


STRUCTURE DRAWING

FOR ZONE-3

DRAWING LIST OF STRUCTURE

DWG No.	DRAWING NAME	SCALE
S-01	DRAWING LIST	NTS
S-02	BAR ARRANGEMENT STANDARD	NTS
S-03	FOUNDATION PLAN AND COLUMN PLAN	1 : 200
S-04	GROUND FLOOR GIRDER AND SLAB PLAN, ROOF FLOOR GIRDER PLAN	1 : 200
S-05	FRAMING ELEVATION LINE X1-19 AND LINE Y1	1 : 200
S-06	FRAMING ELEVATION LINE Y2 AND Y3	1 : 200
S-07	COLUMN LIST AND GIRDER LIST	1 : 25

FOR ZONE-3

PROJECT NAME		TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
PROTOTYPE ELEMENTARY SCHOOL BUILDINGS	MINISTRY OF NATIONAL EDUCATION	QUAKE-RESISTANCE SCHOOL BUILDING ONE-STOREY DRAWING LIST	NTS					S-01

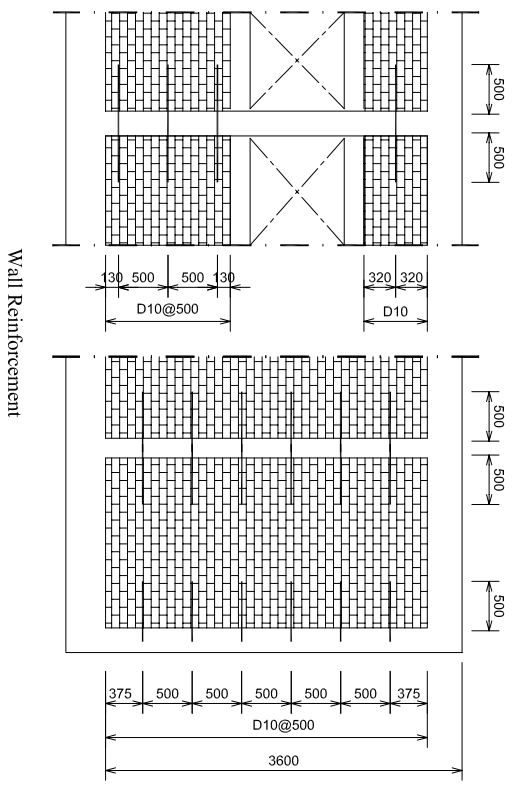
1. Processing and Assembly
 - 1-1 Reinforcing bars with dangerous bends, cracks, splits or other defects may not be used under any circumstances.
 - 1-2 The diameter for deformed reinforcing bar shall be conform to Table-2
 - 1-3 Reinforcing splines shall be lap joint, and the lap length shall be conform to Table-3
 - 1-4 Reinforcing bars shall be cut by de-compression zone
 - 1-4 Reinforcing bars shall be cut by de-compression zone
 - 1-5 Gas cutting is permitted where unavoidable. If approved by the Engineer
 - 1-5 Spot welding and arc strike is not permitted for reinforcing bars.
 - 1-6 Install hooks at each end of reinforcing bars
 - (1) The main reinforcing bars located at the four corners of a column at lap joint, and at the top of column at the highest story
 - (2) Hoops, stirrup and yoke bar

2. Minimum thickness of cover concrete for reinforcing bars

Type of structural elements	Minimum thickness of cover concrete	
	With finishing	No finishing
Slab and walls	20mm	30mm
Elements not in contact with soil	40mm	40mm
Column	40mm	40mm
Beam	40mm	40mm
Foundation, retaining wall	50mm	70mm

3. Minimum clearance between the reinforcing bars

Clearance shall be more than 25mm and 1.25 times the maximum size of coarse aggregate and 1.5 times of largest outside diameter of reinforcing bar



Wall Reinforcement

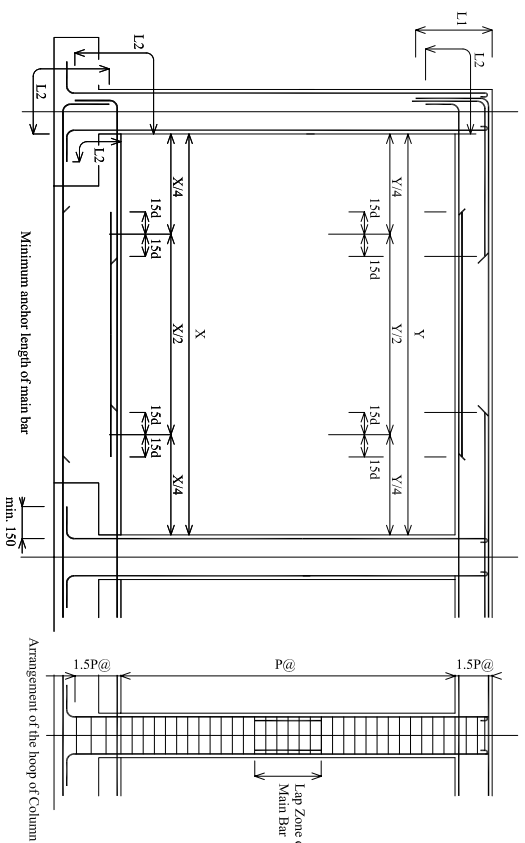
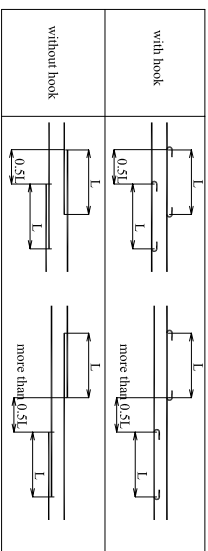
Table-2 Minimum diameter for bending of reinforcing bars

Bending Shape	Under femur Dia.	19 to 38mmDia.	Previous location
180° 	More than 3d	More than 4d	Main bars for column and beam etc.
135° 	More than 3d	More than 4d	Stirrup,loop,spiral bar
90° 	More than 3d	More than 4d	Stirrup,loop,spiral bar
Less than 90° 	More than 4d	More than 6d	Stirrup,loop,spiral bar

Table-3 Minimum lap length and Anchor length

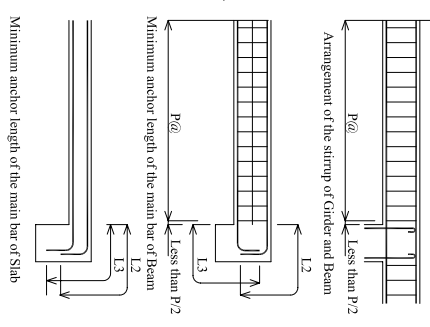
Concrete Design strength	without hook			with hook		
	L1	L2	L3	L1	L2	L3
Over Fc28=21N/mm2 but under Fc28=27N/mm2	40d	35d	Small Beam 25d	10d and over 150mm	30d	25d
					25d	15d
					15d	15d

Table-4 Location of neighboring joints



Minimum anchor length of main bar

Arrangement of the hoop of Column



FOR ZONE-3

PROJECT NAME

PROTOTYPE ELEMENTARY SCHOOL BUILDINGS



MINISTRY OF NATIONAL EDUCATION

TITLE

QUAKE-RESISTANCE SCHOOL BUILDING ONE-STORY BAR ARRANGEMENT STANDARD

SCALE

NTS

DATE

DESIGNED

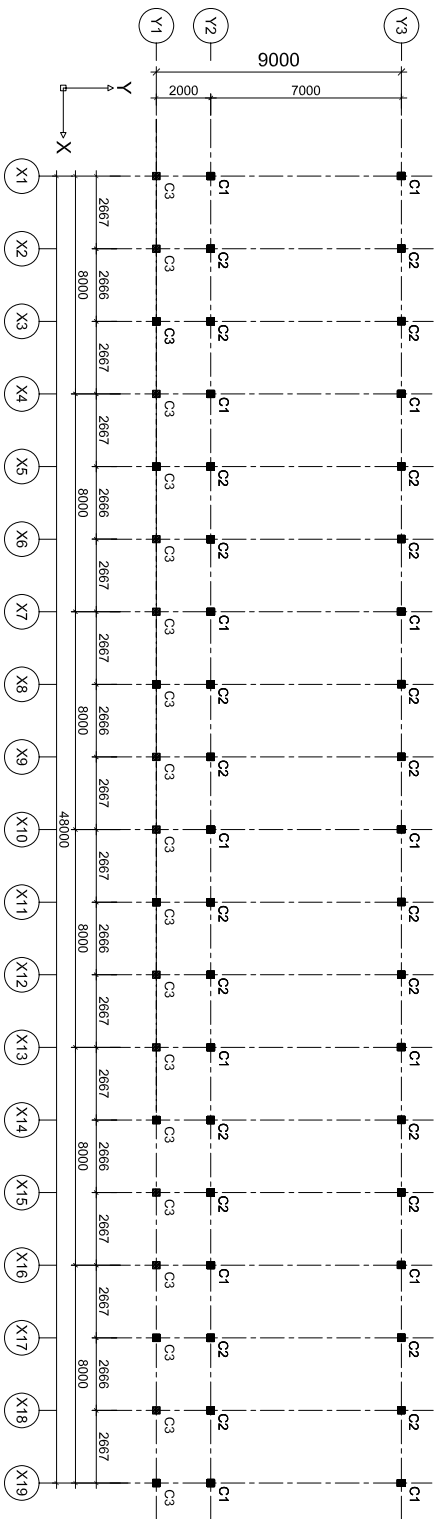
CHECKED

APPROVED

DWG No.

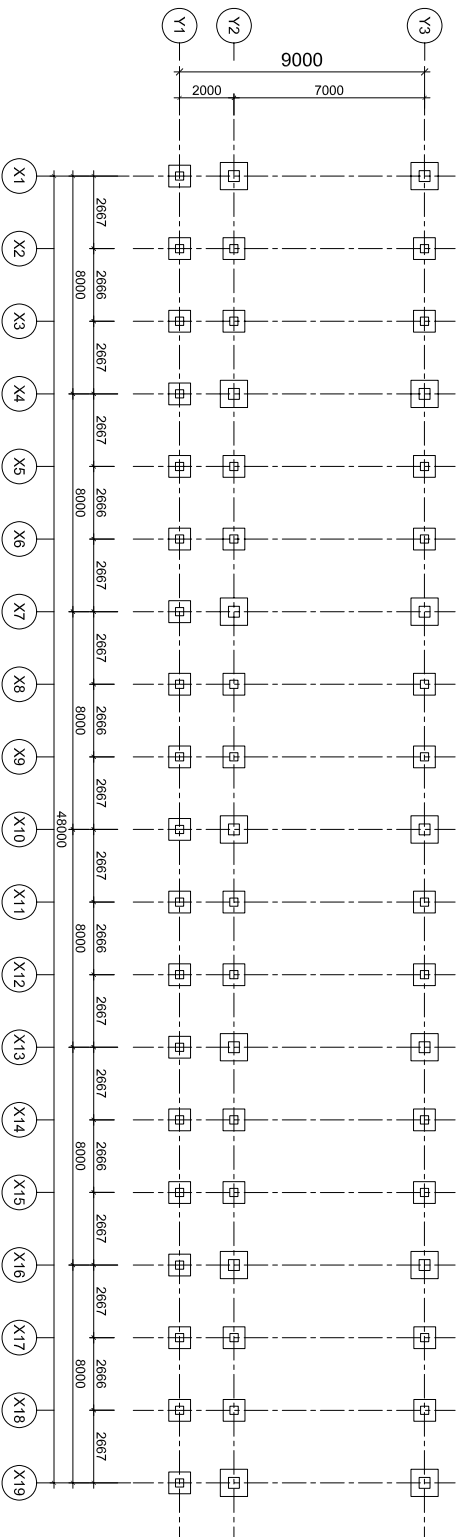
S-02

MEMBER LIST		
TYPE	DIMENTION	QUALITY
C1	270X270	K-225
C2	270X270	K-225
C3	270X270	K-225



○ COLUMN PLAN
SCALE 1 : 200

FOUNDATION TYPE IS DETERMINED BY EACH SITE. FOUNDATION SHOULD BE BUILT ON REINFORCED CONCRETE



○ FOUNDATION PLAN
SCALE 1:200

FOR ZONE-3

PROJECT NAME

PROTOTYPE ELEMENTARY SCHOOL BUILDINGS



MINISTRY OF NATIONAL EDUCATION

TITLE

QUAKE-RESISTANCE SCHOOL BUILDING ONE-STORY FOUNDATION PLAN AND COLUMN PLAN

SCALE

1 : 200

DATE

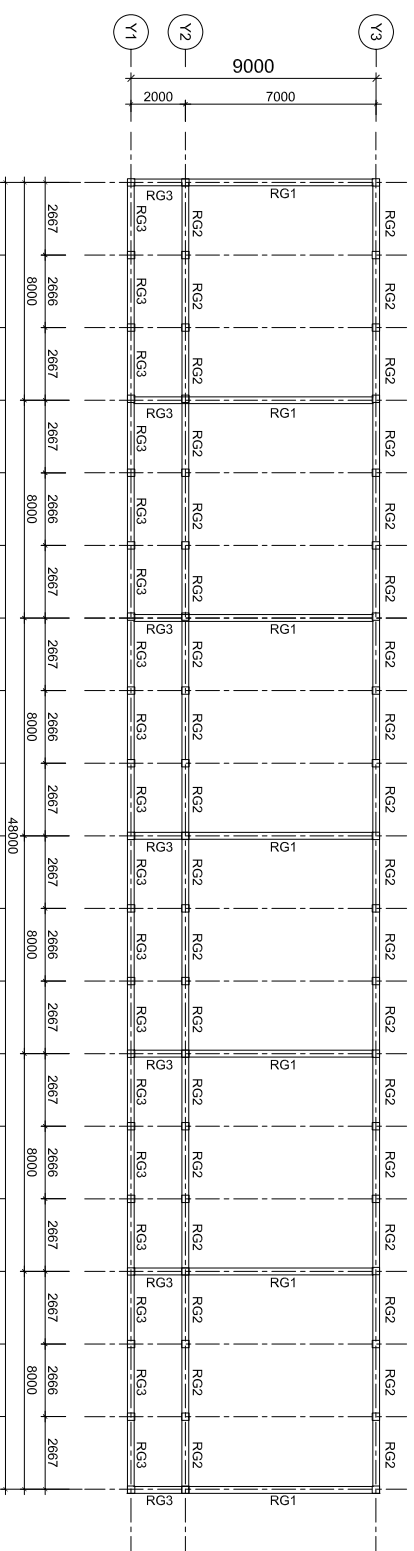
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DWG No.

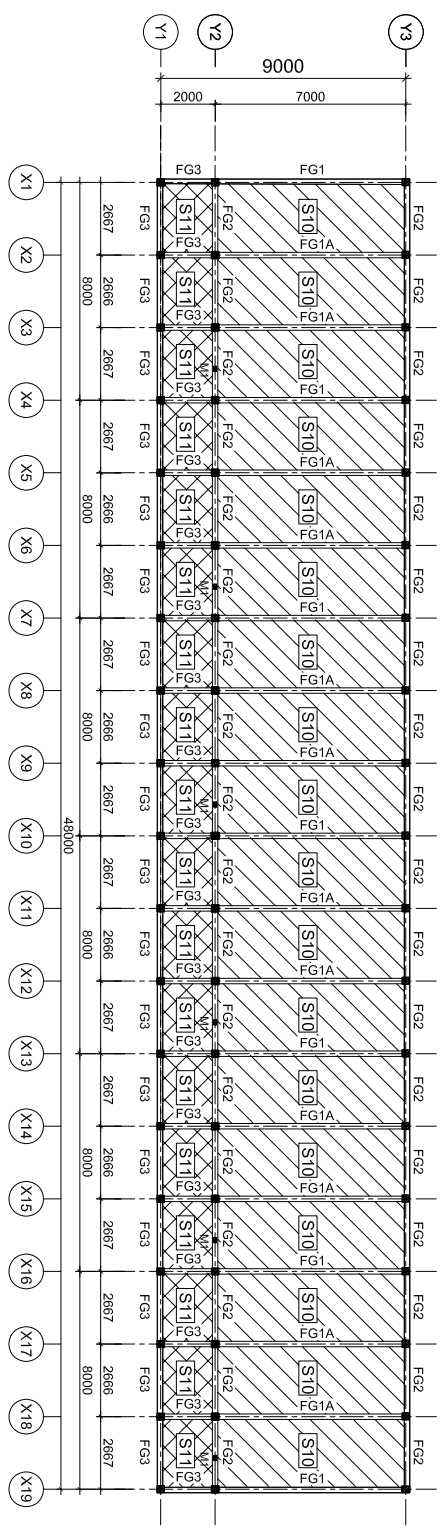
S-03



ROOF FLOOR GIRDER PLAN

SCALE 1:200

MEMBER LIST		
TYPE	DIMENTION	QUALITY
RG1	200X350	K-225
RG2	200X350	K-225
RG3	200X350	K-225



GROUND FLOOR GIRDER AND SLAB PLAN

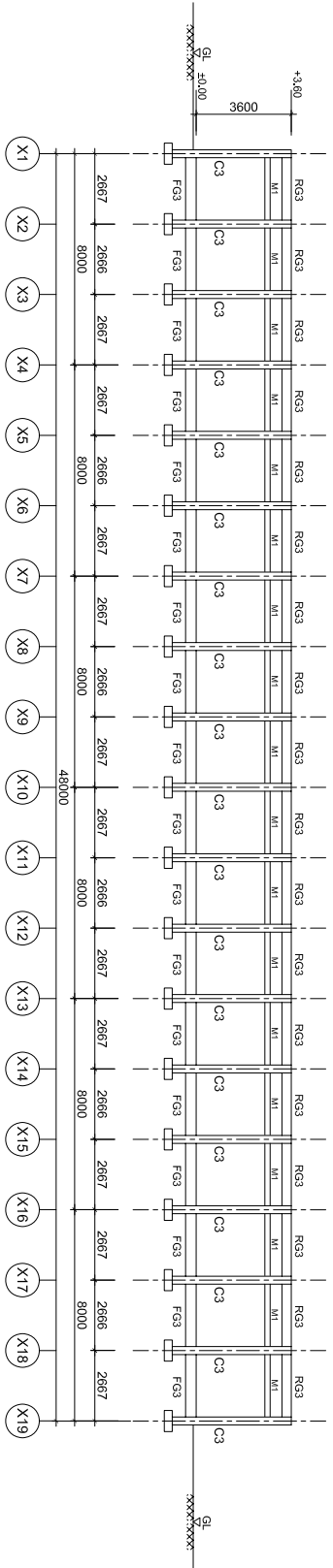
SCALE 1:200

MEMBER LIST		
TYPE	DIMENTION	QUALITY
FG1	250X450	K-225
FG1A	250X400	K-225
FG2	250X400	K-225
FG3	200X400	K-225
M1	200X110	K-225

MEMBER LIST		
TYPE	DIMENTION	QUALITY
S10	100	K-175
S11	100	K-175

FOR ZONE-3

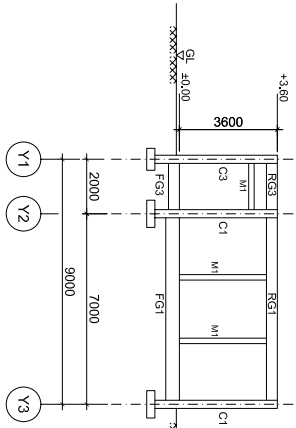
PROJECT NAME	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
PROTOTYPE ELEMENTARY SCHOOL BUILDINGS	QUAKE-RESISTANCE SCHOOL BUILDING ONE-STOREY GROUND FLOOR GIRDER AND SLAB PLAN, ROOF FLOOR GIRDER PLAN	1:200					S-04
 MINISTRY OF NATIONAL EDUCATION							



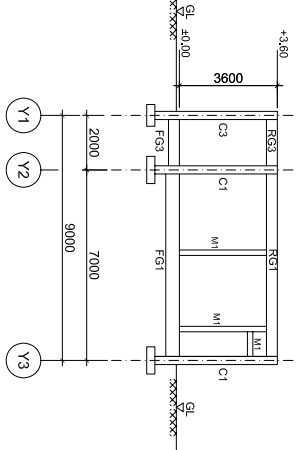
LINE Y1
SCALE 1:200

MEMBER LIST		
TYPE	DIMENTION	QUALITY
RG1	200X350	K-225
RG2	200X350	K-225
RG3	200X350	K-225

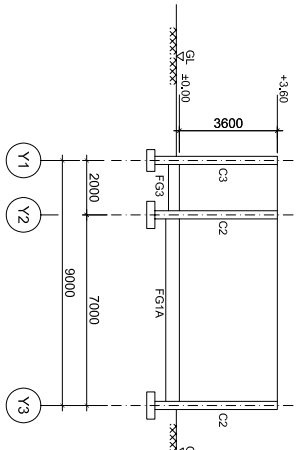
MEMBER LIST		
TYPE	DIMENTION	QUALITY
FG1	250X450	K-225
FG1A	250X400	K-225
FG2	250X400	K-225
FG3	200X400	K-225
M1	200X110	K-225



LINE X1 AND X19
SCALE 1:200



LINE X4, X7, X10, X13 AND X16
SCALE 1:200



LINE X2, X3, X5, X6, X8, X9, X11, X12, X14, X15, X17 AND X18
SCALE 1:200

MEMBER LIST		
TYPE	DIMENTION	QUALITY
C1	270X270	K-225
C2	270X270	K-225
C3	270X270	K-225

FOR ZONE-3

PROJECT NAME

PROTOTYPE ELEMENTARY SCHOOL BUILDINGS



MINISTRY OF NATIONAL EDUCATION

TITLE

QUAKE-RESISTANCE SCHOOL BUILDING ONE-STOREY FRAMING ELEVATION LINE X1-X19 AND LINE Y1

SCALE

1:200

DATE

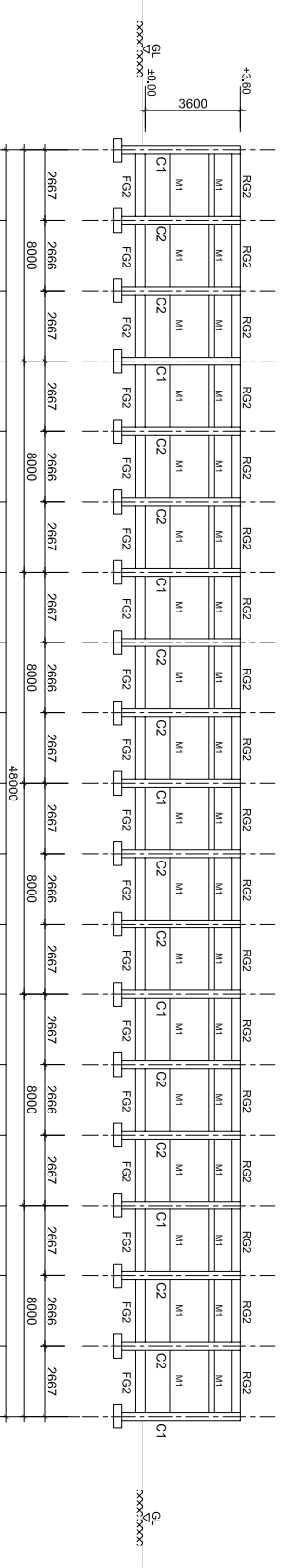
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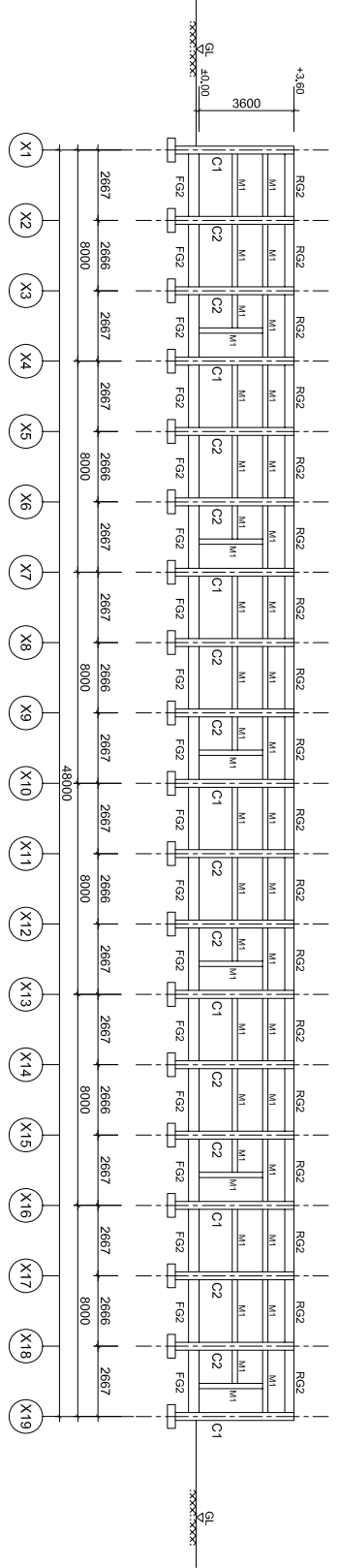
S-05



LINE Y3
SCALE 1:200

MEMBER LIST		
TYPE	DIMENTION	QUALITY
RG1	200X350	K-225
RG2	200X350	K-225
RG3	200X350	K-225

MEMBER LIST		
TYPE	DIMENTION	QUALITY
FG1	250X450	K-225
FG1A	250X400	K-225
FG2	250X400	K-225
FG3	200X400	K-225
M1	200X110	K-225



LINE Y2
SCALE 1:200

MEMBER LIST		
TYPE	DIMENTION	QUALITY
C1	270X270	K-225
C2	270X270	K-225
C3	270X270	K-225

FOR ZONE-3

PROJECT NAME	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
PROTOTYPE ELEMENTARY SCHOOL BUILDINGS	QUAKE-RESISTANCE SCHOOL BUILDING ONE-STOREY FRAMING ELEVATION LINE Y2 AND Y3	1:200					S-06

PROTOTYPE ELEMENTARY SCHOOL BUILDINGS



MINISTRY OF NATIONAL EDUCATION

QUAKE-RESISTANCE SCHOOL BUILDING ONE-STOREY FRAMING ELEVATION LINE Y2 AND Y3

SCALE 1:200

DATE

DESIGNED

CHECKED

APPROVED

DWG No.

S-06

LIST OF THE ROOF FLOOR GIRDER

MARK	RG1			RG2			RG3		
POSITION	END	CENTER	END	CENTER	END	CENTER	END	CENTER	
SECTION									
TOP BAR	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	
BOTTOM BAR	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	
STRIRUP	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	

LIST OF THE GROUND FLOOR GIRDER

MARK	FG1			FG1A			FG2			FG3		
POSITION	END	CENTER	END	CENTER	END	CENTER	END	CENTER	END	CENTER	END	CENTER
SECTION												
TOP BAR	3-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16
BOTTOM BAR	2-D16	3-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16	2-D16
STRIRUP	□-D10 - 150	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200	□-D10 - 200

LIST OF THE COLUMN (GROUND-ROOF)

MARK	C1	C2	C3
POSITION	ALL SECTION	ALL SECTION	ALL SECTION
SECTION			
DIMENSION	270X270	270X270	270X270
MAIN BAR	4-D16	4-D16	4-D16
HOOP	□-D10 -100	□-D10 -100	□-D10 -100

LIST OF THE HEADER

MARK	M1
POSITION	ALL SECTION
SECTION	
DIMENSION	200X110
MAIN BAR	2-D10
HOOP	□-D10 -200

Note : Material
 Concrete K-225
 Main Rebar fy : 370 MPa
 Confinement Rebar fy : 240 MPa

FOR ZONE-3

PROJECT NAME

PROTOTYPE ELEMENTARY SCHOOL BUILDINGS



MINISTRY OF NATIONAL EDUCATION

TITLE

QUAKE-RESISTANCE SCHOOL BUILDING ONE-STORY COLUMN LIST AND GIRDER LIST

SCALE

1 : 25

DATE

DESIGNED

CHECKED

APPROVED

DWG No.

S-07