

**GENERAL NOTES**

**GENERAL**

- 1.1 GENERAL NOTES AND TYPICAL STRUCTURAL DETAILS SHALL APPLY TO ALL DRAWINGS
- 1.2 UNLESS OTHERWISE SHOWN OR NOTED.
- 1.3 FEATURES OF CONSTRUCTION SHOWN ARE TYPICAL AND SHALL APPLY GENERALLY THROUGHOUT FOR SIMILAR CONDITIONS; MODIFY TYPICAL DETAILS AS REQUIRED TO MEET SPECIAL CONDITIONS.
- 1.4 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.
- 1.5 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.
- 1.6 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.
- 1.7 INSPECTION - 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.
- 1.8 UNLESS SPECIFICALLY DETAILED ELSEWHERE, THE CONTRACTOR SHALL FOLLOW TYPICAL DETAILS AS SHOWN IN THESE DRAWINGS.
- 1.9 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
- 1.10 UNSCALED DRAWINGS; 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.
- 1.11 MODIFICATION OF SECTION AND SIZES OF STRUCTURAL MEMBERS SHALL NOT BE ALLOWED UNLESS OTHERWISE APPROVED BY THE STRUCTURAL ENGINEER.
- 1.12 CONTRACTOR TO PROVIDE DYE PENETRANT/ULTRASONIC TESTING RESULT TO CLIENT; THESE TESTINGS SHALL BE CONDUCTED BY ACCREDITED AGENCY.
- 1.13 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<sup>3</sup>
  - UNIT WEIGHT OF SOIL 18.00 KN/m<sup>3</sup>
  - ROOFING: (GI Sheet and Purlins) 0.37 kPa
  - 100mm Chb Wall 3.17 kPa
  - 150mm Chb Wall 3.50 kPa
  - FLOOR FINISH 1.53 kPa
  - PARTITION LOAD 1.53 kPa
  - CILING 0.23 kPa
  - INSULATION 0.08 kPa
  - WATERPROOFING 0.26 kPa
  - ELECTRICAL/MECHANICAL/PUMBING 0.35 kPa
- 1.2 LIVE LOADS
  - ROOF 1.00 kPa
  - OFFICE 2.40 kPa
  - RESTROOM 2.40 kPa
  - EXIT FACILITIES 4.80 kPa
  - EVAUATION, 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<sub>w</sub> & R<sub>vz</sub> 8.50
  - IMPORTANT FACTOR, I 1.50
  - SITE COEFFICIENT, S (S<sub>d</sub>) 4.00
  - ND 1.28
  - NV 1.436
  - FUNDAMENTAL PERIOD OF VIBRATION, T C (m)<sup>1/3</sup> / 4
  - Ct (m) 0.0731
  - HEIGHT IN METERS, h m

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)	MAX. SLUMP (mm)
SLAB, STAIR, CURBS AND GRADE	"A"	20.7 (3000)	75 (3")
CAST-IN-PLACE GIRDESS, 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")

**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 fy = 414 MPa (60,000 PSI) AND ASTM A615 GRADE 40, DEFORMED FOR 12MM DIA. BARS AND SMALLER WITH MINIMUM YIELD STRENGTH fy = 276MPa (40,000 PSI).
- b. ALL REINFORCING BARS SHALL BE DEFORMED BARS UNLESS OTHERWISE SPECIFIED IN DRAWINGS.
- c. ALL REINFORCING BARS SHALL BE CLEAN OR 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**

- (1) DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS.
- (2) CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.
- (3) FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 50mm SHALL LAY FIRST BEFORE INSTALLING THE REINFORCEMENT. THE LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.
- (4) THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, THE POURING SEQUENCES FOR ALL CONCRETING WORK.
- (5) 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.
- (6) 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.
- (7) USE OF ADMIXTURES IS PERMITTED TO PRODUCE PROPER SLUMP AND WORKABILITY BUT SUBJECT TO THE ENGINEERS 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 m.

(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 ACP 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 STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES, ACI 318-99, SHALL BE ADHERED TO, UNLESS SHOWN OTHERWISE.

(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 60MM, UNLESS OTHERWISE NOTED.

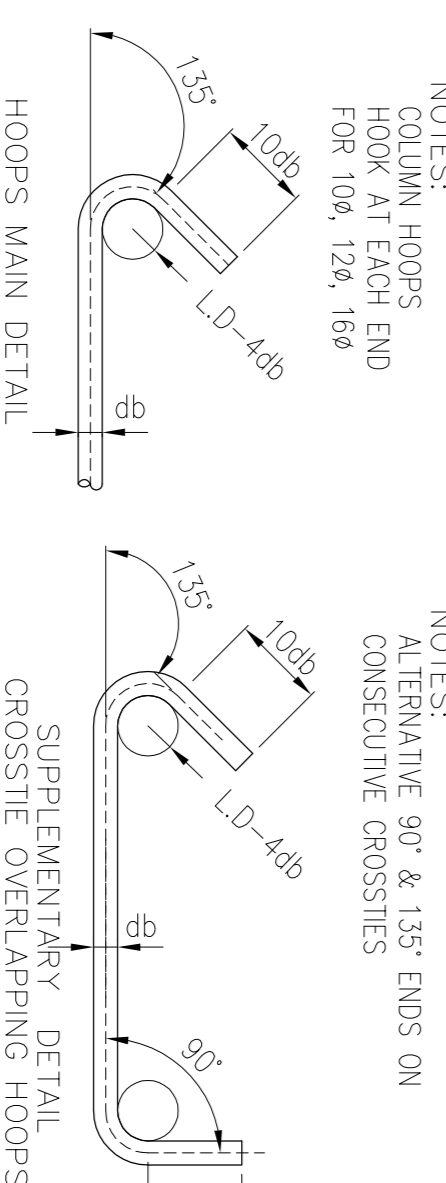
(8) REINFORCEMENTS SHALL BE SPLICED ONLY AS INDICATED ON THE DRAWINGS.

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

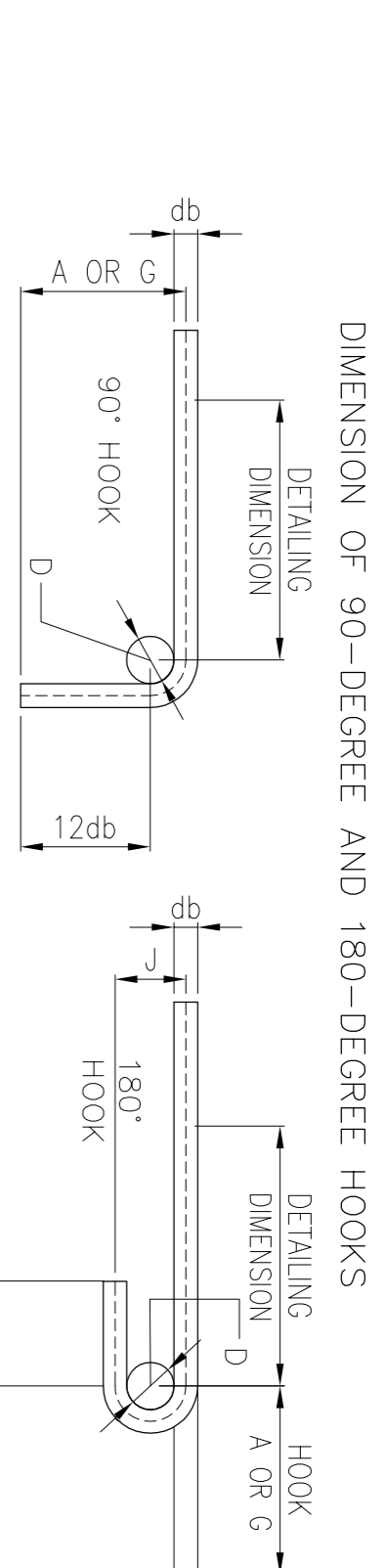
(10) WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS OTHERWISE SHOWN ON THE DRAWING. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4-79 \*AWS STRUCTURAL WELDING CODE\* OF THE AMERICAN WELDING SOCIETY. REINFORCING STEEL WHICH IS WELDED SHALL CONFORM TO ASTM A 706. REINFORCING STEEL NOT CONFORMING 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 DETAIL



(13) TYPICAL STANDARD HOOK DETAIL

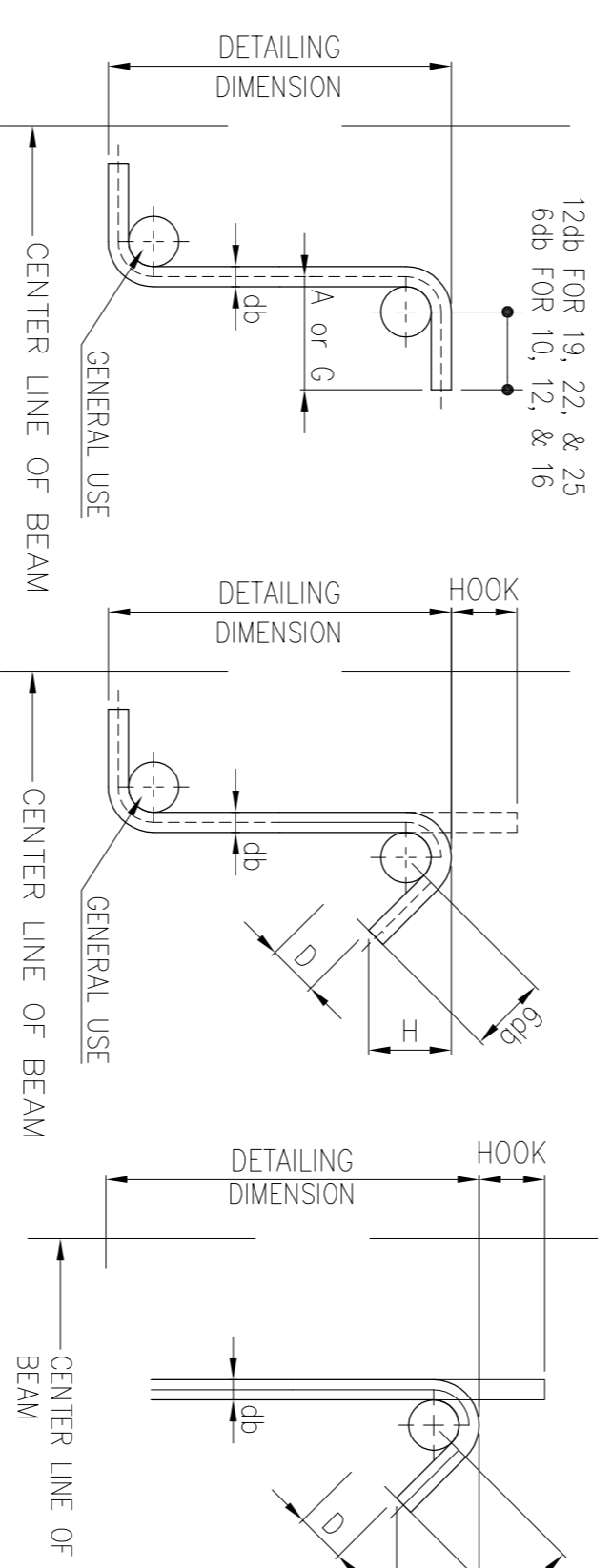


DIMENSION OF 90-DEGREE AND 180-DEGREE HOOKS

RECOMMENDED END HOOKS. ALL GRADES

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

(14) TYPICAL STANDARD STIRRUPS AND THE HOOK DETAIL  
GENERAL USE



STIRRUPS AND THE HOOKS, ALL GRADES

BAR SIZE (mm)	GENERAL USE		SEISMIC USE	
	90° HOOK	135° HOOK	135° HOOK	
10mm∅	40	105mm	55mm	130mm
12mm∅	55	115mm	80mm	170mm
16mm∅	65	155mm	140mm	205mm
20mm∅	145	305mm	145mm	275mm
25mm∅	155	410mm	145mm	365mm

(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.

TABLE A  
DEVELOPMENT LENGTH, LD, IN TENSION  
Fc = 3,000 psi (20.68 Mpa); Fc = 4,000 psi (27.58 Mpa)

BAR SIZE	GENERAL USE			SEISMIC USE		
	Top Bars	Other Bars	Top Bars	Other Bars	Other Bars	Other Bars
10mm∅	525	405	455	350	10mm∅	305
12mm∅	700	540	605	465	12mm∅	385
16mm∅	870	670	755	580	16mm∅	480
20mm∅	1045	805	905	700	20mm∅	575
25mm∅	1395	1075	1205	930	25mm∅	765
28mm∅	1570	1210	1360	1050	28mm∅	860
32mm∅	1770	1360	1535	1180	32mm∅	970

TABLE B  
MINIMUM LENGTH OF COMPRESSION LAP SPLICE (MM)

BAR SIZE	MINIMUM LENGTH OF COMPRESSION LAP SPLICE (MM)
10mm∅	305
12mm∅	385
16mm∅	480
20mm∅	575
25mm∅	765
28mm∅	860
32mm∅	970

**GENERAL NOTES**  
SCALE 1:125



ARCHITECT / ENGINEER :	PROJECT / LOCATION :
RNFTA STRUCTURAL ENGINEER	MULTI-PURPOSE CENTER PILLOT BUILDING, GULUAN, EASTERN SAMAR

OWNER :	NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
IOM / UNICEF	1.	ISSUED FOR BIDDING	06/4/2013	MVA				

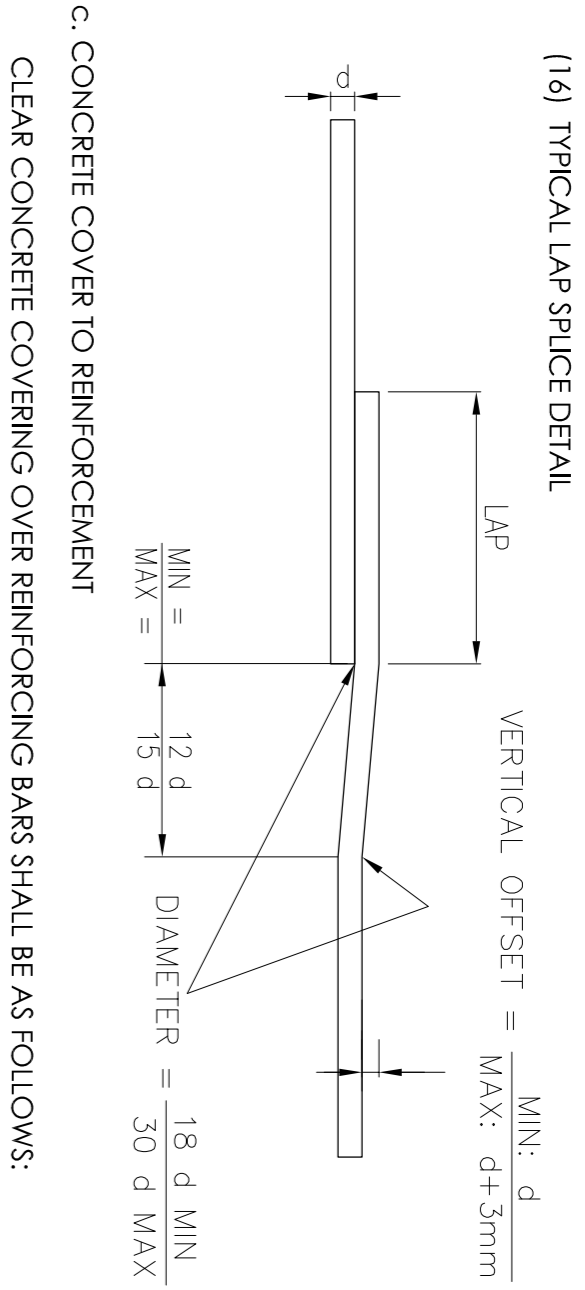


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GENERAL NOTES  
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# GENERAL NOTES



(16) TYPICAL LAP SPLICE DETAIL  
 VERTICAL OFFSET = MAX. d  
 MIN. d  
 $MIN. d = 12d$   
 $MAX. d = 18d$   
 DIAMETER =  $\frac{18d}{30}$  MAX

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 #25MM AND ABOVE	

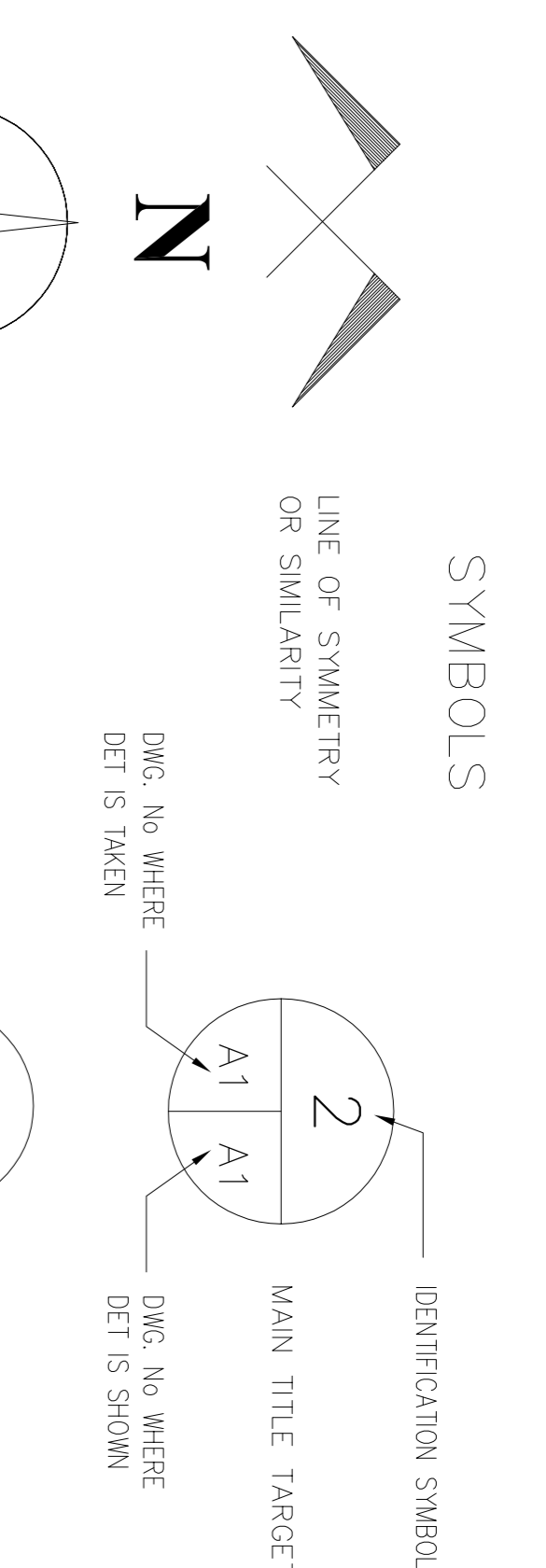
NOTES : A490 BOLTS SHOULD NOT BE HOT-DIPPED GALVANIZED

(4) HOLE SIZE FOR ANCHOR BOLTS

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

## 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 BURRED OR PLACED IN HILLS.
- (4) ALL EXCAVATIONS, BACKFILLING, AND COMPACTATION 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 REMAIN THE EARTH BANKS.
- (10) ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND REMAINING 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.



- (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. AMPUTIDE.
  - (3) ALL CONSTRUCTION JOINTS SHALL BE CLEANED TO REMOVE DUST, CHIPS, OR OTHER FOREIGN MATTERS PRIOR TO PLACING OF ADJACENT CONCRETE.
- d. CONSTRUCTION JOINT
- 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	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. 3.00 M. to 6.00 M.	7 14
ONE-WAY FLOOR SLABS	UNDER 6.00 M. UNDER 3.00 M. 3.00 M. to 6.00 M. OVER 6.00 M.	21 4 7 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.

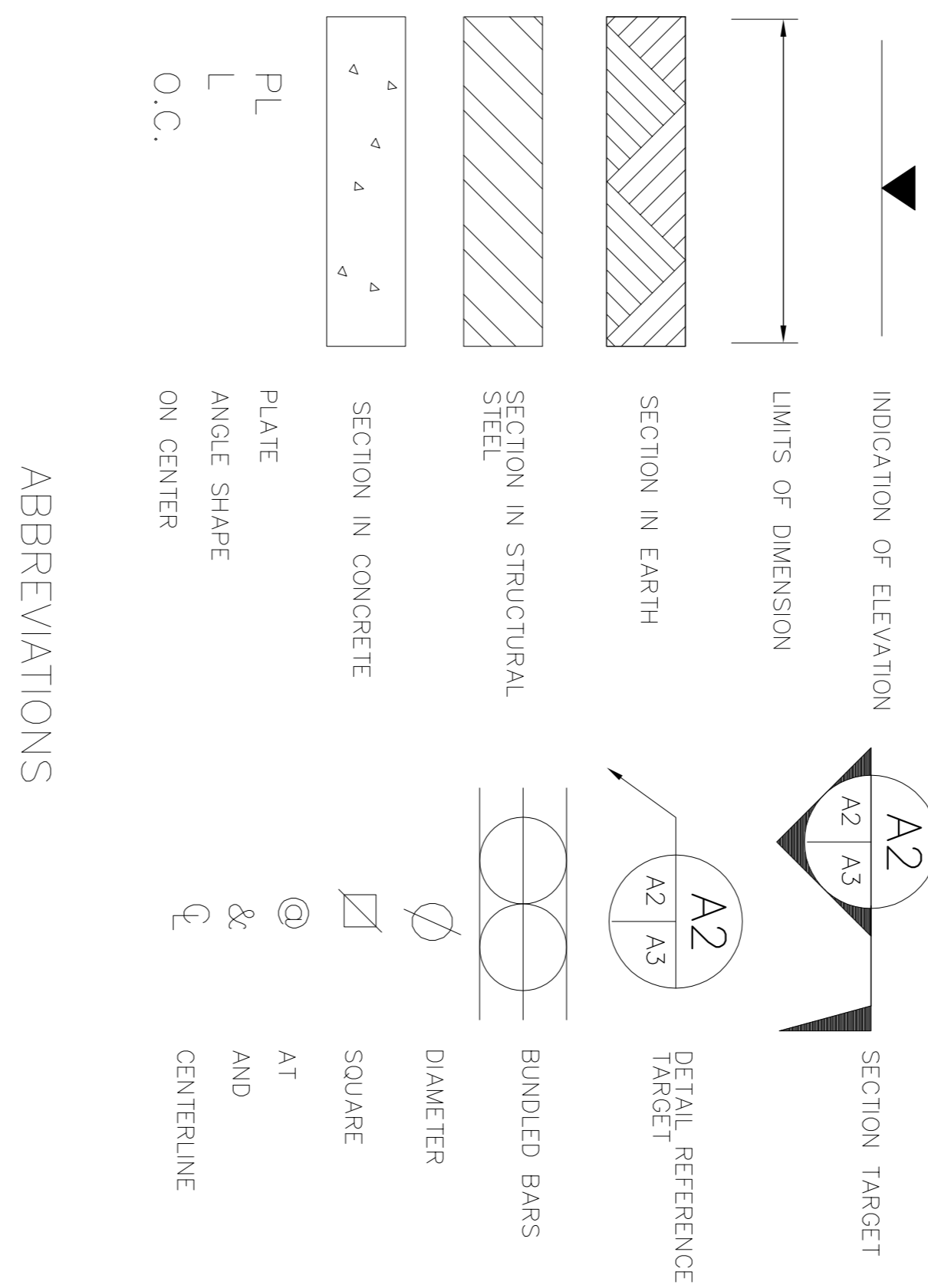
## 3. STRUCTURAL STEEL

- (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, SHAFES, BARS, AND METAL FABRICATIONS ARE ASTM A-36 UNLESS NOTED OTHERWISE.
- (3) SCHEDULE OF BOLTS/NUTS/WASHERS

- (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 (A325SC OR A490SC 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 E70XX 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 GROUGED. 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 WELDS 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 (4.78MM 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.E.I. 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 DRAWING 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 (34,000 PSI)
- (25) FABRICATOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BY THE ENGINEER AND THE OWNER PRIOR TO FABRICATION.

- (1) ALL EXCAVATIONS, BACKFILLING, AND COMPACTATION SHALL BE INSPECTED AND APPROVED BY THE CONTRACTING OFFICER.
- (2) 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.
- (3) NO FOOTING SHALL REST ON FILL.
- (4) MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE 75mm FOR CONCRETE DEPOSITED AGAINST THE GROUND.
- (5) CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER OR SEEPAGE.
- (6) CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING AND SHORING REQUIRED TO SAFELY REMAIN THE EARTH BANKS.
- (7) ALL EXCAVATIONS SHALL BE PROPERLY BACKFILLED. DO NOT PLACE BACKFILL BEHIND REMAINING 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.
- (8) 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.
- (9) 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.



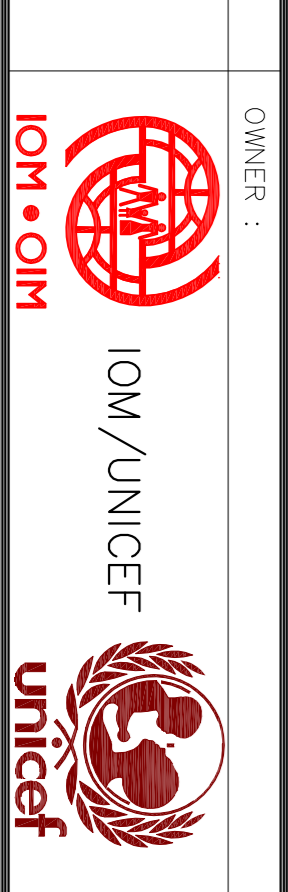
## 1 GENERAL NOTES

SCALE 1:125



ARCHITECT / ENGINEER :  
 RNFPA  
 STRUCTURAL ENGINEER  
 PRC Reg. No. \_\_\_\_\_  
 PTR No. : \_\_\_\_\_  
 Date of Issue : \_\_\_\_\_

PROJECT / LOCATION :  
 MULTI-PURPOSE CENTER  
 PLOT BUILDING, GULUAN, EASTERN SAMAR



NO.	REVISIONS	DATE	BY	NO.	REVISIONS	DATE	BY
1.	ISSUED FOR BIDDING	06/APR/15	MVA				

CHECKED: AOT DRAWN: Mapped FILENAME: 2K1404-E02  
 APPROVED: RNF DATE: 06/APR/15

GENERAL NOTES

SHEET NO. **E ST02**

PROJ. NO. 2K1404

SCALE A1