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<td>DRAWING LIST OF SEB TYPICAL DETAILS (1)</td>
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<tr>
<td>SD/002C</td>
<td>GENERAL NOTES</td>
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<td>SD/003B</td>
<td>CRANKING OF BARS, STANDARD HOOKS AND BENDS</td>
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<td>SD/004B</td>
<td>STEEL REINFORCEMENT ANCHORAGE AND LAP LENGTH REQUIREMENT</td>
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<td>TYPICAL DETAIL OF SPACER BARS AND STIRRUPS AT BEAMS</td>
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<tr>
<td>SD/006D</td>
<td>TYPICAL DETAIL OF TORSION STIRRUPS AND COLUMN BINDERS</td>
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<td>SD/007</td>
<td>TYPICAL WALL JUNCTION DETAILS</td>
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<td>SD/008</td>
<td>TYPICAL DETAIL OF BRICK OR R.C. PARTITION WALL AND WALL BASE</td>
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<td>TYPICAL DETAIL OF R.C. STRUCTURAL WALL</td>
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<td>SD/010</td>
<td>TYPICAL DETAIL OF TRIMMING BARS FOR WALL OPENING</td>
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<td>SD/011</td>
<td>TYPICAL DETAIL OF TRIMMING BARS FOR PERMANENT SLAB OPENING</td>
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<tr>
<td>SD/012</td>
<td>TYPICAL DETAIL OF TRIMMING BARS FOR TEMPORARY SLAB OPENING</td>
</tr>
<tr>
<td>SD/013</td>
<td>TYPICAL DETAIL FOR TEMPORARY PIPE DUCT OPENING IN SLAB</td>
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<td>SD/014</td>
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<td>SD/016</td>
<td>TYPICAL DETAIL OF BEAM AND BEAM 'L' JUNCTION</td>
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<td>SD/017C</td>
<td>TYPICAL DETAIL OF COLUMNS</td>
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<td>SD/018A</td>
<td>TYPICAL DETAIL OF ROOF BEAM &amp; EXTERIOR COLUMN JUNCTION</td>
</tr>
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<td>SD/019B</td>
<td>TYPICAL DETAIL OF 100 THICK GROUND SLAB ON GRADE</td>
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<td>SD/020C</td>
<td>TYPICAL DETAIL OF 150 THICK GROUND SLAB ON GRADE</td>
</tr>
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<td>SD/021C</td>
<td>TYPICAL DETAIL OF 200 THICK GROUND SLAB ON GRADE</td>
</tr>
<tr>
<td>SD/022A</td>
<td>TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (1 OF 5)</td>
</tr>
<tr>
<td>SD/023A</td>
<td>TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (2 OF 5)</td>
</tr>
<tr>
<td>SD/024A</td>
<td>TYPICAL DETAIL OF EXTERNAL DRIVEWAY AND CARPARK GROUND SLAB ON GRADE (3 OF 5)</td>
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</tbody>
</table>

checked by CSE/1 L.S. LAU
approved by AD(SE) K.L. TSE

DRAWMG LIST OF SEB TYPICAL DETAILS (1)

stru. engg. branch
arch. services dept.
GENERAL NOTES:

1. TYPICAL DETAILS DRAWINGS SD/001 TO SD/026 (FIG. 1 TO 16 INCLUSIVE) AND MH/01 TO MH/11 INDICATE THE TYPICAL DETAILING REQUIREMENTS, e.g. ANCHORAGE, LAP, BEND, TRIMMING BARS, SPACER, ETC., AND THE TYPICAL DETAILS OF DIFFERENT R.C. ELEMENTS GENERALLY ADOPTED IN R.C. WORKS. THEY SHALL NOT BE TAKEN AS REPRESENTING THE COMPLEXITY OF R.C. DETAILS FOR THE CONTRACT. SEPARATE R.C. DETAILS DRAWINGS ARE TO BE ISSUED FOR THE CONTRACT. IN CASE DIFFERENT R.C. DETAILS ARE SHOWN, THE DETAILS SHOWN ON R.C. DETAILS DRAWINGS 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
   Ø 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

<table>
<thead>
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<th>drawing title</th>
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<th>date</th>
<th>drawing no.</th>
<th>rev.</th>
<th>scale</th>
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<td>SD/002</td>
<td>C</td>
<td>N.T.S.</td>
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<th>date</th>
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<tbody>
<tr>
<td>AD(SE)</td>
<td>JUNE, 2021</td>
<td>K.L. TSE</td>
</tr>
</tbody>
</table>
TABLE 1 STANDARD HOOKS AND BENDS REQUIREMENT

( FOR BEAM STIRRUPS AND COLUMN BINDERS, SEE DRAWING Nos. SD/005 & SD/006)
<table>
<thead>
<tr>
<th>FOR REBARS TO CS2 : 2012</th>
<th>CONCRETE GRADE</th>
<th>SIZE OF BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10  12  16  20  25  32  40</td>
<td></td>
</tr>
<tr>
<td>TENSION ANCHORAGE LENGTH (TAL) OR TENSION LAP LENGTH (TLL) OR COMPRESSION LAP LENGTH (CLL)</td>
<td>30</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>≥60</td>
<td>300</td>
</tr>
<tr>
<td>COMPRESSION ANCHORAGE LENGTH (CAL)</td>
<td>30</td>
<td>350</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>40</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>≥60</td>
<td>250</td>
</tr>
</tbody>
</table>

SIZE AND LENGTH ALL IN MILLIMETRES

NOTES:
1. FOR ANCHORAGE OR LAP BETWEEN BARS OF SAME BAR SIZE, USE $\phi = $ SIZE OF BARS.
2. FOR LAP BETWEEN BARS OF DIFFERENT BAR SIZE, USE $\phi = $ SIZE OF SMALLER BARS.

TABLE 2 ANCHORAGE & LAP LENGTH REQUIREMENT
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.

SPACER BARS

TYPE A

TYPE B

TYPE C

TYPE D

TYPE E

TYPE F

TYPE G

TYPE H

TYPE J

TYPE M

(1) REFER TO TABLE 1 (SD/003)

(1/2) REFER TO TABLE 3 (SD/006)

FIG. 1 BEAM STIRRUPS

TYPICAL DETAIL OF SPACER BARS AND STIRRUPS AT BEAMS

drawing title

checked

CSE/1 M.K. WONG FEB., 2018

approved

AD(SE) K.L. TSE FEB., 2018

drawing no.

SD/005

rev.

C

scale

N.T.S.

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

BOND LENGTH FOR HOOKS AND BENDS
REQUIREMENT FOR BEAM STIRRUPS AND COLUMN BINDERS

<table>
<thead>
<tr>
<th>BOND LENGTH FOR REBARS TO</th>
<th>CS2 : 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \lambda_1 )</td>
<td>5( \phi )</td>
</tr>
<tr>
<td>( \lambda_2 )</td>
<td>10( \phi )</td>
</tr>
<tr>
<td>BUT ( \geq 50 \text{mm} )</td>
<td></td>
</tr>
<tr>
<td>BUT ( \geq 70 \text{mm} )</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 3

FOR COLUMN BINDERS: ( \( \Gamma \) ) REFER TO TABLE 1 ( SD/003 )
T.L.L. I

\[ i = j \]

\[ S = SPACING \ OF \ BARS \]

WALL END

T.L.L.

\[ S = SPACING \ OF \ BARS \]

TEE JUNCTION

TWO BARS SHOULD BE PLACED WITHIN LOOP
FOR WALL THICKNESS \( \leq 200 \text{mm} \),
FOUR BARS SHOULD BE INCLUDED AS SHOWN
FOR WALL THICKNESS OVER 200\text{mm}.

\[ S = SPACING \ OF \ BARS \]

"L" JUNCTION

FIG. 3 TYPICAL WALL JUNCTION DETAILS (PLAN)
### NO FRP REQUIREMENT

<table>
<thead>
<tr>
<th>VERT. REINF'T</th>
<th>HORIZ. REINF'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPARTMENT WALL WITH FIRE RESISTING PERIOD (FRP) REQUIREMENTS</td>
<td>ALL CASES</td>
</tr>
<tr>
<td>1 HOUR</td>
<td>2 HOUR</td>
</tr>
<tr>
<td>100 ≤ h &lt; 120</td>
<td>T10-250</td>
</tr>
<tr>
<td>120 ≤ h &lt; 160</td>
<td>T10-300 EF</td>
</tr>
<tr>
<td>160 ≤ h &lt; 180</td>
<td>T10-300 EF</td>
</tr>
<tr>
<td>180 ≤ h &lt; 200</td>
<td>T10-250 EF</td>
</tr>
<tr>
<td>200 ≤ h &lt; 240</td>
<td>T10-200 EF</td>
</tr>
<tr>
<td>240 ≤ h ≤ 250</td>
<td>T10-200 EF</td>
</tr>
</tbody>
</table>

**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

1. **NOTES:**
   1. PARTITION WALLS WITH NOMINAL REINFORCEMENT ARE NOT CONSIDERED AS LOADBEARING STRUCTURAL MEMBERS AND HENCE REINFORCEMENT WILL NOT BE MEASURED SEPARATELY, BUT DEEMED INCLUDED IN THE RATES AS FOR OTHER ARCHITECTURAL FEATURES.
   2. SLAB THICKNESS & REINFORCEMENT APPLICABLE TO BRICK PARTITION WALL BASES.

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

100 ≤ h < 120 WALL

120 ≤ h ≤ 250 WALL
WALL THICKNESS, h  
(mm)  
<table>
<thead>
<tr>
<th>WALL THICKNESS, h</th>
<th>VERT. REINF'T</th>
<th>HORI. REINF'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>150 ≤ h &lt; 160</td>
<td>T10-200 EF</td>
<td>T10-300 EF</td>
</tr>
<tr>
<td>160 ≤ h &lt; 180</td>
<td>T10-200 EF</td>
<td>T10-250 EF</td>
</tr>
<tr>
<td>180 ≤ h &lt; 200</td>
<td>T12-250 EF</td>
<td>T10-250 EF</td>
</tr>
<tr>
<td>200 ≤ h &lt; 240</td>
<td>T12-200 EF</td>
<td>T12-250 EF</td>
</tr>
<tr>
<td>240 ≤ h ≤ 250</td>
<td>T12-170 EF</td>
<td>T12-250 EF</td>
</tr>
</tbody>
</table>

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
1. TABLE 5 AND FIG. 6 ARE APPLICABLE FOR NON-LOADBEARING WALLS WHERE OPENING WIDTH (L1) ≤ 2m.

<table>
<thead>
<tr>
<th>WALL THICKNESS, h (mm)</th>
<th>TRIMMING BARS TO OPENING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L1 &lt; 1m</td>
</tr>
<tr>
<td>h &lt; 120</td>
<td>1T12 (SINGLE LAYER)</td>
</tr>
<tr>
<td>120 ≤ h &lt; 200</td>
<td>1T12 EF</td>
</tr>
<tr>
<td>200 ≤ h ≤ 250</td>
<td>1T16 EF</td>
</tr>
</tbody>
</table>

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

2. FOR NON-LOADBEARING WALLS WHERE OPENING WIDTH (L1) > 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.

3. UNDER NORMAL SITUATION, IF OPENING WIDTH (L1) < BAR SPACING, NO TRIMMING BAR IS REQUIRED.

FIG. 6 TYPICAL DETAIL OF TRIMMING BARS FOR WALL OPENING
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 600\( \text{mm} \) OR 0.25 \times \text{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 200\( \text{mm} \) & 600\( \text{mm} \), 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, WHICHER 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
TRIMMING BARS TO BE SPECIFIED BY THE PROJECT STRUCTURAL ENGINEER IF NEEDED

SLAB REINFORCEMENT

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
PIPE DUCT OPENINGS TO BE CONCRETED AFTER INSTALLATION OF PIPS

TRIMMING BARS TO BE SPECIFIED BY THE PROJECT STRUCTURAL ENGINEER IF NEEDED.

WIDTH OF OPENING < 1500mm

PLAN

WIDTH OF OPENING < 1500mm

THICKNESS OF SLAB

FORMWORK TO BE SLOTTED FOR PASSAGE OF BARS

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
NOTES:
1. 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
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
**NOTES:**

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

2. "H": RESPECTIVE FLOOR HEIGHT.

3. IN LIEU OF THE BINDERS, THE CONTRACTOR MAY SUBMIT FOR SO’S APPROVAL AN ALTERNATIVE METHOD OF FIXING COLUMN STARTER BARS IN POSITION.

**FIG. 13 TYPICAL DETAIL OF COLUMNS**

---

**drawing title**

TYPICAL DETAIL OF COLUMNS

**checked**

(atg.) CSE/1 M.K. WONG

**date**

JAN., 2014

**drawing no.**

SD/017

**rev.**

C

**scale**

N.T.S.

---

**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)
STEEL FABRIC REINFORCEMENT AT TOP
(BS4483 A193 3.02 kg/sq. m)
WITH 300mm LAP MIN. WHERE REQUIRED.

ONE LAYER OF 65–80 µm
POLYETHENE SHEET
WITH 150mm LAP MIN.

TWO COATS OF BITUMINOUS PAINT

20 x 12 APPROVED POLYSULPHIDE /
POLYURETHANE JOINT SEALANT

APPROVED POLYETHYLENE FOAM
JOINT FILLER

NOTES:

1. THE IN SITU FIELD DENSITY OF THE SOIL BENEATH HARD CORE 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. HARD CORE 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 HARD CORE LAYER SHALL BE FOLLOWED.

FIG. 15.1 TYPICAL DETAIL OF 100 THICK GROUND SLAB ON GRADE
STEEL FABRIC REINFORCEMENT AT TOP

ONE LAYER OF 65-80 µm POLYTHENE SHEET WITH 150mm LAP MIN.

TWO COATS OF BITUMINOUS PAINT

NOTES:

1. THE IN SITU 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 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. 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.

<table>
<thead>
<tr>
<th>MAXIMUM PANEL DIMENSION</th>
<th>STEEL MESH TO BS 4483 (WITH LONGITUDINAL BARS ALONG LONGER PANEL DIMENSION)</th>
<th>MINIMUM LAP (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6m x 6m</td>
<td>A193</td>
<td>300</td>
</tr>
<tr>
<td>6m x 8m</td>
<td>B283</td>
<td>300</td>
</tr>
</tbody>
</table>

TABLE 6

FIG. 15.2 TYPICAL DETAIL OF 150 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.

**TABLE 6A**

<table>
<thead>
<tr>
<th>MAXIMUM PANEL DIMENSION</th>
<th>STEEL MESH TO BS 4483 (WITH LONGITUDINAL BARS ALONG LONGER PANEL DIMENSION)</th>
<th>MINIMUM LAP (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6m x 6m</td>
<td>A193</td>
<td>300</td>
</tr>
<tr>
<td>6m x 8m</td>
<td>B283</td>
<td>300</td>
</tr>
<tr>
<td>6m x 10m</td>
<td>B385</td>
<td>300</td>
</tr>
</tbody>
</table>

**FIG. 15.3 TYPICAL DETAIL OF 200 THICK GROUND SLAB ON GRADE**
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.
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.
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.
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.
TABLE 8 GRANULAR SUB-BASE MATERIAL

<table>
<thead>
<tr>
<th>B. S. SIEVE SIZE</th>
<th>PERCENTAGE BY WEIGHT PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 mm</td>
<td>100</td>
</tr>
<tr>
<td>37.5 mm</td>
<td>85 ~ 100</td>
</tr>
<tr>
<td>20 mm</td>
<td>60 ~ 85</td>
</tr>
<tr>
<td>10 mm</td>
<td>40 ~ 70</td>
</tr>
<tr>
<td>5 mm</td>
<td>25 ~ 45</td>
</tr>
<tr>
<td>600 µm</td>
<td>8 ~ 22</td>
</tr>
<tr>
<td>75 µm</td>
<td>0 ~ 10</td>
</tr>
</tbody>
</table>


b. THE MATERIAL PASSING THE B.S. SIEVE 425 µm 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>
<thead>
<tr>
<th>DRAWING No.</th>
<th>DRAWING TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MH/01</td>
<td>DRAWING LIST OF SEB TYPICAL DETAILS (2) – MANHOLES</td>
</tr>
<tr>
<td>MH/02</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE A</td>
</tr>
<tr>
<td>MH/03</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE B</td>
</tr>
<tr>
<td>MH/04</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE C</td>
</tr>
<tr>
<td>MH/05</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE D</td>
</tr>
<tr>
<td>MH/06</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE E (1 OF 3)</td>
</tr>
<tr>
<td>MH/07</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE E (2 OF 3)</td>
</tr>
<tr>
<td>MH/08</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE E (3 OF 3)</td>
</tr>
<tr>
<td>MH/09</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE F (1 OF 3)</td>
</tr>
<tr>
<td>MH/10</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE F (2 OF 3)</td>
</tr>
<tr>
<td>MH/11</td>
<td>TYPICAL R.C. DETAILS OF MANHOLE TYPE F (3 OF 3)</td>
</tr>
</tbody>
</table>
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. CONCRETE: GRADE 30/20.
3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.
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SEC. A-A

TYPICAL R.C. DETAILS
OF MANHOLE TYPE E

(2 OF 3)

ARCHITECTURAL SERVICES DEPARTMENT

M.K. WONG

CSE/1

MH/07

0

1:20

rev.

scale
TYPICAL R.C. DETAILS OF MANHOLE TYPE E
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. CONCRETE: GRADE 30/20.
3. FOR LOCATION, LEVELS AND MANHOLE COVER, REFER TO BSB DRAWINGS.