

GENERAL NOTES

GENERAL

- GENERAL NOTES AND TYPICAL STRUCTURAL DETAILS SHALL APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED.
- FEATURES OF CONSTRUCTION SHOWN ARE TYPICAL AND SHALL APPLY GENERALLY THROUGHOUT FOR SIMILAR CONDITIONS. MODIFY TYPICAL DETAILS AS REQUIRED TO MEET SPECIAL CONDITIONS.
- THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SHALL NOTIFY THE ENGINEER / ARCHITECT OF ANY DISCREPANCIES HE MAY FIND BEFORE PROCEEDING WITH THE WORK, OR DURING CONSTRUCTION.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORING AND BRACING FOR THE STRUCTURE FOR ALL LOADS THAT MAY BE IMPOSED DURING CONSTRUCTION.
- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE LATEST APPLICABLE STANDARD OR SPECIFICATIONS. ALL WORKS SHALL CONFORM WITH THE BEST PRACTICE PREVAILING IN THE VARIOUS TRADES.
- ALL CONSTRUCTION AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION, EXAMINATION AND TESTING BY THE ENGINEER / ARCHITECT. THE ENGINEER / ARCHITECT SHALL HAVE THE RIGHT TO REJECT DEFECTIVE MATERIALS AND WORKMANSHIP OR REQUIRE ITS CORRECTION.
- UNLESS SPECIFICALLY DETAILED ELSEWHERE, THE CONTRACTOR SHALL FOLLOW TYPICAL DETAILS AS SHOWN IN THESE DRAWINGS.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COORDINATION OF WORK AMONG THE VARIOUS TRADES AS NECESSARY TO AVOID CONFLICTS AND TO ENSURE THE INSTALLATION OF ALL WORKS WITHIN THE AVAILABLE SPACE.
- DO NOT SCALE DRAWINGS AND CALLED-OUT DIMENSIONS. STANDARD CODE REQUIREMENTS SHALL GOVERN OVER UNSCALED DRAWINGS.
- SPECIAL NOTES AND DIMENSIONS INDICATED ON THE STRUCTURAL DRAWING SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS. ARCHITECTURAL DRAWINGS SHALL BE USED TO DEFINE DETAIL CONFIGURATION, ELEVATIONS, OPENING JOINTS, SLOPES, ETC.
- MODIFICATION OF SECTION AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE ALLOWED UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
- CONTRACTOR TO PROVIDE DYE PENETRANT/ULTRASONIC TESTING RESULT TO CLIENT. THESE TESTINGS SHALL BE CONDUCTED BY ACCREDITED AGENCY.
- IN CASE STRUCTURAL MEMBERS SPECIFIED ARE NOT AVAILABLE, SUBMIT TO CLIENT ENGINEER AVAILABLE LIST OF MEMBERS FOR APPROVAL BEFORE PURCHASING.

DESIGN CRITERIA

1. LOADS

1.1 DEAD LOADS

UNIT WEIGHT OF CONCRETE	24.00 kN/m ³
UNIT WEIGHT OF SOIL	18.00 kN/m ³
ROOFING (GI Sheet and Purlins)	0.37 kPa
100mm CHB WALL	3.17 kPa
150mm CHB WALL	3.30 kPa
FLOOR FINISH	1.53 kPa
PARTITION LOAD	1.00 kPa
CEILING	0.25 kPa
INSULATION	0.08 kPa
WATERPROOFING	0.26 kPa
ELECTRICAL/MECHANICAL/PLUMBING	0.35 kPa

1.2 LIVE LOADS

ROOF	1.00 kPa
OFFICE	2.40 kPa
RESTROOM	2.40 kPa
EXIT FACILITIES	4.80 kPa
EVACUATION, BASIC FLOOR AREA	4.80 kPa

1.3 WIND LOAD

320 kph

1.4 SEISMIC LOADS

SEISMIC ZONE FACTOR, Z	0.40
NUMERICAL COEFFICIENT, R _{wx} & R _{wz}	8.50
IMPORTANCE FACTOR, I	1.50
SITE COEFFICIENT, S (S _d)	4.00
N _a	1.128
N _v	1.456
FUNDAMENTAL PERIOD OF VIBRATION, T	C (hr) ^{3/4}
C _t	0.0731
HEIGHT IN METERS, h	hn

2. DESIGN CODE AND REFERENCE

THE FOLLOWING REFERENCES SHALL GOVERN THE DESIGN FABRICATION & CONSTRUCTION OF THE PROJECT:

AMERICAN CONCRETE INSTITUTE ACI 318 - 95 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE

NATIONAL STRUCTURAL CODE OF THE PHILIPPINES (NSCP) VOLUME 1, PHILIPPINES 6th EDITION, 2010

ASSOCIATION OF STRUCTURAL ENGINEERS OF THE PHILIPPINES (ASEP) HANDBOOK OF STRUCTURAL STEEL SHAPES AND SECTIONS

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) P-320/P-361

UBC 1997, STRUCTURAL ENGINEERING DESIGN PROVISION

STRUCTURAL DESIGN DATA AND SPECIFICATIONS A.B. CARILLO, 6th EDITION

MATERIALS

1. CONCRETE

UNLESS INDICATED OTHERWISE ON PLANS, THE CONCRETE CLASS AND STRENGTH SHALL BE AS FOLLOWS:

STRUCTURAL ELEMENTS	CLASS	28-DAY CYLINDER STRENGTH MPa (psi)	MAX. SLUMP MM (in)
SLAB, STAIR, CURBS AND SLAB ON GRADE	"A"	20.7 (3000)	75 (3")
CAST-IN-PLACE GIRDERS, BEAMS, FOOTINGS AND COLUMN	"AA"	27.6 (4000)	100 (4")
OTHER STRUCTURAL ELEMENTS	"A"	20.7 (3000)	100 (4")
FOR NON STRUCTURAL MEMBERS		17.2 (2500)	100 (4")
LEAN CONCRETE	-	10.0 (1450)	75 (3")

ITEMS	AGGREGATE SIZE
FOOTINGS	25 MM (1")
SLABS, BEAMS, COLUMNS, OTHERS.	19 MM (3/4")
CURBS AND MASS, CONCRETE/SLAB ON GRADE	25 MM (1")

1.1 INFORM ARCHITECT/ENGINEERS OF OTHER MISCELLANEOUS CONCRETE STRUCTURAL ELEMENTS NOT SHOWN ABOVE TO DETERMINE THEIR RESPECTIVE COMPRESSIVE STRENGTH.

2. REINFORCING STEEL

a. REINFORCING STEEL SHALL CONFORM TO LATEST EDITION OF ASTM A615 GRADE 60, DEFORMED, FOR 16MM DIA. BARS AND LARGER WITH MINIMUM YIELD STRENGTH $f_y = 414 \text{ MPa}$ (60,000 PSI) AND ASTM A615 GRADE 40, DEFORMED, FOR 12MM DIA. BARS AND SMALLER WITH MINIMUM YIELD STRENGTH $f_y = 276 \text{ MPa}$ (40,000 PSI).

b. ALL REINFORCING BARS SHALL BE DEFORMED BARS UNLESS OTHERWISE SPECIFIED IN DRAWINGS.

c. ALL REINFORCING BARS SHALL BE CLEAN OF RUST, GREASE OR OTHER MATERIALS LIKELY TO IMPAIR BOND.

d. ALL REINFORCING BARS SHALL ACCURATELY AND SECURELY PLACED BEFORE POURING OF CONCRETE OR APPLYING MORTAR OR GROUT.

3. STRUCTURAL STEEL BOLTS/WELDS

MATERIAL	SPECIFICATIONS
STEEL PLATES AND ROLLED SHAPES	ASTM A36
BOLTS	ASTM A325
WELDS	AWS D1.1 - 183, E70XX SERIES

CONSTRUCTION

1. SETTING OUT

THE SETTING OUT AND THE ELEVATIONS OF THE DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION WORK.

2. REINFORCED CONCRETE

a. CONCRETE MIX AND PLACING

- DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.
- CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.
- FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 50mm SHALL BE LAID FIRST BEFORE INSTALLING THE REINFORCEMENT. THE LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.
- THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, THE POURING SEQUENCES FOR ALL CONCRETING WORK.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS PRIOR TO THE POURING OF ANY STRUCTURAL CONCRETE, SO AN INSPECTION CAN BE MADE ON ALL FORMS AND REINFORCING.
- PREPARE AND SUBMIT CONCRETE MIX DESIGN INCLUDING AGGREGATES GRADATION, WATER AND CEMENT CONTENTS, AND CYLINDER STRENGTH TEST RESULT FOR REVIEW. CONCRETE MIX DESIGN SHALL BE TESTED AT 7, 14 AND 28 DAY CURING PERIOD. THE TEST SHALL FOLLOW THE REQUIREMENT OF ASTM.
- USE OF ADMIXTURES IS PERMITTED TO PRODUCE PROPER SLUMP AND WORKABILITY BUT SUBJECT TO THE ENGINEER'S APPROVAL. ADDITION OF WATER TO CONCRETE AT JOB SITE IS NOT ALLOWED.

(8) FOR CONCRETE SLAB, ALL REINFORCEMENT SHALL BE 0.02m CLEAR MINIMUM FROM TOP AND BOTTOM OF SLAB. TEMPERATURE BARS SHALL BE GENERALLY PLACED NEAR THE FACE IN TENSION AND SHALL NOT BE LESS THAN 0.0018 BT.

(9) FOR TWO OR MORE LAYERS OF REINFORCING BARS, USE SEPARATORS SPACED @ 0.90m O.C. AND IN NO CASE SHALL BE LESS THAN 2 SEPARATORS. CLEAR DISTANCE BETWEEN LAYERS SHOULD NOT BE LESS THAN 25mm OR BAR DIAMETER. FOR CAMBER:

COMPONENT	MINIMUM CAMBER
R.C. BEAMS	6mm FOR EVERY 4.50M. SPAN
CANTILEVER R.C. BEAM	18mm FOR EVERY 3.00M. SPAN
R.C. SLABS	3mm FOR EVERY 3.00M. SHORTER SPAN

(10) COLUMN TIES SHALL BE PROTECTED BY A COVERING OF CONCRETE CAST MONOLITHICALLY WITH 0.05m THICK AND NOT LESS THAN 1/2 TIMES MAXIMUM SIZE OF COURSE AGGREGATES.

(11) LOCATION OF ALL CONSTRUCTION OR COLD JOINTS MUST BE APPROVED BY THE ENGINEER/ARCHITECT.

(12) PIPES OR DUCTS EXCEEDING ONE THIRD THE SLAB OR WALL THICKNESS SHALL NOT BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED. PIPES MAY PASS THROUGH STRUCTURAL CONCRETE IN SLEEVES BUT SHALL NOT BE EMBEDDED THEREIN.

(13) REINFORCING BARS, ANCHOR BOLTS, AND OTHER INSERTS SHALL BE SECURED IN PLACE BEFORE POURING CONCRETE. BAR PLACEMENT AND SUPPORTS SHALL BE IN ACCORDANCE WITH THE RECOMMENDED ACI PRACTICE.

(14) ALL INSERTS, ANCHOR BOLTS, ETC. TO BE EMBEDDED IN THE CONCRETE SHALL BE HOT DIP GALVANIZED UNLESS NOTED OTHERWISE.

(15) IN GENERAL, THE LATEST EDITION OF THE MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES, ACI 315-99, SHALL BE ADHERED TO, UNLESS SHOWN OTHERWISE.

b. BAR BENDING, SPLICING AND PLACING

(1) THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ALL SHOP DRAWINGS INDICATING THE BENDING, CUTTING, SPLICING AND INSTALLATION OF ALL REINFORCING BARS.

(2) BARS SHALL BE BENT COLD, BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS PERMITTED BY THE ENGINEER.

(3) BAR SPLICING NOT INDICATED ON DRAWINGS SHALL BE SUBJECT TO THE APPROVAL OF ENGINEER.

(4) WELDED SPLICES, IF APPROVED BY THE ENGINEER, SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD STRENGTH OF THE BARS.

(5) LAPPED SPLICES SHALL BE STAGGERED WHERE POSSIBLE.

(6) IN GENERAL, BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. SPLICES SHALL BE SECURELY WIRED TOGETHER STAGGER SPLICES AT LEAST 600MM. WHENEVER POSSIBLE IN BEAMS AND SLABS, SPLICE TOP BARS AT MID SPAN AND BOTTOM BARS NEAR SUPPORT. SPLICE OF REINFORCEMENT SHALL BE MADE ONLY AS REQUIRED OR PERMITTED ON DESIGN DRAWINGS OR AS ALLOWED BY THE ACI CODE OR AS AUTHORIZED BY THE ENGINEERS.

(7) BARS NOTED AS CONTINUOUS SHALL HAVE A MINIMUM SPLICE LENGTH OF 42 BAR DIAMETER BUT NOT LESS THAN 600MM. UNLESS OTHERWISE NOTED.

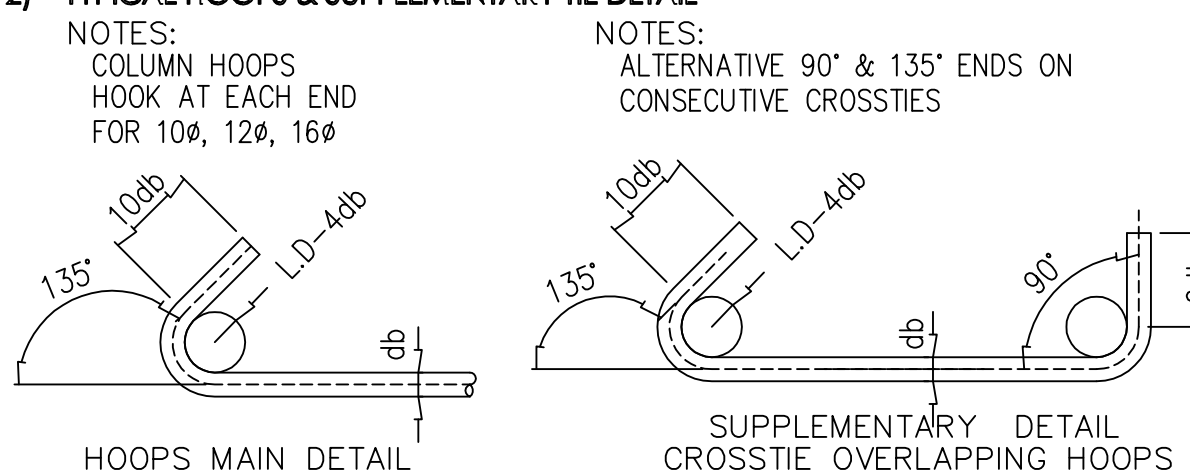
(8) REINFORCEMENTS SHALL BE SPLICED ONLY AS INDICATED ON THE DRAWINGS.

(9) ANY WELDING TO BE PERFORMED MUST HAVE PRIOR WRITTEN APPROVAL OF THE ENGINEER.

(10) WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS OTHERWISE SHOWN ON THE DRAWING. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4-79 "AWS STRUCTURAL WELDING CODE" OF THE AMERICAN WELDING SOCIETY. REINFORCING STEEL WHICH IS WELDED SHALL CONFORM TO ASTM A 706. REINFORCING STEEL NOT CONFORMING TO ASTM A 706 MAY BE USED IF MATERIAL PROPERTIES OF THE REINFORCING STEEL CONFORM TO AWS D1.4-79.

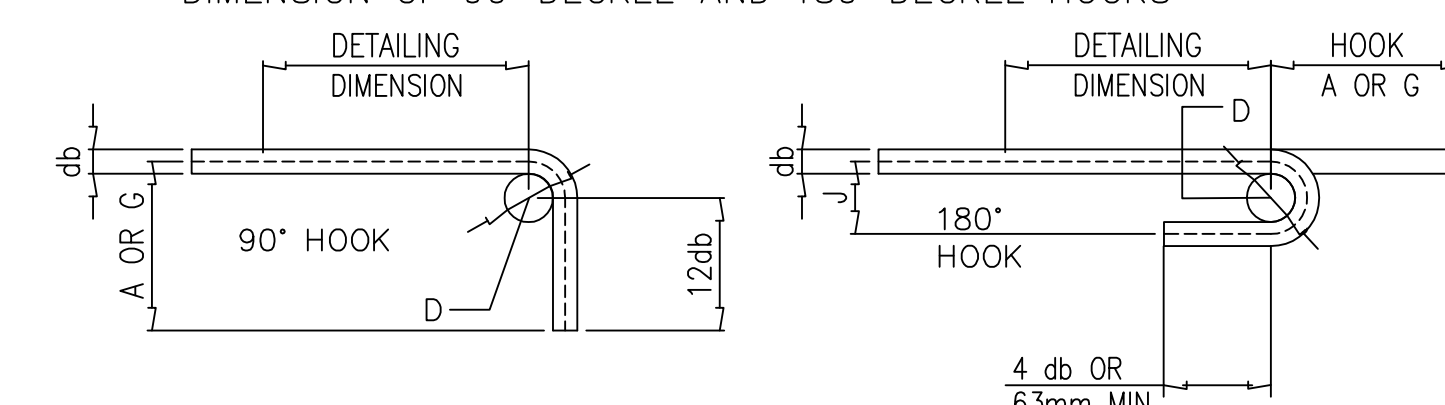
(11) ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS ARE TO BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED.

(12) TYPICAL HOOPS & SUPPLEMENTARY TIE DETAIL



(13) TYPICAL STANDARD HOOK DETAIL

DIMENSION OF 90-DEGREE AND 180-DEGREE HOOKS

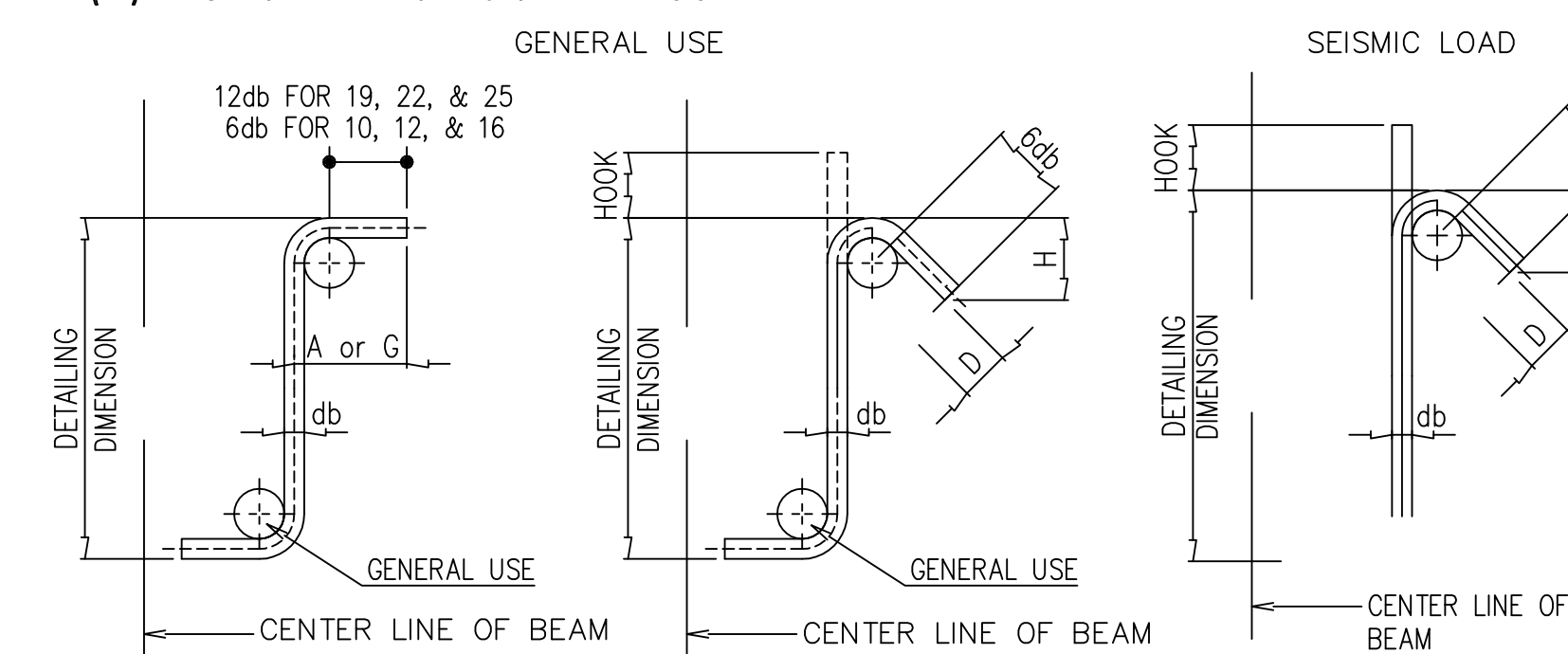


PIN DIAMETER: D = 6db FOR DIAMETER 10 THRU DIAMETER 25
D = 8db FOR DIAMETER 28, DIAMETER 32 AND DIAMETER 36

RECOMMENDED END HOOKS, ALL GRADES

BAR SIZE	FINISHED BEND DIAMETER, D IN. (mm.)	180 DEGREE HOOK		90 DEGREE HOOK	
		A OR G (mm.)	J (mm.)	A OR G (mm.)	A OR G (mm.)
10mm ϕ	60	130	80	155	
12mm ϕ	80	155	105	205	
16mm ϕ	100	180	130	255	
20mm ϕ	115	205	155	305	
25mm ϕ	155	280	205	410	
28mm ϕ	245	285	300	485	
32mm ϕ	275	435	340	560	
36mm ϕ	305	485	375	610	

(14) TYPICAL STANDARD STIRRUPS AND TIE HOOK DETAIL



BAR SIZE	D (mm)	STIRRUPS AND TIE HOOKS, ALL GRADES						
		GENERAL USE			SEISMIC USE			
		90° HOOK	135° HOOK	135° HOOK	A OR G	H APPROX.	A OR G	H APPROX.
10mm ϕ	40	105mm	105mm	55mm	130mm	90mm		
12mm ϕ	55	115mm	115mm	80mm	170mm	145mm		
16mm ϕ	65	155mm	140mm	100mm	205mm	140mm		
20mm ϕ	145	305mm	200mm	145mm	275mm	170mm		
25mm ϕ	155	410mm	265mm	145mm	365mm	230mm		

(15) IF BEAM REINFORCING BARS END IN A WALL, THE CLEAR DISTANCE FROM THE BAR TO THE FARTHER FACE OF THE WALL SHALL NOT BE LESS THAN 50mm MINIMUM EMBEDMENT LENGTH SHALL BE AS SHOWN AS IN TABLE "A".

BAR SIZE	TABLE A				TABLE B	
	DEVELOPMENT LENGTH, L _d , IN TENSION				BAR SIZE	MINIMUM LENGTH OF COMPRESSION LAP SPLICE (MM)
	F'c = 3,000 psi (20.68 Mpa.)		F'c = 4,000 psi (27.58 Mpa.)			
	Top Bars	Other Bars	Top Bars	Other Bars		
10mm ϕ	525	405	455	350	10mm ϕ	305
12mm ϕ	700	540	605	465	12mm ϕ	385
16mm ϕ	870	670	755	580	16mm ϕ	480
20mm ϕ	1045	805	905	700	20mm ϕ	575
25mm ϕ	1395	1075	1205	930	25mm ϕ	765
28mm ϕ	1570	1210	1360	1050	28mm ϕ	860
32mm ϕ	1770	1360	1535	1180	32mm ϕ	970

1 GENERAL NOTES
SCALE 1:125



ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. :
PTR No. :
Place of Issue :
Date of Issue :

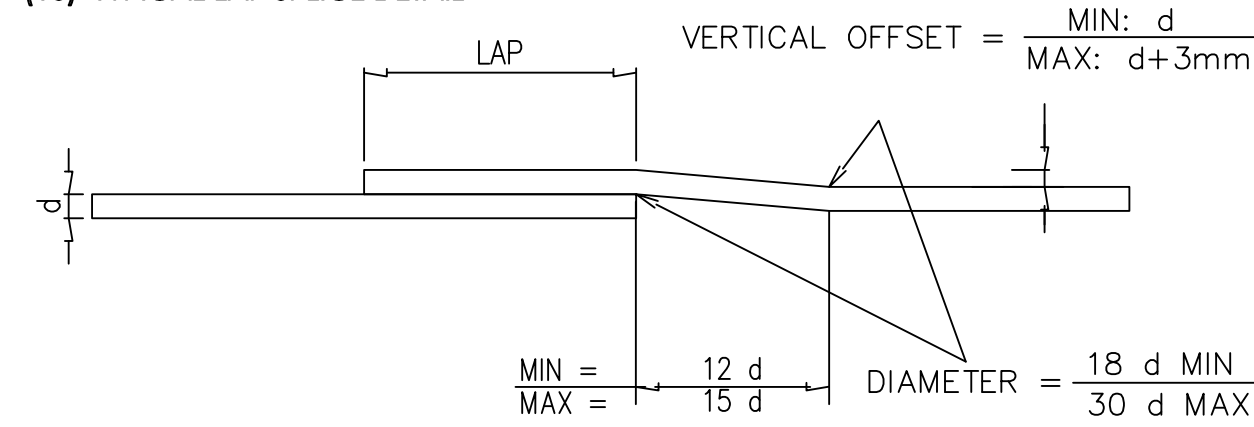
PROJECT / LOCATION :
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR
OWNER :
IOM/UNICEF
IOM • OIM



NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY	SHEET CONTENT	SHEET NO.
	ISSUED FOR BIDDING	23SEP15	MVA					GENERAL NOTES	EST01
								CHECKED	PROJ. NO.
								APPROVED	2K1404A

GENERAL NOTES

(16) TYPICAL LAP SPICE DETAIL



c. CONCRETE COVER TO REINFORCEMENT

CLEAR CONCRETE COVERING OVER REINFORCING BARS SHALL BE AS FOLLOWS:

COLUMN TO TIES	40mm
BEAM TO STIRRUPS	40mm
FOOTING	75mm

d. CONSTRUCTION JOINT

- (1) THE POSITION AND FORM OF ANY CONSTRUCTION JOINT SHALL BE AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEER.
- (2) ALL SURFACES OF CONSTRUCTION JOINTS SHALL BE ROUGHENED TO 6MM. AMPLITUDE.
- (3) ALL CONSTRUCTION JOINTS SHALL BE CLEANED TO REMOVE DUST, CHIPS, OR OTHER FOREIGN MATTERS PRIOR TO PLACING OF ADJACENT CONCRETE.

e. FALSEWORK

ALL FALSEWORK SHALL BE DESIGNED BY THE CONTRACTOR SUBJECT TO THE APPROVAL BY THE ENGINEER.

f. FORMWORK

- (1) FORMS SHALL BE PROVIDED FOR ALL CONCRETE INDICATED UNLESS SPECIFIED OTHERWISE. FORMS SHALL BE SET TRUE TO LINE AND GRADE AND MAINTAINED SO AS TO ENSURE COMPETENT WORK WITHIN THE ALLOWABLE TOLERANCES SPECIFIED AND SHALL BE MORTAR TIGHT.
- (2) FORMS AND THEIR SUPPORTS SHALL BE DESIGNED SO AS NOT TO DAMAGE PREVIOUSLY PLACED STRUCTURE.
- (3) NO CONSTRUCTION LOAD SHALL BE SUPPORTED ON, NOR ANY SHORING REMOVED FROM ANY PART OF STRUCTURE UNDER CONSTRUCTION EXCEPT WHEN THAT PORTION OF THE STRUCTURE IN COMBINATION WITH THE REMAINING FORMING AND SHORING SYSTEM HAS SUFFICIENT STRENGTH TO SUPPORT SAFELY ITS WEIGHT AND ADDITIONAL IMPOSED LOAD.
- (4) FORMS SHALL BE REMOVED IN SUCH MANNER AS NOT TO IMPAIR SAFETY AND SERVICEABILITY OF THE STRUCTURE.
- (5) SHORING (TUKOD) FOR BEAMS/SLABS SHOULD BE REMOVED AFTER 14th DAY
- (6) SCHEDULE OF STRIPPING OF FORMS AND SHORES.

REMOVAL OF FORMS & SHORING		
STRUCTURAL COMPONENT	CLEAR SPAN BETWEEN SUPPORTS	MIN. TIME PERIOD (DAYS)
FOUNDATION	-	1
WALL, COLUMN, BEAMS GIRDER SIDES & SLAB ON GRADE	-	3
JOIST, BEAMS & GIRDER SOFFIT	UNDER 3.00 M.	7
	3.00 M. to 6.00 M.	14
	OVER 6.00 M.	21
ONE-WAY FLOOR SLABS	UNDER 3.00 M.	4
	3.00 M. to 6.00 M.	7
	OVER 6.00 M.	10

g. PROTECTION AND CURING OF CONCRETE

CONCRETE SURFACES SHALL BE PROTECTED FROM HARMFUL EFFECTS OF SUN, WIND AND RUNNING WATER AND SHALL BE KEPT DAMP FOR AT LEAST 7 DAYS.

3. STRUCTURAL STEEL

- (1) ALL STRUCTURAL MILL SECTIONS, AND BUILT-UP PLATE SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AISC LATEST SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS
- (2) STEEL PLATES, SHAPES, BARS, AND METAL FABRICATIONS ARE ASTM A-36 UNLESS NOTED OTHERWISE.
- (3) SCHEDULE OF BOLTS/NUTS/WASHERS

BOLTS	TYPE/GRADE	NUTS
ASTM A307	GRADE A	ASTM A563
ASTM 325 (HIGH-STRENGTH BOLTS)	TYPE 2	ASTM A563
ASTM 490 (QUENCHED AND TEMPERED ALLOY)	TYPE 2	ASTM A563

BOLTS	WASHERS	REMARKS
ASTM A307	ASTM F436	
ASTM 325 (HIGH-STRENGTH BOLTS)	ASTM F436	
ASTM 490 (QUENCHED AND TEMPERED ALLOY)	ASTM F436	Ø25MM AND ABOVE

NOTES : A490 BOLTS SHOULD NOT BE HOT-DIPPED GALVANIZED

(4) HOLE SIZE FOR ANCHOR BOLTS

BOLT SIZE Ø (MM.)	HOLE SIZE Ø (MM.)
19 TO 25 INCL	DIAM + 8
OVER 25 TO 50 INCL	DIAM + 12
OVER 50	DIAM + 25
SWEDGE TYPE	DIAM + 19

(5) UNFINISHED BOLTS SHALL CONFORM TO ASTM A-307 GRADE A. HIGH STRENGTH BOLT SHALL CONFORM TO ASTM A325 OR ASTM A490 AS NOTED. USE 16 MM DIAMETER A325 BOLTS FOR ALL BEAM TO BEAM, BEAM TO GIRDER/COLUMN, GIRDER TO COLUMN BOLTED CONNECTION. USE TWO BOLTS MIN. UNLESS NOTED OTHERWISE.

(6) ALL HIGH STRENGTH BOLTS A325 OR A490 SHALL BE SLIP CRITICAL (A325-SC OR A490-SC CLASS A) UNLESS NOTED OTHERWISE. THE INSTALLATION OF HIGH STRENGTH BOLTS SHALL CONFORM TO THE LATEST EDITION OF AISC SPECIFICATION FOR STRUCTURAL JOINT USING ASTM A325 OR A490 BOLTS. WHERE NON-SLIP CRITICAL BOLTS ARE SPECIFIED, THESE BOLTS SHALL ONLY BE TIGHTENED TO A SNUG TIGHT CONDITION.

(7) BOLT HOLE IN STEEL SHALL BE 1.6MM LARGER IN DIAMETER THAN THE DIAMETER OF BOLT USED FOR SLIP CRITICAL CONNECTIONS CONSTRUCTION OR SHORT SLOTTED HOLES FOR NON-SLIP CRITICAL CONNECTION AS NOTED, UNLESS OTHERWISE SPECIFIED.

(8) ELECTRODES FOR WELDING: ASTM 233 E-70XX SERIES; COMPLY WITH AWS D1.1 CODE REQUIREMENTS.

(9) FLAME CUTTING AND WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST STANDARD CODE FOR WELDING IN BUILDING OF THE AMERICAN WELDING SOCIETY.

(10) ALL BUTT WELDS SHALL BE FULL PENETRATION AND SHALL BE PROPERLY BACK-CHIPPED OR GOUGED. BACK-UP PLATES SHALL BE PROVIDED AS REQUIRED.

(11) GRIND ALL EXPOSED WELDS SMOOTH, EXCEPT FILLET WELDS.

(12) WELD LENGTHS CALLED FOR ON PLANS ARE THE NET EFFECTIVE LENGTH REQUIRED. FILLET WELD SIZES ARE THE WIDTH OF THE HORIZONTAL OR VERTICAL LEG. WHERE LENGTH OF WELD IS NOT SHOWN IT SHALL BE FULL LENGTH OF JOINT. WELDING ELECTRODES TO BE E70XX UNLESS NOTED OTHERWISE.

(13) ALL LEVEL WELDS ARE FULL PENETRATION, UNLESS NOTED OTHERWISE. SIZE ALL FILLET WELDS PER AWS WHERE NOT SHOWN WITH WELD SIZE. PROVIDE MIN. WELD SIZE TO DEVELOP TENSION OR SHEAR CAPACITY OF THE SMALLER MEMBER OF THE PIECES BEING CONNECTED (4.76MM MIN.)

(14) THE CONTRACTOR SHALL PROVIDE MINIMUM 10MM. CONCRETE COVER AROUND ALL STEEL MEMBERS / COMPONENTS (WF, TS, PLATES, BOLTS, ETC.) ADJACENT TO SOIL.

(15) WELDED CONNECTIONS BETWEEN MEMBERS OF MOMENT FRAMES SHALL BE TESTED BY NON-DESTRUCTIVE METHOD.

(16) APPLY TT-P-645 SHOP PAINT FOR ALL FABRICATIONS.

(17) SHOP PAINTING FOR STRUCTURAL STEEL SHALL BE RUST INHIBITIVE PRIMER WITH MINIMUM D.F.T. 2.0 MILS.

(18) TOUCH-UP PAINTING: APPLY PAINT TO EXPOSED AREAS IN MANNER SATISFACTORY TO THE ENGINEER WITH SAME MATERIAL AS SHOP PAINT.

(19) COMPLY WITH AISC CODE AND SPECIFICATION FOR BEARING, ADEQUACY OF TEMPORARY CONNECTIONS AND ALIGNMENT.

(20) CONTRACTOR SHALL FURNISH COMPLETE ERECTION DRAWINGS FOR THE PROPER IDENTIFICATION AND ASSEMBLY OF ALL BUILDING COMPONENTS. THESE DRAWINGS WILL SHOW ANCHOR BOLTS SETTING, PRIMARY SECONDARY, AND ROOF FRAMING, AND NECESSARY INSTALLATION DETAILS. SUBMIT SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION.

(21) THE STEEL SUBCONTRACTOR SHALL COMPLY WITH THE LATEST AISC CODE OF STANDARD PRACTICE.

(22) THE STEEL SUBCONTRACTOR SHALL DETERMINE THE ERECTION SEQUENCE FOR ALL STEEL WORKS. THE STEEL SUBCONTRACTORS SHALL ALSO COORDINATE WITH OTHER TRADES AND SITE CONDITIONS IN DETERMINING THE PROPER STEEL ERECTION SEQUENCE SO AS NOT TO DAMAGE WORK PERFORMED BY OTHER TRADES AND / OR PREVIOUSLY ERECTED STEEL MEMBERS.

(23) WORK POINTS, MEMBERS LENGTH AND/OR ERECTION SEQUENCE SHALL BE ADJUSTED BY THE STEEL SUBCONTRACTOR TO MINIMIZE THE EFFECT OF THE TEMPERATURE CHANGES AND DIFFERENTIAL TEMPERATURE EFFECTS. TEMPERATURE EFFECTS (SUCH AS EXPOSED TO STRONG SUN ON ONE SIDE OF THE BUILDING). MEETING AISC ACCEPTABLE MILL STANDARD AND ERECTION TOLERANCES.

(24) ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM - A36, Fy=248 MPa (36,000 PSI)

(25) FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER AND THE OWNER PRIOR TO FABRICATION.

4. FOOTINGS

(1) THE ASSUMED SOIL BEARING CAPACITY SHALL BE 100 KPa AT 1.5M FROM NATURAL GRADE LINE TO BOTTOM OF FOOTING.

(2) FOOTING SHALL REST ON 100mm THK GRAVEL BASE COURSE COMPACTED TO 95% MAXIMUM DENSITY.

(3) BACKFILL SHALL BE PLACED IN 150mm LAYERS AND EACH LAYER SHALL BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DENSITY. SHALL BE FREE FROM DETRIMENTAL AMOUNTS OF ORGANIC MATERIAL & NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL W/ A MAXIMUM DIMENSION GREATER THAN 300mm BE BURIED OR PLACED IN FILLS.

(4) ALL EXCAVATIONS, BACKFILLING AND COMPACTION SHALL BE INSPECTED AND APPROVED BY THE CONTRACTING OFFICER.

(5) THE CONTRACTOR SHALL VERIFY THE ACTUAL SOIL CONDITION BEFORE CONSTRUCTION OR AFTER FOOTING EXCAVATION IS DONE, TO CHECK THE GEOTECHNICAL REPORTS RECOMMENDED BEARING CAPACITY, IF ANY.

(6) NO FOOTING SHALL REST ON FILL.

(7) MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE 75mm FOR CONCRETE DEPOSITED AGAINST THE GROUND.

(8) CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER OR SEEPAGE.

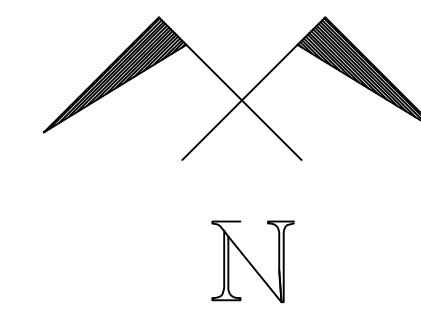
(9) CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY RETAIN THE EARTH BANKS.

(10) ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND RETAINING WALLS BEFORE WALLS HAVE ATTAINED FULL DESIGN STRENGTH. CONTRACTOR SHALL BRACE OR PROTECT ALL BUILDING AND PIT WALLS BELOW GRADE FROM LATERAL LOADS UNTIL ATTACHING FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED FULL STRENGTH. CONTRACTOR SHALL PROVIDE FOR DESIGN, PERMITS AND INSTALLATION OF SUCH BRACING.

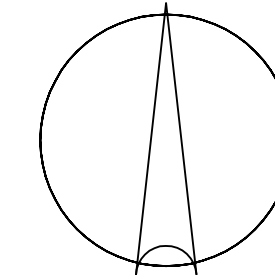
(11) FOOTINGS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON DRAWINGS. SHOULD SOIL ENCOUNTERED AT THESE DEPTHS NOT BE APPROVED BY THE FOUNDATION ENGINEER, FOOTING ELEVATIONS WILL BE ALTERED AS REQUIRED.

(12) FOOTING BACKFILL AND UTILITY TRENCH BACKFILL WITHIN BUILDING AREA SHALL BE MECHANICALLY COMPACTED IN LAYERS. IN ACCORDANCE WITH SOIL REPORT. FLOODING WILL NOT BE PERMITTED.

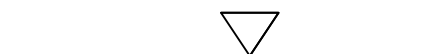
SYMBOLS



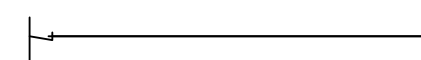
LINE OF SYMMETRY OR SIMILARITY



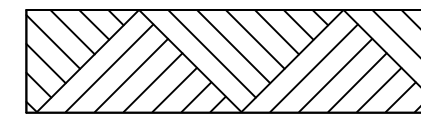
NORTH ARROW



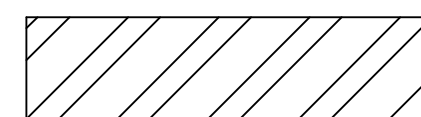
INDICATION OF ELEVATION



LIMITS OF DIMENSION



SECTION IN EARTH



SECTION IN STRUCTURAL STEEL



SECTION IN CONCRETE

PL

PLATE

L

ANGLE SHAPE

O.C.

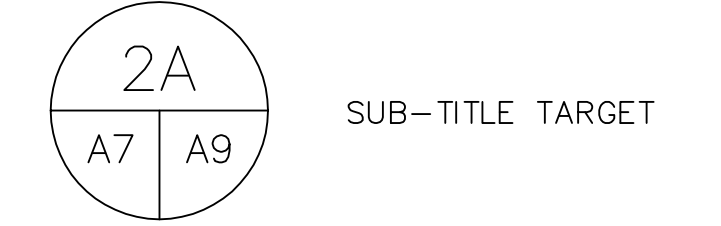
ON CENTER

IDENTIFICATION SYMBOL

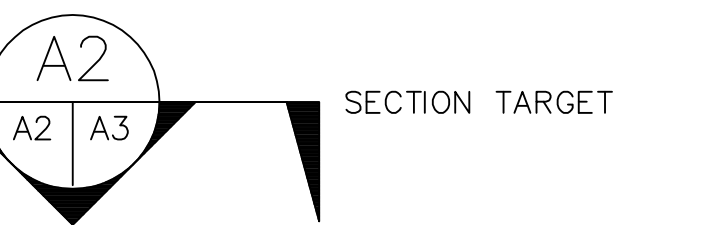


DWG. No WHERE DET IS TAKEN

DWG. No WHERE DET IS SHOWN



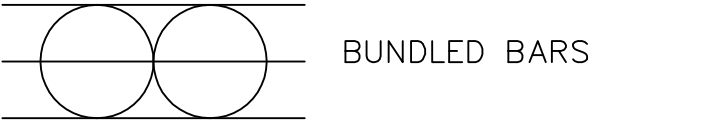
SUB-TITLE TARGET



SECTION TARGET



DETAIL REFERENCE TARGET



BUNDLED BARS

Ø DIAMETER

□ SQUARE

@ AT

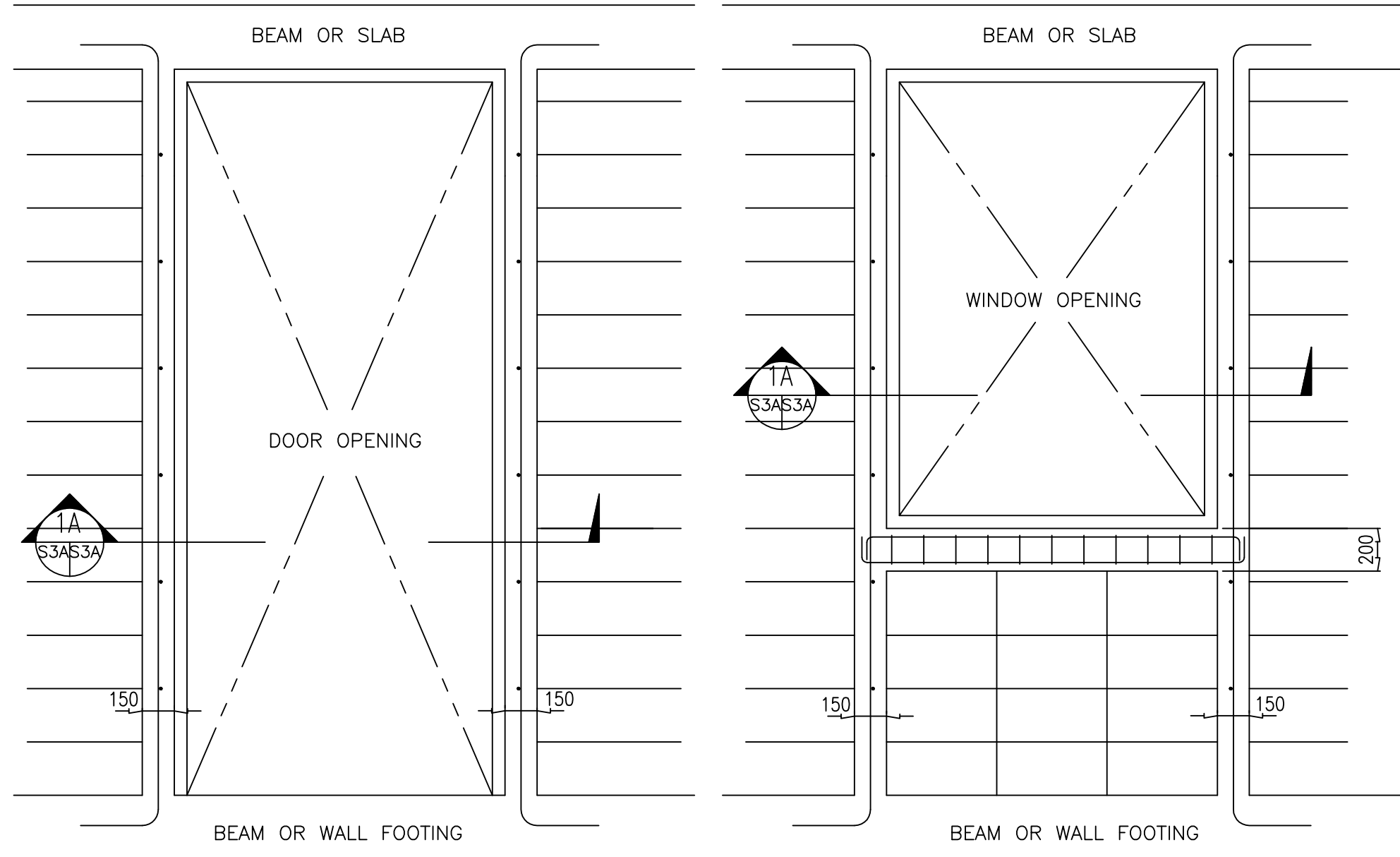
& AND

⊂ CENTERLINE

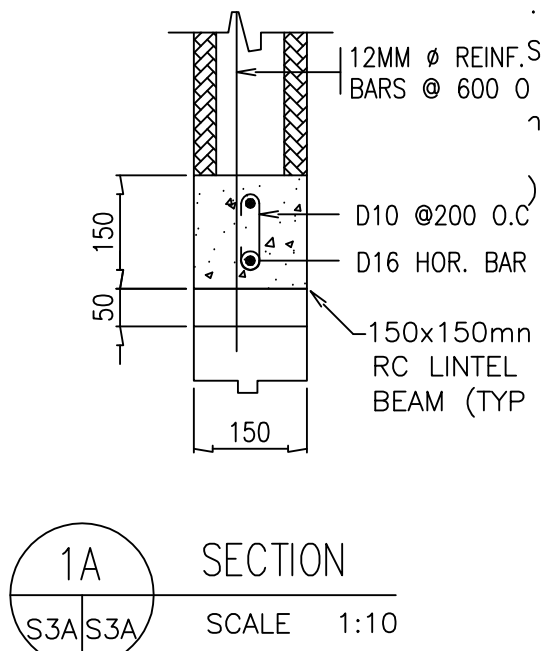
ABBREVIATIONS

ABT	ABOUT	INTERM	INTERMEDIATE	VERT	VERTICAL
BB	BOTTOM BARS	JT	JOINT	VOL	VOLUME
BOTT	BOTTOM	LG	LENGTH	W	WIDTH
BSMT	BASEMENT	LN	LINE	w/	WITH
CLR	CLEAR	kg	KILOGRAM	&	AND
COL	COLUMN	kN	KILONEWTON		
CONC	CONCRETE	kPa	KILOPASCAL		
CONST	CONSTRUCTION	m	METER		
CONT	CONTINUOUS	mm	MILLIMETER		
CTR	CENTER	MAX	MAXIMUM		
DET	DETAIL	MIN	MINIMUM		
DIA	DIAMETER	MPa	MEGAPASCAL		
DWG	DRAWING	N	NEWTON		
EA	EACH	NF	NEAR FACE		
EF	EACH FACE	No	NUMBER		
ELEV.	ELEVATION	O.C.	ON CENTER		
ENGR	ENGINEER	QTY	QUANTITY		
EQ	EQUAL	R	RADIUS		
EW	EACH WAY	RC	REINFORCED CONCRETE		
EXP	EXPANSION	REINF	REINFORCEMENT		
EXT	EXTERIOR	SDWK	SIDEWALK		
EXIST	EXISTING	SL	SLOPE		
FF	FAR FACE	SP	SPIRAL		
FFL	FINISH FLOOR LINE	SPCS	SPACES		
FIN	FINISH	STD	STANDARD		
FLR	FLOOR	STIR	STIRRUP		
FTG	FOOTING	SYMM	SYMMETRY		
GEN	GENERAL	TB	TOP BARS		
GRND	GROUND	THK	THICK		
HOR	HORIZONTAL	TYP	TYPICAL		
INT	INTERIOR	VAR	VARIABLE		

1 GENERAL NOTES
S2 S2 SCALE 1:125



1 TYPICAL DOOR AND WINDOW OPENING & LINTEL BEAM
S3A/S3A SCALE 1:25



1A SECTION
S3A/S3A SCALE 1:10

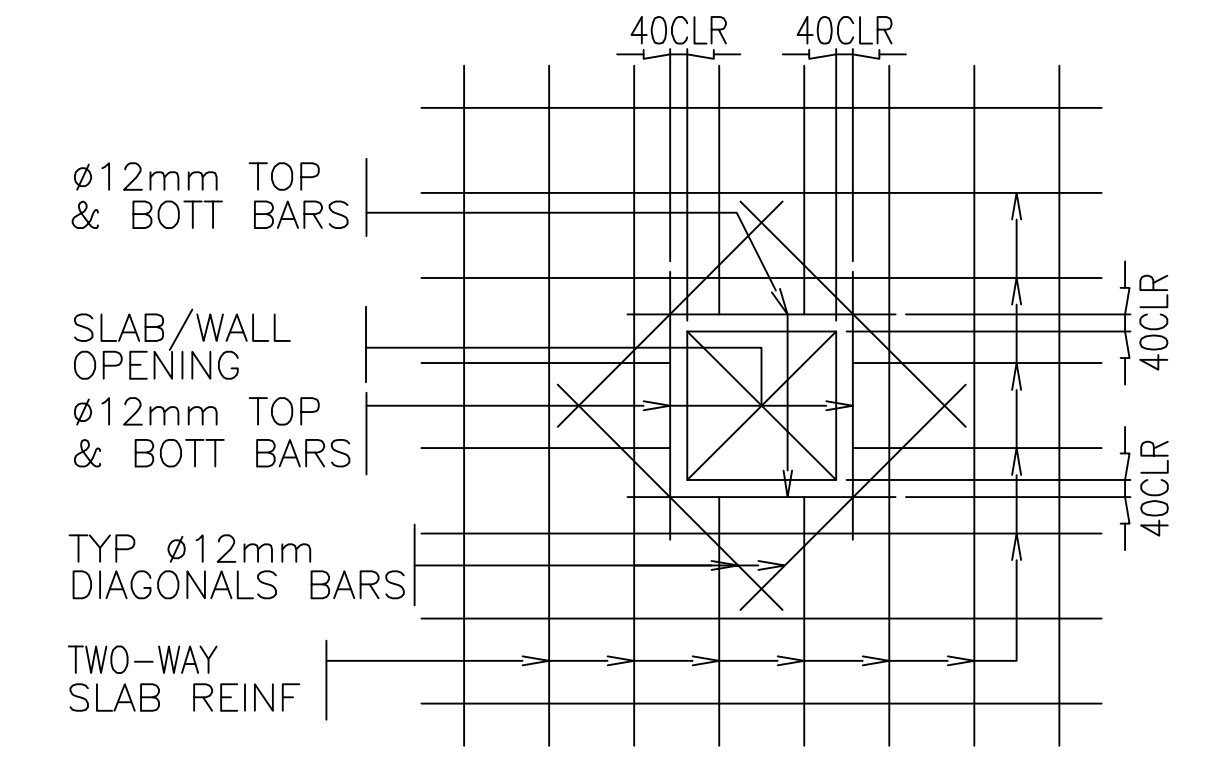
SCHEDULE OF CONCRETE HOLLOW BLOCKS

t (MM.)	VERTICAL REINFORCEMENT		HORIZONTAL REINFORCEMENT		GROUTED CELL
	φ	Avm	φ	Ahm	
150	12	600 MM O.C.	10	600 MM O.C.	ALL
100	12	600 MM O.C.	10	600 MM O.C.	ALL

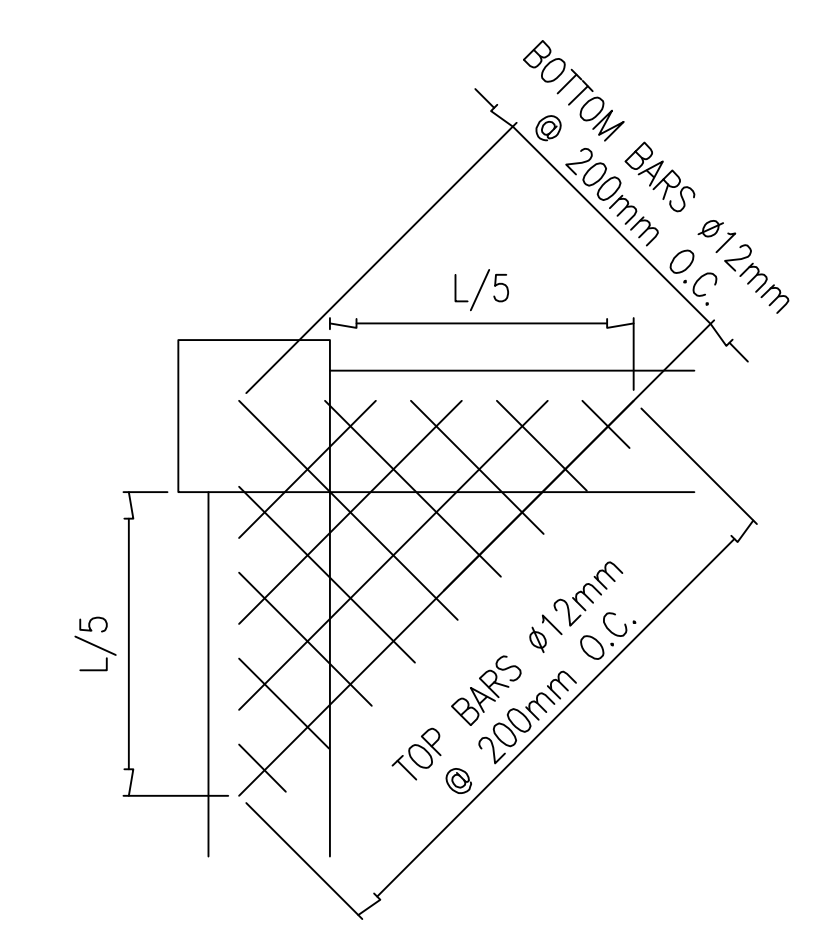
Avm = VERTICAL REINFORCEMENT SPACING
Ahm = HORIZONTAL REINFORCEMENT SPACING
t = THICKNESS OF MASONRY

- NOTES:
1. ALL EXTERIOR CONCRETE BLOCKS SHALL HAVE A MINIMUM STRENGTH OF 350 PSI (100MM THK)
 2. ALL INTERIOR CONCRETE BLOCKS SHALL HAVE A MINIMUM STRENGTH OF 350 PSI (100MM THK)
 3. PROVIDE STIFFENER COLUMNS AT EVERY THREE METERS (3.00 M.) O.C. WITH 2-1Ø VERTICAL BAR WITH 1Ø TIES @ 200MM O.C. AS INDICATED.
 4. PROVIDE STIFFENER BEAMS (200MM X 150 MM) AT EVERY THREE METERS (3.00 M.) O.C. WITH 2-1Ø HORIZONTAL BARS WITH 1Ø TIES AT 200MM O.C.
 5. ALL CHB CELLS CONTAINING REINFORCEMENT SHALL ONLY BE SOLIDLY FILLED WITH GROUT, ALSO ALL CHB CELLS BELOW FINISH GRADE LINE SHALL BE SOLIDLY FILLED WITH GROUT.
 6. UNLESS OTHERWISE NOTED, SOLID GROUT SHALL MEAN ALL CELLS (WITH OR WITHOUT REINFORCEMENT BE GROUTED.)
 7. SPECIAL FIELD INSPECTION IS REQUIRED.
 8. LAYING OF CONG. BLOCKS SHOULD BE 1200MM HIGH IN ONE DAY (1 DAY).

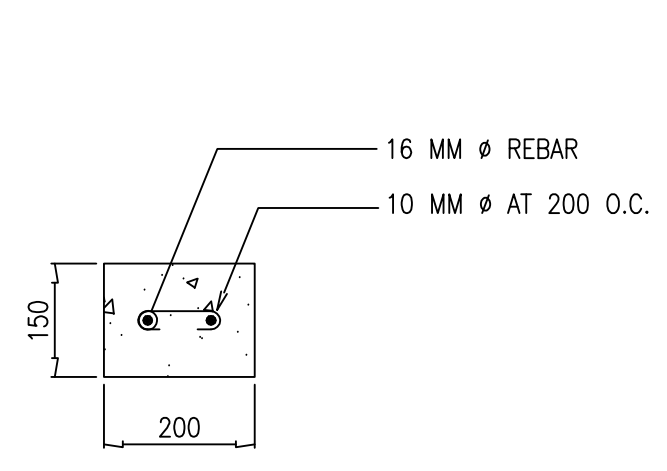
4 TYPICAL CONCRETE HOLLOW BLOCK PLAN
S3A/S3A SCALE 1:40



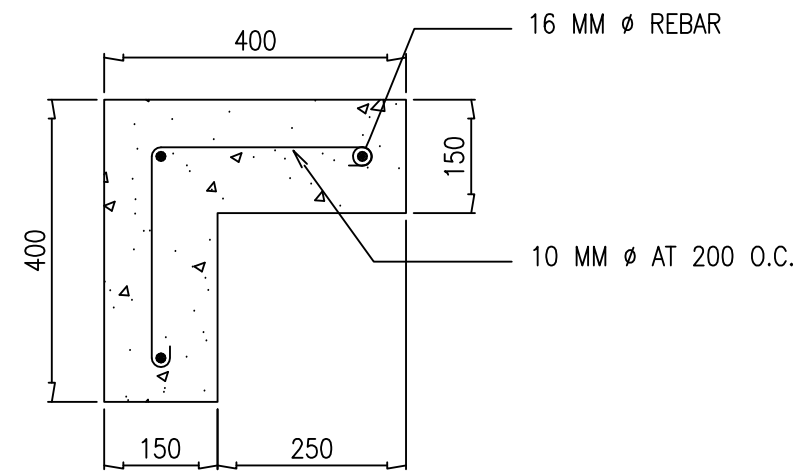
5A TYPICAL SLAB/WALL OPENING DETAIL
S3A/S3A SCALE 1:25



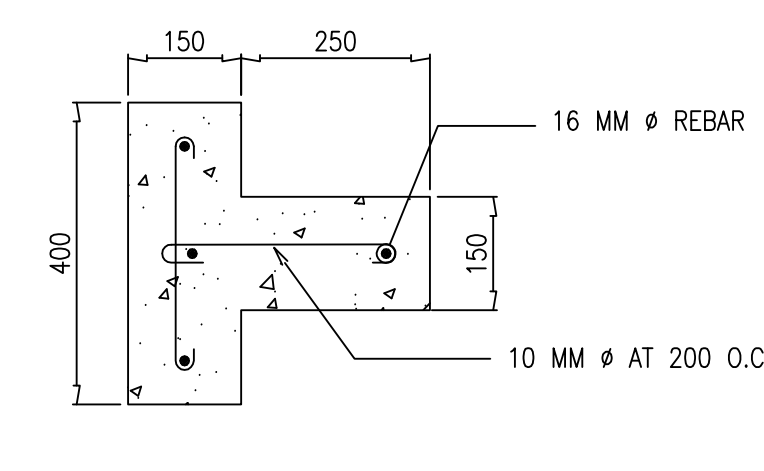
5B TYPICAL EXTERIOR CORNER DETAIL
S3A/S3A SCALE 1:35



2A DETAIL @ MIDSPAN (TYP. @ EVERY 3M)
S3A/S3A SCALE 1:10



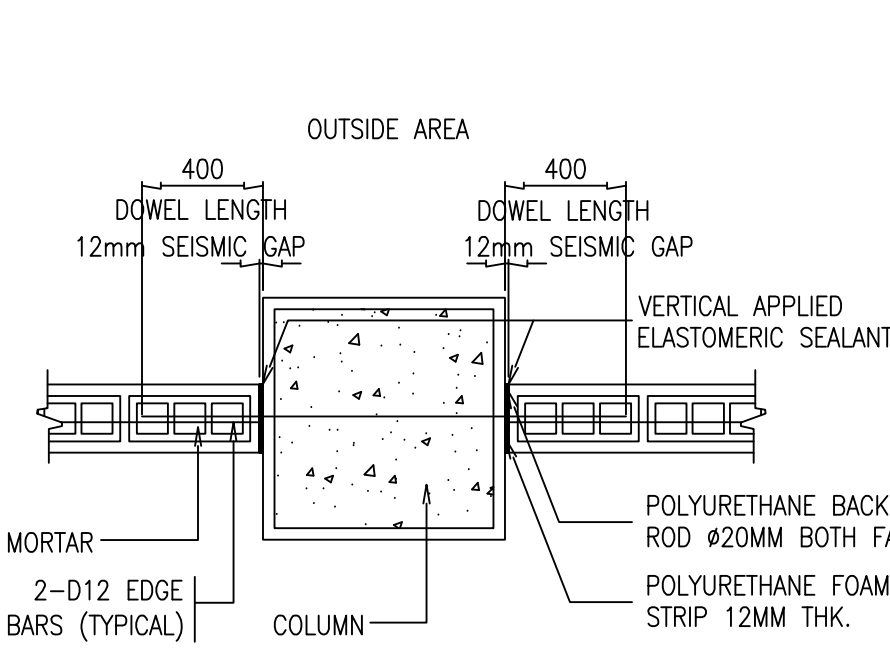
2B DETAIL @ CORNERS
S3A/S3A SCALE 1:10



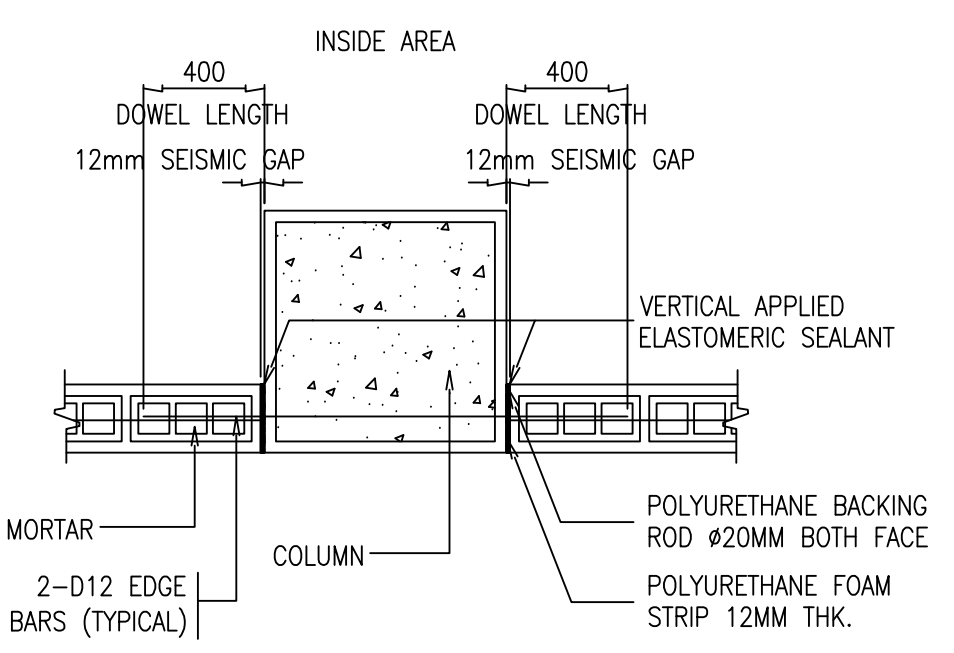
2C DETAIL @ INTERSECTIONS
S3A/S3A SCALE 1:10

2 TYPICAL CHB WALL STIFFENER COLUMNS
S3A/S3A SEE ABOVE

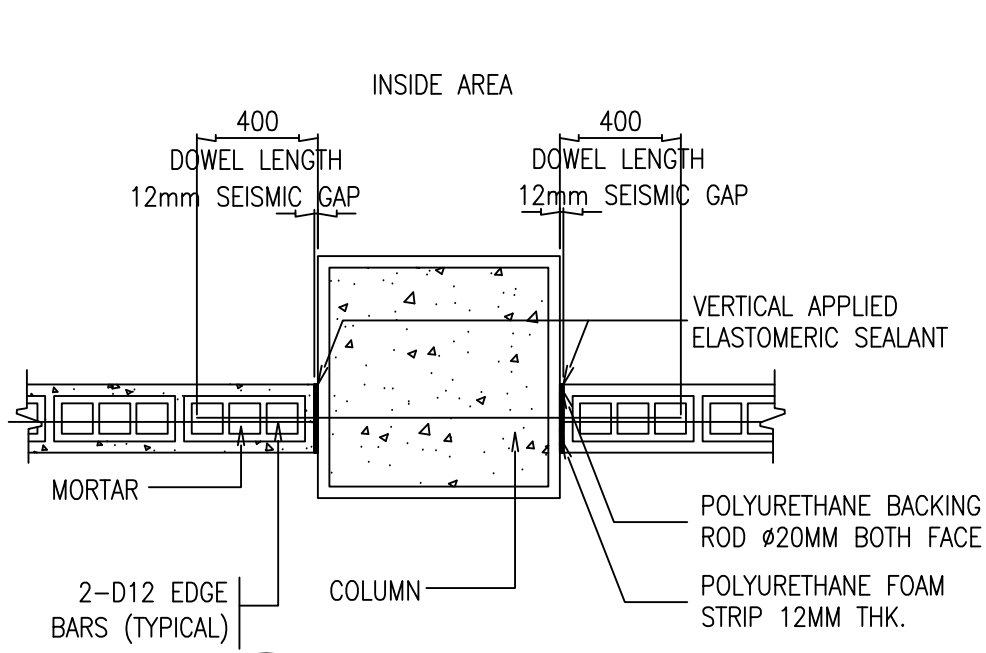
- NOTES:
1. ALL REINFORCEMENT SHALL BE 0.019M CLEAR MINIMUM FROM TOP AND BOTTOM SLAB.
 2. FOR TWO-WAY SLAB ALONG THE LONGER SPAN AND SHALL BE PLACED BELOW THOSE ALONG THE LONGER SPAN AT CENTER AND OVER THE LONGER SPAN BARS NEAR THE SUPPORT UNLESS OTHERWISE INDICATED OR SHOWN IN DETAIL. THE SPACING OF THE BARS AT THE COLUMN STRIPS CAN BE APPROXIMATELY 1 1/2 OF THE MIDDLE STRIP IN NO CASE GREATER THAN 2 1/2 THE SLAB THICKNESS.
 3. UNLESS OTHERWISE DETAILED IN CONDITIONING SLAB HAVING SAME REINFORCEMENT RUNNING IN ONE DIRECTION, REINFORCING SHALL BE BENT, EXTENDED OR CUT AS FOLLOWS.
 4. TEMPERATURE BARS FOR SLAB SHALL BE GENERALLY PLACED NEAR THE TENSION FACE AND SHALL NOT BE LESS THAN 0.025 BT.
 5. UNLESS OTHERWISE NOTED, ALL BEDDED SLAB SHALL BE REINFORCED WITH 10mmØ BAR @ 0.25M.O.C. B.W. AT CENTER OF SLAB. CONSTRUCTION JOINT FOR SLAB SHALL NOT BE MORE THAN 3.0M APART.
 6. PROVIDE EXTRA REINFORCEMENT AT CORNER SLAB (TWO ADJACEN DISCONTINUOUS EDGE) AS SHOWN ABOVE.
 7. PROVIDE SUPPLEMENTARY SMALL UNFRAMED OPENING SLAB AS SHOWN BELOW.



3A TYP. DETAIL 1
S3A/S3A SCALE 1:25

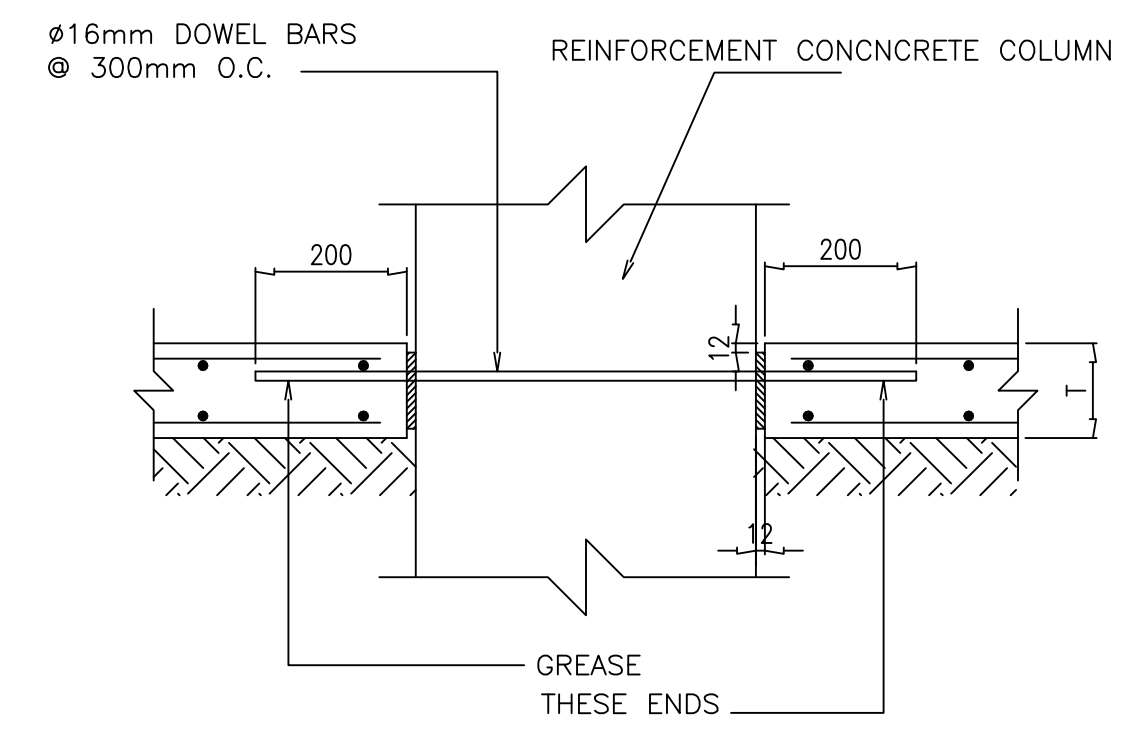


3B TYP. DETAIL 2
S3A/S3A SCALE 1:25

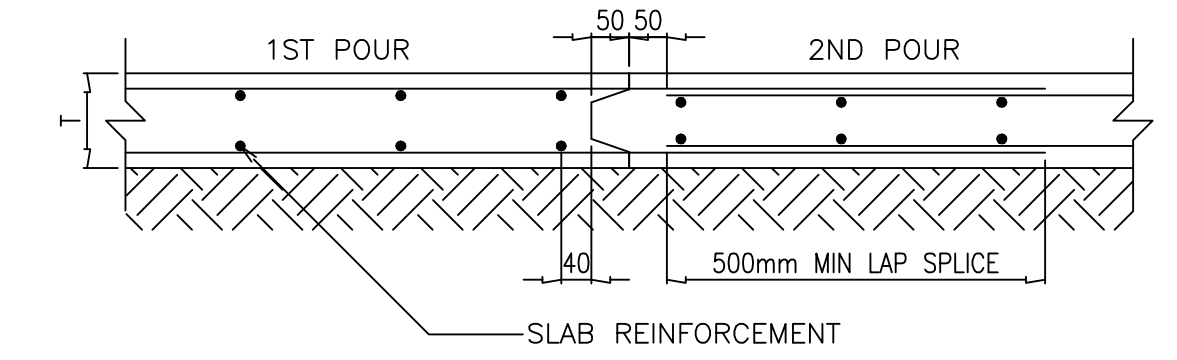


3C TYP. DETAIL 3
S3A/S3A SCALE 1:25

3 TYPICAL CHB WALL TO CONCRETE COLUMN CONNECTION DETAIL
S3A/S3A SEE ABOVE



6A EXPANSION JOINT
S3A/S3A SCALE 1:10



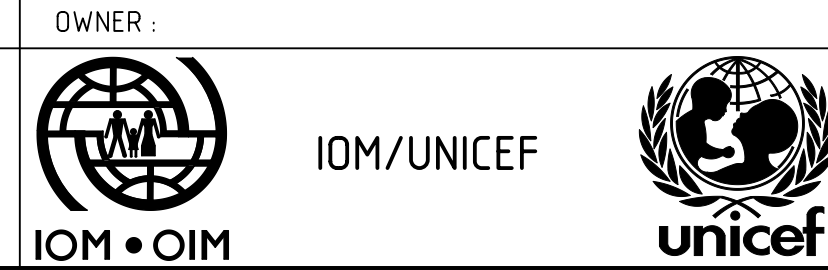
6B CONSTRUCTION JOINT
S3A/S3A SCALE 1:10

6 CONSTRUCTION JOINTS FOR SLAB ON FILL
S3A/S3A SEE ABOVE



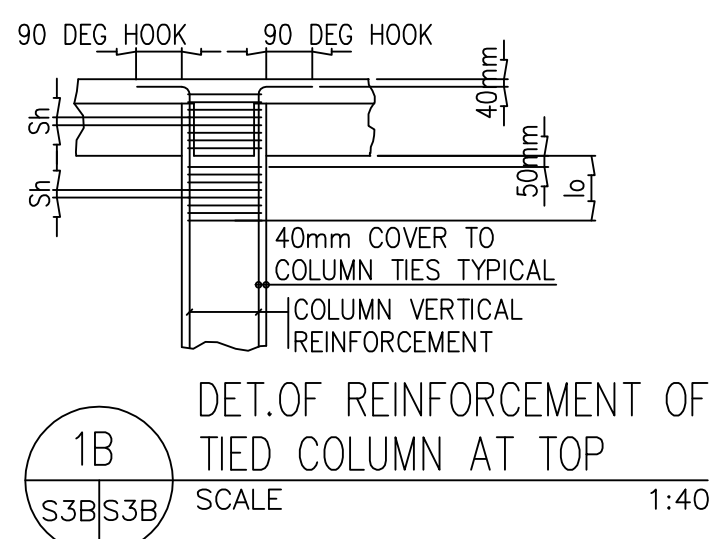
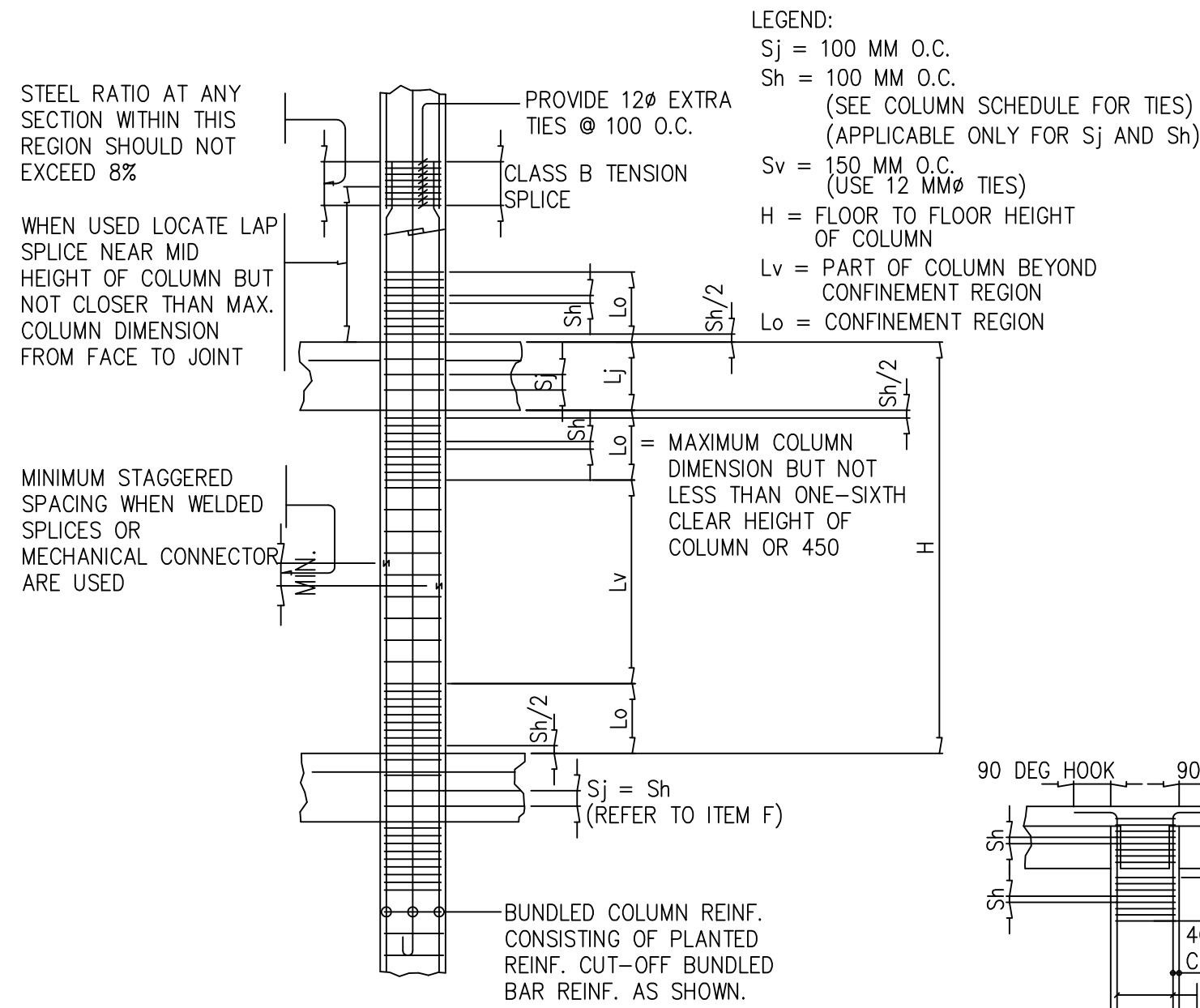
ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue : ---
Date of Issue : ---

PROJECT / LOCATION :
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR



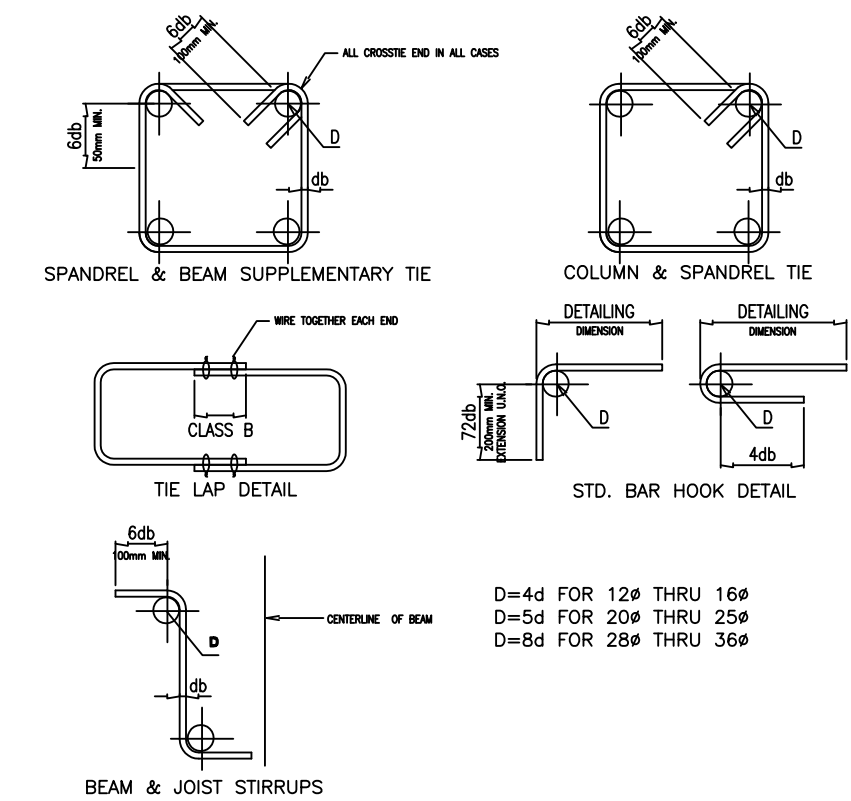
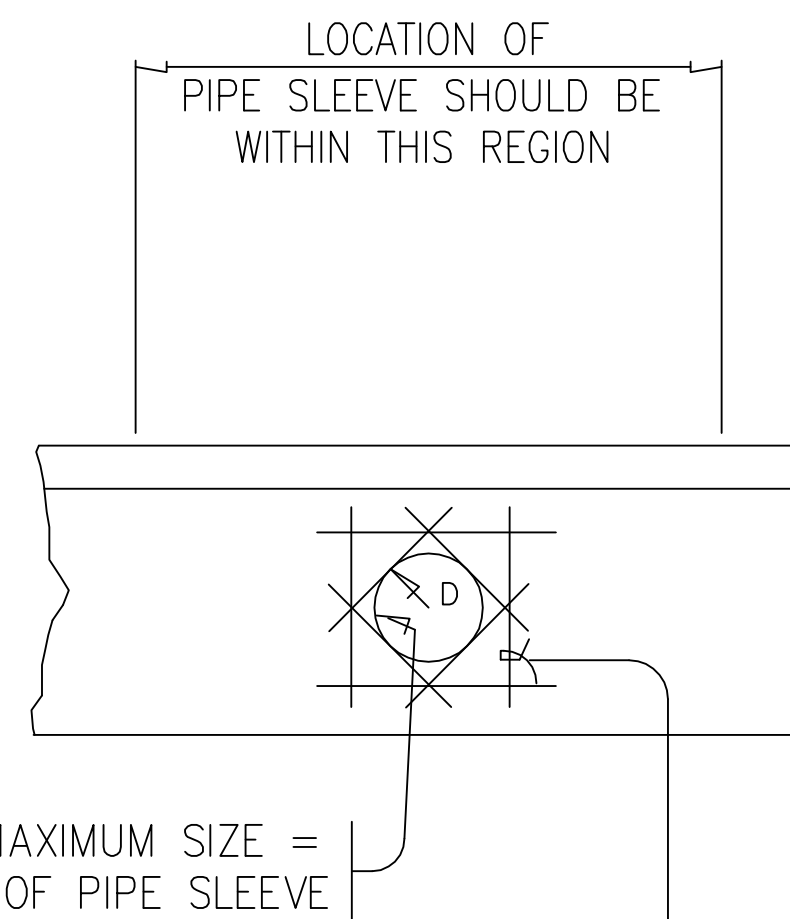
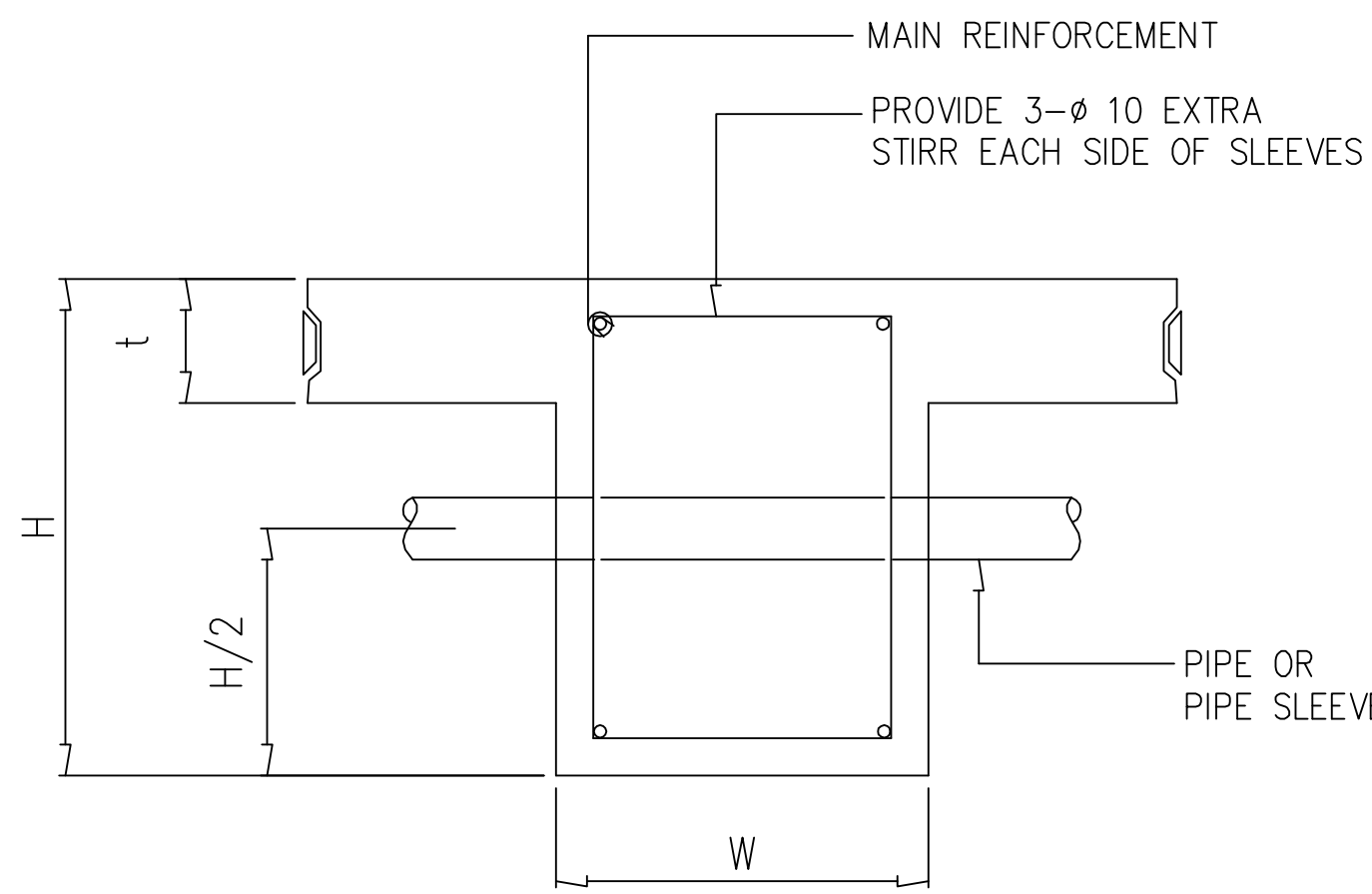
NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
1	ISSUED FOR BIDDING	23SEP15	MVA				

SHEET CONTENT	SHEET NO.
TYPICAL DOOR AND WINDOW OPENING & LINTEL BEAM TYPICAL CHB WALL STIFFENER COLUMNS TYPICAL CHB WALL TO CONCRETE COLUMN CONN. DETAIL TYPICAL CONCRETE HOLLOW BLOCK PLAN CONSTRUCTION JOINTS FOR SLAB ON FILL	EST3A
CHECKED: AQT DRAWN: MAApele FILENAME: 2K1404-A-ST3A APPROVED: RNF DATE: 23SEP15	PROJ. NO. 2K1404.A



NOTE:

- PIPES OR PIPE SLEEVES SHALL NOT BE LARGER IN DIAMETER THAN 1/3 THE OVERALL DEPTH OF BEAM OR GIRDER.
- THEY SHALL NOT BE SPACED CLOSER THAN 3 DIAMETERS ON CENTER.
- THEY SHALL NOT IMPAIR SIGNIFICANTLY THE STRENGTH OF CONSTRUCTION.
- SUBMIT TO STRUCTURAL ENGINEER FOR APPROVAL THE LOCATION OF EMBEDDED PIPE OR PIPE SLEEVE PRIOR TO INSTALLATION.



NOTES ON COLUMNS:

- FOR ALL TIED COLUMNS, MIN. 4 LAYERS OF TIES SHALL BE PROVIDED AT 100mm O.C. IN COLUMN REINFORCEMENT JUST ABOVE THE GIRDER IN BOTH SIDES OF COLUMN CONST. JOINTS.
- COLUMN TIES & SPIRALS SHALL BE PROVIDED WITH EVERYWHERE BY COVERING OF CONCRETE CAST MONOLITHICALLY WITH THE CORE OF MIN. THICKNESS OF 3.81 CM. (1-1/2") MAX. SIZE OF COARSE AGGREGATE.
- WHERE COLUMNS CHANGE IN SIZE, VERT. REINF'T. SHALL BE OFFSET AT SLOPE OF NOT MORE THAN 1:6 & EXTRA 10mm dia. TIES AT 100mm SHALL BE PROVIDED THROUGH-OUT THE OFFSET REGION.

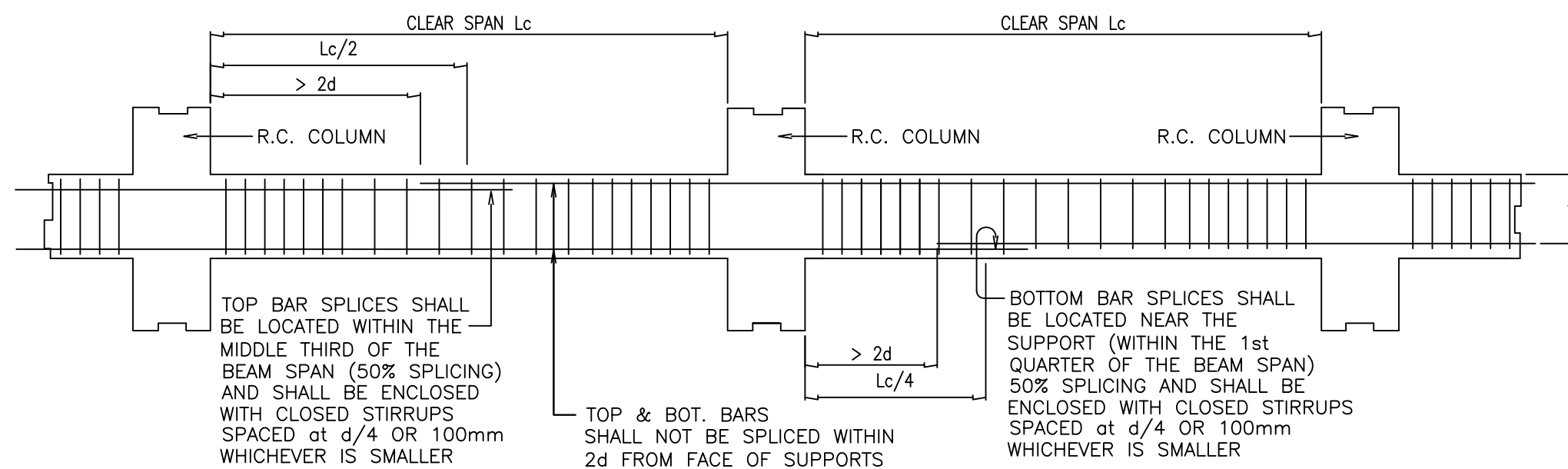
BAR SIZES (MM)	LAP SPLICES LENGTH		ANCHORAGE LENGTH (MM)
	TYPE "A"	TYPE "B"	
Ø 10	400	300	600
Ø 12	450	350	600
Ø 16	610	400	600
Ø 20	760	560	600
Ø 25	1100	900	680
Ø 28	1400	1200	560
Ø 32	1900	1400	1120
Ø 36	2410	2410	1430

NOTES:

- TYPE "A" BUNDLED BARS
TYPE "B" INDIVIDUAL BARS
- NOT MORE THAN 33% OF THE BARS SHALL BE SPLICED WITHIN THE REQUIRED LAP LENGTH

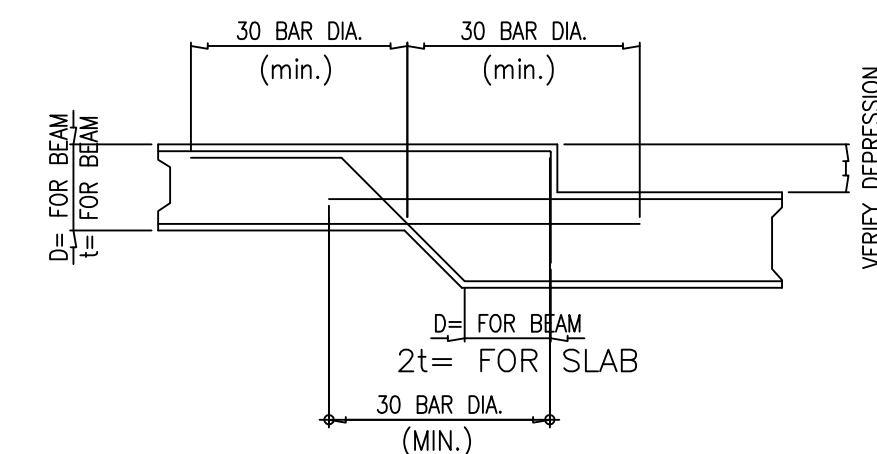
1C SCHEDULE OF LAP SPLICE
S3B/S3B SCALE 1:40

1 TYP. TIED COLUMN BAR DETAIL
S3B/S3B SCALE 1:40



4 SPLICE LOCATION FOR BEAM REBARS
S3B/S3B SCALE 1:30

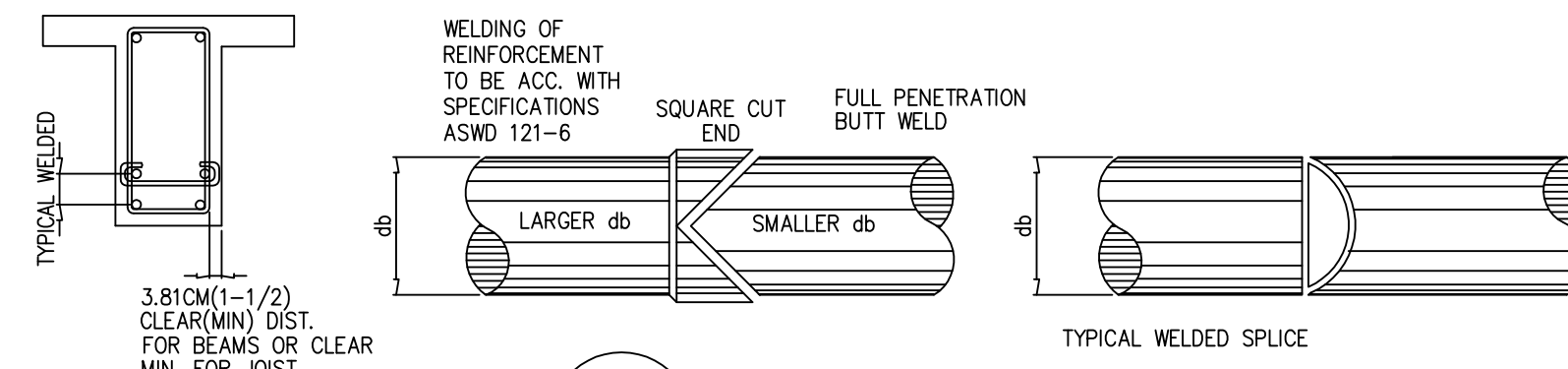
2 PIPE SLEEVES DETAIL
S3B/S3B SCALE 1:25



5 TYP. DROP SLAB DETAILED
S3B/S3B SCALE 1:75

NOTE:

NO SPLICE BE PERMITTED ON BEAMS WHERE CRITICAL BENDING OCCURS, LENGTH OF LAP SPLICES WHERE PERMITTED SHALL BE AS SHOWN TABLE "A". WELD SPLICES SHALL BE DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED YIELD OF BARS. NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE ALLOWED TO SPLICE THEREIN. A TYPICAL WELDED SPLICE DETAIL FOR Small dia. & Larger dia. BARS ARE SHOWN BELOW.



6 TYPICAL WELDED SPLICE DETAIL
S3B/S3B SCALE 1:50



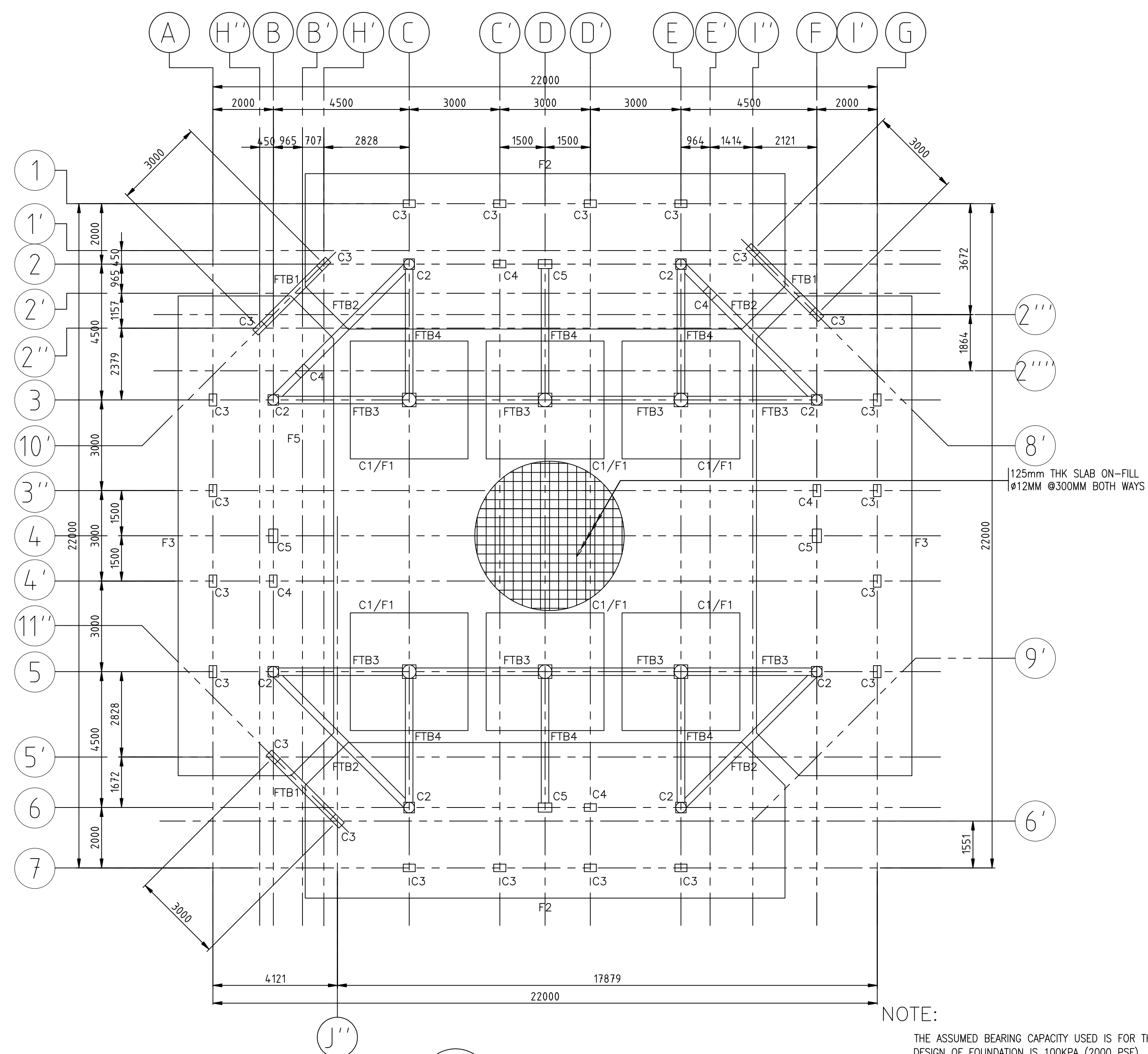
ARCHITECT / ENGINEER :		
RNFA STRUCTURAL ENGINEER		
PRC Reg. No.	PTR No.	Place of Issue : ---
---	---	Date of Issue : ---

PROJECT / LOCATION :	OWNER :
MULTI-PURPOSE CENTER CITY OF BORONGAN, EASTERN SAMAR	IOM/UNICEF

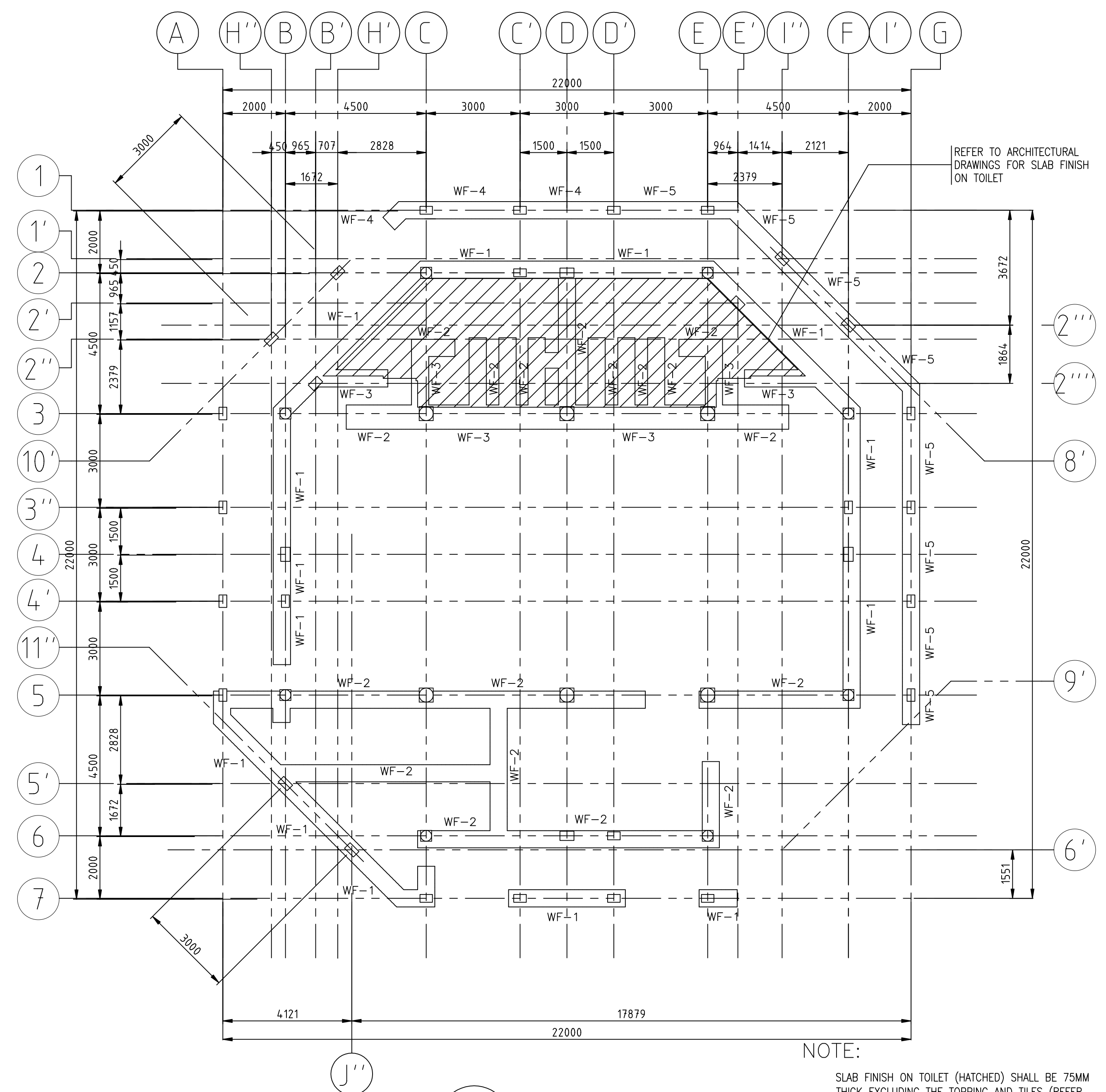


NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
	ISSUED FOR BIDDING	23SEP15	MVA				

SHEET CONTENT				SHEET NO.	
TYPICAL TIED COLUMN BAR DETAIL PIPE SLEEVES DETAIL TYPICAL BAR BENDING DETAIL SPLICE LOCATION FOR BEAM REBARS TYPICAL DROP SLAB DETAIL TYPICAL WELDED SPLICE DETAIL				EST3B	
CHECKED	AQT	DRAWN	MAApeto	FILENAME	PROJ. NO.
APPROVED	RNF	DATE	23SEP15	2K1404A-ST3B	2K1404A



1 FOUNDATION PLAN
S4/S4 SCALE 1:100

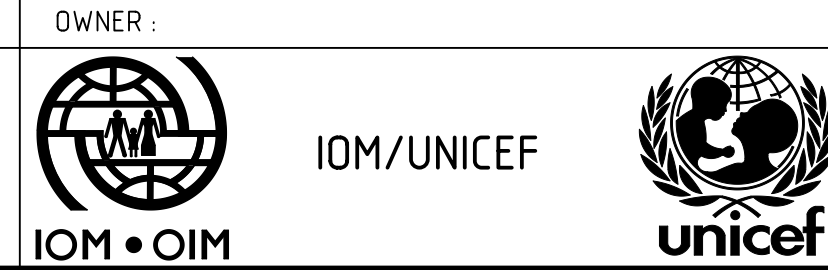


2 WALL FOOTING PLAN
S4/S4 SCALE 1:100



ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue :
Date of Issue :

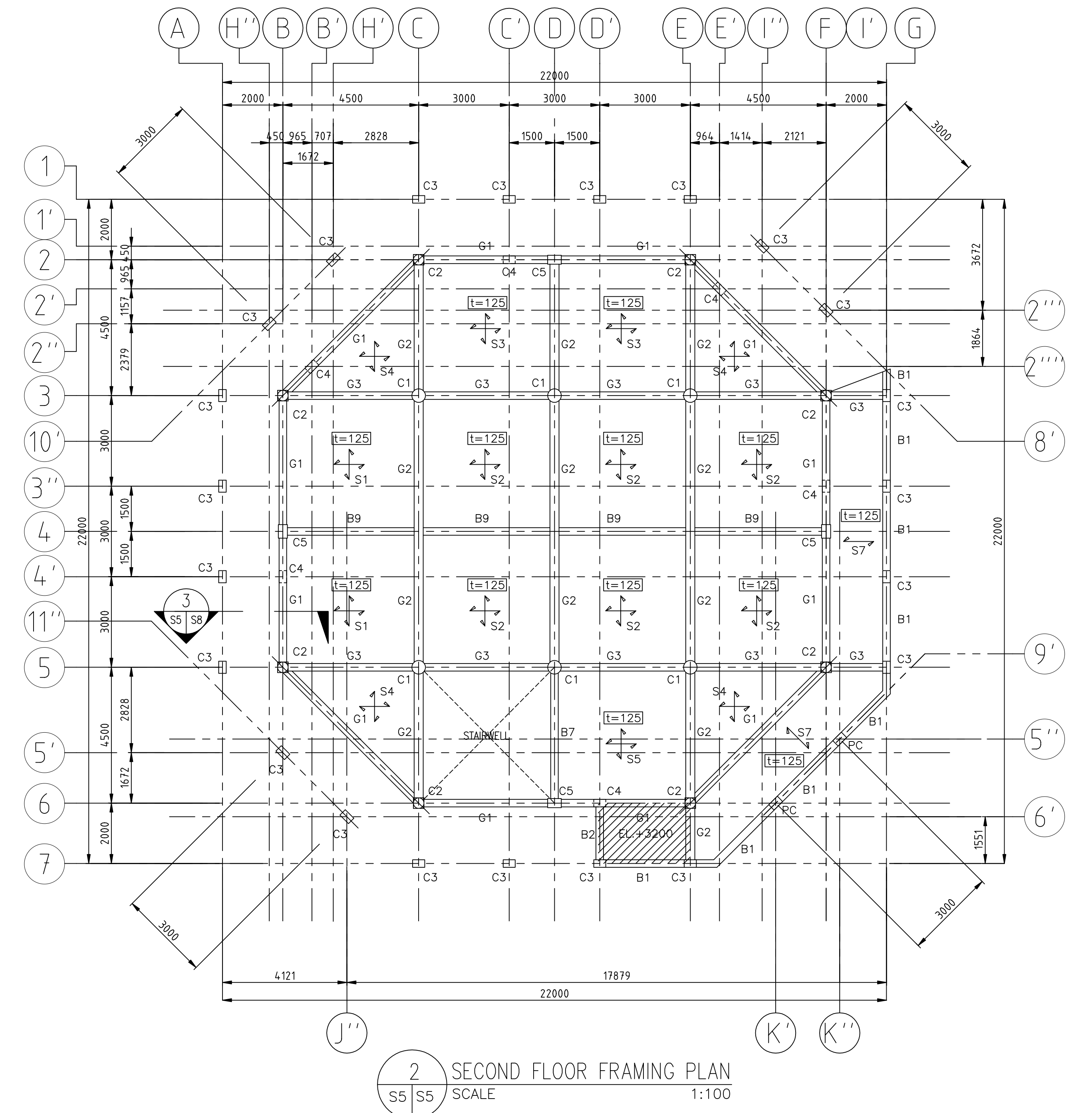
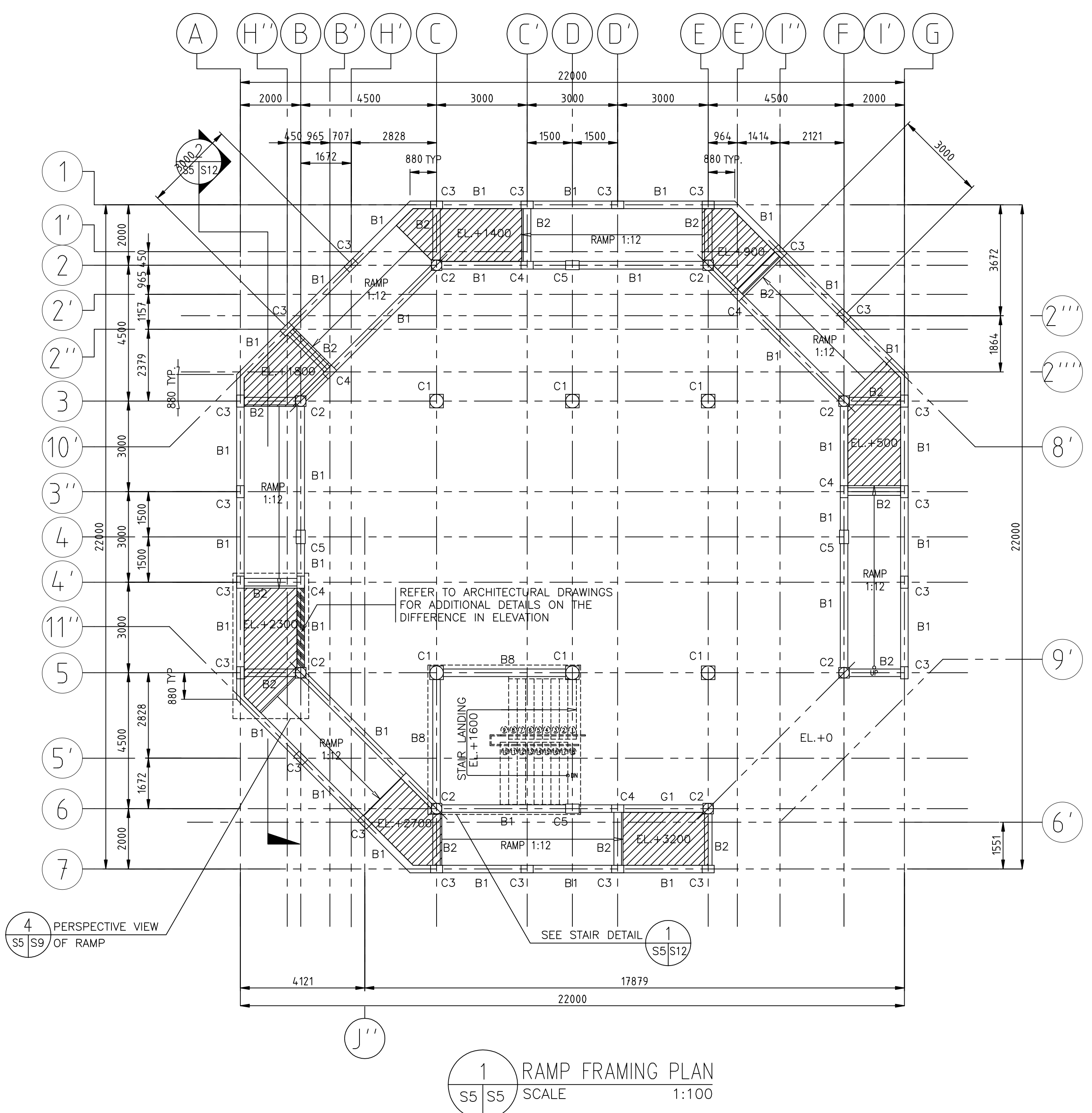
PROJECT / LOCATION :
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR



NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
1	ISSUED FOR BIDDING	23SEP15	MVA				

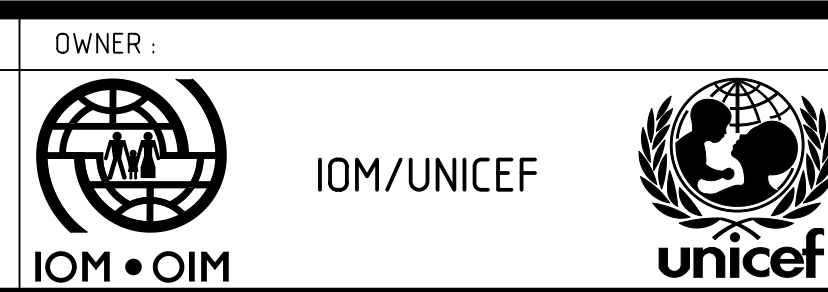
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APPROVED	RNF	DATE	23SEP15	2K1404A-ST04	2K1404A

EST04



ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue :
Date of Issue :

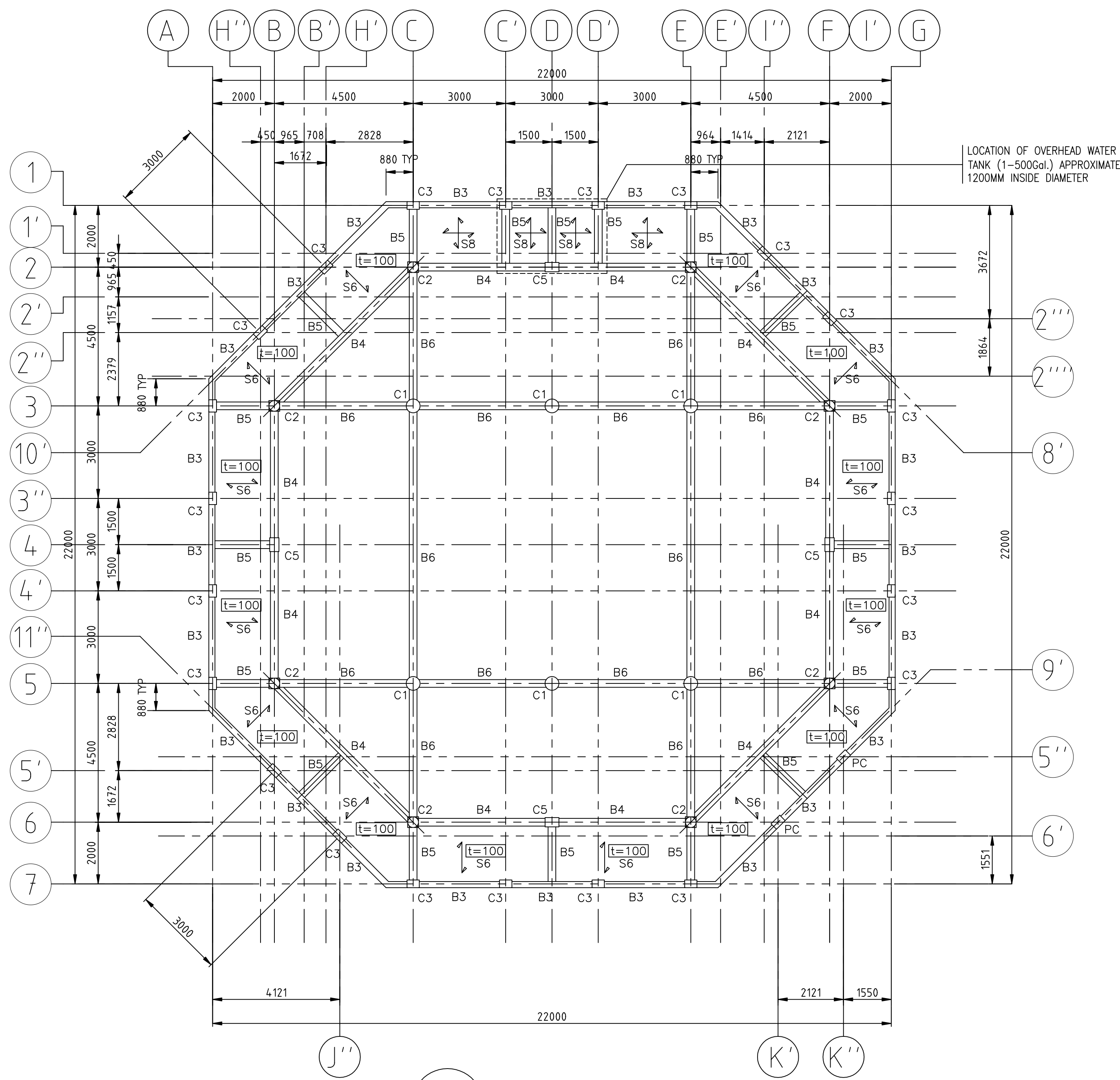
PROJECT / LOCATION :
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR



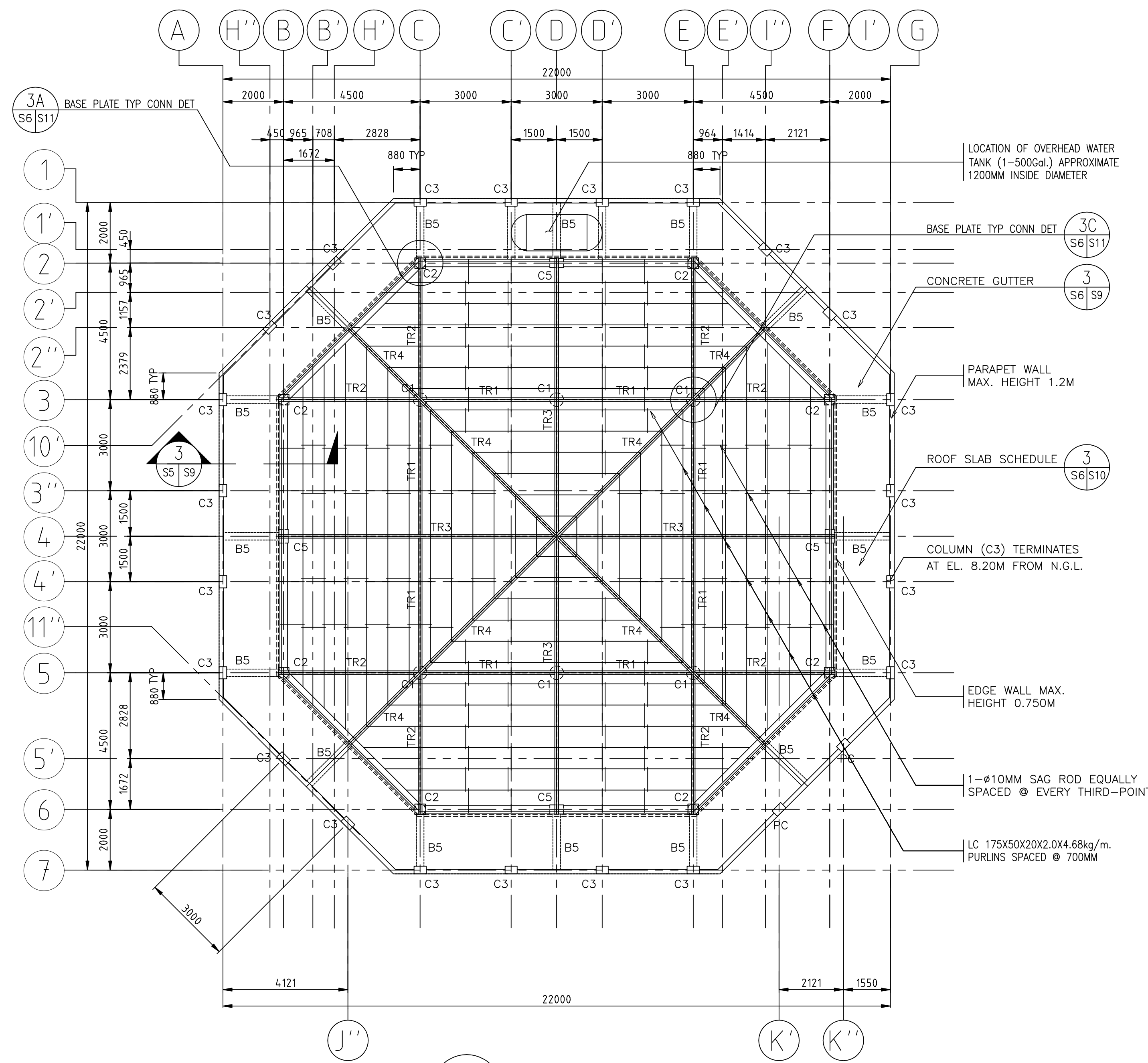
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1	ISSUED FOR BIDDING	23SEP15	MVA				

CHECKED	AQT	DRAWN	MA	FILENAME	PROJ. NO.
APPROVED	RNF	DATE	23SEP15	2K1404A-ST05	2K1404A

SHEET NO.
EST05



1 ROOF FRAMING PLAN
SCALE 1:100



2 TRUSS FRAMING PLAN
SCALE 1:100



ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue : ---
Date of Issue : ---

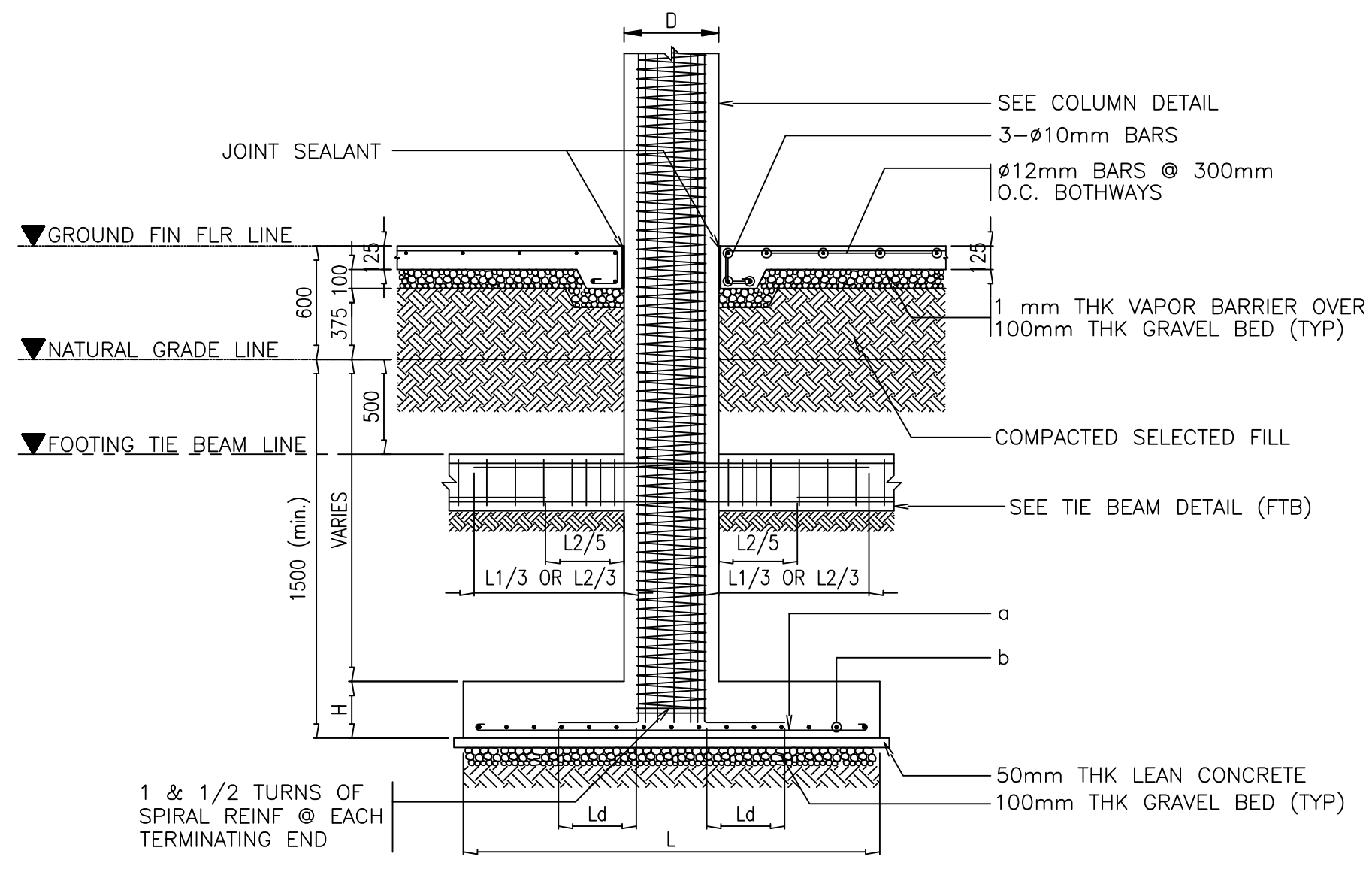
PROJECT / LOCATION :
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CITY OF BORONGAN, EASTERN SAMAR



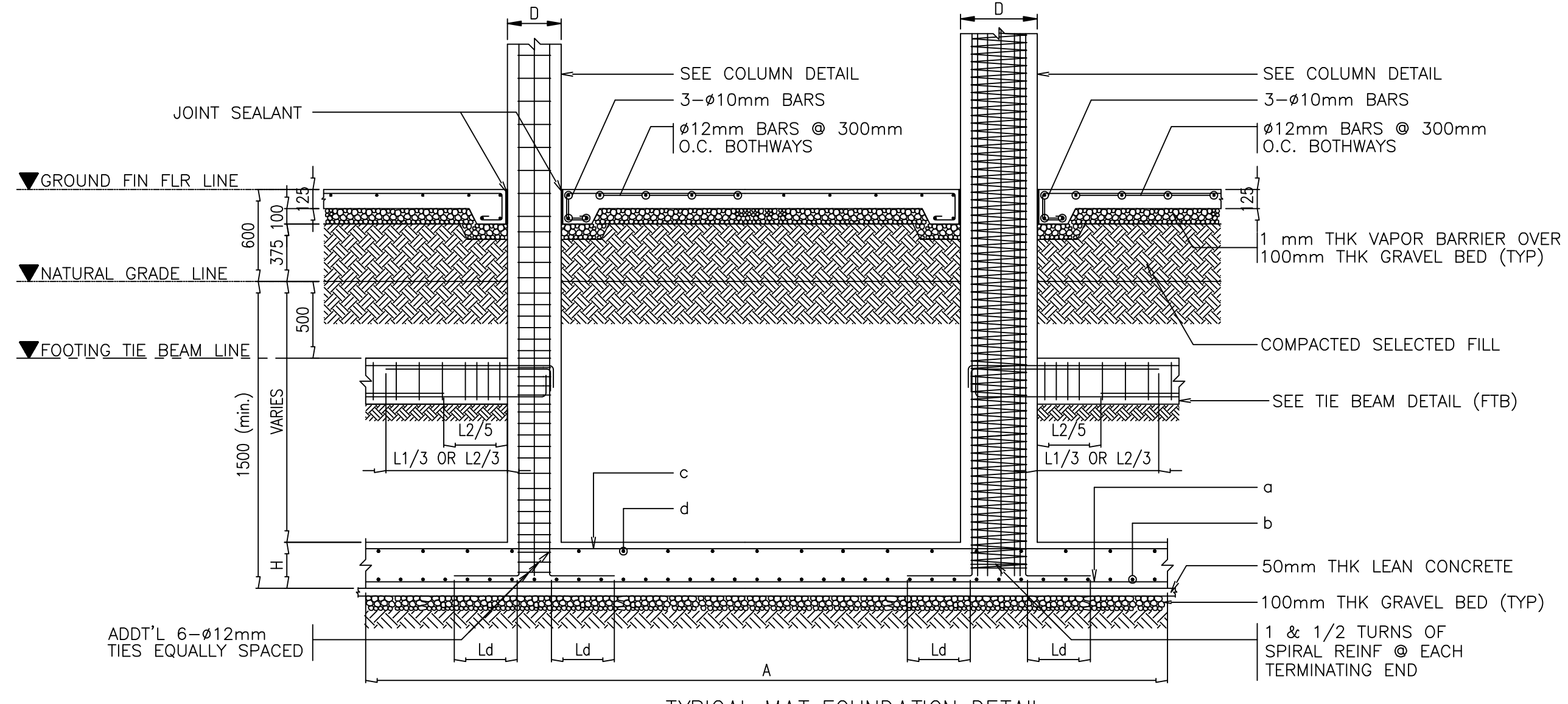
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1	ISSUED FOR BIDDING	23SEP15	MVA				

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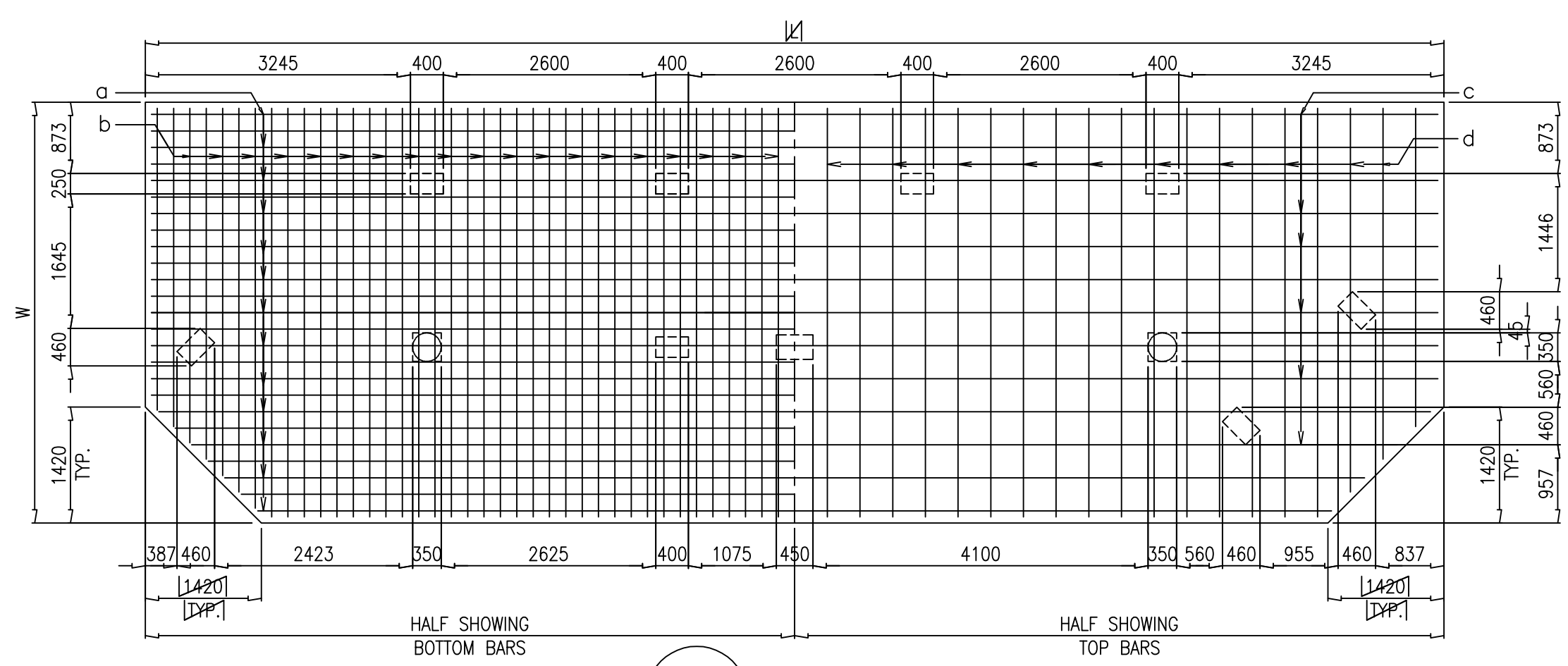
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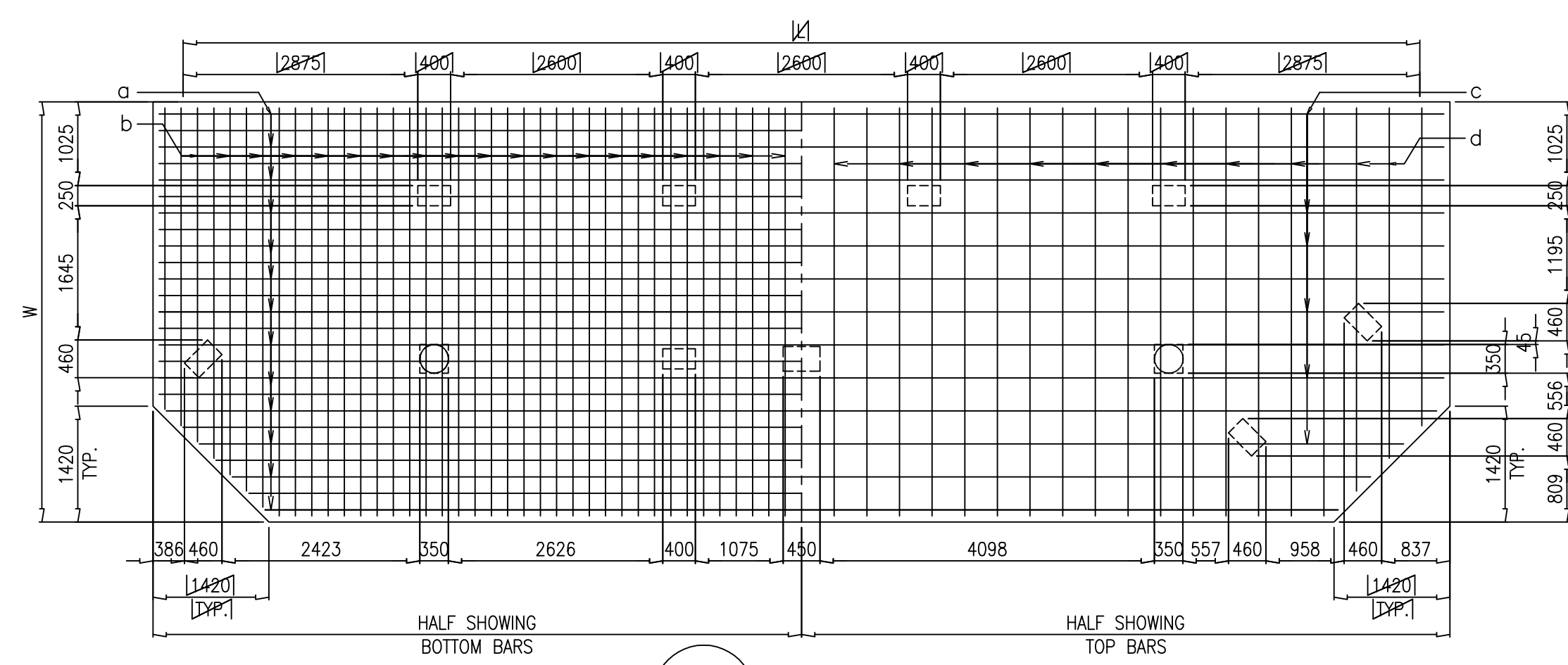
1A C1-F1 DETAIL
SCALE 1:30



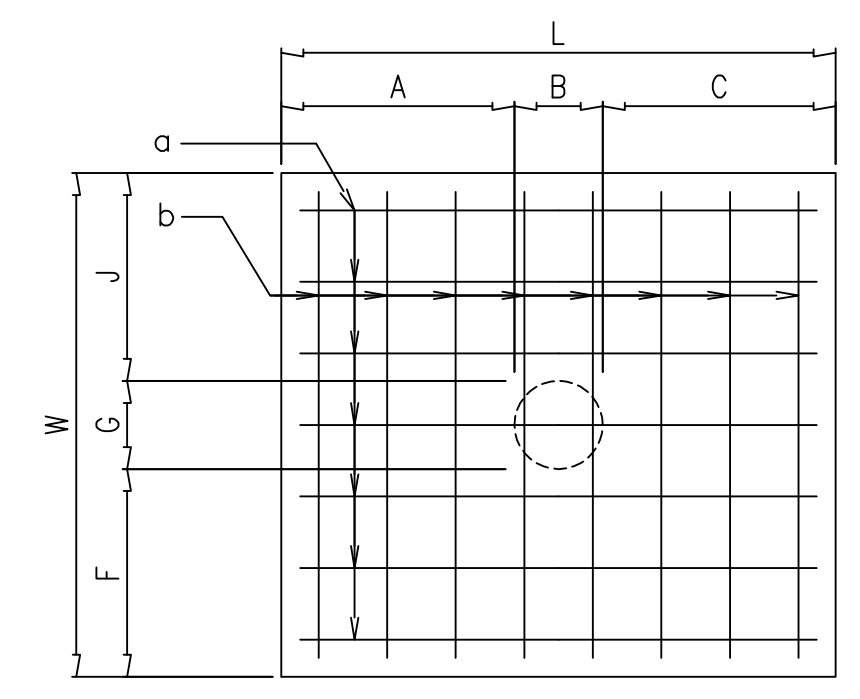
TYPICAL MAT FOUNDATION DETAIL
AT WIDTH SECTION (W)
SCALE 1:30



1D PLAN F2 DETAIL
SCALE 1:65

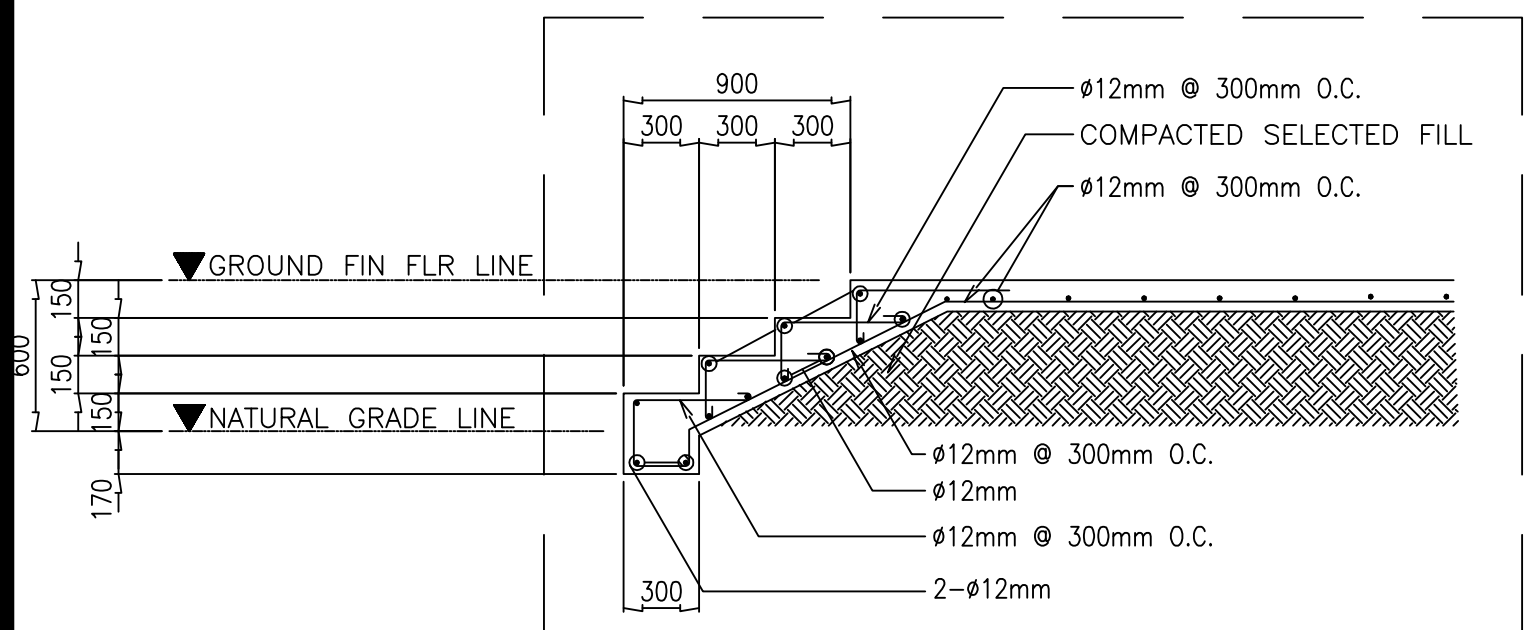


1F PLAN F3 DETAIL
SCALE 1:65

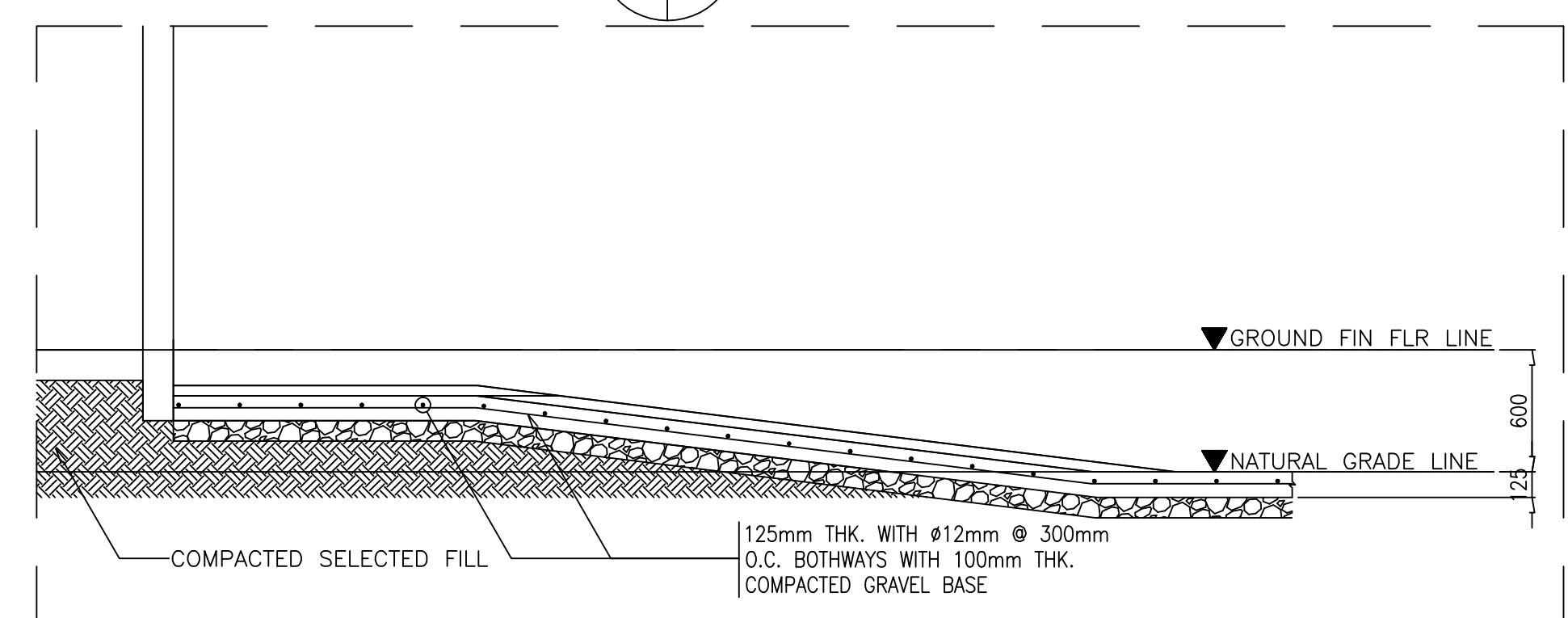


1E PLAN F1 DETAIL
SCALE 1:30

1 COLUMN FOOTING DETAIL
SCALE 1:30



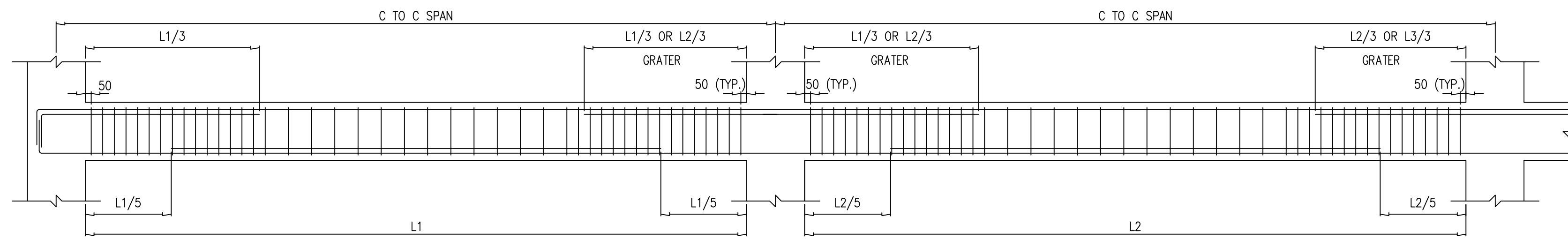
4 STAIR ON GRADE DETAIL
SCALE 1:30



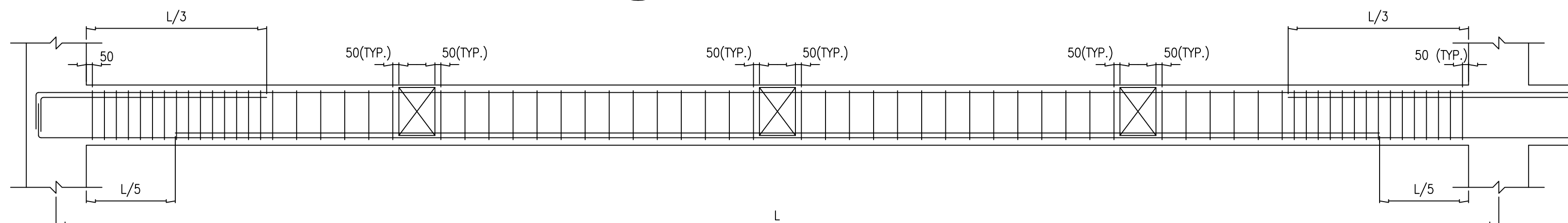
3 RAMP DETAIL
SCALE 1:30

	SPREAD FOOTING / MAT FOUNDATION SCHEDULE											REINFORCEMENT			
	DIMENSION											BOTTOM REINFORCEMENT		TOP REINFORCEMENT	
	L	W	H	A	B	C	D	E	F	G	J	a	b	c	d
F1	3900	3900	550	1725	450	1725	-	-	1725	450	1725	30-ø16mm ø16mm @ 150mm O.C.	30-ø16mm ø16mm @ 100mm O.C.	-	-
F2	15890	5150	600	SEE PLAN DETAIL 1D								150mm O.C.	100mm O.C.	300mm O.C.	200mm O.C.
F3	15890	5150	600	SEE PLAN DETAIL 1F								150mm O.C.	100mm O.C.	300mm O.C.	200mm O.C.

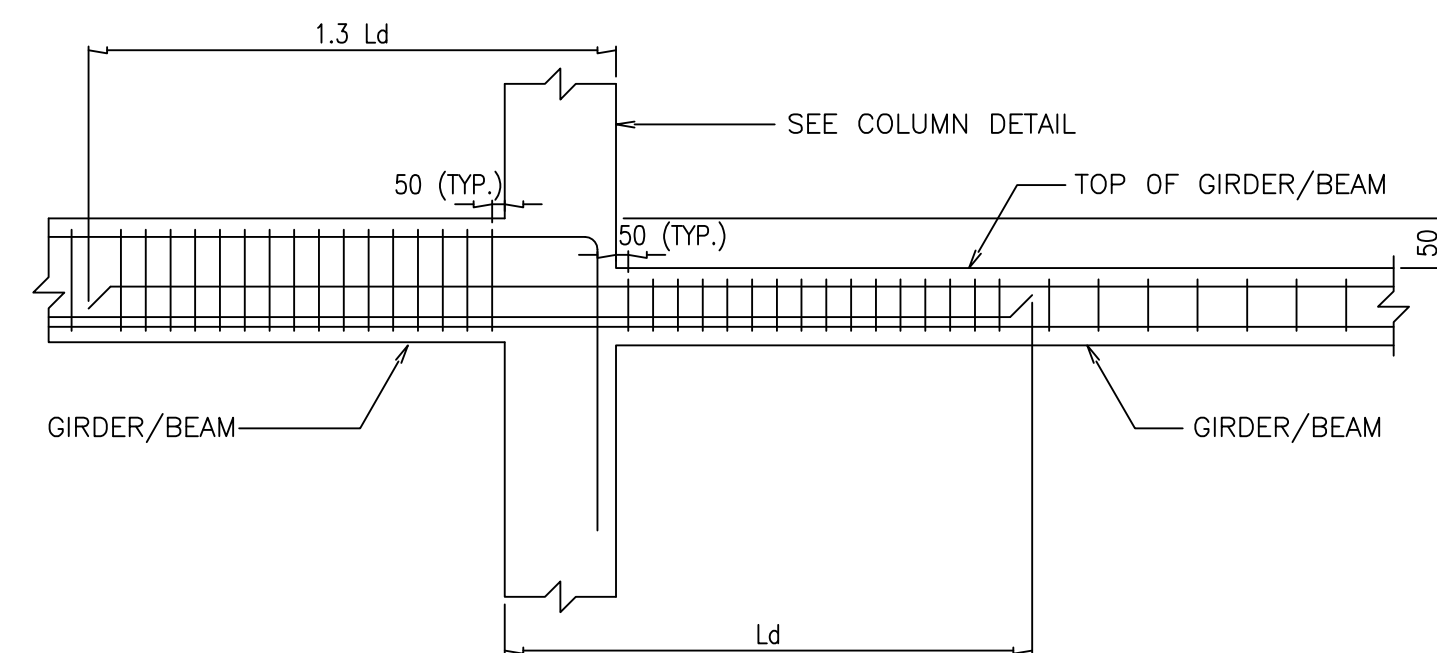
2 FOOTING SCHEDULE
SCALE 1:30



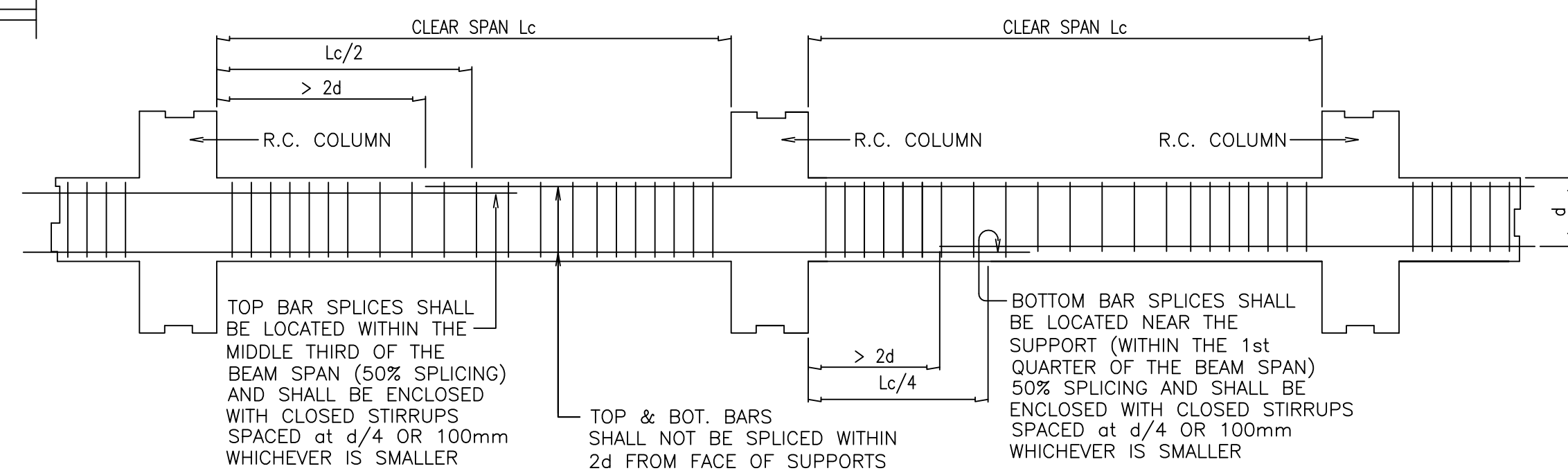
1A AT COLUMN SUPPORT
SCALE 1:30



1B AT GIRDER SUPPORT
SCALE 1:30



1C TYP DET OF DEPRESSED GIRDERS/BEAMS
SCALE 1:30

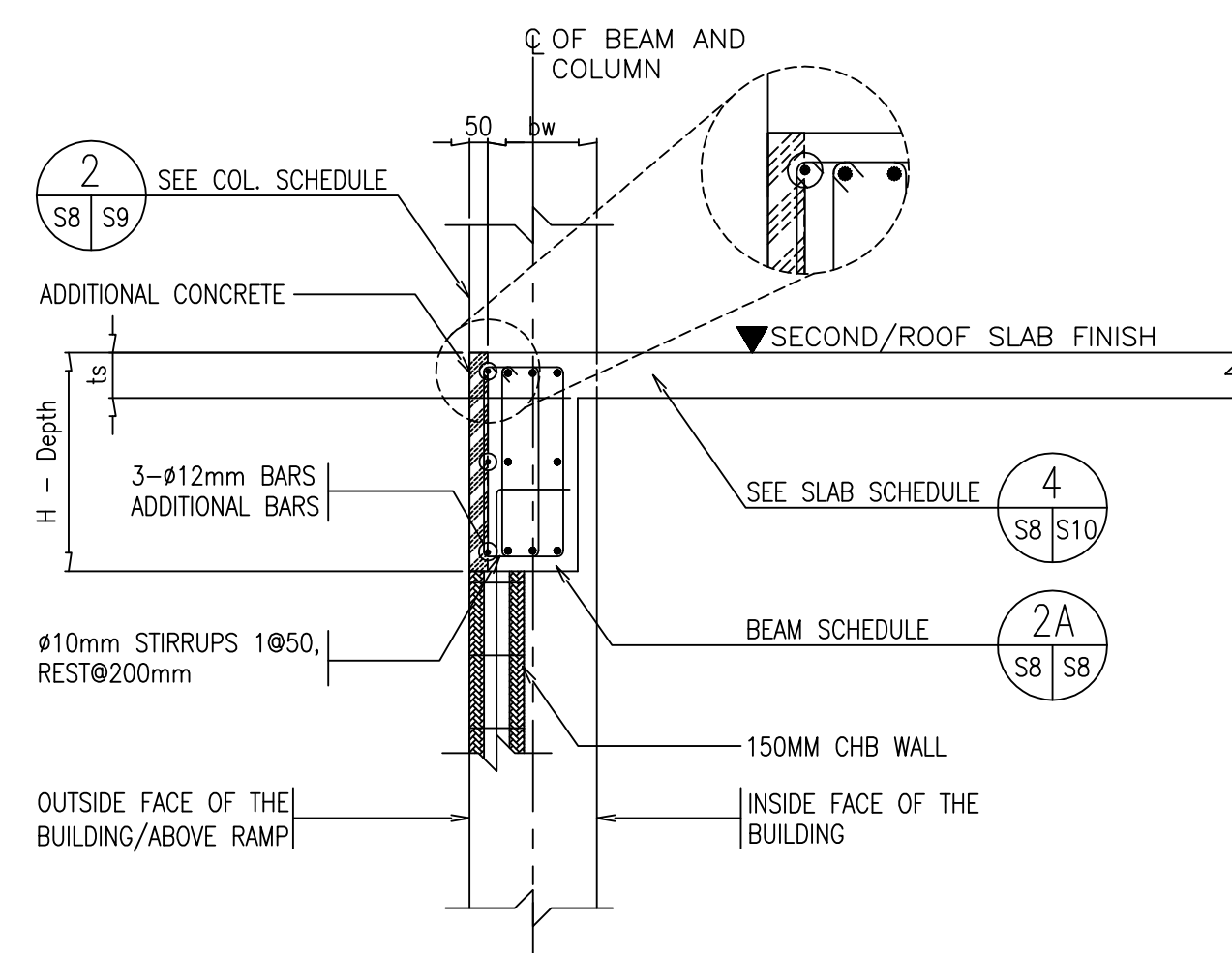


1D SPLICE LOCATION FOR BEAM REBARS
SCALE 1:30

NOTE:

- IF SPlicing 2 BARS OF DIFFERENT DIAMETERS. USE THE LAP LENGTH OF THE LARGER BAR
- SPlicing OF REINFORCEMENT SHALL BE LIMITED TO 1/2 THE TOTAL AMOUNT OF REINFORCEMENT AT THE SECTION
- NO LAPS IN TOP & BOTTOM TO OCCUR WITHIN A DISTANCE OF 2h FROM THE FACE OF SUPPORT OR AT MIDSPAN
- LAPS IN FRAMING BARS TO BE STAGGERED RELATIVE TO LAPS IN MAIN TOP AND BOTTOM BARS
- MINIMUM CLEAR DISTANCE BETWEEN BARS IN LAYERS IS 25mm.

1 TYPICAL BEAM SECTION DETAIL
SCALE 1:30



NOTE:

THE HATCHED AREA SHOWN IN THE OFFSET DRAWING SHALL BE PROVIDED TO RECONCILE THE ARCHITECTURAL REQUIREMENT.

- AN ADDITIONAL 3-12MM# SHALL BE PROVIDED AS SHOWN WITH STIRRUPS SPACED AT 1050MM, REST @ 200MM.
- THE ADDITIONAL CONCRETE SHALL BE MONOLITHICALLY POURED ALONG WITH THE ORIGINAL BEAM.

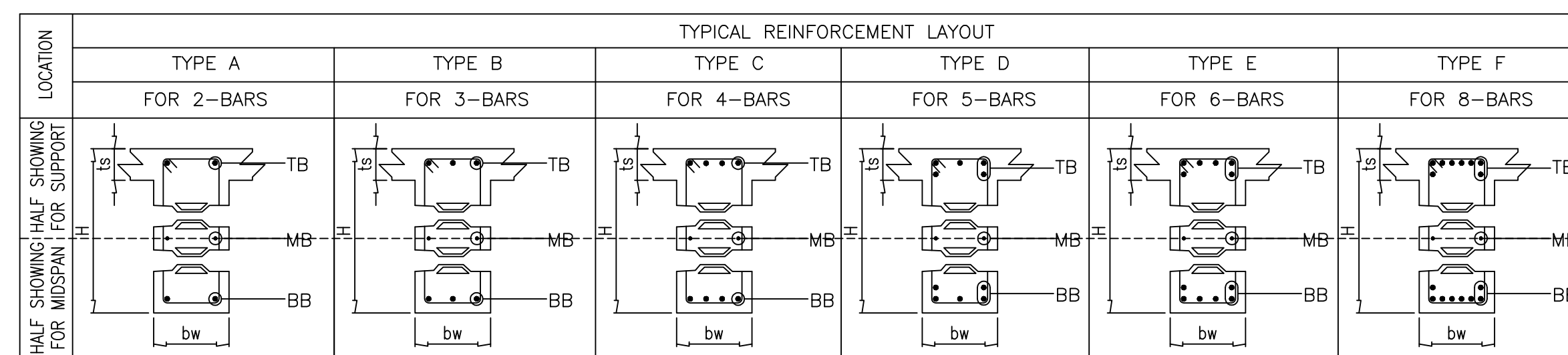
2 ADD'L. WIDTH FOR BEAM DETAIL
SCALE 1:20

Beam MARK	BEAM PROPERTIES					MAIN REINFORCEMENT									STIRRUPS REINFORCEMENT		REMARKS			
	width bw mm	Height H mm	Rein. Main mm	Rein. Stirrups mm	Rein. Torsion mm	LEFT SUPPORT			MIDSPAN			RIGHT SUPPORT			TYPE	SCHEDULE				
						Rein. Type	TB pcs.	MB pcs.	BB pcs.	Rein. Type	TB pcs.	MB pcs.	BB pcs.	Rein. Type	TB pcs.	MB pcs.	BB pcs.			
BUILDING A:																				
G1	250	600	20	10	12	B.A.B	3	2	3	B.A.B	3	2	3	B.A.B	3	2	3	2L-100	1 @ 50, 15 @ 60, REST @ 200MM O.C. TO C.L.	SEE DETAIL 3, FOR ADD'L. WIDTH
G2	300	600	20	10	12	E.A.B	6	2	3	A.A.C	2	2	4	E.A.B	6	2	3	2L-100	1 @ 50, 16 @ 60, REST @ 200MM O.C. TO C.L.	
G3	250	600	20	10	12	B.A.A	3	2	2	A.A.A	2	2	2	B.A.A	3	2	2	2L-100	1 @ 50, 8 @ 120, REST @ 200MM O.C. TO C.L.	
B1	250	400	16	10	12	C.A.A	4	2	2	A.A.C	2	2	4	C.A.A	4	2	2	2L-100	1 @ 50, 8 @ 60, REST @ 200MM O.C. TO C.L.	
B2	250	350	16	10		B.-.A	3	2	2	A.-.B	2	2	3	B.-.A	3	2	2	2L-100	1 @ 50, 8 @ 60, REST @ 200MM O.C. TO C.L.	
B3	200	300	16	10		A.-.A	2	2	2	A.-.A	2	2	2	A.-.A	2	2	2	2L-100	1 @ 50, 7 @ 60, REST @ 200MM O.C. TO C.L.	
B4	250	300	16	10		B.-.A	3	2	2	A.-.A	2	2	2	B.-.A	3	2	2	2L-100	1 @ 50, 7 @ 60, REST @ 200MM O.C. TO C.L.	SEE DETAIL 3, FOR ADD'L. WIDTH
B5	250	300	16	10		A.-.A	2	2	2	A.-.A	2	2	2	A.-.A	2	2	2	2L-100	1 @ 50, 9 @ 60, REST @ 200MM O.C. TO C.L.	
B6	250	300	16	10		A.-.A	2	2	2	A.-.A	2	2	2	A.-.A	2	2	2	2L-100	1 @ 50, 19 @ 60, REST @ 200MM O.C. TO C.L.	
B7	250	400	16	10	12	B.A.A	3	2	2	A.A.A	2	2	2	B.A.A	3	2	2	2L-100	1 @ 50, 19 @ 60, REST @ 200MM O.C. TO C.L.	
B8	250	400	16	10	12	D.A.B	5	2	3	A.A.B	2	2	3	D.A.B	5	2	3	2L-100	1 @ 50, 7 @ 60, REST @ 200MM O.C. TO C.L.	
B9	250	400	16	10	12	D.A.B	5	2	3	A.A.B	2	2	3	D.A.B	5	2	3	2L-100	1 @ 50, 15 @ 60, REST @ 200MM O.C. TO C.L.	
FTB1	250	500	16	10	12	B.A.A	3	2	2	A.A.B	2	2	3	B.A.A	3	2	2	2L-100	1 @ 50, 19 @ 60, REST @ 200MM O.C. TO C.L.	
FTB2	250	500	16	10	12	D.A.A	5	2	2	A.A.C	2	2	4	D.A.A	5	2	2	2L-100	1 @ 50, 23 @ 60, REST @ 200MM O.C. TO C.L.	
FTB3	250	500	16	10	12	E.A.B	6	2	3	A.A.B	2	2	3	E.A.B	6	2	3	2L-100	1 @ 50, 23 @ 60, REST @ 200MM O.C. TO C.L.	
FTB4	250	500	16	10	12	C.A.A	4	2	2	A.A.B	2	2	3	C.A.A	4	2	2	2L-100	1 @ 50, 14 @ 60, REST @ 200MM O.C. TO C.L.	
FTB5	250	500	16	10	12	B.A.A	3	2	2	A.A.B	2	2	3	B.A.A	3	2	2	2L-100	1 @ 50, 10 @ 60, REST @ 200MM O.C. TO C.L.	

NOTE:
FOR BEAM REINFORCEMENT REFERENCING, LEFT TO RIGHT MEANS A TO G AND 1 TO 7.
FOR ADDITIONAL CONCRETE FOR BEAM, SEE DETAIL 3 FOR ADDITIONAL REINFORCEMENT AND STIRRUPS.

2A MAIN REINFORCEMENT & STIRRUPS
SCALE 1:30

2 BEAM SCHEDULE
SCALE AS SHOWN



2B TYPICAL REINFORCEMENT LAYOUT
SCALE 1:20

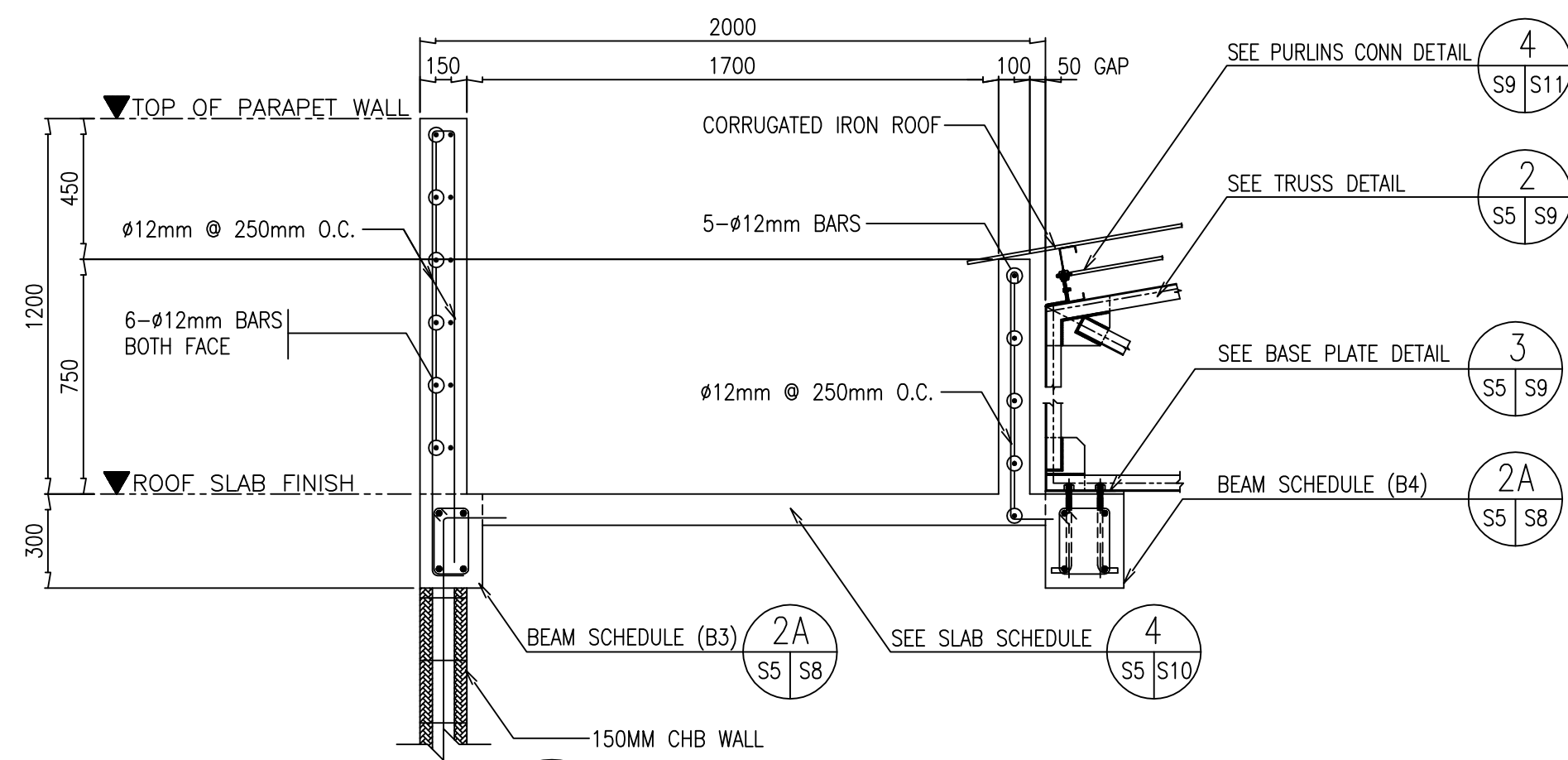


ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue : ---
Date of Issue : ---

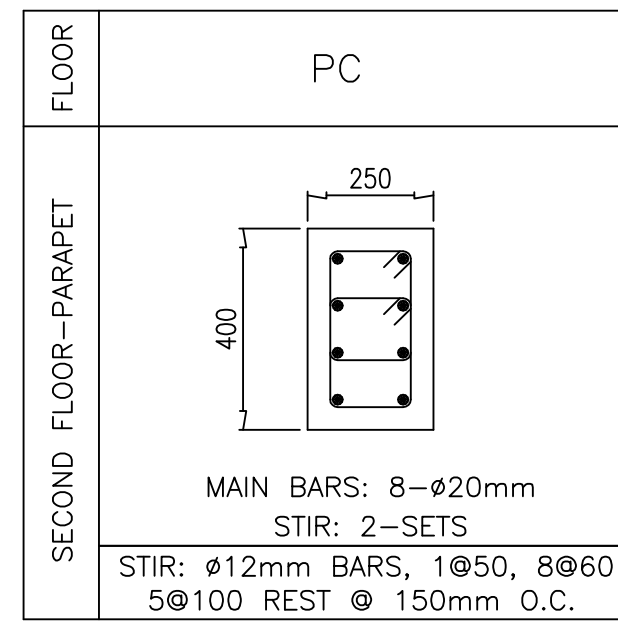
PROJECT / LOCATION :
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR



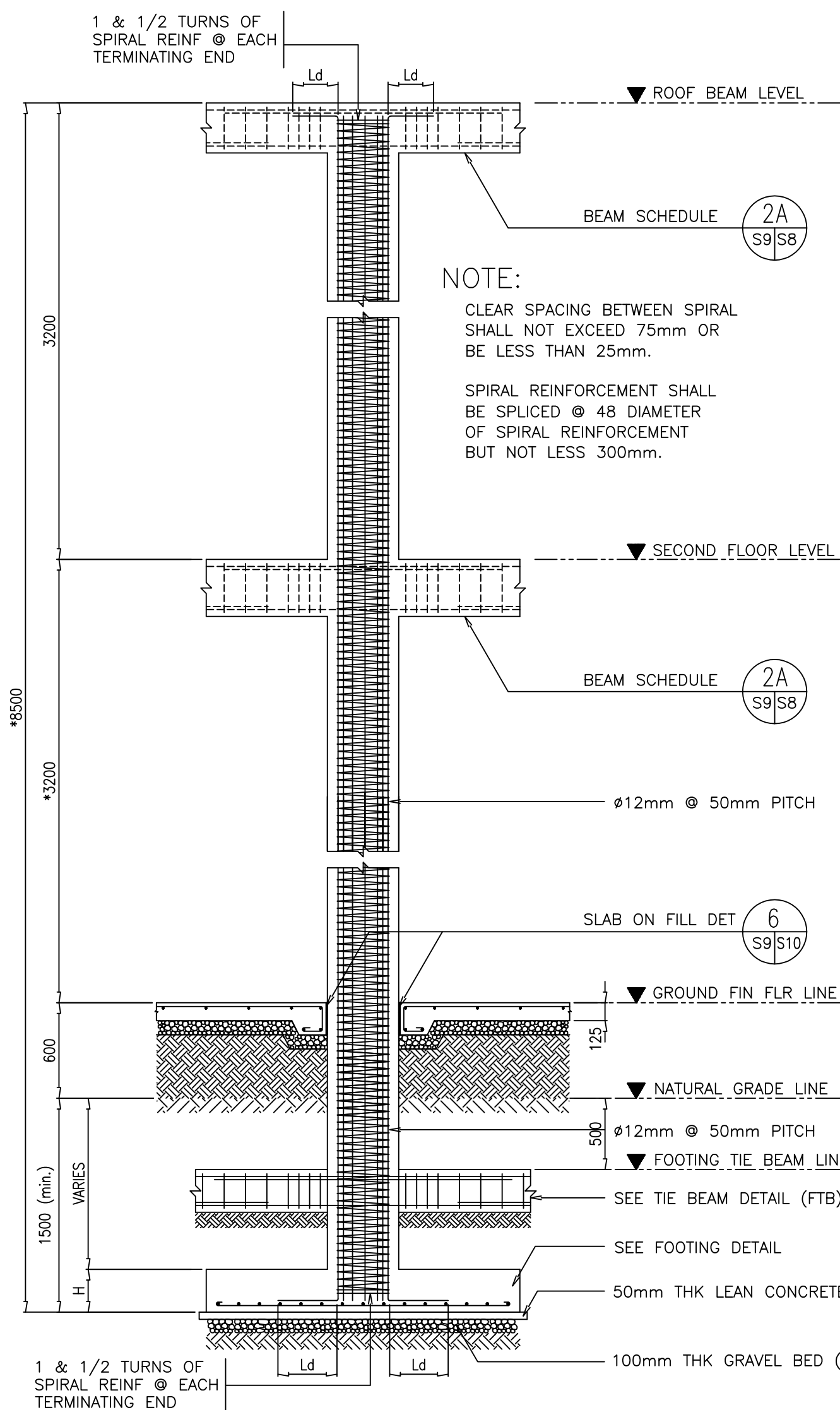
NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY	SHEET CONTENT	SHEET NO.
1	ISSUED FOR BIDDING	23SEP15	MVA					TYPICAL BEAM SECTION BEAM SCHEDULE ADDITIONAL WIDTH FOR BEAM DETAIL	EST08
CHECKED	AQT	DRAWN	MAApeLO	FILENAME	PROJ. NO.				
APPROVED	RNF	DATE	23SEP15	2K1404A-S108	2K1404A				



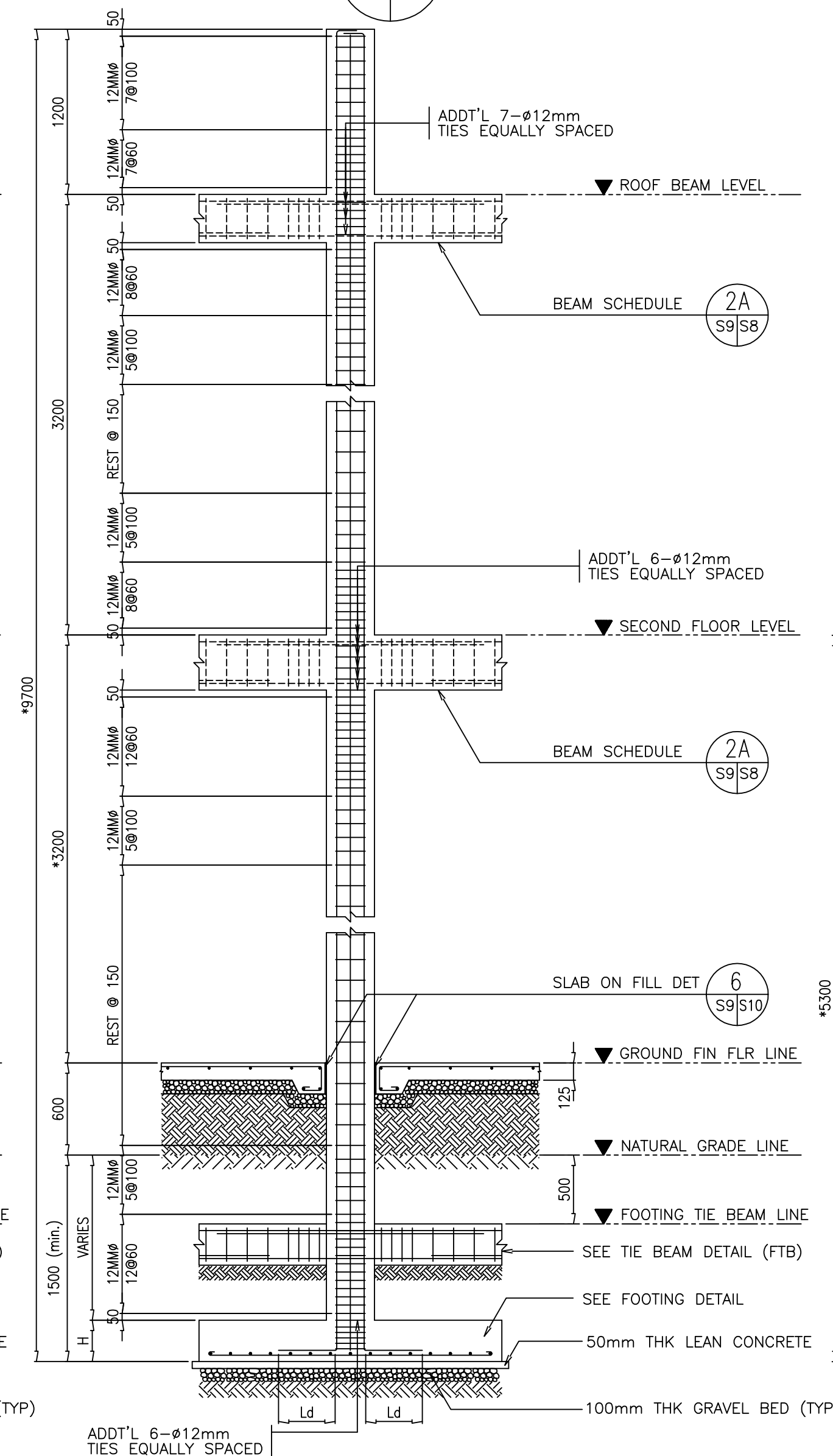
3 ROOF & CONC GUTTER DET
SCALE 1:20



5 PLANTED COLUMN SCHEDULE
SCALE 1:15

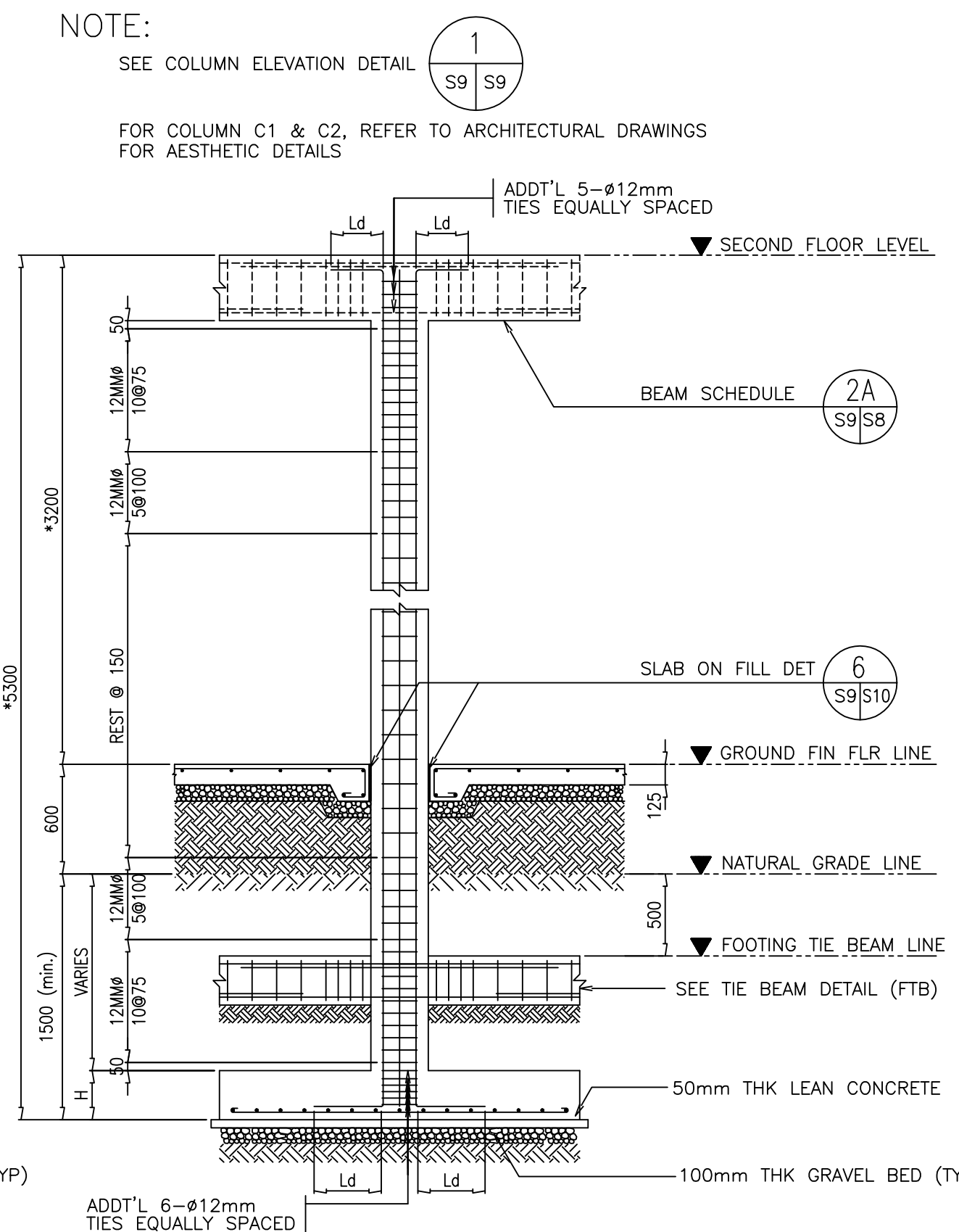


1A TYP CIRCULAR COL ELEV DET (C1 & C2)
SCALE 1:30



1 COLUMN ELEVATION DETAIL
SCALE 1:30

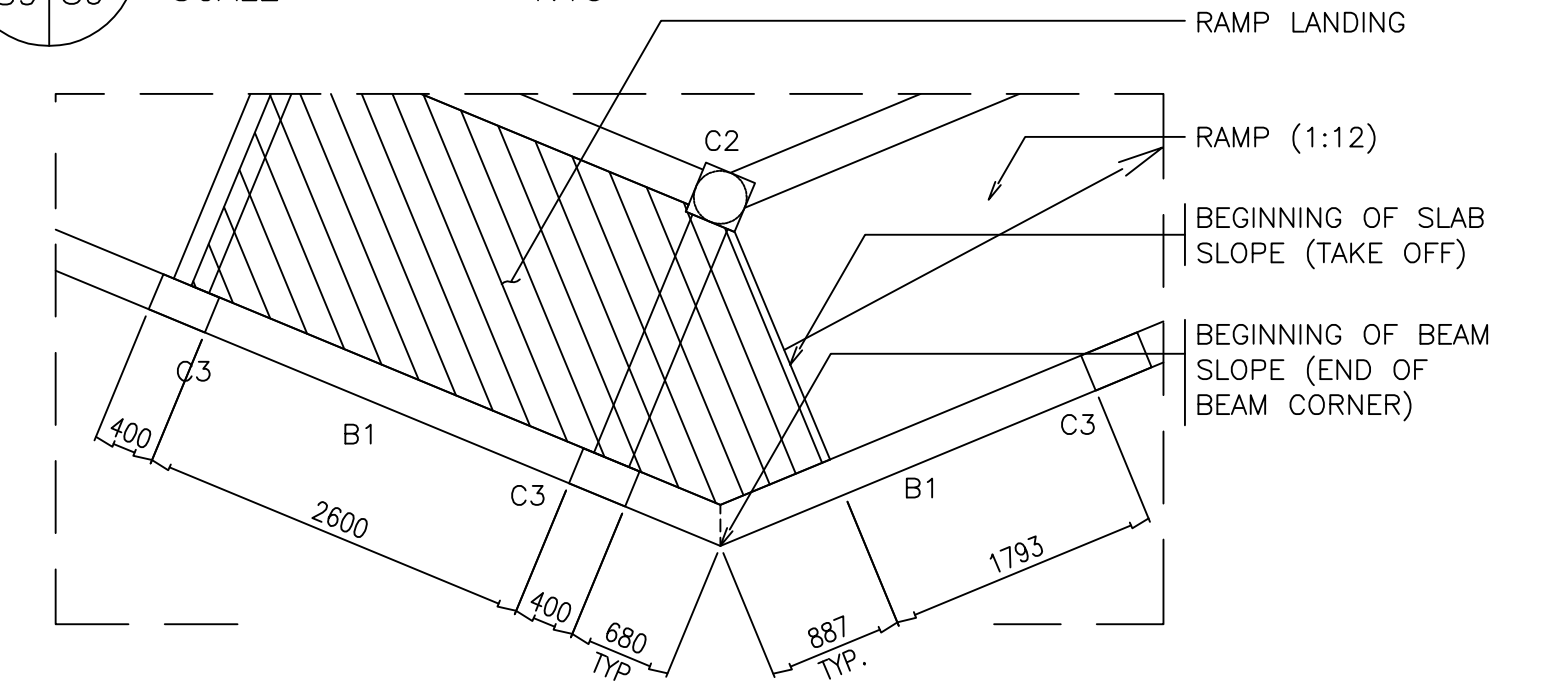
1B TYP RECTANGULAR COL ELEV DET (C3)
SCALE 1:30



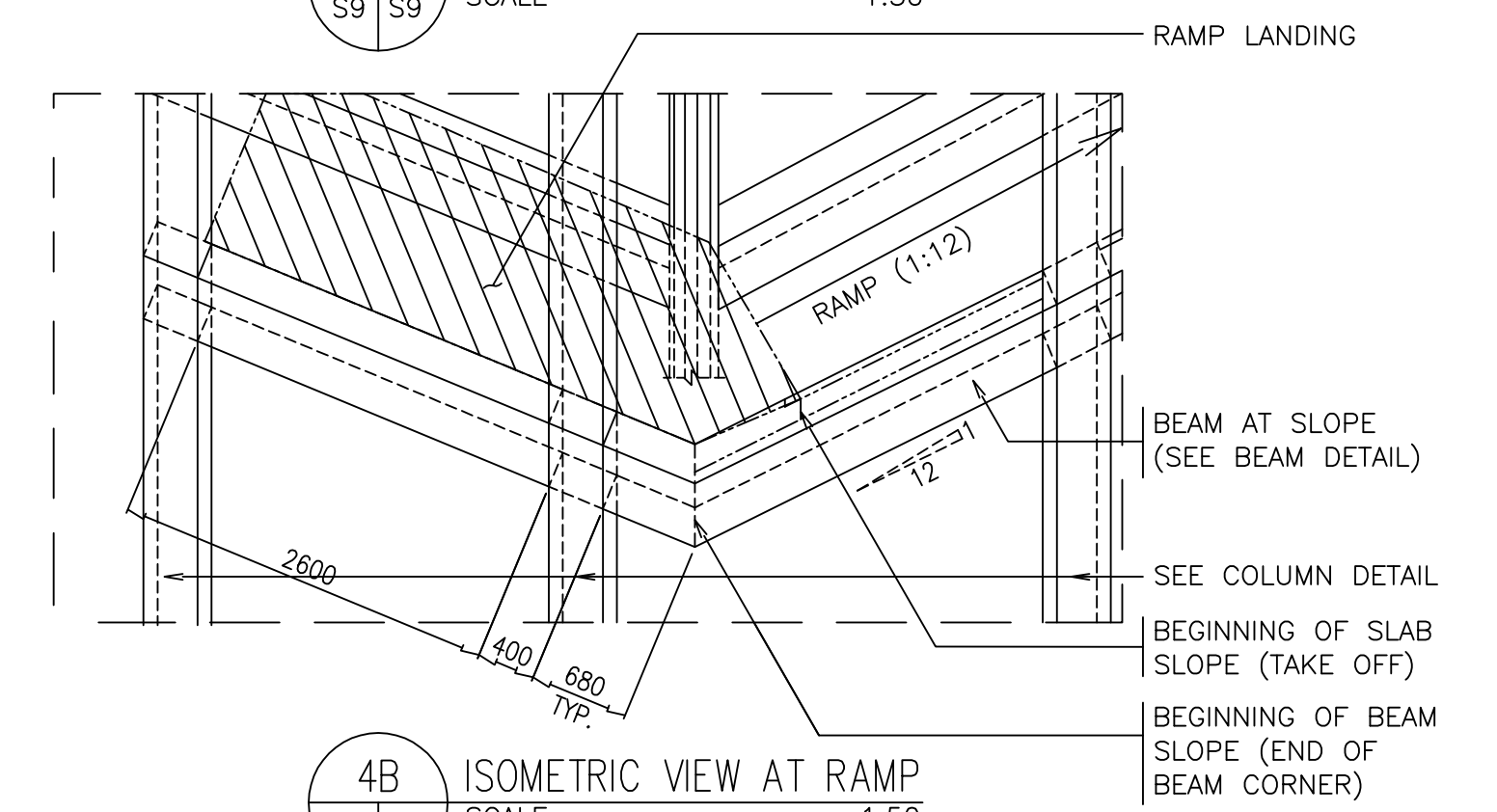
1C TYP RECTANGULAR COL ELEV DET (C4)
SCALE 1:30

FLOOR	C1	C2	C3	C4	C5
ROOF LEVEL-PARAPET			<p>MAIN BARS: 8-#20mm STIR: 2-SETS</p>		
SECOND FLOOR-ROOF	<p>MAIN BARS: 12-#20mm STIR: #12mm @ 50mm PITCH</p>	<p>MAIN BARS: 9-#20mm STIR: #12mm @ 50mm PITCH</p>	<p>MAIN BARS: 10-#20mm STIR: 2-SETS</p>		<p>MAIN BARS: 12-#20mm STIR: 2-SETS</p>
GROUND-SECOND FLOOR	<p>MAIN BARS: 12-#20mm STIR: #12mm @ 50mm PITCH</p>	<p>MAIN BARS: 9-#20mm STIR: #12mm @ 50mm PITCH</p>	<p>MAIN BARS: 10-#20mm STIR: 2-SETS</p>	<p>MAIN BARS: 10-#20mm STIR: 2-SETS</p>	<p>MAIN BARS: 12-#20mm STIR: 2-SETS</p>

2 COLUMN SCHEDULE
SCALE 1:15



4A LANDING PLAN FOR RAMP
SCALE 1:50



4B ISOMETRIC VIEW AT RAMP
SCALE 1:50

4 PERSPECTIVE VIEW OF RAMP
SCALE 1:50



ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue : ---
Date of Issue : ---

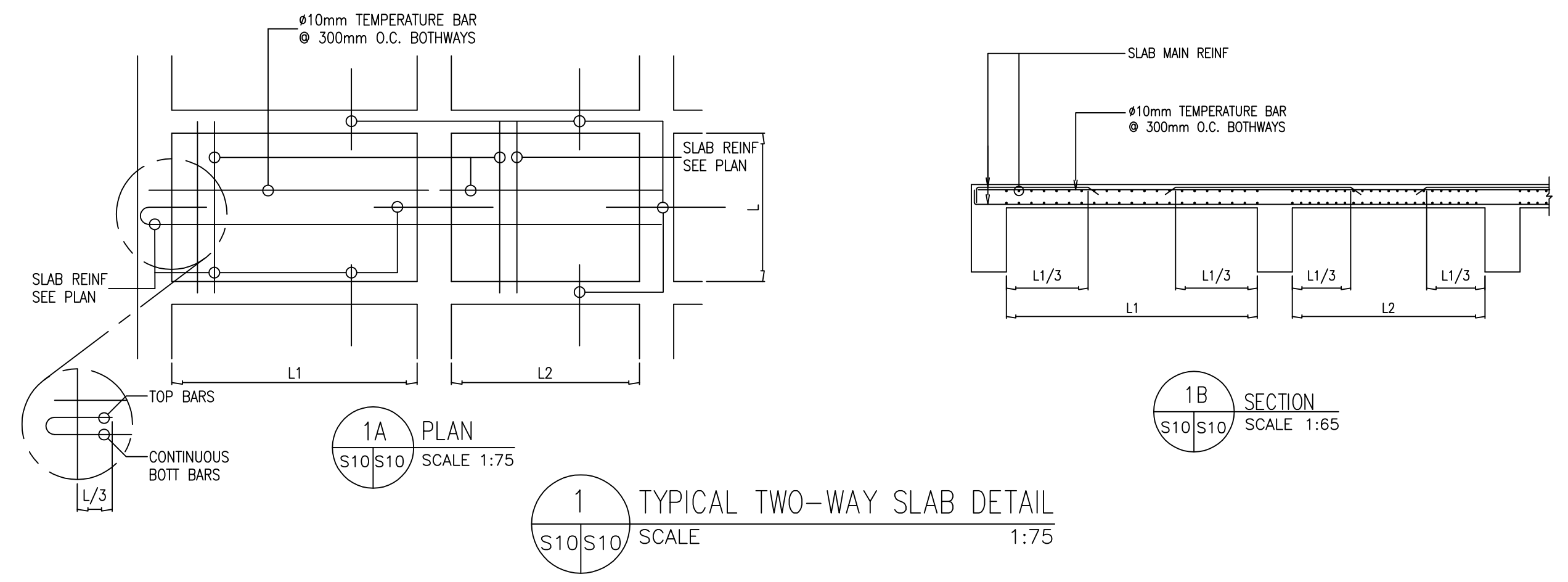
PROJECT / LOCATION :
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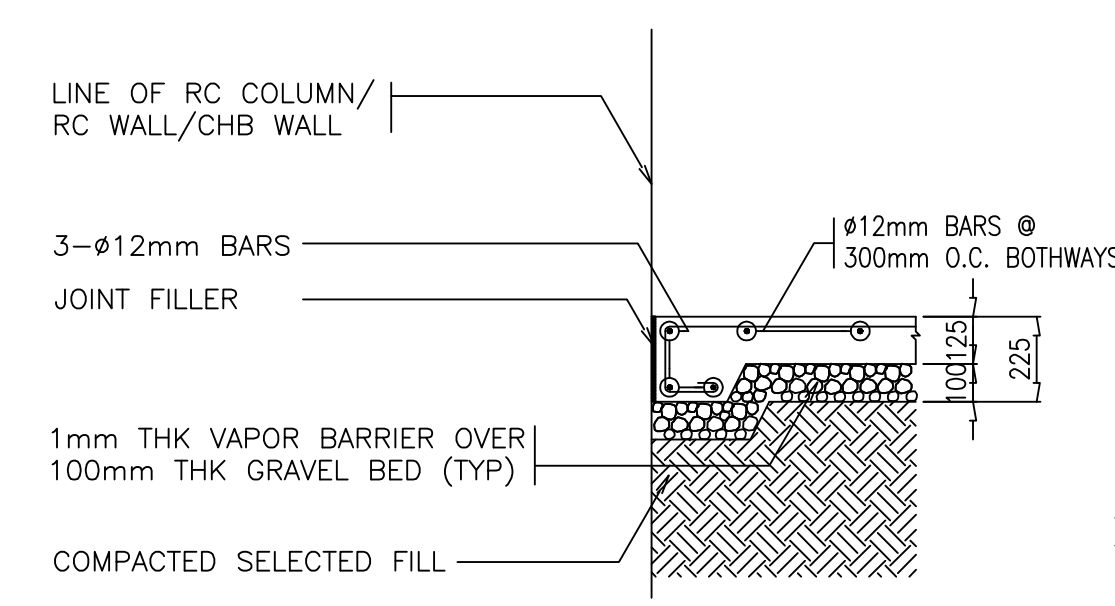
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1	ISSUED FOR BIDDING	23SEP15	MVA				

CHECKED	AGT	DATE	MA	FILENAME	PROJ. NO.
APPROVED	RNF	DATE	23SEP15	2K1404A-ST09	2K1404A

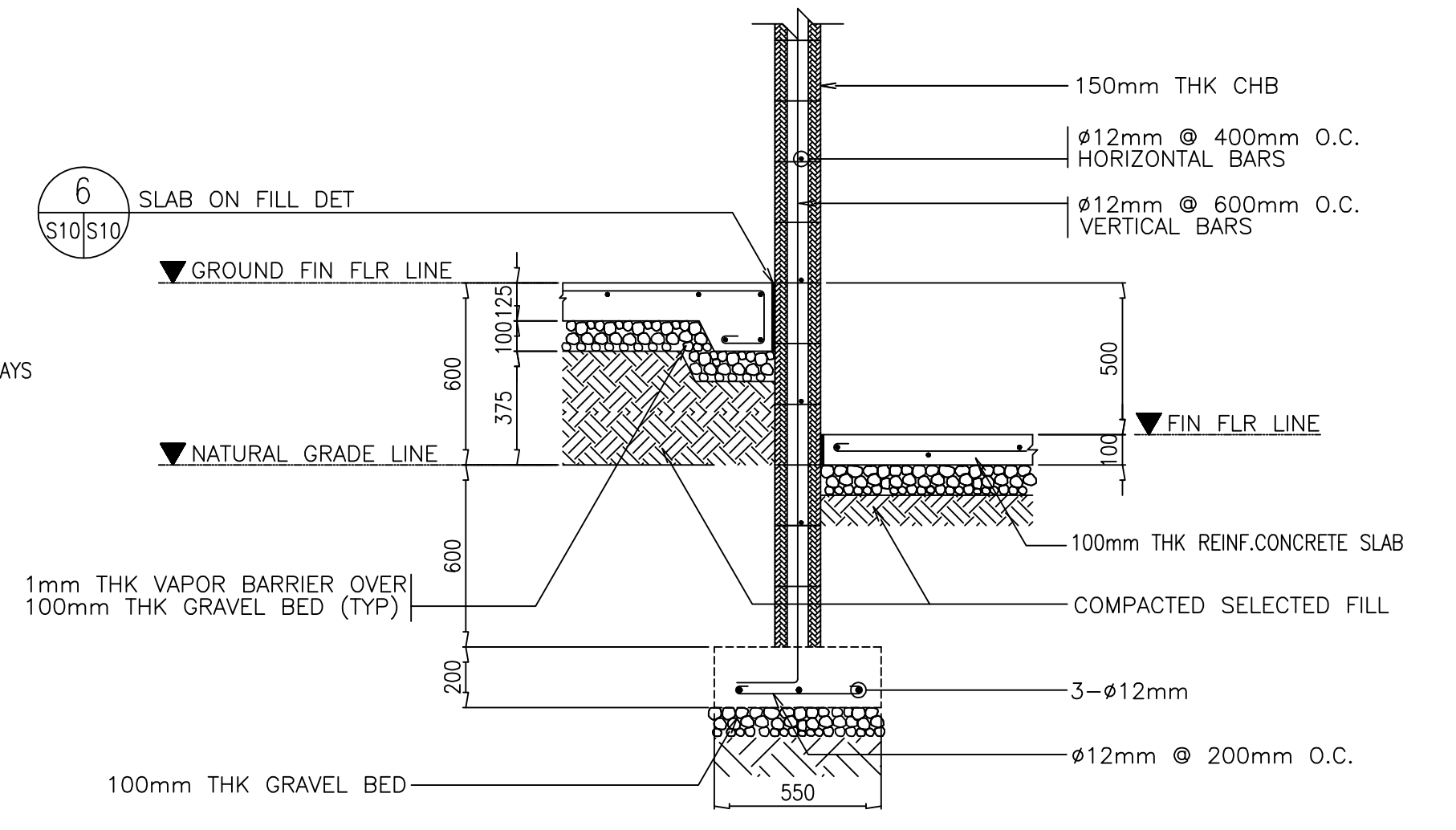
SHEET NO.
EST09



1 TYPICAL TWO-WAY SLAB DETAIL
SCALE 1:75



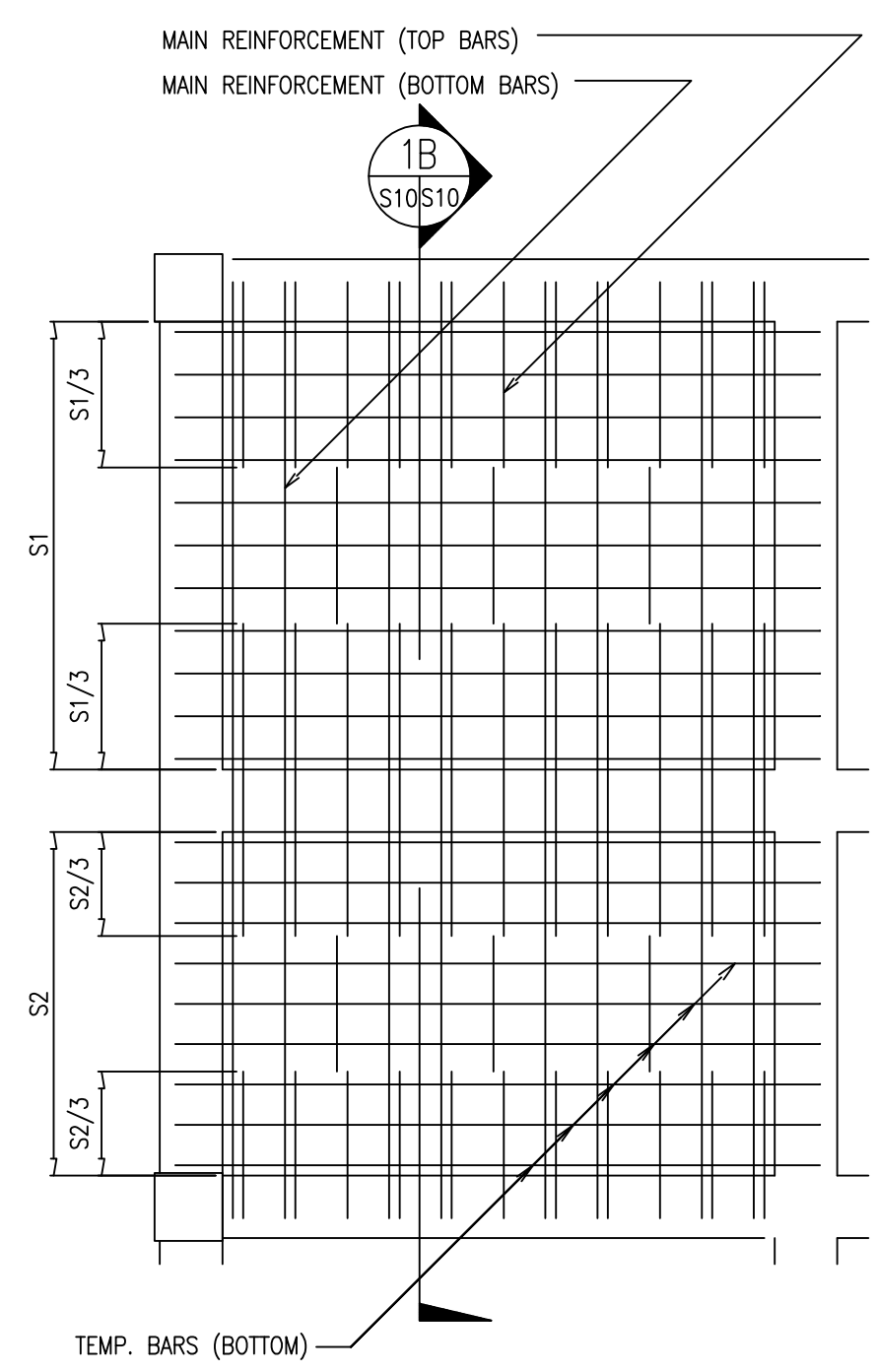
6 SLAB ON FILL DETAIL
SCALE 1:20



5A WF-1 DETAIL
SCALE 1:20

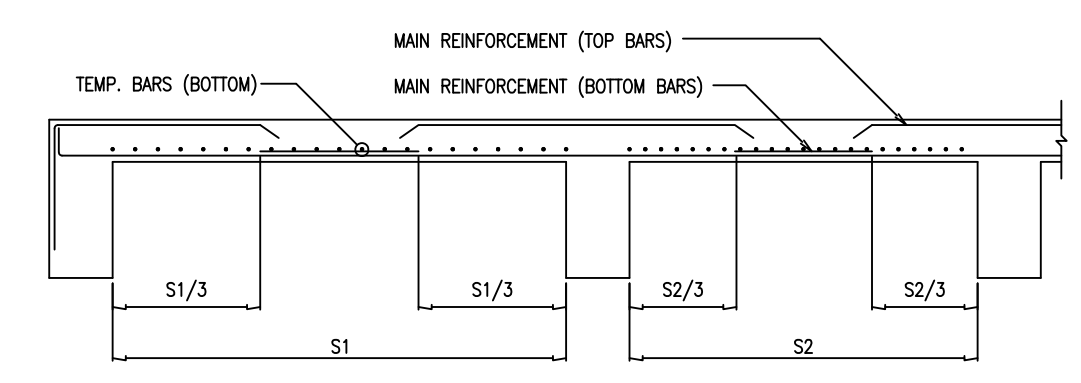
MARK	THICKNESS (mm)	SHORT SPAN				LONG SPAN				TEMPERATURE BARS	REMARKS
		CONT EDGE TOP BARS	MIDSPAN BOTTOM BARS	DISCONT EDGE TOP BARS	CONT EDGE TOP BARS	MIDSPAN BOTTOM BARS	DISCONT EDGE TOP BARS	DISCONT EDGE TOP BARS			
S1	125	10mm @ 100mm O.C.	10mm @ 200mm O.C.	10mm @ 200mm O.C.	10mm @ 100mm O.C.	10mm @ 200mm O.C.	-	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	
S2	125	10mm @ 100mm O.C.	10mm @ 200mm O.C.	-	10mm @ 100mm O.C.	10mm @ 200mm O.C.	-	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	
S3	125	10mm @ 100mm O.C.	10mm @ 200mm O.C.	-	10mm @ 100mm O.C.	10mm @ 200mm O.C.	10mm @ 200mm O.C.	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	
S4	125	10mm @ 100mm O.C.	10mm @ 150mm O.C.	10mm @ 300mm O.C.	10mm @ 100mm O.C.	10mm @ 150mm O.C.	10mm @ 300mm O.C.	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	
S5	125	10mm @ 100mm O.C.	10mm @ 200mm O.C.	10mm @ 200mm O.C.	10mm @ 100mm O.C.	10mm @ 200mm O.C.	-	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	
S8	125	10mm @ 200mm O.C.	10mm @ 200mm O.C.	-	-	10mm @ 200mm O.C.	10mm @ 200mm O.C.	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	
S9	125	-	10mm @ 200mm O.C.	10mm @ 200mm O.C.	12mm @ 200mm O.C.	12mm @ 200mm O.C.	-	-	10mm @ 300mm O.C. BOTHWAYS	TWO-WAY	

2 SLAB REINFORCEMENT SCHEDULE (TWO-WAY SLAB)
SCALE 1:75



NOTE:
2 OUT OF EVERY 3 BOTTOM BARS SHALL EXTEND TO THE SUPPORT

3A PLAN
SCALE 1:65



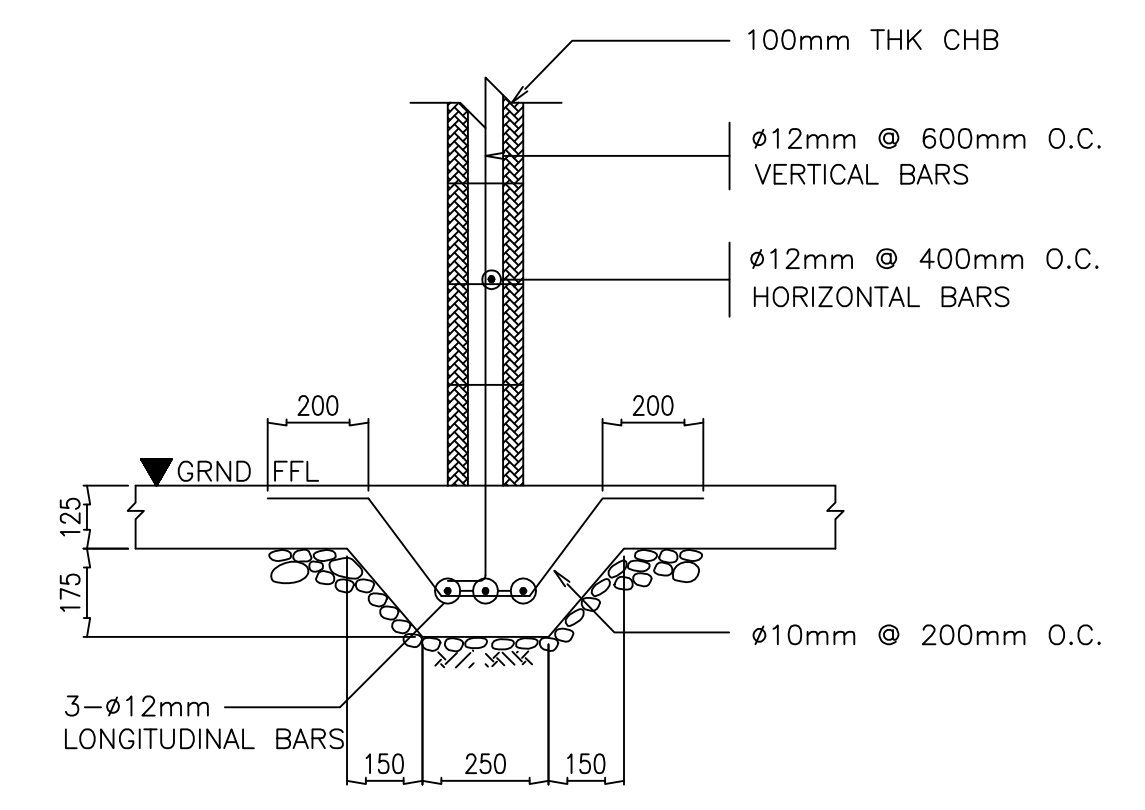
NOTE:
S1 = SHORTER SPAN OF SLAB

3B SECTION
SCALE 1:50

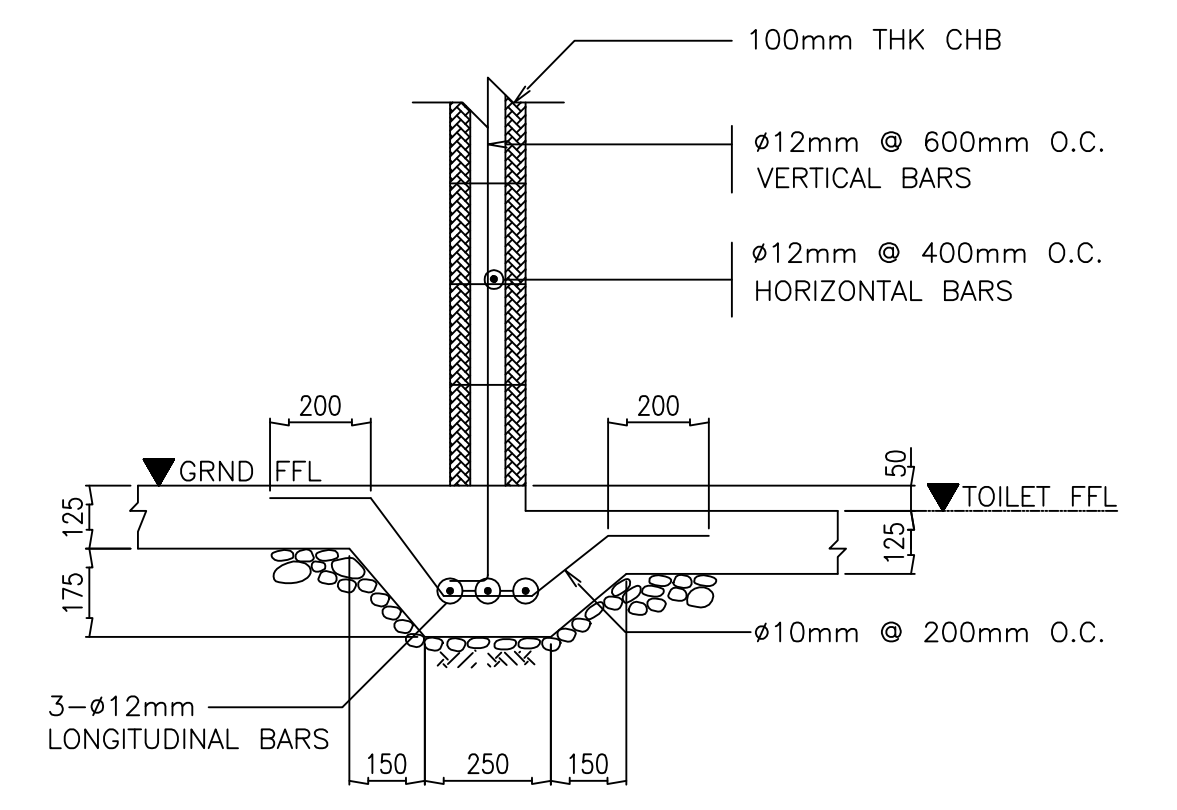
3 TYPICAL ONE-WAY SLAB DETAIL
SCALE 1:50

MARK	THICKNESS (mm)	MAIN REINFORCEMENT		TEMPERATURE BARS	REMARKS
		TOP BARS	BOTTOM BARS		
S6	100	10mm @ 200mm O.C.	10mm @ 200mm O.C.	10mm @ 300mm O.C. BOTHWAYS	ONE-WAY
S7	125	10mm @ 200mm O.C.	10mm @ 200mm O.C.	10mm @ 300mm O.C. BOTHWAYS	ONE-WAY
S10	125	10mm @ 200mm O.C.	10mm @ 200mm O.C.	12mm @ 200mm O.C. BOTHWAYS	ONE-WAY

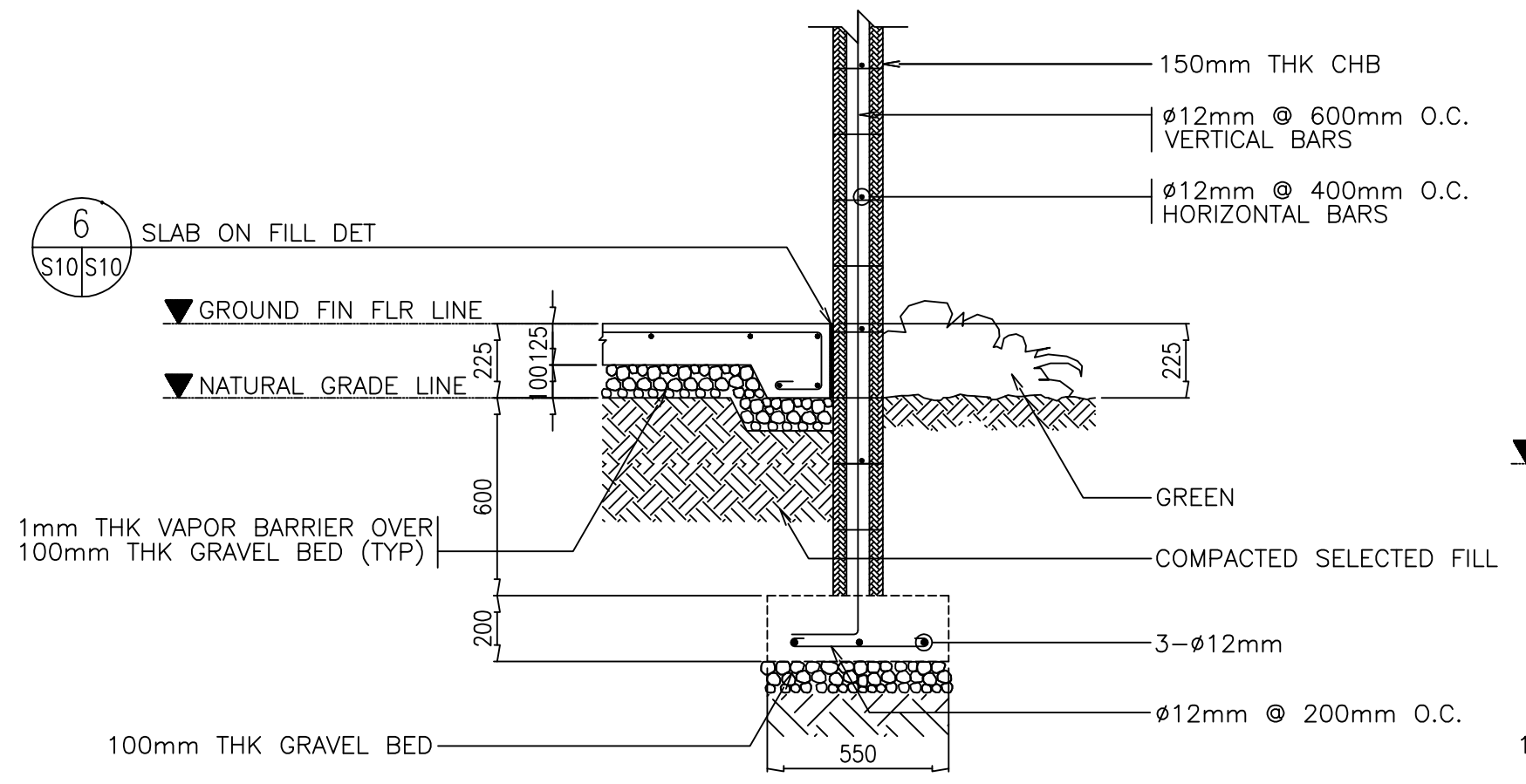
4 SLAB REINFORCEMENT SCHEDULE (ONE-WAY SLAB)
SCALE 1:75



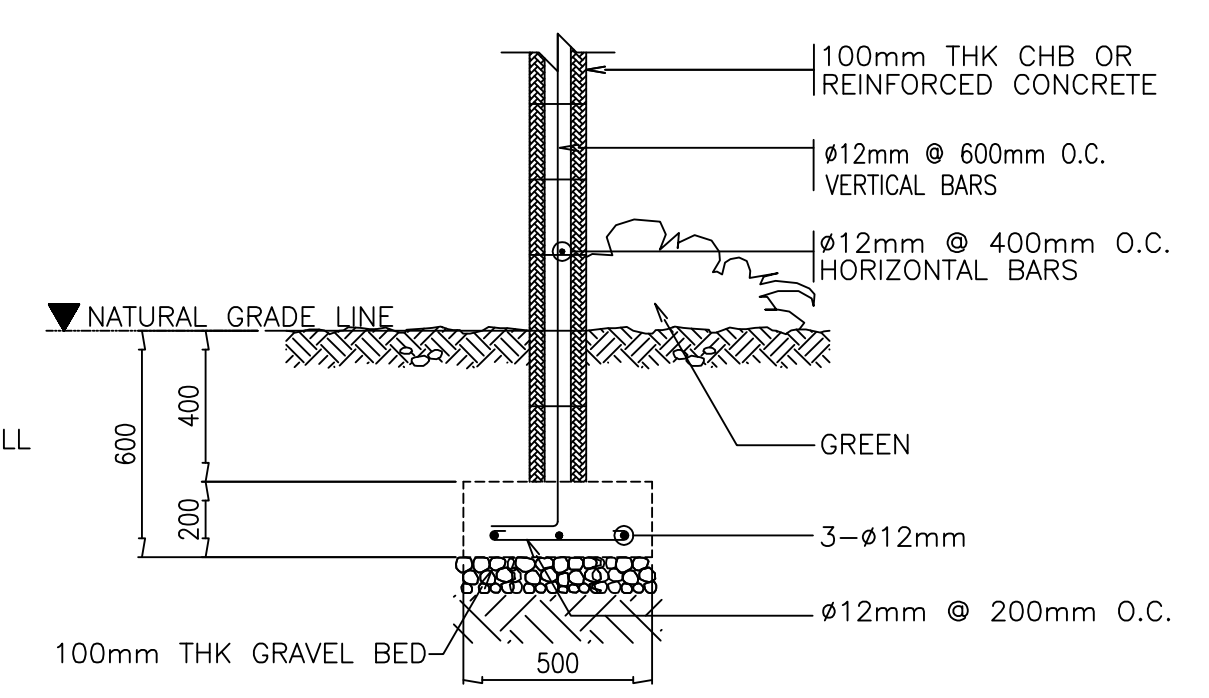
5B WF-2 DETAIL
SCALE 1:15



5C WF-3 DETAIL
SCALE 1:15



5D WF-4 DETAIL
SCALE 1:20



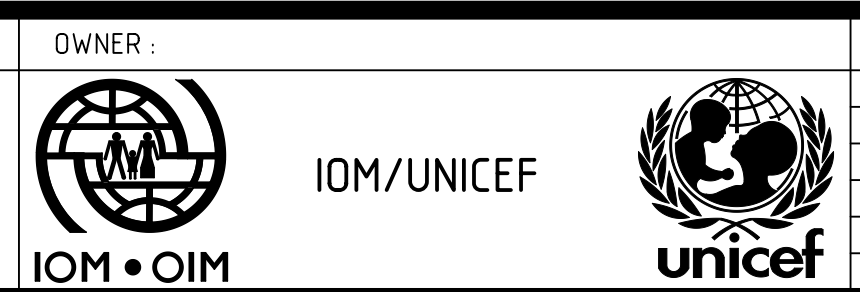
5E WF-5 DETAIL
SCALE 1:20

5 CHB WALL FOOTING DETAIL
SCALE AS SHOWN



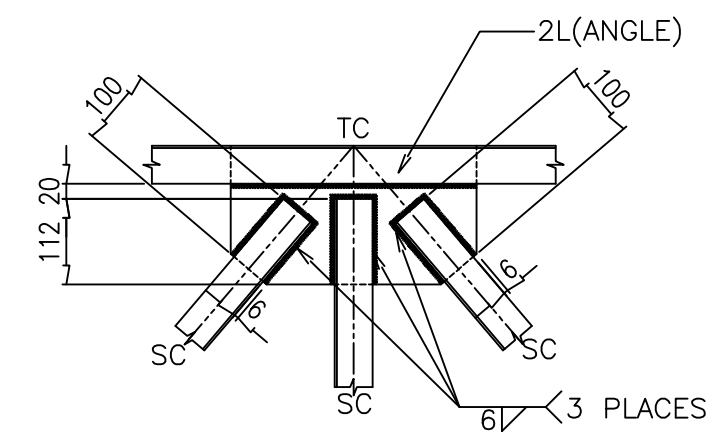
ARCHITECT / ENGINEER:
RNFA
STRUCTURAL ENGINEER

PROJECT / LOCATION:
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR

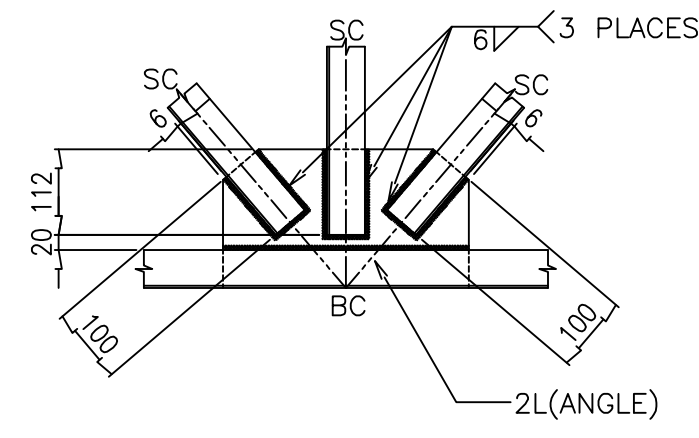


NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
1	ISSUED FOR BIDDING	23SEP15	MVA				

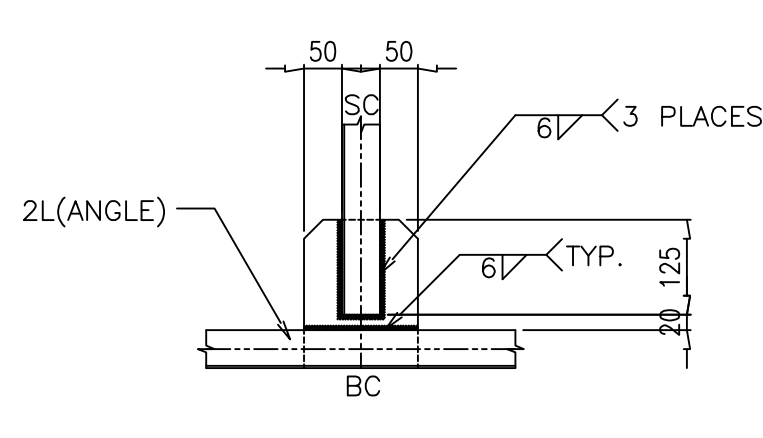
SHEET CONTENT	SHEET NO.
TYPICAL TWO-WAY SLAB DETAIL SLAB REIN. SCHEDULE (TWO-WAY SLAB) TYPICAL ONE-WAY SLAB DETAIL SLAB REIN. SCHEDULE (ONE-WAY SLAB) CHB WALL FOOTING DETAIL & SLAB ON-FILL	EST10
CHECKED: AGT APPROVED: RNF	FILENAME: 2K1404A-ST10 PROJ. NO.: 2K1404A



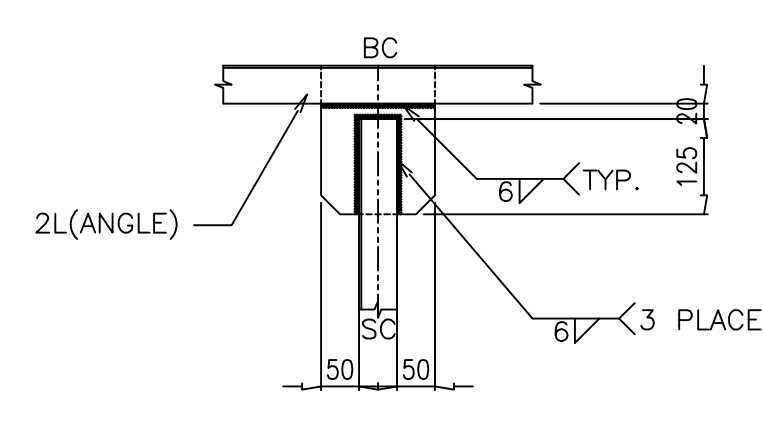
1A TRUSS DETAIL 1
SCALE 1:10



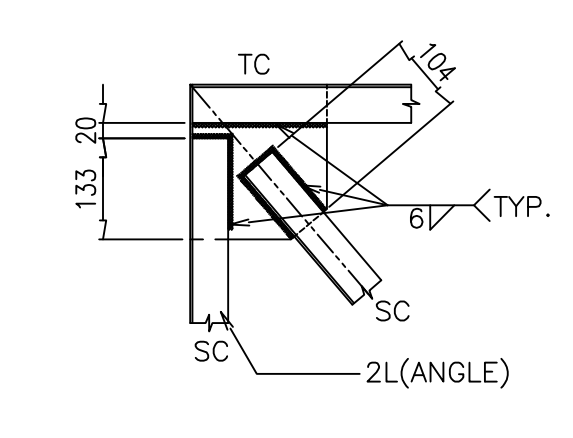
1B TRUSS DETAIL 2
SCALE 1:10



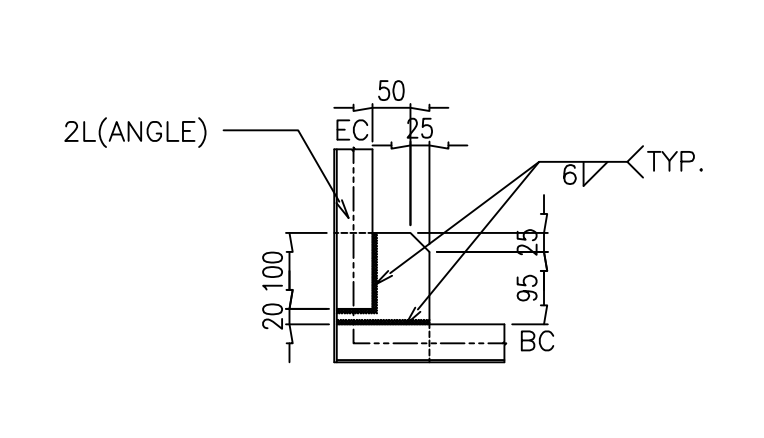
1C TRUSS DETAIL 3
SCALE 1:10



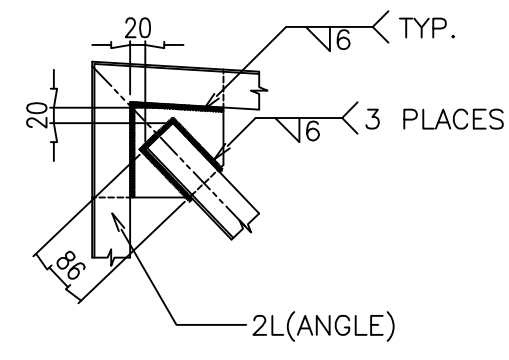
1D TRUSS DETAIL 4
SCALE 1:10



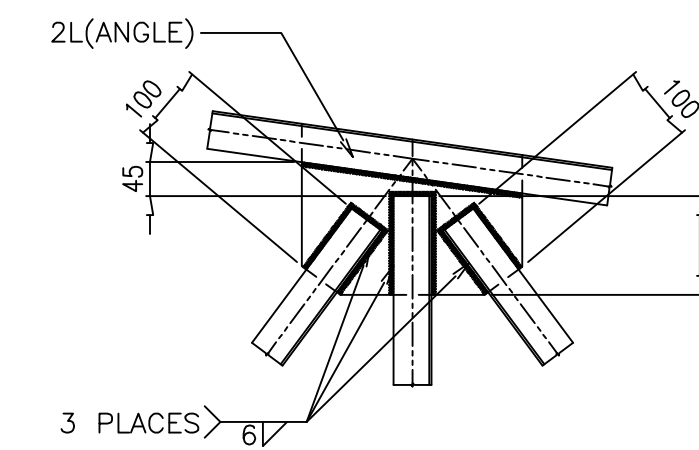
1E TRUSS DETAIL 5
SCALE 1:10



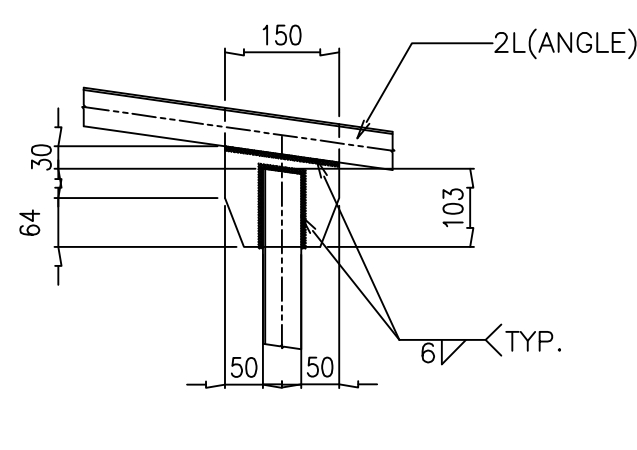
1F TRUSS DETAIL 6
SCALE 1:10



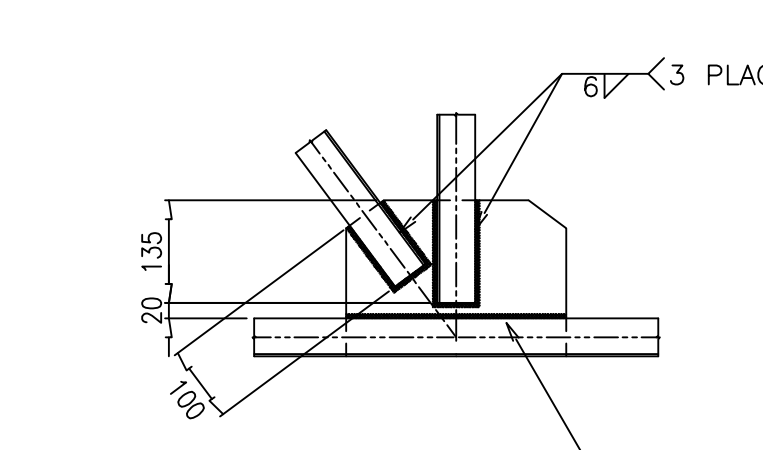
1G TRUSS DETAIL 7
SCALE 1:10



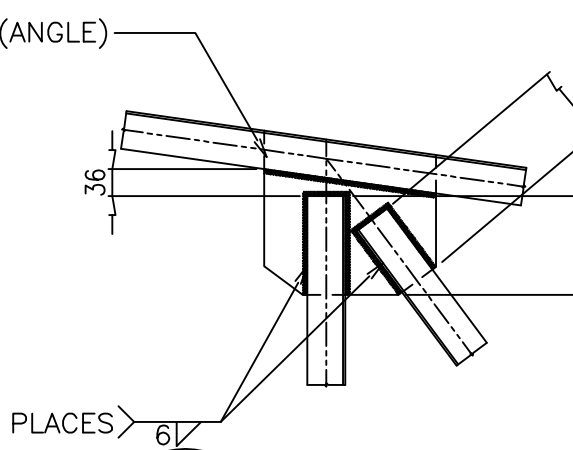
1H TRUSS DETAIL 8
SCALE 1:10



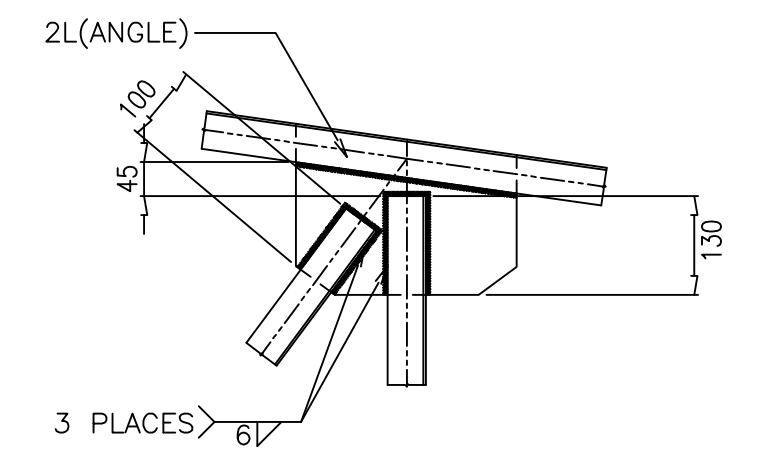
1I TRUSS DETAIL 9
SCALE 1:10



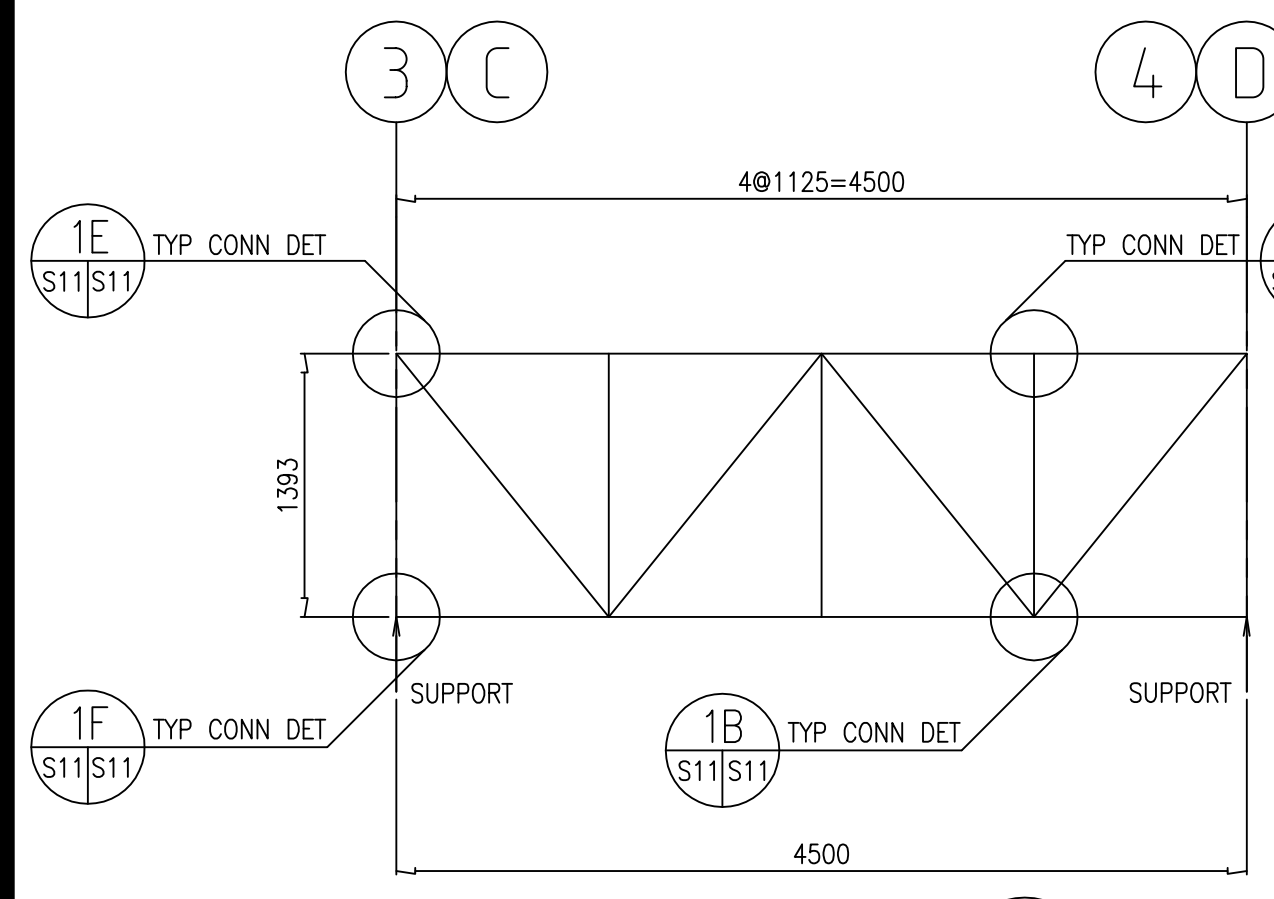
1J TRUSS DETAIL 10
SCALE 1:10



1K TRUSS DETAIL 11
SCALE 1:10

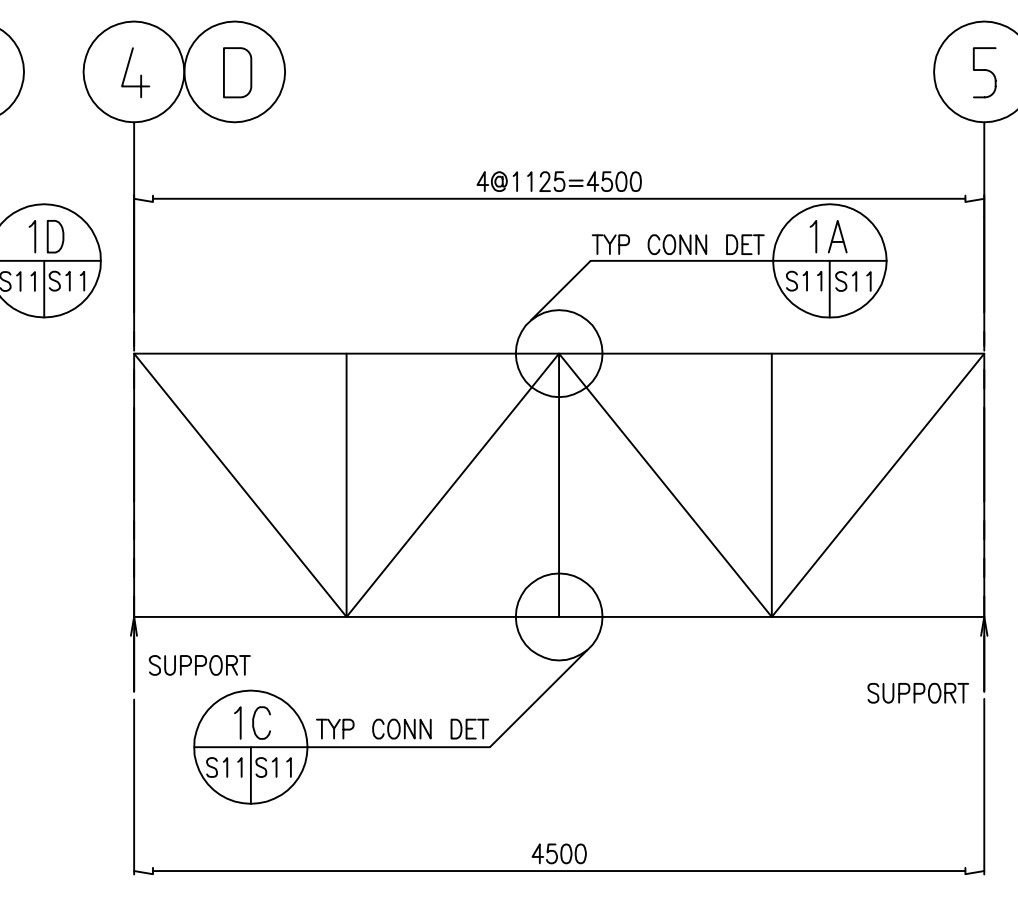


1L TRUSS DETAIL 8
SCALE 1:10



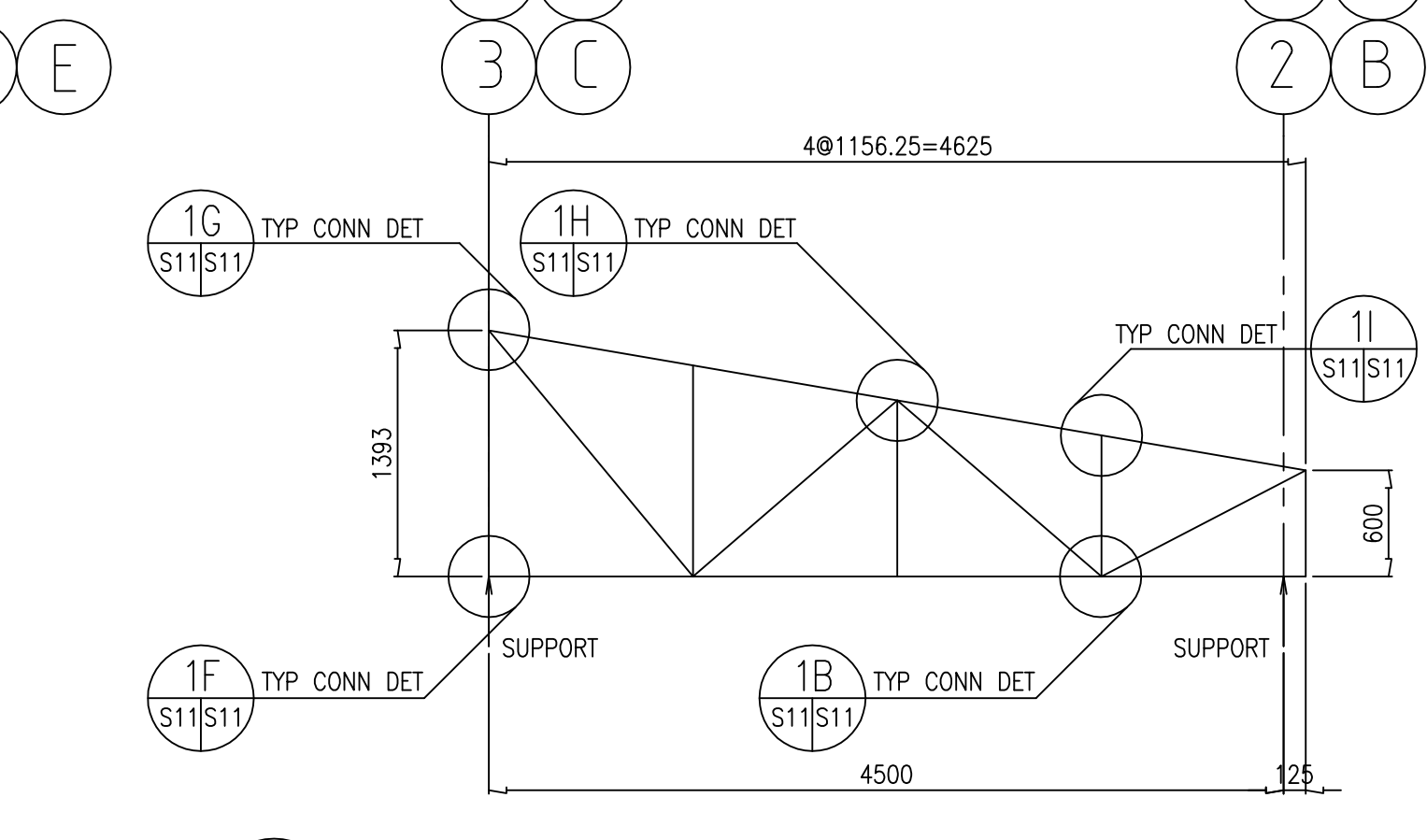
2A TRUSS 1 DETAIL (TR1)
SCALE 1:40

TOP CHORD (TC) : 2-L65x65x8.0
BOTTOM CHORD (BC) : 2-L65x65x5.0
END CHORD (ED) : 2-L65x65x8.0
SECONDARY MEMB (SC) : L50x50x5.0



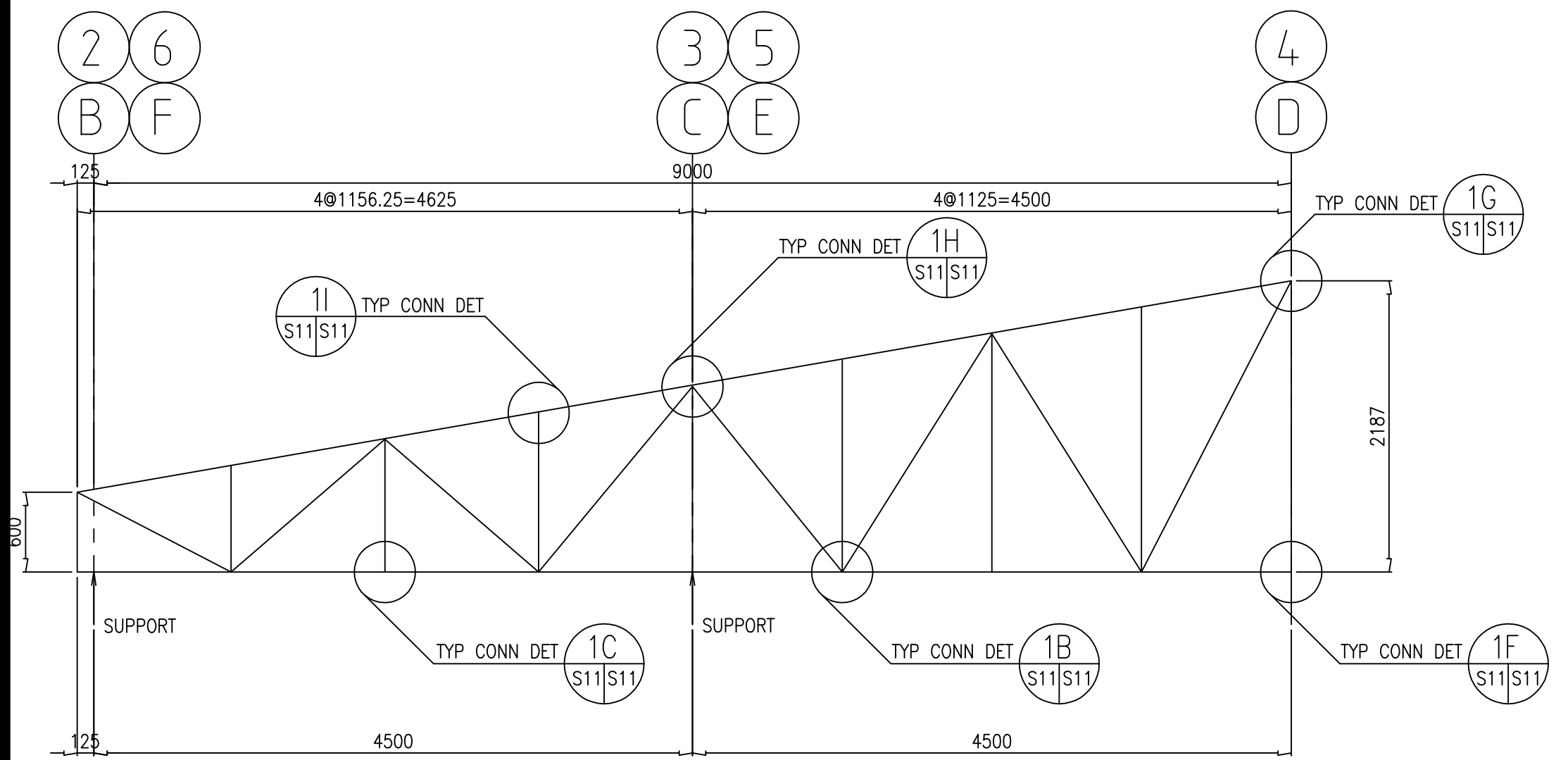
2B TRUSS 2 DETAIL (TR2)
SCALE 1:40

TOP CHORD (TC) : 2-L65x65x8.0
BOTTOM CHORD (BC) : 2-L65x65x5.0
END CHORD (ED) : 2-L65x65x8.0
SECONDARY MEMB (SC) : L50x50x5.0



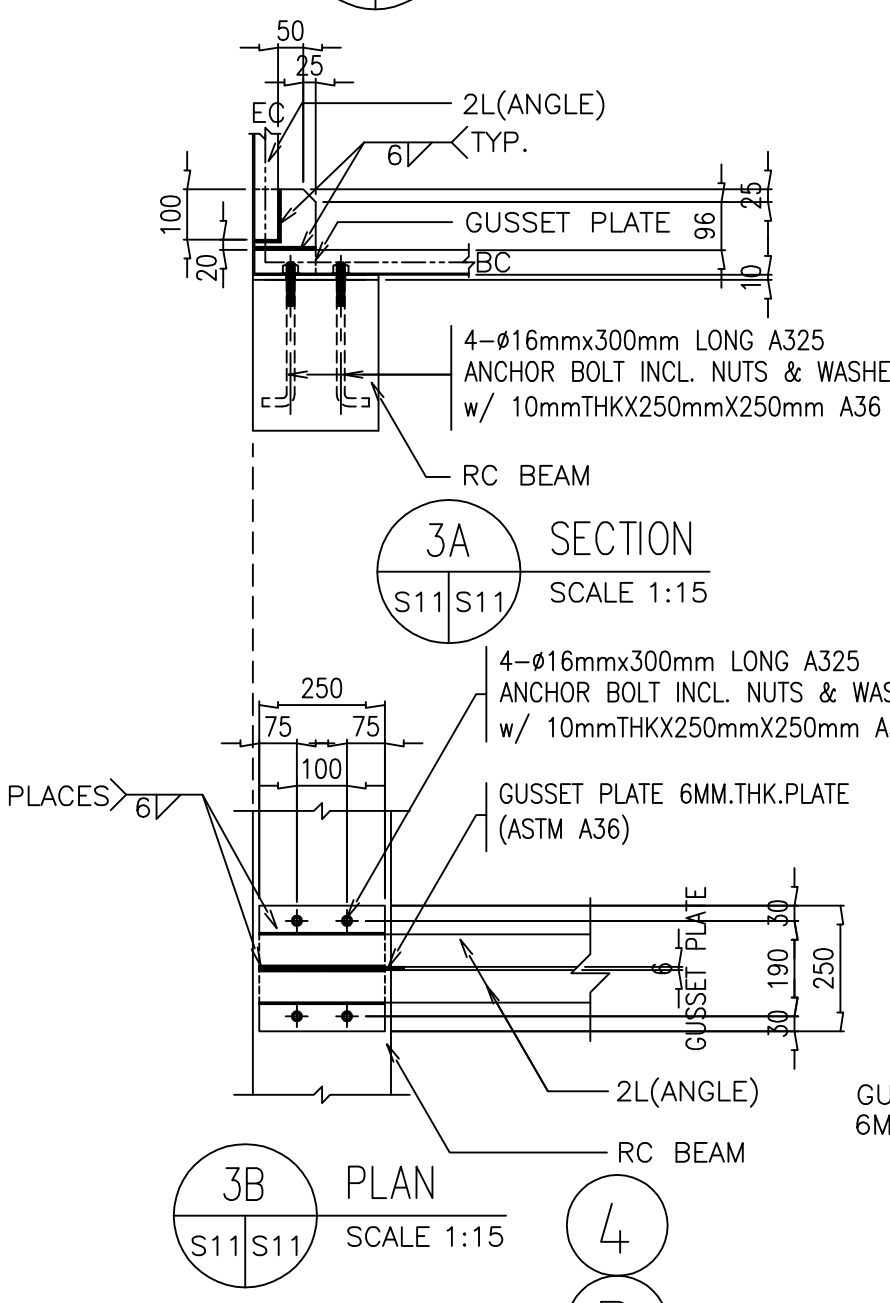
2C TRUSS 3 DETAIL (TR3)
SCALE 1:40

TOP CHORD (TC) : 2-L65x65x8.0
BOTTOM CHORD (BC) : 2-L65x65x5.0
END CHORD (ED) : 2-L65x65x8.0
SECONDARY MEMB (SC) : L50x50x5.0

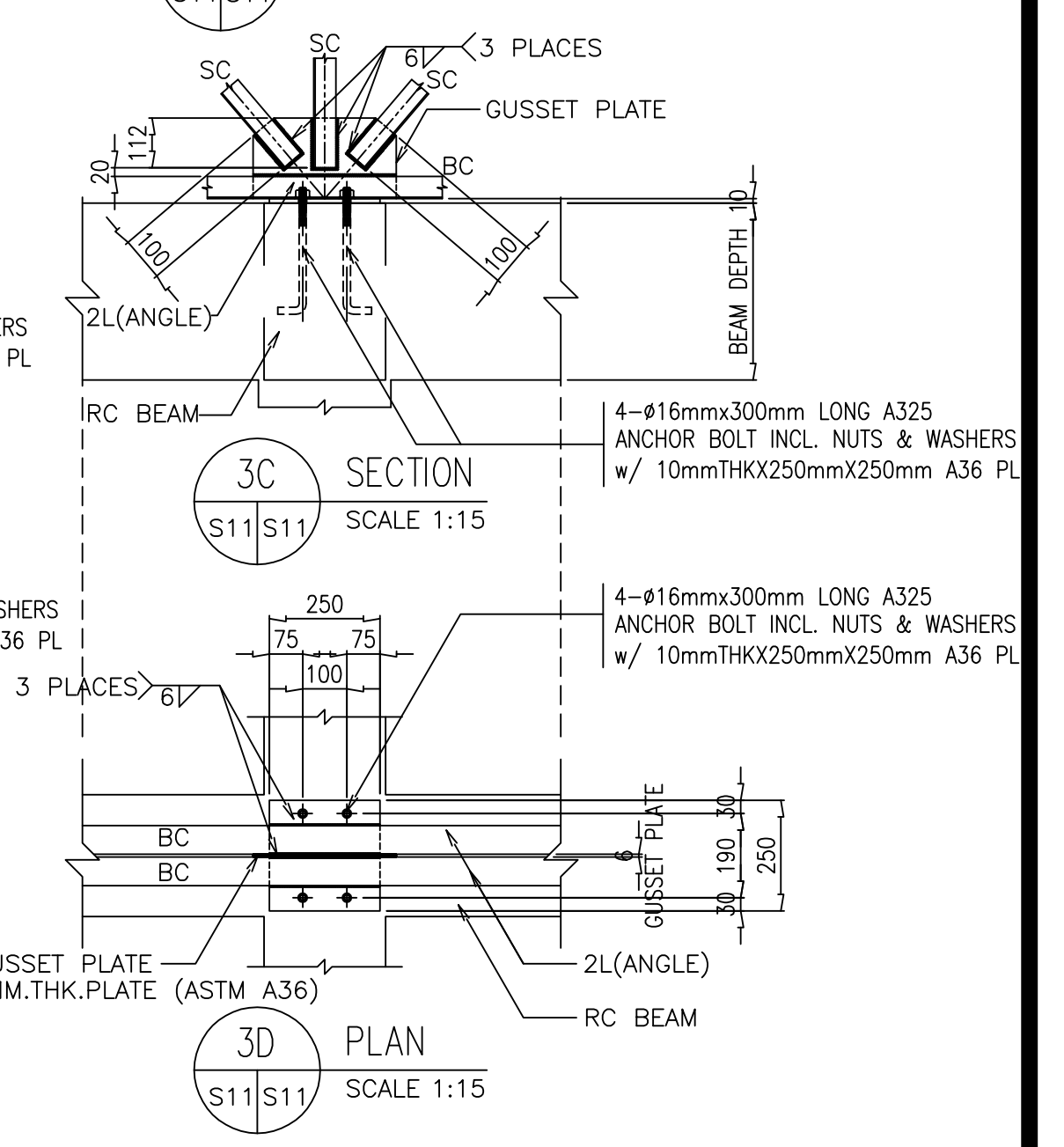


2D TRUSS 4 DETAIL (TR4)
SCALE 1:40

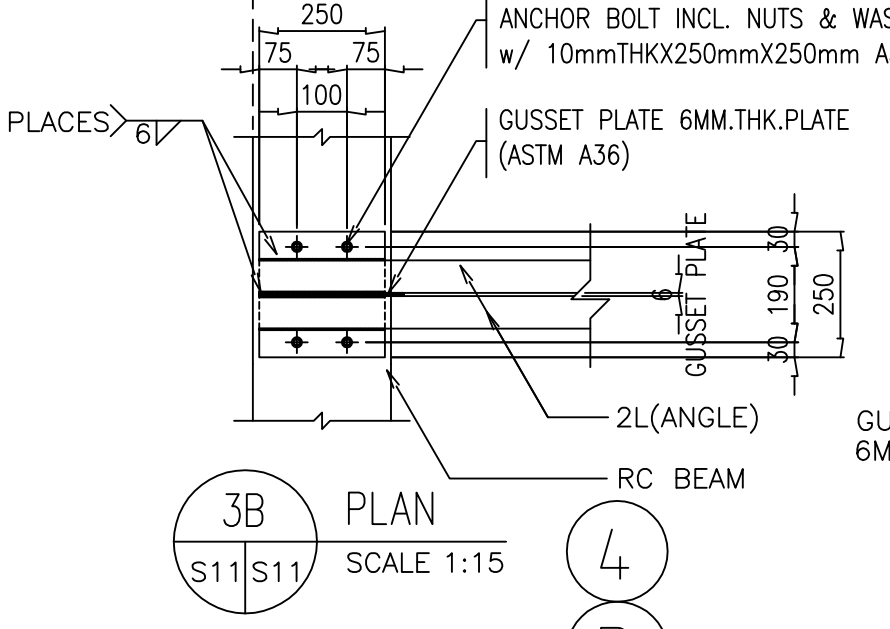
TOP CHORD (TC) : 2-L65x65x8.0
BOTTOM CHORD (BC) : 2-L65x65x5.0
END CHORD (ED) : 2-L65x65x8.0
SECONDARY MEMB (SC) : L50x50x5.0



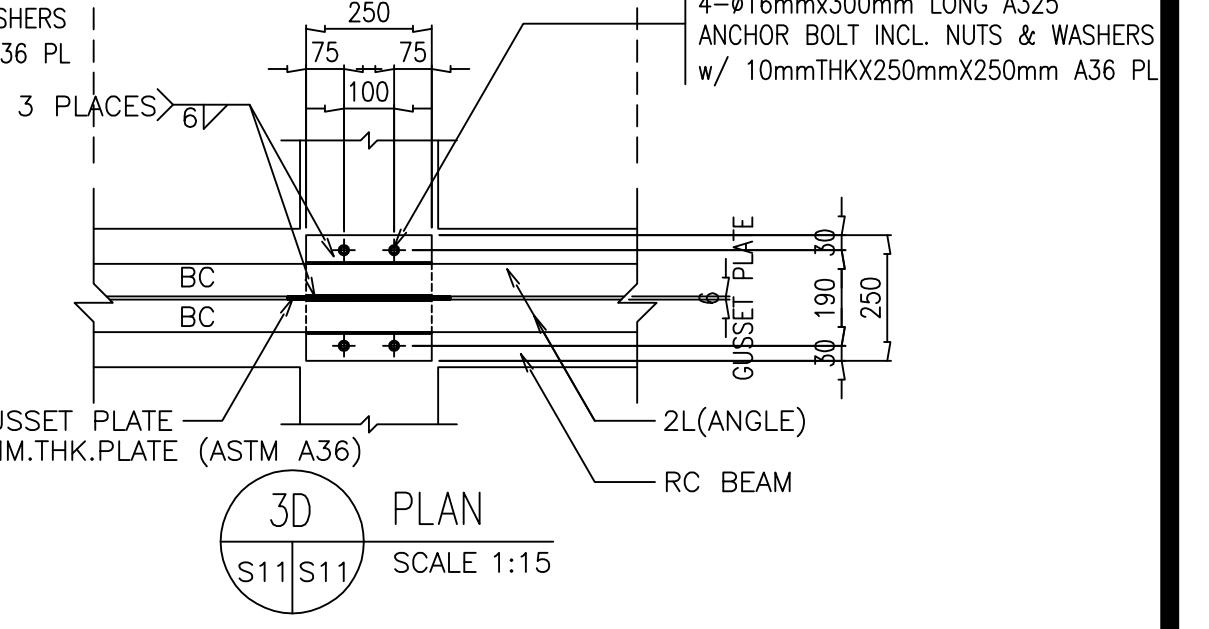
3A SECTION
SCALE 1:15



3C SECTION
SCALE 1:15



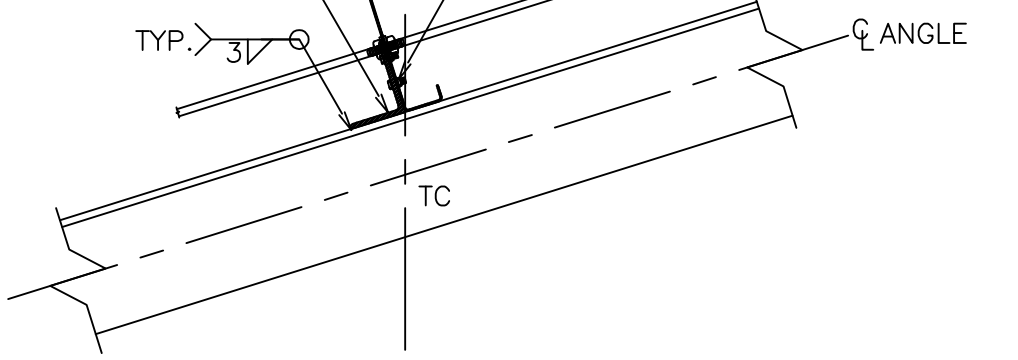
3B PLAN
SCALE 1:15



3D PLAN
SCALE 1:15

3 TYPICAL BASE PLATE DETAIL
SCALE 1:15

LC 175X50X20X2.0X4.68 kg/m. PURLINS @ 700mm O.C. (TYP.)
L 100x75x6mmx155mm.lg SETTING ANGLE
4-8mm Ø BOLT w/ NUTS & WASHERS
1-Ø10MM SAG ROD A36 w/ NUTS & WASHERS INCL.(TYP.)



4 PURLINS CONN DETAIL
SCALE 1:10



ARCHITECT / ENGINEER :
RNFA
STRUCTURAL ENGINEER
PRC Reg. No. PTR No. Place of Issue : ---
Date of Issue : ---

PROJECT / LOCATION :
MULTI-PURPOSE CENTER
CITY OF BORONGAN, EASTERN SAMAR



NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
1	ISSUED FOR BIDDING	23SEP15	MVA				

CHECKED	APPROVED	QDT	DRAWN	MA	FILENAME	PROJ. NO.
		RNF	DATE	23SEP15	ZK1404A-ST11	ZK1404A

SHEET NO. EST11

