DRAWING, INDICATED DIMENSIONS SHALL GOVERN AND DISTANCES AND SIZES NOT BE SCALED
...SES.
...AWINGS. SEE ARCHITECTURAL DRAWINGS FOR DEPRESSIONS IN FLOOR SLABS, OPENINGS IN THE
...OR PARTITIONS,LOCATIONS OF DRAINS, ETC.
...S AS TO THE LAYOUT, DIMENSIONS, AND ELEVATIONS BETWEEN THE STRUCTURAL PLANS, AND ARCH
... THE CONTRACTOR SHALL NOTIFY BOTH THE STRUCTURAL ENGINEER AND THE ARCHITECT.
...LL BE DONE IN ACCORDANCE WITH THE ACI 318_95, BUILDING CODE REQUIREMENTS FOR
...D ALL STRUCTURAL STEEL WORK ACCORDING WITH AISC SPECIFICATION (98 EDITION) IN SO FAR
...T WITH LOCAL BUILDING REQUIREMENT.
... CONCRETE INSTITUE, AISC TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND ASTM TO
...STING MATERIALS.
... TYPICAL DETAILS APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED. MODIFY
...TED TO MEET SPECIAL CONDITIONS.
...CTION AND PLACING DIAGRAMS OF ALL STRUCTURAL STEELS, MISCELLANEOUS IRON, PRE-CAST
... SUBMITTED FOR ENGINEERS APPROVAL BEFORE FABRICATION.
... AND PROVIDE ALL MISCELLANEOUS CURB-15, SILLS, STOOLS, EQUIPMENT'S AND MECHANICAL BASES
...HE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS.
... TESTING FOR CONCRETE, REINFORCING BARS & STRUCTURAL STEEL MUST BE NOTED AND
...TURAL DESIGNER.

... FOR AN ALLOWABLE SOIL BEARING PRESSURE 0 96MPA (2000psf). CONTRACTOR SHALL
.../ ENGINEER, IN WRITING , THE ACTUAL SOIL CONDITIONS UNCOVERED AND CONFIRM ACTUAL
...OIL BEFORE DEPOSITING CONCRETE.
...AST 1500mm BELOW NATURAL GRADE LINE UNLESS OTHERWISE INDICATED IN PLANS.
...ON FILL.
...TION FOR REINFORCEMENTS SHALL BE 75mm CLEAR FOR CONCRETE DEPOSITED ON THE GROUND
...E DEPOSITED AGAINST FORMWORK.

...CYLINDER COMPRESSIVE STRENGTHS AT 28 DAYS SHALL BE :
... FOR GENERAL FOOTING, BEAM BLOCKS, POST AND WALL FOOTING,
... ALL OTHER CONCRETE NOT SPECIFIED HEREUNDER
... FOR EXTERNAL PAVEMENT WORKS
... FOR GENERAL COLUMN, BEAMS, GIRDERS, AND BEAMS, SLAB ON GRADE
...NG ROOF BEAMS , SUSPENDED SLAB ,SELECTED FOOTING & UNDER GROUND WATER TANK
... FOR SELECTED COLUMN
... FOR ALL LEAN CONCRETE.

...E FOLLOWINGS ;
SUSPENDED SLABS, BEAMS, GIRDER, WALLS, AND COLUMNS
FOOTING, THICKENED SLABS, AND SLABS ON FILL

...R REINFORCING A SFOLLOWS:
FORMED CONCRETE AGAINST GROUND OR EXPOSED TO WEATHER
FOR BARS LARGER THAN 16 MM IN DIAMETER
BEAM STIRRUPS AND COLUMN TIES.
FOR BARS OF 16 MM IN DIAMETER AND SMALLER
BEAMS AND COLUMNS NOT EXPOSED TO GROUND OR
TO WEATHER.
SLAB AND WALLS NOT EXPOSED TO GROUND OR
WEATHER.
CONCRETE EXPOSED TO SEWAGE AND UNFORMED CONCRETE DEPOSITED
AGAINTS GROUND.

...LS , ANCHOR BOLTS AND OTHER INSERTS SHALL BE SECURED IN POSITION

...E TAKEN FOR EACH DAYS POUR AND EACH 50 CUBIC METERS OR FRACTION
...E WITH A.S.T.M. C31 AND TESTED IN ACCORDANCE WITH A.S.T.M. C39

...ED IN ITS FINAL POSITION WITHOUT FINAL SEGREGATION, RE-HANDLING OR FLOWING,
...EFERABLY WITH BUGGIES, BUCKETS OR WHEELBARROWS. NO CHUTE SHALL BE ALLOWED
...TE FROM HOPPERS TO BUGGIES, WHEELBARROWS OR BUCKETS. IN WHICH CASE, THEY
...(6) METERS IN AGGREGATE LENGTH.

... SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS UNLESS AUTHORIZED IN
...O CONCRETE DROP WILL BE HIGHER THAN 1200MM.

...ISH AND MAINTAIN ADEQUATE FORMS FOR SHORING UNTIL THE CONCRETE MEMBERS
...ENT STRENGTH FOR THE WORKING CONDITON ANTICIPATED.

...L OF FORMS :

... FORMS – AFTER 24 HOURS
...M FORMS – AFTER 72 HOURS
(OR AFTER TEST CYLINDER YEILD SATISFACTORY RESULT)
...NG – AFTER 7 DAYS

...D SLAB
... FORMS – AFTER 24 HOURS
...M FORMS – AFTER 7 DAYS
(OR AFTER TEST CYLINDER YEILD SATISFACTORY RESULT)

...L – AFTER 72 HOURS

... FORMS – AFTER 72 HOURS : WHEN CONSTRUCTION LINE LOAD IS TO BE APPLIED
– AFTER 36 HOURS : WHEN PURPOSE IS FOR FORM RE-USE
...NG – AFTER 72 HOURS OR WHEN TEST CYLINDER YEILD SATISFACTORY RESULT
...IS TO BE POURED , AT LEAST TWO (2) FLOORS SHALL BE SHORED

...LLOWS :
...E ....10 CM
.........................15 CM
...CONCRETE ....15 CM

...H AS WATER-REDUCING, AIR-ENTRAINED OR SUPERPLASTIBIZER CAN BE USED IN ACCOR-
...URE'S RECOMMENDATION AND HAS BEEN APPROVED BY THE ENGINEER.

...HALL BE CONTINUOUS FOR A MINIMUM PERIOD OF (7) DAYS IMMEDIATELY AFTER POURING

...MIT THE SCHEDULE OF POURING AND LOCATIONS OF CONSTRUCTION JOINTS TO THE
...RAL ENGINEER ASSIGNED 3 DAYS PRIOR TO THE POURING FOR APPROVAL.

STRUCTURAL NOTES

REINFORCING STEEL BARS

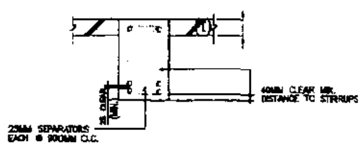
1. GRADE :
REINFORCING STEEL BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM 615
GRADE 40 (40,000 psi) 276 MPa – #12 & BELOW
GRADE 60 (60,000 psi) 414 MPa – #16 & ABOVE
2. MILL CERTIFICATE OF REINFORCEMENTS SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER.
3. ALL BARS SHALL BE BENT COLD UNLESS OTHERWISE PERMITTED BY THE STRUCTURAL ENGINEER
4. ALL REINFORCING BARS SHALL BE CLEAN THOROUGHLY OF ALL LOOSE RUST, SOIL OR OTHER MATERIAL IMMEDIATELY PRIOR TO PLACING OF CONCRETE.
5. A FULL WELDED SPLICE SHALL BE BARS BUTTED AND WELDED TO DEVELOP IN TENSION AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH f_y OF THE BAR.
6. ALL WELDING OF REINFORCEMENT SHALL BE CONFORMED TO THE PROVISIONS OF THE STRUCTURAL WELDING CODE REINFORCING STEEL, AWS D 1.4
7. ALL FULL MECHANICAL CONNECTION (REBAR SPLICER) SHALL BE DEVELOPED IN TENSION OR COMPRESSION AS REQUIRED , AT LEAST 125 % OF THE SPECIFIED YIELD STRENGTH f_y OF THE BAR. IF USED ,SUBMIT SAMPLE FOR APPROVAL OF THE DESIGNER.
8. WHEN A BEAM CROSSES A GIRDER ,REST BEAM BARS ON TOP OF GIRDER BAR. REINFORCING BARS SHALL BE SYMMETRICAL ABOUT THE CENTER LINE WHENEVER POSSIBLE AND UPPER LAYERS SHOULD BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER .
9. GENERALLY NO SPLICES SHALL BE PERMITTED ON MEMBERS WHERE CRITICAL BENDING STRESSES OCCUR. LOCATION AND LENGTHS OF LAP SPLICES SHALL BE AS INDICATED IN THESE NOTES AND ON THE STRUCTURAL DRAWINGS.
10. ALL REINFORCING BARS SHALL PASS THE REQUIREMENT OF NSCP SECTION 6.2.1.2.5

COLUMNS

1. BEAM COLUMN JOINTS SHALL BE PROVIDED WITH TRANSVERSE REINFORCEMENT SPACED AT TWICE THAT REQUIRED BY ITEM 4 WHEN THERE ARE BEAMS HAVING WIDTHS AT LEAST ONE HALF THE COLUMN WIDTH AND DEPTHS NOT LESS THAN THREE QUARTERS OF THE DEEPEST BEAM THAT FRAME INTO FOUR SIDES OF THE COLUMN. FOR ALL OTHER CONDITIONS PROVIDE SAME SPACING AS REQUIRED ON ITEM 4.
2. LAP SPLICES, WHEN REQUIRED, ARE PERMITTED ONLY WITHIN THE CENTER HALF OF THE COLUMN LENGTH AND SHALL BE PROPORTIONED AS TENSION SPLICES. IN NO CASE SHALL BE THE LAP SPLICE BE LOCATED CLOSER THAN EQUAL TO THE DISTANCE MAXIMUM COLUMN DIMENSION FROM THE FACE OF THE BEAM COLUMN JOINT. PROVIDE EXTRA TRANSVERSE REINFORCEMENT OF THE SAME SIZE AND ARRANGEMENT INDICATED IN THE COLUMN SCHEDULE SPACED AT MOST ONE-FOURTH THE MINIMUM COLUMN SECTION DIMENSION THROUGHOUT THE LENGTH OF THE SPLICE.
3. WELDED SPLICES AND MECHANICAL CONNECTIONS MAY BE USED AT ANY SECTION PROVIDED NOT MORE THAN ALTERNATE LONGITUDINAL BARS ARE SPLICED AT ANY SECTION AND DISTANCE BETWEEN SPLICES MUST BE 600MM OR MORE ALONG AXIS OF THE COLUMN.
4. COLUMN TIE SPACING SHALL BE NOT GREATER THAN 1/4 OF THE COLUMN SECTION NOR 100 MM OVER A DISTANCE OF MAXIMUM COLUMN SECTION BUT NOT LESS THAN 1/6 OF CLEAR STOREY HEIGHT OR 450MM FROM EACH JOINT FACE.

BEAMS AND GIRDERS

1. UNLESS OTHERWISE NOTED IN PLANS OR SPECIFICATIONS, CAMBER ALL BEAMS AND GIRDERS AT LEAST 6MM FOR EVERY 4500MM OF SPAN EXCEPT CANTILEVERS FOR WHICH THE CAMBER SHALL BE NOTED IN THE PLANS OR AS ORDERED BY THE DESIGNERS BUT IN NO CASE LESS THAN 19MM FOR EVERY 3000MM OF FREE SPAN.
2. IF THERE ARE TWO OR MORE LAYERS OF LONGITUDINAL REINFORCING BARS IN A BEAM OR GIRDER, USE SEPARATORS OF A SIZE NOT LESS THAN 25MM BARS SPACED ABOUT 900MM ON CENTER. IN NO CASE SHALL BE THERE BE LESS THAN TWO (2) SEPARATORS BETWEEN LAYERS OF BARS .
3. LONGITUDINAL REINFORCING BARS SHALL BE PLACED SYMMETRICAL ABOUT THE VERTICAL CENTER LINE OF THE BEAM OR GIRDER SECTION WHERE POSSIBLE, WITH UPPER LAYER BARS PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYERS.
4. MINIMUM CONCRETE PROTECTION OF REINFORCING BARS OR SHAPES SHALL BE SHOWN BELOW.



REINFORCED CONCRETE

5. BEAM REINFORCING BARS BOTH TOP AND BOTTOM TERMINATING IN A WALL, SHALL BE EXTEND AT THE MOST 50MM FROM THE FAR FACE OF THE WALL AND SHALL BE TERMINATE IN A STANDARD 90 DEGREES HOOK .
6. LONGITUDINAL REINFORCEMENT OF GIRDERS, BOTH TOP AND BOTTOM,TERMINATED IN A COLUMN SHALL BE EXTENDED TO THE FAR FACE OF THE CONFINED CONCRETE CORE OF THE COLUMN AND TERMINATED BY A STANDARD 90 DEG. HOOK.
7. GENERALLY, NO LAP SPLICE SHALL BE PERMITTED ON BEAMS AND GIRDERS AT POINTS WHERE CRITICAL BENDING STRESSES OCCUR. IN ADDITION, FOR GIRDERS, NO LAP SPLICE SHALL BE LOCATED WITHIN THE JOINTS OR WITHIN A DISTANCE EQUAL TO TWICE THE MEMBER DEPTH FROM THE FACE OF THE JOINT.
8. PROVIDE LAP SPLICES IN GIRDERS WITH HOOP REINFORCEMENT OVER THE LENGTH OF THE LAPPED BARS SPACED NO FARTHER THAN ONE-FOURTH THE NOMINAL DEPTH OR 100MM.
9. WELDED SPLICES AND MECHANICAL CONNECTIONS MAYBE USED FOR SPLICING BEAMS AND GIRDERS PROVIDED THAT NO MORE THAN ALTERNATE BARS IN EACH LAYER OF LONGITUDINAL REINFORCEMENT ARE SPLICED AT A SECTION AND THE CENTER TO CENTER DISTANCE BETWEEN SPLICES OF ADJACENT BARS IS AT LEAST 600MM MEASURED ALONG THE AXIS OF THE MEMBER.
10. AT LOCATIONS OF DEPRESSED SLABS, BOTTOM OF BEAMS AND GIRDERS SHALL BE DEPRESSED.

CONCRETE SLABS

1. ALL SLAB REINFORCEMENT HAVE A MINIMUM CLEAR DISTANCE OF 20MM FROM THE BOTTOM AND FROM THE TOP OF SLABS.
2. IF SLABS ARE REINFORCED BOTHWAYS, BARS ALONG THE SHORTER SPAN SHALL BE PLACED BELOW THOSE ALONG THE LONG SPAN AT THE CENTER AND OVER THE LONGER SPAN BARS NEAR THE SUPPORTS. THE SPACING OF THE BARS AT THE COLUMN STRIPS SHALL BE APPROXIMATELY ONE AND ONE – HALF (1-1/2) THAT IN MIDDLE STRIPS BUT IN NO CASE GREATER THAN TWO AND ONE– HALF (2-1/2) SLAB THICKNESS OR 450MM.
3. TEMPERATURE BARS FOR SLAB SHALL BE GENERALLY PLACED NEAR THE FACE IN TENSION.

REINFORCED CONCRETE WALLS

1. ALL WALLS SHALL BE REINFORCED ACCORDING TO THE FOLLOWING SCHEDULE OF WALL REINFORCEMENTS UNLESS OTHERWISE INDICATED IN THE PLANS.

WALL THICKNESS (MM)	REINFORCEMENT		REMARKS
	HORIZONTAL	VERTICAL	
100	#10MM @ 300 MM	#10MM @ 300 MM	VERT. BARS @ CENTERS.
125	#10MM @ 250 MM	#10MM @ 300 MM	HOR. BARS STAGGERED
150	#10MM @ 300 MM	#10MM @ 300 MM	
175	#10MM @ 300 MM	#10MM @ 300 MM	HOR. BARS OUTSIDE
200	#10MM @ 250 MM	#10MM @ 250 MM	BOTH FACES,VERT. BARS
225	#10MM @ 250 MM	#10MM @ 250 MM	STAGGERED INSIDE BOTH
250	#10MM @ 250 MM	#10MM @ 300 MM	FACES

2. REINFORCING BARS SHALL HAVE 40MM MINIMUM CLEAR CONCRETE COVER FROM FACE OF WALL EXCEPT FOR WALLS IN CONTACT WITH THE GROUND WHERE A MINIMUM OF 50MM SHALL BE PROVIDED. FOR WALL CAST AGAINST AND PERMANENTLY EXPOSED TO THE EARTH, THE MINIMUM COVER WAS 75MM CLEAR.
3. CARRY VERTICAL BARS AT LEAST 600MM ABOVE FLOOR LEVEL TO PROVIDE FOR SPLICES WHEN NECESSARY. VERTICAL AND HORIZONTAL BARS SHALL BE SPLICED BY LAPPING A DISTANCE EQUAL TO 40MM BAR DIAMETERS AND WIRED SECURELY WITH NO. 16 G.I. WIRE PROVIDED THAT SPLICES IN THE ADJACENT BARS ARE STAGGERED AT LEAST 1500MM.
4. UNLESS OTHERWISE NOTED IN THE PLAN, ALL OPENINGS IN WALLS 250MM OR THICKER SHALL BE REINFORCED AROUND WITH 2-# 20MM BARS; FOR 225MM, 175MM, 150MM WALLS , USE 2-# 16MM BARS; FOR 125MM AND 100MM WALLS, USE 2- # 12MM BARS . ALL WALLS SPANNING OPENINGS HAVE VERTICAL REINFORCEMENTS BENT TO U-FORM LIKE STIRRUPS AND SPACED ACCORDING TO THE SCHEDULE UNLESS OTHERWISE NOTED.

MASONRY BLOCK WALLS

1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATION OF THE NATIONAL CONCRETE MASONRY ASSOCIATION AND UNIFORM BUILDING CODE.
2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90 GRADE N. NON-LOAD BEARING BLOCKS HAVE AN AVERAGE MINIMUM COMPRESSIVE STRENGTH OF 2.4MPa(350Psi)
3. MORTAR AND GROUT FOR ALL REINFORCED MASONRY SHALL CONFORM TO ASTM 270-TYPE M AND HAVE A MINIMUM 28 – DAYS STANDARD CYLINDER COMPRESSIVE STRENGTH OF 21 MPa (3000 Psi).
4. ALL CONCRETE HOLLOW BLOCKS MASONRY WALLS SHALL BE LAID IN RUNNING BOND (INTERLOCKING COURSE) WITH FULL MORTAR BEDDING. STACK BOND SHALL BE USED ONLY WHEN SPECIFIED.
5. ALL CELLS SHALL BE SOLIDLY FILLED WITH CONCRETE-GROUT.
6. UNLESS OTHERWISE NOTED ALL EXTERIOR WALL SHALL BE 6"CHB & INTERIOR WALL 4"CHB
7. ALL MASONRY UNITS SHALL BE REINFORCED ACCORDING TO THE FOLLOWING SCHEDULE UNLESS OTHERWISE STATED IN THE PLANS:

SCHEDULE OF CHB REINFORCEMENT FOR NON-LOAD BEARING WALLS OR PARTITIONS

BLOCK THICKNESS	REINFORCEMENT		NOTES
	HORIZONTAL	VERTICAL	
75 MM	#10MM DIA. BARS AT EVERY THIRD COURSE	#10MM @ 600MM O.C.	A. MINIMUM LAP SPLICE = 250MM B. PROVIDE RIGHT ANGLED REINFORCEMENT 600 MM LONG @ CORNERS. C. WHERE CHB WALLS, ADJOIN COLUMNS, RC BEAMS AND WALL DOWELS WITH SAME SIZE AS VERTICAL OR HORIZONTAL REINFORCEMENT SHALL BE PROVIDED.
100 MM		#10MM @ 600MM O.C.	
150 MM	#12MM DIA. BARS AT EVERY THIRD COURSE	#12MM @ 600MM O.C.	
200 MM		#12MM @ 600MM O.C.	

LINTEL BEAM IN CHB WALL OPENING (100MM & 150MM THK.)

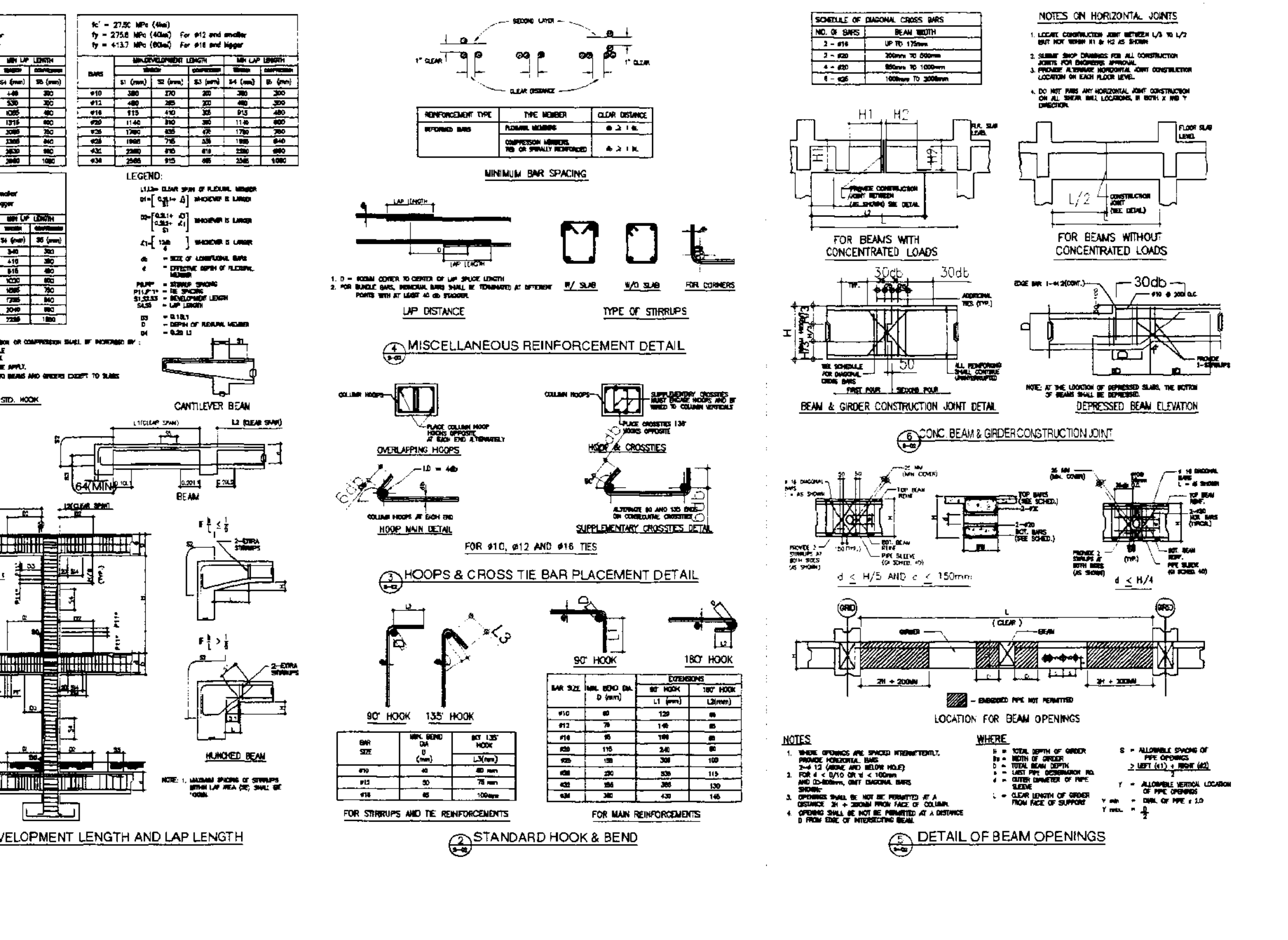
CLEAR SPAN (MM)	TOTAL LENGTH (+ 400MM)	MIN. fc' MPa	HEIGHT OF LINTEL (MM)	REINFORCEMENT		
				TOP BARS	BOT. BARS	TIES
1200	1600	13.8	200	1 – #12MM	1 – #12MM	#10 @ 200 O.C.
1500	1900	13.8	200	1 – #12MM	1 – #12MM	#10 @ 200 O.C.
1800	2200	13.8	200	1 – #12MM	1 – #12MM	#10 @ 200 O.C.
2100	2500	13.8	250	2 – #12MM	2 – #12MM	#10 @ 200 O.C.
2400	2800	13.8	250	2 – #12MM	2 – #12MM	#10 @ 200 O.C.
2700	3100	13.8	250	2 – #12MM	2 – #12MM	#10 @ 200 O.C.
3000	3400	13.8	300	2 – #16MM	2 – #16MM	#10 @ 200 O.C.

SLAB-ON-GRADE

1. THE SOIL SUBGRADE AND FILL LAYERS BELOW ALL SLABS ON GRADE, PAVING AND PIT SLABS SHALL BE MECHANICALLY COMPACTED IN LAYERS TO A MINIMUM OF 100% PERCENT OF THE MODIFIED PROCTOR DENSITY.
2. UNLESS OTHERWISE NOTED, ALL SLABS ON GRADE SHALL BE REINFORCED WITH #10mm BARS AT 200mm O.C., EACHWAY.
3. SLAB DESIGN WAS BASE ON THE CRITERIA OF S-01. MINIMUM SOIL BEARING CAPACITY OF SUBGRADE TO SUPPORT THE SLAB ON GRADE IS 12 TON/M^2. PLATE LOAD TEST SHALL BE CONDUCTED AT A RATE OF 1 POINT LOCATION EVERY 250m2 AREA.

CIVIL ENGINEER	CHECKED BY :	PROJECT TITLE :	SHEET CONTENT:	PREPARED BY:	
DI... G. ...LAN, JR. PRC REG. No. 0127914 Validity: 9/15/2021 PTR No.: 2532282 Date: 7/9/20 Place: ... TIN: 427-54...	JASON F. RUFON ... Director APPROVED BY: ARNUL... LUNA	REHABILITATION OF CAS BUILDING LOCATION : ROMBLON STATE UNIVERSITY - Main Campus, Liwanag, Odiongan, Romblon	AS SHOWN	CAD OPERATOR: WA - PING JOB NO. : DATE :JULY 2020	S-1

STRUCTURAL NOTES


MINIMUM BAR SPACING
LAP DISTANCE
W/ SLAB
W/O SLAB
FOR CORNERS
TYPE OF STIRRUPS
MISCELLANEOUS REINFORCEMENT DETAIL
OVERLAPPING HOOPS
HOOP MAIN DETAIL
HOOP & CROSSTIES
SUPPLEMENTARY CROSSTIES DETAIL
FOR ø10, ø12 AND ø16 TIES
HOOPS & CROSS TIE BAR PLACEMENT DETAIL
90° HOOK
135° HOOK
180° HOOK
FOR STIRRUPS AND TIE REINFORCEMENTS
FOR MAIN REINFORCEMENTS
STANDARD HOOK & BEND
CANTILEVER BEAM
BEAM
HUNCHED BEAM
DEVELOPMENT LENGTH AND LAP LENGTH
LEGEND:
SCHEDULE OF DIAGONAL CROSS BARS
NOTES ON HORIZONTAL JOINTS
FOR BEAMS WITH CONCENTRATED LOADS
FOR BEAMS WITHOUT CONCENTRATED LOADS
BEAM & GIRDER CONSTRUCTION JOINT DETAIL
DEPRESSED BEAM ELEVATION
CONC. BEAM & GIRDER CONSTRUCTION JOINT
d ≤ H/5 AND c ≤ 150mm
d ≤ H/4
LOCATION FOR BEAM OPENINGS
NOTES
WHERE
DETAIL OF BEAM OPENINGS

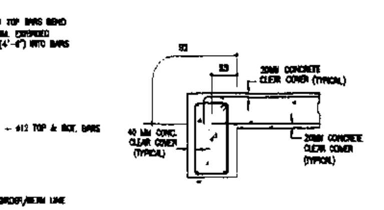
CIVIL ENGINEER	CHECKED BY :	PROJECT TITLE :	SHEET CONTENT	PREPARED BY:	
DIOMEDES G. FAMARILLAN JR.	JASON T. RUFON	REHABILITATION OF CAS BUILDING	AS SHOWN	CAD OPERATOR: WA - PING	S-2
PRC REG No 0122419 Validity: 4/8/21	APPROVED BY:			JOB NO. :	
PTR No. 2539282 Date: 7/9/20	ARNULFO DE LUNA			DATE :JULY 2020	
Place Romblon, Romb. TIN: 203-857-579		LOCATION : ROMBLON STATE UNIVERSITY - Main Campus, Liwanag, Odiongan, Romblon			

STRUCTURAL NOTES

NOTES :

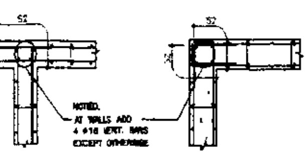
1. PROVIDE THESE ADDITIONAL BARS FOR ALL OPENINGS PLUS BARS (NOT SHOWN) PARALLEL TO SIDE OF OPENING EQUAL TO THE NUMBER OF TERMINATED BARS AT OPENING.
2. SEE ARCHITECTURAL & MECHANICAL PLANS FOR SLAB OPENING LOCATION.
3. OMIT TRIMMER BARS WHERE OPENING IS FRAMED BY BEAM.
4. DIAGONAL BARS
   - IF < 400MM 2-#12 TOP & BOTTOM BARS
   - IF > 400MM 3-#12 TOP OF BOTTOM BARS
   - IF < 150MM OR 0.10M² (NO ADDITIONAL REINFORCEMENT NEEDED)

SLAB OPENING DETAIL

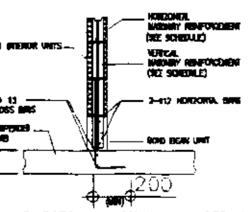


SLAB END DETAIL

MISCELLANEOUS DETAILS

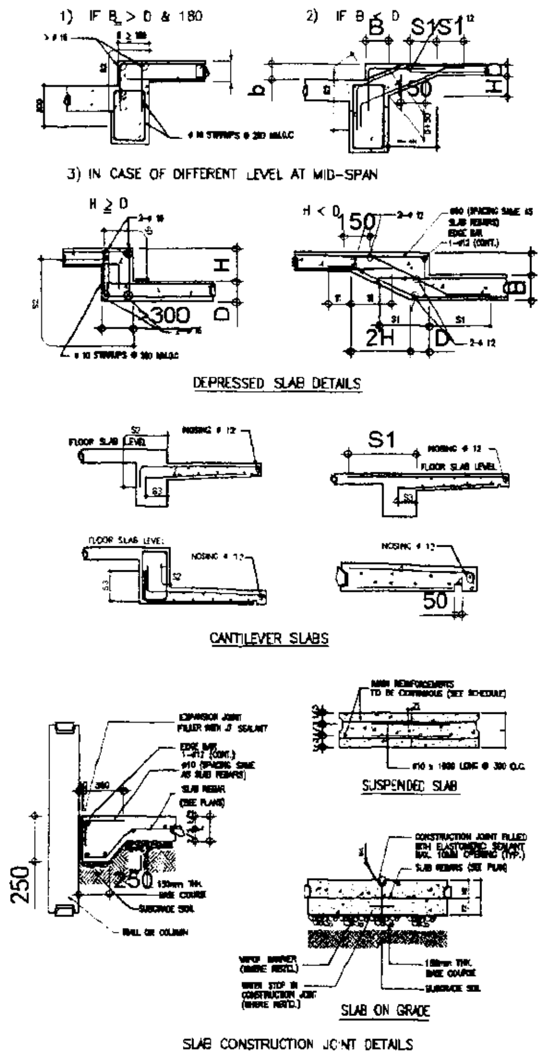


REBARS @ CORNERS OF R.C. WALLS

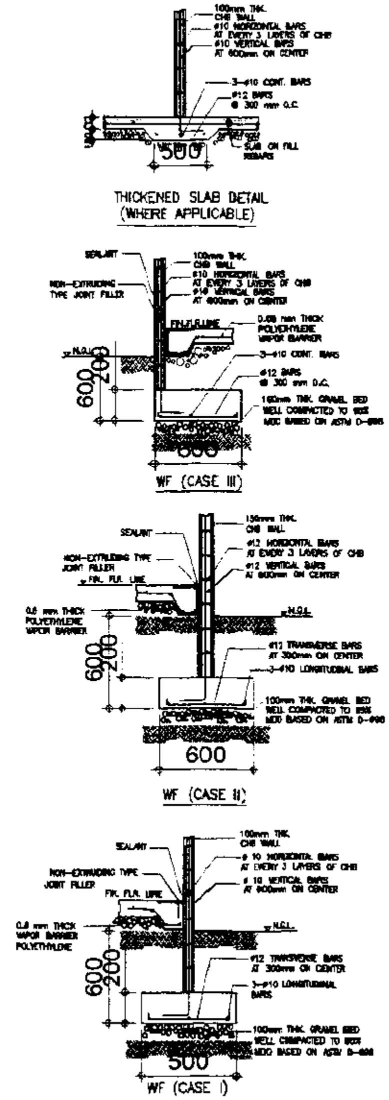


CHB PARTITION ON SUSPENDED SLAB

CHB CONNECTION DETAILS



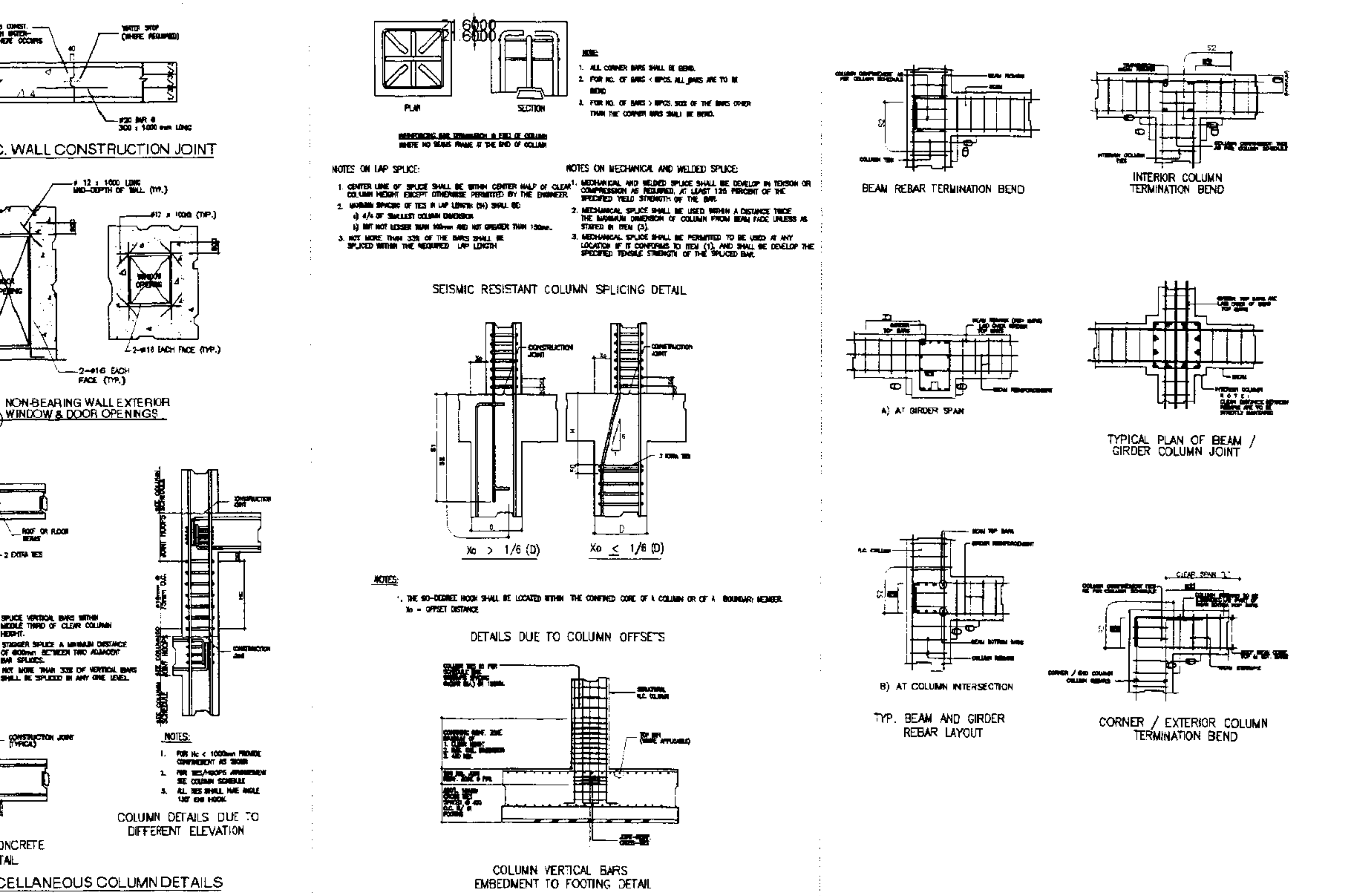
MISCELLANEOUS SLAB DETAILS



CHB WALL FOOTING DETAILS
(WHERE APPLICABLE)

CIVIL ENGINEER	CHECKED BY:	PROJECT TITLE:	SHEET CONTENT:	PREPARED BY:	
DIOSDADO G. FAMERO SILVA, JR.	JASON F. RUFON	REHABILITATION OF CAS BUILDING	AS SHOWN	CAD OPERATOR:	S-3
PRC REG. NO. 0122914 Validity: 9/15/21	APPROVED BY:			WA - PING	
PTR No.: 2533282 Date: 7/9/20	ARNULFO DE LUNA			JOB NO. :	
Place: Romblon TIN: 423-547-317		LOCATION : ROMBLON STATE UNIVERSITY - Main Campus, Liwanag, Odiongan, Romblon		DATE : JULY 2020	

STRUCTURAL NOTES



WATER STOP (WHERE REQUIRED)
C. WALL CONSTRUCTION JOINT
NON-BEARING WALL EXTERIOR WINDOW & DOOR OPENINGS
2-#16 EACH FACE (TYP.)
PLAN
SECTION
NOTE:
1. ALL CORNER BARS SHALL BE BEND.
2. FOR NO. OF BARS < 8PCS. ALL BARS ARE TO BE BEND.
3. FOR NO. OF BARS > 8PCS. 50% OF THE BARS OTHER THAN THE CORNER BARS SHALL BE BEND.
NOTES ON LAP SPLICE:
1. CENTER LINE OF SPLICE SHALL BE WITHIN CENTER HALF OF CLEAR COLUMN HEIGHT EXCEPT OTHERWISE PERMITTED BY THE ENGINEER.
2. MAXIMUM SPACING OF TIES IN LAP LENGTH (SH) SHALL BE:
a) 1/4 OF SMALLEST COLUMN DIMENSION
b) BUT NOT LESSER THAN 100mm AND NOT GREATER THAN 150mm.
3. NOT MORE THAN 33% OF THE BARS SHALL BE SPLICED WITHIN THE REQUIRED LAP LENGTH
NOTES ON MECHANICAL AND WELDED SPLICE:
1. MECHANICAL AND WELDED SPLICE SHALL BE DEVELOP IN TENSION OR COMPRESSION AS REQUIRED, AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRENGTH OF THE BAR.
2. MECHANICAL SPLICE SHALL BE USED WITHIN A DISTANCE TWICE THE MAXIMUM DIMENSION OF COLUMN FROM BEAM FACE UNLESS AS STATED IN ITEM (3).
3. MECHANICAL SPLICE SHALL BE PERMITTED TO BE USED AT ANY LOCATION IF IT CONFORMS TO ITEM (1), AND SHALL BE DEVELOP THE SPECIFIED TENSILE STRENGTH OF THE SPLICED BAR.
SEISMIC RESISTANT COLUMN SPLICING DETAIL
CONSTRUCTION JOINT
Xo > 1/6 (D)
Xo ≤ 1/6 (D)
NOTES:
1. THE 90-DEGREE HOOK SHALL BE LOCATED WITHIN THE CONFINED CORE OF A COLUMN OR OF A BOUNDARY MEMBER.
Xo = OFFSET DISTANCE
DETAILS DUE TO COLUMN OFFSETS
COLUMN VERTICAL BARS EMBEDMENT TO FOOTING DETAIL
NOTES:
1. FOR Hc < 1000mm PROVIDE CONFINEMENT AS SHOWN
2. FOR TIES/HOOPS ARRANGEMENT SEE COLUMN SCHEDULE
3. ALL TIES SHALL HAVE ANGLE 135° END HOOK
COLUMN DETAILS DUE TO DIFFERENT ELEVATION
CONCRETE
MISCELLANEOUS COLUMN DETAILS
BEAM REBAR TERMINATION BEND
INTERIOR COLUMN TERMINATION BEND
A) AT GIRDER SPAN
TYPICAL PLAN OF BEAM / GIRDER COLUMN JOINT
B) AT COLUMN INTERSECTION
TYP. BEAM AND GIRDER REBAR LAYOUT
CORNER / EXTERIOR COLUMN TERMINATION BEND

CIVIL ENGINEER	CHECKED BY :	PROJECT TITLE :	SHEET CONTENT:	PREPARED BY:	
[illegible] C. PAMPILLON, JR.	JASON E. RUFON	REHABILITATION OF CAS BUILDING	AS SHOWN	CAD OPERATOR:	S-4
PRC REG No. 0122914 Validity: 9/5/21	APPROVED BY:			WA - PING	
PTR No. 2577282 Date: 7/9/20	ARNEL DE LUNA			JOB NO. :	
Place: Romblon TIN: 929-577-5R		LOCATION : ROMBLON STATE UNIVERSITY - Main Campus, Liwanag, Odiongan, Romblon		DATE :JULY 2020	