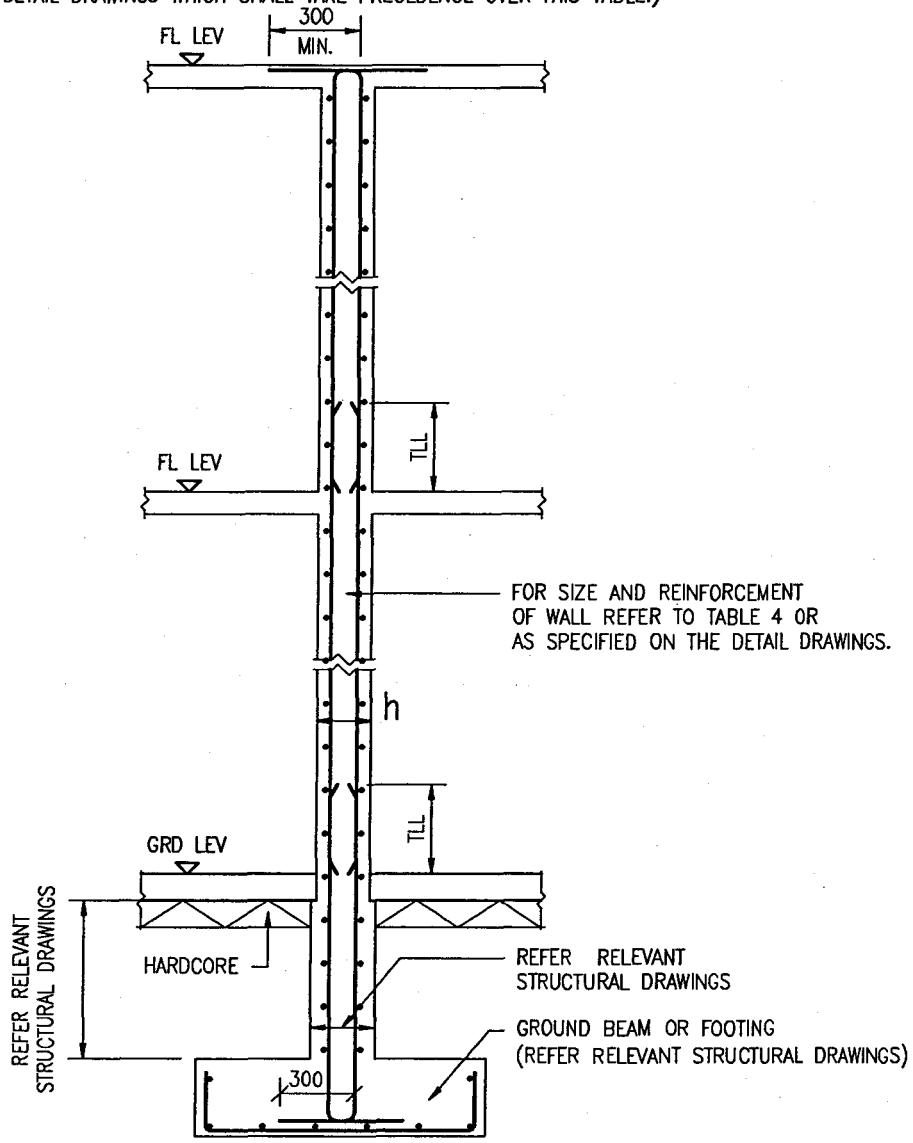
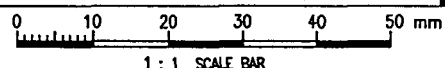
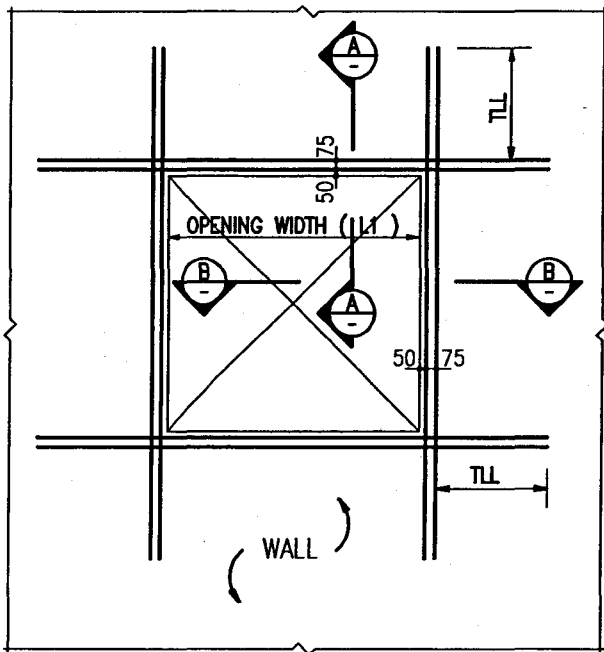


FIG. 5 TYPICAL DETAIL OF R.C. STRUCTURAL WALL

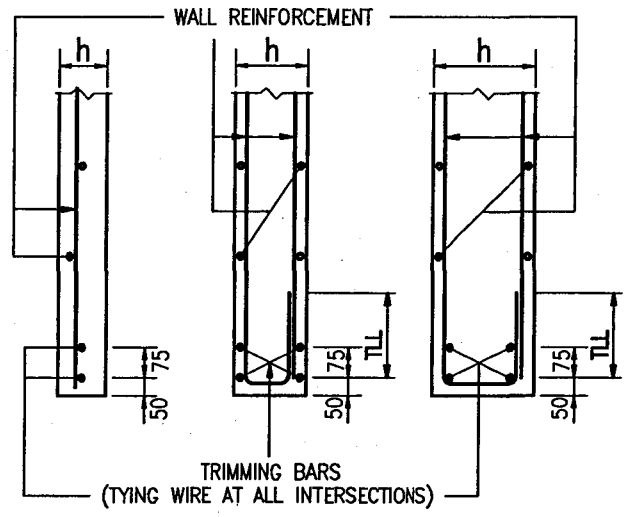
drawing title TYPICAL DETAIL OF R.C. STRUCTURAL WALL	checked CSE/1 C.T. WONG <i>C.T. Wong</i>	date JULY, 2008	drawing no. SD/009	scale N.T.S.
	approved AD(SE) W.W. LI <i>W.W. Li</i>	date JULY, 2008	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	

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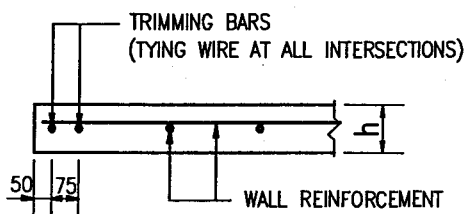


ELEVATION

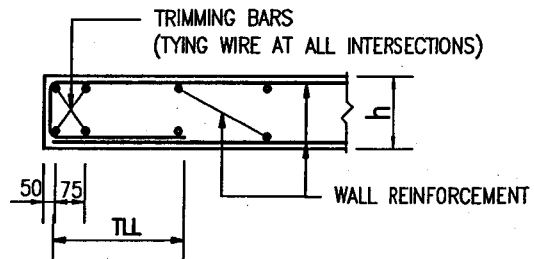


$h < 120$ $120 \leq h < 200$ $200 \leq h \leq 250$

SEC. A - A



$h < 120$



$120 \leq h \leq 250$

SEC. B - B

NOTES:

1. TABLE 5 AND FIG. 6 ARE APPLICABLE FOR NON-LOADBEARING WALLS WHERE OPENING WIDTH (L_1) $\leq 2m$.

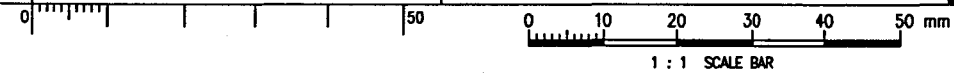
WALL THICKNESS, h (mm)	TRIMMING BARS TO OPENING	
	$L_1 < 1m$	$1m < L_1 \leq 2m$
$h < 120$	1T12 (SINGLE LAYER)	2T12 - 75 (SINGLE LAYER)
$120 \leq h < 200$	1T12 EF	2T12 - 75 EF
$200 \leq h \leq 250$	1T16 EF	2T16 - 75 EF

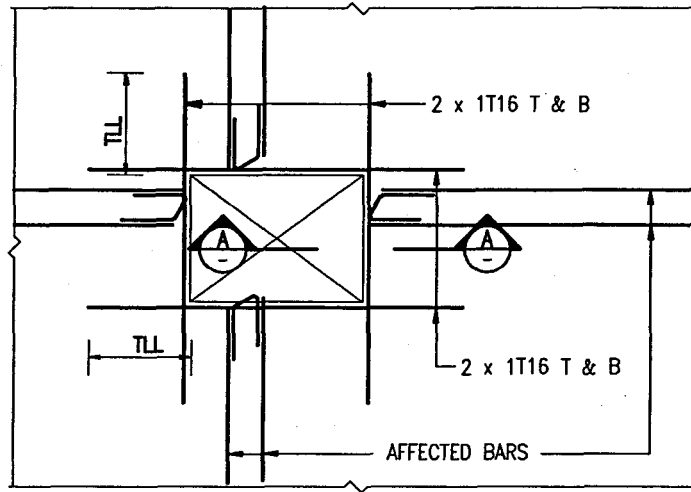
TABLE 5 TRIMMING BARS FOR WALL OPENING AT NON-LOADBEARING WALLS

- FOR NON-LOADBEARING WALLS WHERE OPENING WIDTH (L_1) $> 2m$, OR FOR ALL SIZE OF OPENING IN STRUCTURAL WALLS, THE LOCATION AND SIZE OF THE OPENING SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER. DETAILS AND AMOUNT OF TRIMMING BARS SHALL BE SPECIFIED BY THE PROJECT STRUCTURAL ENGINEER. REFER ALSO TO WALL DETAIL DRAWINGS.
- UNDER NORMAL SITUATION, IF OPENING WIDTH (L_1) $<$ BAR SPACING, NO TRIMMING BAR IS REQUIRED.

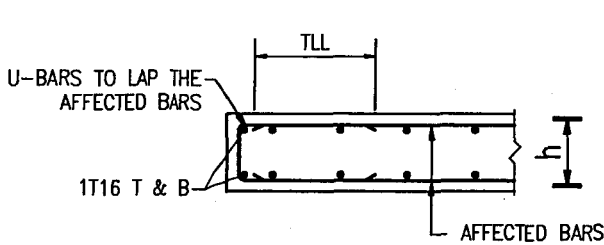
FIG. 6 TYPICAL DETAIL OF TRIMMING BARS FOR WALL OPENING

drawing title TYPICAL DETAIL OF TRIMMING BARS FOR WALL OPENING	checked CSE/1 C.T. WONG <i>C.T. Wong</i>	date JULY, 2008	drawing no. SD/010	scale N.T.S.
	approved AD(SE) W.W. LI <i>W.W. Li</i>	date JULY, 2008	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	

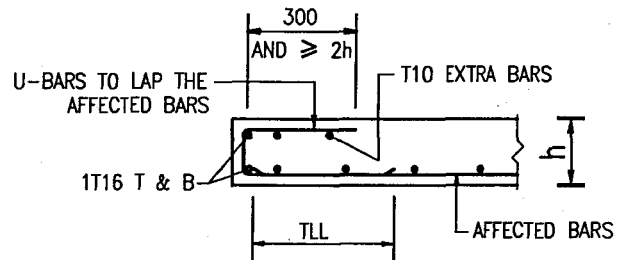




PLAN



SLAB WITH TOP REINFORCEMENT



SLAB WITHOUT TOP REINFORCEMENT

SEC. A - A

NOTES:

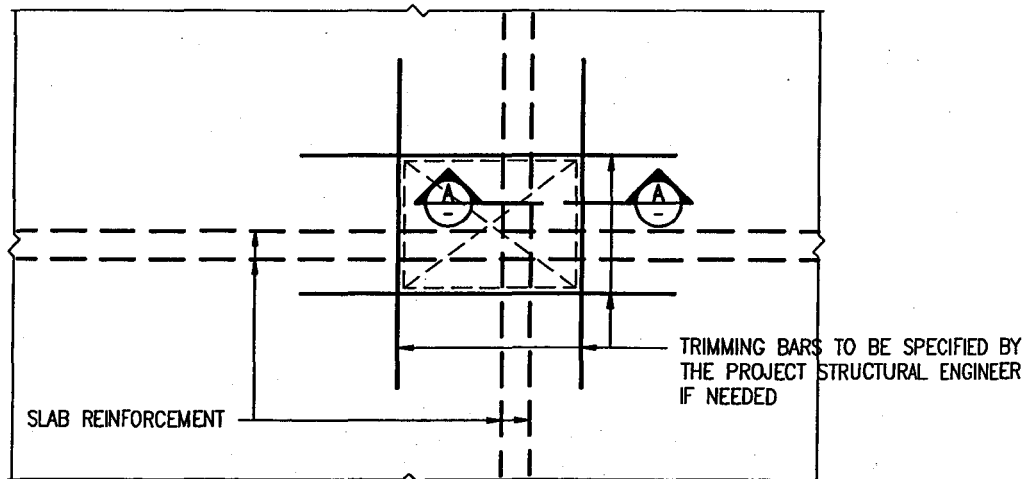
1. FIG. 7 IS APPLICABLE FOR OPENINGS THAT :-
 - a. WITH SLAB THICKNESS $\leq 200\text{mm}$
 - b. HAVE OPENING SIZE NOT MORE THAN 600mm OR 0.25 x SPAN LENGTH OF SLAB
 - c. DETAIL NOT APPLICABLE TO OPENINGS IN CANTILEVER SLABS
2. IF SIZE OF OPENING $< 200\text{mm}$, DISPLACE BARS TO SIDES OF OPENING, NO EXTRA TRIMMING BARS REQUIRED.
3. FOR SIZE OF OPENING BETWEEN 200mm & 600mm, ADD TRIMMING BARS AS STATED IN THE FIGURE, OR THE AREA OF TRIMMING BAR ON ONE SIDE EQUAL TO HALF THE AREA OF THE AFFECTED BARS IN THE CORRESPONDING DIRECTION CUT BY THE OPENING, WHICHEVER IS THE GREATER.
4. FOR LARGER SIZE OF SLAB OPENING, DETAILS OF STEEL ARRANGEMENT SHALL BE SPECIFIED BY THE PROJECT STRUCTURAL ENGINEER. REFER ALSO TO SLAB DETAIL DRAWINGS.

FIG. 7 TYPICAL DETAIL OF TRIMMING BARS FOR PERMANENT SLAB OPENING

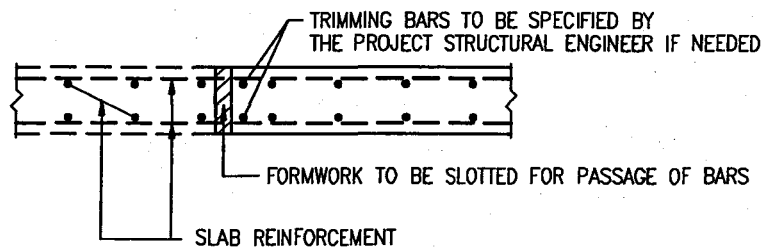
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drawing title TYPICAL DETAIL OF TRIMMING BARS FOR PERMANENT SLAB OPENING	checked CSE/1 C.T. WONG <i>C.T. Wong</i>	date JULY, 2008	drawing no. SD/011	scale N.T.S.
	approved AD(SE) W.W. LI <i>W.W. Li</i>	date JULY, 2008	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	





PLAN



SEC. A - A

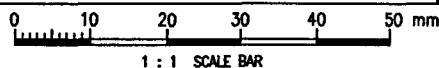
NOTES:

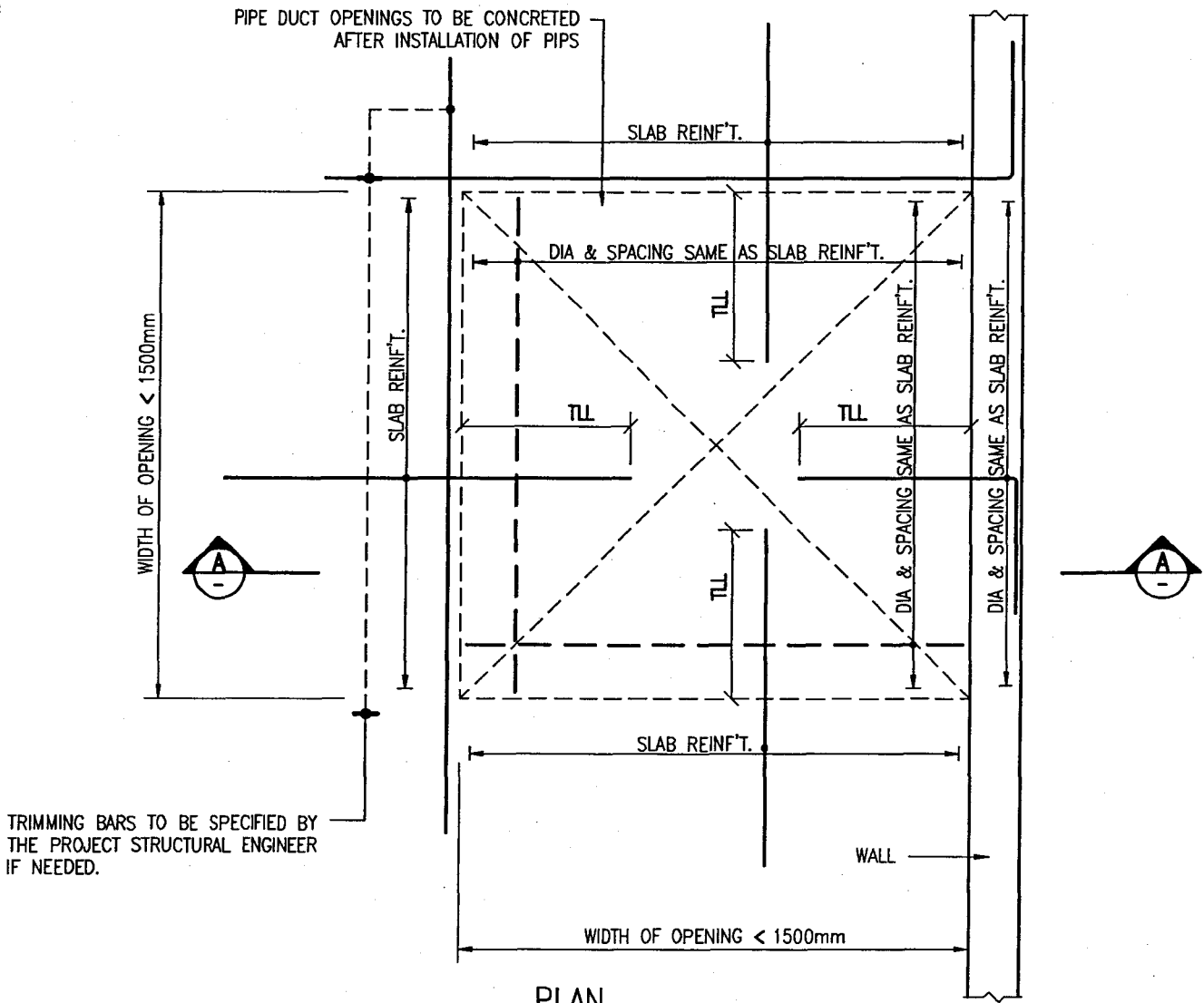
THE FIGURE IS APPLICABLE TO TEMPORARY SLAB OPENING THE SIZE AND LOCATION OF WHICH SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER BEFORE CONSTRUCTION.

FIG. 8 TYPICAL DETAIL OF TRIMMING BARS FOR TEMPORARY SLAB OPENING

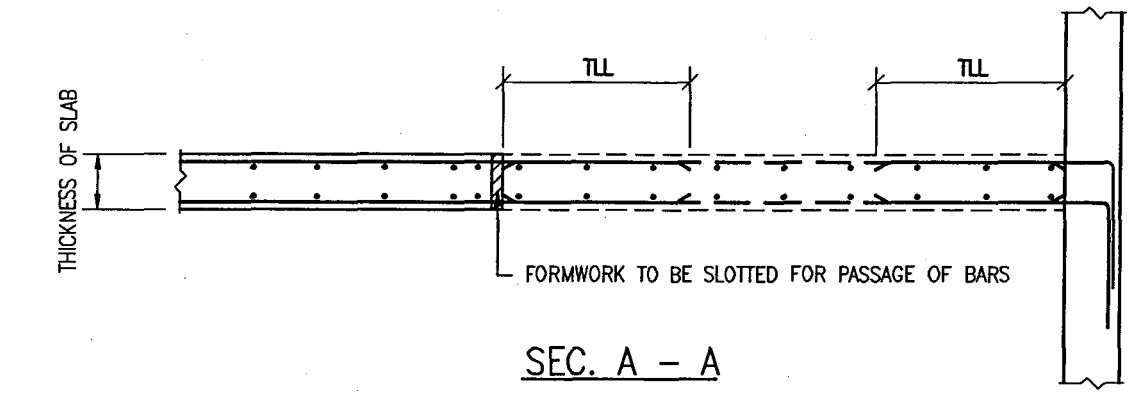
drawing title TYPICAL DETAIL OF TRIMMING BARS FOR TEMPORARY SLAB OPENING	checked CSE/1 C.T. WONG <i>C.T. Wong</i>	date JULY, 2008	drawing no. SD/012	scale N.T.S.
	approved AD(SE) W.W. LI <i>W.W. Li</i>	date JULY, 2008	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	

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PLAN



SEC. A - A

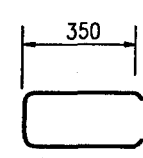
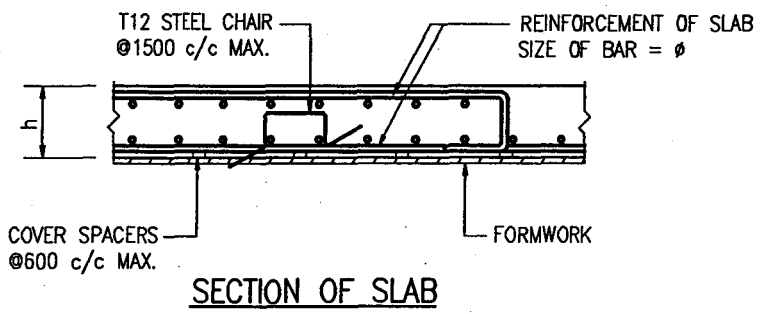
NOTES:

THE FIGURE IS APPLICABLE TO TEMPORARY SLAB OPENING THE SIZE AND LOCATION OF WHICH SHALL BE APPROVED BY THE PROJECT STRUCTURAL ENGINEER BEFORE CONSTRUCTION.

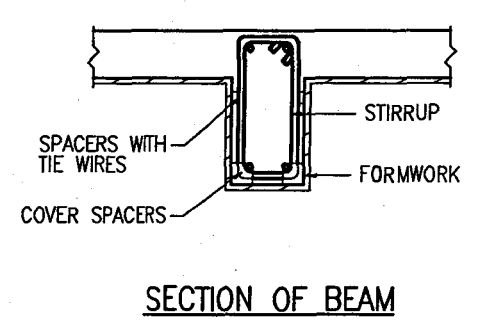
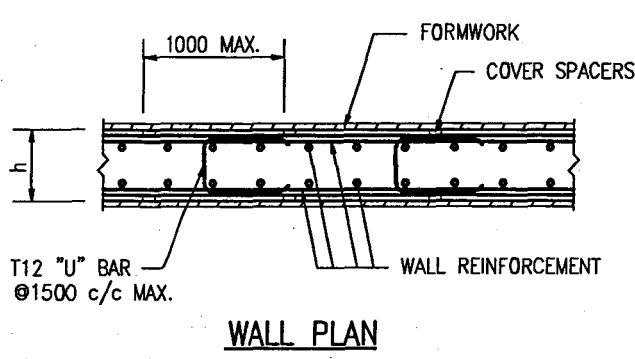
FIG. 9 TYPICAL DETAIL FOR LARGER TEMPORARY PIPE DUCT OPENINGS

drawing title TYPICAL DETAIL FOR TEMPORARY PIPE DUCT OPENING IN SLAB	checked CSE/1 C.T. WONG <i>C.T. Wong</i>	date JULY, 2008	drawing no. SD/013	scale N.T.S.
	approved AD(SE) W.W. LI <i>W.W. Li</i>	date JULY, 2008	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	





MAX. SPACING : 1500 c/c B.W.



NOTES:

THE DIAMETER AND SPACING OF CHAIRS ARE GIVEN AS MINIMUM REQUIREMENT, THE CONTRACTOR HAS TO PUT IN ADDITIONAL CHAIRS WHERE NECESSARY TO SUPPORT THE REINFORCEMENT FROM SAGGING OR DISPLACEMENT.

FIG. 10 REQUIREMENT OF SPACER BLOCK, "U" BARS AND STEEL CHAIRS FOR STRUCTURAL ELEMENTS

100
50
0

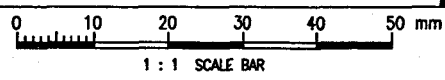
drawing title
REQUIREMENT OF SPACER BLOCK, 'U' BARS AND STEEL CHAIRS FOR STRUCTURAL ELEMENTS

checked
CSE/1 C.T. WONG *C.T. Wong* date
JULY, 2008

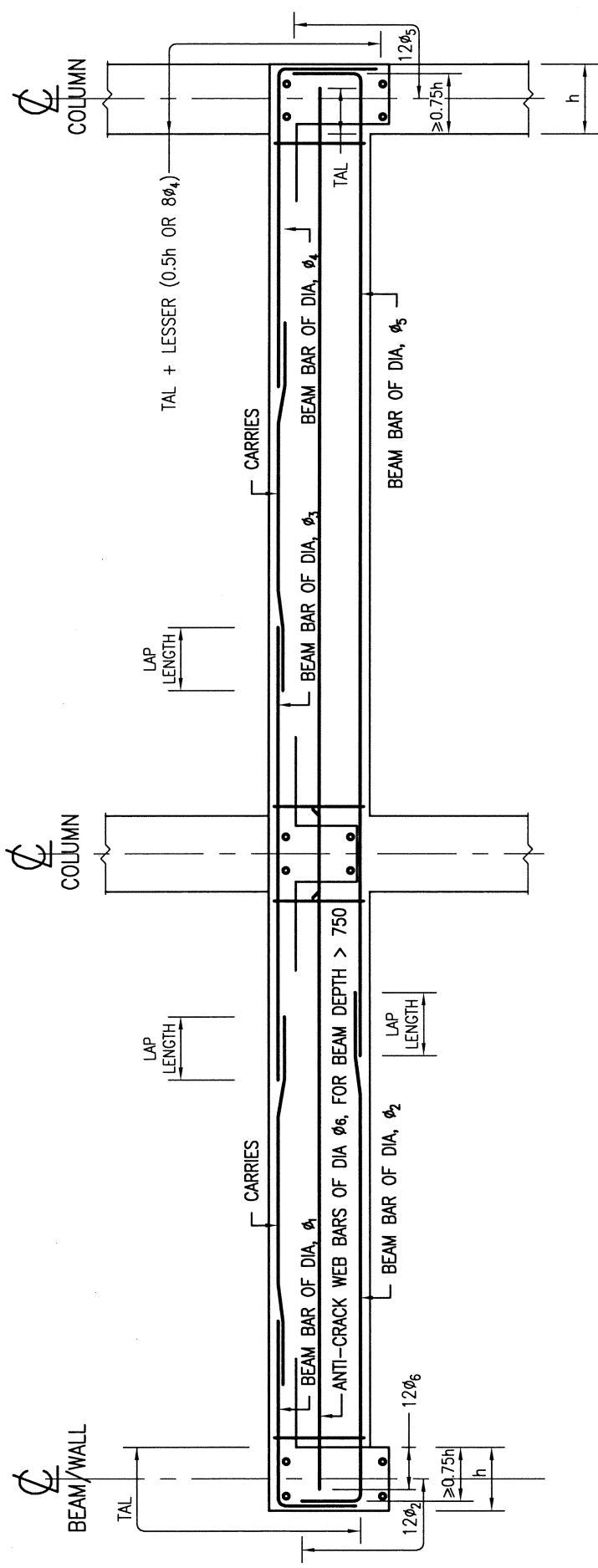
approved
AD(SE) W.W. LI *W.W. Li* date
JULY, 2008

drawing no. scale
SD/014 N.T.S.

**STRU. ENGG. BRANCH
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0 50 100



NOTES:

- FOR ARRANGEMENT OF REINFORCEMENT IN EXTERIOR COLUMN AND BEAM JUNCTION AT ROOF LEVEL REFER TO DRG No. SD/018.

FIG. 11 ANCHORAGE AND LAPPING ARRANGEMENT OF BEAM LONGITUDINAL BARS

drawing title
ANCHORAGE AND LAPPING ARRANGEMENT OF BEAM LONGITUDINAL BARS

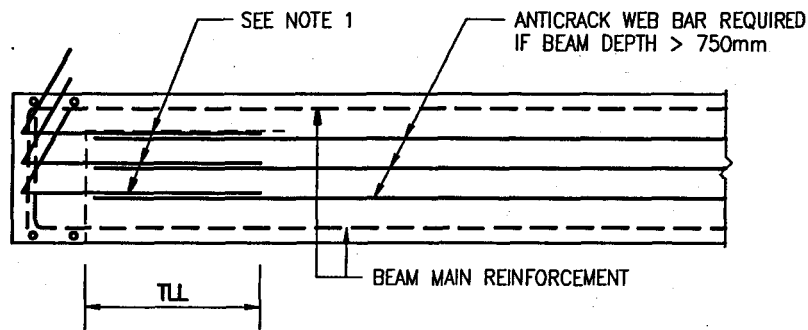
checked
 CSE/1 M.K. WONG MAR., 2020

approved
 AD(SE) K.L. TSE MAR., 2020

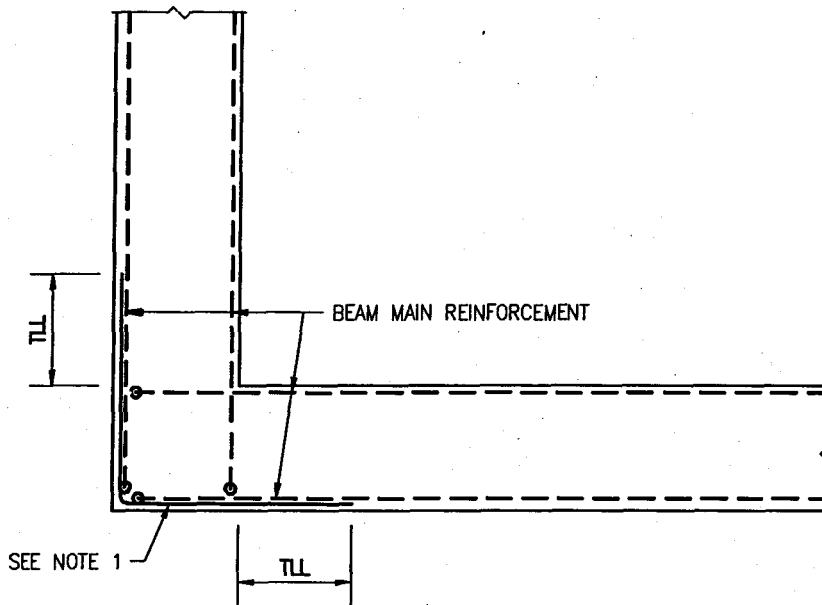
drawing no.
SD/015

rev. **B** scale **N.T.S.**

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ELEVATION



PLAN

NOTES:

1. FOR ANTICRACK BARS AT THE CORNER OF L JUNCTION USE T12 - 250 c/c (MIN.) OR IF BEAM DEPTH GREATER THAN 750mm, USE ANTICRACK BARS AS SPECIFIED ON BEAM DETAIL DRAWING.

FIG. 12 TYPICAL DETAIL OF BEAM AND BEAM 'L' JUNCTION

100
50
0

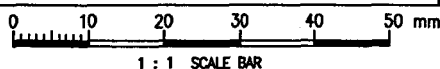
drawing title
TYPICAL DETAIL OF BEAM AND BEAM 'L' JUNCTION

checked
CSE/1 C.T. WONG *C.T. Wong* date
JULY, 2008

approved
AD(SE) W.W. LI *W.W. Li* date
JULY, 2008

drawing no. **SD/016** scale
N.T.S.

**STRU. ENGG. BRANCH
ARCH. SERVICES DEPT.**



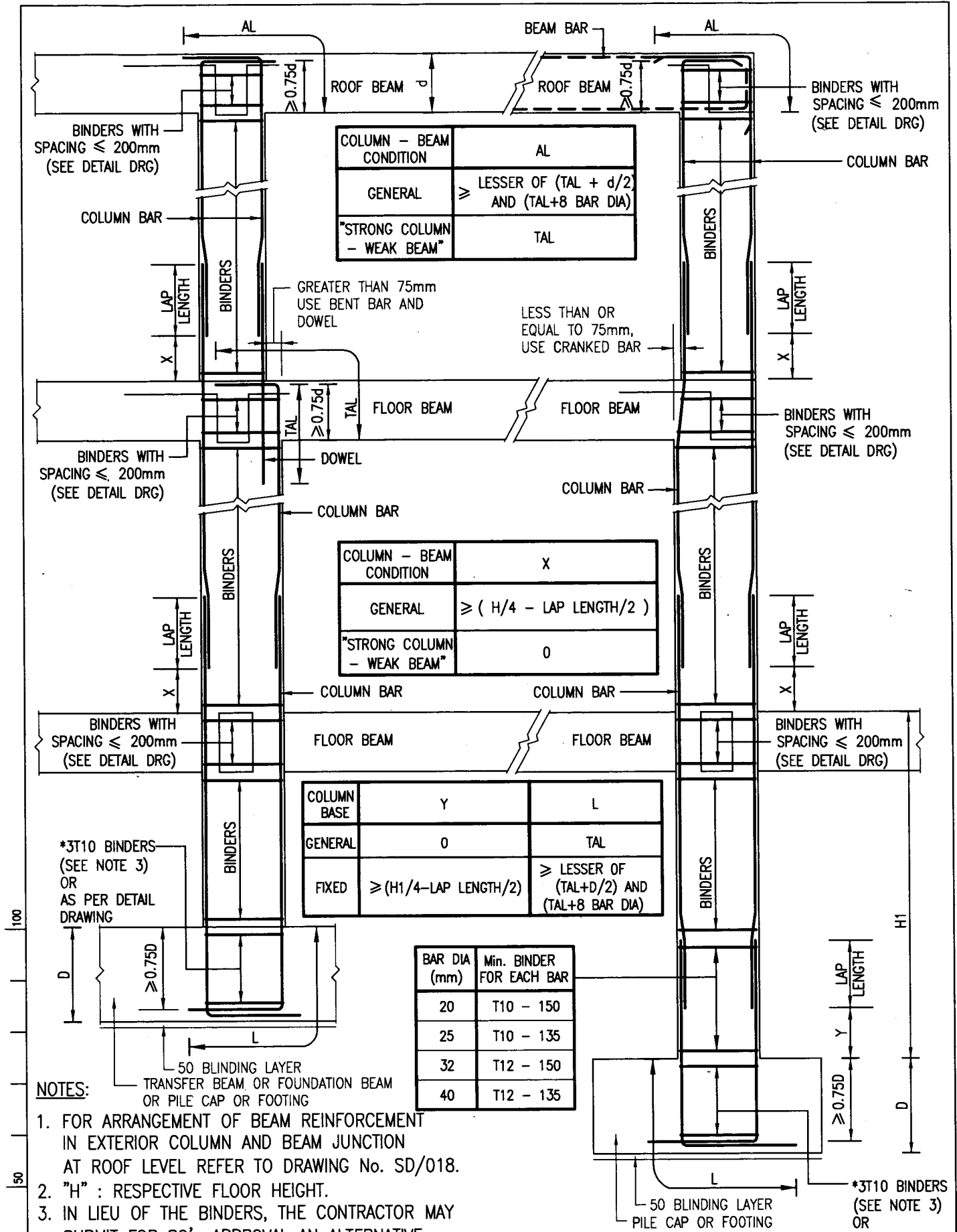


FIG. 13 TYPICAL DETAIL OF COLUMNS

drawing title TYPICAL DETAIL OF COLUMNS	checked (atg.)CSE/1 <u>M.K. WONG</u>	date JAN., 2014	drawing no. SD/017	rev. C	scale N.T.S.
	approved AD(SE) <u>K.T. LEUNG</u>	date JAN., 2014	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

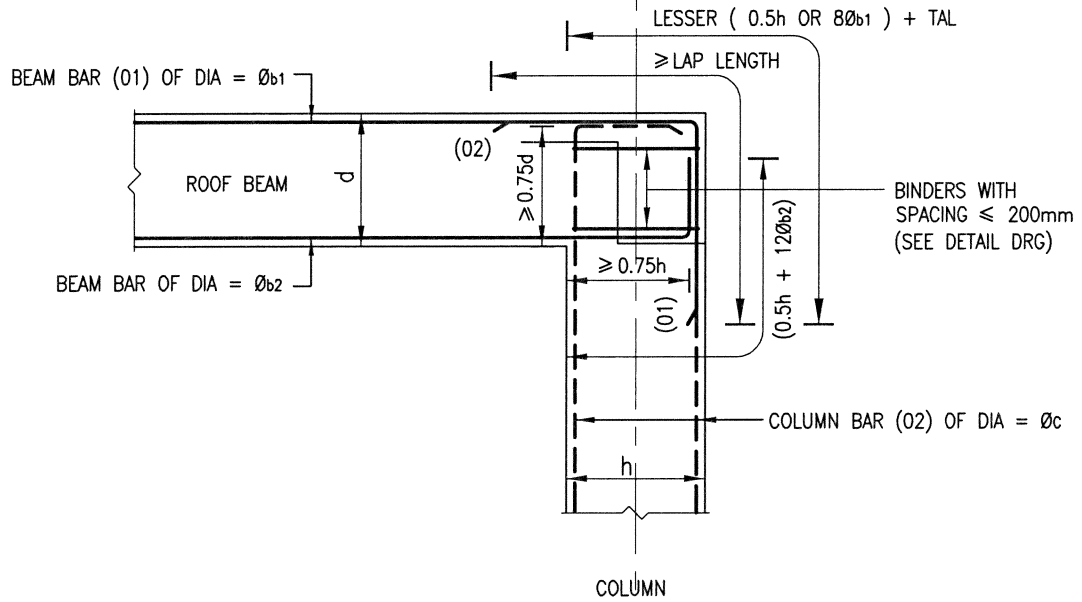


FIG. 14.1 ROOF BEAM & EXTERIOR COLUMN JUNCTION
- TYPICAL DETAIL (I)

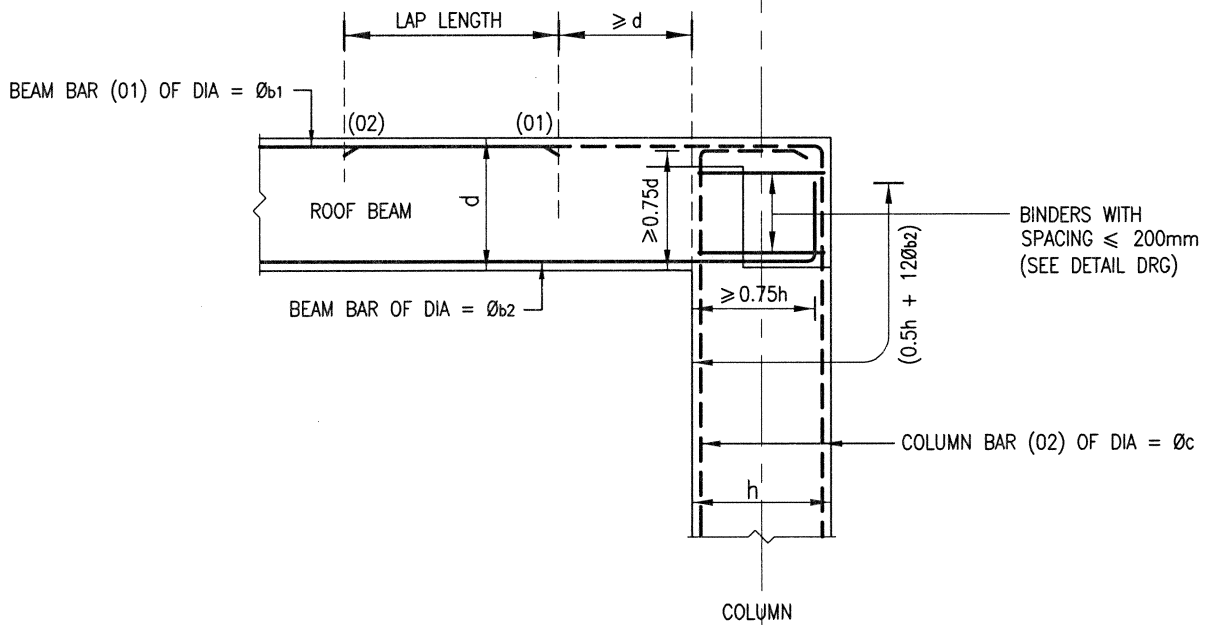


FIG. 14.2 ROOF BEAM & EXTERIOR COLUMN JUNCTION
- TYPICAL DETAIL (II)

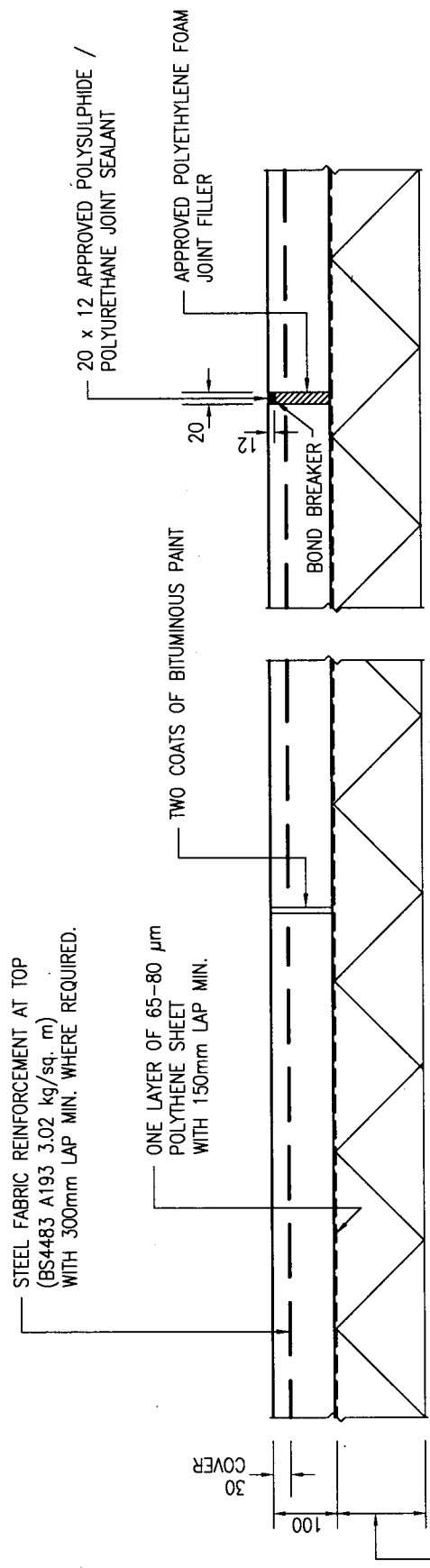
100
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drawing title TYPICAL DETAIL OF ROOF BEAM & EXTERIOR COLUMN JUNCTION	checked CSE/1 M.K. WONG	date MAR., 2020	drawing no. SD/018	rev. A	scale N.T.S.
	approved AD(SE) K.L. TSE	date MAR., 2020	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

0 50

100

50



DETAIL OF CONTRACTION JOINT

DETAIL OF EXPANSION JOINT

NOTES:

1. THE INSITU FIELD DENSITY OF THE SOIL BENEATH HARDCORE SHALL NOT BE LESS THAN 90% OF THE MAXIMUM DRY DENSITY.
2. GROUND SLABS TO BE CAST IN ALTERNATE PANELS NOT GREATER THAN 6m x 6m. EVERY THIRD JOINT SHALL BE AN EXPANSION JOINT, THE REMAINDER BEING CONTRACTION JOINTS. (CONTRACTOR IS REQUIRED TO SUBMIT LAYOUT OF JOINTS FOR PSE'S APPROVAL PRIOR TO CONSTRUCTION OF THE GROUND SLABS ON GRADE)
3. HARDCORE SHALL BE OF SUITABLE MATERIAL COMPLYING WITH CLAUSE 3.01(vi) OF THE GENERAL SPECIFICATION.
4. IF GRADE 200 RECYCLED ROCKFILL IS SPECIFIED, PARTICULAR SPECIFICATION FOR USE OF GRADE 200 RECYCLED ROCKFILL FOR HARDCORE LAYER SHALL BE FOLLOWED.

FIG. 15.1 TYPICAL DETAIL OF 100 THICK GROUND SLAB ON GRADE

drawing title

TYPICAL DETAIL OF
100 THICK GROUND SLAB
ON GRADE

checked

(atg.)CSE/1 M.K. WONG JAN., 2014

date

approved

AD(SE) K.T. LEUNG JAN., 2014

date

drawing no.

SD/019

rev.

B

scale

N.T.S.

**STRU. ENGG. BRANCH
ARCH. SERVICES DEPT.**

150

0 50 100

drawing title

TYPICAL DETAIL OF
150 THICK GROUND
SLAB ON GRADE

checked

CSE/1 M.K. WONG

date

MAR., 2020

drawing no.

SD/020

rev.

C

scale

N.T.S.

approved

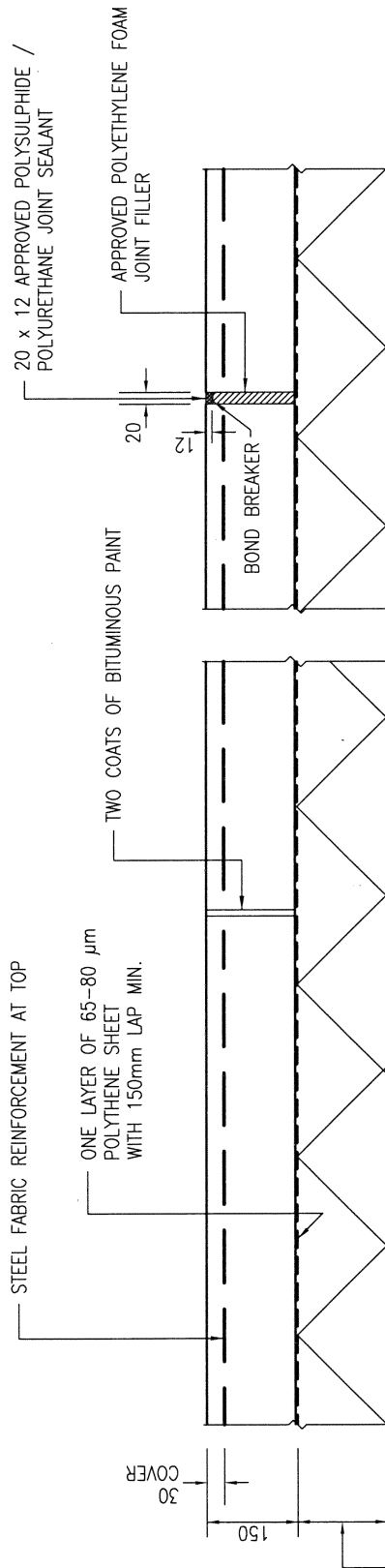
AD(SE) K.L. TSE



date

MAR., 2020

**STRU. ENGG. BRANCH
ARCH. SERVICES DEPT.**



DETAIL OF CONTRACTION JOINT

DETAIL OF EXPANSION JOINT

150mm MIN. HARDWARE OR
200mm MIN. GRADE 200 RECYCLED
ROCKFILL AS SPECIFIED

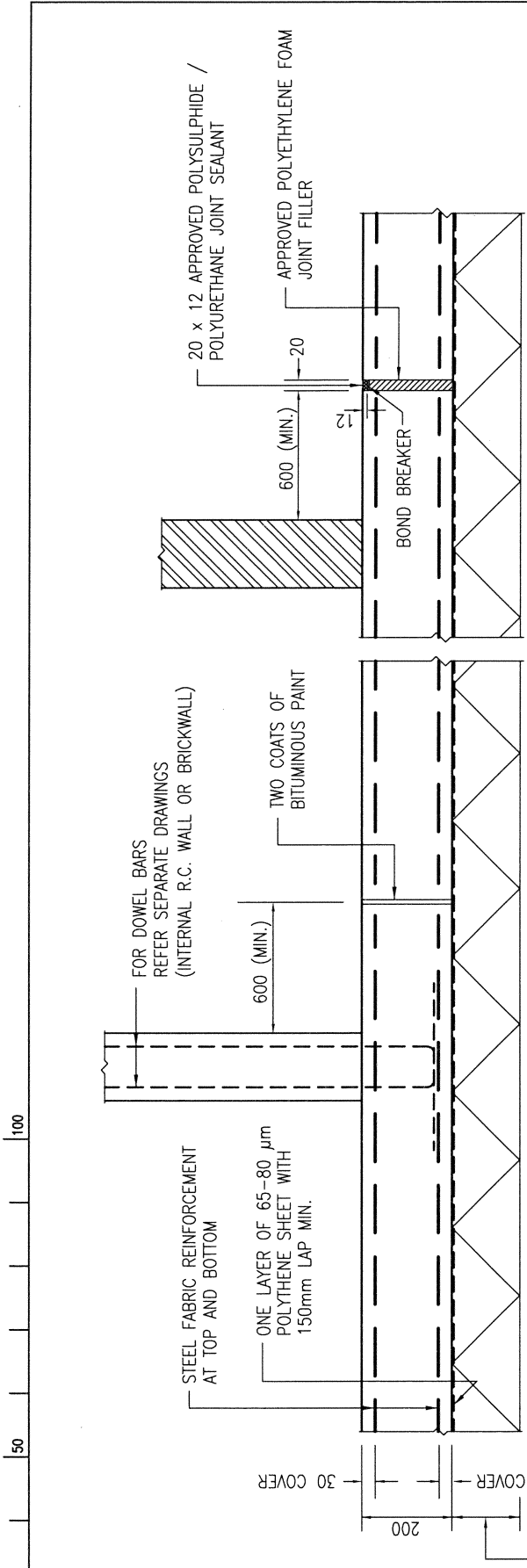
NOTES:

1. THE INSITU FIELD DENSITY OF THE SOIL BENEATH HARDWARE SHALL NOT BE LESS THAN 90% OF THE MAXIMUM DRY DENSITY.
2. GROUND SLABS TO BE CAST IN ALTERNATE PANELS WITH MAXIMUM PANEL DIMENSION, REQUIRED REINFORCEMENT AND MINIMUM LAP AS SHOWN IN TABLE 6. EVERY THIRD JOINT SHALL BE AN EXPANSION JOINT, THE REMAINDER BEING CONTRACTION JOINTS. (CONTRACTOR IS REQUIRED TO SUBMIT LAYOUT OF JOINTS FOR PSE'S APPROVAL PRIOR TO CONSTRUCTION OF THE GROUND SLABS ON GRADE)
3. HARDWARE SHALL BE OF SUITABLE MATERIAL COMPLYING WITH CLAUSE 3.01(vi) OF THE GENERAL SPECIFICATION.
4. IF GRADE 200 RECYCLED ROCKFILL IS SPECIFIED, PARTICULAR SPECIFICATION FOR USE OF GRADE 200 RECYCLED ROCKFILL FOR HARDWARE LAYER SHALL BE FOLLOWED.

MAXIMUM PANEL DIMENSION	STEEL MESH TO BS 4483 (WITH LONGITUDINAL BARS ALONG LONGER PANEL DIMENSION)	MINIMUM LAP (mm)
6m x 6m	A193	300
6m x 8m	B283	300

TABLE 6

FIG. 15.2 TYPICAL DETAIL OF 150 THICK GROUND SLAB ON GRADE



EXPANSION JOINT

CONTRACTION JOINT

MAXIMUM PANEL DIMENSION	STEEL MESH TO BS 4483 (WITH LONGITUDINAL BARS ALONG LONGER PANEL DIMENSION)	MINIMUM LAP (mm)
6m x 6m	A193	300
6m x 8m	B283	300
6m x 10m	B385	300

TABLE 6A

FIG. 15.3 TYPICAL DETAIL OF 200 THICK GROUND SLAB ON GRADE

NOTES:

1. THE INSITU FIELD DENSITY OF THE SOIL BENEATH HARDCORE SHALL NOT BE LESS THAN 90% OF THE MAXIMUM DRY DENSITY.
2. GROUND SLABS TO BE CAST IN ALTERNATE PANELS WITH MAXIMUM PANEL DIMENSION, REQUIRED TOP AND BOTTOM REINFORCEMENT AND MINIMUM LAP AS SHOWN IN TABLE 6A. EVERY THIRD JOINT SHALL BE AN EXPANSION JOINT, THE REMAINDER BEING CONTRACTION JOINTS. (CONTRACTOR IS REQUIRED TO SUBMIT LAYOUT OF JOINTS FOR PSE'S APPROVAL PRIOR TO CONSTRUCTION OF THE GROUND SLABS ON GRADE)
3. HARDCORE SHALL BE OF SUITABLE MATERIAL COMPLYING WITH CLAUSE 3.01(vi) OF THE GENERAL SPECIFICATION.
4. IF GRADE 200 RECYCLED ROCKFILL IS SPECIFIED, PARTICULAR SPECIFICATION FOR USE OF GRADE 200 RECYCLED ROCKFILL FOR HARDCORE LAYER SHALL BE FOLLOWED.

drawing title TYPICAL DETAIL OF 200 THICK GROUND SLAB ON GRADE	checked CSE/1 M.K. WONG	date MAR., 2020	drawing no. SD/021	rev. C	scale N.T.S.
	approved AD(SE) K.L. TSE	date MAR., 2020		STRU. ENGG. BRANCH ARCH. SERVICES DEPT.	

50 100

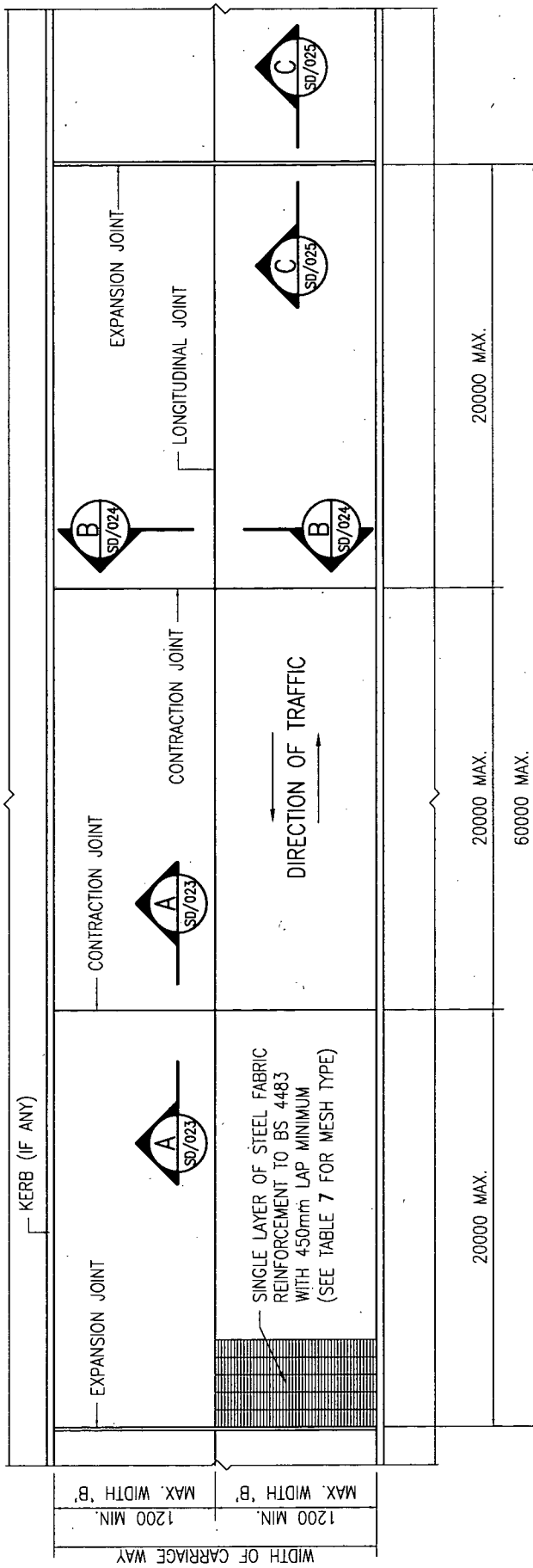


FIG. 16.1 TYPICAL PART PLAN OF REINFORCED CONCRETE EXTERNAL DRIVEWAY AND CAR PARKING AREAS

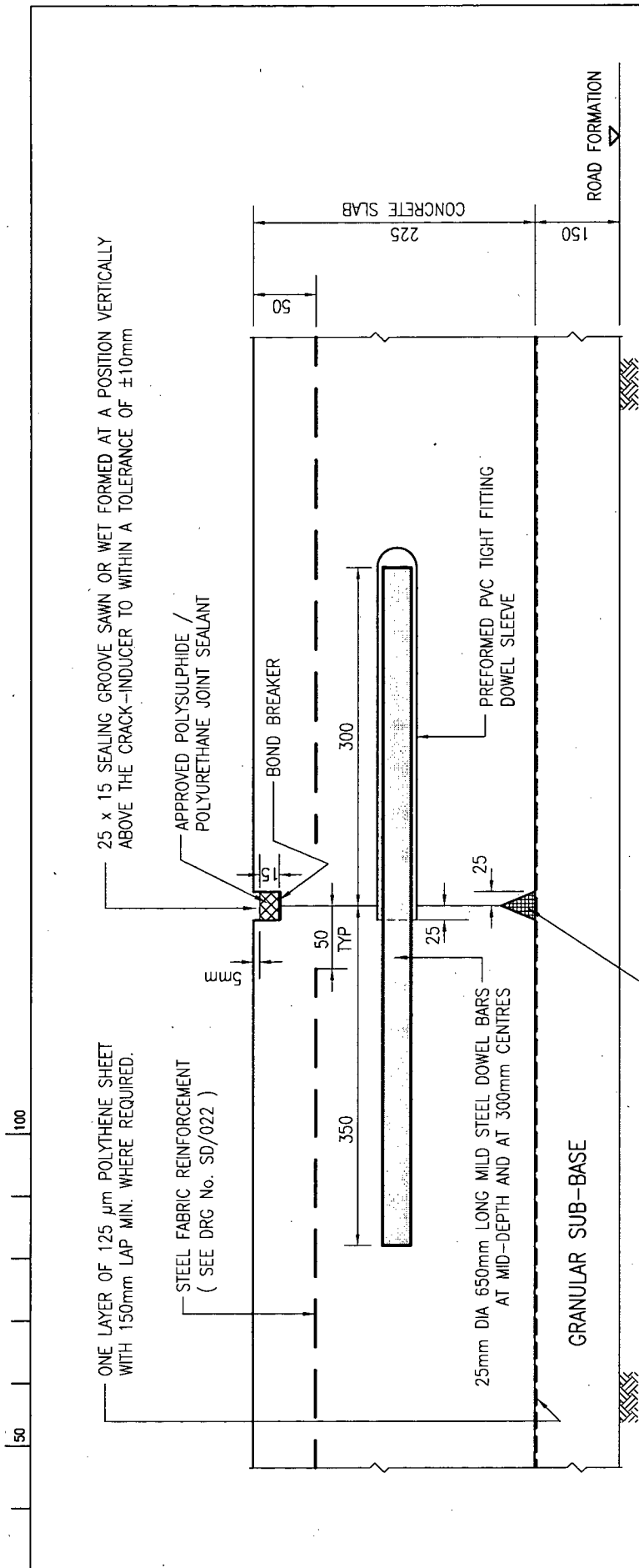
NOTES:

1. DRAWINGS No. SD/022 TO SD/026 ARE NOT APPLICABLE TO WORKS THAT WILL BE HANDED OVER TO HIGHWAYS DEPARTMENT.
2. CONCRETE TO BE GRADE 40/20 MIN.
3. LONGITUDINAL JOINTS SHOULD BE PROVIDED SO THAT SLABS ARE NOT WIDER THAN THE MAX. WIDTH IN TABLE 7.
4. EVERY THIRD JOINT IN THE TRANSVERSE DIRECTION SHOULD BE AN EXPANSION JOINT, THE REMAINDER BEING CONTRACTION JOINTS.
5. CONTRACTOR IS REQUIRED TO SUBMIT LAYOUT OF JOINTS FOR PSE'S APPROVAL PRIOR TO CONSTRUCTION OF THE EXTERNAL SLABS ON GRADE.
6. GRANULAR SUB-BASE MATERIAL REFER TO TABLE 8 ON DRG No. SD/026.

MAX. SLAB WIDTH BETWEEN LONGITUDINAL JOINTS, 'B'	STEEL MESH TO BS 4483
4.5 m	C503 (4.34 kg/sq. m)
6.0 m	B503 (5.93 kg/sq. m)

TABLE 7

drawing title TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (1 OF 5)	checked CSE/1 M.K. WONG	date DEC., 2014	drawing no. SD/022	rev. A	scale N.T.S.
	approved AD(SE) K.T. LEUNG	date DEC., 2014	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		



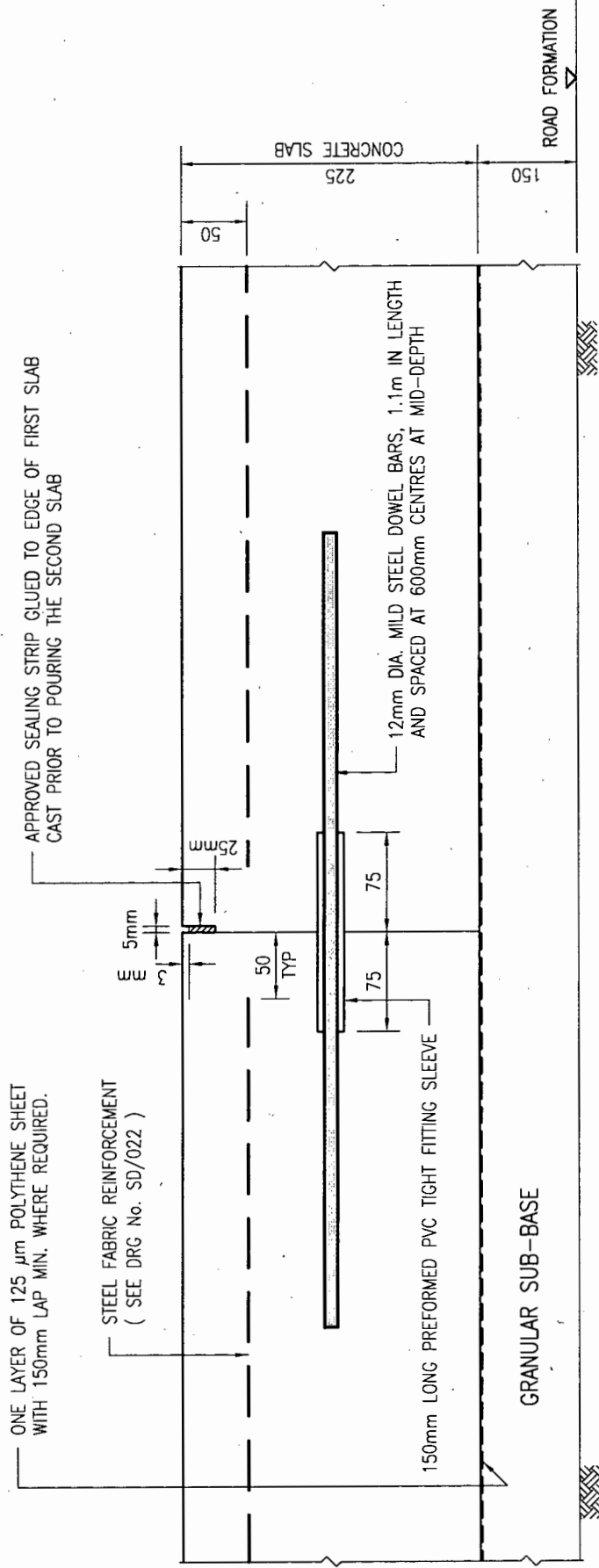
BOTTOM CRACK-INDUCER (OF TIMBER, STEEL OR SYNTHETIC MATERIAL) SECURELY FIXED TO THE BASE. THE COMBINED DEPTH OF DISCONTINUITY PROVIDED BY THE CRACK-INDUCER AND THE SEALING GROOVE AT THE TOP OF THE SLAB SHOULD BE AT LEAST 1/4 OF THE THICKNESS OF THE SLAB

FIG. 16.2 SEC. A-A DETAIL OF CONTRACTION JOINT IN EXTERNAL DRIVEWAY AND CAR PARKING AREAS

- NOTES :
1. ALL THE FILLING MATERIALS FOR ROAD FORMATION SHALL BE COMPACTED IN COMPLIANCE WITH CLAUSE 3.19(vi) OF THE GENERAL SPECIFICATION; OR, AS APPROVED BY THE SO, CLAUSE 3.20 OF THE GENERAL SPECIFICATION.
 2. IMMEDIATELY PRIOR TO LAYING THE SUB-BASE, CARRY OUT PREPARATION AND SURFACE TREATMENT OF THE ROAD FORMATION IN ACCORDANCE WITH CLAUSE 3.26 OF THE GENERAL SPECIFICATION.
 3. UNLESS OTHERWISE SPECIFIED, SUB-BASE SHALL BE COMPACTED IN ACCORDANCE WITH CLAUSE 3.20 OF THE GENERAL SPECIFICATION OR AS APPROVED BY THE SO.

drawing title TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (2 OF 5)	checked CSE/1 <u>M.K. WONG</u>	date DEC., 2014	drawing no. SD/023	rev. A	scale N.T.S.
	approved AD(SE) <u>K.T. LEUNG</u>	date DEC., 2014	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

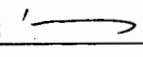
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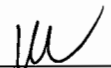


**FIG. 16.3 SEC. B-B DETAIL OF LONGITUDINAL JOINT
IN EXTERNAL DRIVEWAY AND CAR PARKING AREAS**

- NOTES :
1. ALL THE FILLING MATERIALS FOR ROAD FORMATION SHALL BE COMPACTED IN COMPLIANCE WITH CLAUSE 3.19(vi) OF THE GENERAL SPECIFICATION; OR, AS APPROVED BY THE SO, CLAUSE 3.20 OF THE GENERAL SPECIFICATION.
 2. IMMEDIATELY PRIOR TO LAYING THE SUB-BASE, CARRY OUT PREPARATION AND SURFACE TREATMENT OF THE ROAD FORMATION IN ACCORDANCE WITH CLAUSE 3.26 OF THE GENERAL SPECIFICATION.
 3. UNLESS OTHERWISE SPECIFIED, SUB-BASE SHALL BE COMPACTED IN ACCORDANCE WITH CLAUSE 3.20 OF THE GENERAL SPECIFICATION OR AS APPROVED BY THE SO.

drawing title
**TYPICAL DETAIL OF
 EXTERNAL DRIVEWAY AND
 CARPARK GROUND SLAB
 ON GRADE**
 (3 OF 5)

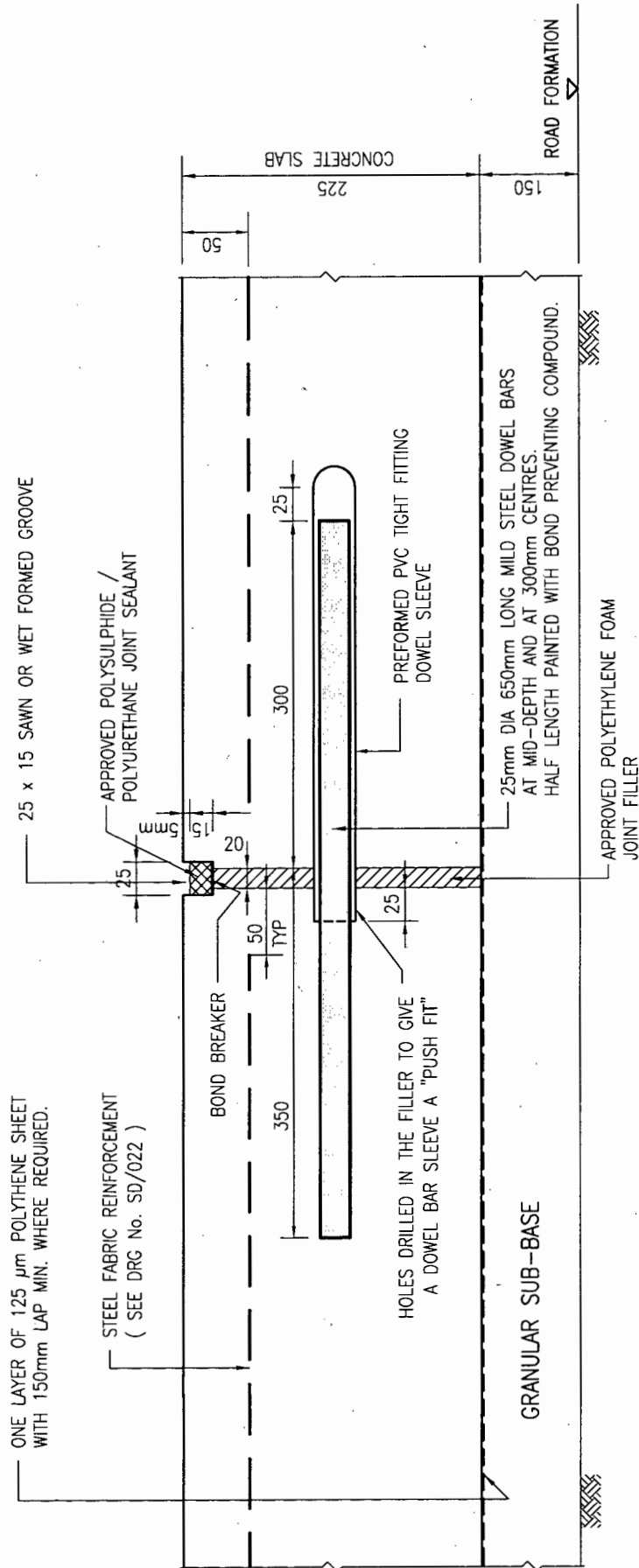
checked
 CSE/1 M.K. WONG  DEC., 2014

approved
 AD(SE) K.T. LEUNG  DEC., 2014

drawing no. SD/024	rev. A	scale N.T.S.
STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

0 50

50 100



**FIG. 16.4 SEC. C-C DETAIL OF EXPANSION JOINT
IN EXTERNAL DRIVEWAY AND CAR PARKING AREAS**

NOTES :

1. ALL THE FILLING MATERIALS FOR ROAD FORMATION SHALL BE COMPACTED IN COMPLIANCE WITH CLAUSE 3.19(vi) OF THE GENERAL SPECIFICATION; OR, AS APPROVED BY THE SO, CLAUSE 3.20 OF THE GENERAL SPECIFICATION.
2. IMMEDIATELY PRIOR TO LAYING THE SUB-BASE, CARRY OUT PREPARATION AND SURFACE TREATMENT OF THE ROAD FORMATION IN ACCORDANCE WITH CLAUSE 3.26 OF THE GENERAL SPECIFICATION.
3. UNLESS OTHERWISE SPECIFIED, SUB-BASE SHALL BE COMPACTED IN ACCORDANCE WITH CLAUSE 3.20 OF THE GENERAL SPECIFICATION OR AS APPROVED BY THE SO.

drawing title

TYPICAL DETAIL OF
EXTERNAL DRIVEWAY AND
CARPARK GROUND SLAB
ON GRADE

(4 OF 5)

checked

CSE/1 M.K. WONG

date

DEC., 2014

drawing no.

SD/025

rev.

A

scale

N.T.S.

approved

AD(SE) K.T. LEUNG

date

DEC., 2014

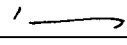

**STRU. ENGG. BRANCH
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RANGE OF GRADING	
B. S. SIEVE SIZE	PERCENTAGE BY WEIGHT PASSING
75 mm	100
37.5 mm	85 ~ 100
20 mm	60 ~ 85
10 mm	40 ~ 70
5 mm	25 ~ 45
600 μ m	8 ~ 22
75 μ m	0 ~ 10

- a. GRANULAR SUB-BASE MATERIAL SHALL BE COMPRISED OF CRUSHED ROCK, RE-CYCLED AGGREGATE OR APPROVED RE-CYCLED SUB-BASE MATERIAL. THE MATERIAL SHALL BE WELL-GRADED AND LIE WITHIN THE ABOVE GRADING LIMITS. THE PARTICLE SIZE SHALL BE DETERMINED IN ACCORDANCE WITH THE REQUIREMENTS OF CS3.
- b. THE MATERIAL PASSING THE B.S. SIEVE 425 μ m WHEN TESTED IN ACCORDANCE WITH GEOSPEC 3, TEST METHOD 6.1 SHALL BE NON-PLASTIC.
- c. THE MATERIAL SHALL BE LAID AND COMPACTED TO THE REQUIREMENTS OF CLAUSE 3.20 OF THE GENERAL SPECIFICATION.

TABLE 8 GRANULAR SUB-BASE MATERIAL


100
50
0

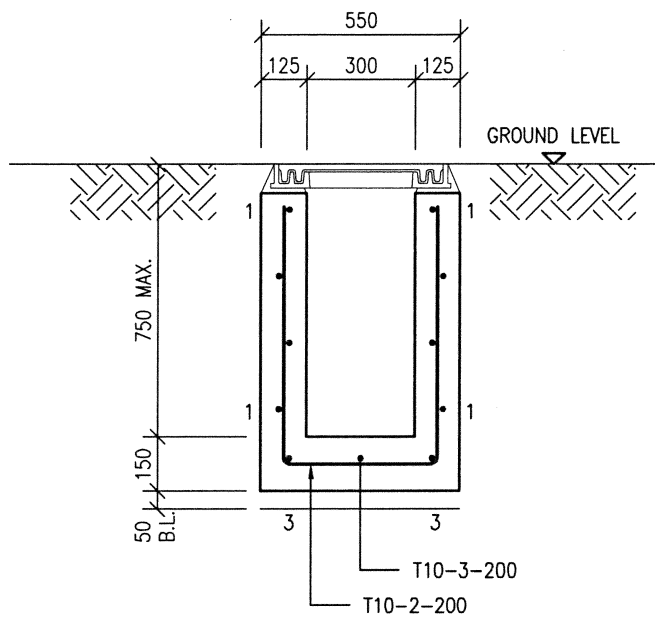
drawing title TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (5 OF 5)	checked CSE/1 <u>M.K. WONG</u>  DEC., 2014	date DEC., 2014	drawing no. SD/026	rev. B	scale N.T.S.
	approved AD(SE) <u>K.T. LEUNG</u> 	date DEC., 2014	STRU. ENGG. BRANCH ARCH. SERVICES DEPT.		

DRAWING LIST OF SEB TYPICAL DETAILS (2) – MANHOLES

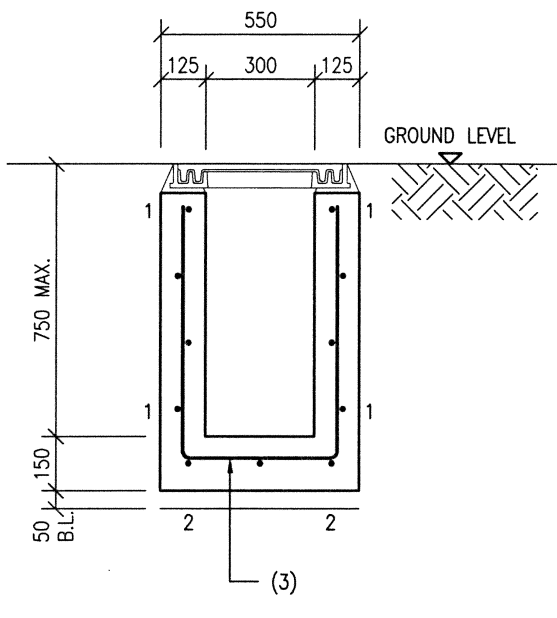
DRAWING No.	DRAWING TITLE
MH/01	DRAWING LIST OF SEB TYPICAL DETAILS (2) – MANHOLES
MH/02	TYPICAL R.C. DETAILS OF MANHOLE TYPE A
MH/03	TYPICAL R.C. DETAILS OF MANHOLE TYPE B
MH/04	TYPICAL R.C. DETAILS OF MANHOLE TYPE C
MH/05	TYPICAL R.C. DETAILS OF MANHOLE TYPE D
MH/06	TYPICAL R.C. DETAILS OF MANHOLE TYPE E (1 OF 3)
MH/07	TYPICAL R.C. DETAILS OF MANHOLE TYPE E (2 OF 3)
MH/08	TYPICAL R.C. DETAILS OF MANHOLE TYPE E (3 OF 3)
MH/09	TYPICAL R.C. DETAILS OF MANHOLE TYPE F (1 OF 3)
MH/10	TYPICAL R.C. DETAILS OF MANHOLE TYPE F (2 OF 3)
MH/11	TYPICAL R.C. DETAILS OF MANHOLE TYPE F (3 OF 3)

100
50
0

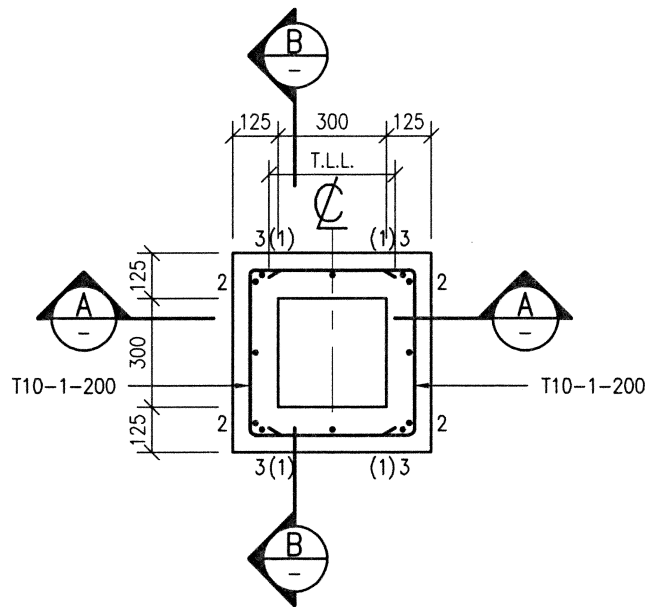
title DRAWING LIST OF SEB TYPICAL DETAILS (2) – MANHOLES	checked CSE/1 M.K. WONG <i>[Signature]</i>	date MAR., 2020	drawing no. MH/01	rev. -	scale -	
	approved AD(SE) K.L. TSE <i>[Signature]</i>	date MAR., 2020	 ARCHITECTURAL SERVICES DEPARTMENT			
	office STRUCTURAL ENGINEERING BRANCH					



SEC. A-A



SEC. B-B



SECTIONAL PLAN

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. CONCRETE: GRADE 30/20.
 3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.

title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE A**

checked
 CSE/1 M.K. WONG

approved
 AD(SE) K.L. TSE

office
STRUCTURAL ENGINEERING BRANCH

date
 MAR., 2020

date
 MAR., 2020

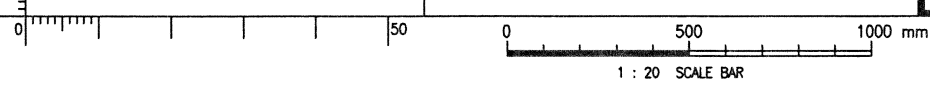
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MH/02

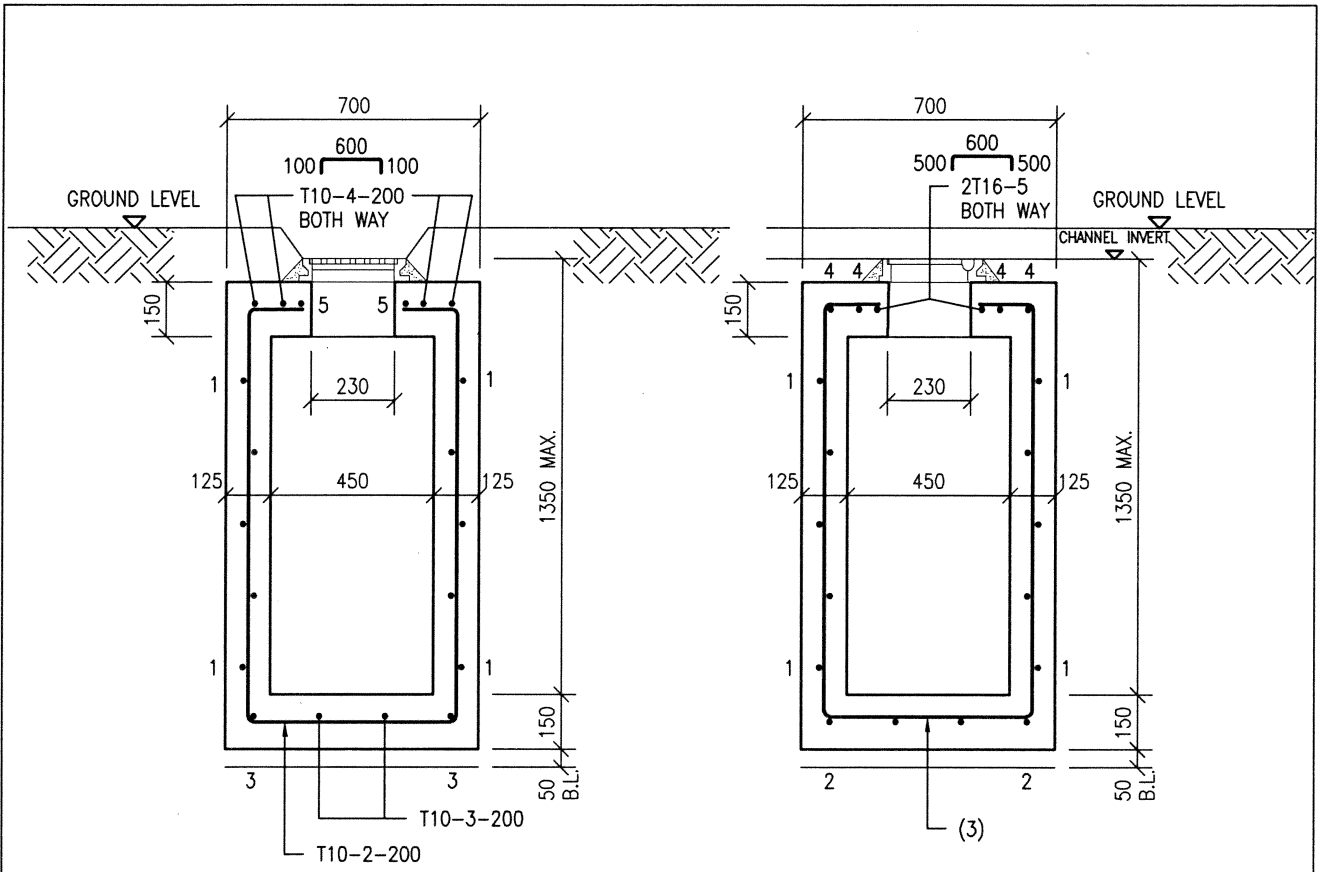
rev.

scale
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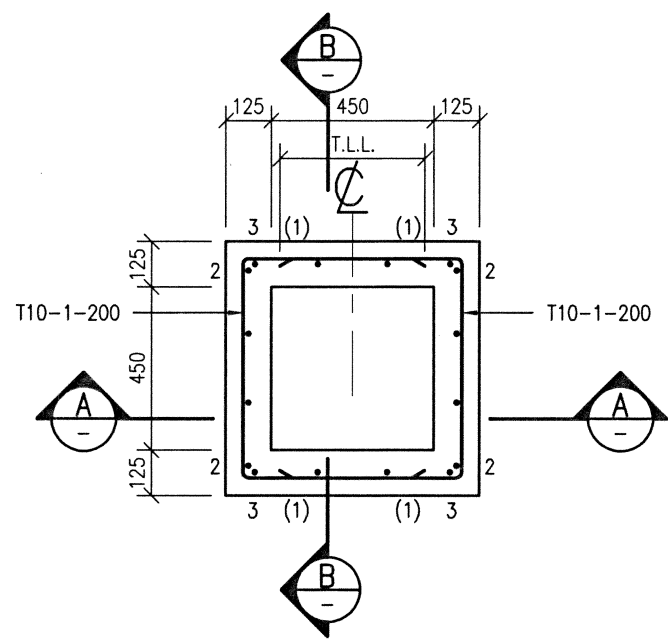
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SEC. A-A

SEC. B-B



SECTIONAL PLAN

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. CONCRETE: GRADE 30/20.
3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.

title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE B**

checked
 CSE/1 M.K. WONG

approved
 AD(SE) K.L. TSE

office
STRUCTURAL ENGINEERING BRANCH

date
 MAR., 2020

date
 MAR., 2020

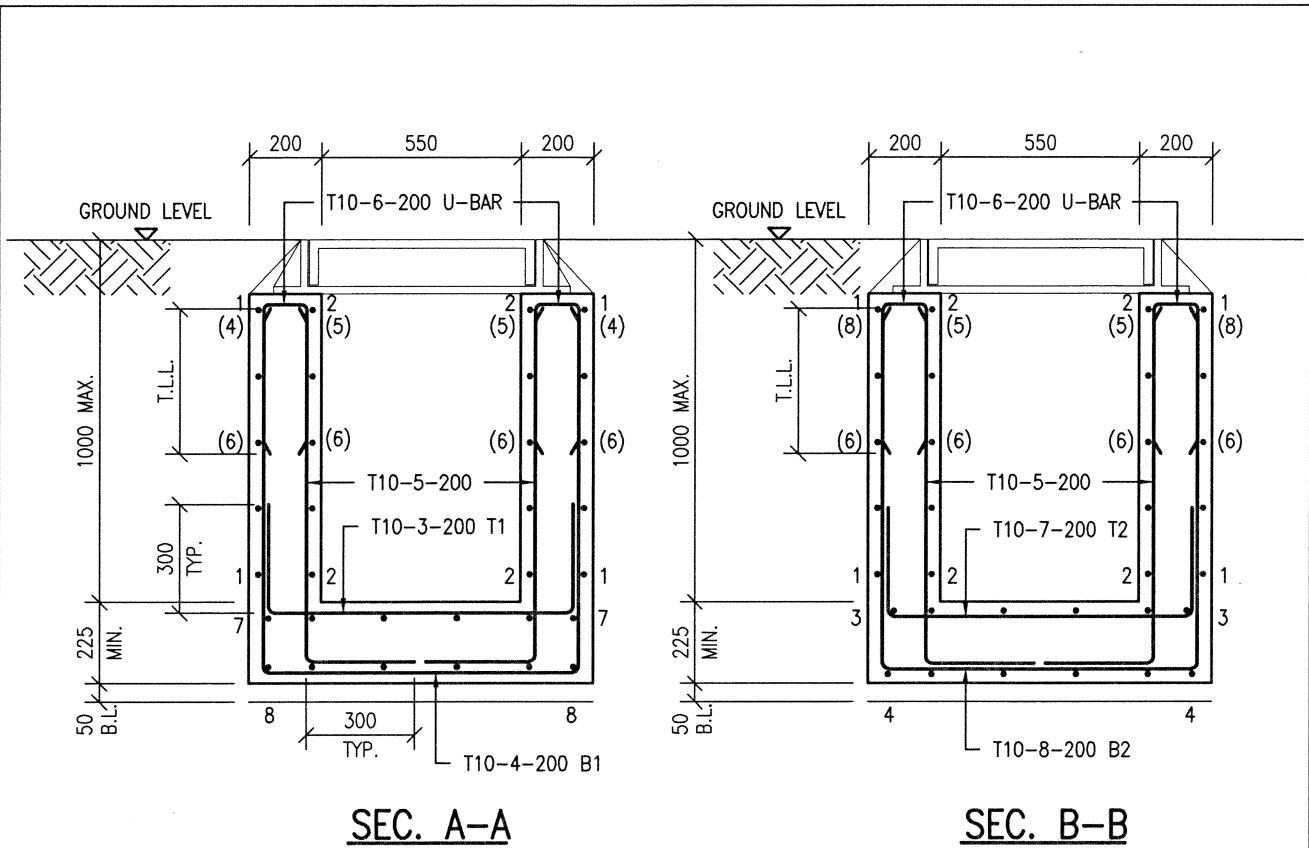
drawing no.
MH/03

rev.

scale
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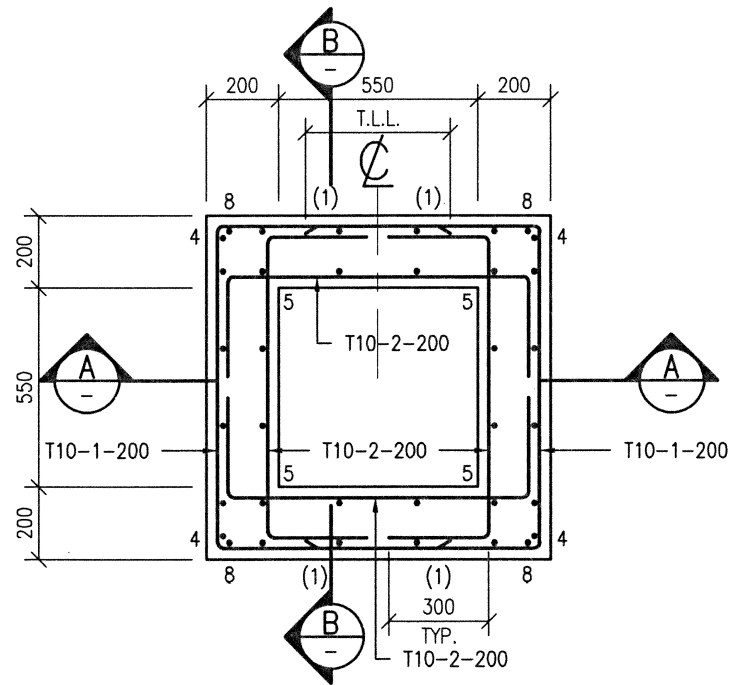


**ARCHITECTURAL
 SERVICES
 DEPARTMENT**



SEC. A-A


SEC. B-B

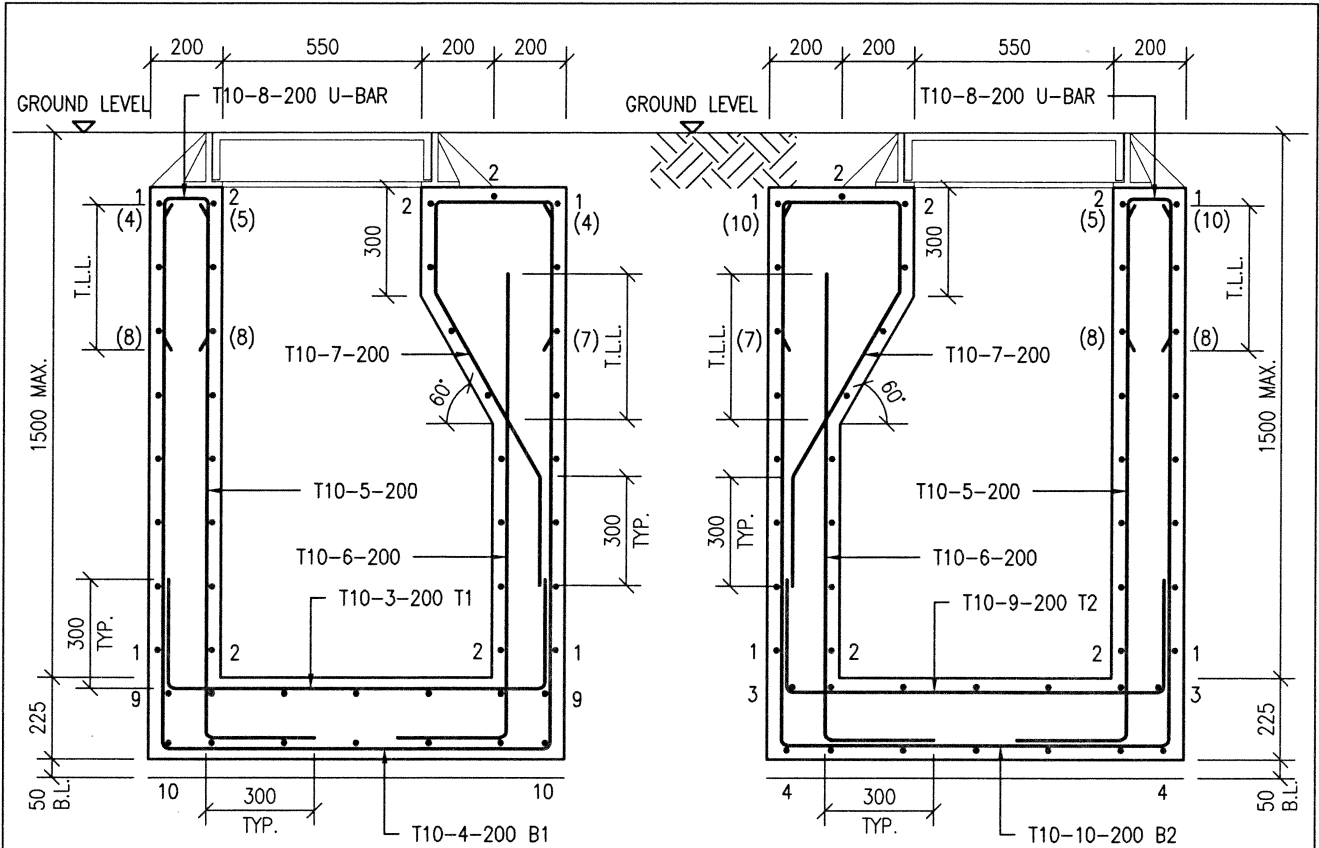


SECTIONAL PLAN

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. CONCRETE: GRADE 30/20.
 3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.

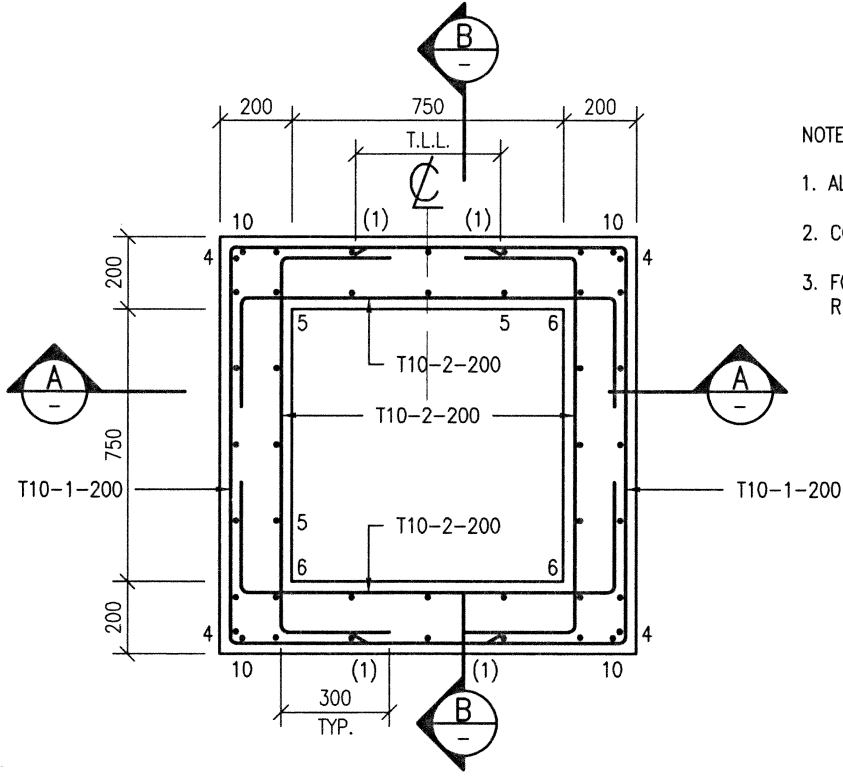
100
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title TYPICAL R.C. DETAILS OF MANHOLE TYPE C	checked CSE/1 M.K. WONG	date MAR., 2020	drawing no. MH/04	rev.	scale 1 : 20
	approved AD(SE) K.L. TSE	date MAR., 2020	 ARCHITECTURAL SERVICES DEPARTMENT		
	office STRUCTURAL ENGINEERING BRANCH				




SEC. A-A

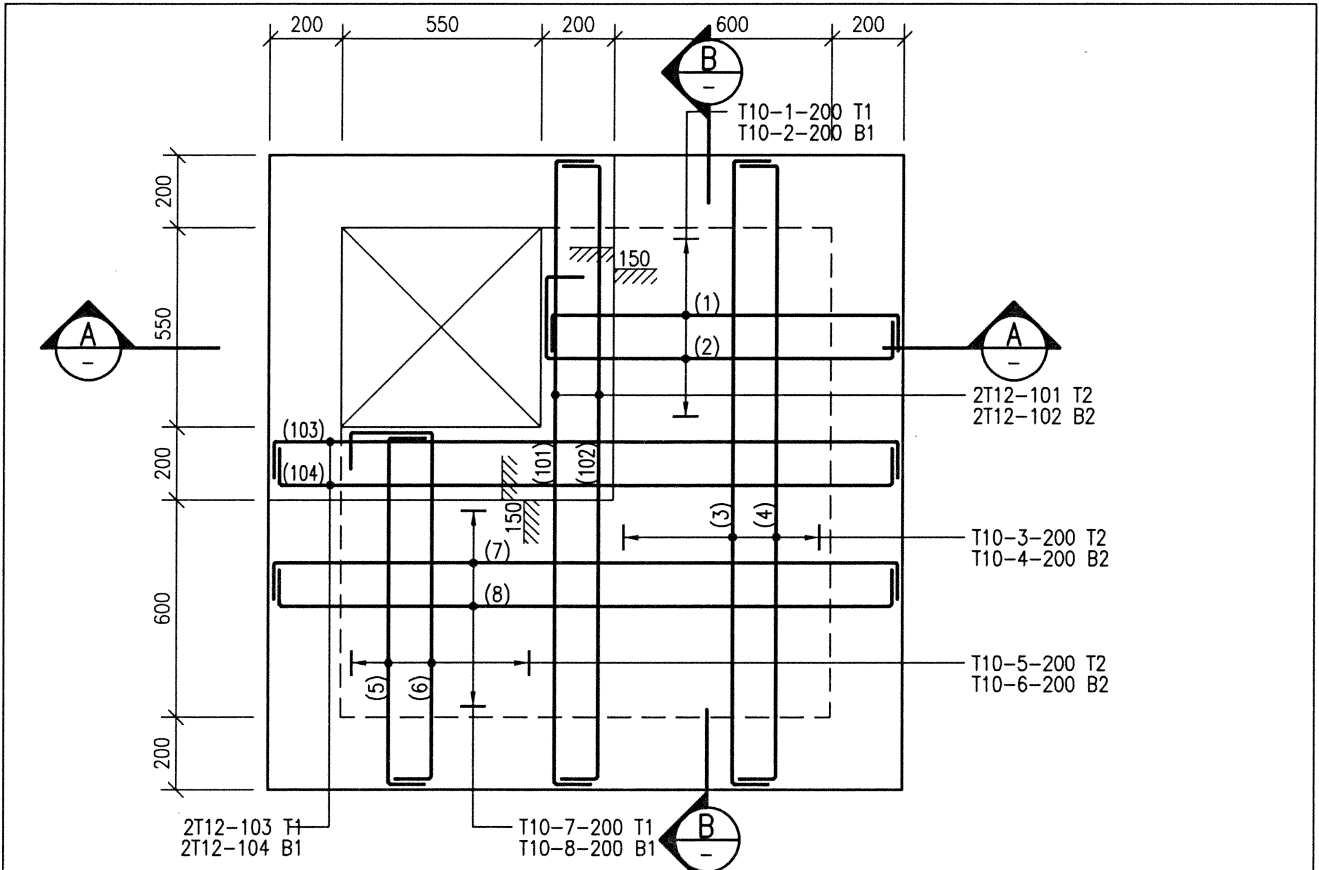
SEC. B-B



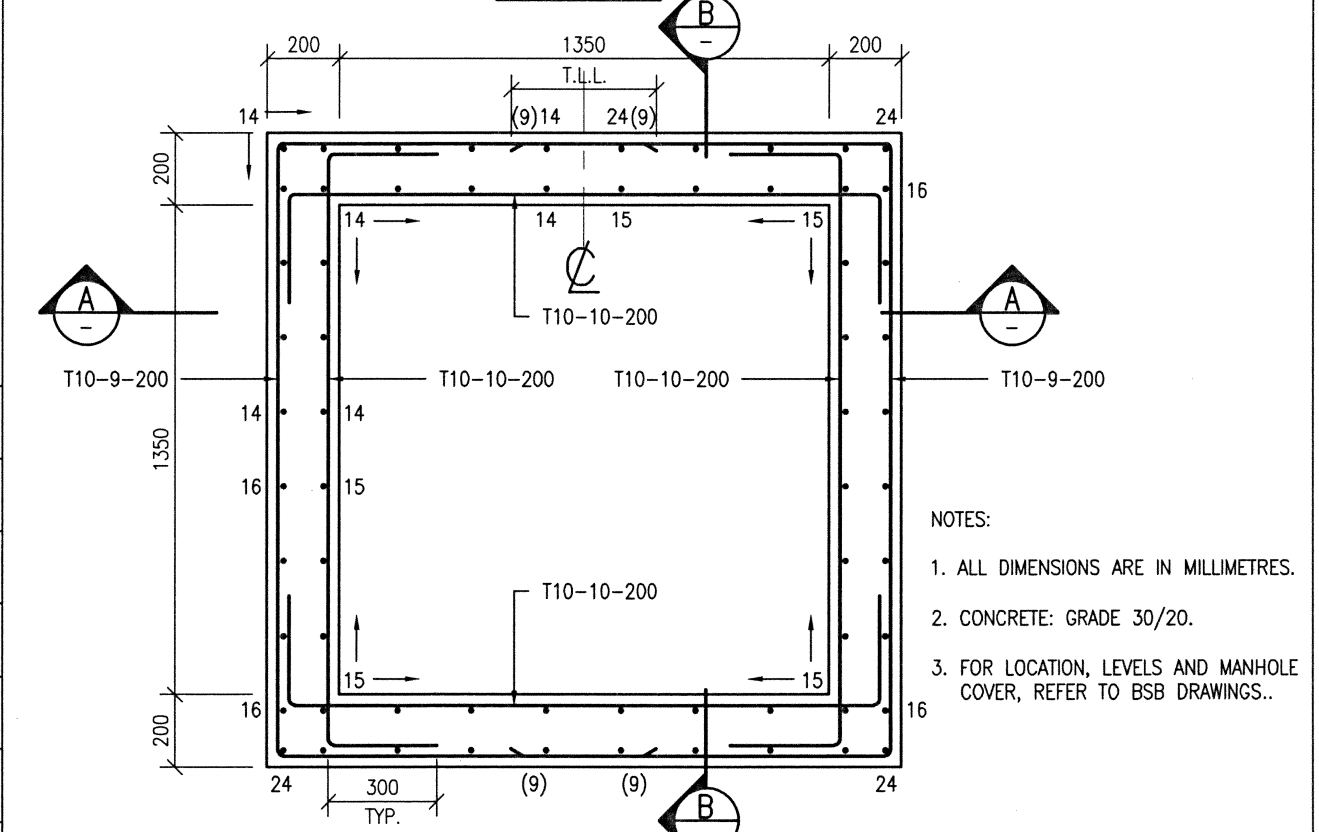
SECTIONAL PLAN

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. CONCRETE: GRADE 30/20.
 3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.

title TYPICAL R.C. DETAILS OF MANHOLE TYPE D	checked CSE/1 M.K. WONG	date MAR., 2020	drawing no. MH/05	rev.	scale 1 : 20
	approved AD(SE) K.L. TSE <i>[Signature]</i>	date MAR., 2020	 ARCHITECTURAL SERVICES DEPARTMENT		
	office STRUCTURAL ENGINEERING BRANCH				



TOP PLAN



SECTIONAL PLAN

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. CONCRETE: GRADE 30/20.
 3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS..

title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE E**
 (1 OF 3)

checked
 CSE/1 M.K. WONG *[Signature]*
 approved
 AD(SE) K.L. TSE *[Signature]*
 office
STRUCTURAL ENGINEERING BRANCH

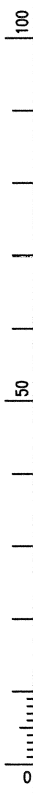
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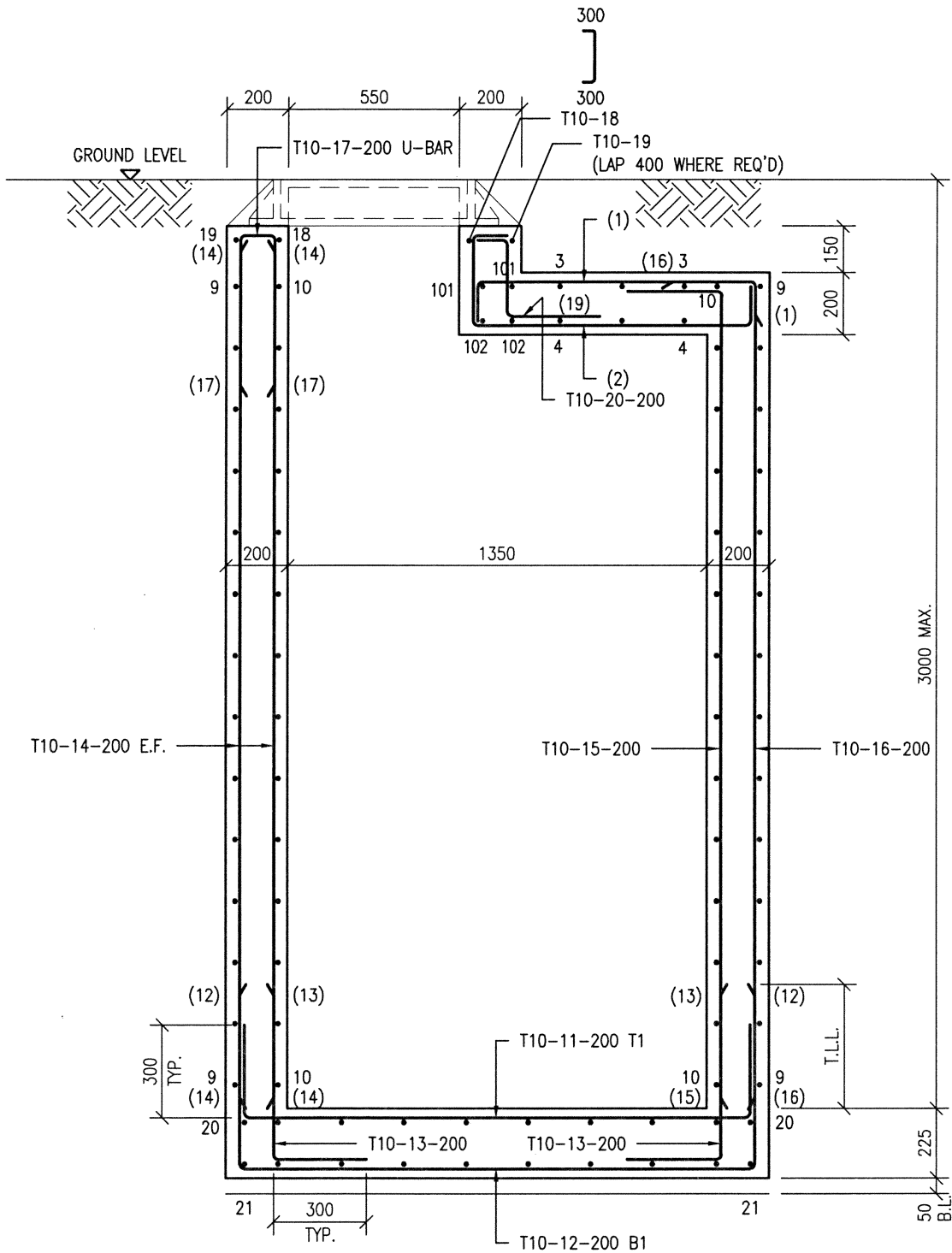
drawing no.
MH/06

rev.

scale
 1 : 20

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SEC. A-A

title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE E**

(2 OF 3)

checked
 CSE/1 M.K. WONG

approved
 AD(SE) K.L. TSE

office
STRUCTURAL ENGINEERING BRANCH

date
 MAR., 2020

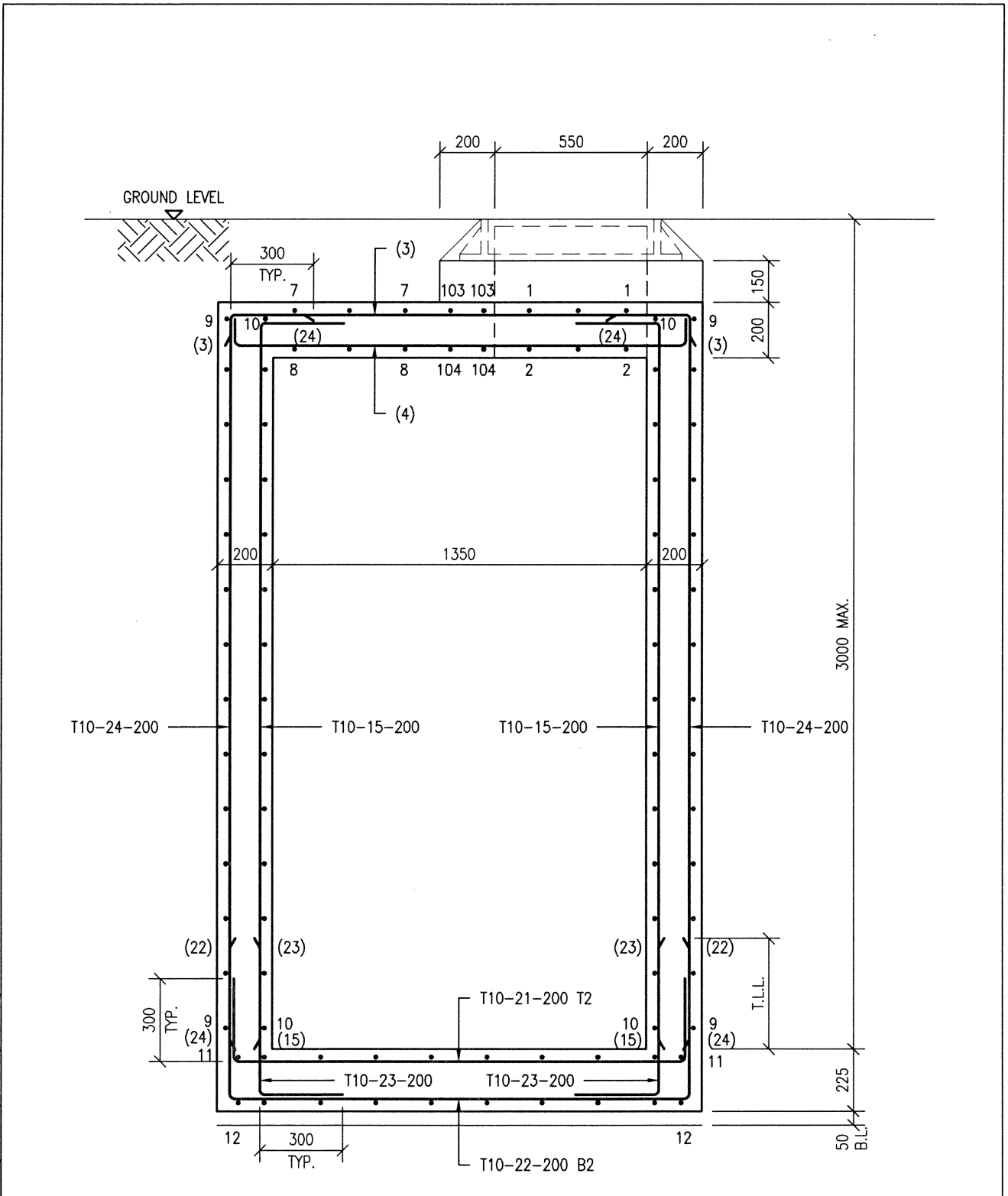
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drawing no.
MH/07

rev. scale
 1 : 20




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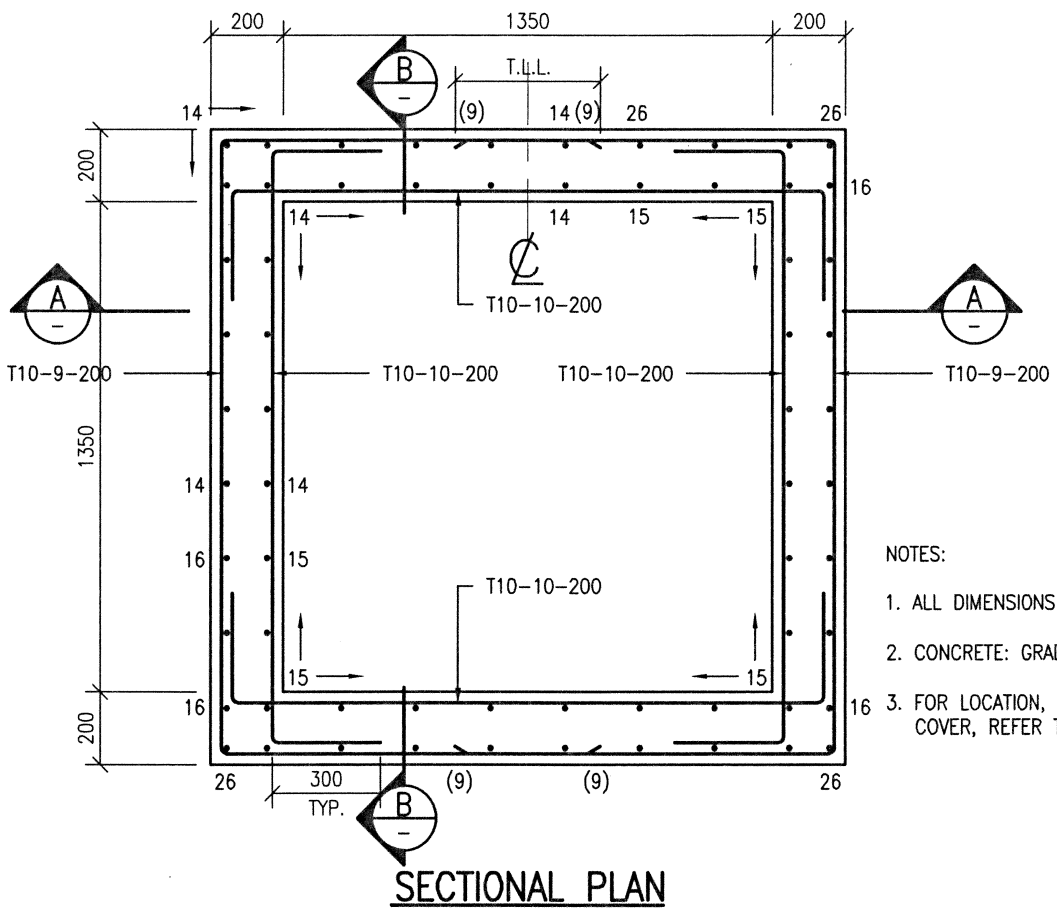
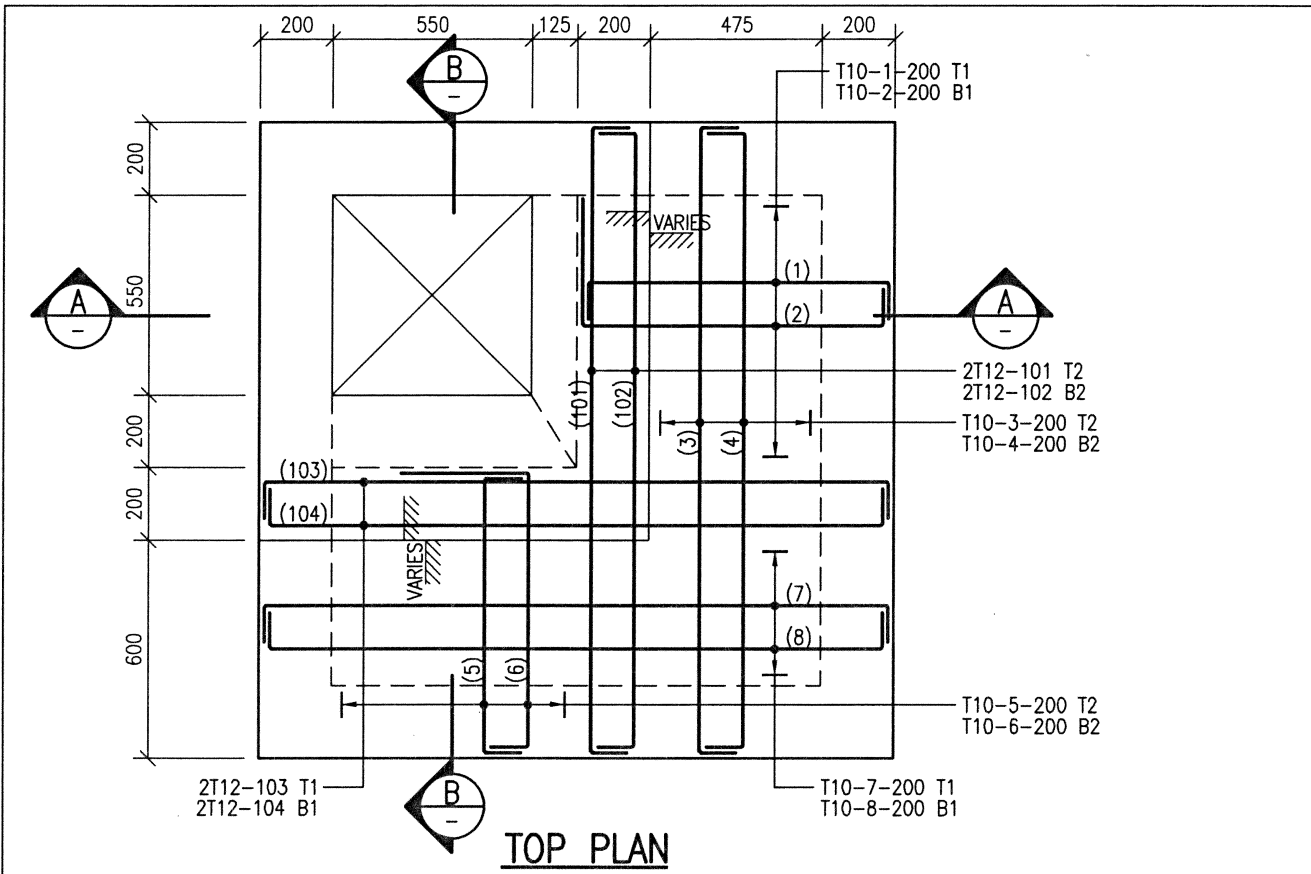


SEC. B-B

title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE E**
 (3 OF 3)

checked CSE/1 M.K. WONG	date MAR., 2020
approved AD(SE) K.L. TSE <i>T.M.M.M.</i>	date MAR., 2020
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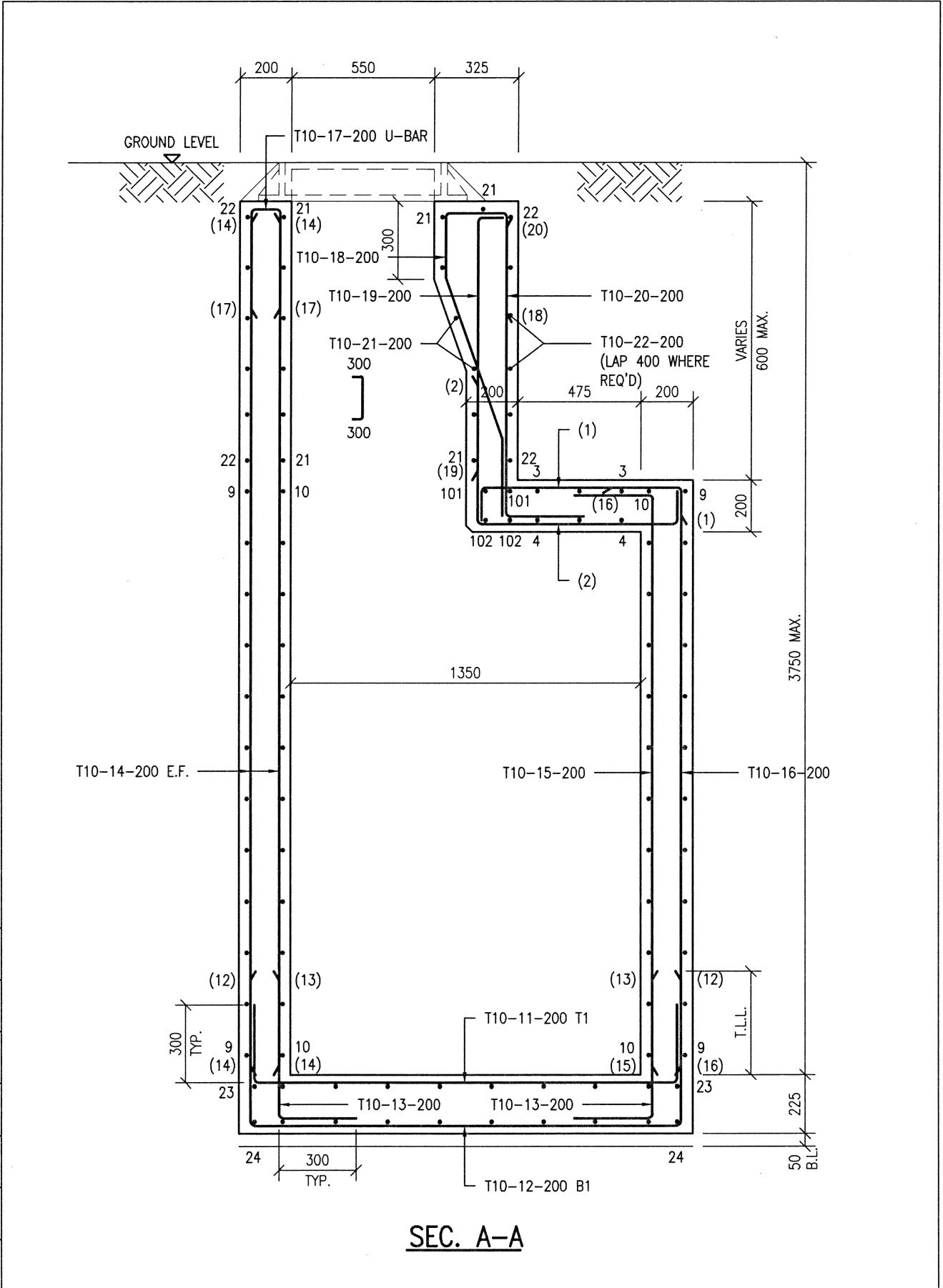


- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
 2. CONCRETE: GRADE 30/20.
 3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.


title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE F**
 (1 OF 3)

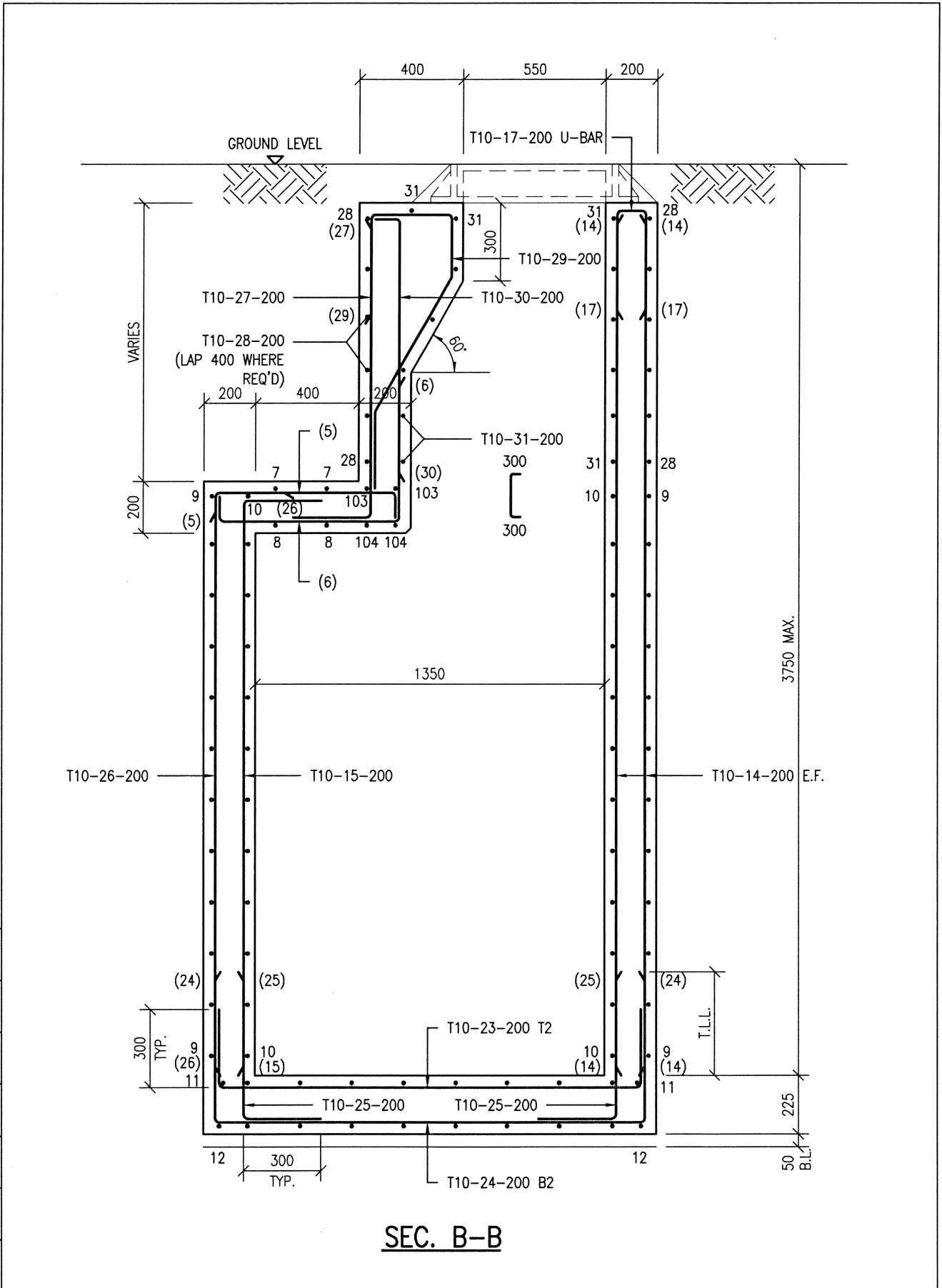
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approved AD(SE) K.L. TSE	date MAR., 2020
office STRUCTURAL ENGINEERING BRANCH	

drawing no. MH/09	rev.	scale 1 : 20
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SEC. A-A

title TYPICAL R.C. DETAILS OF MANHOLE TYPE F (2 OF 3)	checked CSE/1 M.K. WONG	date MAR., 2020	drawing no. MH/10	rev.	scale 1 : 20
	approved AD(SE) K.L. TSE	date MAR., 2020	<div style="text-align: center;">  ARCHITECTURAL SERVICES DEPARTMENT </div>		
	office STRUCTURAL ENGINEERING BRANCH				



SEC. B-B

title
**TYPICAL R.C. DETAILS
 OF MANHOLE TYPE F**

(3 OF 3)

checked CSE/1 M.K. WONG	date MAR., 2020
approved AD(SE) K.L. TSE	date MAR., 2020
office STRUCTURAL ENGINEERING BRANCH	

drawing no. MH/11	rev.	scale 1 : 20
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