UNITED NATIONS HIGH COMMISSIONER
FOR REFUGEES (UNHCR)

CONSTRUCTION OF GOVERNMENT SCHOOLS UNDER RAHA PROGRAMME-2022 IN DISTRICT HARIPUR AND MANSEHRA

DRAWINGS

OCTOBER, 2022

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED
NESPAK HOUSE, Sector-G, 5/2, P. O. Box 2461, Islamabad
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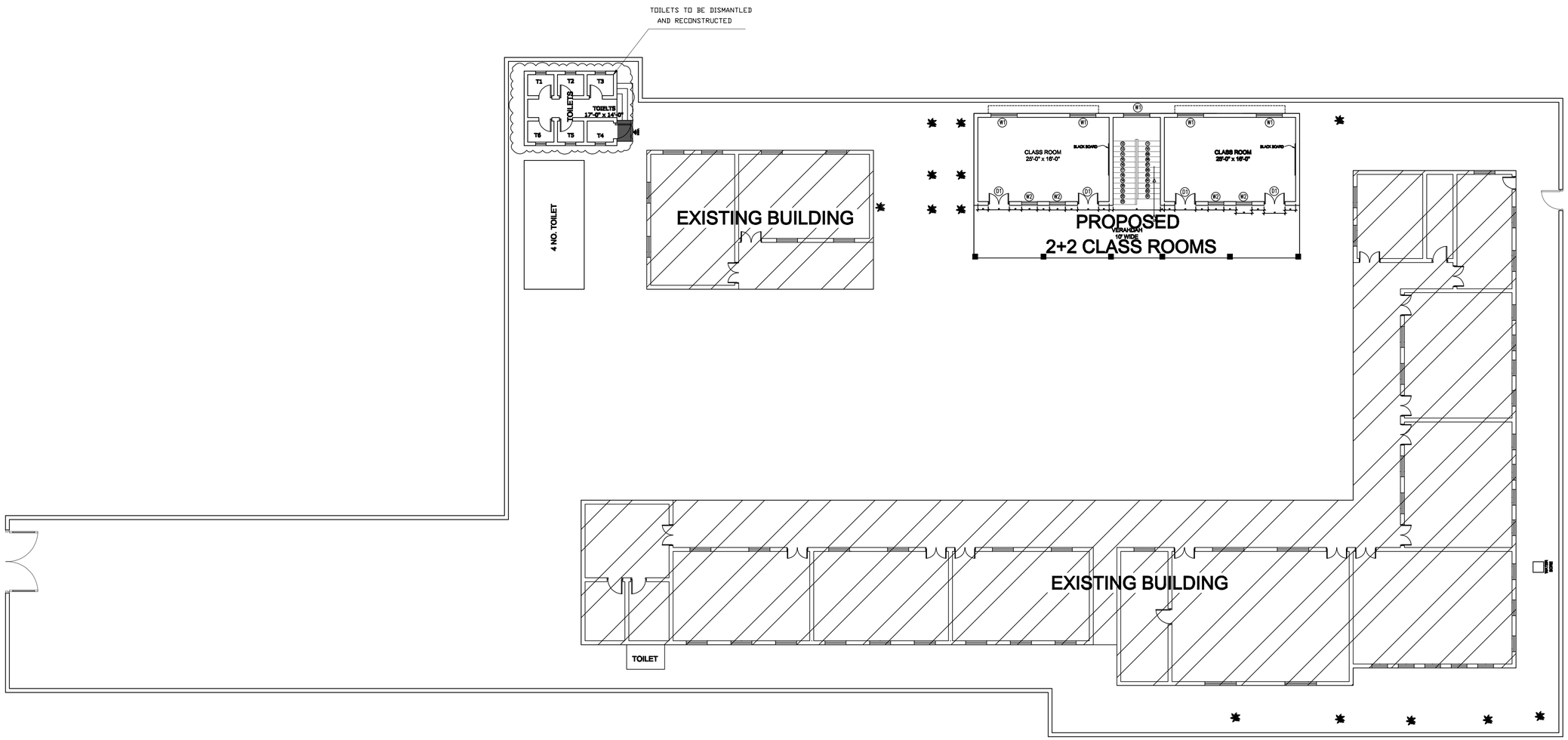
Clearance Code	4199/321/M/183(22)	Doc No.	4199-03	Rev No.	0

1. GOVT. GIRLS HIGH SCHOOL
DHINDA, HARIPUR



LEGEND

EXITING BUILDING

PROPOSED

DEMOLISHED

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

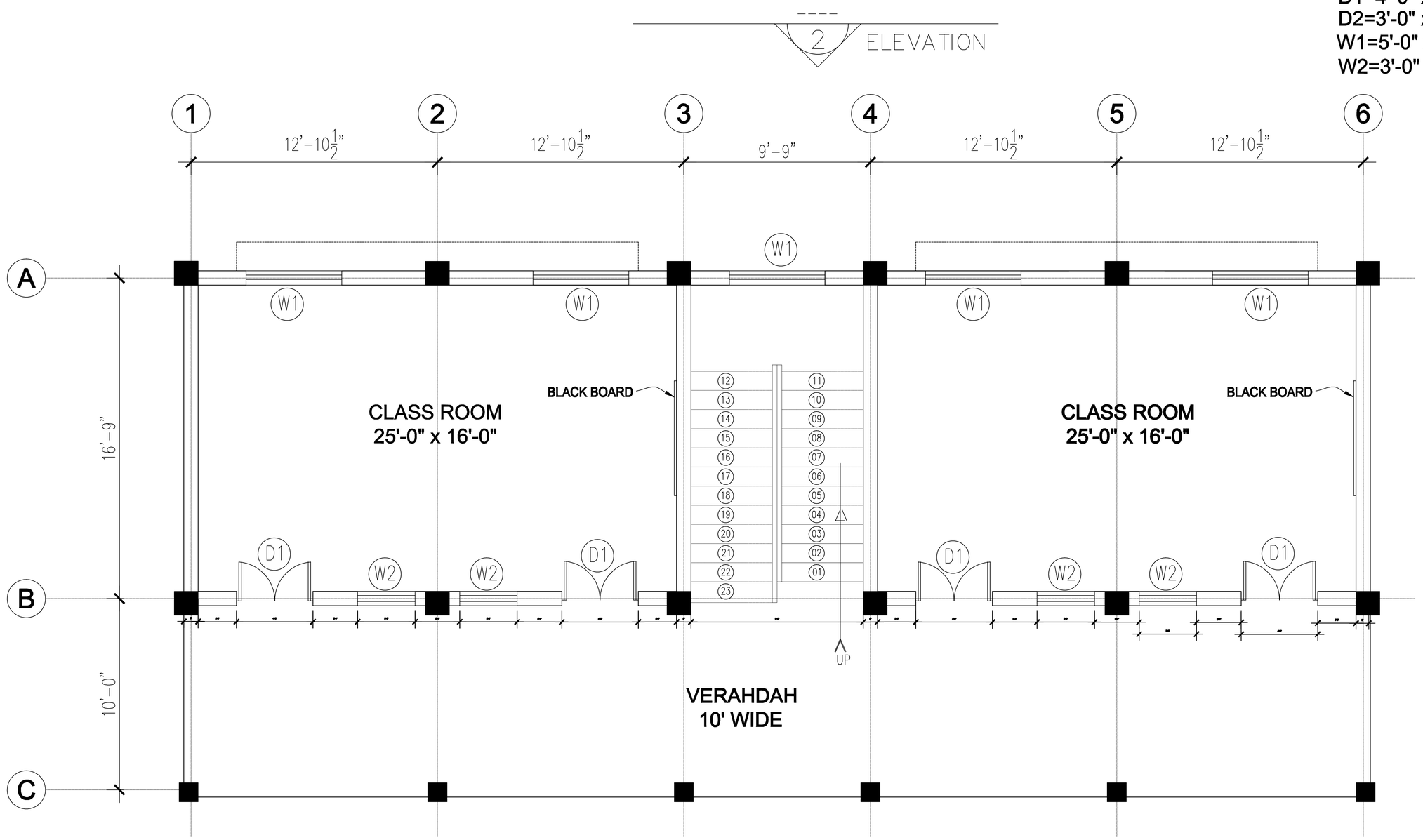
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

ARCHITECTURAL LAYOUTS
SITE PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.	OCT.,2022	4199/322/C/01B01	0
SUBM. WAJIHA REHAN			

D1=4'-0" x 9'-6"
D2=3'-0" x 7'-0"
W1=5'-0" x 6'-3"
W2=3'-0" x 6'-3"



GROUND FLOOR PLAN

1 ELEVATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

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CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
ARCHITECTURAL LAYOUTS
GROUND FLOOR PLAN

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CKD.			
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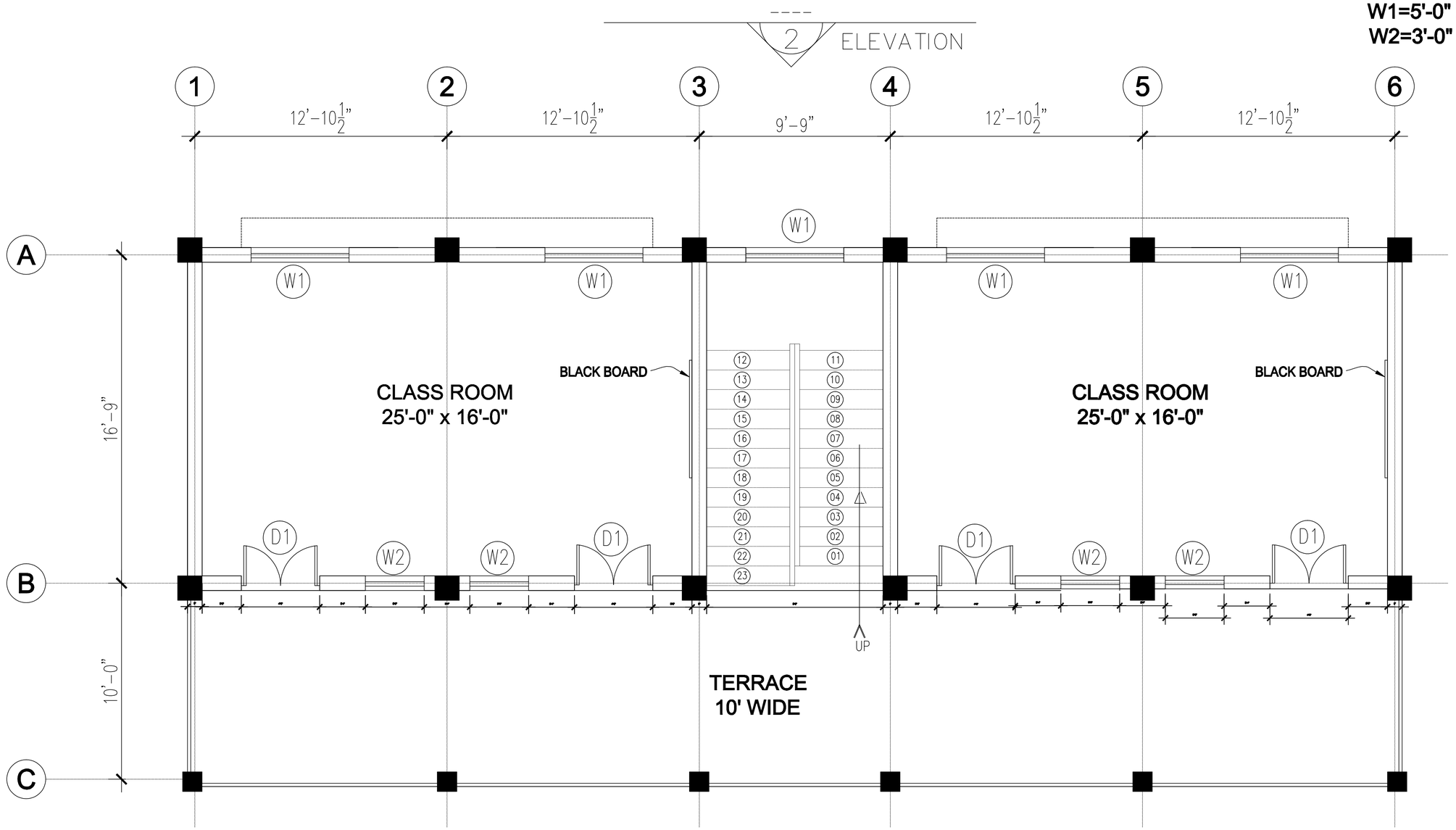

FIRST FLOOR PLAN

1 ELEVATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
ARCHITECTURAL LAYOUTS
FIRST FLOOR PLAN

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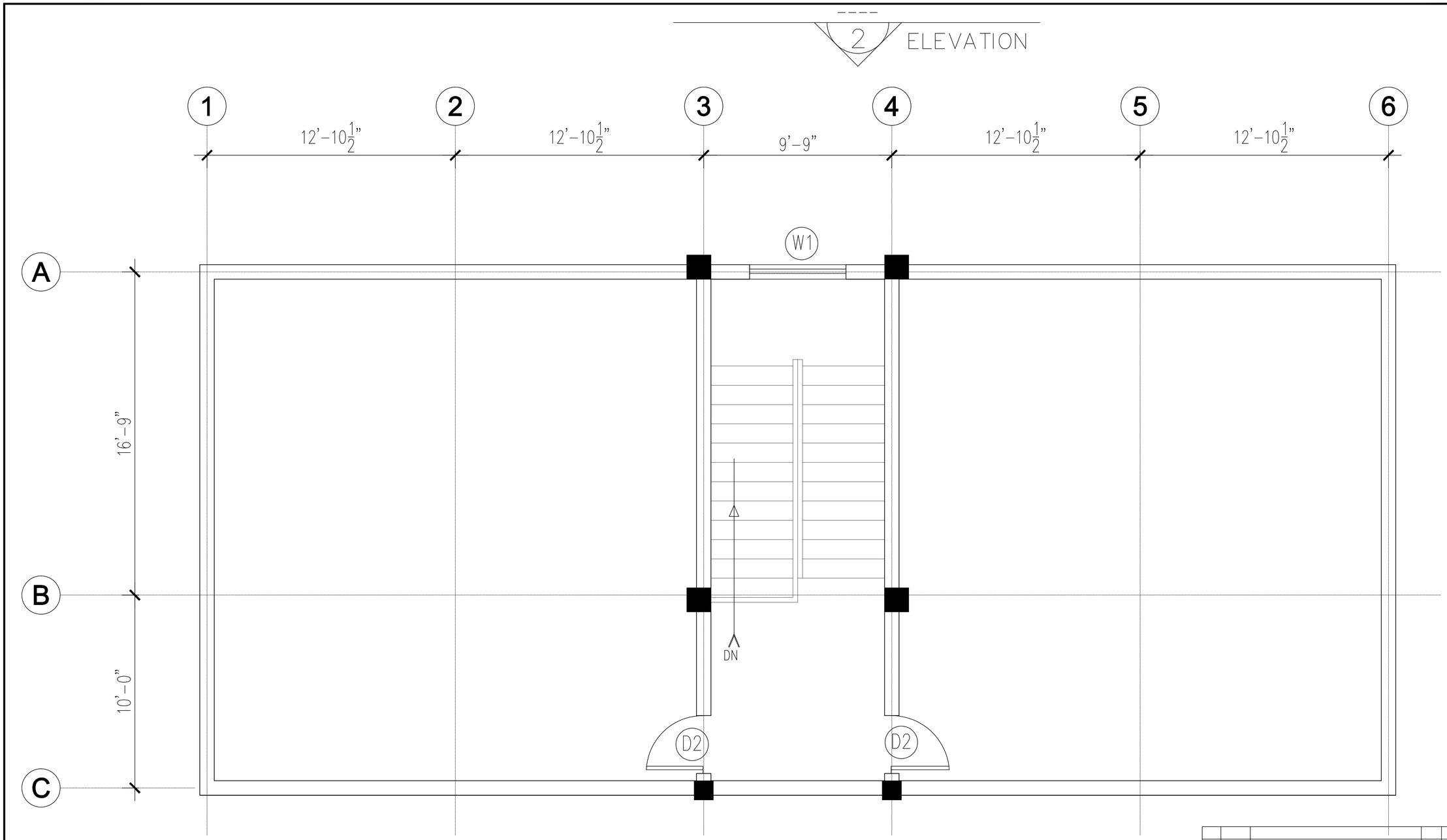
SUBM. WAJIHA REHAN			



ROOF PLAN

1 ELEVATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
ARCHITECTURAL LAYOUTS
ROOF PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

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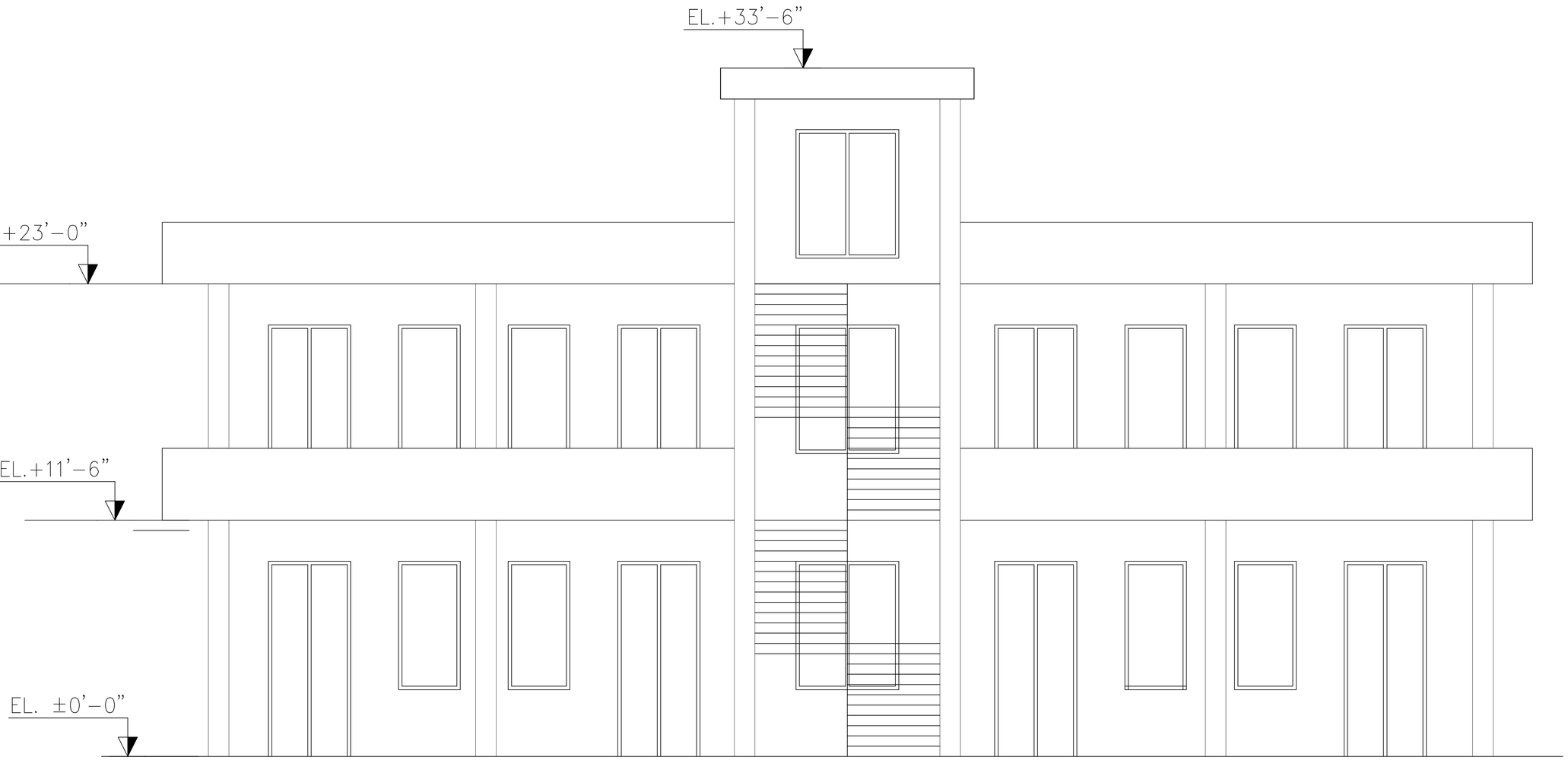
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/01B04	0



FRONT ELEVATION-1

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
ARCHITECTURAL LAYOUTS
FRONT ELEVATION - 1

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

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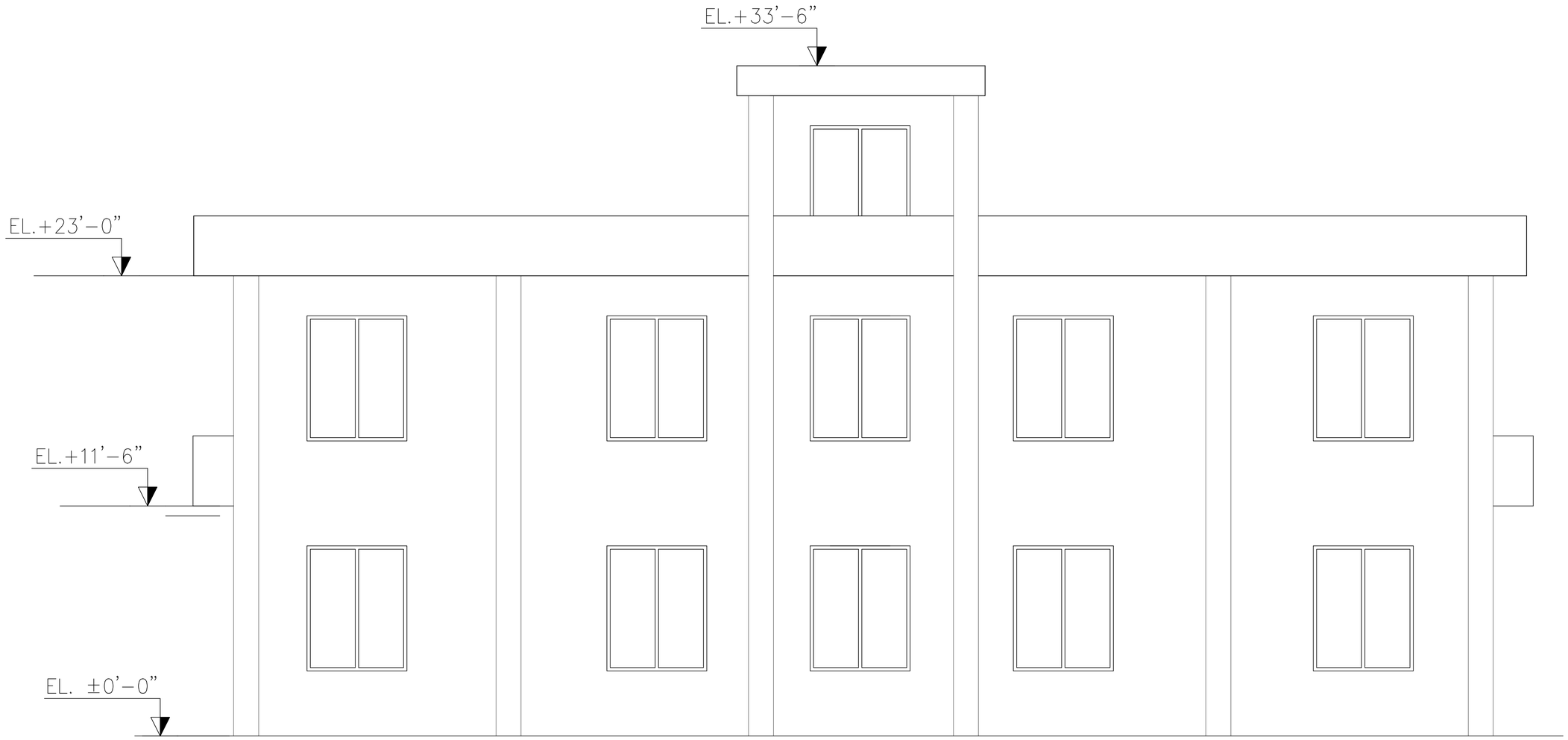
FILE	DATE	DRAWING NO.	REV.
CKD.	OCT.,2022	4199/322/C/01B05	0
SUBM. WAJIHA REHAN			



ELEVATION-2

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
ARCHITECTURAL LAYOUTS
ELEVATION - 2

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

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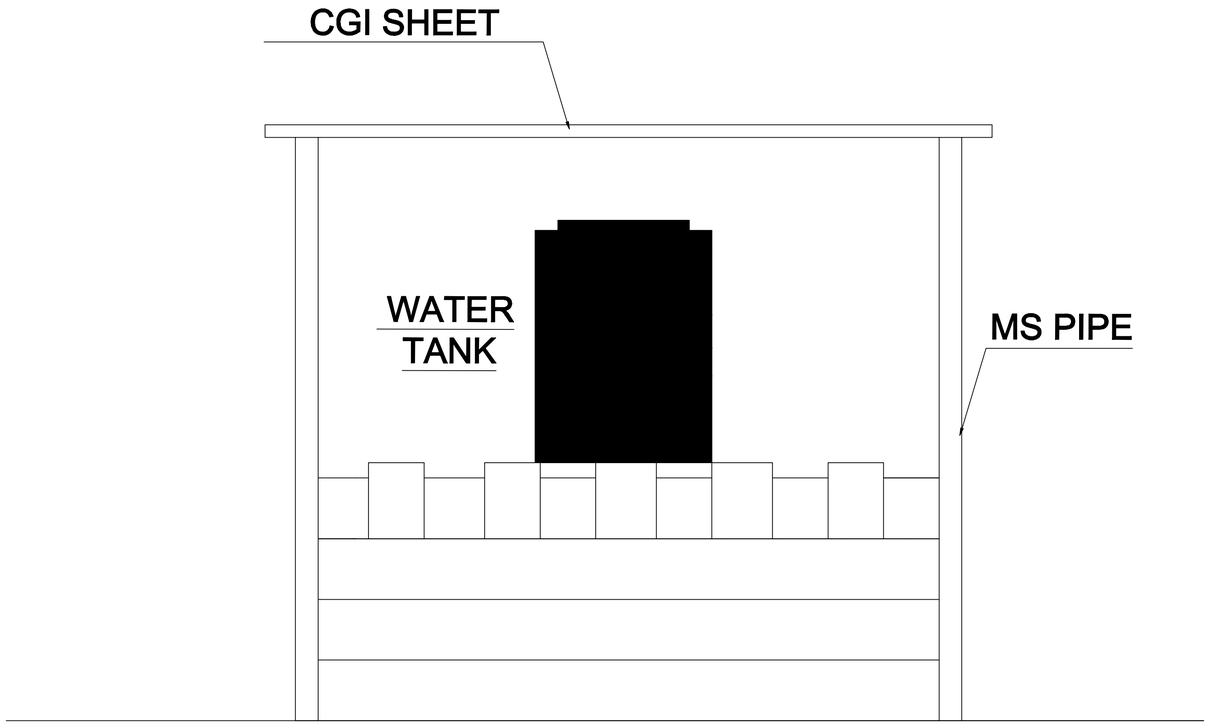
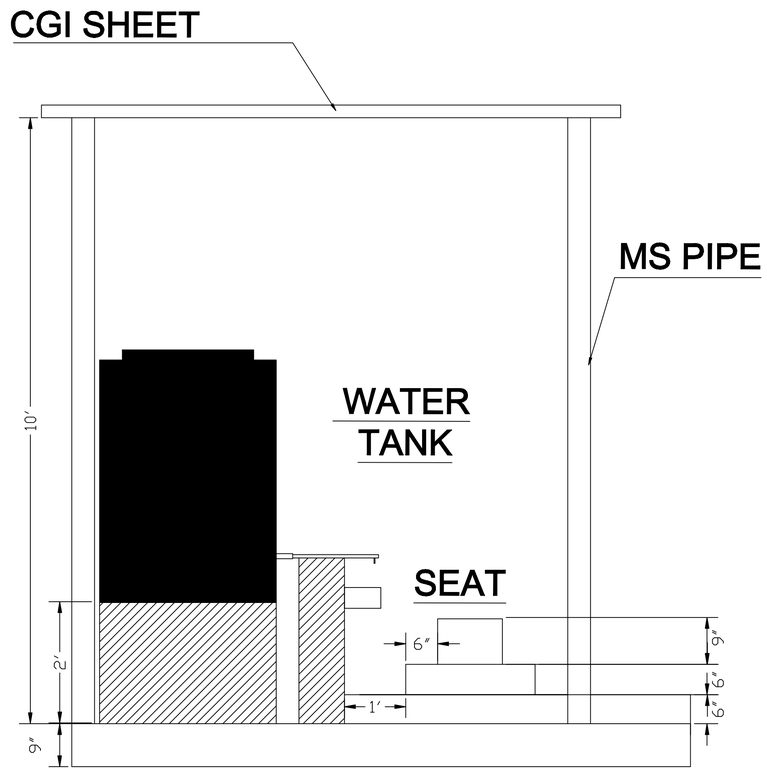
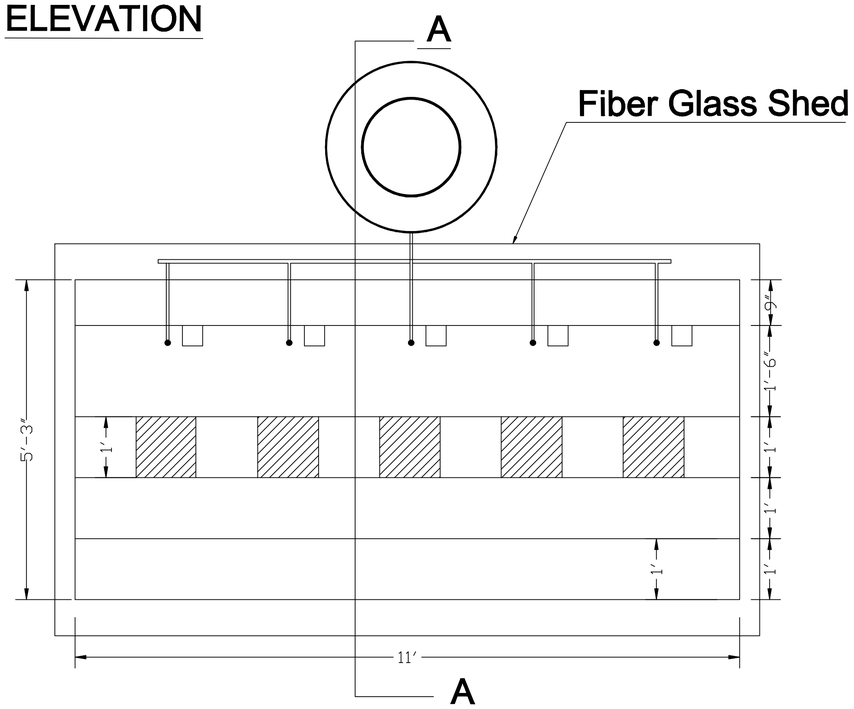
FILE	DATE	DRAWING NO.	REV.
CKD.		4199/322/C/01B06	0
SUBM. WAJIHA REHAN	OCT.,2022		



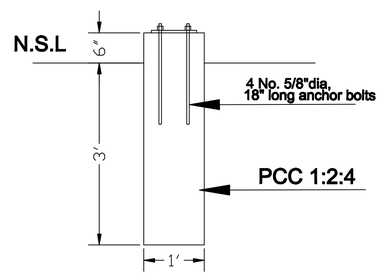
ELEVATION



SECTION AT A-A



PLAN OF WASH FACILITATION



TYPICAL FOUNDATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

ARCHITECTURAL LAYOUTS

TYPICAL DETAIL OF WASH FACILITY

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

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DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.			
SUBM. WAJIHA REHAN			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/322/C/01B07	0

A. GENERAL

1. NOTES GIVEN ON THIS DRAWING ARE APPLICABLE TO ALL STRUCTURAL DRAWINGS UNLESS OTHERWISE NOTED. NOTES WRITTEN ON ANY OTHER DRAWING SHALL BE APPLICABLE TO THAT PARTICULAR DRAWING ONLY UNLESS OTHERWISE CROSS REFERRED.
2. SYSTEM OF UNITS IS FPS.
3. ALL LEVELS MARKED ON THE DRAWINGS ARE LEVELS OF STRUCTURAL ELEMENTS. FINISH LEVELS SHALL BE IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND STABILITY OF THE STRUCTURE AND ALL TEMPORARY WORKS DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL INFORM THE ENGINEER ABOUT ANTICIPATED CONSTRUCTION LOADS IN THE STRUCTURE AND OBTAIN ENGINEER'S APPROVAL THEREOF BEFORE COMMENCING THE WORK.
6. THE CONTRACTOR SHALL CO-ORDINATE ALL DRAWINGS OF ALL DISCIPLINES FOR ALL ITEMS INCLUDING BUT NOT LIMITED TO SIZES AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK AND SHALL BRING TO THE NOTICE OF THE ENGINEER DISCREPANCIES, IF ANY, FOR HIS INSTRUCTIONS, PRIOR TO THE START OF WORK.
7. THE CONTRACTOR SHALL VERIFY LAYOUT, CONFIGURATION, ALL DIMENSIONS AND LEVELS PERTAINING TO EXISTING WORKS BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ADOPT ADEQUATE AND APPROPRIATE MEASURES SO AS NOT TO DAMAGE THE EXISTING WORKS.
8. THE CONTRACTOR SHALL EXERCISE UTMOST CARE AND PRECAUTION DURING THE WORKS, AGAINST ANY MISHAPS OR ACCIDENTS, FOR WHICH THE CONTRACTOR SHALL BE WHOLLY AND SOLELY RESPONSIBLE. THE CONTRACTOR SHALL INDEMNIFY THE OWNER AGAINST ANY ACCIDENTS AND ANY LOSSES THEREFROM AND SHALL REPAIR AND RECTIFY THEM AT HIS OWN COST AND TIME.
9. THE CONTRACTOR SHALL COORDINATE SCHEDULE OF CONSTRUCTION WITH SUPPLY AND INSTALLATION OF EQUIPMENT.
10. PROVISIONS SHALL BE MADE FOR INSTALLATION OF EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS.
11. ANY DEPARTURES/DEVIATIONS DESIRED FROM THE DESIGN OR SPECIFICATIONS, OR SOLUTIONS TO ANY PROBLEMS ENCOUNTERED, SHALL BE GOT APPROVED FROM THE ENGINEER PRIOR TO IMPLEMENTATION. UNAPPROVED DEPARTURES/DEVIATIONS MAY LEAD TO REJECTION/REPLACEMENT OF THE ENTIRE WORK AT THE CONTRACTOR'S COST.
12. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO SPECIFICATIONS OF THE CONTRACT. IN ABSENCE OF ANY EXPRESS OR IMPLIED SPECIFICATION IN THE CONTRACT, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO RELEVANT AMERICAN STANDARDS AND SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
13. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULES FOR ENGINEER'S APPROVAL AND OBTAIN HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF SHOP DRAWINGS AND BAR BENDING SCHEDULES. THE ENGINEER'S APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY.

B. FOUNDATION AND EARTHWORK

1. THE CONTRACTOR SHALL STUDY THE AVAILABLE GEOTECHNICAL INVESTIGATION REPORT BEFORE COMMENCING THE WORK.
2. FOUNDATION DESIGN IS BASED ON THE RECOMMEDATION LAID DOWN IN GEOTECHNICAL INVESTIGATION REPORT.
3. TERMITE CONTROL TREATMENT SHALL BE CARRIED OUT AS PER SPECIFICATIONS.
4. THE TYPE AND COMPACTION OF SOIL BELOW GRADE SLAB SHALL BE AS PER JOB SPECIFICATIONS.
5. NO FOOTING SHALL BE PLACED ON FILL. HOWEVER, AREAS WHERE FILLING BELOW THE FOOTINGS BECOMES INEVITABLE OR OVER-EXCAVATION (IF ANY), SHALL BE FILLED WITH CONCRETE CLASS 'E' WITH PRIOR APPROVAL OF THE ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING SYSTEM IF AND WHERE SO REQUIRED DURING CONSTRUCTION.
7. ALL STRUCTURAL CONCRETE SURFACES AGAINST WHICH EARTH IS TO BE FILLED SHALL BE COATED WITH BITUMEN (10/20 GRADE) APPLIED HOT AT THE RATE OF 20 lb/100SFT PER COAT, EXCEPT FOR CONCRETE CLASS 'D' AND 'E'.
8. BACKFILLING AND COMPACTION SHALL BE CARRIED OUT EQUALLY ON BOTH SIDES OF PLINTH BEAMS TO AVOID IMBALANCE OF LATERAL EARTH PRESSURE.
9. THE CONTRACTOR SHALL SUPPLY AND ERECT ADEQUATE SHORING AND SUPPORT THE SIDES OF ALL EXCAVATIONS WHERE REQUIRED TO SAFEGUARD WORKMEN AND PROTECT ANY ADJACENT STRUCTURES.
10. EXISTING UNDERGROUND SERVICES, REQUIRED TO BE LEFT IN POSITION, SHALL BE CAREFULLY PROTECTED DURING EXCAVATION AND BACKFILLING OPERATIONS.
11. EXCAVATIONS ADJACENT TO EXISTING STRUCTURES AND/OR UNDERGROUND SERVICES SHALL BE MADE BY HAND.

C. REINFORCED / PLAIN CEMENT CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS FOR EXECUTION OF WORKS (1967), GOVERNMENT OF WEST PAKISTAN, BEING REFERENCE SPECIFICATIONS FOR KP-MRS ITEMS..
2. ALL CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ASTM STANDARDS C31, C39, C172 & SPECIFICATIONS AND THE MINIMUM CUBE/CYLINDER CRUSHING STRENGTH OF CONCRETE AT 28 DAYS SHALL BE AS FOLLOWS. TESTING OF CLASS 'D' & 'E' SHALL BE PERFORMED IF SO DIRECTED BY THE ENGINEER.

CLASS	NOMINAL MIX	MINIMUM CYLINDER STRENGTH AT 28-DAYS (psi.)
A	1:1:2	3,750
B	1:1½:3	3,000
C	1:2:4	2,400
D	1:3:6	1,500
E	1:4:8	1,200

C. REINFORCED / PLAIN CEMENT CONCRETE (CONTINUED)

3. CLASS OF CONCRETE FOR DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE AS FOLLOWS UNLESS NOTED OTHER WISE:

COMPONENT	CONCRETE CLASS
COLUMNS AND FOOTING	CLASS 'B'
SLABS & BEAMS	CLASS 'B'
P.C.C. STEPS & STUB COLUMNS (FOR FUTURE EXTENSION)	CLASS 'D'
LEAN CONCRETE	CLASS 'E'

4. ORDINARY PORTLAND CEMENT SHALL BE USED FOR ALL CONCRETE WORKS.
5. AN INTEGRAL WATER PROOFING AGENT SHALL BE USED IN CONCRETE THAT IS CONSTANTLY OR INTERMITTENTLY IN CONTACT WITH WATER AS PER MANUFACTURER'S RECOMMENDATIONS (GENCON GENPRUF RMC OR PENETRON ADMIX OR EQUIVALENT).
6. WATER CEMENT RATIO FOR WATERTIGHT STRUCTURAL CONCRETE SHALL NOT EXCEED 0.45 AND 0.5 FOR ALL OTHER STRUCTURAL CONCRETE.
7. CONCRETE CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

STRUCTURAL MEMBER / ELEMENT	MINIMUM COVER (INCHES)
FOUNDATIONS (ALL TYPES)	2"
COLUMNS & BEAMS	1½"
RCC RETAINING WALLS	1½"
SLABS	¾"
RCC SHELLS AND DOMES	½"

8. ALL REINFORCING STEEL EXCEPT 3/8"ø BARS SHALL BE DEFORMED, HOT ROLLED BILLET STEEL BARS CONFORMING TO ASTM A-615 GRADE-60 WITH SPECIFIED YIELD STRENGTH OF NOT LESS THAN 60,000 psi. NOR MORE THAN 78,000 psi, AND RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
9. 3/8"ø BARS SHALL BE MILD STEEL DEFORMED BARS CONFORMING TO ASTM A-615 GRADE-40 WITH SPECIFIED YIELD STRENGTH OF NOT LESS THAN 40,000 psi. NOR MORE THAN 58,000 psi, AND RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
10. GRADE-60 STEEL BARS ARE REPRESENTED USING PREFIX SYMBOL "#" AND GRADE-40 STEEL BARS ARE REPRESENTED USING PREFIX SYMBOL "ø". WHEREAS, THE NUMBER INDICATES THE BAR DIAMETER/SIZE, AS UNDER:

BAR NUMBER	DIAMETER (INCHES)
3	3/8"
4	1/2"
5	5/8"
6	3/4"
8	1"

C. REINFORCED / PLAIN CEMENT CONCRETE (CONTINUED)

12. ALL DETAILING SHALL BE DONE AS PER ACI STANDARDS ACI-315, ACI-318 & ACI-350R.
13. ALL REINFORCING STEEL SHALL BE HELD FIRMLY IN PLACE BEFORE AND DURING THE PLACING OF CONCRETE BY MEANS OF WIRES AND SUPPORTS ADEQUATE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION.

D. CONCRETE CONSTRUCTION

1. THE CONTRACTOR SHALL SUBMIT CONCRETE POURING SCHEDULE FOR ENGINEER'S APPROVAL. NO CONCRETE SHALL BE POURED UNTIL ITS FORMWORK AND REINFORCEMENT HAS BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. DURING CONSTRUCTION, STACKING OF CONSTRUCTION MATERIALS, BLOCKS ETC. SHOULD BE AVOIDED ON SLAB PANELS.
3. BEFORE CASTING OF ANY STRUCTURAL MEMBER, THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED ITEMS FOR ELECTRICAL, MECHANICAL, HVAC, PLUMBING, STRUCTURAL STEEL AND OTHER WORKS, AND DOWELS FOR STRUCTURAL MEMBERS AND/OR MASONARY ARE PROPERLY LOCATED IN PLACE.

E. CONSTRUCTION JOINTS

1. JOINTS, NOT SHOWN ON THE DRAWING, SHALL BE SO MADE AND LOCATED AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHALL NEED PRIOR APPROVAL OF THE ENGINEER. THEY SHALL BE LOCATED NEAR THE MIDDLE OF THE SPANS OF SLAB & BEAMS. JOINTS IN WALLS & COLUMNS SHALL BE AT THE UNDER-SIDE OF FLOORS, SLABS OR BEAMS AND AT THE TOP OF FOOTINGS OR FLOOR SLABS.
2. JOINTS SHALL BE PERPENDICULAR TO MAIN REINFORCEMENT. ALL REINFORCING STEEL SHALL BE CONTINUED ACROSS THE JOINTS.
3. JOINTS IN BASE SLAB & WALLS AND ROOF SLAB, IN ADDITION TO THOSE SHOWN ON THE DRAWINGS SHALL BE BORNE BY THE CONTRACTOR. BEAMS & BRACKETS SHALL BE PLACED AT THE SAME TIME AS SLABS.

F. ELECTRICAL CONDUITS

1. CONDUITS, FOR ELECTRICAL WORKS, SHALL BE PLACED WITHIN THE REINFORCED CONCRETE. THEY SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SECTION IN BEAMS & SLABS AND WITHIN THE MIDDLE HALF OF THE THICKNESS. SPACING BETWEEN PARALLEL CONDUITS SHALL NOT BE LESS THAN 6" (150 MM).

SCALE = 1"=6'

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UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

GENERAL NOTES (SHEET 1 OF 2)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G01	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/01G01	0

G. PROPS, FORMWORK & CURING

1. SHORE & BRACE ALL PARTS OF THE BUILDING DURING CONSTRUCTION, TO THE EXTENT NECESSARY TO ENSURE COMPLETE SAFETY, STRENGTH & SERVICEABILITY OF ALL STRUCTURAL ELEMENTS UNDER ALL CONDITIONS OF LOADS WHICH MAY OCCUR DURING CONSTRUCTION. SUCH SHORING & BRACING IS THE CONTRACTOR'S SOLE RESPONSIBILITY AND IS NOT SHOWN ON STRUCTURAL DRAWINGS OR SPECIFIED IN THE PROJECT.
2. SEQUENCE OF REMOVAL OF FORMWORK SHALL BE APPROVED BY THE ENGINEER.
3. AT LEAST ONE LOWER FLOOR SHALL REMAIN PROPPED UNTILL THE UPPER FLOOR IS CAST AND CURED.

H. BRICK MASONRY WORKS

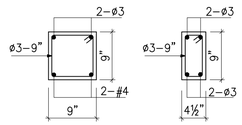
1. ALL BRICK MASONRY WORKS SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS .
2. ALL BRICK WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS FOR EXECUTION OF WORKS FOR KP–MRS AS MENTIONED IN THE CONTRACT DOCUMENT.
3. ALL BRICKS SHALL BE SOUND, HARD, WELL BURNT AND OF UNIFORM SIZE, COLOUR AND TEXTURE. DIMENSIONAL VARIATION IN SIZES SHALL NOT EXCEED ⅛".
4. EACH FINISHED BRICK SHALL BE 9"x4½"x3" IN SIZE AND SHALL WEIGH BETWEEN 7 TO 9 POUNDS. THE DEPTH OF FROG SHALL BE ¼" ON THE FACE.
5. TESTING OF COMPRESSIVE STRENGH OF MASONRY PRISMS SHALL BE DONE, IF SO DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH ASTM E447 STANDARD.
6. THE AVERAGE COMPRESSIVE STRENGTH OF FIVE REPRESENTATIVE BRICKS SHALL NOT LESS THAN 1700 psi. AND SHALL BE NOT LESS THAN 1500 psi. FOR ANY INDIVIDUAL BRICK.
7. BRICKS SHALL BE LAID "FROG" UPWARD WITH MORTAR JOINTS AND IN ENGLISH/FLEMISH BOND AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE ENGINEER. BOTH BED/VERTICAL JOINTS SHALL BE ⅜" THICK COMLETELY FILLED WITH CEMENT MORTAR.
8. ALL BRICK WORK SHALL BE ERECTED PLUMB AND TRUE TO LINE AND LEVEL. THE MAXIMUM VARIATION IN ANY STOREY HEIGHT OR ANY LENGTH OF WALL SHALL BE ⅛" IN 10'–0".
9. MORTAR USED IN MASONRY CONSTRUCTION SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGHT OF NOT LESS 1800 psi AND SHALL CONFORM TO ASTM C270 STANDARDS. COMPRESSIVE STRENGHT OF MASONRY AT 28 DAYS SHALL NOT BE LESS THAN 1150 psi.
10. 9" AND 4½"–THICK BRICK MASONRY IN SUPER STRUCTURE SHALL BE LAID IN 1:6 CEMENT SAND MORTAR.
11. BEARING OF LINTELS SHALL BE 9" MINIMUM AT EACH SUPPORT.
12. ALL DESIGN, DETAILING, MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH RELEVANT ACI, ASTM, AND UBC CODES AND STANDARDS.

J. STRUCTURAL STEEL WORKS

1. ALL FABRICATION, PAINTING, ERECTION AND QUALITY CONTROL IS TO BE DONE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A–36 OR EQUIVALENT.
3. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF AMERICAN WELDING SOCIETY, AWS, SPECIFICATIONS USING ELECTRODES E70XX.
4. ALL BOLTS SHALL CONFORM TO ASTM A307 OR A325.
5. SURFACE PREPARATION OF ALL STRUCTURAL STEEL FOR PAINTING SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF "STEEL STRUCTURES PAINTING COUNCIL" SPECIFICATIONS SSPC–SP6 FOR COMMERCIAL BLAST CLEANING.
6. ALL STEEL SHALL BE SHOP PAINTED WITH ONE COAT OF POLYURETHANE PRIMER AND TWO COATS OF POLYURETHANE ENAMEL OF APPROVED COLOR, TWO FINAL COATS OF POLYURETHANE ENAMEL SHALL BE APPLIED AFTER ERECTION. ALL WORK SHALL BE CARRIED OUT AS PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS. STEEL SURFACE IN CONTACT WITH CONCRETE SHALL NOT BE PAINTED.

K. ABBREVIATIONS & SYMBOLS

@ AT THE RATE OF
B BOTTOM
BW BOTHWAYS
c/c CENTRE TO CENTRE
CL CLEAR
D,d DEPTH, THICKNESS
EF EACH FACE
EJ EXPANSION JOINT
EL. STRUCTURAL ELEVATION
EQ EQUAL
FF FAR FACE
FFL FINISHED FLOOR LEVEL
FGL FINISHED GROUND LEVEL
GS SLAB ON GRADE
H HORIZONTAL
NF NEAR FACE
NSL EXISTING/NATURAL SURFACE LEVEL
NSP NOT SHOWN ON PLAN
NTS NOT TO SCALE
SOP SURVEY OF PAKISTAN
ST STIRUPPS
T TOP
TYP. TYPICAL
UNO UNLESS NOTED OTHERWISE
V VERTICAL
≥ GREATER THAN OR EQUAL TO
≤ LESS THAN OR EQUAL TO
ø DIAMETER IN INCHES UNO
LEVEL ON PLAN
℄ CENTRE LINE
L ANGLE
[CHANNEL



TYPICAL DETAIL OF LINTELS
(UP TO 5'–0" CLEAR SPAN)

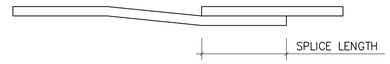
SPLICE LENGHTH (LS)*

fc' CYLINDER STRENGTH = 3,000 PSI		
BAR SIZES	(LS1) TOP BARS	(LS2) OTHER BARS
#3 TO #6	57db	44db
#7 TO #18	72db	55db

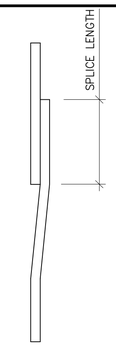
* ALL LAP SPLICE SHALL BE STAGGARED BY AT LEAST 50 %

DEVELOPMENT LENGHT (LD)

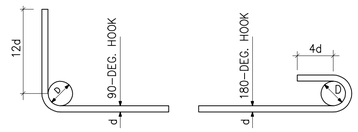
LD = LS



BEAM SPLICE (TYP)

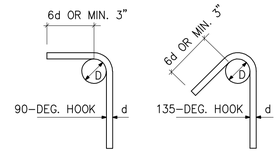


COLUMN SPLICE (TYP)



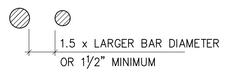
STANDARD BAR HOOKS (MAIN BARS)

BAR DIA	D
ø3	2½"
#4	3"
#5	4"
#6	4"
#8	6"
#9	7"
#11	8½"

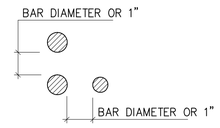


STIRRUPS AND TIE HOOKS

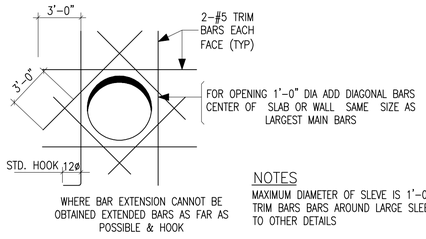
BAR DIA	D
ø3	1½"
#4	2"
#5	2½"



VERTICAL BAR SPACING

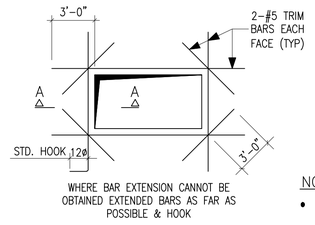


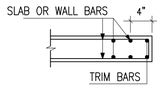
BAR SPACING IN BEAM



NOTES
MAXIMUM DIAMETER OF SLEVE IS 1'–0" FOR TRIM BARS BARS AROUND LARGE SLEEVE REFER TO OTHER DETAILS

REINFORCEMENT AROUND SLEEVE IN SLABS & WALLS (TYP)





SECTION A–A

NOTES
- FOR OPENING WITH MAXIMUM DIMENSION OVER 5'–0" REFER TO OTHER DETAILS.
- USE THIS DETAILS IF NOT SHOWN IN DESIGN DRAWINGS

REINFORCEMENT DETAIL AT OPENING IN SLAB & WALLS (TYP)

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

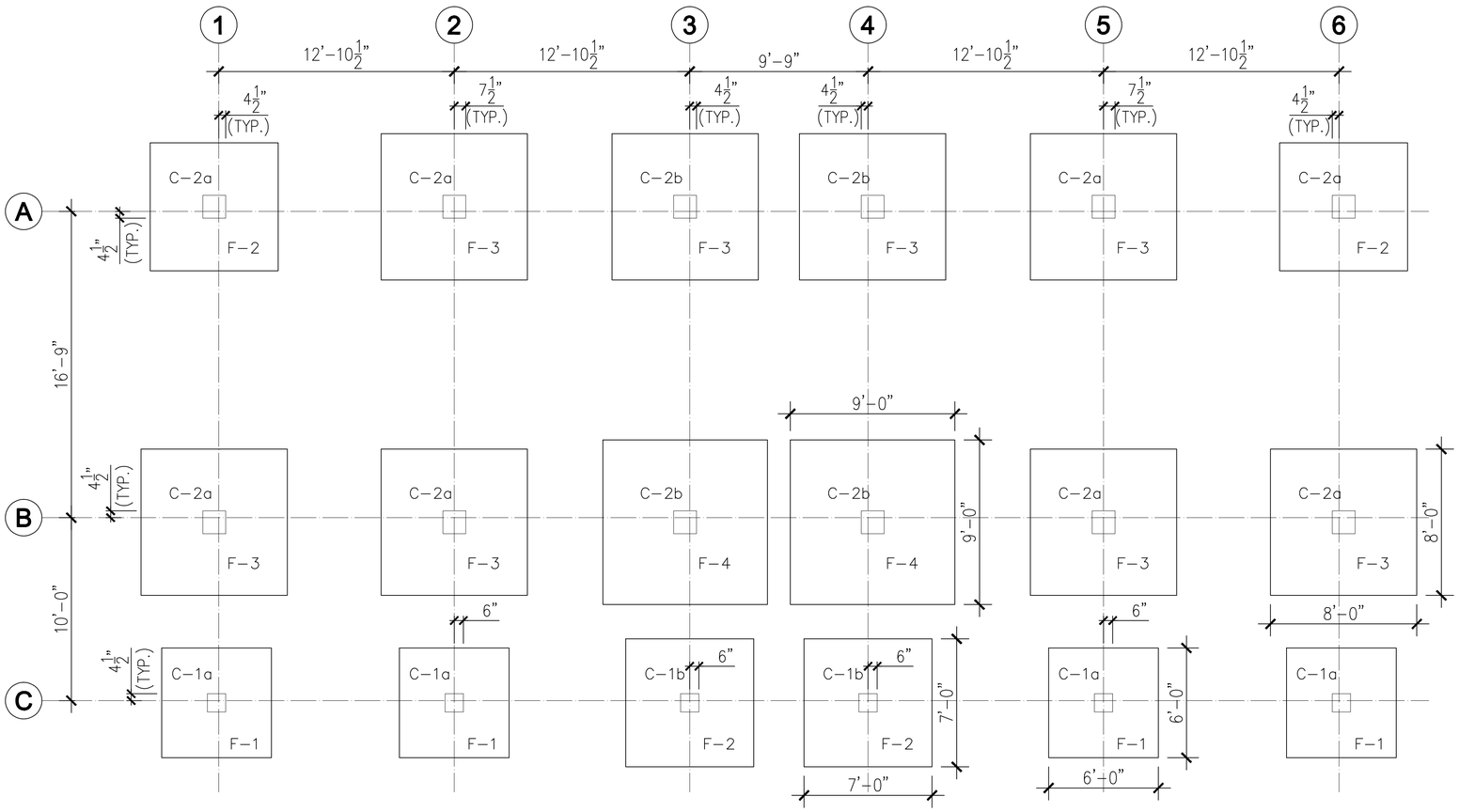
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

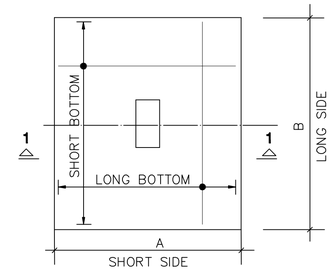
STRUCTURAL LAYOUTS
GENERAL NOTES (SHEET 2 OF 2)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

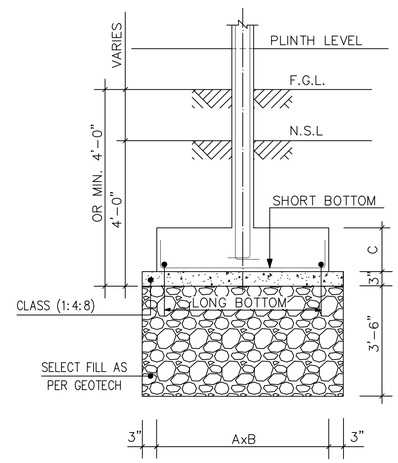
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G02	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/01G02	0
SUBM. TALHA AFZAL			



FOUNDATION & COLUMN LAYOUT PLAN



PLAN OF ISOLATED FOOTING



SECTION OF ISOLATED FOOTING (TYP)
(SEC 1-1)

FOOTING SCHEDULE					
FOOTING MARK	SIZE			REINFORCEMENT	
	SHORT SIZE (A)	LONG SIZE (B)	THICKNESS (C)	SHORT BOTTOM	LONG BOTTOM
F-1	6'-0"	6'-0"	18"	#4-6"	#4-6"
F-2	7'-0"	7'-0"	18"	#5-6"	#5-6"
F-3	8'-0"	8'-0"	18"	#5-5"	#5-5"
F-4	9'-0"	9'-0"	21"	#5-4"	#5-4"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS OF GEOTECHNICAL INVESTIGATION REPORT.
5. ALL ISOLATED FOOTING SHALL BE PLACED CONCENTRIC WITH THE COLUMNS UNLESS NOTED OTHERWISE.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

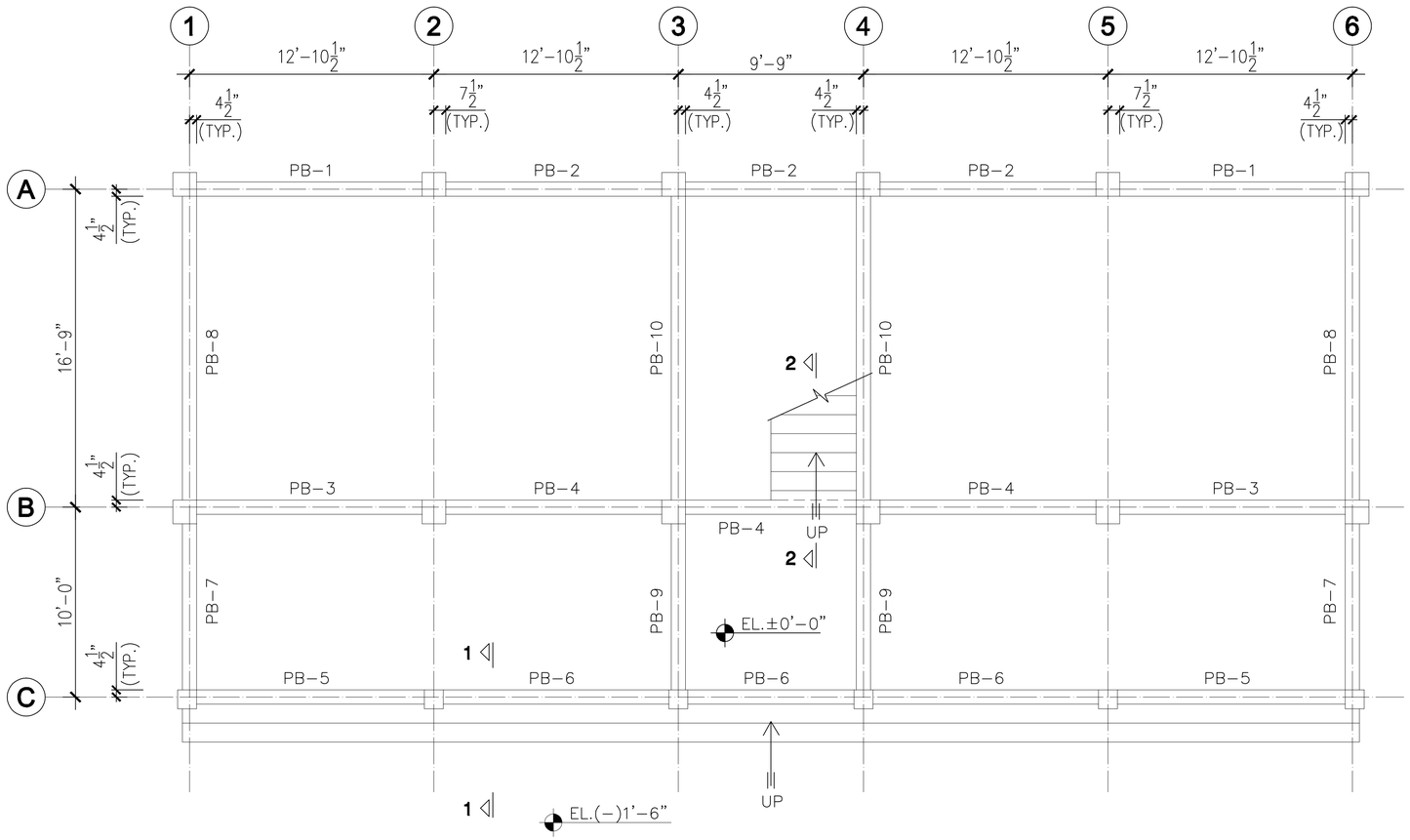
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

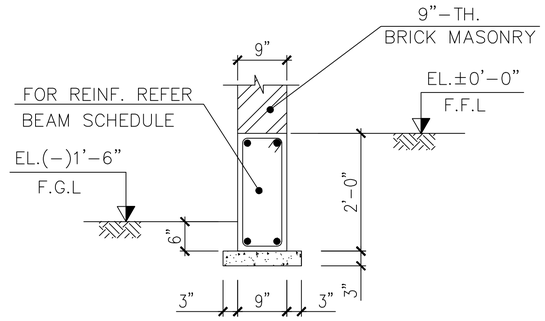
FOUNDATION & COLUMN LAYOUT PLAN AND DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

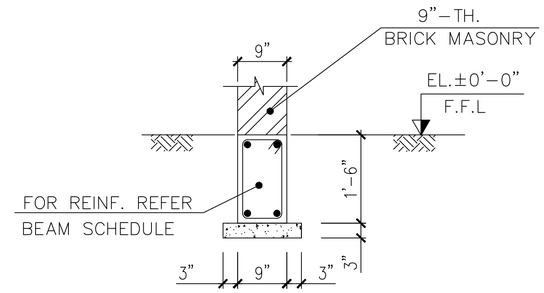
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G03	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G03	0
SUBM. TALHA AFZAL	OCT.,2022		



FRAMING PLAN AT EL.±0'-0"



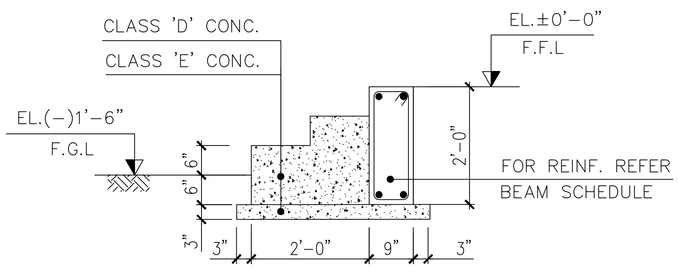
TYP. SECTION OF EXTERNAL PLINTH BEAMS



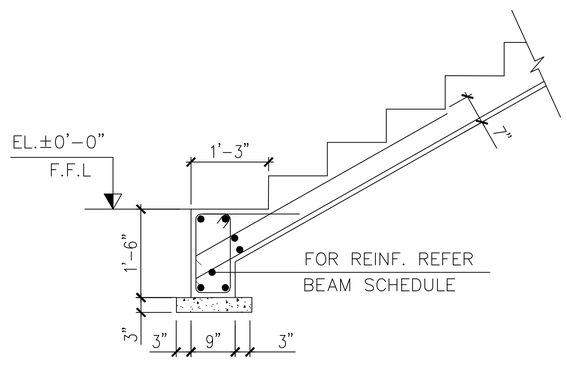
TYP. SECTION OF INTERNAL PLINTH BEAMS

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G10.



SECTION 1-1



SECTION 2-2

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

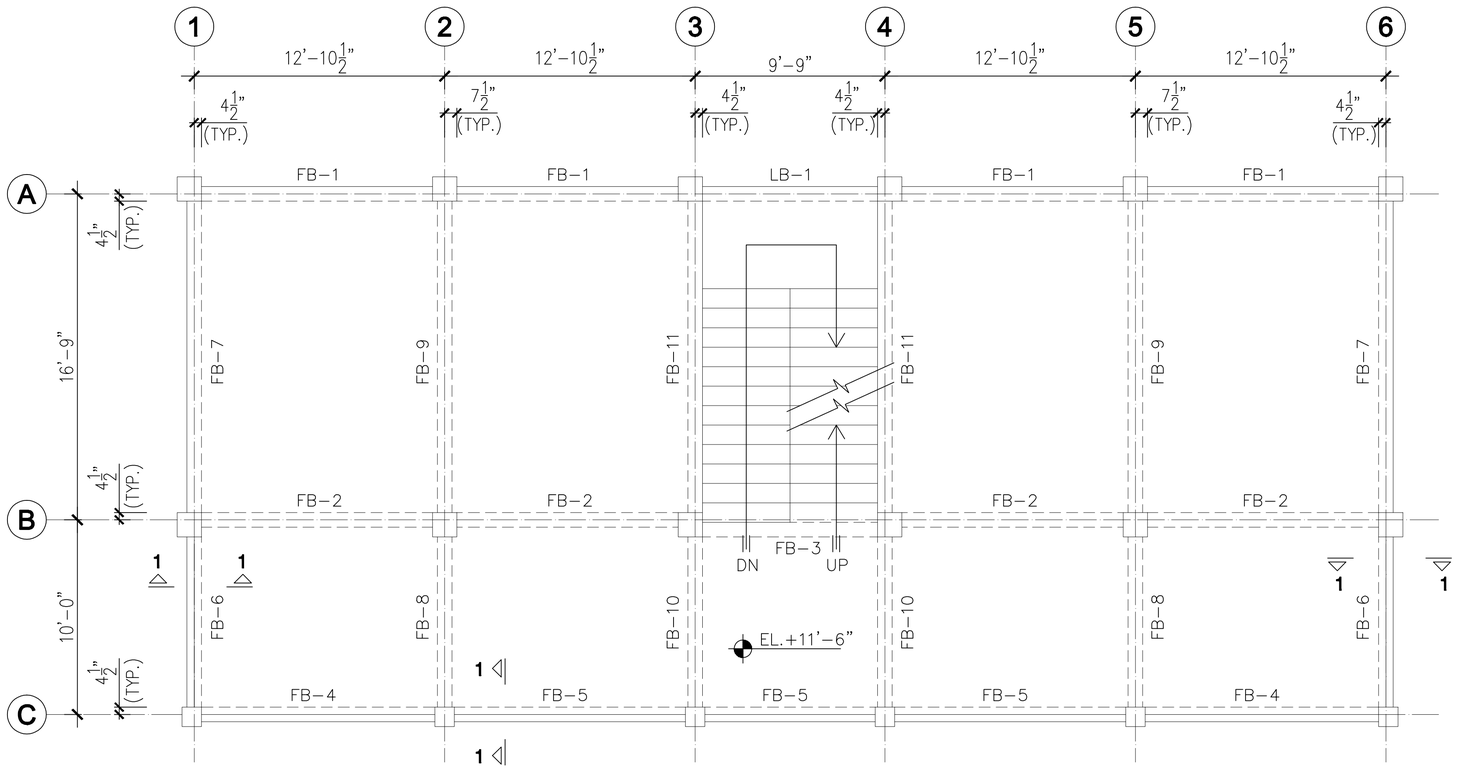
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

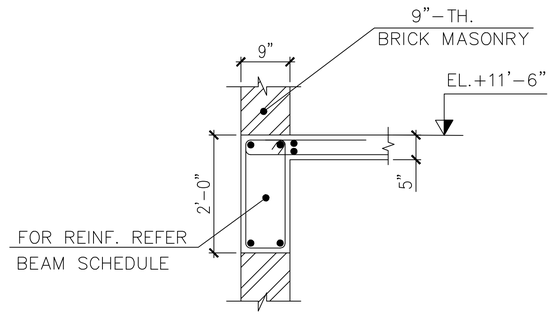
FRAMING PLAN AT EL.±0'-0"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

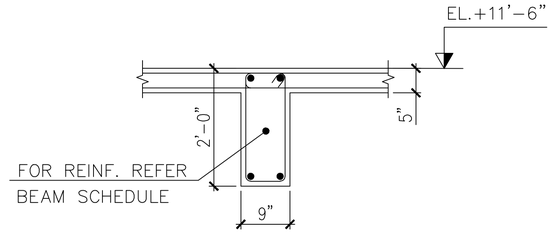
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G04	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G04	0
SUBM. TALHA AFZAL	OCT.,2022		



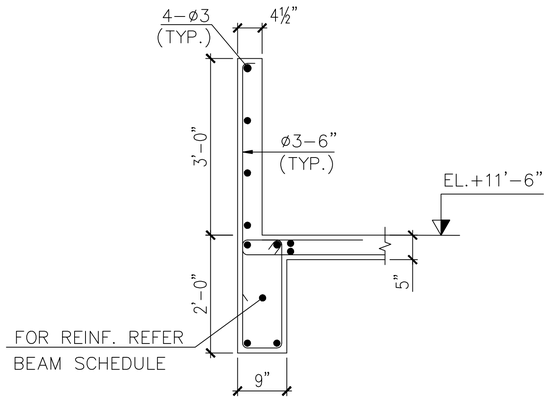
FRAMING PLAN AT EL.+11'-6"



TYP. SECTION OF EXTERNAL FLOOR BEAMS



TYP. SECTION OF INTERNAL FLOOR BEAMS



SECTION 1-1

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G11.
5. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

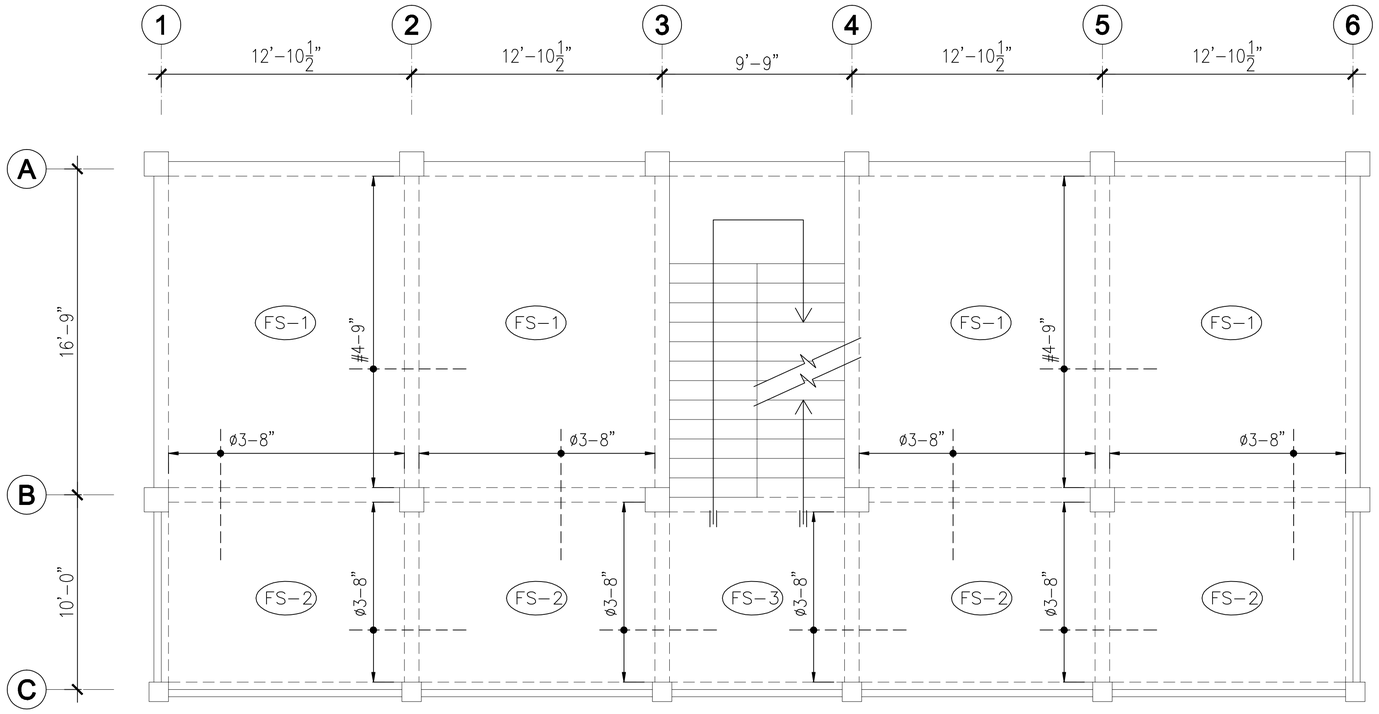
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

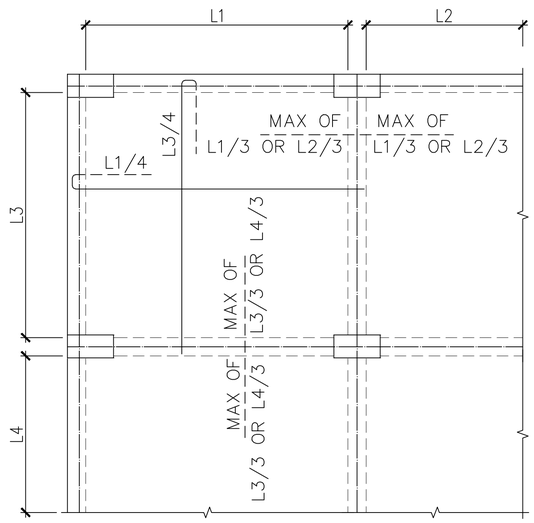
STRUCTURAL LAYOUTS
FRAMING PLAN AT EL.+11'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G05	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G05	0
SUBM. TALHA AFZAL	OCT.,2022		



SLAB REINFORCEMENT PLAN AT EL.+11'-6"



TYPICAL SLAB REINFORCEMENT PLAN

SLAB REINFORCEMENT SCHEDULE

SLAB MARKS	SLAB THICKNESS	BOTTOM REINFORCEMENT	
		SHORT BOTTOM	LONG BOTTOM
FS-1	5"	ø3-7"	ø3-8"
FS-2	5"	ø3-8"	ø3-8"
FS-3	5"	ø3-9"	ø3-9"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.
5. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

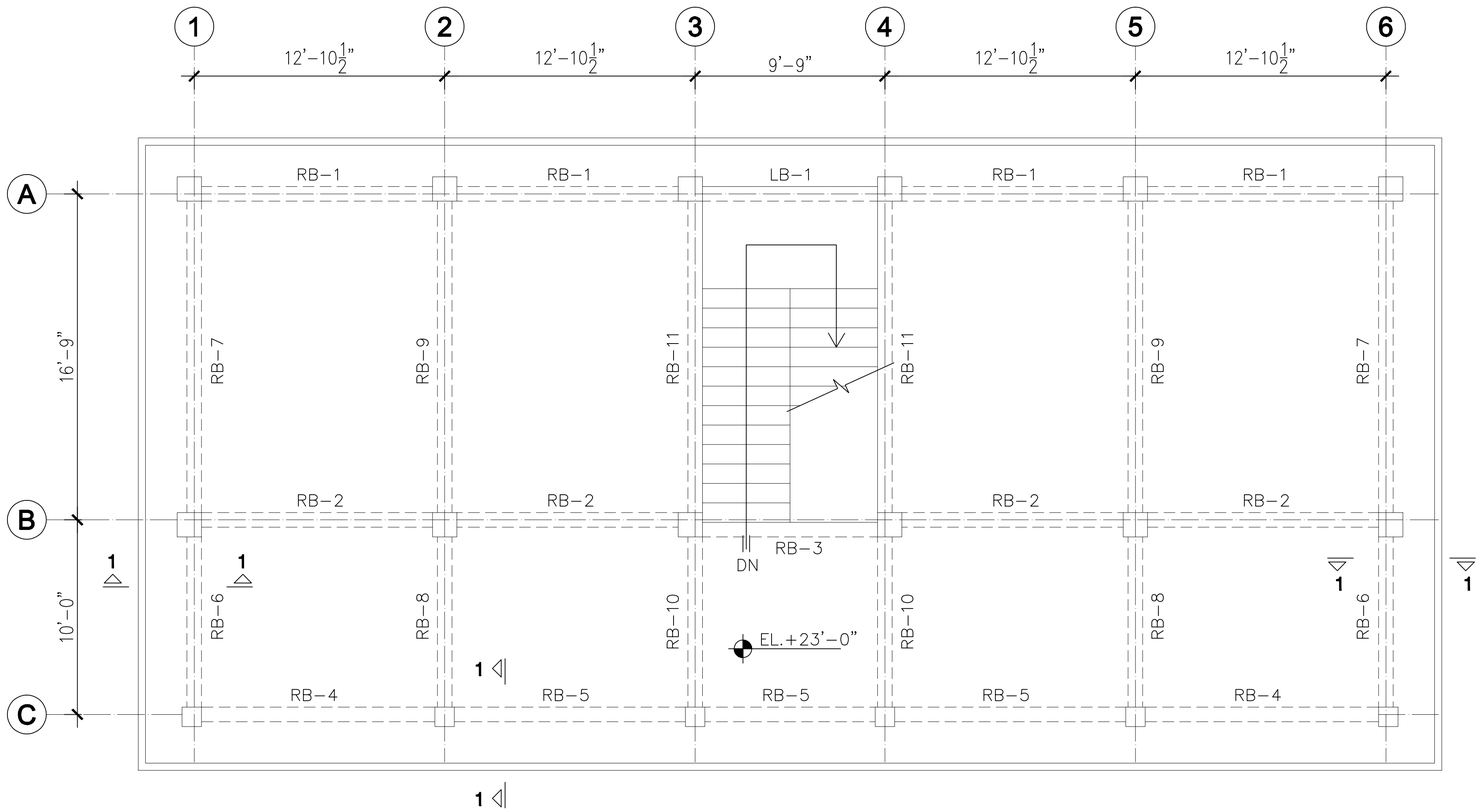
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

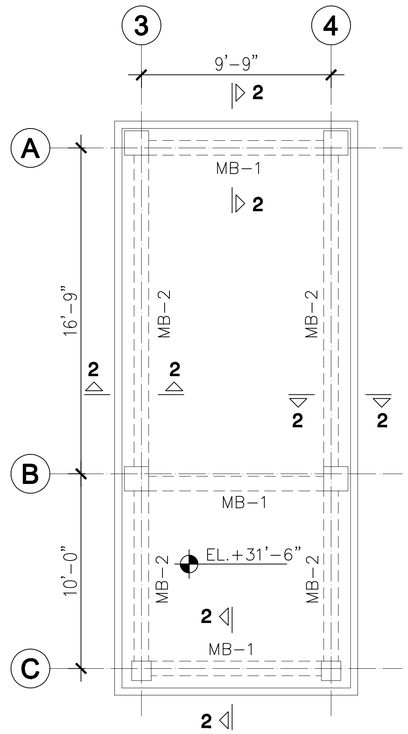
SLAB REINFORCEMENT PLAN AT EL.+11'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

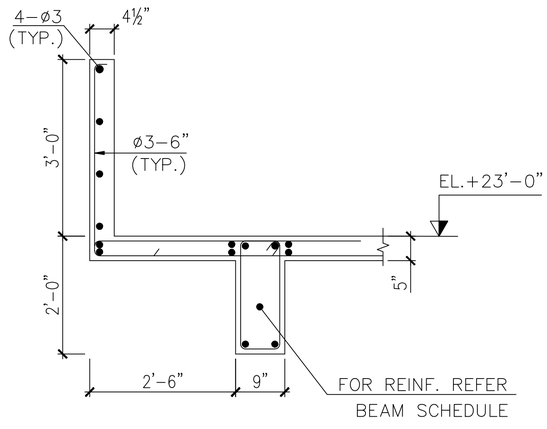
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G06	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G06	0
SUBM. TALHA AFZAL	OCT.,2022		



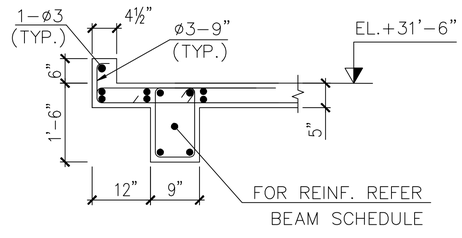
FRAMING PLAN AT EL.+23'-0"



FRAMING PLAN AT EL.+31'-6"



SECTION 1-1



SECTION 2-2

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G12.
5. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

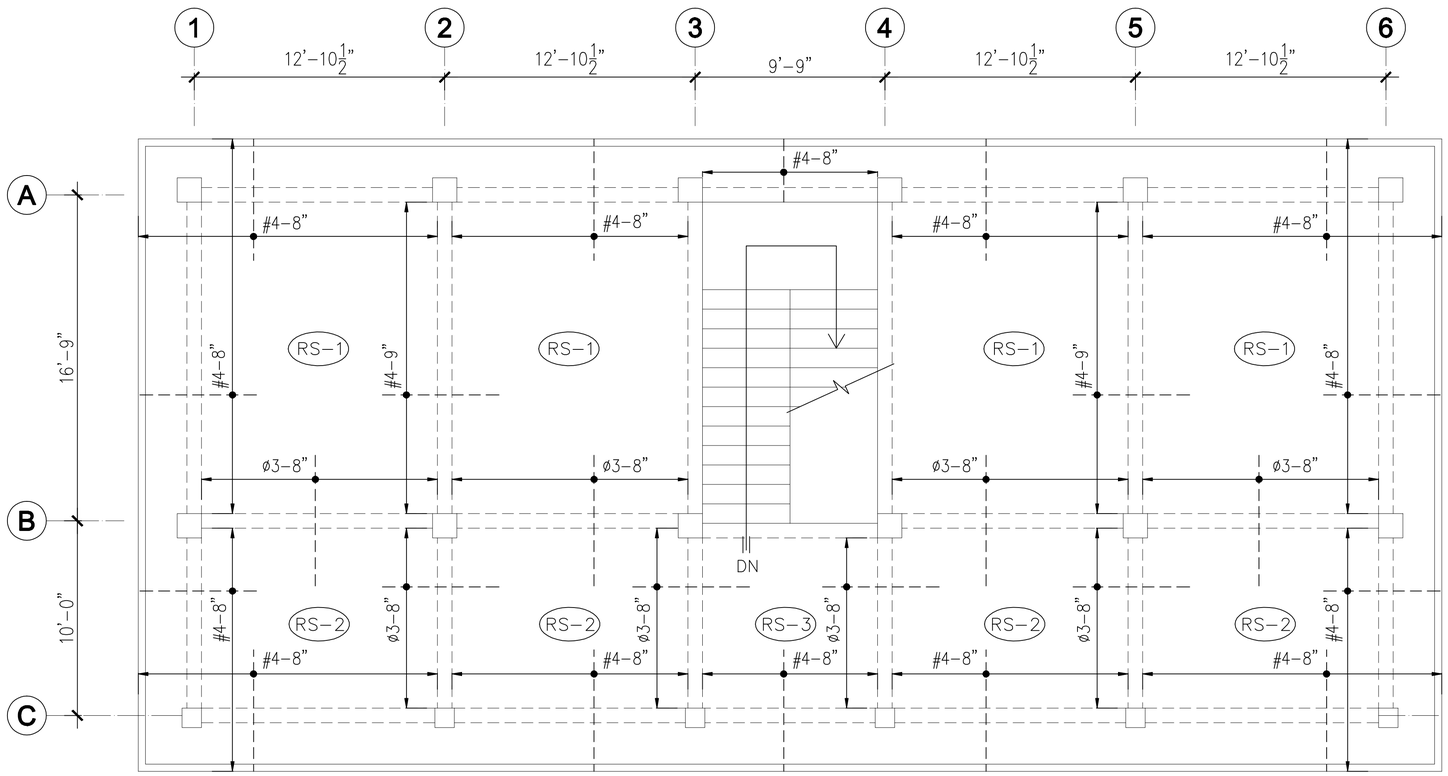
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

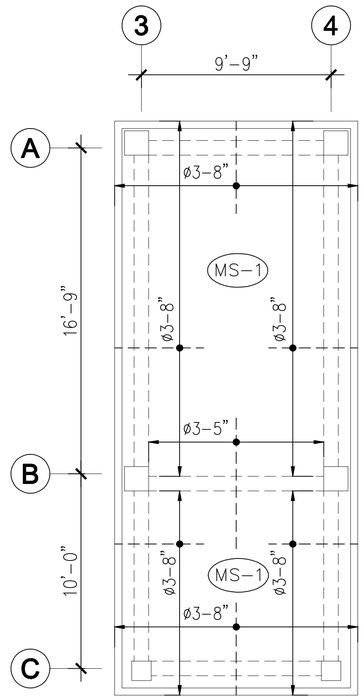
FRAMING PLAN AT EL.+23'-0" & EL.+31'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

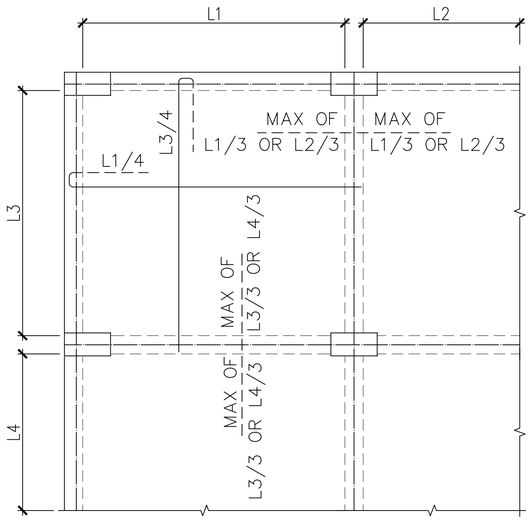
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G07			
CKD. UMER LATIF	DATE	DRAWING NO.	REV.
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/01G07	0



SLAB REINFORCEMENT PLAN AT EL.+23'-0"



SLAB REINFORCEMENT PLAN AT EL.+31'-6"



TYPICAL SLAB REINFORCEMENT PLAN

SLAB REINFORCEMENT SCHEDULE

SLAB MARKS	SLAB THICKNESS	BOTTOM REINFORCEMENT	
		SHORT BOTTOM	LONG BOTTOM
RS-1	5"	ø3-7"	ø3-8"
RS-2	5"	ø3-8"	ø3-8"
RS-3	5"	ø3-9"	ø3-9"
MS-1	5"	ø3-8"	ø3-9"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.
5. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

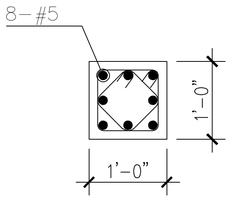
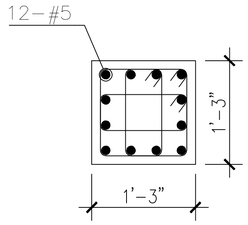
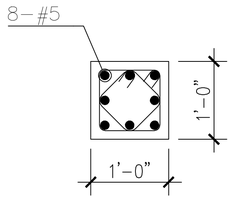
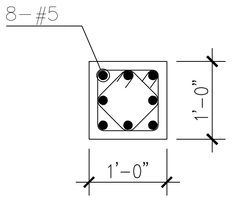
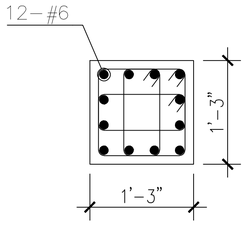
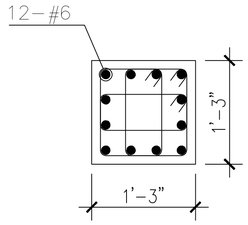
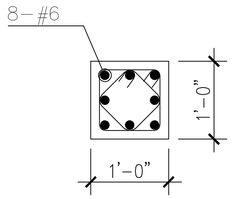
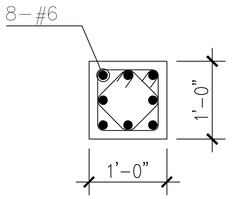
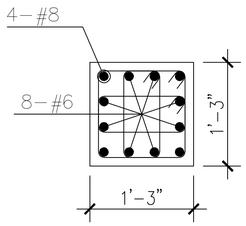
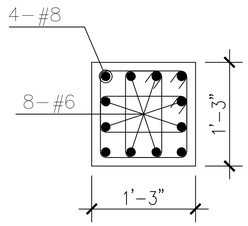
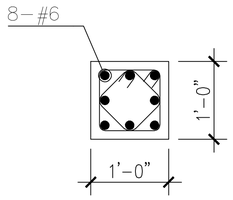
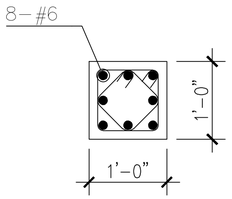
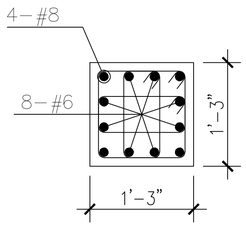
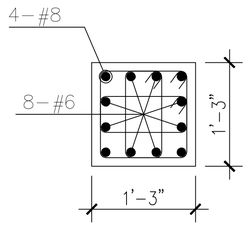
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

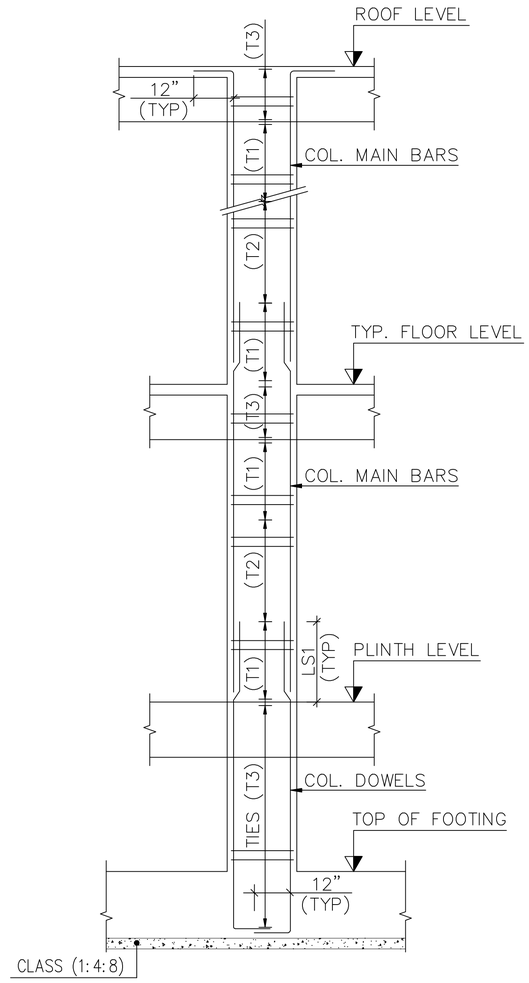
STRUCTURAL LAYOUTS

SLAB REINFORCEMENT PLAN AT EL.+23'-0" & EL. +31'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G08	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/01G08	0

ELEVATION \ MARK	C–1a	C–1b	C–2a	C–2b
FROM EL.+11'–6" TO EL.+23'–0"	–		–	
FROM EL.+11'–6" TO EL.+23'–0"				
FROM EL.(±)0'–0" TO EL.+11'–6"				
FROM TOP OF FOUNDATION TO EL.(±)0'–0"				
TIES	T1	7–2XØ3–4"	7–2XØ3–4"	7–3XØ3–4"	7–3XØ3–4"
	T2	2XØ3–8"	2XØ3–8"	3XØ3–8"	3XØ3–8"
	T3	2XØ3–4"	2XØ3–4"	3XØ3–4"	3XØ3–4"
REMARKS					



TYPICAL COLUMN ELEVATION

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR FINAL COLUMN ELEVATION, SEE RESPECTIVE FRAMING PLANS.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

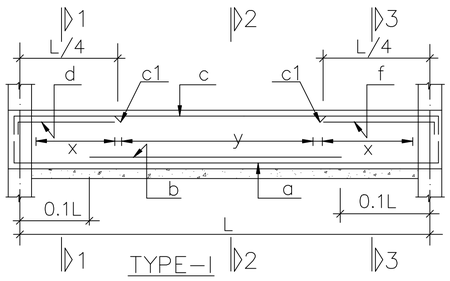
UNHCR PAKISTAN

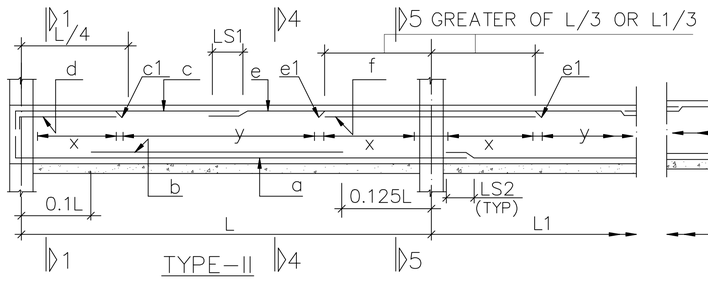
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

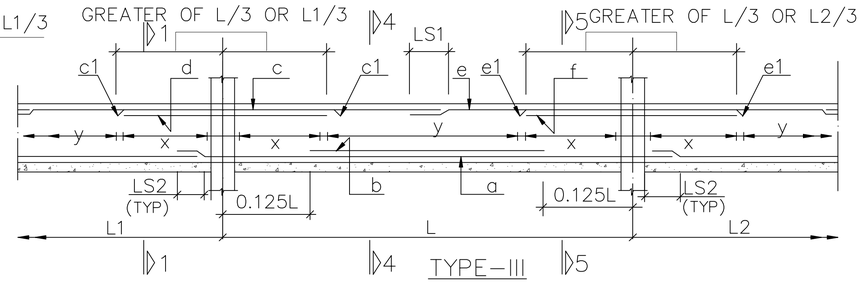
STRUCTURAL LAYOUTS
COLUMN SCHEDULE

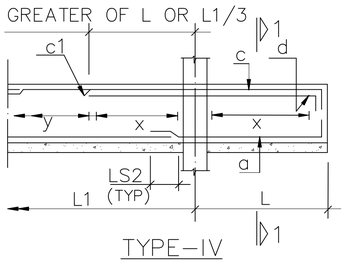
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. S. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G09	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G09	0
SUBM. TALHA AFZAL	OCT.,2022		

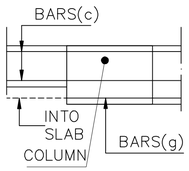




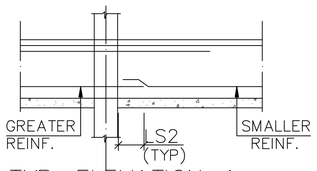




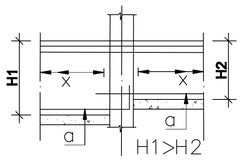
TYPE-IV



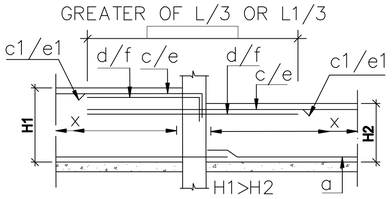
TYP. PLAN



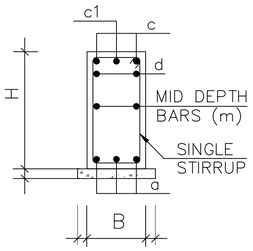
TYP. ELEVATION-1



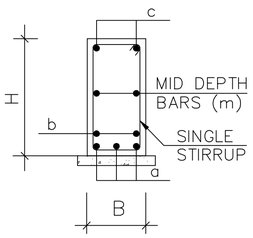
TYP. ELEVATION-2



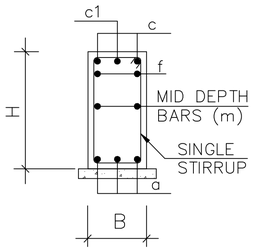
TYP. ELEVATION-3



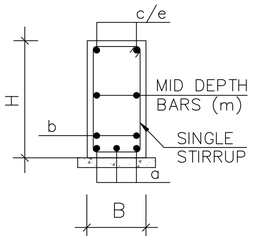
TYP. SEC.1-1
MAX. 3 BARS IN ONE LAYER



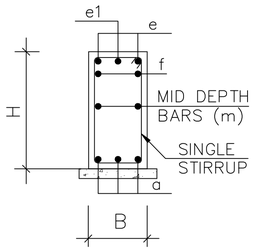
TYP. SEC.2-2
MAX. 3 BARS IN ONE LAYER



TYP. SEC.3-3
MAX. 3 BARS IN ONE LAYER



TYP. SEC.4-4
MAX. 3 BARS IN ONE LAYER



TYP. SEC.5-5
MAX. 3 BARS IN ONE LAYER

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
10-BARS "b,d & f" SHALL BE PROVIDED IN SECOND LAYER UNLESS NOTED OTHERWISE.
11-THE LOCATION OF LAPS SHOWN IN TYPE II,III & IV IS INDICATED ONLY IT MAY BE ELIMINATED.
12-LAPS (IF REQUIRED.) SHALL BE PROVIDED AT LOCATION SHOWN ON THE TYPICAL ELEVATIONS USING MAXIMUM AVAILABLE LENGTH.
13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

P L I N T H B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
PB-1	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-2	9"X24"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-3	9"X18"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-4	9"X18"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-5	9"X24"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
PB-6	9"X24"	III	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
PB-7	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	2-#4	-	-	ø3-4"	ø3-8"	
PB-8	9"X24"	II	3-#5	-	2-#5	1-#5	2-#4	2-#5	1-#5	2-#4	-	-	ø3-4"	ø3-8"	
PB-9	9"X18"	II	3-#5	-	2-#5	1-#4	-	2-#5	-	2-#4	-	-	ø3-4"	ø3-8"	
PB-10	9"X18"	II	3-#5	-	2-#5	-	2-#4	2-#5	-	2-#4	-	-	ø3-4"	ø3-8"	
LB-1	9"X18"	I	3-#5	-	3-#5	-	-	-	-	-	-	-	ø3-4"	ø3-4"	

SPECIAL NOTE:-
THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

SCALE = 1"=6'

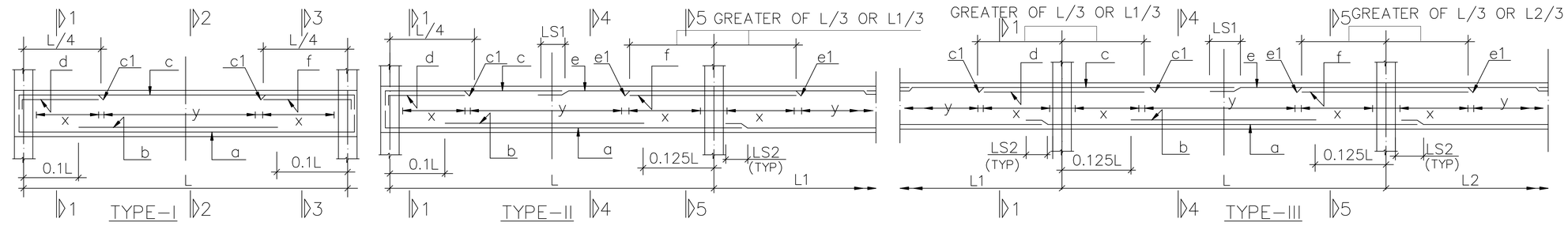
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

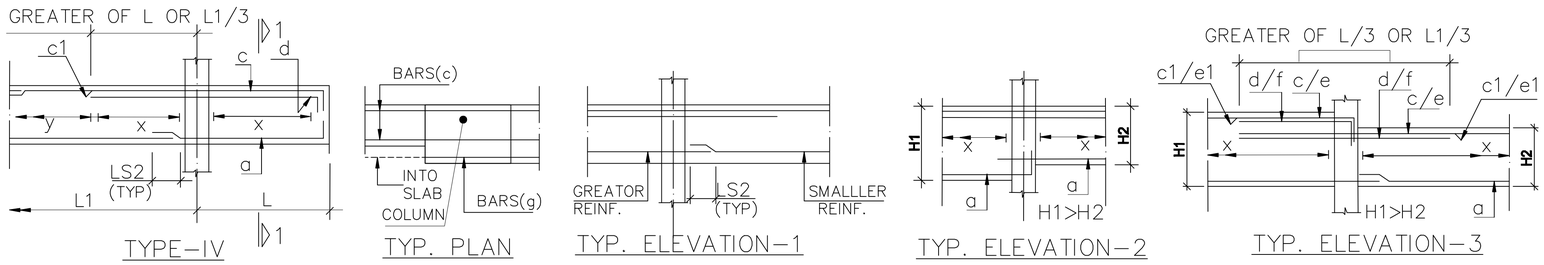
UNHCR PAKISTAN

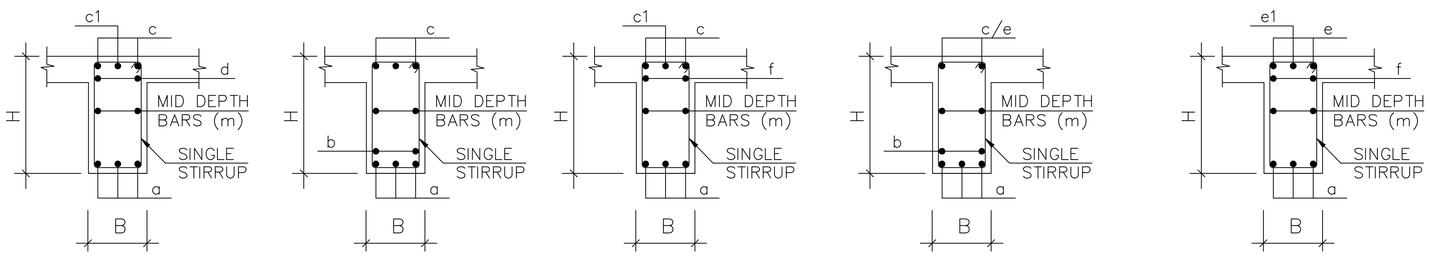
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
STRUCTURAL LAYOUTS
PLINTH BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G10	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G10	0
SUBM. TALHA AFZAL	OCT.,2022		







TYP. SEC.1-1
MAX. 3 BARS IN ONE LAYER

TYP. SEC.2-2
MAX. 3 BARS IN ONE LAYER

TYP. SEC.3-3
MAX. 3 BARS IN ONE LAYER

TYP. SEC.4-4
MAX. 3 BARS IN ONE LAYER

TYP. SEC.5-5
MAX. 3 BARS IN ONE LAYER

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
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13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

F L O O R B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
FB-1	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
FB-2	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
FB-3	9"X24"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
FB-4	9"X24"	II	3-#4	-	2-#5	1-#4	-	2-#5	1-#4	-	-	-	ø3-4"	ø3-8"	
FB-5	9"X24"	III	3-#4	-	2-#5	1-#4	-	2-#5	1-#4	-	-	-	ø3-4"	ø3-8"	
FB-6	9"X24"	II	3-#5	-	2-#6	-	-	2-#6	1-#6	-	-	-	ø3-4"	ø3-8"	
FB-7	9"X24"	II	3-#5	-	2-#6	1-#6	-	2-#6	1-#6	-	-	-	ø3-4"	ø3-8"	
FB-8	9"X24"	II	3-#5	-	2-#6	-	-	2-#6	1-#5		-	-	ø3-4"	ø3-8"	
FB-9	9"X24"	II	3-#5	-	2-#6	1-#5	-	2-#6	1-#5	-	-	-	ø3-4"	ø3-8"	
FB-10	9"X24"	II	3-#5	-	2-#6	-	-	2-#6	1-#6	-	-	-	ø3-4"	ø3-8"	
FB-11	9"X24"	II	3-#5	-	2-#6	1-#6	-	2-#6	1-#6	-	-	-	ø3-4"	ø3-8"	

SPECIAL NOTE:-
THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

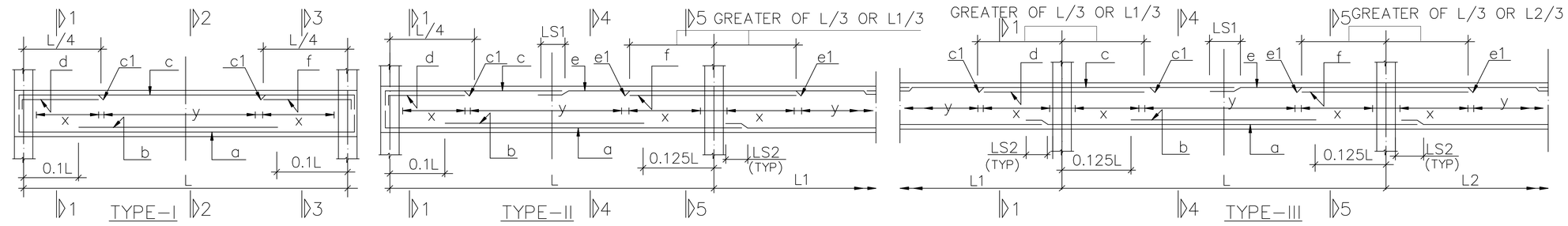
UNHCR PAKISTAN

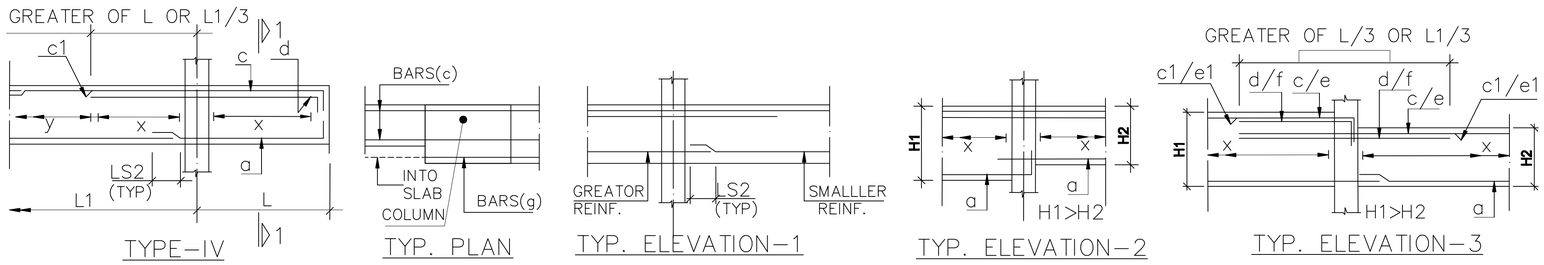
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

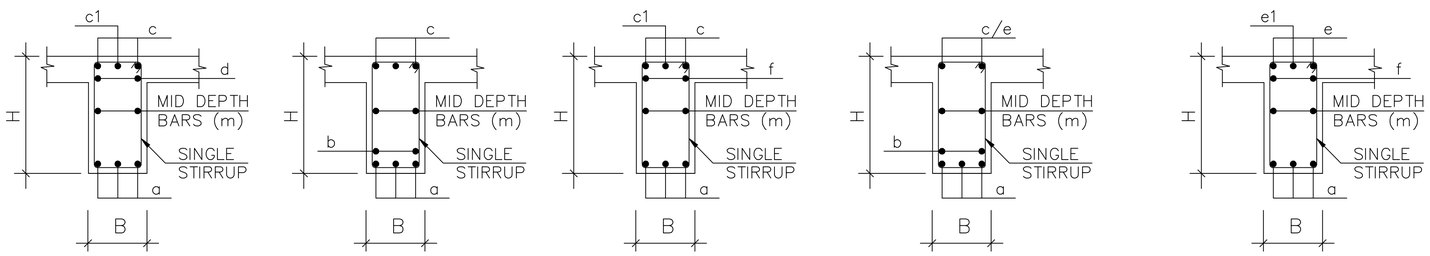
STRUCTURAL LAYOUTS
FLOOR BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G11	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/01G11	0
SUBM. TALHA AFZAL			







NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H AND AT LAP LOCATIONS.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
10-BARS "b,d & f" SHALL BE PROVIDED IN SECOND LAYER UNLESS NOTED OTHERWISE.
11-THE LOCATION OF LAPS SHOWN IN TYPE II,III & IV IS INDICATED ONLY IT MAY BE ELIMINATED.
12-LAPS (IF REQUIRED.) SHALL BE PROVIDED AT LOCATION SHOWN ON THE TYPICAL ELEVATIONS USING MAXIMUM AVAILABLE LENGTH.
13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

R O O F & M U M T Y B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
RB-1	9"X24"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-2	9"X24"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-3	9"X24"	III	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-4	9"X24"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-5	9"X24"	III	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-6	9"X24"	II	3-#4	-	2-#5	-	-	2-#5	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-7	9"X24"	II	3-#4	-	2-#5	1-#4	-	2-#5	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-8	9"X24"	II	3-#4	-	2-#5	-	-	2-#5	1-#4		-	-	ø3-4"	ø3-8"	
RB-9	9"X24"	II	3-#4	-	2-#5	1-#4	-	2-#5	1-#4	-	-	-	ø3-4"	ø3-8"	
RB-10	9"X24"	II	3-#5	-	2-#5	-	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
RB-11	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
MUMTY BEAMS															
MB-1	9"X18"	I	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
MB-2	9"X18"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	

SPECIAL NOTE:-
THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

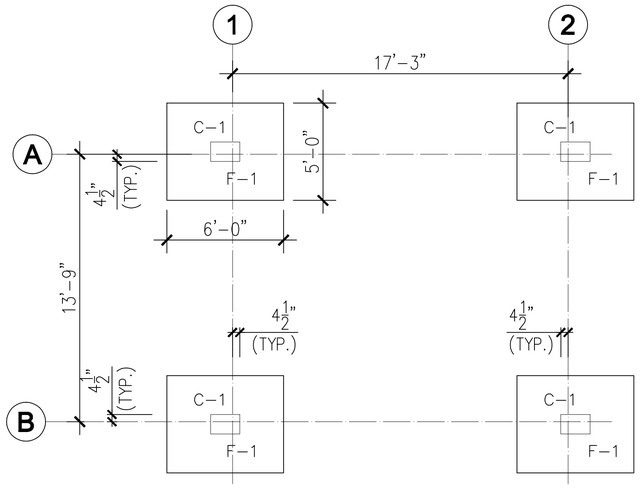
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

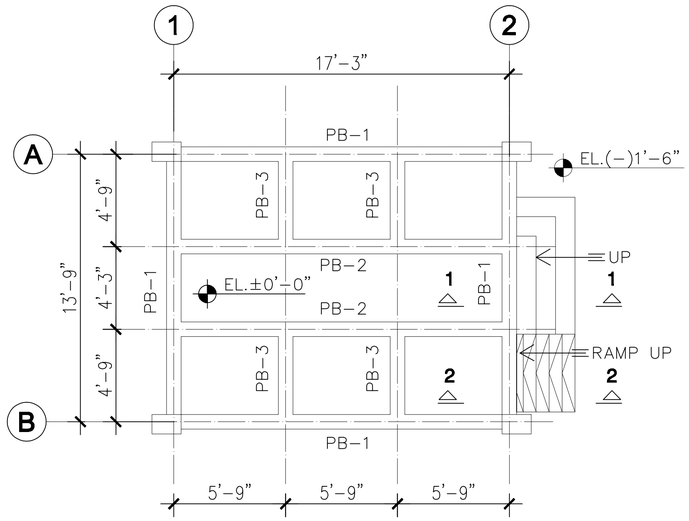
STRUCTURAL LAYOUTS
ROOF & MUMTY BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

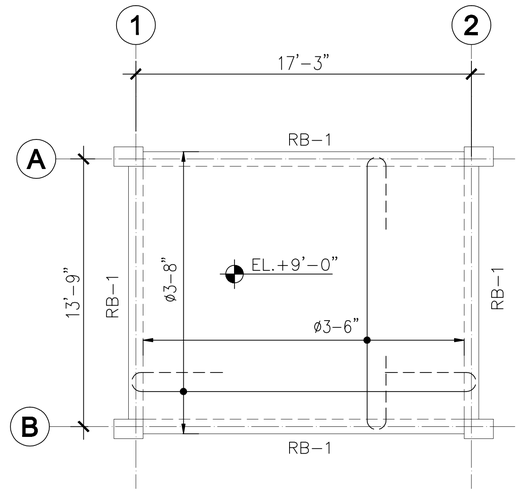
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G12	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/01G12	0
SUBM. TALHA AFZAL			



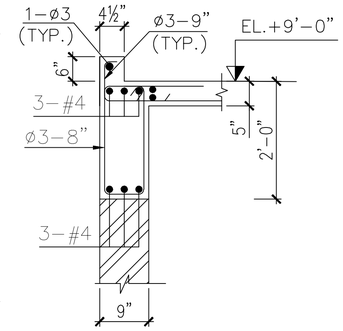
FOUNDATION & COLUMN LAYOUT PLAN



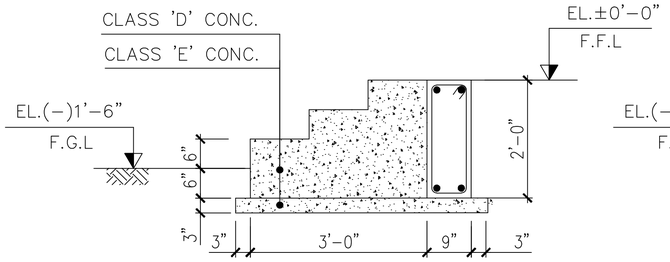
FRAMING PLAN AT EL.±0'-0"



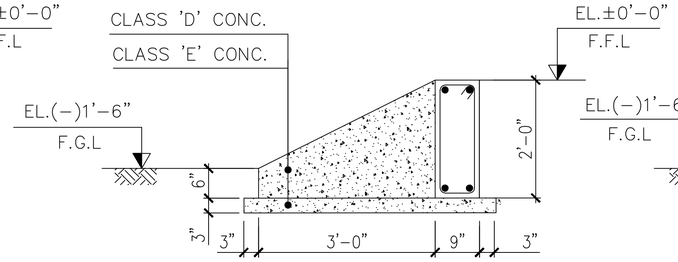
FRAMING & SLAB REINF. PLAN AT EL.+9'-0"



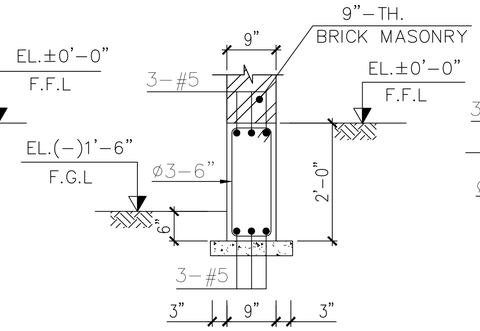
TYP. SECTION OF ROOF BEAMS



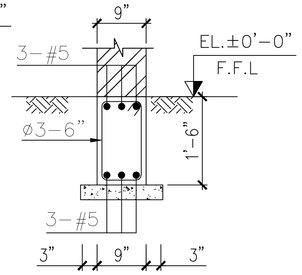
SECTION 1-1



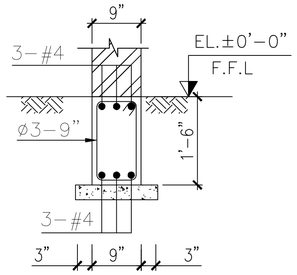
SECTION 2-2



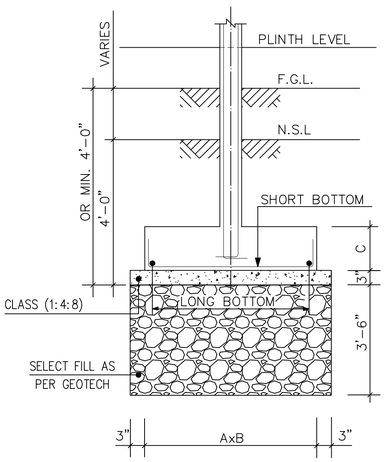
PB-1



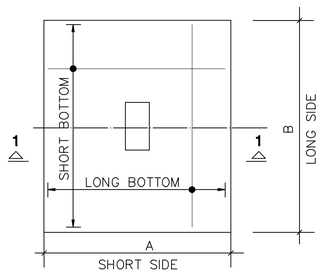
PB-2



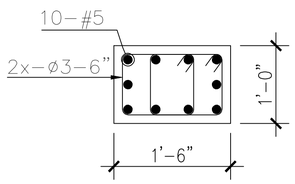
PB-3



SECTION OF ISOLATED FOOTING (TYP)
(SEC 1-1)



PLAN OF ISOLATED FOOTING



COLUMN C-1

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS OF GEOTECHNICAL INVESTIGATION REPORT.
5. ALL ISOLATED FOOTING SHALL BE PLACED CONCENTRIC WITH THE COLUMNS UNLESS NOTED OTHERWISE.
6. ALL EXTERNAL PLINTH BEAMS ARE 9"x24" EXCEPT NOTED OTHERWISE.
7. ALL INTERNAL PLINTH BEAMS ARE 9"x18" EXCEPT NOTED OTHERWISE.
8. ALL ROOF BEAMS ARE 9"x24" EXCEPT NOTED OTHERWISE.
9. ALL SLABS ARE 5" THICK EXCEPT NOTED OTHERWISE.
10. ALL BINDER BARS SHALL BE ø3-12" c/c.

F O O T I N G S C H E D U L E

FOOTING MARK	SIZE			REINFORCEMENT	
	SHORT SIZE (A)	LONG SIZE (B)	THICKNESS (C)	SHORT BOTTOM	LONG BOTTOM
F-1	5'-0"	6'-0"	18"	#4-6"	#4-6"

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

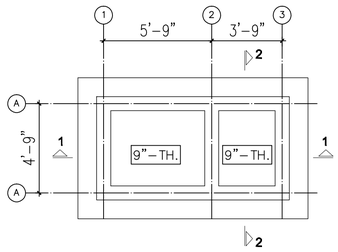
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

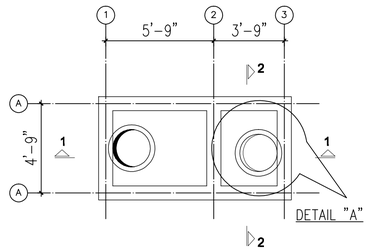
STRUCTURAL DETAILS OF TOILET BLOCK

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

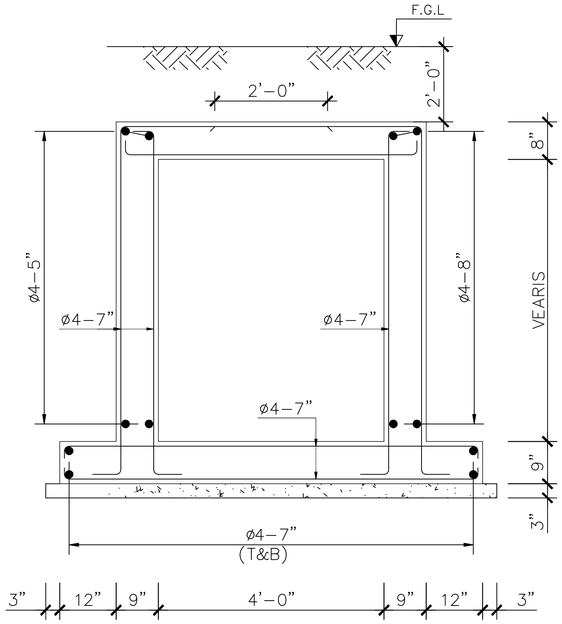
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G13	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/01G13	0
SUBM. TALHA AFZAL			



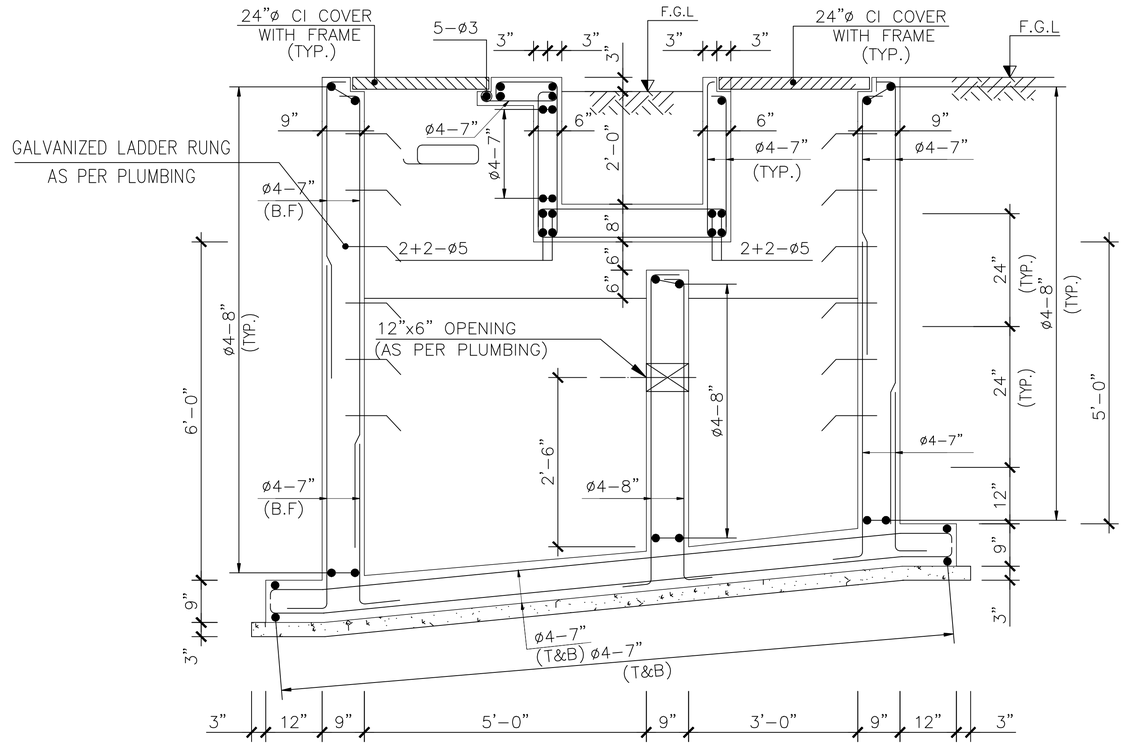
BOTTOM SLAB PLAN OF SEPTIC TANK



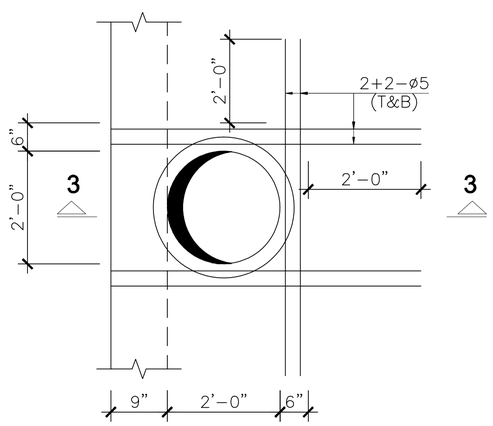
TOP SLAB PLAN OF SEPTIC TANK



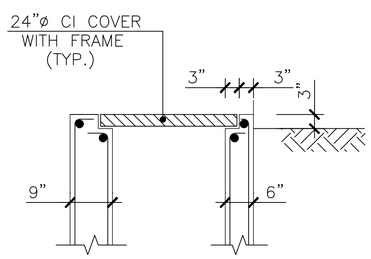
SECTION 2-2



SECTION 1-1



DETAIL "A"



SECTION 3-3

NOTES:

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH THE RELEVANT PLUMBING AND OTHER SERVICES DRAWINGS.
3. ALL STRUCTURAL CONCRETE SHALL BE CLASS 'C' HAVING MINIMUM 28-DAYS CUBE STRENGTH OF 2,400.00 psi
4. LEAN CONCRETE SHALL BE TYP. "E" TYPE HAVING MINIMUM 28-DAYS CUBE STRENGTH OF 1200 psi
5. ALL REINFORCING BARS SHALL BE GRADE-40 DEFORMED STEEL HAVING MINIMUM YIELD STRENGTH OF 40,000 psi, CONFORMING TO ASTM A615.
6. CLEAR COVER TO REINFORCEMENT SHALL BE AS UNDER:
   BOTTOM SLAB = 1½" (ALL FACES)
   TOP SLAB = 3/4" (ALL FACES)
   WALLS = 1½" (BOTH FACES)
7. BACKFILLING AGAINST THE WALLS SHALL NOT BE DONE UNTIL TOP SLAB IS CAST AND CURED.
8. ALL THE STRUCTURAL SURFACES AGAINST WHICH EARTH IS TO BE FILLED SHALL BE COATED WITH TWO (02) COATS OF HOT BITUMEN AS PER SPECIFICATIONS.

SCALE = 1"=8'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

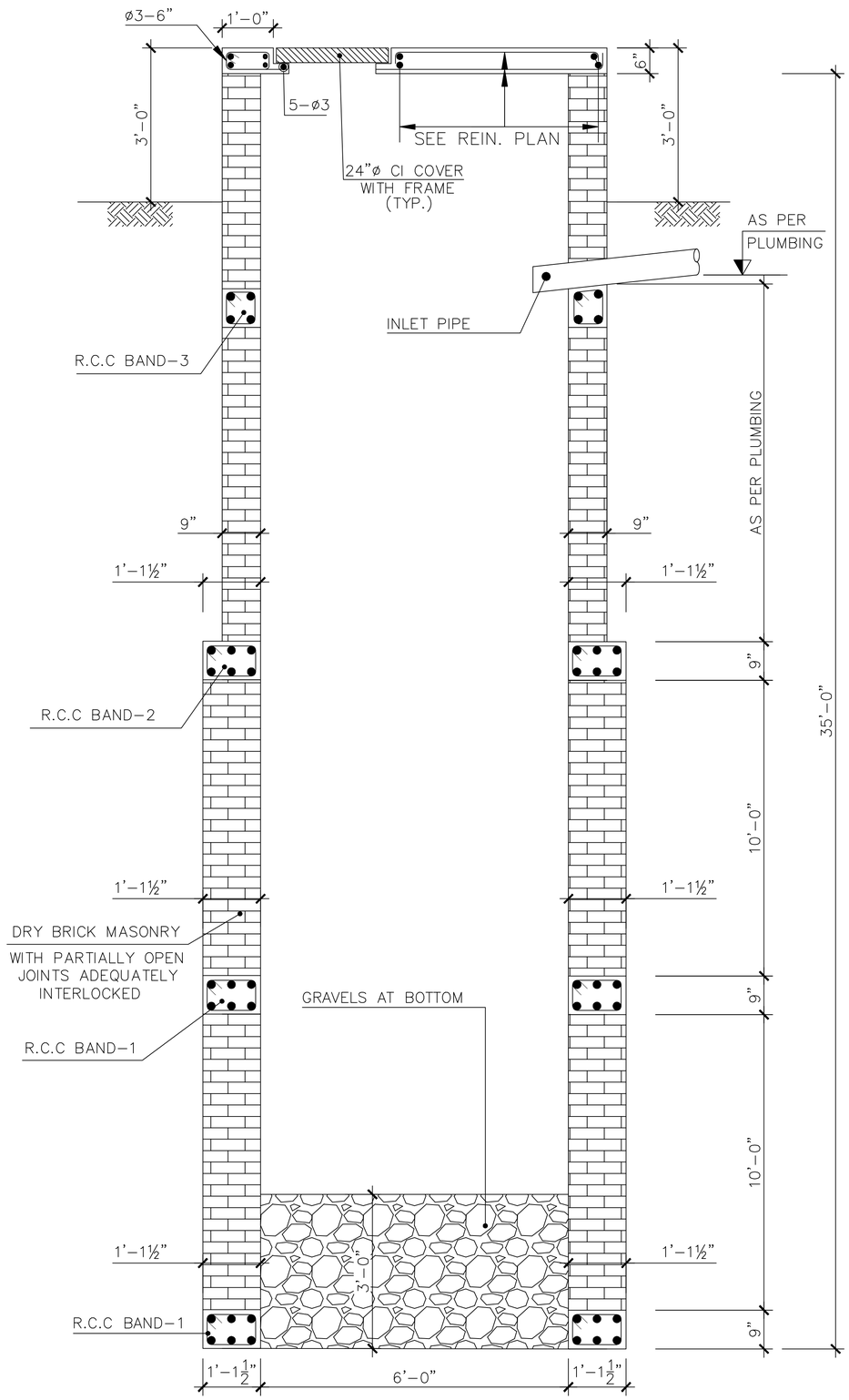
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

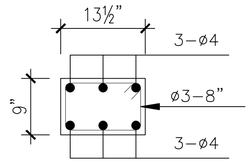
STRUCTURAL LAYOUTS
STRUCTURAL DETAILS OF SEPTIC TANK

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

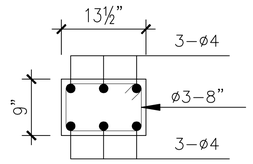
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G14	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/01G14	0
SUBM. TALHA AFZAL	OCT.,2022		



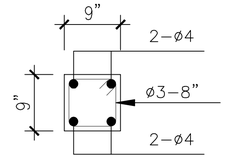
SECTION OF SOAKAGE PIT



R.C.C BAND–1



R.C.C BAND–2



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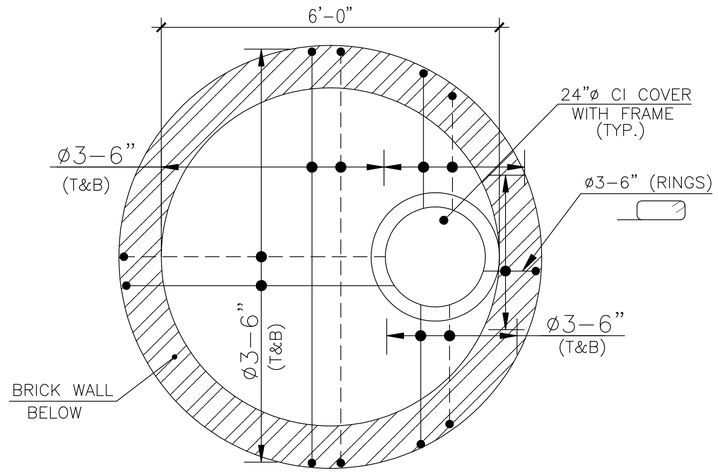


TOP SLAB PLAN OF SOAKAGE PIT
(6" THICK)

NOTES:

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH THE RELEVANT PLUMBING AND OTHER SERVICES DRAWINGS.
3. ALL STRUCTURAL CONCRETE SHALL BE CLASS 'C' HAVING MINIMUM 28–DAYS CUBE STRENGTH OF 2,400.00 psi
4. ALL REINFORCING BARS SHALL BE GRADE–40 DEFORMED STEEL HAVING MINIMUM YIELD STRENGTH OF 40,000 psi, CONFORMING TO ASTM A615.
5. CLEAR COVER TO REINFORCEMENT SHALL BE AS UNDER:
   SLAB = 3/4" (ALL FACES)
   BEAMS = 1½"

SCALE = 1"=8'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

STRUCTURAL LAYOUTS

STRUCTURAL DETAILS OF SOAKAGE PIT

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 01G15	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/01G15	0

SYMBOLS AND DESCRIPTIONS

ELECTRICAL WORKS

S. #	SYMBOL	DESCRIPTION	STATUS
1		MSB -- MAIN SWITCH BOARD	N.A.
2		DB -- DISTRIBUTION BOARD	
3		CP -- CONTROL PANEL	N.A.
4		PDB -- POWER DISTRIBUTION BOARD	N.A.
5		TRIPLE POLE, 500 VOLTS, MOULDED CASE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
6		TRIPLE POLE, 500 VOLTS, MINIATURE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
7		SINGLE POLE, 250 VOLTS, MINIATURE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
8	FP	FOUR POLE, 500 VOLTS, RESIDUAL CURRENT CIRCUIT BREAKER (SENSITIVITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	N.A.
9	DP	DOUBLE POLE, 250 VOLTS, RESIDUAL CURRENT CIRCUIT BREAKER (SENSITIVITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	N.A.
10		INSTRUMENTS PROTECTION FUSE (ONE NO.)	
11		INSTRUMENTS PROTECTION FUSES (THREE NOS.)	
12	VSS	VSS – VOLTMETER SELECTOR SWITCH (RY–YB–BR–OFF–RN)	
13	ASS	ASS – AMMETER SELECTOR SWITCH (R–Y–B–OFF)	
14	A	AC AMMETER (MEASURING RANGE INDICATED ON DRAWING)	
15	V	AC VOLTMETER (MEASURING RANGE INDICATED ON DRAWING)	
16		ONE NO. SINGLE PHASE CURRENT TRANSFORMER (TRANSFORMATION RATIO INDICATED ON DRAWINGS)	
17		THREE NOS. SINGLE PHASE CURRENT TRANSFORMERS (TRANSFORMATION RATIOS INDICATED ON DRAWINGS)	
18		PHASE INDICATION LAMPS R – RED Y – YELLOW B – BLUE	
19	F	CEILING FAN 56 INCH (1422mm) SWEEP	
20	10"	EXHAUST FAN WITH METALLIC BLADES (10" DIA)	
21	12"	EXHAUST FAN WITH METALIC BLADES & MOUNTING RING (12" DIA)	
22	18"	EXHAUST FAN WITH METALIC BLADES & MOUNTING RING (18" DIA)	N.A.
23		LIGHT CONTROL SWITCHES AND FAN DIMMERS	
24		13 AMPS 250 VOLTS COMBINED 2 + 3 PIN MULTI SOCKET UNIT WIRED WITH 2.5 SQ.mm PVC COPPER CABLE	
25		15 AMPS 250 VOLTS COMBINED 3 PIN SWITCH SOCKET UNIT WIRED WITH 4.0 SQ.mm PVC COPPER CABLE	
26		20 AMPS 250 VOLTS COMBINED 3 PIN SWITCH SOCKET UNIT WIRED WITH 4.0 SQ.mm PVC COPPER CABLE	
27		20A TP MCCB	N.A.

N.A. = NOT APPLICABLE

LIGHTING FIXTURES

S. #	SYMBOL	DESCRIPTION	STATUS
1		12 W LED DOWN LIGHTER	
2		7 W LED DOWN LIGHTER	
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

N.A. = NOT APPLICABLE

COMMUNICATIONS SYSTEMS

S. #	SYMBOL	DESCRIPTION	STATUS
1		WALL MOUNTED CAMERA	
2	SD	SMOKE DETECTOR	
3	HD	HEAT DETECTOR	
4	M	MANUAL CALL POINT	
5	FACP	FIRE ALARM CONTROL PANEL	
6		Duplex Face plate with 2 I/Os RJ–45 CAT–6 UTP telecommunication outlet	
7	CSNC	COMMUNICATION SYSTEMS DISTRIBUTION NETWORK	
8			
9			
10			
11			
12			
13			
14			

N.A. = NOT APPLICABLE

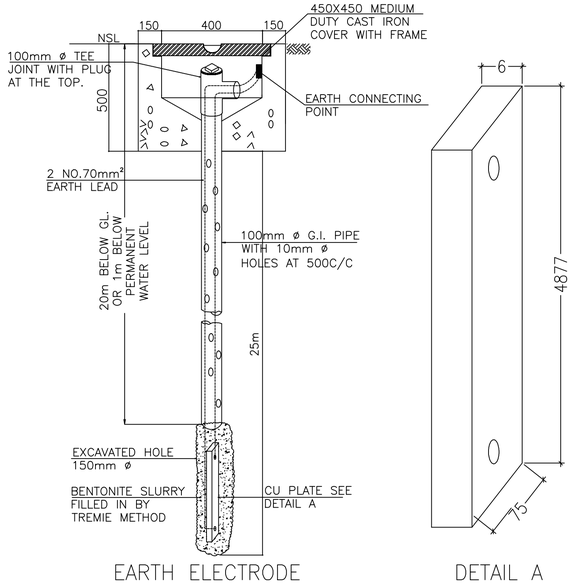


PLATE TYPE EARTH ELECTRODE

GENERAL NOTES

ELECTRICAL SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL ELECTRICAL DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.

THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE ELECTRICAL WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.

ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH BOQ, TECHNICAL SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, PLUMBING AND HVAC DRAWINGS & ALL OTHER RELEVANT DETAILS.

DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/ MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.

PROPER CO–ORDINATION OF ELECTRICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.

ALL NON–CURRENT CARRYING PARTS i.e. OUTER CASINGS OF EQUIPMENT SUCH AS HT & LT PANELS, DISTRIBUTIONS BOARDS, CABLE TRAYS, AUXILIARY CONSTRUCTIONS FOR EQUIPMENT ETC. SHALL BE CONNECTED TO THE GROUNDING/EARTHING SYSTEM AT REQUIRED NUMBER OF POINTS WITH SPECIFIED SIZES OF CONDUCTORS. WATER PIPES ALONG ELECTRICAL LINE SHALL BE BONDED TO THE EARTHING SYSTEM WITH 10mm² SINGLE CORE, COPPER CONDUCTOR PVC CABLE.

ELECTRICAL POINTS FOR EQUIPMENT SHALL BE INSTALLED IN CO–ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS COMMUNICATION SYSTEMS, HVAC, PLUMBING ETC. THE LOCATION ON ELECTRICAL DRAWINGS IS ONLY INDICATIVE.

ARRANGEMENT OF ELECTRICAL EQUIPMENTS ON ELECTRICAL DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.

LOADS ON ALL PHASES SHALL BE BALANCED AT THE TESTING/ COMMISSIONING STAGE.

CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER OF TWO INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.

RUN GREEN–YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG LIGHT AND POWER WIRING. WHEREVER THE SIZE IS NOT SPECIFIED THE FOLLOWING CRITERIA SHALL BE OBSERVED TO DETERMINE MINIMUM CROSS SECTIONAL AREA OF EARTH CONTINUITY CONDUCTOR(ECC) IN RELATION TO THE AREA OF ITS PHASE CONDUCTORS. RUN DECARATE ECC FOR EACH CIRCUIT.

- ECC & PHASE CONDUCTOR OF SAME SIZE FOR UPTO AND INCLUDING 16mm² CABLES.
- 16mm² ECC FOR PHASE CONDUCTOR OF 16mm², 25mm² & 35 mm² CABLES.
- FOR CABLES OF 50mm² AND ABOVE SIZES, ECC IS HALF SIZE OF PHASE CONDUCTOR.
- MAXIMUM SIZE OF ECC IS 70mm².

THE MAXIMUM CAPACITY OF PVC CONDUITS FOR SIMULTANEOUS DRAWING OF PVC INSULATED CABLES SHALL BE DETERMINED AS PER BS 4607. THE FOLLOWING TABLE SHALL BE USED TO DETERMINE THE MAXIMUM NUMBER OF CABLES.

S. #	NOMINAL CONDUCTOR SIZE(SQMM)	NO. & DIA OF WIRES	NOMINAL OVERALL DIA	20 MM DIA (3/4" DIA)	25 MM DIA (1" DIA)	32 MM DIA (1¼" DIA)
1	1.5	1/1.38	3.1	10	18	30
2	2.5	1/1.78	3.5	8	14	23
3	2.5	7/0.67	3.8	7	12	20
4	4	7/0.85	4.3	5	9	15
5	6	7/1.04	4.9	4	7	12
6	10	7/1.35	6.2	2	4	7
7	16	7/1.70	7.3	–	3	5
8	25	7/2.14	9.0	–	2	3
9	35	19/1.53	10.3	–	–	2

NORMAL & EMERGENCY CIRCUITS SHALL RUN IN DECARATE CONDUITS.

ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.

THE WIRING SHALL BE CONTINUOUS LOOPING–IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.

THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.

MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL(F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

MAIN SWITCH BOARD	48 INCHES
DISTRIBUTION BOARD	48 INCHES
CONTROL PANEL	48 INCHES
ON/OFF PUSH BUTTON STATION	48 INCHES
DIMMER CONTROL UNIT	48 INCHES
LIGHT CONTROL SWITCH(ONE WAY/TWO WAY)	48 INCHES
5A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
20A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN KITCHEN(ABOVE COUNTER)	10 INCHES
15A SOCKET OUTLETS IN TOILETS	66 INCHES
16A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
32A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
63A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
CEILING FAN	96 INCHES
WALL FAN	84 INCHES
EXHAUST FAN	REFER ARCH. DRGS.

COMMUNICATION SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL COMMUNICATION SYSTEMS DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE COMMUNICATION SYSTEMS WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL COMMUNICATION SYSTEMS DRAWINGS SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS, ITEMS OF B.O.Q., ARCHITECTURAL STRUCTURAL, HVAC, PLUMBING DRAWINGS AND ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO–ORDINATION OF COMMUNICATION SYSTEMS WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. TELEPHONE SYSTEM SHALL BE COMPLETE WITH INSTRUMENTS, EQUIPMENT AND INTERCONNECTING WIRING, TELEPHONE EXCHANGE, TELEPHONE OUTLETS, JUNCTION BOXES, CONDUITS OF SPECIFIED SIZES IN THE BUILDING, AND UNDERGROUND PIPES OF SPECIFIED SIZES SHOWN ON DRAWINGS SHALL BE PROVIDED. WHERE SIZE OF CONDUIT/PIPE IS NOT SPECIFIED SUITABLE SIZE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
8. POINTS FOR COMMUNICATION SYSTEMS EQUIPMENT SHALL BE INSTALLED IN CO–ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS ELECTRICAL, HVAC, PLUMBING ETC. THE LOCATION ON COMMUNICATION SYSTEMS DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF COMMUNICATION SYSTEMS EQUIPMENTS ON DRAWINGS ARE TENTATIVE EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
10. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER 2 INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
11. RUN GREEN–YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG COMMUNICATION SYSTEMS WIRING.
12. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
13. THE WIRING SHALL BE CONTINUOUS LOOPING–IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
14. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
15. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

TELEPHONE JUNCTION BOX	10 INCHES
TELEPHONE OUTLET	10 INCHES
INTERCOM CONTROL PACK	10 INCHES
INTERCOM STATION (WALL MOUNTED)	36 INCHES
FA SYSTEM CONTROL PANEL	10 INCHES
MANUAL CALL STATION	42 INCHES
AUDIO ALARM	100 INCHES

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

GOVT. GIRLS HIGH SCHOOL DHINDA

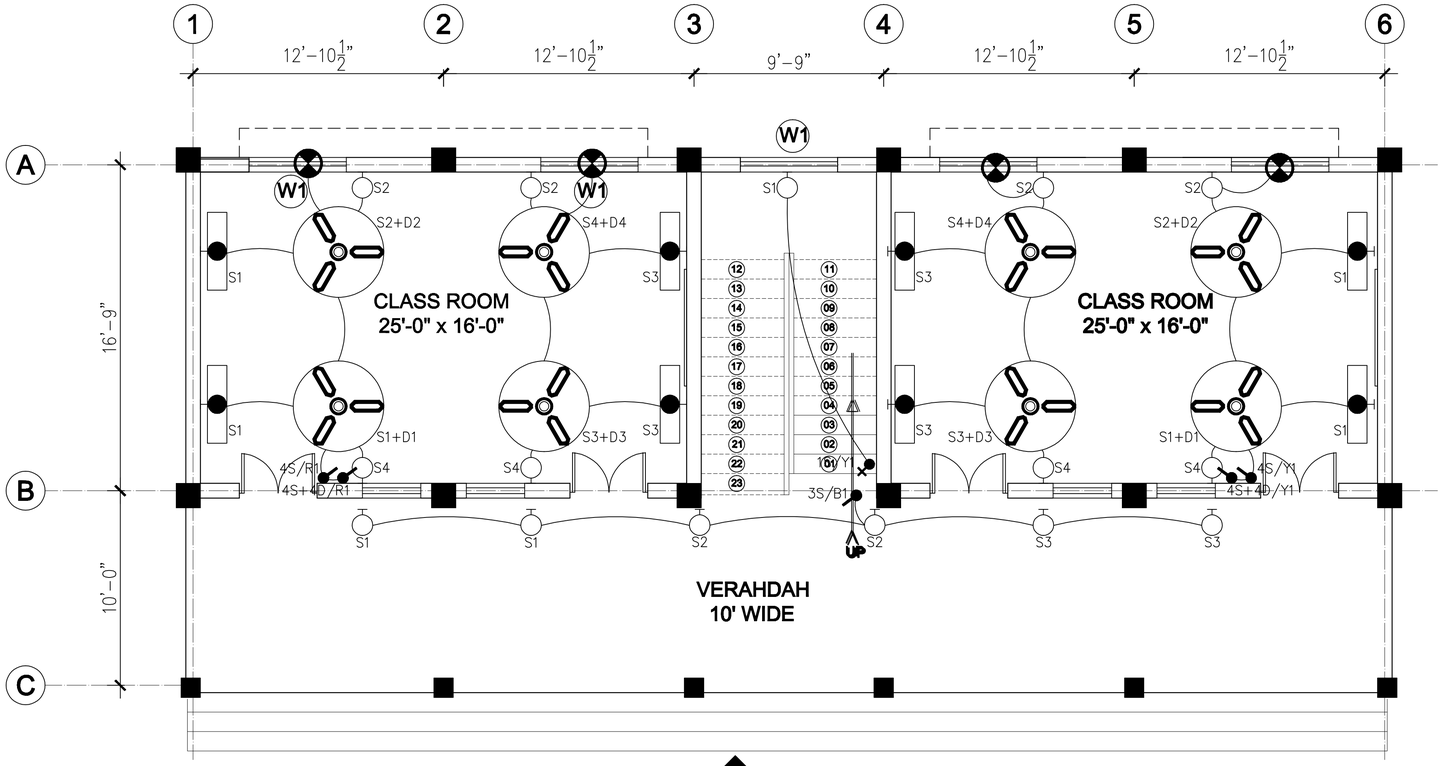
HARIPUR

LEGEND & GENERAL NOTES

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

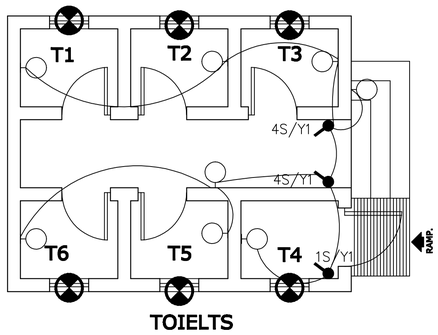
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. ALI			
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

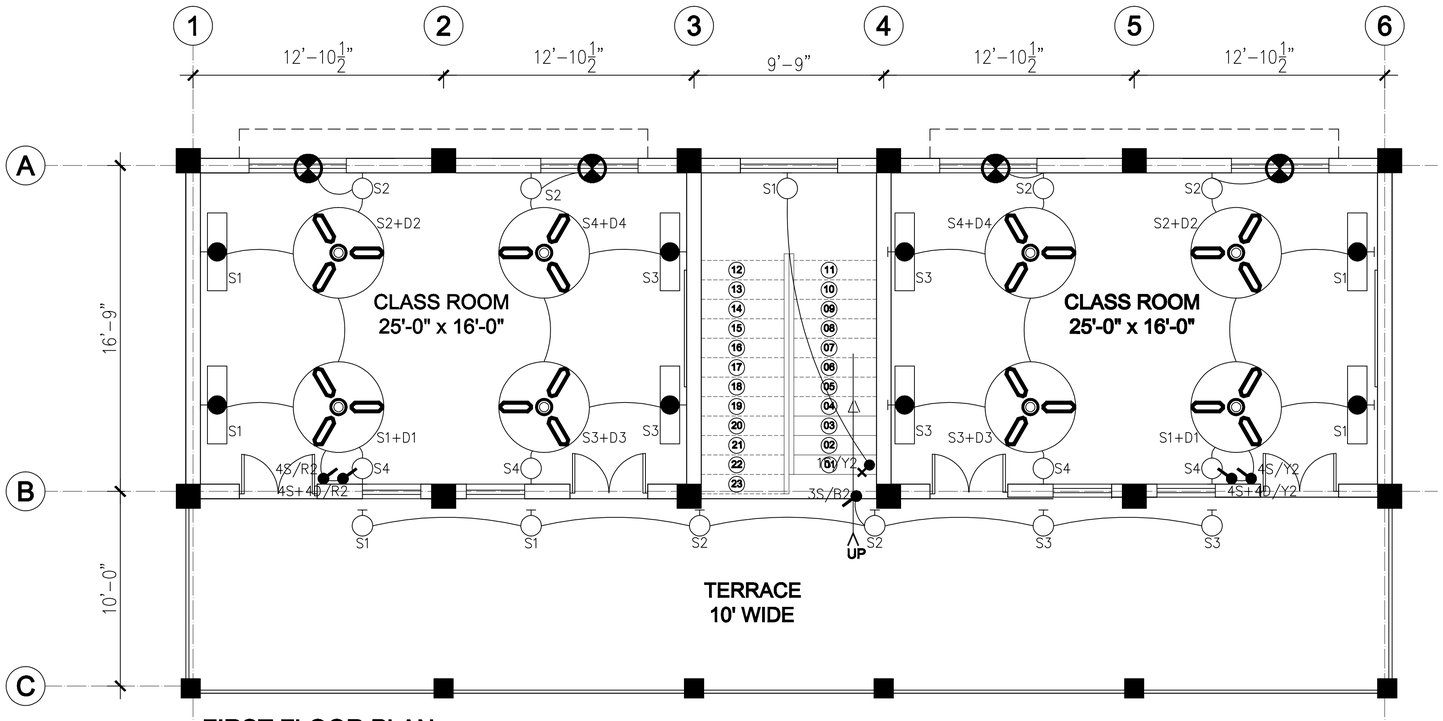
DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/01E01	0



GROUND FLOOR PLAN

ENT.





FIRST FLOOR PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

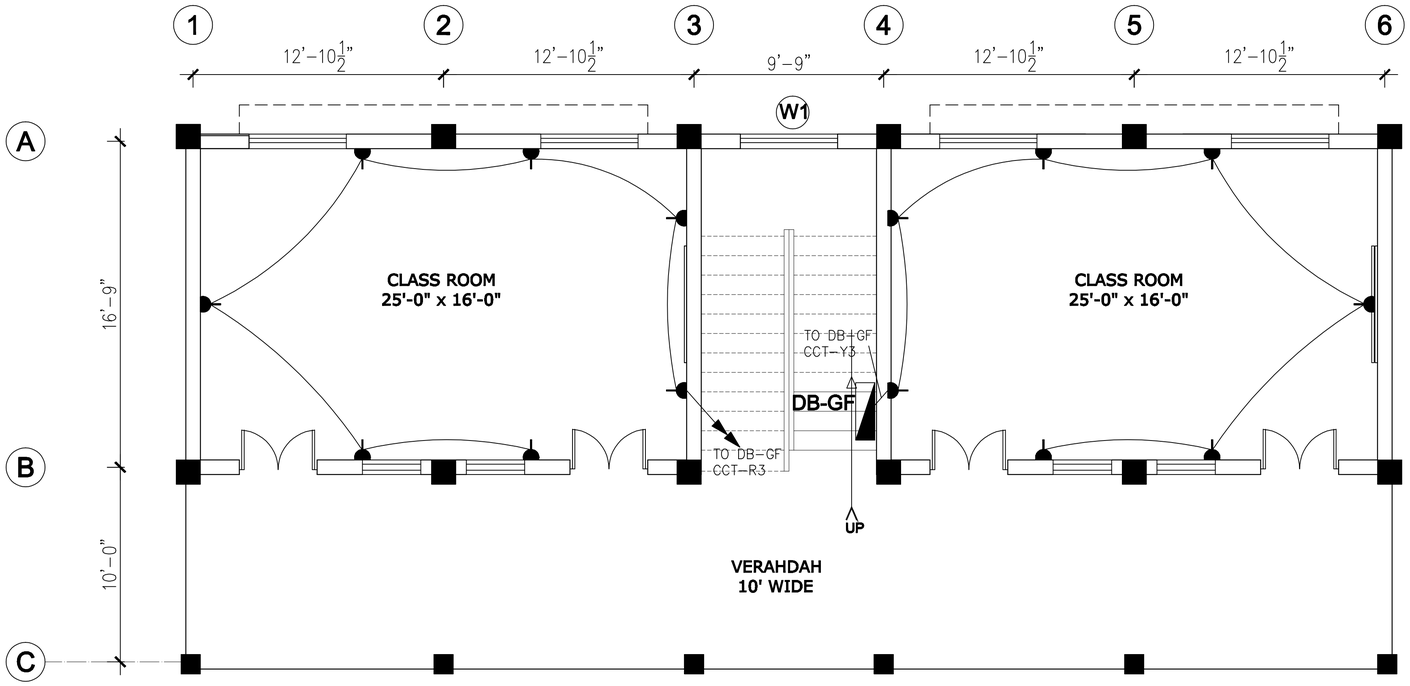
UNHCR PAKISTAN

GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
GROUND & FIRST FLOOR PLAN
LIGHTING LAYOYUT

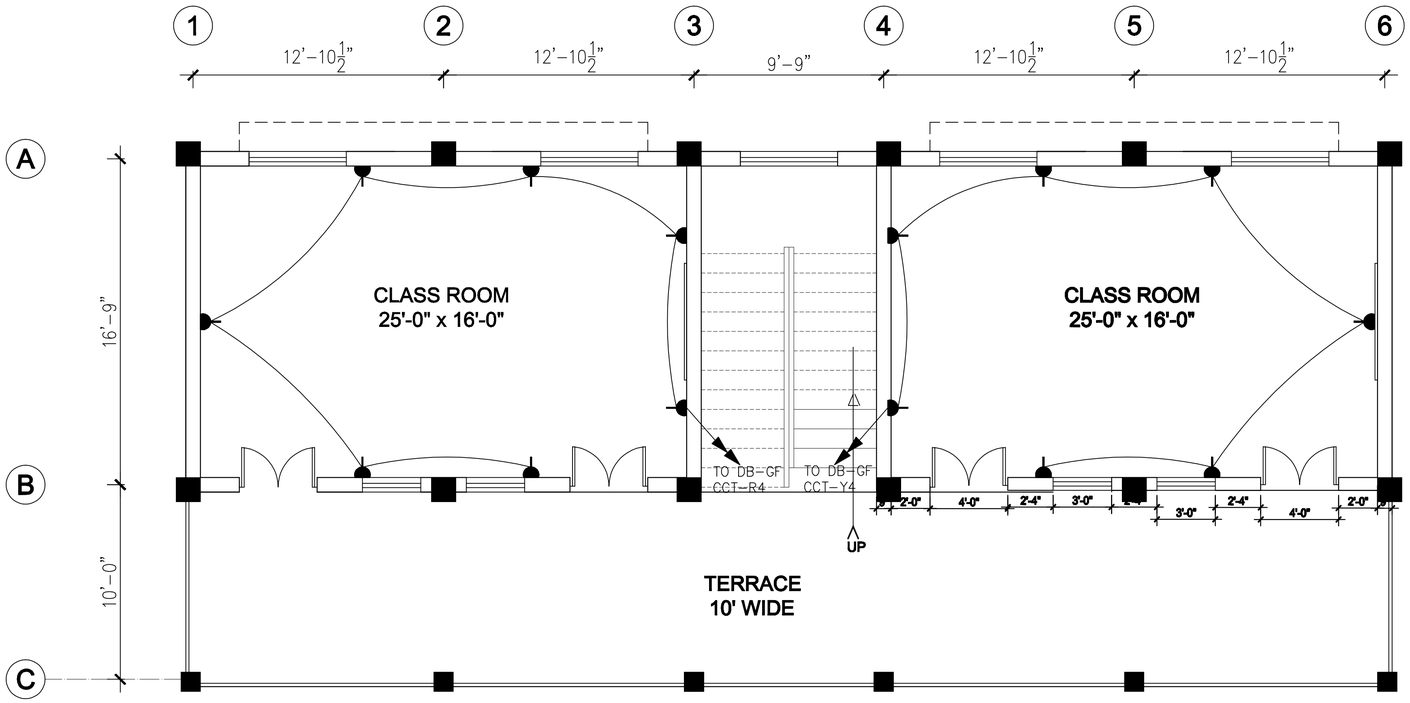
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. ALI			
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/01E02	0



GROUND FLOOR PLAN



FIRST FLOOR PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

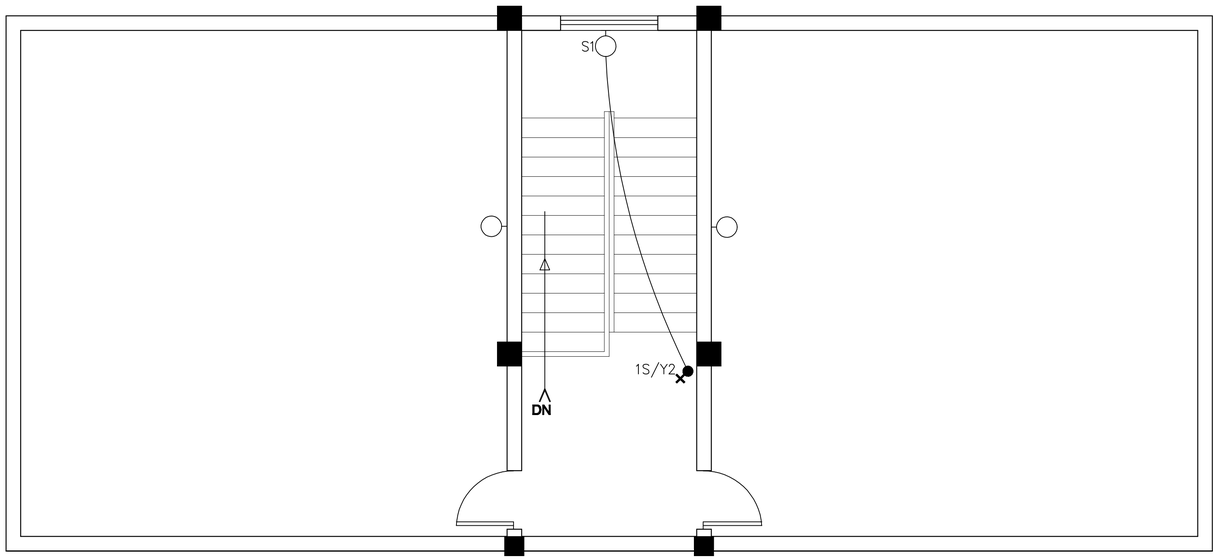
UNHCR PAKISTAN

GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR
GROUND & FIRST FLOOR PLAN
POWER LAYOYUT

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. ALI			
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/01E03	0



ROOF PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

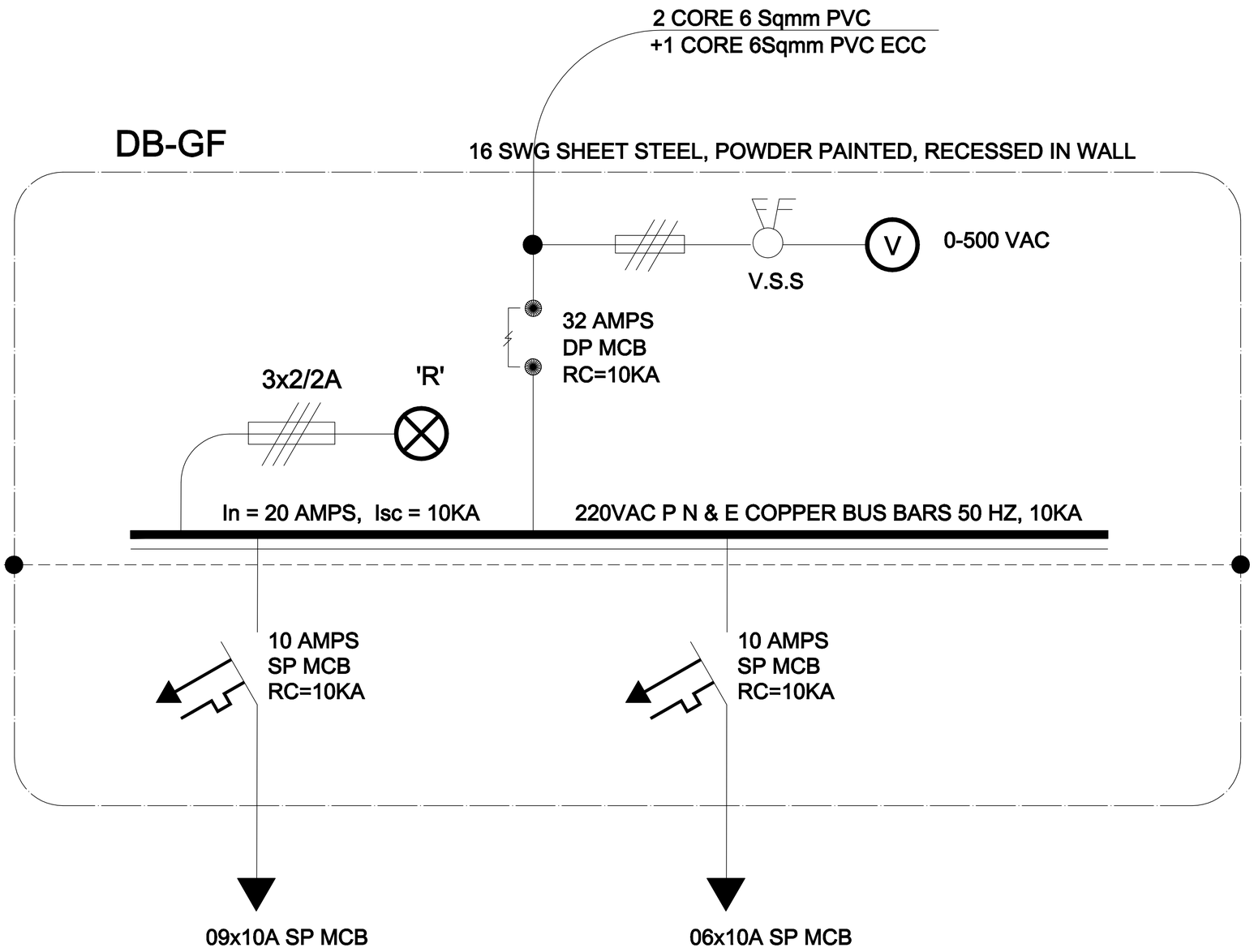
GOVT. GIRLS HIGH SCHOOL DHINDA

HARIPUR

GROUND & FIRST FLOOR PLAN
POWER LAYOYUT

NATIONAL ENGINEERING SERVICES
PAKISTAN (PVT.) LTD. ISLAMABAD

DESN. NESPAK	RECOMMENDED	VER./CKD.	APPROVED
DWN. ALI			
FILE	DATE	DRAWING NO.	REV.
CKD. KALEEM	OCT.,2022	4199/325/C/01E04	0
SUBM. WAJAHAT			



SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

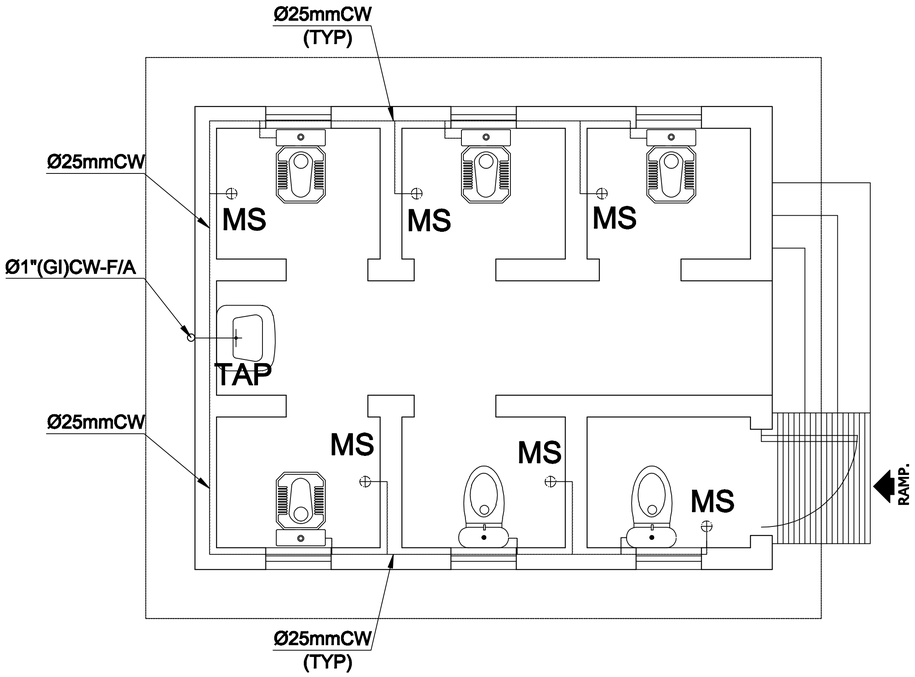
GOVT. GIRLS HIGH SCHOOL DHINDA
HARIPUR

SINGLE LINE DIAGRAM

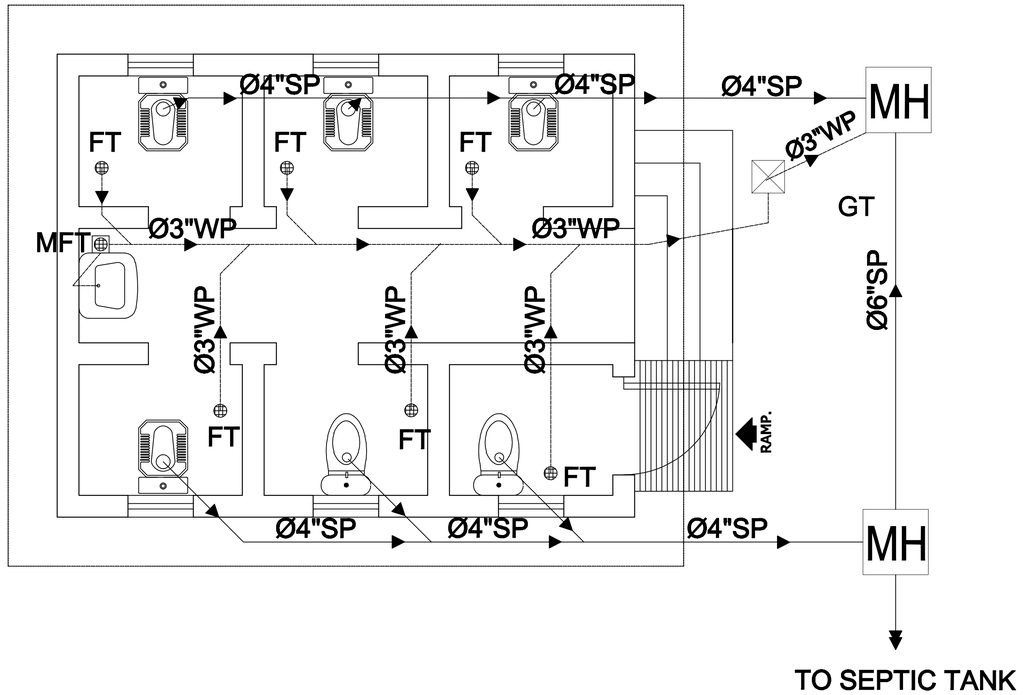
NATIONAL ENGINEERING SERVICES
PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. ALI	—	—	—
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/01E05	0



WATER SUPPLY LAYOUT PLAN



SANITARY DRAINAGE LAYOUT PLAN

LEGEND

S.NO	DESCRIPTION	SYMBOL
1.	WATER TAP	WT
2.	MUSLIM SHOWER	MS
3	GAS WATER HEATER	GWH
4	GULLY TRAP	G.T
5	ASIAN WATER CLOSET	
6	ENGLISH WATER CLOSET	
7.	MULTI FLOOR TRAP	
8.	FLOOR TRAP	

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

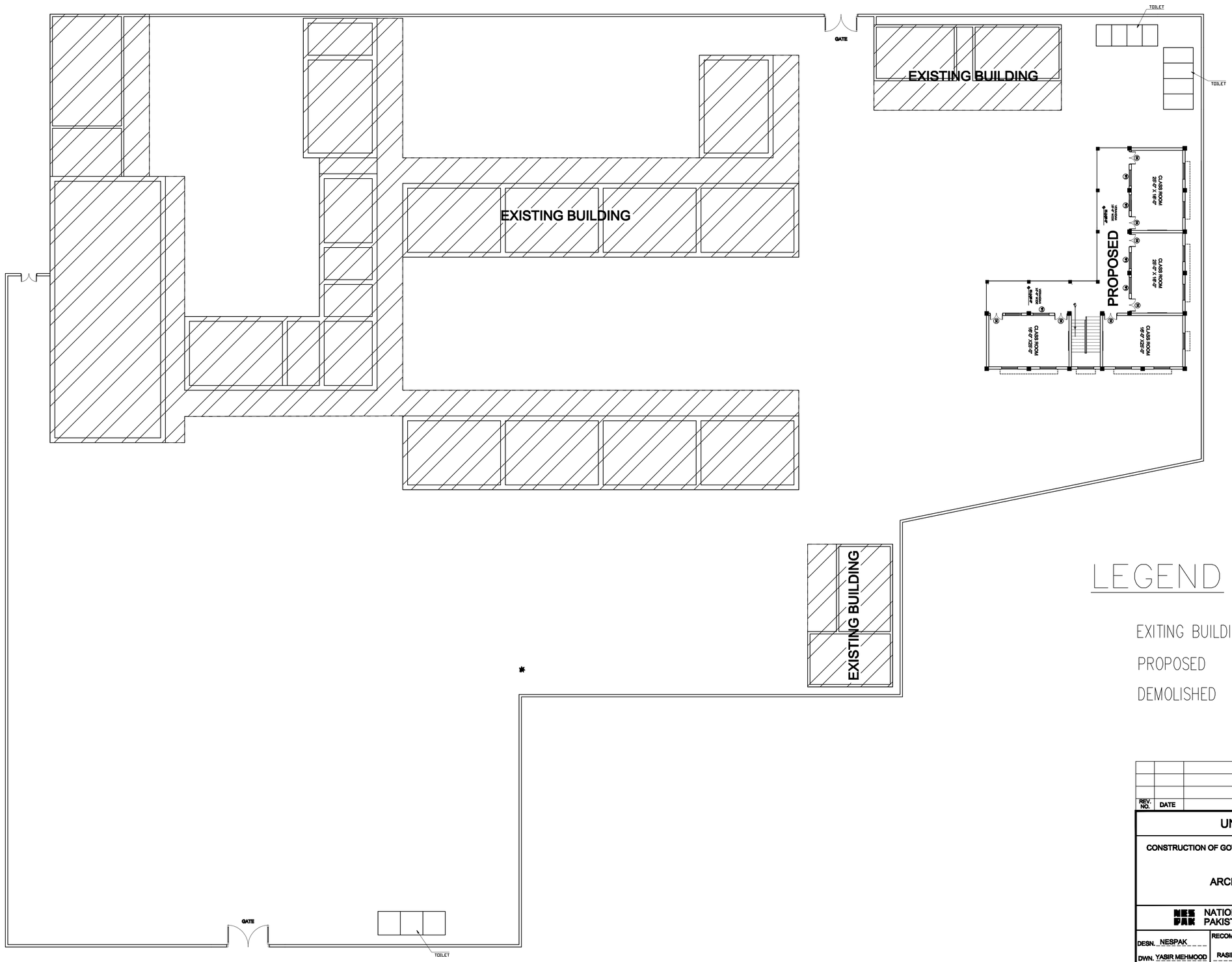
CONSTRUCTION OF GOVT. GIRLS HIGH SCHOOL DHINDA HARIPUR

(WATER SUPPLY & SANITARY DRAINAGE LAYOUTS)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. HASNAT ALI	MEHWISH AZIZ	NAVID AKHTAR	RASHID ULLAH
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. MEHWISH AZIZ	OCT.,2022	4199/324/C/01F01	0

2. GOVT. HIGH SCHOOL FOR BOYS
KANGRA COLONY, HARIPUR



LEGEND

EXITING BUILDING	
PROPOSED	
DEMOLISHED	

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

ARCHITECTURAL LAYOUTS

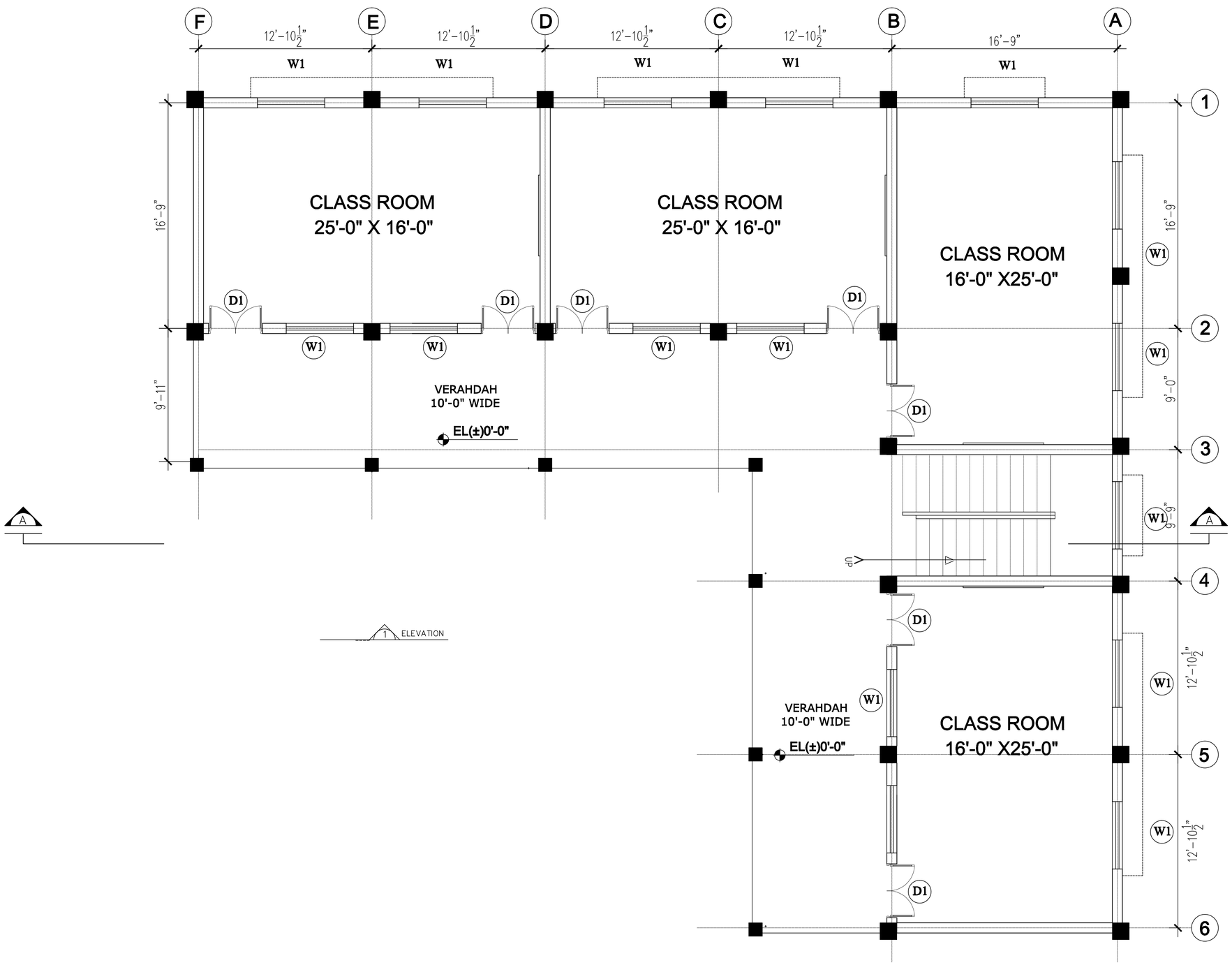
SITE PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.	OCT.,2022	4199/322/C/02B01	0
SUBM. WAJIHA REHAN			

SCHEDULE OF DOOR & WINDOWS

D1=4'-0" x 9'-6"
D2=3'-0" x 7'-0"
W1=5'-0" x 6'-3"



GROUND FLOOR PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

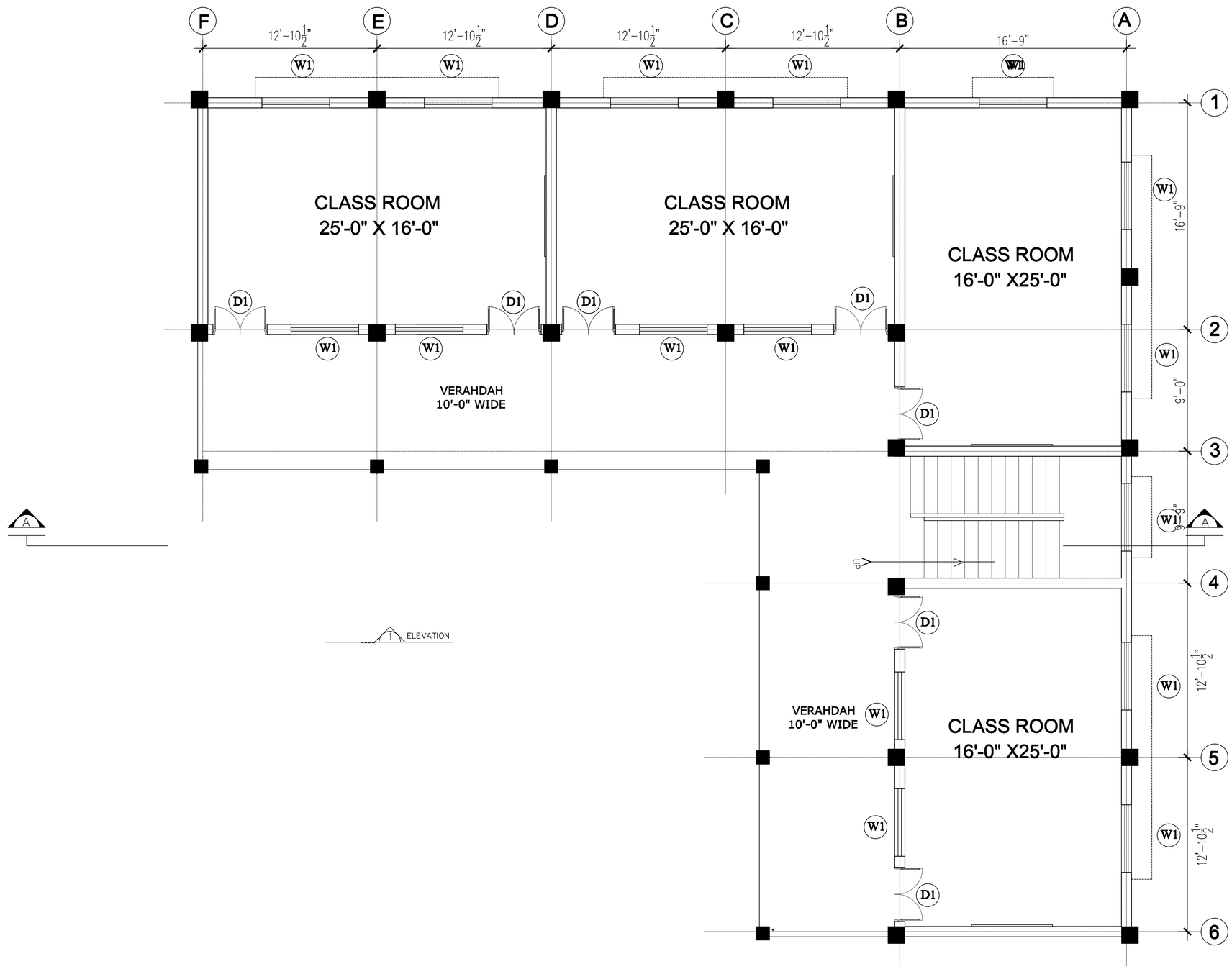
ARCHITECTURAL LAYOUTS
GROUND FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.	DATE	DRAWING NO.	REV.
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/02B02	0

SCHEDULE OF DOOR & WINDOWS

D1=4'-0" x 9'-6"
D2=3'-0" x 7'-0"
W1=5'-0" x 6'-3"



FIRST FLOOR PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

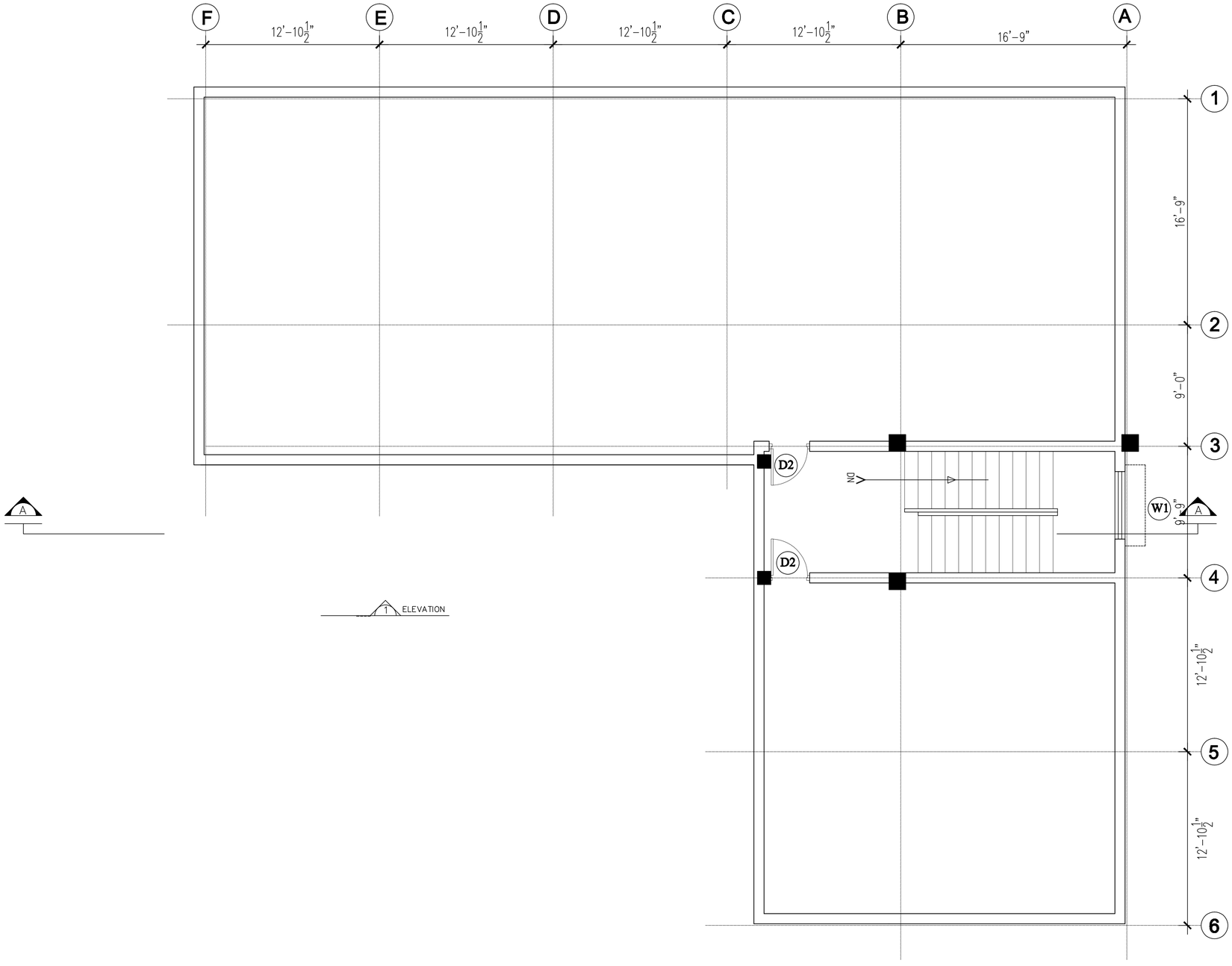
CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

ARCHITECTURAL LAYOUTS
FIRST FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.	OCT.,2022	4199/322/C/02B03	0
SUBM. WAJIHA REHAN			



MUMTY PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

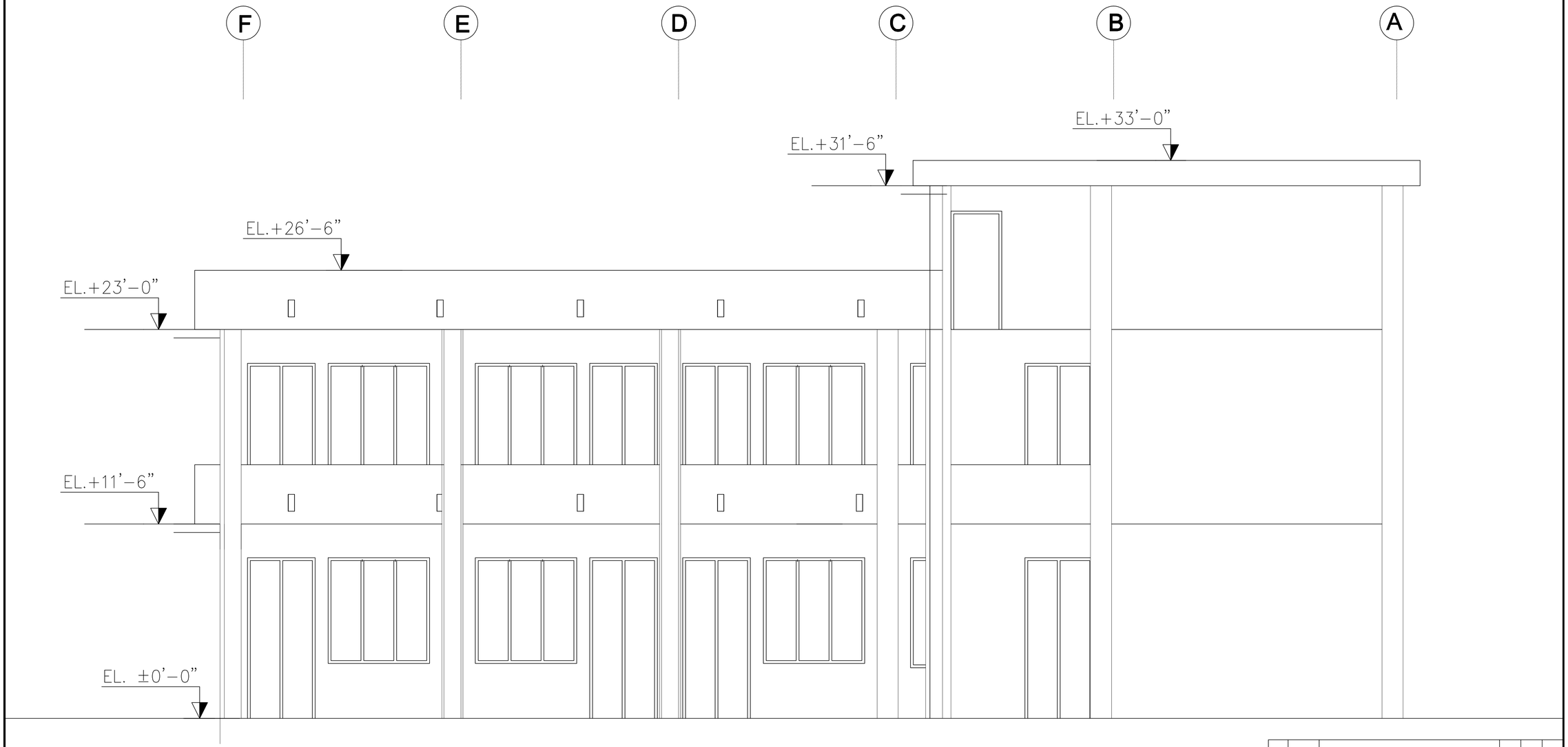
HARIPUR

ARCHITECTURAL LAYOUTS

ROOF PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.	DATE	DRAWING NO.	REV.
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/02B04	0



FRONT ELEVATION-1

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

ARCHITECTURAL LAYOUTS

ELEVATION - 1

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
DWN. YASIR MEHMOOD			
FILE	DATE	DRAWING NO.	REV.
CKD.	OCT.,2022	4199/322/C/02B05	0
SUBM. WAJIHA REHAN			

SECTIONAL ELEVATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

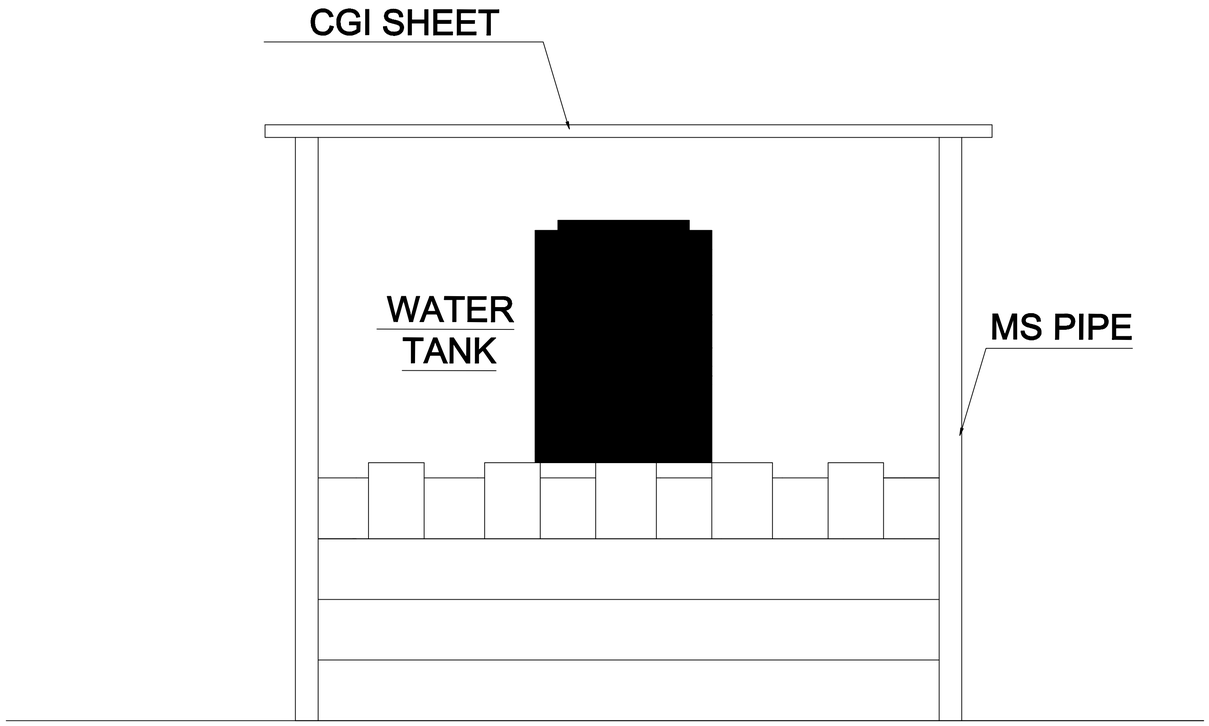
HARIPUR

ARCHITECTURAL LAYOUTS

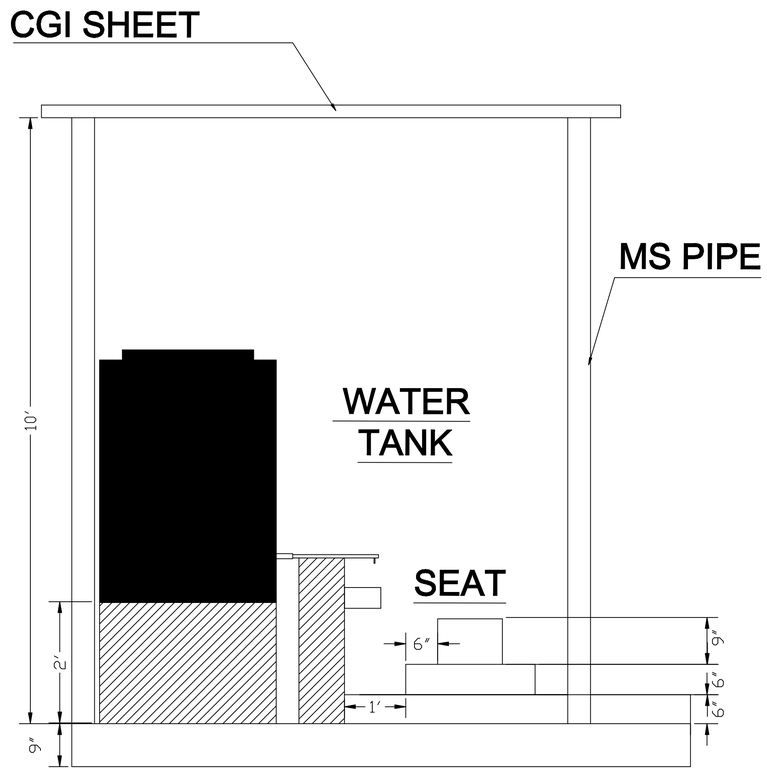
ELEVATION - 2

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

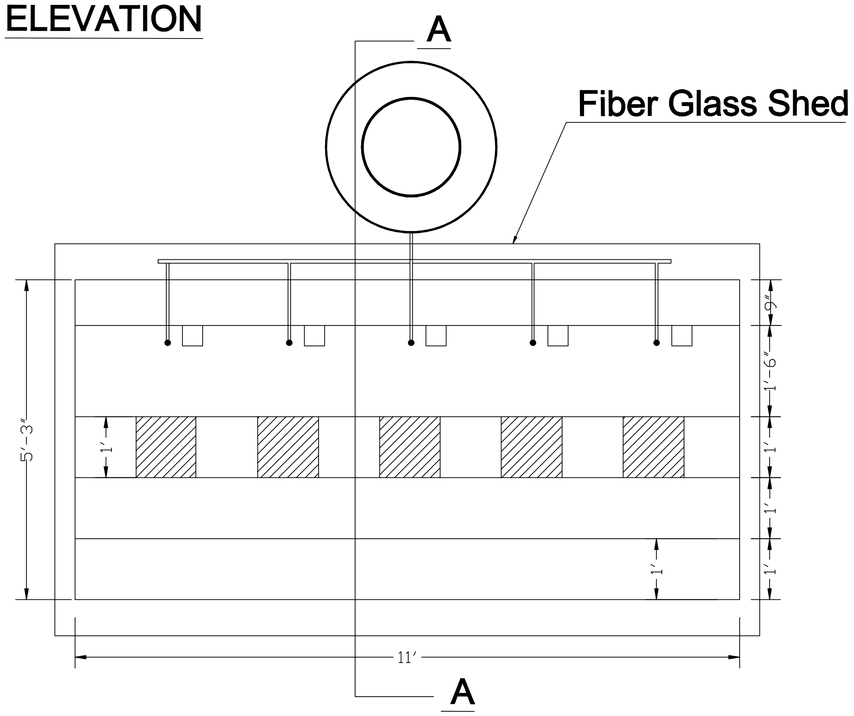
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/02B06	0



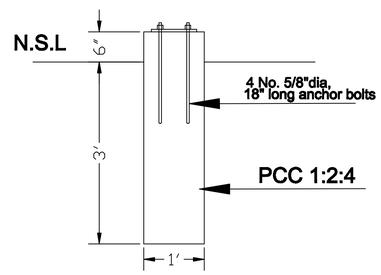
ELEVATION



SECTION AT A-A



PLAN OF WASH FACILITATION



TYPICAL FOUNDATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

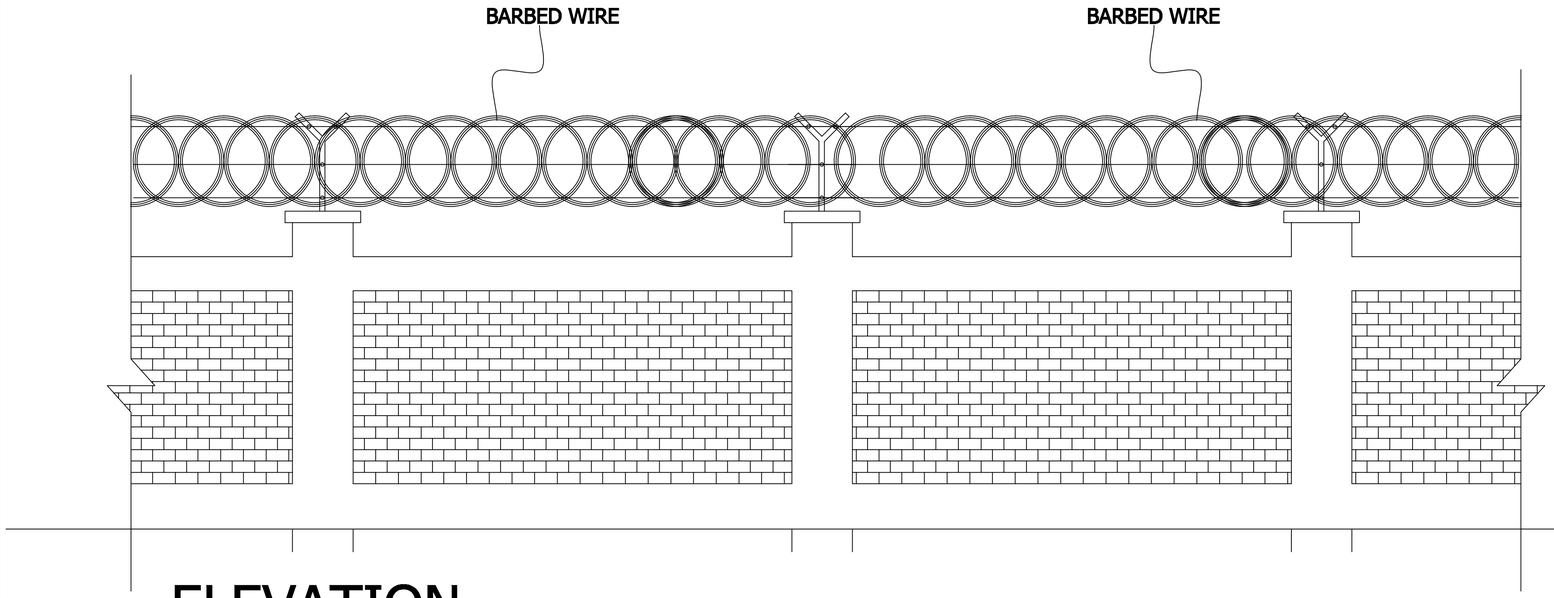
HARIPUR

ARCHITECTURAL LAYOUTS

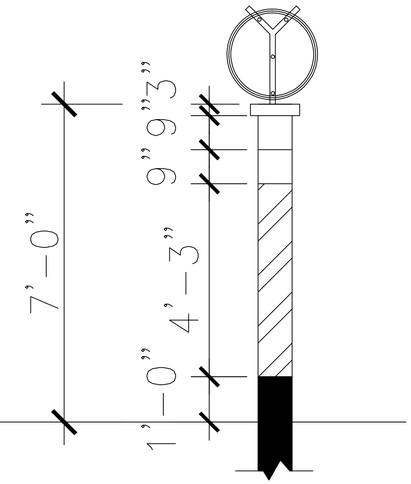
TYPICAL DETAIL OF WASH FACILITY

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

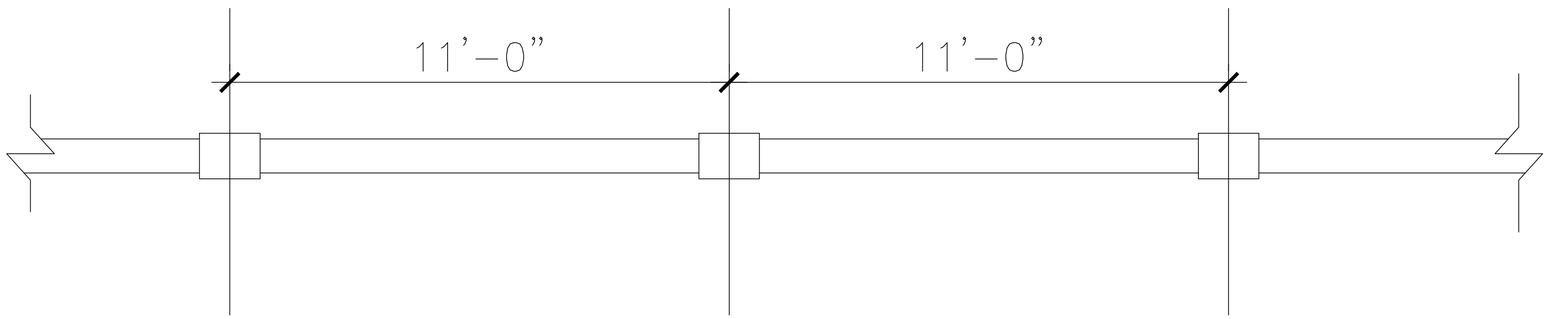
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/02B07	0



ELEVATION



SECTION



PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

ARCHITECTURAL LAYOUTS
BOUNDARY WALL

NATIONAL ENGINEERING SERVICES
PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.			
SUBM. WAJIHA REHAN			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/322/C/02B08	0

A. GENERAL

1. NOTES GIVEN ON THIS DRAWING ARE APPLICABLE TO ALL STRUCTURAL DRAWINGS UNLESS OTHERWISE NOTED. NOTES WRITTEN ON ANY OTHER DRAWING SHALL BE APPLICABLE TO THAT PARTICULAR DRAWING ONLY UNLESS OTHERWISE CROSS REFERRED.
2. SYSTEM OF UNITS IS FPS.
3. ALL LEVELS MARKED ON THE DRAWINGS ARE LEVELS OF STRUCTURAL ELEMENTS. FINISH LEVELS SHALL BE IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND STABILITY OF THE STRUCTURE AND ALL TEMPORARY WORKS DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL INFORM THE ENGINEER ABOUT ANTICIPATED CONSTRUCTION LOADS IN THE STRUCTURE AND OBTAIN ENGINEER'S APPROVAL THEREOF BEFORE COMMENCING THE WORK.
6. THE CONTRACTOR SHALL CO-ORDINATE ALL DRAWINGS OF ALL DISCIPLINES FOR ALL ITEMS INCLUDING BUT NOT LIMITED TO SIZES AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK AND SHALL BRING TO THE NOTICE OF THE ENGINEER DISCREPANCIES, IF ANY, FOR HIS INSTRUCTIONS, PRIOR TO THE START OF WORK.
7. THE CONTRACTOR SHALL VERIFY LAYOUT, CONFIGURATION, ALL DIMENSIONS AND LEVELS PERTAINING TO EXISTING WORKS BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ADOPT ADEQUATE AND APPROPRIATE MEASURES SO AS NOT TO DAMAGE THE EXISTING WORKS.
8. THE CONTRACTOR SHALL EXERCISE UTMOST CARE AND PRECAUTION DURING THE WORKS, AGAINST ANY MISHAPS OR ACCIDENTS, FOR WHICH THE CONTRACTOR SHALL BE WHOLLY AND SOLELY RESPONSIBLE. THE CONTRACTOR SHALL INDEMNIFY THE OWNER AGAINST ANY ACCIDENTS AND ANY LOSSES THEREFROM AND SHALL REPAIR AND RECTIFY THEM AT HIS OWN COST AND TIME.
9. THE CONTRACTOR SHALL COORDINATE SCHEDULE OF CONSTRUCTION WITH SUPPLY AND INSTALLATION OF EQUIPMENT.
10. PROVISIONS SHALL BE MADE FOR INSTALLATION OF EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS.
11. ANY DEPARTURES/DEVIATIONS DESIRED FROM THE DESIGN OR SPECIFICATIONS, OR SOLUTIONS TO ANY PROBLEMS ENCOUNTERED, SHALL BE GOT APPROVED FROM THE ENGINEER PRIOR TO IMPLEMENTATION. UNAPPROVED DEPARTURES/DEVIATIONS MAY LEAD TO REJECTION/REPLACEMENT OF THE ENTIRE WORK AT THE CONTRACTOR'S COST.
12. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO SPECIFICATIONS OF THE CONTRACT. IN ABSENCE OF ANY EXPRESS OR IMPLIED SPECIFICATION IN THE CONTRACT, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO RELEVANT AMERICAN STANDARDS AND SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
13. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULES FOR ENGINEER'S APPROVAL AND OBTAIN HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF SHOP DRAWINGS AND BAR BENDING SCHEDULES. THE ENGINEER'S APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY.

B. FOUNDATION AND EARTHWORK

1. THE CONTRACTOR SHALL STUDY THE AVAILABLE GEOTECHNICAL INVESTIGATION REPORT BEFORE COMMENCING THE WORK.
2. FOUNDATION DESIGN IS BASED ON THE RECOMMEDATION LAID DOWN IN GEOTECHNICAL INVESTIGATION REPORT.
3. TERMITE CONTROL TREATMENT SHALL BE CARRIED OUT AS PER SPECIFICATIONS.
4. THE TYPE AND COMPACTION OF SOIL BELOW GRADE SLAB SHALL BE AS PER JOB SPECIFICATIONS.
5. NO FOOTING SHALL BE PLACED ON FILL. HOWEVER, AREAS WHERE FILLING BELOW THE FOOTINGS BECOMES INEVITABLE OR OVER-EXCAVATION (IF ANY), SHALL BE FILLED WITH CONCRETE CLASS 'E' WITH PRIOR APPROVAL OF THE ENGINEER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING SYSTEM IF AND WHERE SO REQUIRED DURING CONSTRUCTION.
7. ALL STRUCTURAL CONCRETE SURFACES AGAINST WHICH EARTH IS TO BE FILLED SHALL BE COATED WITH BITUMEN (10/20 GRADE) APPLIED HOT AT THE RATE OF 20 lb/100SFT PER COAT, EXCEPT FOR CONCRETE CLASS 'D' AND 'E'.
8. BACKFILLING AND COMPACTION SHALL BE CARRIED OUT EQUALLY ON BOTH SIDES OF PLINTH BEAMS TO AVOID IMBALANCE OF LATERAL EARTH PRESSURE.
9. THE CONTRACTOR SHALL SUPPLY AND ERECT ADEQUATE SHORING AND SUPPORT THE SIDES OF ALL EXCAVATIONS WHERE REQUIRED TO SAFEGUARD WORKMEN AND PROTECT ANY ADJACENT STRUCTURES.
10. EXISTING UNDERGROUND SERVICES, REQUIRED TO BE LEFT IN POSITION, SHALL BE CAREFULLY PROTECTED DURING EXCAVATION AND BACKFILLING OPERATIONS.
11. EXCAVATIONS ADJACENT TO EXISTING STRUCTURES AND/OR UNDERGROUND SERVICES SHALL BE MADE BY HAND.

C. REINFORCED / PLAIN CEMENT CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS FOR EXECUTION OF WORKS (1967), GOVERNMENT OF WEST PAKISTAN, BEING REFERENCE SPECIFICATIONS FOR KP-MRS ITEMS..
2. ALL CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ASTM STANDARDS C31, C39, C172 & SPECIFICATIONS AND THE MINIMUM CUBE/CYLINDER CRUSHING STRENGTH OF CONCRETE AT 28 DAYS SHALL BE AS FOLLOWS. TESTING OF CLASS 'D' & 'E' SHALL BE PERFORMED IF SO DIRECTED BY THE ENGINEER.

CLASS	NOMINAL MIX	MINIMUM CYLINDER STRENGTH AT 28-DAYS (psi.)
A	1:1:2	3,750
B	1:1½:3	3,000
C	1:2:4	2,400
D	1:3:6	1,500
E	1:4:8	1,200

C. REINFORCED / PLAIN CEMENT CONCRETE (CONTINUED)

3. CLASS OF CONCRETE FOR DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE AS FOLLOWS UNLESS NOTED OTHER WISE:

COMPONENT	CONCRETE CLASS
COLUMNS AND FOOTING	CLASS 'B'
SLABS & BEAMS	CLASS 'B'
P.C.C. STEPS & STUB COLUMNS (FOR FUTURE EXTENSION)	CLASS 'D'
LEAN CONCRETE	CLASS 'E'

4. ORDINARY PORTLAND CEMENT SHALL BE USED FOR ALL CONCRETE WORKS.
5. AN INTEGRAL WATER PROOFING AGENT SHALL BE USED IN CONCRETE THAT IS CONSTANTLY OR INTERMITTENTLY IN CONTACT WITH WATER AS PER MANUFACTURER'S RECOMMENDATIONS (GENCON GENPRUF RMC OR PENETRON ADMIX OR EQUIVALENT).
6. WATER CEMENT RATIO FOR WATERTIGHT STRUCTURAL CONCRETE SHALL NOT EXCEED 0.45 AND 0.5 FOR ALL OTHER STRUCTURAL CONCRETE.
7. CONCRETE CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

STRUCTURAL MEMBER / ELEMENT	MINIMUM COVER (INCHES)
FOUNDATIONS (ALL TYPES)	2"
COLUMNS & BEAMS	1½"
RCC RETAINING WALLS	1½"
SLABS	¾"
RCC SHELLS AND DOMES	½"

8. ALL REINFORCING STEEL EXCEPT 3/8"ø BARS SHALL BE DEFORMED, HOT ROLLED BILLET STEEL BARS CONFORMING TO ASTM A-615 GRADE-60 WITH SPECIFIED YIELD STRENGTH OF NOT LESS THAN 60,000 psi. NOR MORE THAN 78,000 psi, AND RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
9. 3/8"ø BARS SHALL BE MILD STEEL DEFORMED BARS CONFORMING TO ASTM A-615 GRADE-40 WITH SPECIFIED YIELD STRENGTH OF NOT LESS THAN 40,000 psi. NOR MORE THAN 58,000 psi, AND RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
10. GRADE-60 STEEL BARS ARE REPRESENTED USING PREFIX SYMBOL "#" AND GRADE-40 STEEL BARS ARE REPRESENTED USING PREFIX SYMBOL "ø". WHEREAS, THE NUMBER INDICATES THE BAR DIAMETER/SIZE, AS UNDER:

BAR NUMBER	DIAMETER (INCHES)
3	3/8"
4	1/2"
5	5/8"
6	3/4"
8	1"

C. REINFORCED / PLAIN CEMENT CONCRETE (CONTINUED)

12. ALL DETAILING SHALL BE DONE AS PER ACI STANDARDS ACI-315, ACI-318 & ACI-350R.
13. ALL REINFORCING STEEL SHALL BE HELD FIRMLY IN PLACE BEFORE AND DURING THE PLACING OF CONCRETE BY MEANS OF WIRES AND SUPPORTS ADEQUATE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION.

D. CONCRETE CONSTRUCTION

1. THE CONTRACTOR SHALL SUBMIT CONCRETE POURING SCHEDULE FOR ENGINEER'S APPROVAL. NO CONCRETE SHALL BE POURED UNTIL ITS FORMWORK AND REINFORCEMENT HAS BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. DURING CONSTRUCTION, STACKING OF CONSTRUCTION MATERIALS, BLOCKS ETC. SHOULD BE AVOIDED ON SLAB PANELS.
3. BEFORE CASTING OF ANY STRUCTURAL MEMBER, THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED ITEMS FOR ELECTRICAL, MECHANICAL, HVAC, PLUMBING, STRUCTURAL STEEL AND OTHER WORKS, AND DOWELS FOR STRUCTURAL MEMBERS AND/OR MASONARY ARE PROPERLY LOCATED IN PLACE.

E. CONSTRUCTION JOINTS

1. JOINTS, NOT SHOWN ON THE DRAWING, SHALL BE SO MADE AND LOCATED AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHALL NEED PRIOR APPROVAL OF THE ENGINEER. THEY SHALL BE LOCATED NEAR THE MIDDLE OF THE SPANS OF SLAB & BEAMS. JOINTS IN WALLS & COLUMNS SHALL BE AT THE UNDER-SIDE OF FLOORS, SLABS OR BEAMS AND AT THE TOP OF FOOTINGS OR FLOOR SLABS.
2. JOINTS SHALL BE PERPENDICULAR TO MAIN REINFORCEMENT. ALL REINFORCING STEEL SHALL BE CONTINUED ACROSS THE JOINTS.
3. JOINTS IN BASE SLAB & WALLS AND ROOF SLAB, IN ADDITION TO THOSE SHOWN ON THE DRAWINGS SHALL BE BORNE BY THE CONTRACTOR. BEAMS & BRACKETS SHALL BE PLACED AT THE SAME TIME AS SLABS.

F. ELECTRICAL CONDUITS

1. CONDUITS, FOR ELECTRICAL WORKS, SHALL BE PLACED WITHIN THE REINFORCED CONCRETE. THEY SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SECTION IN BEAMS & SLABS AND WITHIN THE MIDDLE HALF OF THE THICKNESS. SPACING BETWEEN PARALLEL CONDUITS SHALL NOT BE LESS THAN 6" (150 MM).

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY
HARIPUR
STRUCTURAL LAYOUTS
GENERAL NOTES (SHEET 1 OF 2)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G01	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G01	0
SUBM. TALHA AFZAL	OCT.,2022		

G. PROPS, FORMWORK & CURING

1. SHORE & BRACE ALL PARTS OF THE BUILDING DURING CONSTRUCTION, TO THE EXTENT NECESSARY TO ENSURE COMPLETE SAFETY, STRENGTH & SERVICEABILITY OF ALL STRUCTURAL ELEMENTS UNDER ALL CONDITIONS OF LOADS WHICH MAY OCCUR DURING CONSTRUCTION. SUCH SHORING & BRACING IS THE CONTRACTOR'S SOLE RESPONSIBILITY AND IS NOT SHOWN ON STRUCTURAL DRAWINGS OR SPECIFIED IN THE PROJECT.
2. SEQUENCE OF REMOVAL OF FORMWORK SHALL BE APPROVED BY THE ENGINEER.
3. AT LEAST ONE LOWER FLOOR SHALL REMAIN PROPPED UNTILL THE UPPER FLOOR IS CAST AND CURED.

H. BRICK MASONRY WORKS

1. ALL BRICK MASONRY WORKS SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS .
2. ALL BRICK WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS FOR EXECUTION OF WORKS FOR KP–MRS AS MENTIONED IN THE CONTRACT DOCUMENT.
3. ALL BRICKS SHALL BE SOUND, HARD, WELL BURNT AND OF UNIFORM SIZE, COLOUR AND TEXTURE. DIMENSIONAL VARIATION IN SIZES SHALL NOT EXCEED ⅛".
4. EACH FINISHED BRICK SHALL BE 9"x4½"x3" IN SIZE AND SHALL WEIGH BETWEEN 7 TO 9 POUNDS. THE DEPTH OF FROG SHALL BE ¼" ON THE FACE.
5. TESTING OF COMPRESSIVE STRENGH OF MASONRY PRISMS SHALL BE DONE, IF SO DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH ASTM E447 STANDARD.
6. THE AVERAGE COMPRESSIVE STRENGTH OF FIVE REPRESENTATIVE BRICKS SHALL NOT LESS THAN 1700 psi. AND SHALL BE NOT LESS THAN 1500 psi. FOR ANY INDIVIDUAL BRICK.
7. BRICKS SHALL BE LAID "FROG" UPWARD WITH MORTAR JOINTS AND IN ENGLISH/FLEMISH BOND AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE ENGINEER. BOTH BED/VERTICAL JOINTS SHALL BE ⅜" THICK COMLETELY FILLED WITH CEMENT MORTAR.
8. ALL BRICK WORK SHALL BE ERECTED PLUMB AND TRUE TO LINE AND LEVEL. THE MAXIMUM VARIATION IN ANY STOREY HEIGHT OR ANY LENGTH OF WALL SHALL BE ⅛" IN 10'–0".
9. MORTAR USED IN MASONRY CONSTRUCTION SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGHT OF NOT LESS 1800 psi AND SHALL CONFORM TO ASTM C270 STANDARDS. COMPRESSIVE STRENGHT OF MASONRY AT 28 DAYS SHALL NOT BE LESS THAN 1150 psi.
10. 9" AND 4½"–THICK BRICK MASONRY IN SUPER STRUCTURE SHALL BE LAID IN 1:6 CEMENT SAND MORTAR.
11. BEARING OF LINTELS SHALL BE 9" MINIMUM AT EACH SUPPORT.
12. ALL DESIGN, DETAILING, MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH RELEVANT ACI, ASTM, AND UBC CODES AND STANDARDS.

J. STRUCTURAL STEEL WORKS

1. ALL FABRICATION, PAINTING, ERECTION AND QUALITY CONTROL IS TO BE DONE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A–36 OR EQUIVALENT.
3. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF AMERICAN WELDING SOCIETY, AWS, SPECIFICATIONS USING ELECTRODES E70XX.
4. ALL BOLTS SHALL CONFORM TO ASTM A307 OR A325.
5. SURFACE PREPARATION OF ALL STRUCTURAL STEEL FOR PAINTING SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF "STEEL STRUCTURES PAINTING COUNCIL" SPECIFICATIONS SSPC–SP6 FOR COMMERCIAL BLAST CLEANING.
6. ALL STEEL SHALL BE SHOP PAINTED WITH ONE COAT OF POLYURETHANE PRIMER AND TWO COATS OF POLYURETHANE ENAMEL OF APPROVED COLOR, TWO FINAL COATS OF POLYURETHANE ENAMEL SHALL BE APPLIED AFTER ERECTION. ALL WORK SHALL BE CARRIED OUT AS PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS. STEEL SURFACE IN CONTACT WITH CONCRETE SHALL NOT BE PAINTED.

K. ABBREVIATIONS & SYMBOLS

@ AT THE RATE OF
B BOTTOM
BW BOTHWAYS
c/c CENTRE TO CENTRE
CL CLEAR
D,d DEPTH, THICKNESS
EF EACH FACE
EJ EXPANSION JOINT
EL. STRUCTURAL ELEVATION
EQ EQUAL
FF FAR FACE
FFL FINISHED FLOOR LEVEL
FGL FINISHED GROUND LEVEL
GS SLAB ON GRADE
H HORIZONTAL
NF NEAR FACE
NSL EXISTING/NATURAL SURFACE LEVEL
NSP NOT SHOWN ON PLAN
NTS NOT TO SCALE
SOP SURVEY OF PAKISTAN
ST STIRUPPS
T TOP
TYP. TYPICAL
UNO UNLESS NOTED OTHERWISE
V VERTICAL
≥ GREATER THAN OR EQUAL TO
≤ LESS THAN OR EQUAL TO
ø DIAMETER IN INCHES UNO
LEVEL ON PLAN
℄ CENTRE LINE
L ANGLE
[CHANNEL

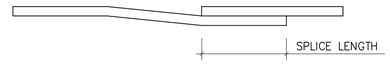
SPLICE LENGHTH (LS)*

fc' CYLINDER STRENGTH = 3,000 PSI		
BAR SIZES	(LS1) TOP BARS	(LS2) OTHER BARS
#3 TO #6	57db	44db
#7 TO #18	72db	55db

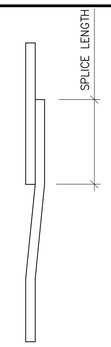
* ALL LAP SPLICE SHALL BE STAGGARED BY AT LEAST 50 %

DEVELOPMENT LENGHT (LD)

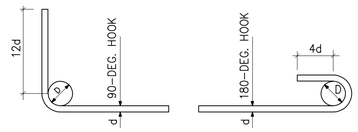
LD = LS



BEAM SPLICE (TYP)

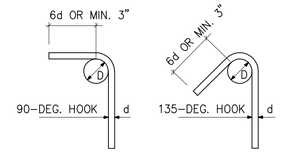


COLUMN SPLICE (TYP)



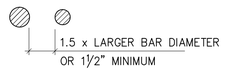
STANDARD BAR HOOKS (MAIN BARS)

BAR DIA	D
ø3	2½"
#4	3"
#5	4"
#6	4"
#8	6"
#9	7"
#11	8½"

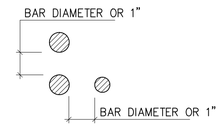


STIRRUPS AND TIE HOOKS

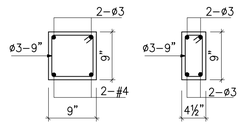
BAR DIA	D
ø3	1½"
#4	2"
#5	2½"



VERTICAL BAR SPACING

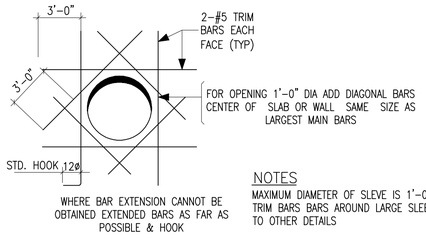


BAR SPACING IN BEAM



TYPICAL DETAIL OF LINTELS

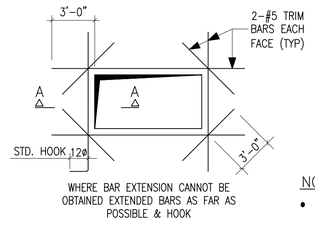
(UP TO 5'–0" CLEAR SPAN)

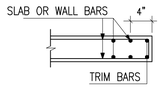


NOTES

MAXIMUM DIAMETER OF SLEVE IS 1'–0" FOR TRIM BARS BARS AROUND LARGE SLEEVE REFER TO OTHER DETAILS

REINFORCEMENT AROUND SLEEVE IN SLABS & WALLS (TYP)





SECTION A–A

NOTES

- FOR OPENING WITH MAXIMUM DIMENSION OVER 5'–0" REFER TO OTHER DETAILS.
- USE THIS DETAILS IF NOT SHOWN IN DESIGN DRAWINGS

REINFORCEMENT DETAIL AT OPENING IN SLAB & WALLS (TYP)

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

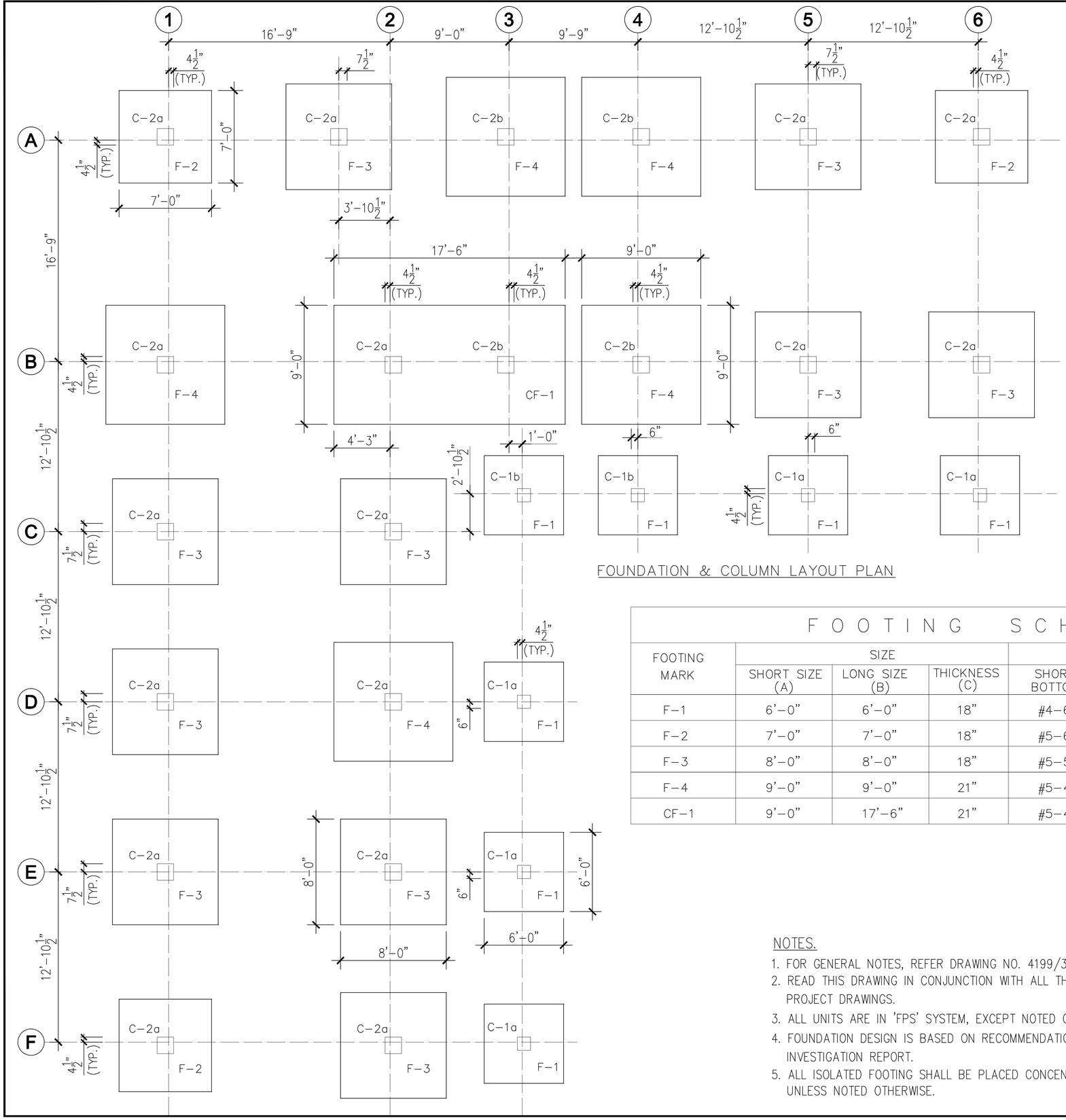
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR

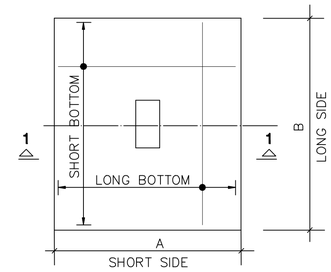
STRUCTURAL LAYOUTS
GENERAL NOTES (SHEET 2 OF 2)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

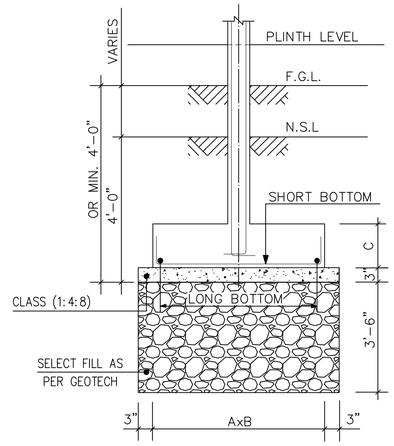
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G02	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G02	0
SUBM. TALHA AFZAL	OCT.,2022		



FOUNDATION & COLUMN LAYOUT PLAN



PLAN OF ISOLATED FOOTING



SECTION OF ISOLATED FOOTING (TYP)
(SEC 1-1)

FOOTING SCHEDULE

FOOTING MARK	SIZE			REINFORCEMENT			
	SHORT SIZE (A)	LONG SIZE (B)	THICKNESS (C)	SHORT BOTTOM	LONG BOTTOM	SHORT TOP	LONG TOP
F-1	6'-0"	6'-0"	18"	#4-6"	#4-6"	–	–
F-2	7'-0"	7'-0"	18"	#5-6"	#5-6"	–	–
F-3	8'-0"	8'-0"	18"	#5-5"	#5-5"	–	–
F-4	9'-0"	9'-0"	21"	#5-4"	#5-4"	–	–
CF-1	9'-0"	17'-6"	21"	#5-4"	#5-4"	#4-6"	#4-6"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS OF GEOTECHNICAL INVESTIGATION REPORT.
5. ALL ISOLATED FOOTING SHALL BE PLACED CONCENTRIC WITH THE COLUMNS UNLESS NOTED OTHERWISE.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

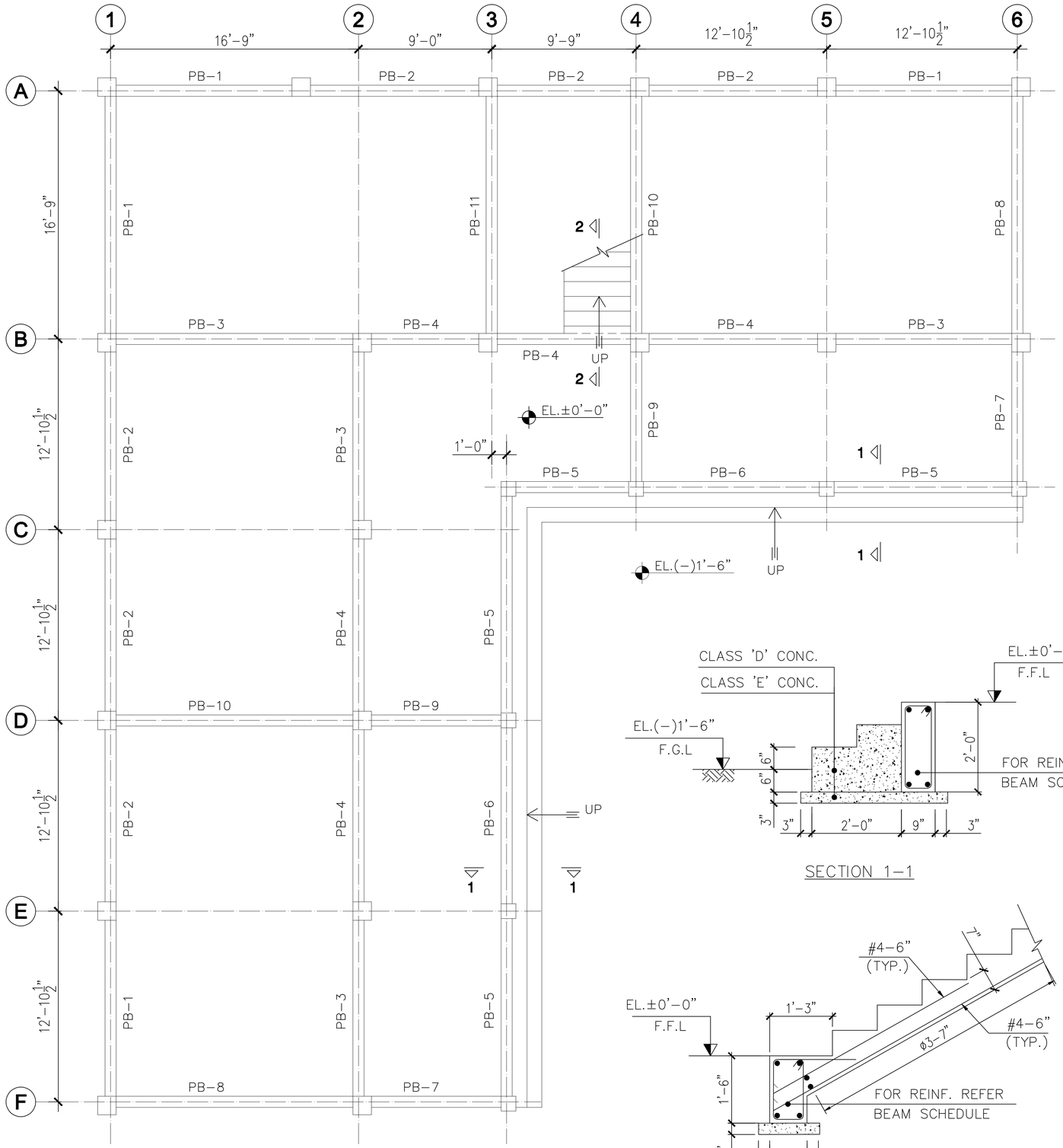
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR

STRUCTURAL LAYOUTS

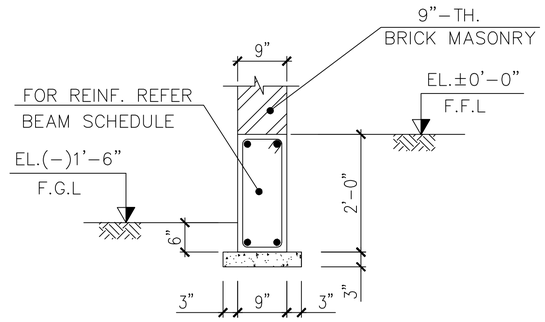
FOUNDATION & COLUMN LAYOUT PLAN AND DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

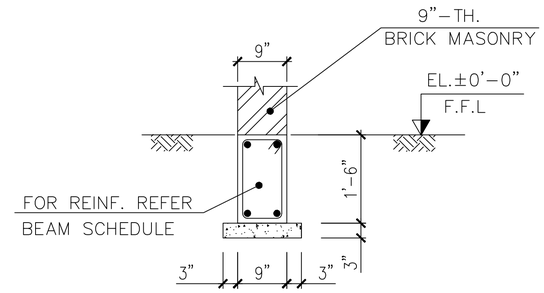
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G03	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/02G03	0
SUBM. TALHA AFZAL			



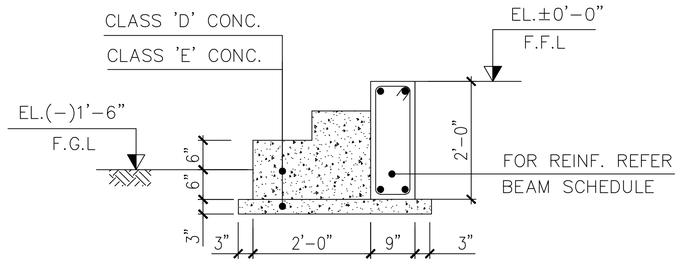
FRAMING PLAN AT EL.±0'-0"



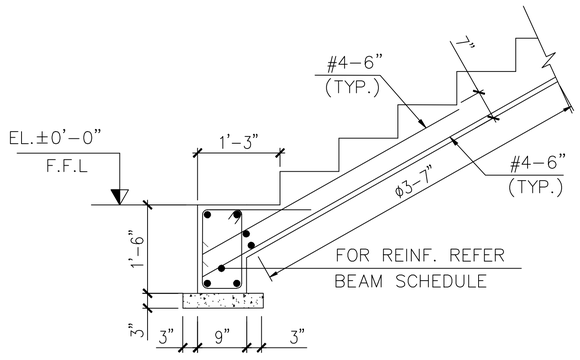
TYP. SECTION OF EXTERNAL PLINTH BEAMS



TYP. SECTION OF INTERNAL PLINTH BEAMS



SECTION 1-1



SECTION 2-2

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G10.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

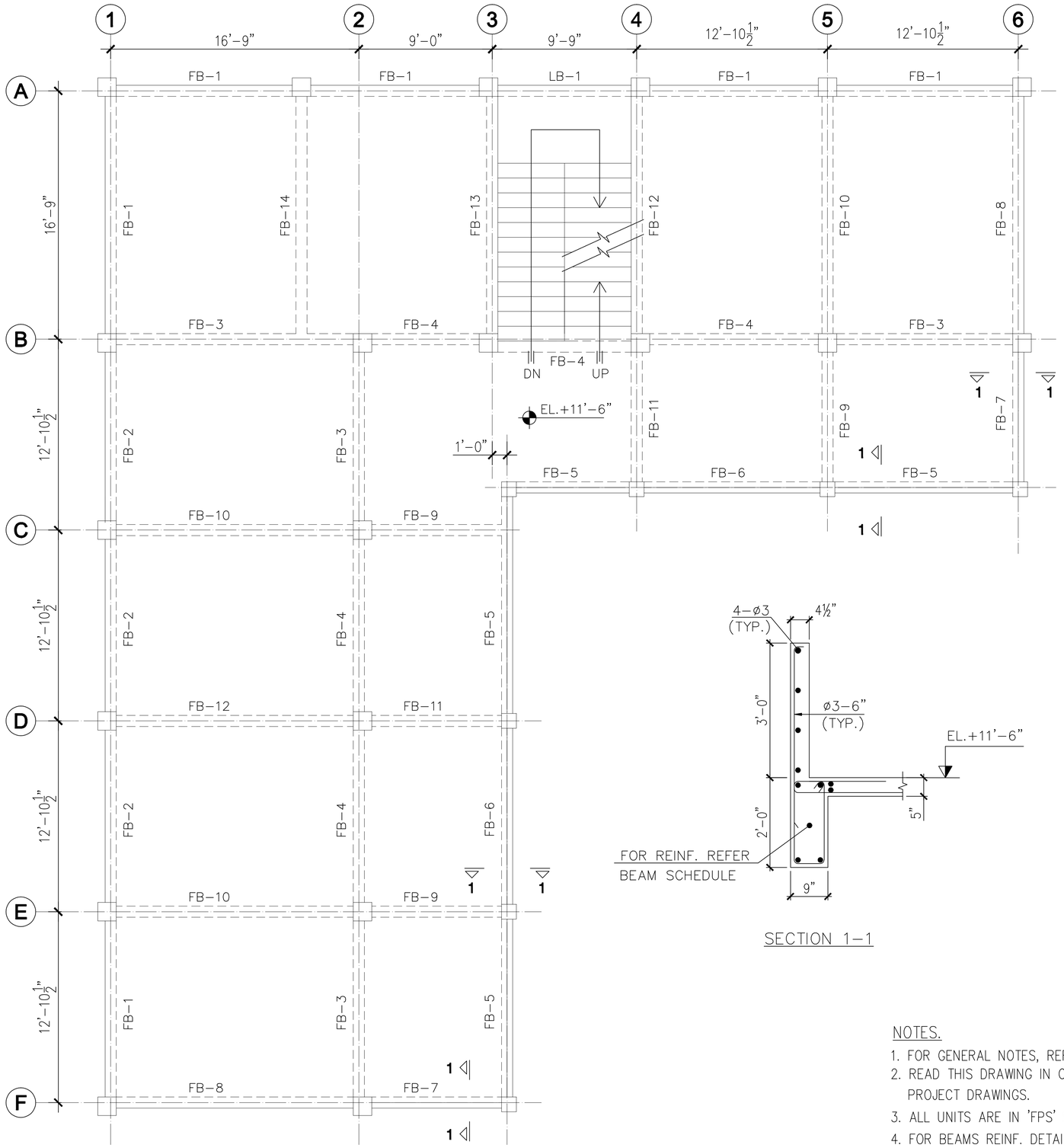
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR

STRUCTURAL LAYOUTS
FRAMING PLAN AT EL.±0'-0"

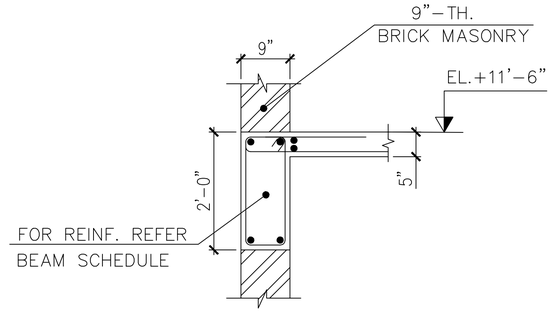
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G04	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G04	0
SUBM. TALHA AFZAL	OCT.,2022		

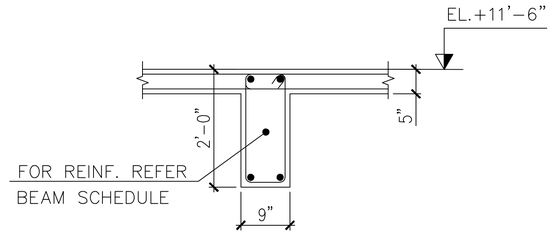


FRAMING PLAN AT EL.+11'-6"

SECTION 1-1



TYP. SECTION OF EXTERNAL FLOOR BEAMS



TYP. SECTION OF INTERNAL FLOOR BEAMS

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G11.
5. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

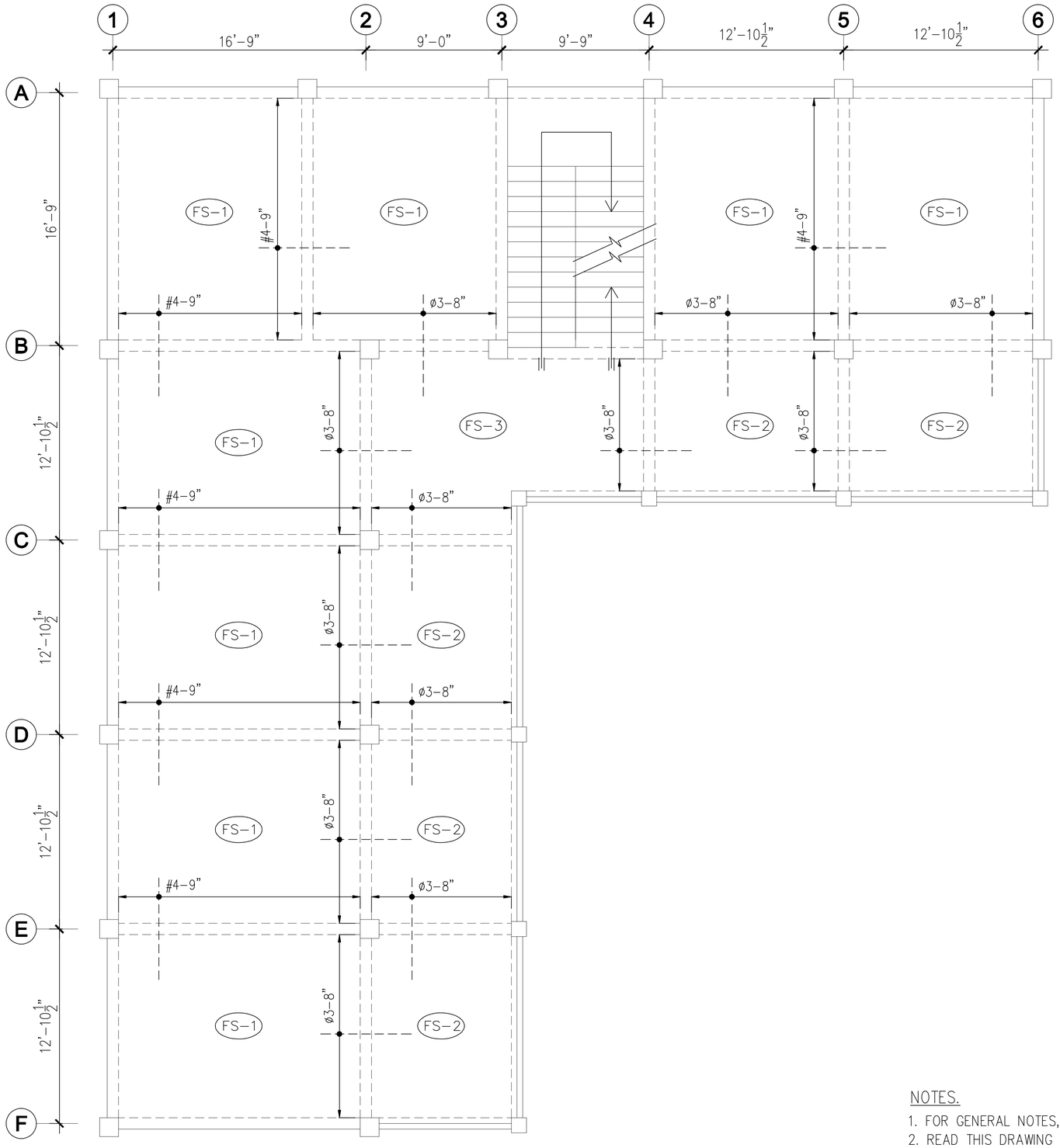
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR

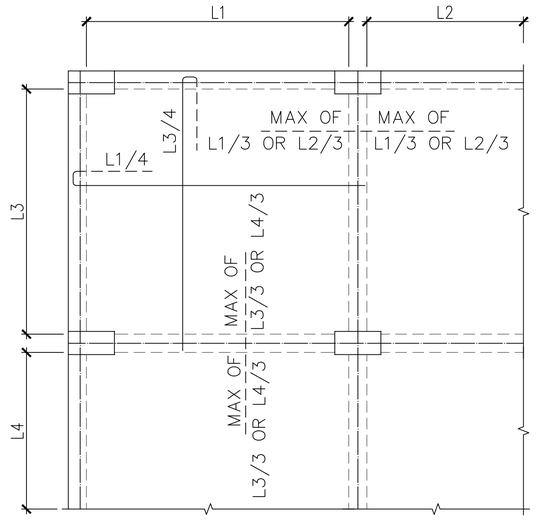
STRUCTURAL LAYOUTS
FRAMING PLAN AT EL.+11'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G05	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G05	0
SUBM. TALHA AFZAL	OCT.,2022		



SLAB REINFORCEMENT PLAN AT EL.+11'-6"



TYPICAL SLAB REINFORCEMENT PLAN

SLAB REINFORCEMENT SCHEDULE

SLAB MARKS	SLAB THICKNESS	BOTTOM REINFORCEMENT	
		SHORT BOTTOM	LONG BOTTOM
FS-1	5"	ø3-7"	ø3-8"
FS-2	5"	ø3-8"	ø3-8"
FS-3	5"	ø3-7"	ø3-8"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.
5. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

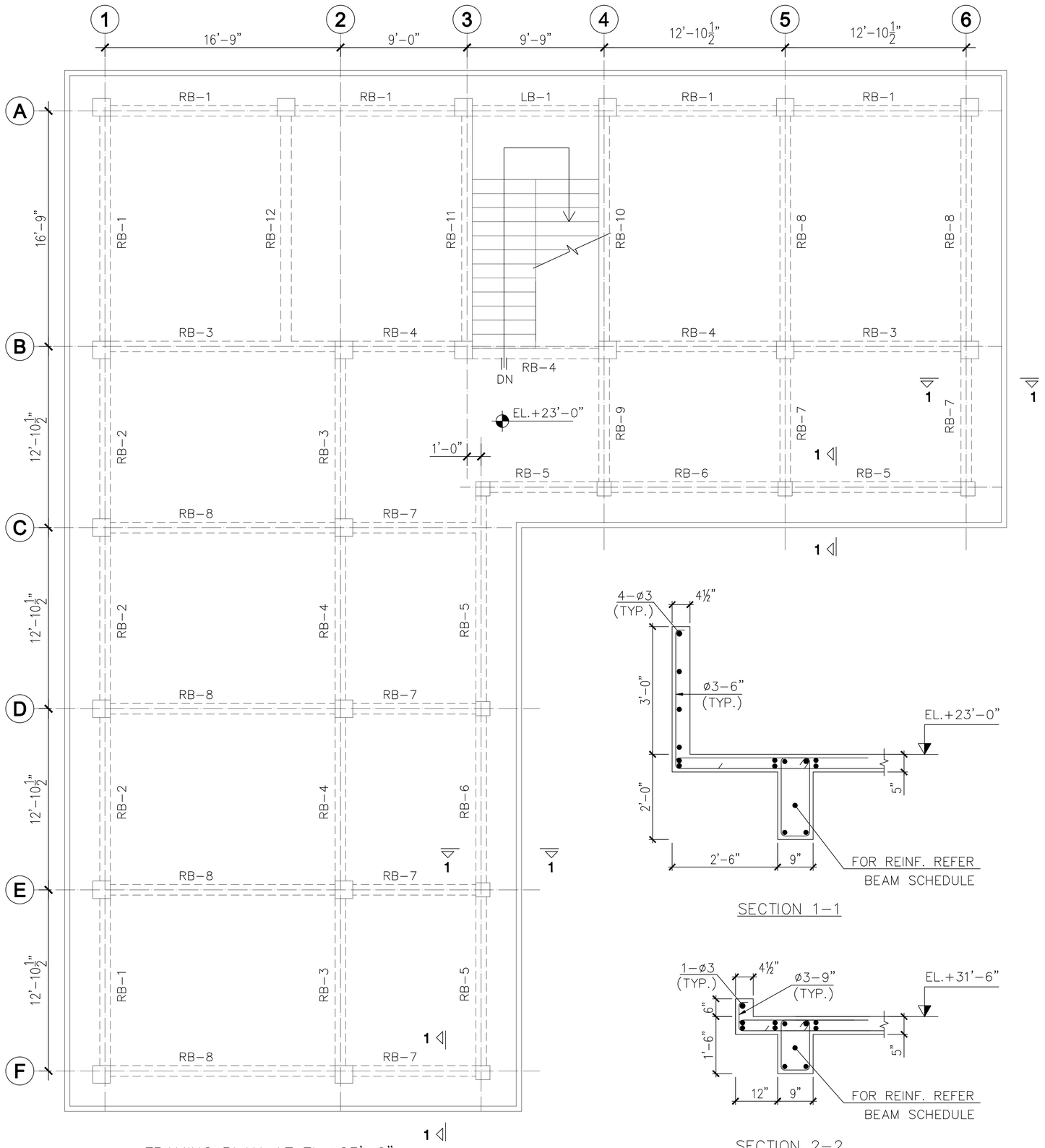
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

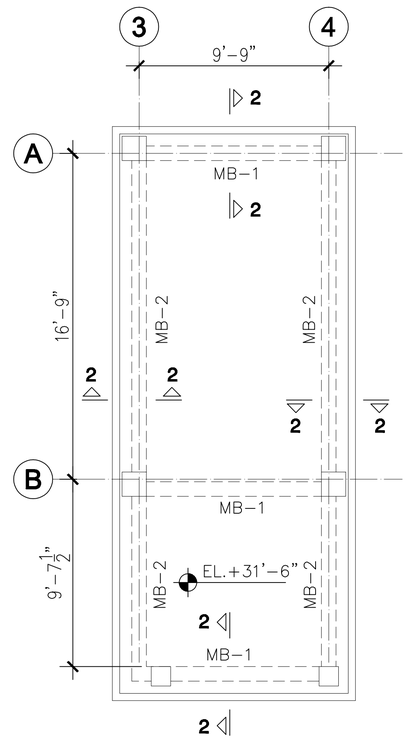
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY
HARIPUR
STRUCTURAL LAYOUTS
SLAB REINFORCEMENT PLAN AT EL.+11'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G06	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G06	0
SUBM. TALHA AFZAL	OCT.,2022		



FRAMING PLAN AT EL.+23'-0"



FRAMING PLAN AT EL.+31'-6"

SECTION 1-1

SECTION 2-2

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G12.
5. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.

SCALE = 1"=6'

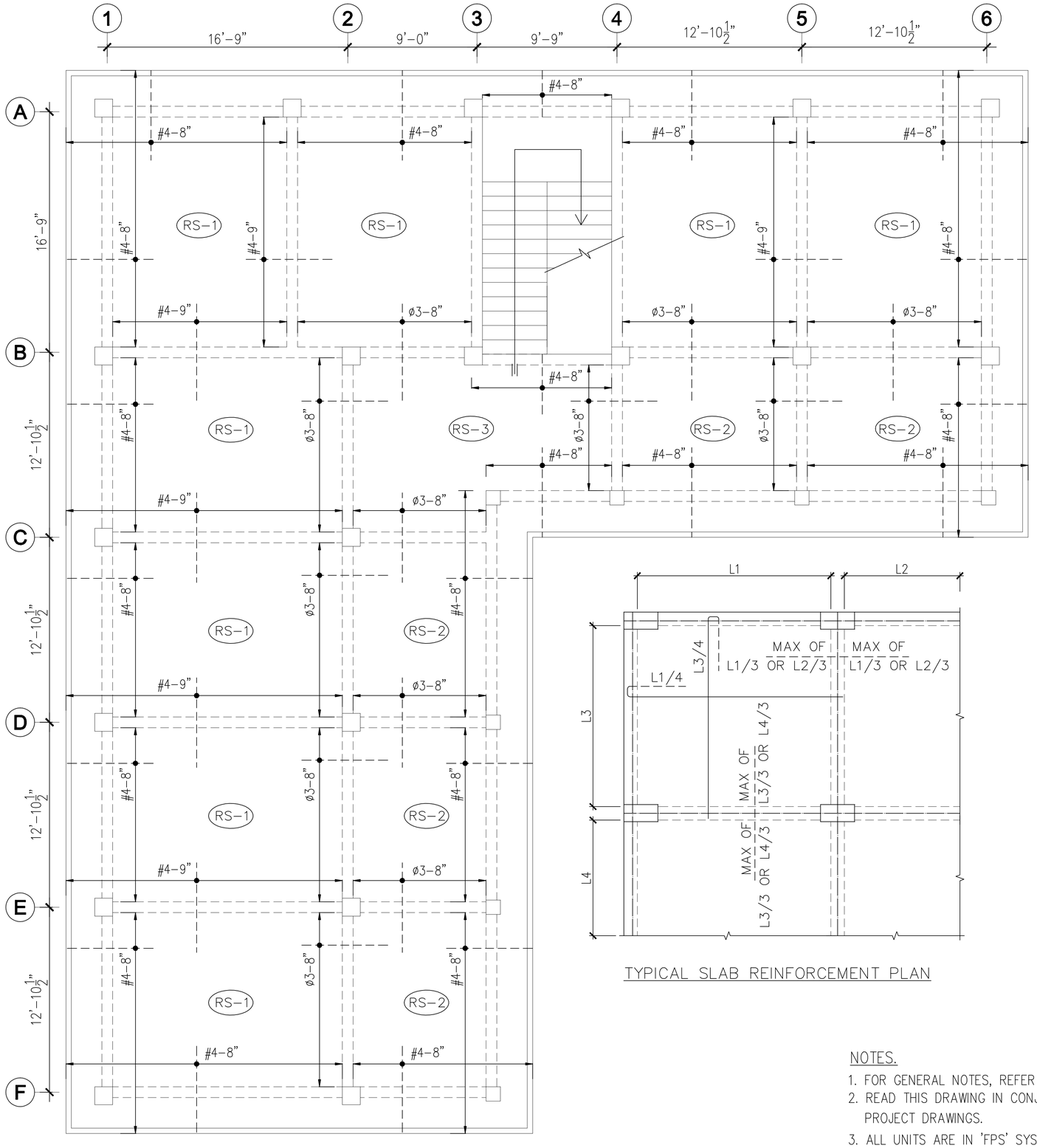
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

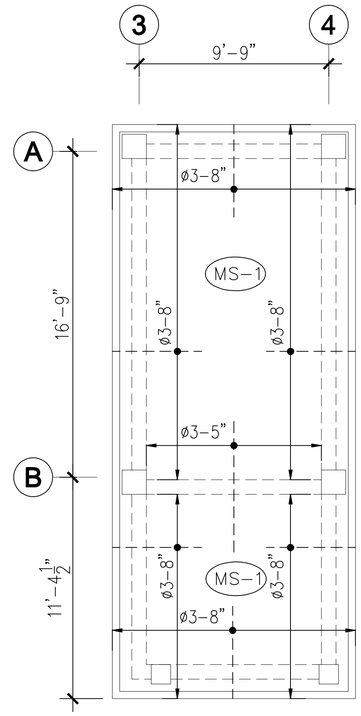
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY
HARIPUR
STRUCTURAL LAYOUTS
FRAMING PLAN AT EL.+23'-0" & EL.+31'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G07	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G07	0
SUBM. TALHA AFZAL	OCT.,2022		



SLAB REINFORCEMENT PLAN AT EL.+23'-0"



SLAB REINFORCEMENT PLAN AT EL.+31'-6"

TYPICAL SLAB REINFORCEMENT PLAN

SLAB REINFORCEMENT SCHEDULE

SLAB MARKS	SLAB THICKNESS	BOTTOM REINFORCEMENT	
		SHORT BOTTOM	LONG BOTTOM
RS-1	5"	ø3-7"	ø3-8"
RS-2	5"	ø3-8"	ø3-8"
RS-3	5"	ø3-7"	ø3-8"
MS-1	5"	ø3-8"	ø3-9"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.
5. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

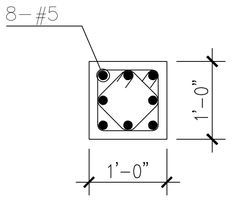
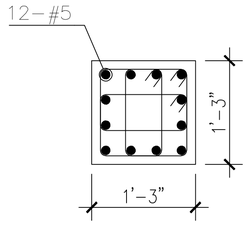
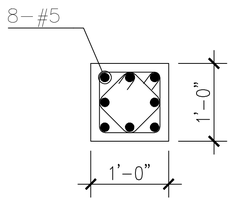
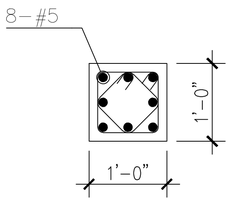
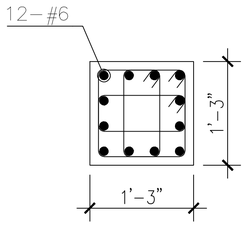
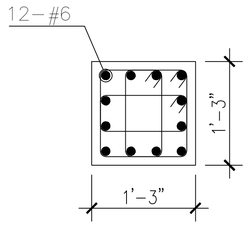
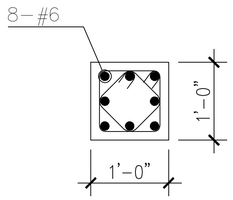
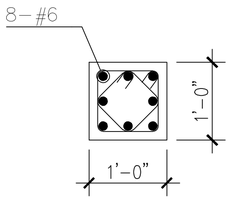
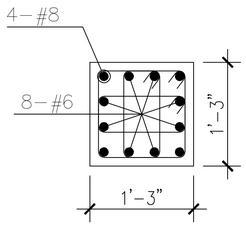
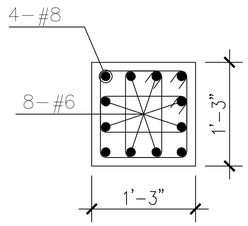
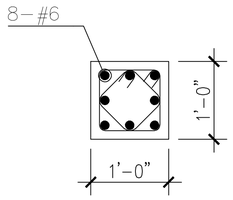
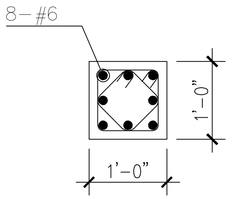
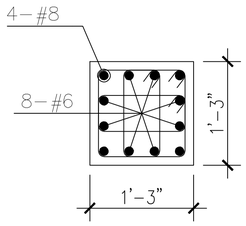
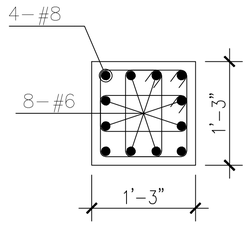
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR

STRUCTURAL LAYOUTS

SLAB REINFORCEMENT PLAN AT EL.+23'-0" & EL.+31'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G08	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/02G08	0

ELEVATION \ MARK	C–1a	C–1b	C–2a	C–2b
FROM EL.+11'–6" TO EL.+23'–0"	–		–	
FROM EL.+11'–6" TO EL.+23'–0"				
FROM EL.(±)0'–0" TO EL.+11'–6"				
FROM TOP OF FOUNDATION TO EL.(±)0'–0"				
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TIES T2	2XØ3–8"	2XØ3–8"	3XØ3–8"	3XØ3–8"
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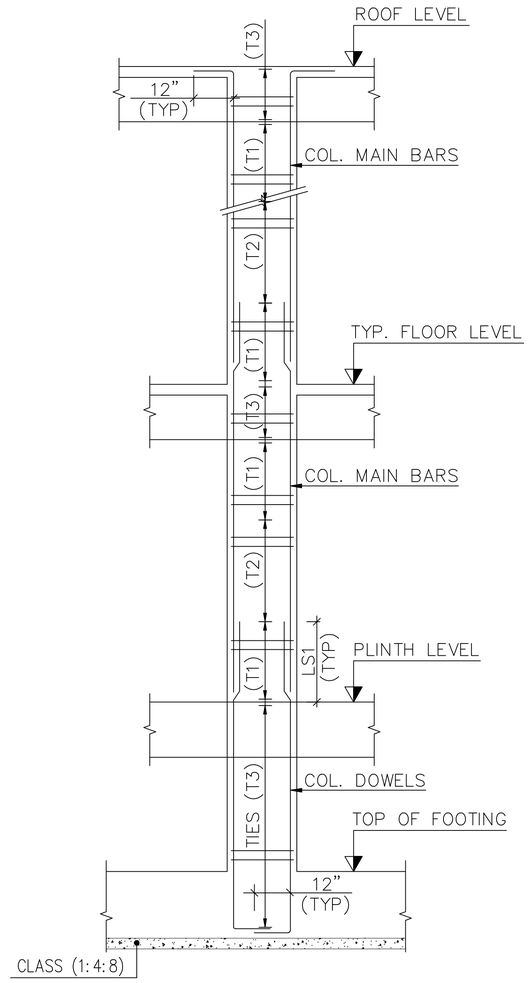
REMARKS				



TYPICAL COLUMN ELEVATION

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR FINAL COLUMN ELEVATION, SEE RESPECTIVE FRAMING PLANS.

SCALE = 1"=6'

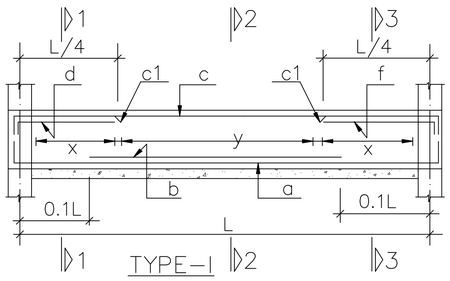
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

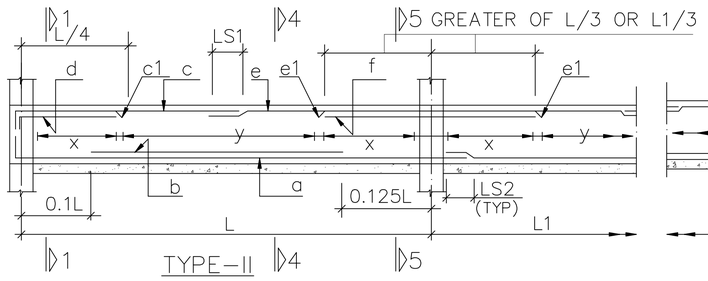
UNHCR PAKISTAN

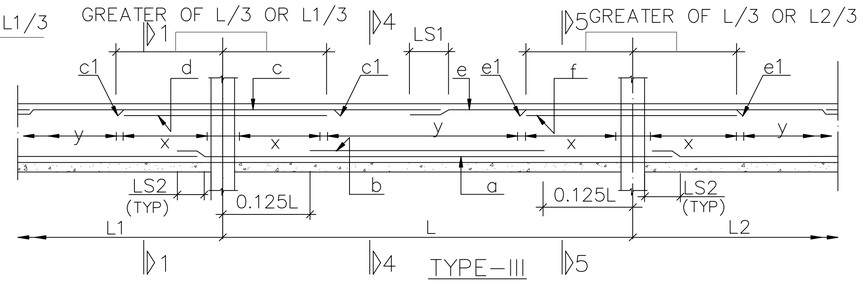
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY
HARIPUR
STRUCTURAL LAYOUTS
COLUMN SCHEDULE

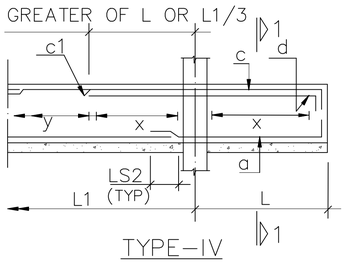
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. S. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G09	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/02G09	0
SUBM. TALHA AFZAL	OCT.,2022		

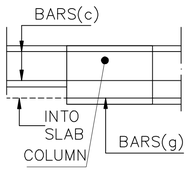




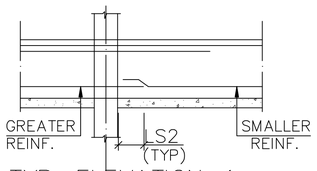




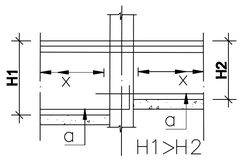
TYPE-IV



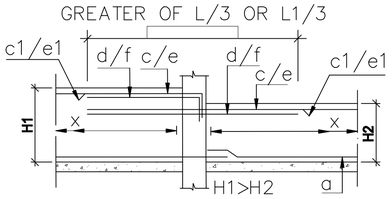
TYP. PLAN



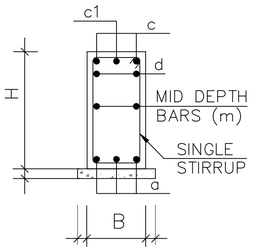
TYP. ELEVATION-1



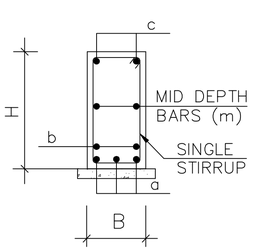
TYP. ELEVATION-2



TYP. ELEVATION-3



TYP. SEC.1-1
MAX. 3 BARS IN ONE LAYER



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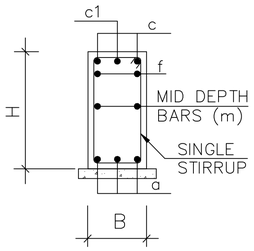
MAX. 3 BARS IN ONE LAYER



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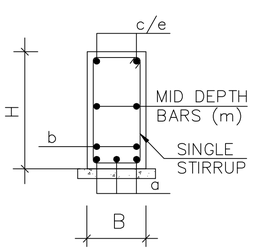
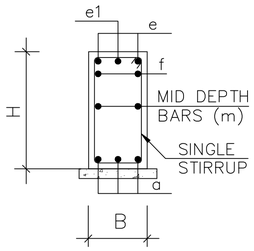
MAX. 3 BARS IN ONE LAYER



TYP. SEC.4-4
MAX. 3 BARS IN ONE LAYER



TYP. SEC.5-5
MAX. 3 BARS IN ONE LAYER

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
10-BARS "b,d & f" SHALL BE PROVIDED IN SECOND LAYER UNLESS NOTED OTHERWISE.
11-THE LOCATION OF LAPS SHOWN IN TYPE II,III & IV IS INDICATED ONLY IT MAY BE ELIMINATED.
12-LAPS (IF REQUIRED.) SHALL BE PROVIDED AT LOCATION SHOWN ON THE TYPICAL ELEVATIONS USING MAXIMUM AVAILABLE LENGTH.
13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

P L I N T H B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
PB-1	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-2	9"X24"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-3	9"X18"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-4	9"X18"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-5	9"X24"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
PB-6	9"X24"	III	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
PB-7	9"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	2-#4	-	-	ø3-4"	ø3-8"	
PB-8	9"X24"	II	3-#5	-	2-#5	1-#5	2-#4	2-#5	1-#5	2-#4	-	-	ø3-4"	ø3-8"	
PB-9	9"X18"	II	3-#5	-	2-#5	1-#4	-	2-#5	-	2-#4	-	-	ø3-4"	ø3-8"	
PB-10	9"X18"	II	3-#5	-	2-#5	-	2-#4	2-#5	-	2-#4	-	-	ø3-4"	ø3-8"	
PB-11	9"X18"	II	3-#5	-	3-#5	-	2-#4	-	-	2-#4	-	-	ø3-4"	ø3-8"	
LB-1	9"X18"	I	3-#5	-	3-#5	-	-	-	-	-	-	-	ø3-4"	ø3-4"	

SPECIAL NOTE:-
THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

SCALE = 1"=6'

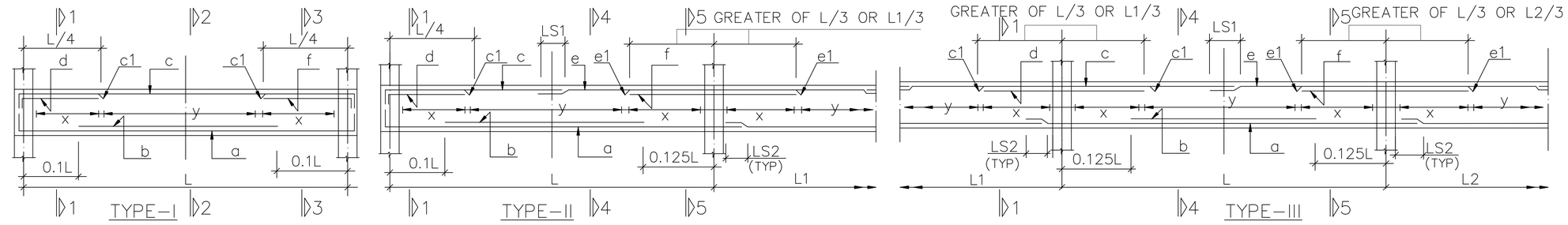
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

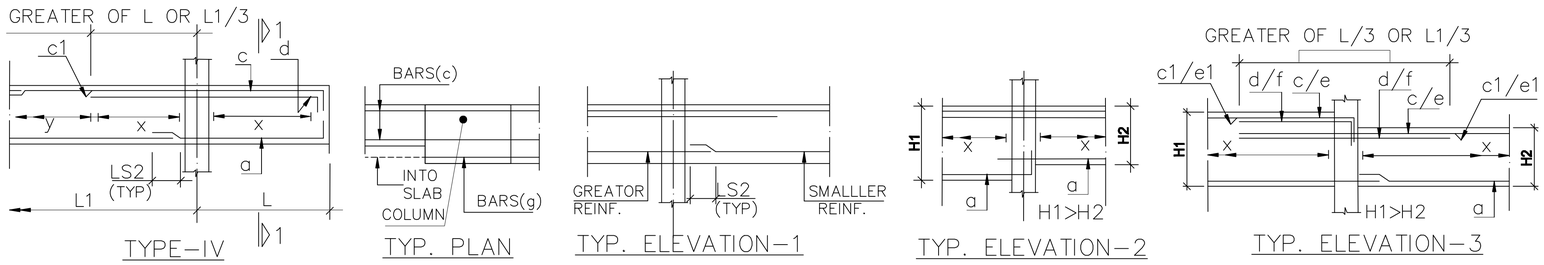
UNHCR PAKISTAN

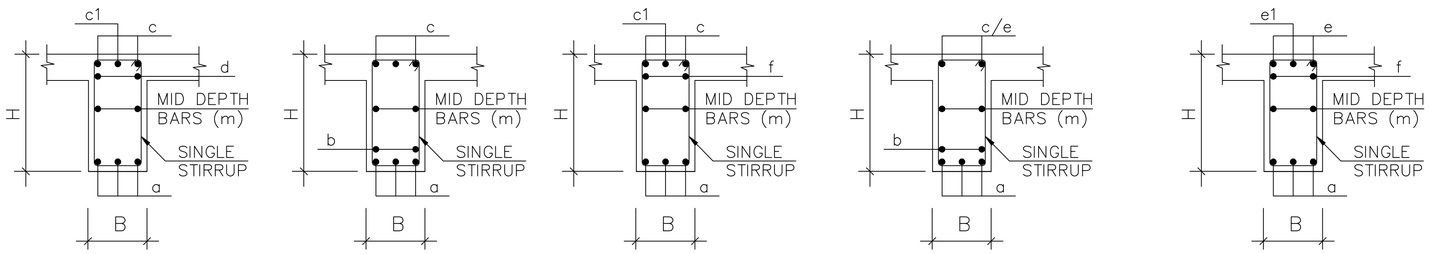
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR
STRUCTURAL LAYOUTS
PLINTH BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G10	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/02G10	0
SUBM. TALHA AFZAL			







NOTES

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F L O O R B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
FB-1	9"X24"	II	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-2	9"X24"	III	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-3	9"X24"	II	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-3a	9"X24"	II	3-#5	–	2-#5	–	2-#5	2-#5	1-#5	–	–	–	ø3-4"	ø3-4"	
FB-4	9"X24"	III	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-5	9"X24"	II	3-#4	–	2-#5	1-#4	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
FB-6	9"X24"	III	3-#4	–	2-#5	1-#4	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
FB-7	9"X24"	II	3-#5	–	2-#6	–	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-8	9"X24"	II	3-#5	–	2-#6	1-#6	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-9	9"X24"	II	3-#5	–	2-#6	–	–	2-#6	1-#5		–	–	ø3-4"	ø3-8"	
FB-10	9"X24"	II	3-#5	–	2-#6	1-#5	–	2-#6	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-11	9"X24"	II	3-#5	–	2-#6	–	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-12	9"X24"	II	3-#5	–	2-#6	1-#6	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-13	9"X24"	I	3-#5	–	2-#6	1-#5	–	–	–	–	–	–	ø3-4"	ø3-8"	
FB-14	9"X24"	I	3-#5	–	2-#5	1-#5	–	–	–	–	–	–	ø3-4"	ø3-8"	

SPECIAL NOTE:-
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SCALE = 1"=6'

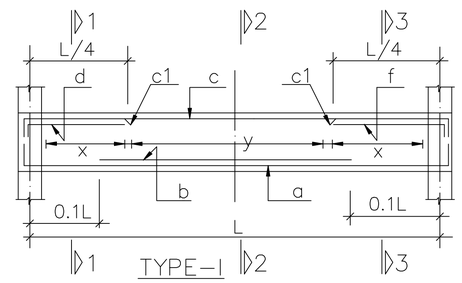
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

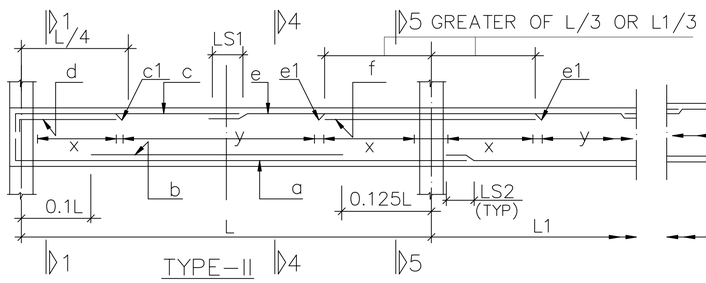
CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR
STRUCTURAL LAYOUTS
FLOOR BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

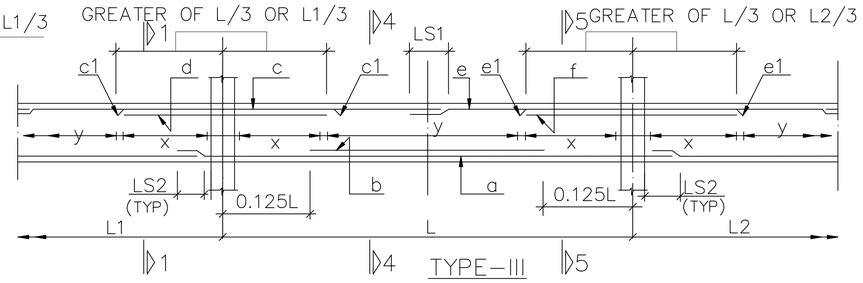
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G11	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/02G11	0
SUBM. TALHA AFZAL			



TYPE-I



TYPE-II



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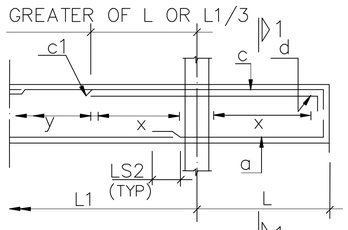

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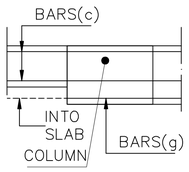
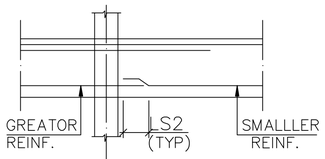
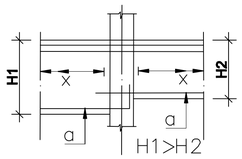


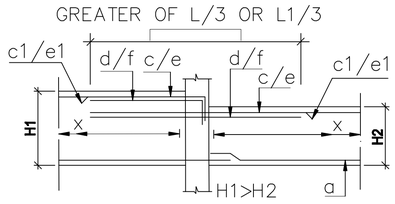
TYP. PLAN



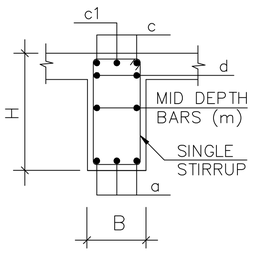
TYP. ELEVATION-1



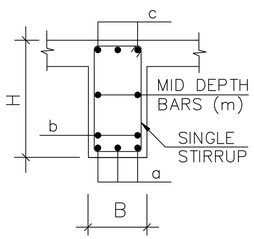
TYP. ELEVATION-2



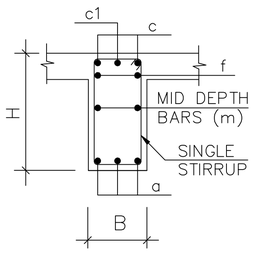
TYP. ELEVATION-3



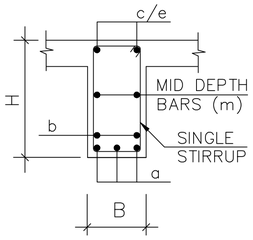
TYP. SEC.1-1
MAX. 3 BARS IN ONE LAYER



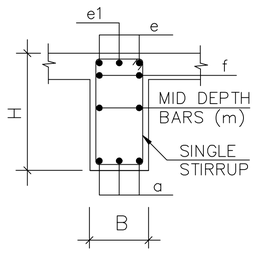
TYP. SEC.2-2
MAX. 3 BARS IN ONE LAYER



TYP. SEC.3-3
MAX. 3 BARS IN ONE LAYER



TYP. SEC.4-4
MAX. 3 BARS IN ONE LAYER



TYP. SEC.5-5
MAX. 3 BARS IN ONE LAYER

R O O F & M U M T Y B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
RB-1	9"X24"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-2	9"X24"	III	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-3	9"X24"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-3a	9"X24"	II	3-#4	–	2-#4	–	2-#4	2-#4	1-#4	–	–	–	ø3-4"	ø3-4"	
RB-4	9"X24"	III	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-5	9"X24"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-6	9"X24"	III	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-7	9"X24"	II	3-#4	–	2-#5	–	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-8	9"X24"	II	3-#4	–	2-#5	1-#4	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-9	9"X24"	II	3-#4	–	2-#5	–	–	2-#5	1-#5		–	–	ø3-4"	ø3-8"	
RB-10	9"X24"	II	3-#4	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
RB-11	9"X24"	I	3-#4	–	2-#5	1-#5	–	–	–	–	–	–	ø3-4"	ø3-8"	
RB-12	9"X24"	I	3-#4	–	2-#4	1-#4	–	–	–	–	–	–	ø3-4"	ø3-8"	
M U M T Y B E A M S															
MB-1	9"X18"	I	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
MB-2	9"X18"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H AND AT LAP LOCATIONS.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
10-BARS "b,d & f" SHALL BE PROVIDED IN SECOND LAYER UNLESS NOTED OTHERWISE.
11-THE LOCATION OF LAPS SHOWN IN TYPE II,III & IV IS INDICATED ONLY IT MAY BE ELIMINATED.
12-LAPS (IF REQUIRED.) SHALL BE PROVIDED AT LOCATION SHOWN ON THE TYPICAL ELEVATIONS USING MAXIMUM AVAILABLE LENGTH.
13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

SPECIAL NOTE:-

THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

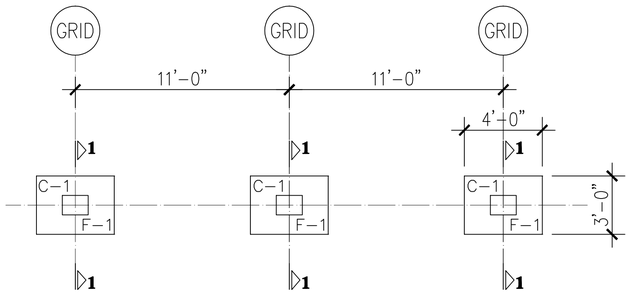
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY HARIPUR

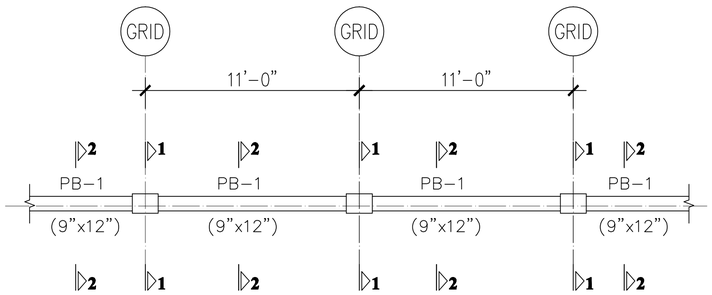
STRUCTURAL LAYOUTS
ROOF & MUMTY BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

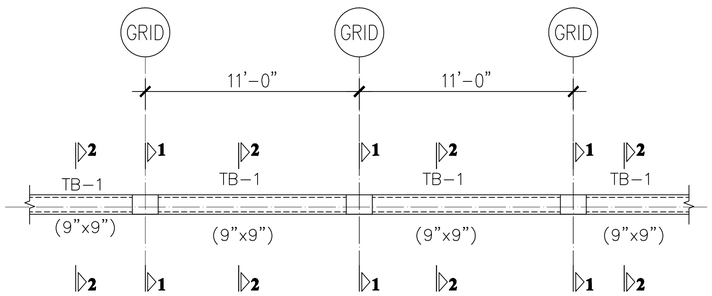
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G12	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/02G12	0
SUBM. TALHA AFZAL			



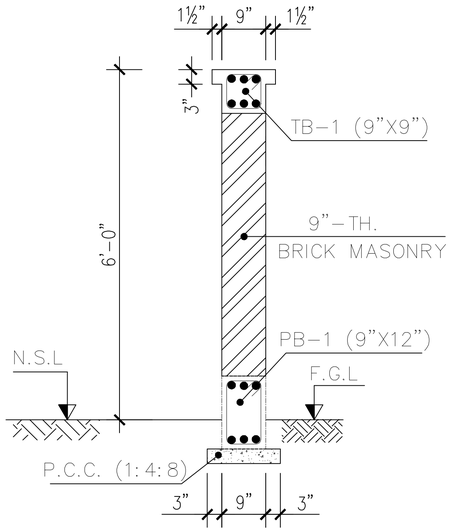
TYP. FOUNDATION AND COLUMN LAYOUT PLAN OF BOUNDARY WALL



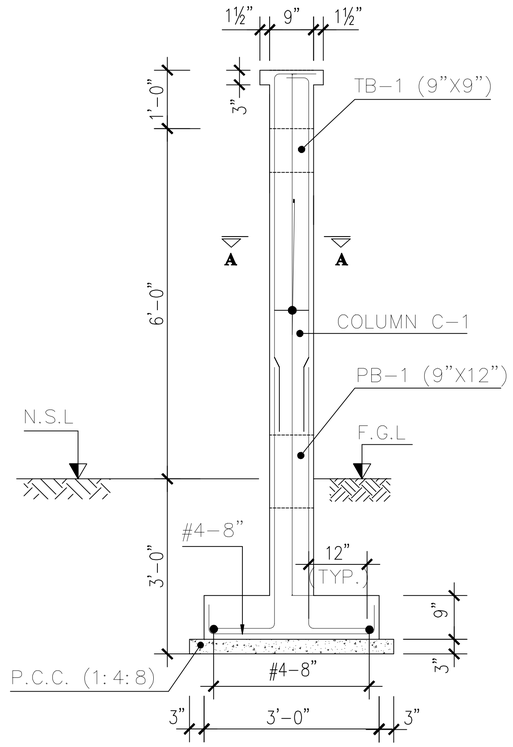
LAYOUT PLAN OF PLINTH BEAM



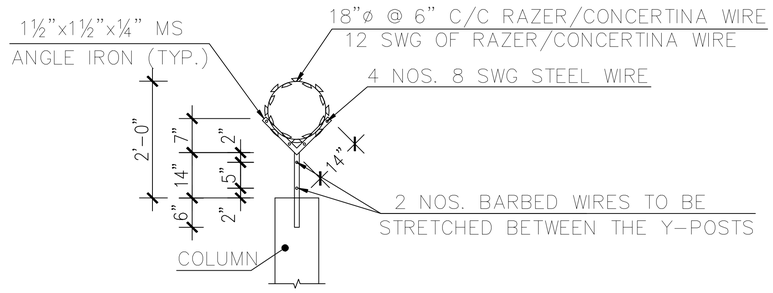
LAYOUT PLAN OF TOP BEAM



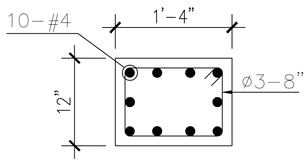
SECTION 2-2



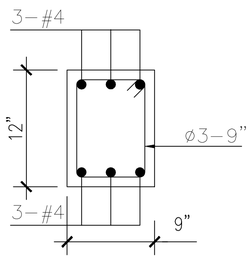
SECTION 1-1



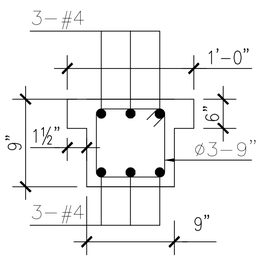
TYPICAL DETAIL OF Y POST CONNECTION AT COLUMN LOCATION



SECTION A-A
(C-1)



PB-1
(9"X12")



TB-1
(9"X9")

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR LAYOUT OF BOUNDARY WALL REFER, RESPECTIVE ARCH. DWG.
5. FOR EXP. JOINT LOCATION REFER, ARCH. DWG.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL KANGRA COLONY
HARIPUR
STRUCTURAL LAYOUTS
STRUCTURAL DETAILS OF BOUNDARY WALLS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 02G13	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/02G13	0

SYMBOLS AND DESCRIPTIONS

ELECTRICAL WORKS

S. #	SYMBOL	DESCRIPTION	STATUS
1		MSB -- MAIN SWITCH BOARD	N.A.
2		DB -- DISTRIBUTION BOARD	
3		CP -- CONTROL PANEL	N.A.
4		PDB -- POWER DISTRIBUTION BOARD	N.A.
5		TRIPLE POLE, 500 VOLTS, MOULDED CASE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
6		TRIPLE POLE, 500 VOLTS, MINIATURE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
7		SINGLE POLE, 250 VOLTS, MINIATURE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
8	FP	FOUR POLE, 500 VOLTS, RESIDUAL CURRENT CIRCUIT BREAKER (SENSITIVITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	N.A.
9	DP	DOUBLE POLE, 250 VOLTS, RESIDUAL CURRENT CIRCUIT BREAKER (SENSITIVITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	N.A.
10		INSTRUMENTS PROTECTION FUSE (ONE NO.)	
11		INSTRUMENTS PROTECTION FUSES (THREE NOS.)	
12	VSS	VSS – VOLTMETER SELECTOR SWITCH (RY–YB–BR–OFF–RN)	
13	ASS	ASS – AMMETER SELECTOR SWITCH (R–Y–B–OFF)	
14	A	AC AMMETER (MEASURING RANGE INDICATED ON DRAWING)	
15	V	AC VOLTMETER (MEASURING RANGE INDICATED ON DRAWING)	
16		ONE NO. SINGLE PHASE CURRENT TRANSFORMER (TRANSFORMATION RATIO INDICATED ON DRAWINGS)	
17		THREE NOS. SINGLE PHASE CURRENT TRANSFORMERS (TRANSFORMATION RATIOS INDICATED ON DRAWINGS)	
18		PHASE INDICATION LAMPS R – RED Y – YELLOW B – BLUE	
19	F	CEILING FAN 56 INCH (1422mm) SWEEP	
20	10"	EXHAUST FAN WITH METALLIC BLADES (10" DIA)	
21	12"	EXHAUST FAN WITH METALIC BLADES & MOUNTING RING (12" DIA)	
22	18"	EXHAUST FAN WITH METALIC BLADES & MOUNTING RING (18" DIA)	N.A.
23		LIGHT CONTROL SWITCHES AND FAN DIMMERS	
24		13 AMPS 250 VOLTS COMBINED 2 + 3 PIN MULTI SOCKET UNIT WIRED WITH 2.5 SQ.mm PVC COPPER CABLE	
25		15 AMPS 250 VOLTS COMBINED 3 PIN SWITCH SOCKET UNIT WIRED WITH 4.0 SQ.mm PVC COPPER CABLE	
26		20 AMPS 250 VOLTS COMBINED 3 PIN SWITCH SOCKET UNIT WIRED WITH 4.0 SQ.mm PVC COPPER CABLE	
27		20A TP MCCB	N.A.

N.A. = NOT APPLICABLE

LIGHTING FIXTURES

S. #	SYMBOL	DESCRIPTION	STATUS
1		12 W LED DOWN LIGHTER	
2		7 W LED DOWN LIGHTER	
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

N.A. = NOT APPLICABLE

COMMUNICATIONS SYSTEMS

S. #	SYMBOL	DESCRIPTION	STATUS
1		WALL MOUNTED CAMERA	
2	SD	SMOKE DETECTOR	
3	HD	HEAT DETECTOR	
4	M	MANUAL CALL POINT	
5	FACP	FIRE ALARM CONTROL PANEL	
6		Duplex Face plate with 2 I/Os RJ–45 CAT–6 UTP telecommunication outlet	
7	CSNC	COMMUNICATION SYSTEMS DISTRIBUTION NETWORK	
8			
9			
10			
11			
12			
13			
14			

N.A. = NOT APPLICABLE

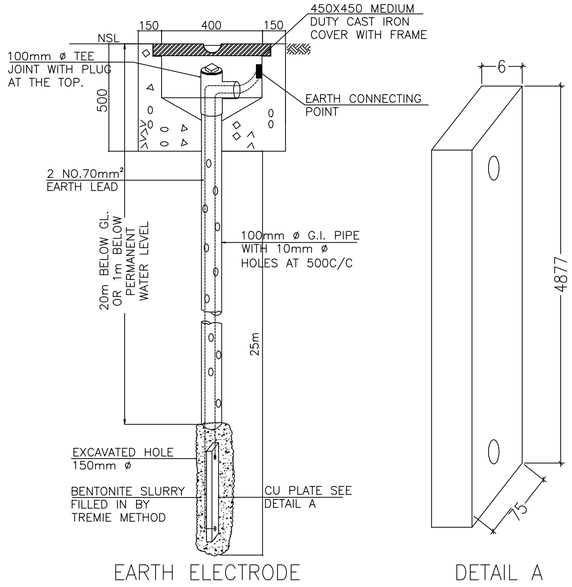


PLATE TYPE EARTH ELECTRODE

GENERAL NOTES

ELECTRICAL SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL ELECTRICAL DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.

THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE ELECTRICAL WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.

ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH BOQ, TECHNICAL SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, PLUMBING AND HVAC DRAWINGS & ALL OTHER RELEVANT DETAILS.

DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/ MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.

PROPER CO–ORDINATION OF ELECTRICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.

ALL NON–CURRENT CARRYING PARTS i.e. OUTER CASINGS OF EQUIPMENT SUCH AS HT & LT PANELS, DISTRIBUTIONS BOARDS, CABLE TRAYS, AUXILIARY CONSTRUCTIONS FOR EQUIPMENT ETC. SHALL BE CONNECTED TO THE GROUNDING/EARTHING SYSTEM AT REQUIRED NUMBER OF POINTS WITH SPECIFIED SIZES OF CONDUCTORS. WATER PIPES ALONG ELECTRICAL LINE SHALL BE BONDED TO THE EARTHING SYSTEM WITH 10mm² SINGLE CORE, COPPER CONDUCTOR PVC CABLE.

ELECTRICAL POINTS FOR EQUIPMENT SHALL BE INSTALLED IN CO–ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS COMMUNICATION SYSTEMS, HVAC, PLUMBING ETC. THE LOCATION ON ELECTRICAL DRAWINGS IS ONLY INDICATIVE.

ARRANGEMENT OF ELECTRICAL EQUIPMENTS ON ELECTRICAL DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.

LOADS ON ALL PHASES SHALL BE BALANCED AT THE TESTING/ COMMISSIONING STAGE.

CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER OF TWO INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.

RUN GREEN–YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG LIGHT AND POWER WIRING. WHEREVER THE SIZE IS NOT SPECIFIED THE FOLLOWING CRITERIA SHALL BE OBSERVED TO DETERMINE MINIMUM CROSS SECTIONAL AREA OF EARTH CONTINUITY CONDUCTOR(ECC) IN RELATION TO THE AREA OF ITS PHASE CONDUCTORS. RUN DECARATE ECC FOR EACH CIRCUIT.

- ECC & PHASE CONDUCTOR OF SAME SIZE FOR UPTO AND INCLUDING 16mm² CABLES.
- 16mm² ECC FOR PHASE CONDUCTOR OF 16mm², 25mm² & 35 mm² CABLES.
- FOR CABLES OF 50mm² AND ABOVE SIZES, ECC IS HALF SIZE OF PHASE CONDUCTOR.
- MAXIMUM SIZE OF ECC IS 70mm².

THE MAXIMUM CAPACITY OF PVC CONDUITS FOR SIMULTANEOUS DRAWING OF PVC INSULATED CABLES SHALL BE DETERMINED AS PER BS 4607. THE FOLLOWING TABLE SHALL BE USED TO DETERMINE THE MAXIMUM NUMBER OF CABLES.

S. #	NOMINAL CONDUCTOR SIZE(SQMM)	NO. & DIA OF WIRES	NOMINAL OVERALL DIA	20 MM DIA (3/4" DIA)	25 MM DIA (1" DIA)	32 MM DIA (1¼" DIA)
1	1.5	1/1.38	3.1	10	18	30
2	2.5	1/1.78	3.5	8	14	23
3	2.5	7/0.67	3.8	7	12	20
4	4	7/0.85	4.3	5	9	15
5	6	7/1.04	4.9	4	7	12
6	10	7/1.35	6.2	2	4	7
7	16	7/1.70	7.3	–	3	5
8	25	7/2.14	9.0	–	2	3
9	35	19/1.53	10.3	–	–	2

NORMAL & EMERGENCY CIRCUITS SHALL RUN IN DECARATE CONDUITS.

ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.

THE WIRING SHALL BE CONTINUOUS LOOPING–IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.

THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.

MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL(F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

MAIN SWITCH BOARD	48 INCHES
DISTRIBUTION BOARD	48 INCHES
CONTROL PANEL	48 INCHES
ON/OFF PUSH BUTTON STATION	48 INCHES
DIMMER CONTROL UNIT	48 INCHES
LIGHT CONTROL SWITCH(ONE WAY/TWO WAY)	48 INCHES
5A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
20A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN KITCHEN(ABOVE COUNTER)	10 INCHES
15A SOCKET OUTLETS IN TOILETS	66 INCHES
16A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
32A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
63A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
CEILING FAN	96 INCHES
WALL FAN	84 INCHES
EXHAUST FAN	REFER ARCH. DRGS.

COMMUNICATION SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL COMMUNICATION SYSTEMS DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE COMMUNICATION SYSTEMS WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL COMMUNICATION SYSTEMS DRAWINGS SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS, ITEMS OF B.O.Q., ARCHITECTURAL STRUCTURAL, HVAC, PLUMBING DRAWINGS AND ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO–ORDINATION OF COMMUNICATION SYSTEMS WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. TELEPHONE SYSTEM SHALL BE COMPLETE WITH INSTRUMENTS, EQUIPMENT AND INTERCONNECTING WIRING, TELEPHONE EXCHANGE, TELEPHONE OUTLETS, JUNCTION BOXES, CONDUITS OF SPECIFIED SIZES IN THE BUILDING, AND UNDERGROUND PIPES OF SPECIFIED SIZES SHOWN ON DRAWINGS SHALL BE PROVIDED. WHERE SIZE OF CONDUIT/PIPE IS NOT SPECIFIED SUITABLE SIZE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
8. POINTS FOR COMMUNICATION SYSTEMS EQUIPMENT SHALL BE INSTALLED IN CO–ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS ELECTRICAL, HVAC, PLUMBING ETC. THE LOCATION ON COMMUNICATION SYSTEMS DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF COMMUNICATION SYSTEMS EQUIPMENTS ON DRAWINGS ARE TENTATIVE EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
10. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER 2 INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
11. RUN GREEN–YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG COMMUNICATION SYSTEMS WIRING.
12. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
13. THE WIRING SHALL BE CONTINUOUS LOOPING–IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
14. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
15. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

TELEPHONE JUNCTION BOX	10 INCHES
TELEPHONE OUTLET	10 INCHES
INTERCOM CONTROL PACK	10 INCHES
INTERCOM STATION (WALL MOUNTED)	36 INCHES
FA SYSTEM CONTROL PANEL	10 INCHES
MANUAL CALL STATION	42 INCHES
AUDIO ALARM	100 INCHES

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

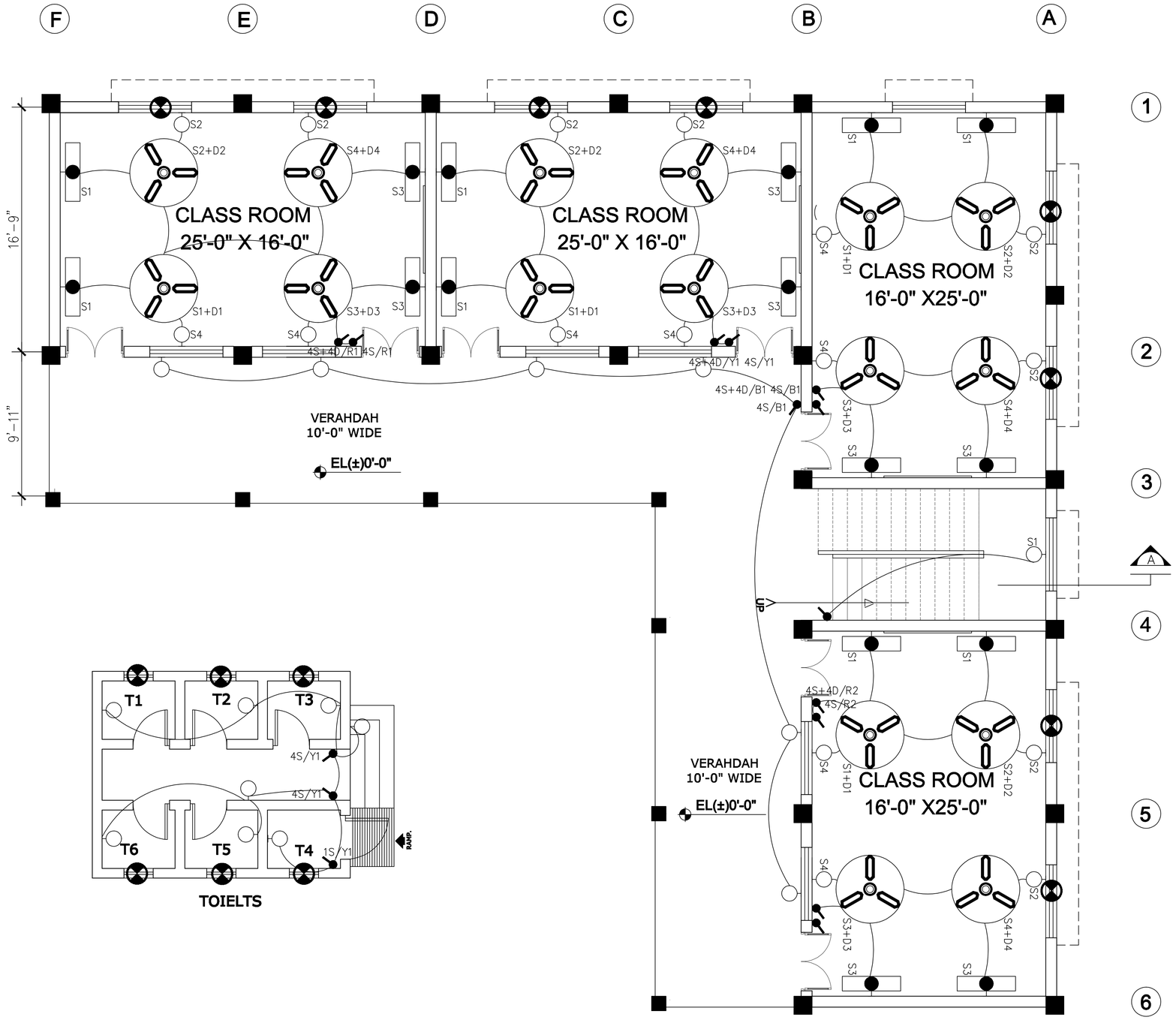
CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY HARIPUR

LEGEND & GENERAL NOTES

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/02E01	0



TOIELTS

GROUND FLOOR PLAN

LIGHTING AND FANS LAYOYUT

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

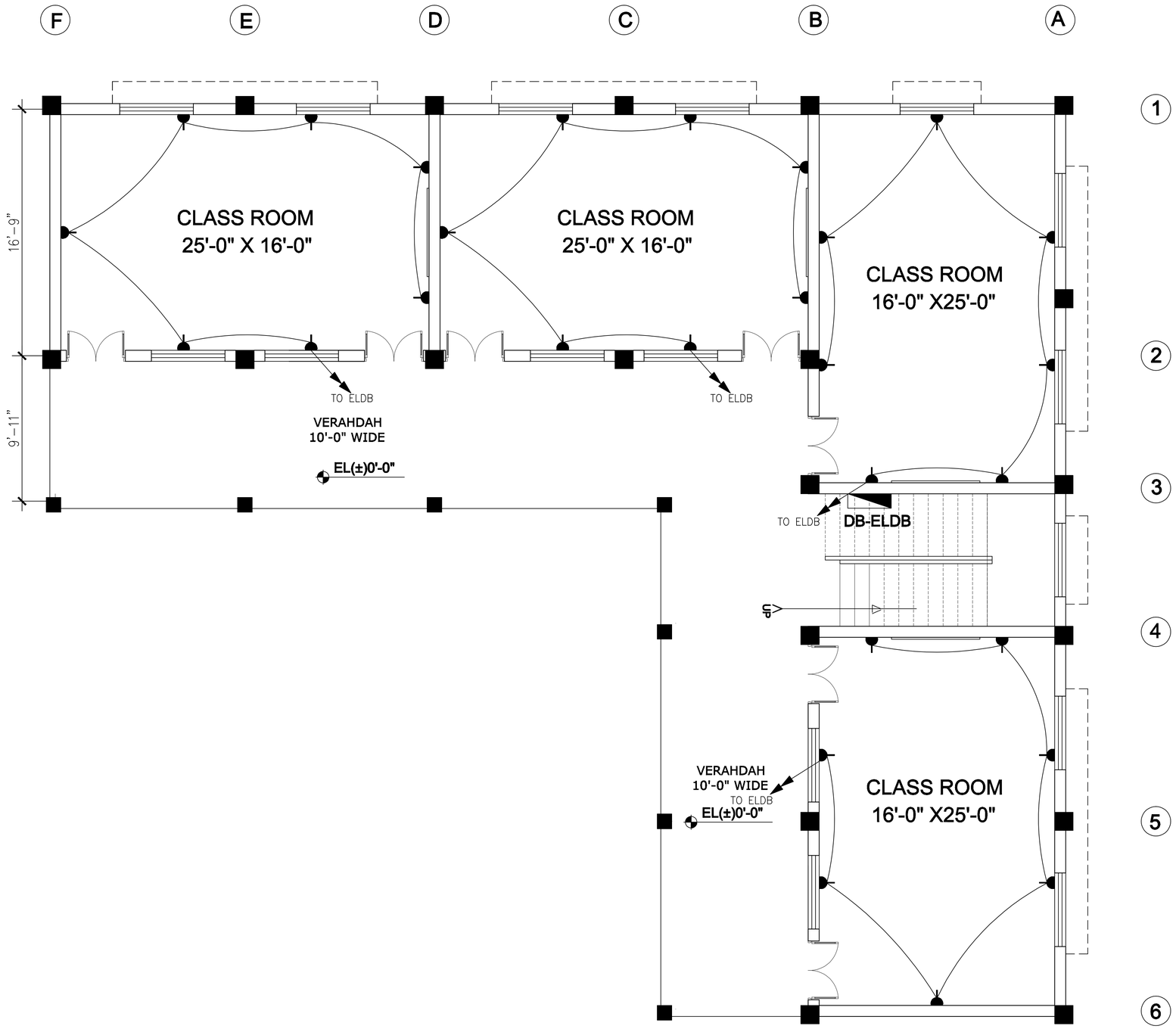
HARIPUR

LIGHTING AND FANS LAYOYUT

GROUND FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK	RASHID ULLAH	WAJAHAT	WAJAHAT
DWN. KALEEM			
FILE	DATE	DRAWING NO.	REV.
CKD. KALEEM	OCT.,2022	4199/325/C/02E02	0
SUBM. WAJAHAT			



POWER LAYOUT

GROUND FLOOR PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

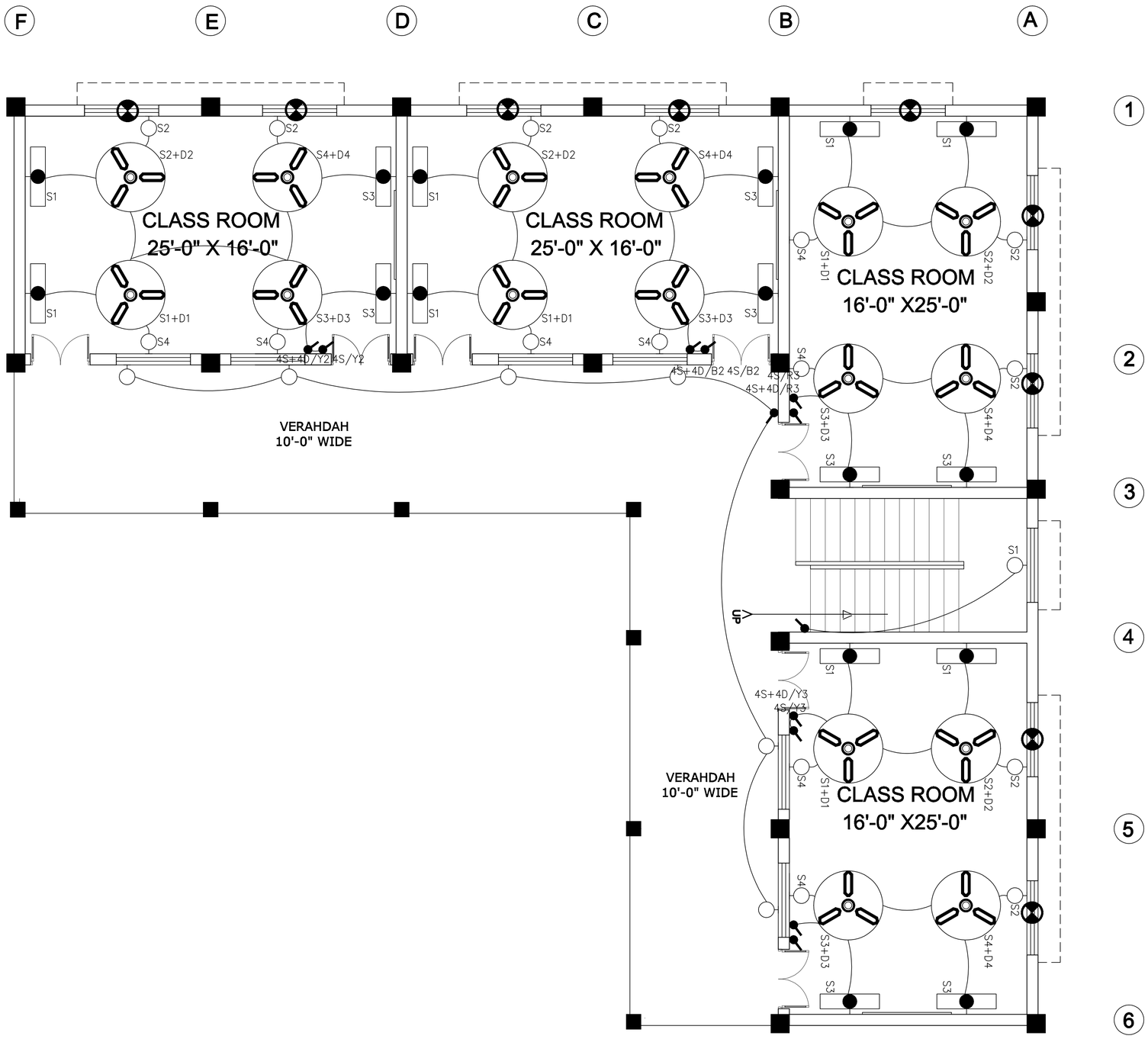
POWER LAYOUT

GROUND FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/02E03	0



FIRST FLOOR PLAN
LIGHTING AND FANS LAYOYUT

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

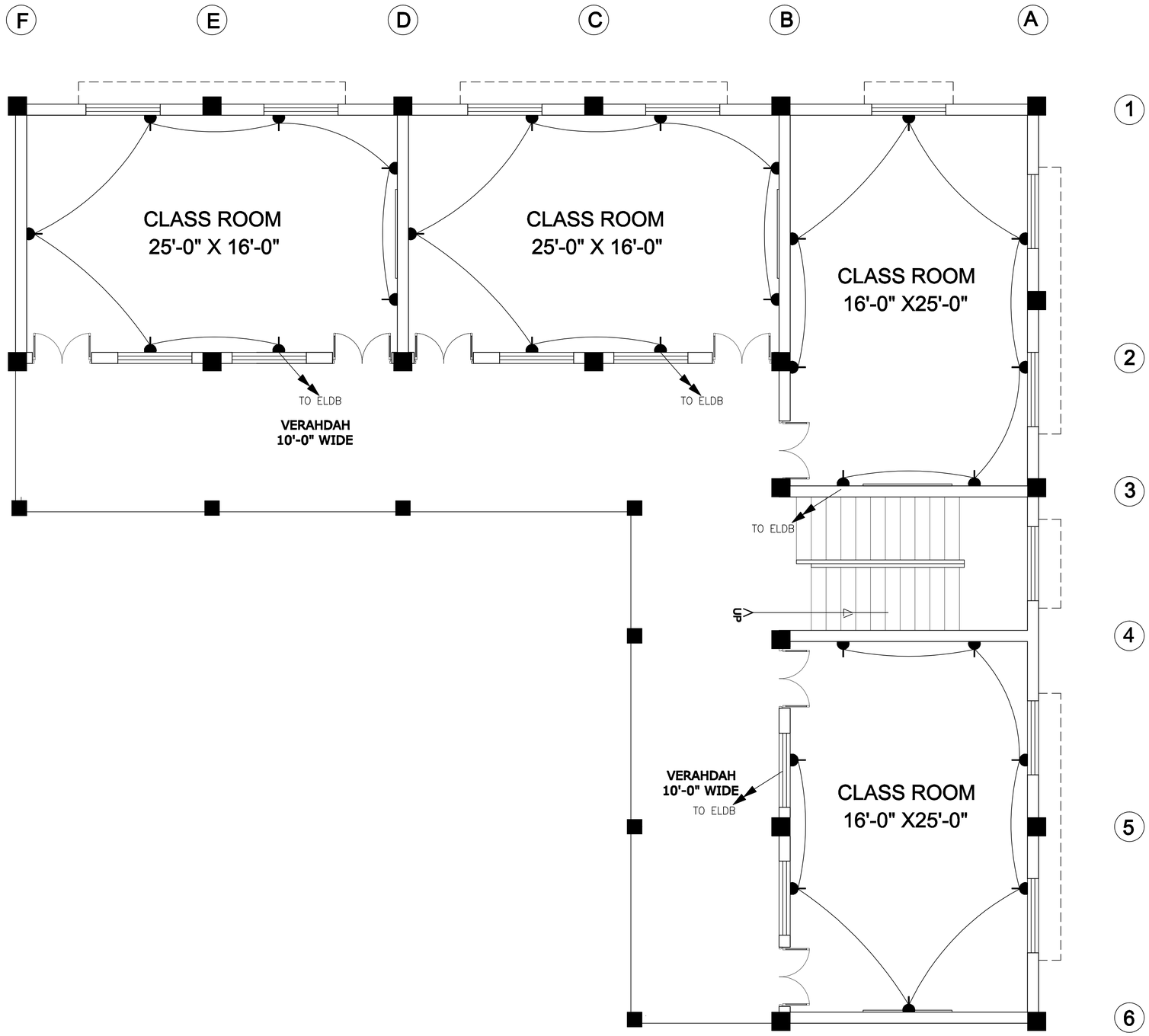
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY
HARIPUR
LIGHTING AND FANS LAYOYUT
FIRST FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/02E04	0



POWER LAYOUT

FIRST FLOOR PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

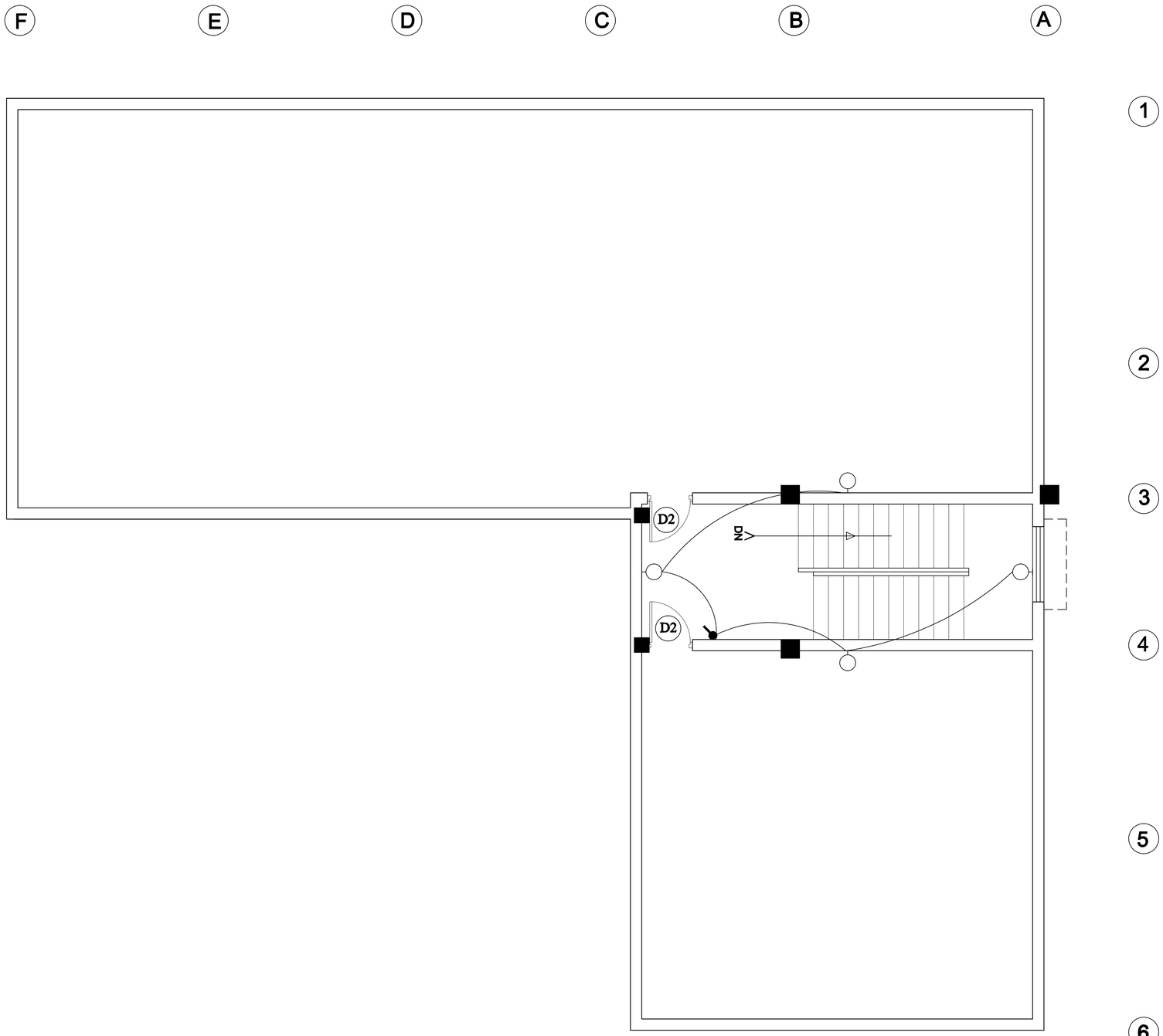
POWER LAYOUT

FIRST FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/02E05	0



MUMTY PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

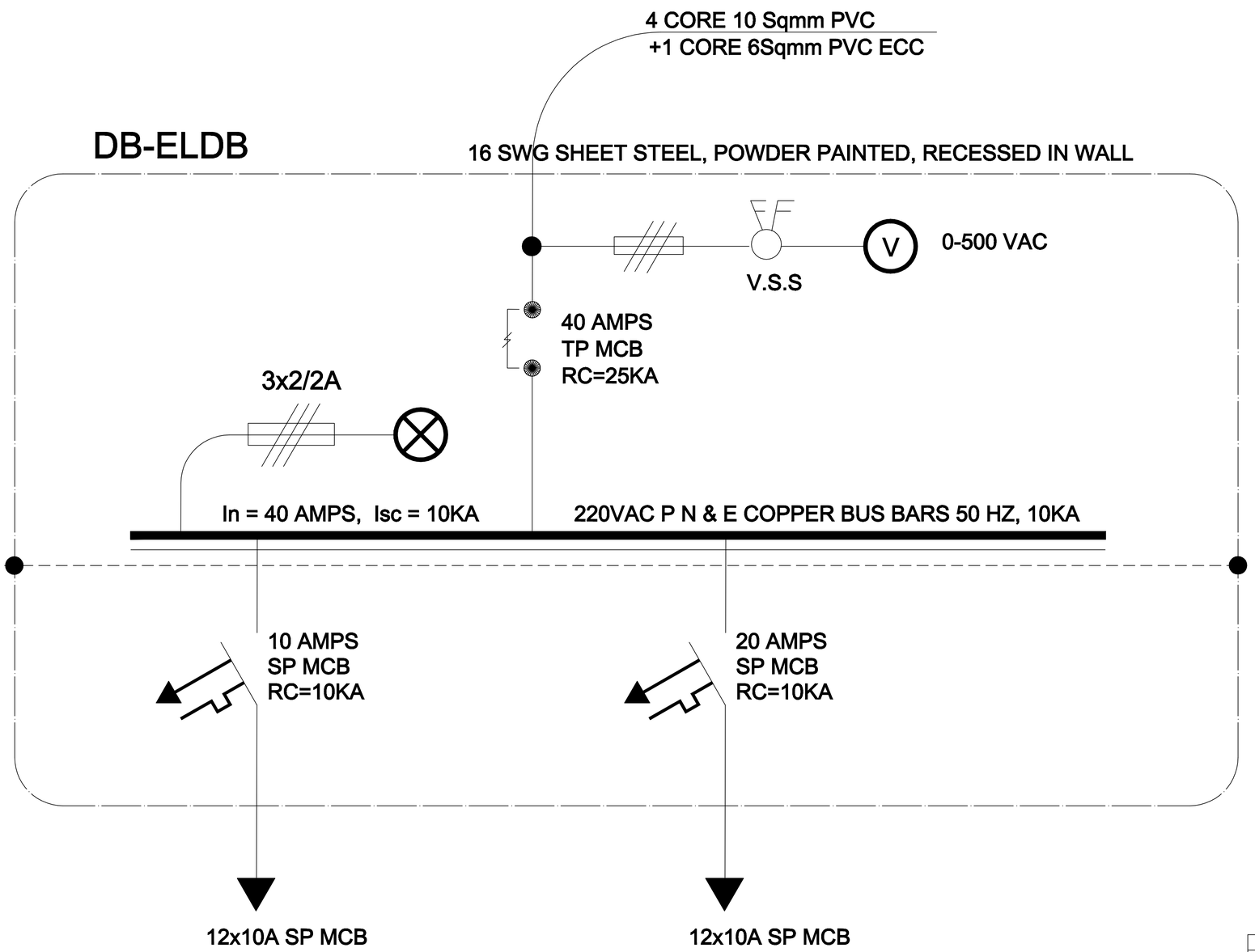
CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

POWER LAYOYUT

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK	RASHID ULLAH	WAJAHAT	WAJAHAT
DWN. KALEEM			
FILE	DATE	DRAWING NO.	REV.
CKD. KALEEM	OCT.,2022	4199/325/C/02E06	0
SUBM. WAJAHAT			



SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. HIGH SCHOOL FOR BOYS KANGRA COLONY

HARIPUR

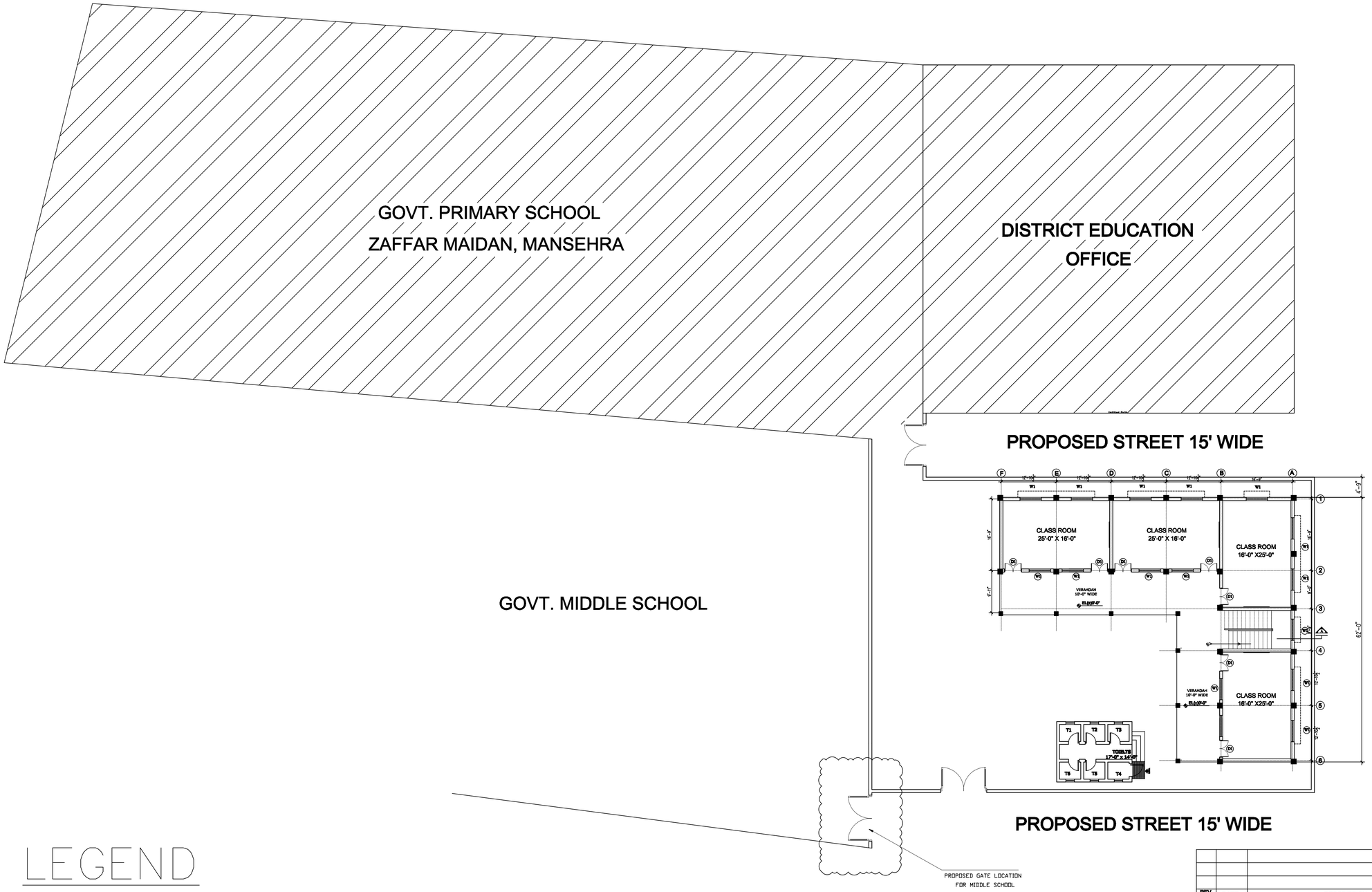
SINGLE LINE DIAGRAM

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK	RASHID ULLAH	WAJAHAT	WAJAHAT
DWN. KALEEM			
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/02E07	0

3. GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA



LEGEND

EXITING BUILDING

PROPOSED

DEMOLISHED

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN

MANSEHRA

ARCHITECTURAL LAYOUTS

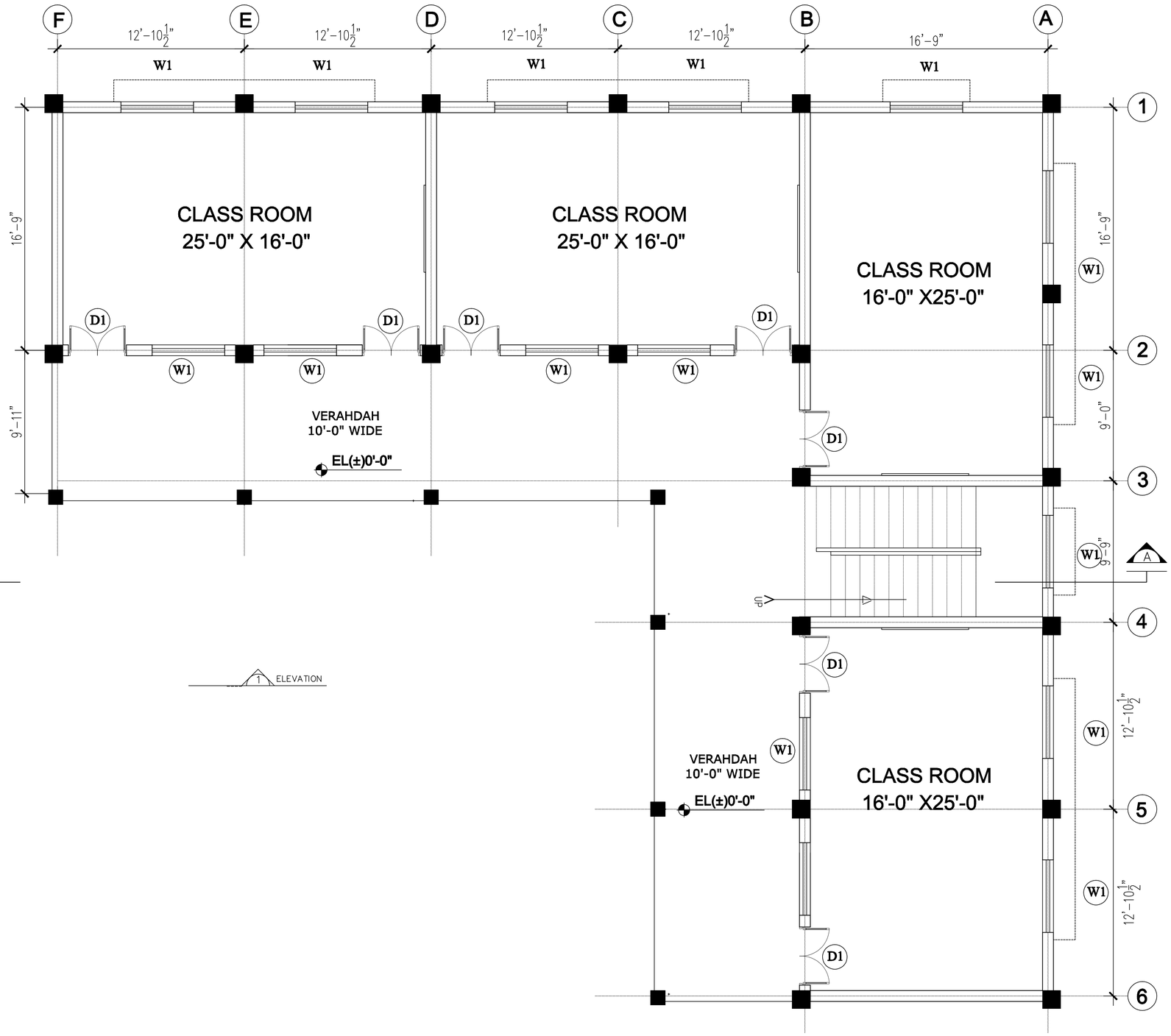
SITE PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/03B01	0

SCHEDULE OF DOOR & WINDOWS

D1=4'-0" x 9'-6"
D2=3'-0" x 7'-0"
W1=5'-0" x 6'-3"



A

A

1 ELEVATION

GROUND FLOOR PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
ARCHITECTURAL LAYOUTS
GROUND FLOOR PLAN

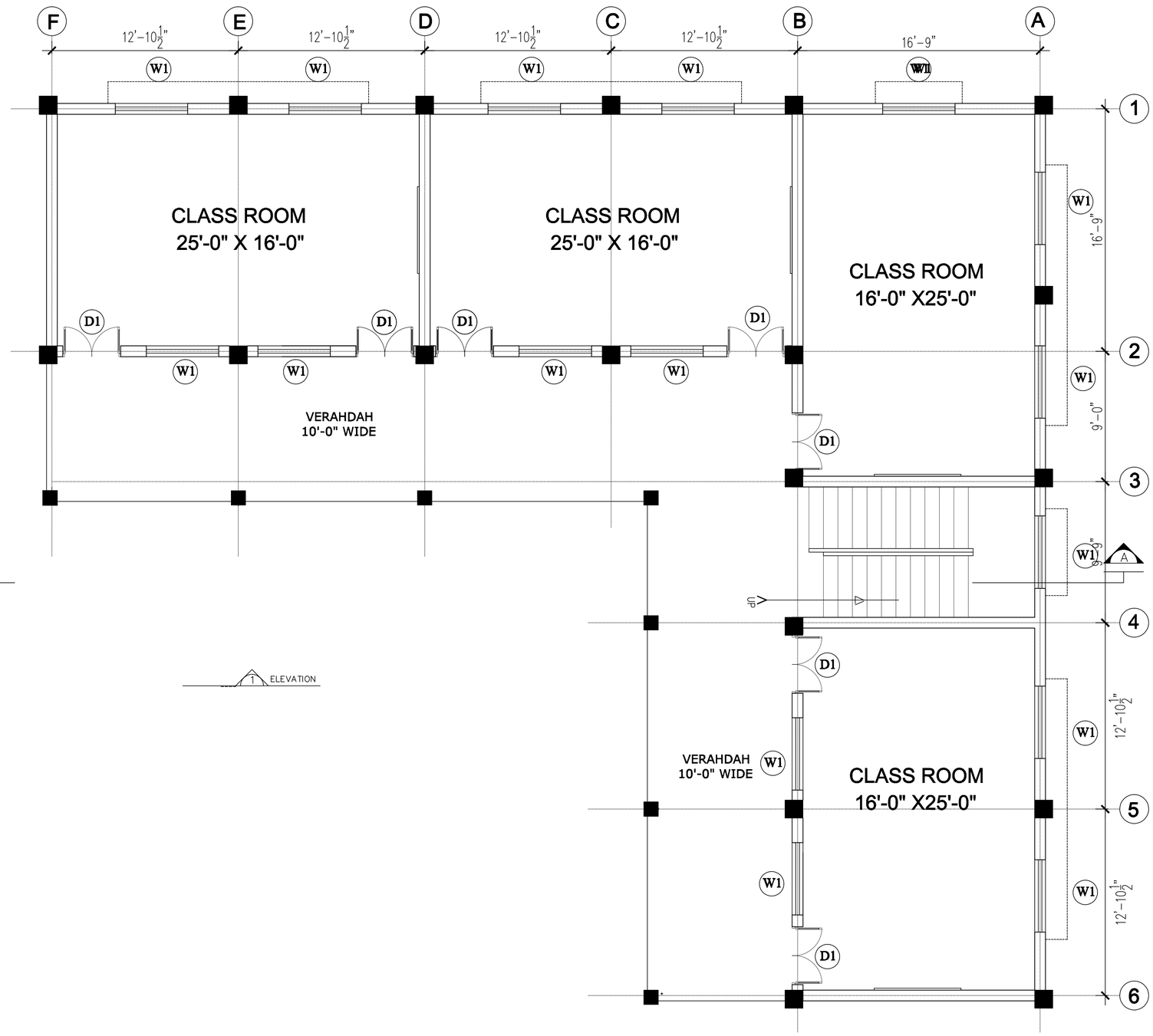
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.			
SUBM. WAJIHA REHAN			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/322/C/03B02	0

SCHEDULE OF DOOR & WINDOWS

D1=4'-0" x 9'-6"
D2=3'-0" x 7'-0"
W1=5'-0" x 6'-3"



FIRST FLOOR PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

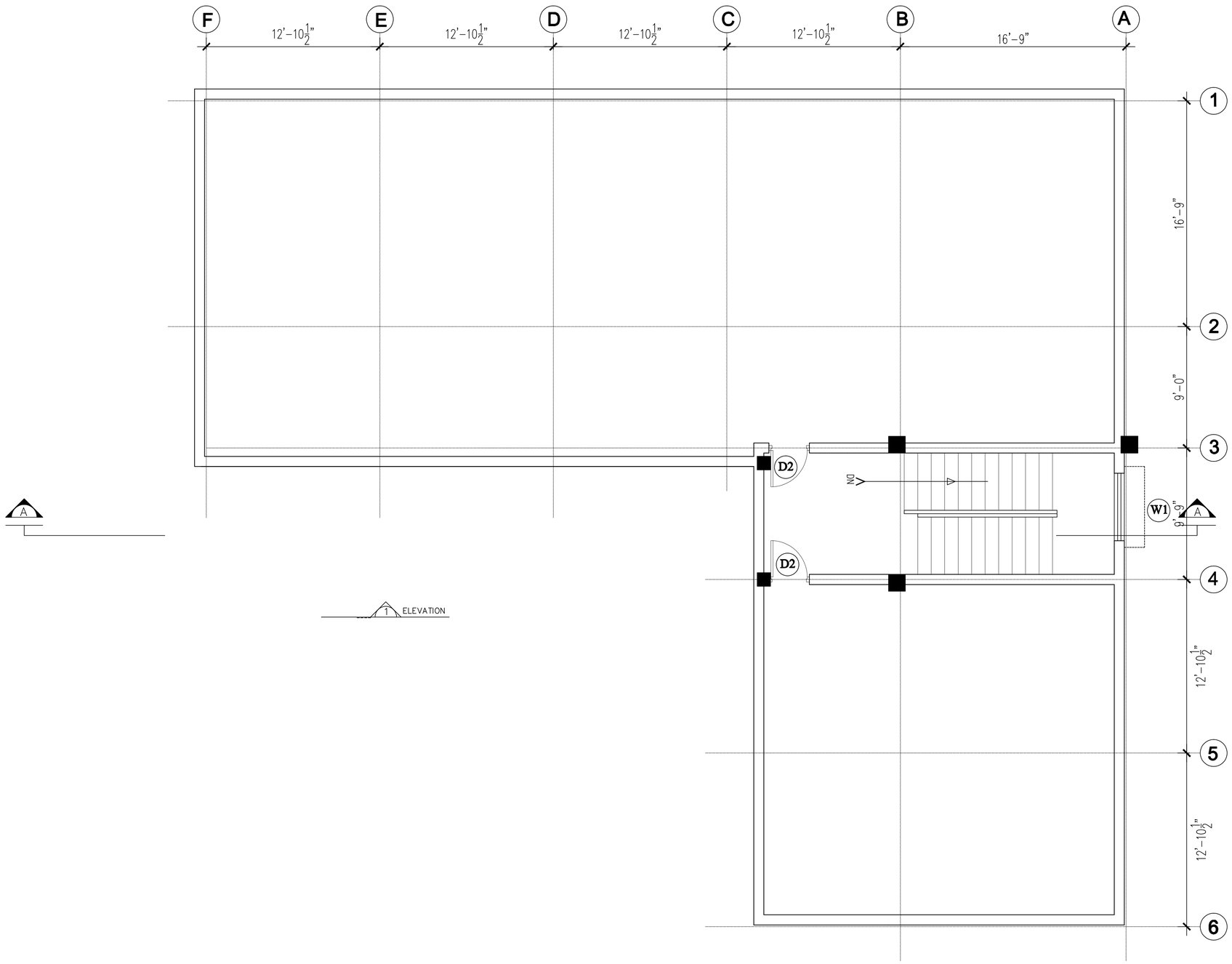
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
ARCHITECTURAL LAYOUTS
FIRST FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.			
SUBM. WAJIHA REHAN			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/322/C/03B03	0



MUMTY PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN

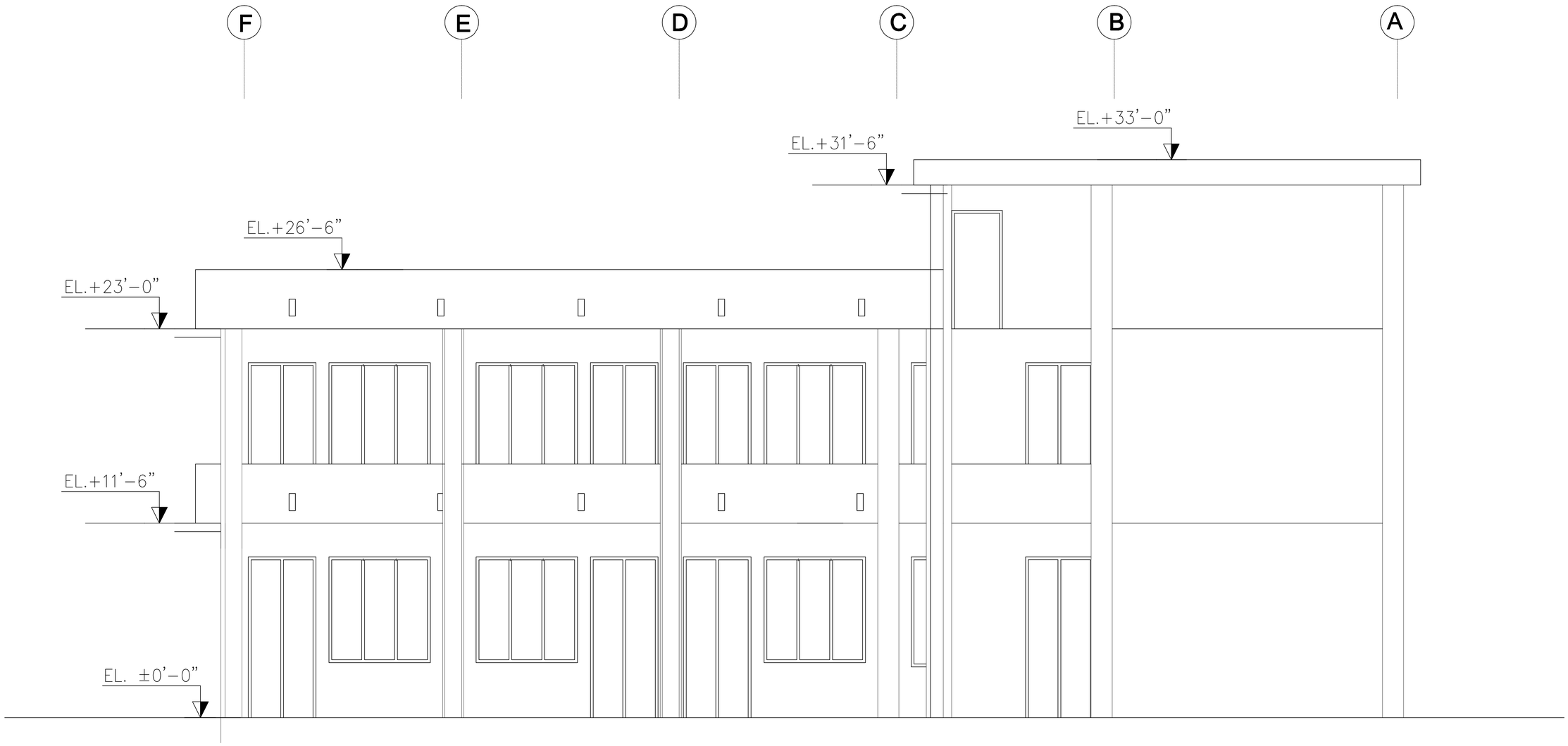
MANSEHRA

ARCHITECTURAL LAYOUTS

ROOF PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
DWN. YASIR MEHMOOD			
FILE	DATE	DRAWING NO.	REV.
CKD.	OCT.,2022	4199/322/C/03B04	0
SUBM. WAJIHA REHAN			



FRONT ELEVATION-1

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
ARCHITECTURAL LAYOUTS
ELEVATION - 1

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/03B05	0

SECTIONAL ELEVATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN

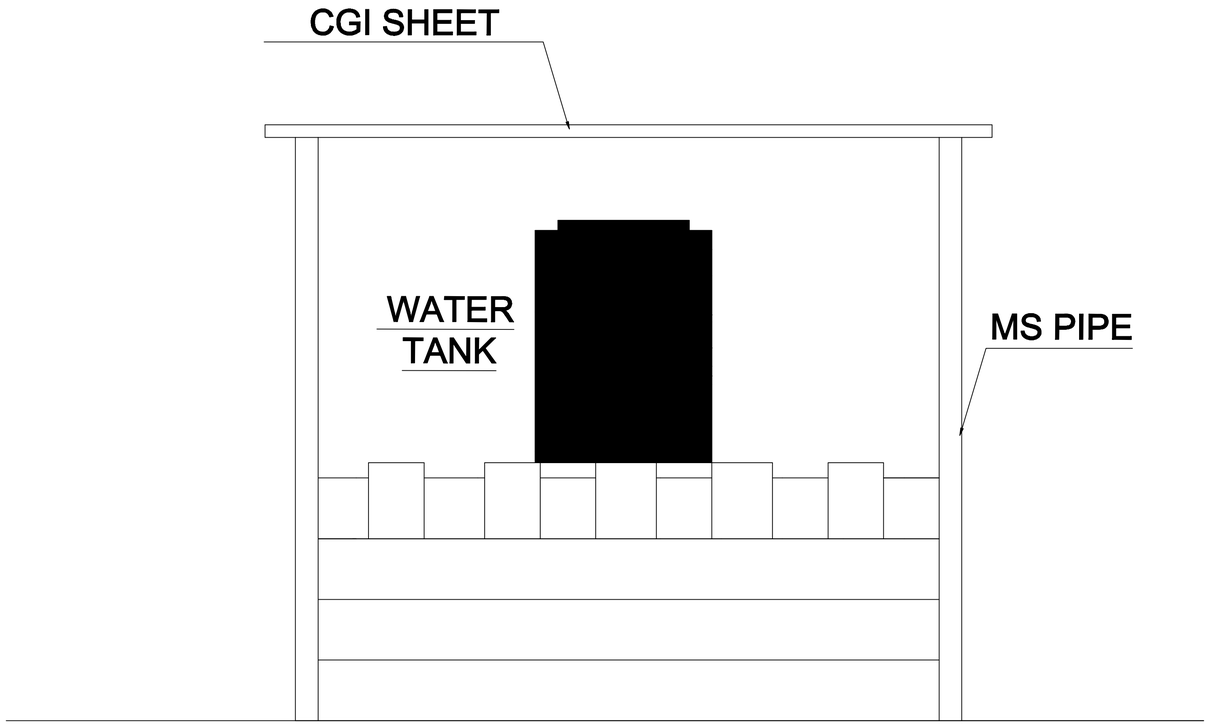
MANSEHRA

ARCHITECTURAL LAYOUTS

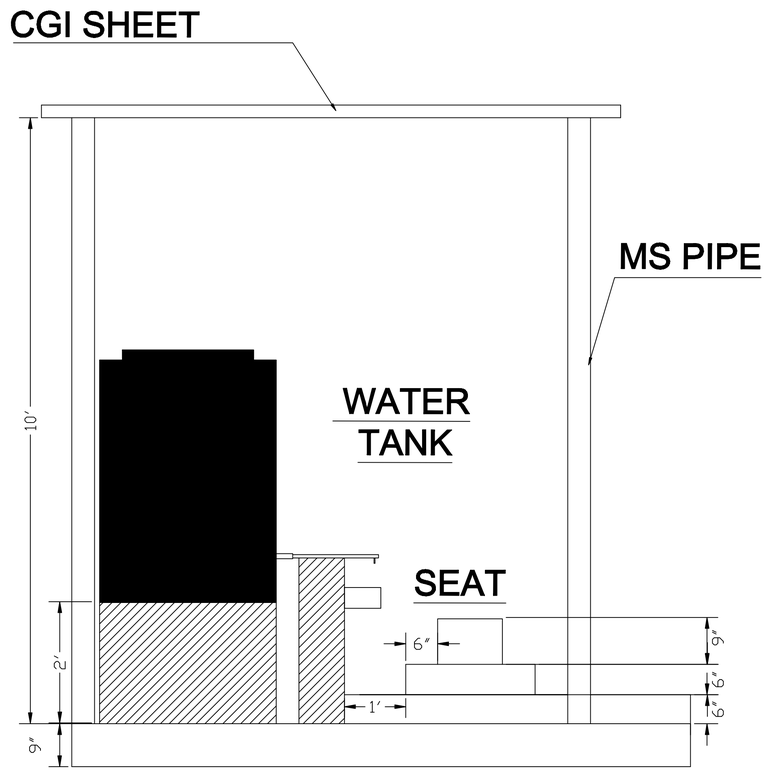
ELEVATION - 2

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

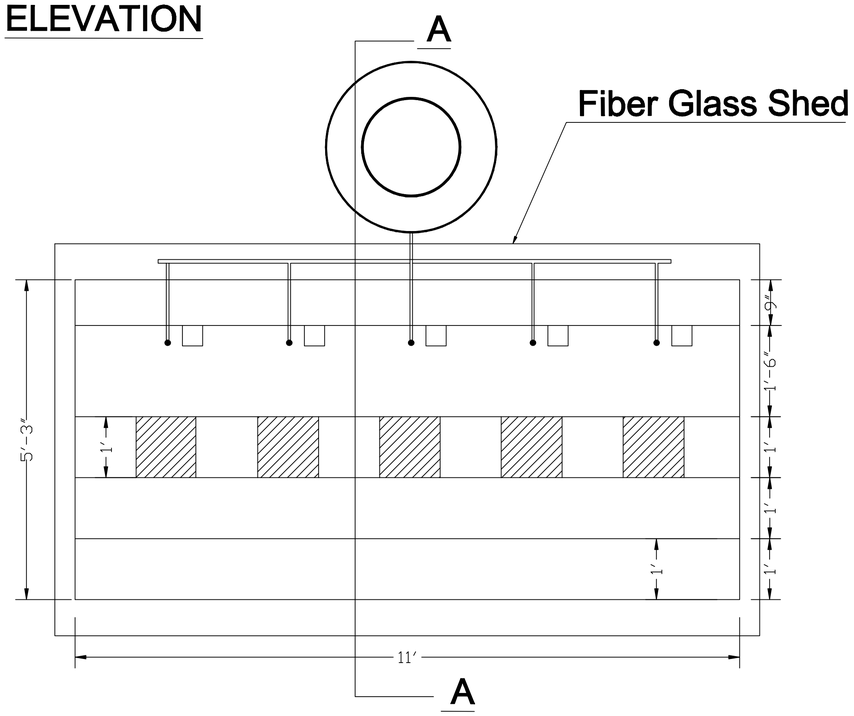
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/03B06	0



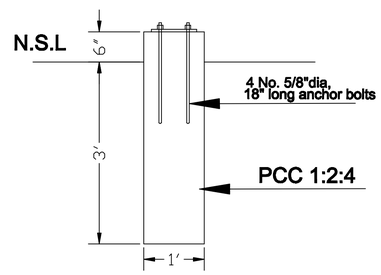
ELEVATION



SECTION AT A-A



PLAN OF WASH FACILITATION



TYPICAL FOUNDATION

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

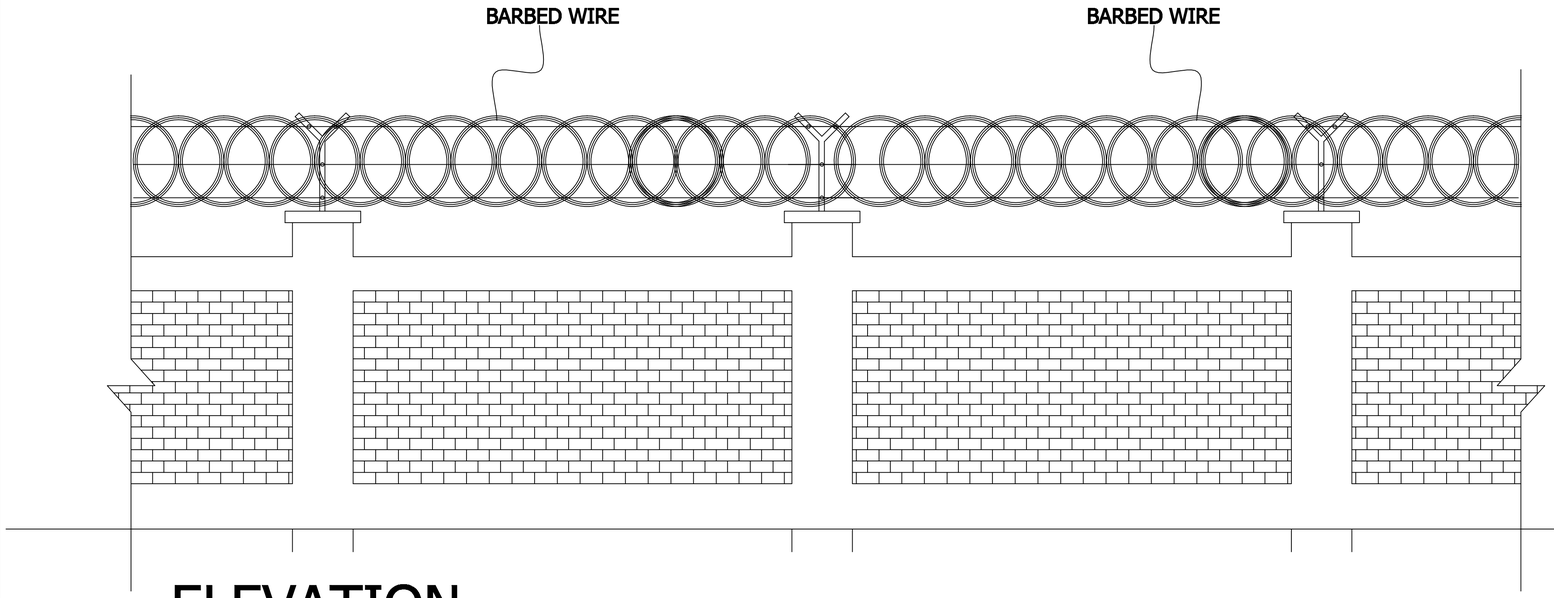
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
ARCHITECTURAL LAYOUTS
TYPICAL DETAIL OF WASH FACILITY

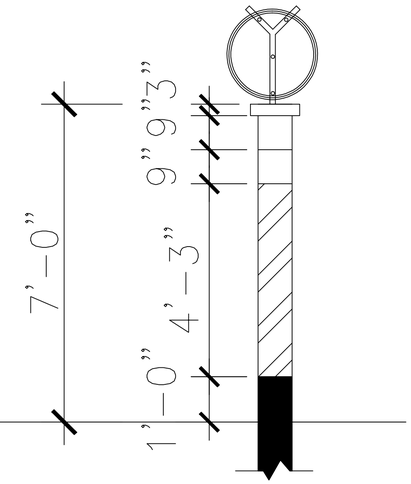
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE			
CKD.			
SUBM. WAJIHA REHAN			

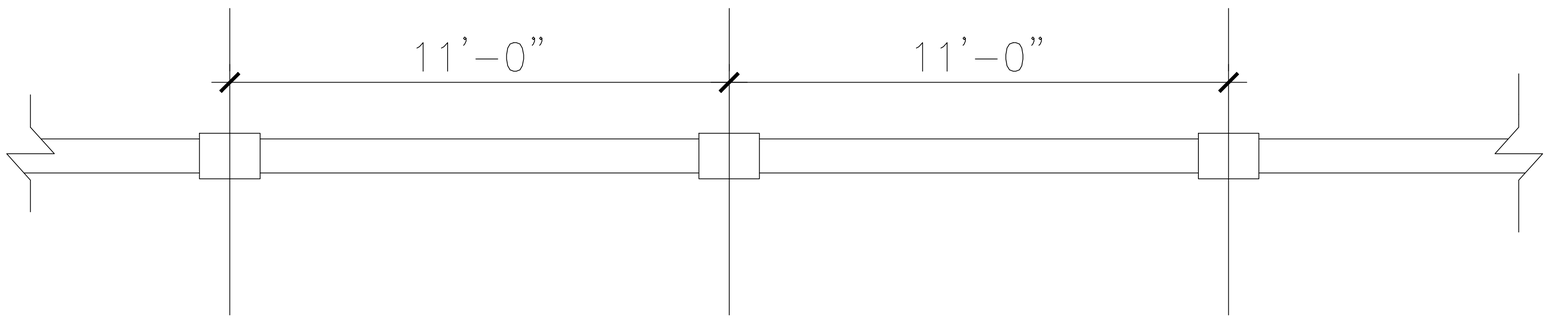
DATE	DRAWING NO.	REV.
OCT.,2022	4199/322/C/03B07	0



ELEVATION



SECTION



PLAN

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
ARCHITECTURAL LAYOUTS
BOUNDARY WALL

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. YASIR MEHMOOD	RASID ULLAH	WAJIHA REHAN	WAJIHA REHAN
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. WAJIHA REHAN	OCT.,2022	4199/322/C/03B08	0

A. GENERAL

1. NOTES GIVEN ON THIS DRAWING ARE APPLICABLE TO ALL STRUCTURAL DRAWINGS UNLESS OTHERWISE NOTED. NOTES WRITTEN ON ANY OTHER DRAWING SHALL BE APPLICABLE TO THAT PARTICULAR DRAWING ONLY UNLESS OTHERWISE CROSS REFERRED.
2. SYSTEM OF UNITS IS FPS.
3. ALL LEVELS MARKED ON THE DRAWINGS ARE LEVELS OF STRUCTURAL ELEMENTS. FINISH LEVELS SHALL BE IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND STABILITY OF THE STRUCTURE AND ALL TEMPORARY WORKS DURING CONSTRUCTION.
5. THE CONTRACTOR SHALL INFORM THE ENGINEER ABOUT ANTICIPATED CONSTRUCTION LOADS IN THE STRUCTURE AND OBTAIN ENGINEER'S APPROVAL THEREOF BEFORE COMMENCING THE WORK.
6. THE CONTRACTOR SHALL CO-ORDINATE ALL DRAWINGS OF ALL DISCIPLINES FOR ALL ITEMS INCLUDING BUT NOT LIMITED TO SIZES AND LOCATION OF ALL OPENINGS REQUIRED FOR DUCTS, PIPES AND PIPE SLEEVES, ELECTRICAL CONDUITS AND OTHER ITEMS TO BE EMBEDDED IN CONCRETE OR OTHERWISE INCORPORATED IN STRUCTURAL WORK AND SHALL BRING TO THE NOTICE OF THE ENGINEER DISCREPANCIES, IF ANY, FOR HIS INSTRUCTIONS, PRIOR TO THE START OF WORK.
7. THE CONTRACTOR SHALL VERIFY LAYOUT, CONFIGURATION, ALL DIMENSIONS AND LEVELS PERTAINING TO EXISTING WORKS BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL ADOPT ADEQUATE AND APPROPRIATE MEASURES SO AS NOT TO DAMAGE THE EXISTING WORKS.
8. THE CONTRACTOR SHALL EXERCISE UTMOST CARE AND PRECAUTION DURING THE WORKS, AGAINST ANY MISHAPS OR ACCIDENTS, FOR WHICH THE CONTRACTOR SHALL BE WHOLLY AND SOLELY RESPONSIBLE. THE CONTRACTOR SHALL INDEMNIFY THE OWNER AGAINST ANY ACCIDENTS AND ANY LOSSES THEREFROM AND SHALL REPAIR AND RECTIFY THEM AT HIS OWN COST AND TIME.
9. THE CONTRACTOR SHALL COORDINATE SCHEDULE OF CONSTRUCTION WITH SUPPLY AND INSTALLATION OF EQUIPMENT.
10. PROVISIONS SHALL BE MADE FOR INSTALLATION OF EQUIPMENT AS PER MANUFACTURER'S RECOMMENDATIONS.
11. ANY DEPARTURES/DEVIATIONS DESIRED FROM THE DESIGN OR SPECIFICATIONS, OR SOLUTIONS TO ANY PROBLEMS ENCOUNTERED, SHALL BE GOT APPROVED FROM THE ENGINEER PRIOR TO IMPLEMENTATION. UNAPPROVED DEPARTURES/DEVIATIONS MAY LEAD TO REJECTION/REPLACEMENT OF THE ENTIRE WORK AT THE CONTRACTOR'S COST.
12. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO SPECIFICATIONS OF THE CONTRACT. IN ABSENCE OF ANY EXPRESS OR IMPLIED SPECIFICATION IN THE CONTRACT, ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO RELEVANT AMERICAN STANDARDS AND SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
13. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULES FOR ENGINEER'S APPROVAL AND OBTAIN HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACCURACY OF SHOP DRAWINGS AND BAR BENDING SCHEDULES. THE ENGINEER'S APPROVAL SHALL NOT RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY.

B. FOUNDATION AND EARTHWORK

1. THE CONTRACTOR SHALL STUDY THE AVAILABLE GEOTECHNICAL INVESTIGATION REPORT BEFORE COMMENCING THE WORK.
2. FOUNDATION DESIGN IS BASED ON THE RECOMMEDATION LAID DOWN IN GEOTECHNICAL INVESTIGATION REPORT.
3. TERMITE CONTROL TREATMENT SHALL BE CARRIED OUT AS PER SPECIFICATIONS.
4. THE TYPE AND COMPACTION OF SOIL BELOW GRADE SLAB SHALL BE AS PER JOB SPECIFICATIONS.
5. NO FOOTING SHALL BE PLACED ON FILL. HOWEVER, AREAS WHERE FILLING BELOW THE FOOTINGS BECOMES INEVITABLE OR OVER-EXCAVATION (IF ANY), SHALL BE FILLED WITH CONCRETE CLASS 'E' WITH PRIOR APPROVAL OF THE ENGINEER.

B. FOUNDATION AND EARTHWORK (CONTINUED)

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING SYSTEM IF AND WHERE SO REQUIRED DURING CONSTRUCTION.
7. ALL STRUCTURAL CONCRETE SURFACES AGAINST WHICH EARTH IS TO BE FILLED SHALL BE COATED WITH BITUMEN (10/20 GRADE) APPLIED HOT AT THE RATE OF 20 lb/100SFT PER COAT, EXCEPT FOR CONCRETE CLASS 'D' AND 'E'.
8. BACKFILLING AND COMPACTION SHALL BE CARRIED OUT EQUALLY ON BOTH SIDES OF PLINTH BEAMS TO AVOID IMBALANCE OF LATERAL EARTH PRESSURE.
9. THE CONTRACTOR SHALL SUPPLY AND ERECT ADEQUATE SHORING AND SUPPORT THE SIDES OF ALL EXCAVATIONS WHERE REQUIRED TO SAFEGUARD WORKMEN AND PROTECT ANY ADJACENT STRUCTURES.
10. EXISTING UNDERGROUND SERVICES, REQUIRED TO BE LEFT IN POSITION, SHALL BE CAREFULLY PROTECTED DURING EXCAVATION AND BACKFILLING OPERATIONS.
11. EXCAVATIONS ADJACENT TO EXISTING STRUCTURES AND/OR UNDERGROUND SERVICES SHALL BE MADE BY HAND.

C. REINFORCED / PLAIN CEMENT CONCRETE

1. ALL CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS FOR EXECUTION OF WORKS (1967), GOVERNMENT OF WEST PAKISTAN, BEING REFERENCE SPECIFICATIONS FOR KP-MRS ITEMS.
2. ALL CONCRETE SHALL BE TESTED IN ACCORDANCE WITH ASTM STANDARDS C31, C39, C172 & SPECIFICATIONS AND THE MINIMUM CUBE/CYLINDER CRUSHING STRENGTH OF CONCRETE AT 28 DAYS SHALL BE AS FOLLOWS. TESTING OF CLASS 'D' & 'E' SHALL BE PERFORMED IF SO DIRECTED BY THE ENGINEER.

CLASS	NOMINAL MIX	MINIMUM CYLINDER STRENGTH AT 28-DAYS (psi.)
A	1:1:2	3,750
B	1:1½:3	3,000
C	1:2:4	2,400
D	1:3:6	1,500
E	1:4:8	1,200

3. CLASS OF CONCRETE FOR DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE AS FOLLOWS UNLESS NOTED OTHER WISE:

COMPONENT	CONCRETE CLASS
COLUMNS AND FOOTING	CLASS 'B'
SLABS & BEAMS	CLASS 'B'
P.C.C. STEPS & STUB COLUMNS (FOR FUTURE EXTENSION)	CLASS 'D'
LEAN CONCRETE	CLASS 'E'

4. ORDINARY PORTLAND CEMENT SHALL BE USED FOR ALL CONCRETE WORKS.

C. REINFORCED / PLAIN CEMENT CONCRETE (CONTINUED)

5. AN INTEGRAL WATER PROOFING AGENT SHALL BE USED IN CONCRETE THAT IS CONSTANTLY OR INTERMITTENTLY IN CONTACT WITH WATER AS PER MANUFACTURER'S RECOMMENDATIONS (GENCON GENPRUF RMC OR PENETRON ADMIX OR EQUIVALENT).
6. WATER CEMENT RATIO FOR WATERTIGHT STRUCTURAL CONCRETE SHALL NOT EXCEED 0.45 AND 0.5 FOR ALL OTHER STRUCTURAL CONCRETE.
7. CONCRETE CLEAR COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS:

STRUCTURAL MEMBER / ELEMENT	MINIMUM COVER (INCHES)
FOUNDATIONS (ALL TYPES)	2"
COLUMNS & BEAMS	1½"
RCC RETAINING WALLS	1½"
SLABS	¾"
RCC SHELLS AND DOMES	½"

8. ALL REINFORCING STEEL EXCEPT 3/8"ø BARS SHALL BE DEFORMED, HOT ROLLED BILLET STEEL BARS CONFORMING TO ASTM A-615 GRADE-60 WITH SPECIFIED YIELD STRENGTH OF NOT LESS THAN 60,000 psi. NOR MORE THAN 78,000 psi, AND RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
9. 3/8"ø BARS SHALL BE MILD STEEL DEFORMED BARS CONFORMING TO ASTM A-615 GRADE-40 WITH SPECIFIED YIELD STRENGTH OF NOT LESS THAN 40,000 psi. NOR MORE THAN 58,000 psi, AND RATIO OF ULTIMATE STRENGTH TO YIELD STRENGTH SHALL NOT BE LESS THAN 1.25.
10. GRADE-60 STEEL BARS ARE REPRESENTED USING PREFIX SYMBOL "#" AND GRADE-40 STEEL BARS ARE REPRESENTED USING PREFIX SYMBOL "ø". WHEREAS, THE NUMBER INDICATES THE BAR DIAMETER/SIZE, AS UNDER:

BAR NUMBER	DIAMETER (INCHES)
3	3/8"
4	1/2"
5	5/8"
6	3/4"
8	1"

11. ALL DETAILING SHALL BE DONE AS PER ACI STANDARDS ACI-315, ACI-318 & ACI-350R.
12. ALL REINFORCING STEEL SHALL BE HELD FIRMLY IN PLACE BEFORE AND DURING THE PLACING OF CONCRETE BY MEANS OF WIRES AND SUPPORTS ADEQUATE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION.

D. CONCRETE CONSTRUCTION

1. THE CONTRACTOR SHALL SUBMIT CONCRETE POURING SCHEDULE FOR ENGINEER'S APPROVAL. NO CONCRETE SHALL BE POURED UNTIL ITS FORMWORK AND REINFORCEMENT HAS BEEN INSPECTED AND APPROVED BY THE ENGINEER.
2. DURING CONSTRUCTION, STACKING OF CONSTRUCTION MATERIALS, BLOCKS ETC. SHOULD BE AVOIDED ON SLAB PANELS.
3. BEFORE CASTING OF ANY STRUCTURAL MEMBER, THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED ITEMS FOR ELECTRICAL, MECHANICAL, HVAC, PLUMBING, STRUCTURAL STEEL AND OTHER WORKS, AND DOWELS FOR STRUCTURAL MEMBERS AND/OR MASONARY ARE PROPERLY LOCATED IN PLACE.

E. CONSTRUCTION JOINTS

1. JOINTS, NOT SHOWN ON THE DRAWING, SHALL BE SO MADE AND LOCATED AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHALL NEED PRIOR APPROVAL OF THE ENGINEER. THEY SHALL BE LOCATED NEAR THE MIDDLE OF THE SPANS OF SLAB & BEAMS. JOINTS IN WALLS & COLUMNS SHALL BE AT THE UNDER-SIDE OF FLOORS, SLABS OR BEAMS AND AT THE TOP OF FOOTINGS OR FLOOR SLABS.
2. JOINTS SHALL BE PERPENDICULAR TO MAIN REINFORCEMENT. ALL REINFORCING STEEL SHALL BE CONTINUED ACROSS THE JOINTS.
3. JOINTS IN BASE SLAB & WALLS AND ROOF SLAB, IN ADDITION TO THOSE SHOWN ON THE DRAWINGS SHALL BE BORNE BY THE CONTRACTOR. BEAMS & BRACKETS SHALL BE PLACED AT THE SAME TIME AS SLABS.

F. ELECTRICAL CONDUITS

1. CONDUITS, FOR ELECTRICAL WORKS, SHALL BE PLACED WITHIN THE REINFORCED CONCRETE. THEY SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SECTION IN BEAMS & SLABS AND WITHIN THE MIDDLE HALF OF THE THICKNESS. SPACING BETWEEN PARALLEL CONDUITS SHALL NOT BE LESS THAN 6" (150 MM).

G. PROPS, FORMWORK & CURING

1. SHORE & BRACE ALL PARTS OF THE BUILDING DURING CONSTRUCTION, TO THE EXTENT NECESSARY TO ENSURE COMPLETE SAFETY, STRENGTH & SERVICEABILITY OF ALL STRUCTURAL ELEMENTS UNDER ALL CONDITIONS OF LOADS WHICH MAY OCCUR DURING CONSTRUCTION. SUCH SHORING & BRACING IS THE CONTRACTOR'S SOLE RESPONSIBILITY AND IS NOT SHOWN ON STRUCTURAL DRAWINGS OR SPECIFIED IN THE PROJECT.
2. SEQUENCE OF REMOVAL OF FORMWORK SHALL BE APPROVED BY THE ENGINEER.
3. AT LEAST ONE LOWER FLOOR SHALL REMAIN PROPPED UNTILL THE UPPER FLOOR IS CAST AND CURED.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
GENERAL NOTES (SHEET 1 OF 2)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G01	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G01	0
SUBM. TALHA AFZAL			

H. BRICK MASONRY WORKS

1. ALL BRICK MASONRY WORKS SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS .
2. ALL BRICK WORK SHALL CONFORM TO THE REQUIREMENTS OF SPECIFICATIONS FOR EXECUTION OF WORKS FOR KP–MRS AS MENTIONED IN THE CONTRACT DOCUMENT.
3. ALL BRICKS SHALL BE SOUND, HARD, WELL BURNT AND OF UNIFORM SIZE, COLOUR AND TEXTURE. DIMENSIONAL VARIATION IN SIZES SHALL NOT EXCEED ⅛".
4. EACH FINISHED BRICK SHALL BE 9"x4½"x3" IN SIZE AND SHALL WEIGH BETWEEN 7 TO 9 POUNDS. THE DEPTH OF FROG SHALL BE ¼" ON THE FACE.
5. TESTING OF COMPRESSIVE STRENGH OF MASONRY PRISMS SHALL BE DONE, IF SO DIRECTED BY THE ENGINEER, IN ACCORDANCE WITH ASTM E447 STANDARD.
6. THE AVERAGE COMPRESSIVE STRENGTH OF FIVE REPRESENTATIVE BRICKS SHALL NOT LESS THAN 1700 psi. AND SHALL BE NOT LESS THAN 1500 psi. FOR ANY INDIVIDUAL BRICK.
7. BRICKS SHALL BE LAID "FROG" UPWARD WITH MORTAR JOINTS AND IN ENGLISH/FLEMISH BOND AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE ENGINEER. BOTH BED/VERTICAL JOINTS SHALL BE ⅜" THICK COMLETELY FILLED WITH CEMENT MORTAR.
8. ALL BRICK WORK SHALL BE ERECTED PLUMB AND TRUE TO LINE AND LEVEL. THE MAXIMUM VARIATION IN ANY STOREY HEIGHT OR ANY LENGTH OF WALL SHALL BE ⅛" IN 10'–0".
9. MORTAR USED IN MASONRY CONSTRUCTION SHALL HAVE AN ULTIMATE COMPRESSIVE STRENGHT OF NOT LESS 1800 psi AND SHALL CONFORM TO ASTM C270 STANDARDS. COMPRESSIVE STRENGHT OF MASONRY AT 28 DAYS SHALL NOT BE LESS THAN 1150 psi.
10. 9" AND 4½"–THICK BRICK MASONRY IN SUPER STRUCTURE SHALL BE LAID IN 1:6 CEMENT SAND MORTAR.
11. BEARING OF LINTELS SHALL BE 9" MINIMUM AT EACH SUPPORT.
12. ALL DESIGN, DETAILING, MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH RELEVANT ACI, ASTM, AND UBC CODES AND STANDARDS.

J. STRUCTURAL STEEL WORKS

1. ALL FABRICATION, PAINTING, ERECTION AND QUALITY CONTROL IS TO BE DONE IN ACCORDANCE WITH THE LATEST AISC SPECIFICATIONS.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A–36 OR EQUIVALENT.
3. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF AMERICAN WELDING SOCIETY, AWS, SPECIFICATIONS USING ELECTRODES E70XX.
4. ALL BOLTS SHALL CONFORM TO ASTM A307 OR A325.
5. SURFACE PREPARATION OF ALL STRUCTURAL STEEL FOR PAINTING SHALL BE IN ACCORDANCE WITH THE LATEST ISSUE OF "STEEL STRUCTURES PAINTING COUNCIL" SPECIFICATIONS SSPC–SP6 FOR COMMERCIAL BLAST CLEANING.
6. ALL STEEL SHALL BE SHOP PAINTED WITH ONE COAT OF POLYURETHANE PRIMER AND TWO COATS OF POLYURETHANE ENAMEL OF APPROVED COLOR, TWO FINAL COATS OF POLYURETHANE ENAMEL SHALL BE APPLIED AFTER ERECTION. ALL WORK SHALL BE CARRIED OUT AS PER MANUFACTURER'S RECOMMENDATIONS/SPECIFICATIONS. STEEL SURFACE IN CONTACT WITH CONCRETE SHALL NOT BE PAINTED.

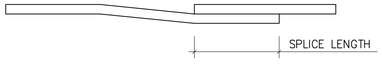
SPLICE LENGHTH (LS)*

fc' CYLINDER STRENGTH = 3,000 PSI		
BAR SIZES	(LS1) TOP BARS	(LS2) OTHER BARS
#3 TO #6	57db	44db
#7 TO #18	72db	55db

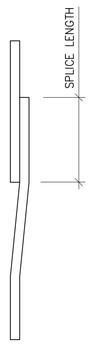
* ALL LAP SPLICE SHALL BE STAGGARED BY AT LEAST 50 %

DEVELOPMENT LENGHT (LD)

LD = LS



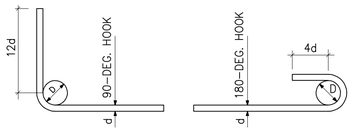
BEAM SPLICE (TYP)



COLUMN SPLICE (TYP)

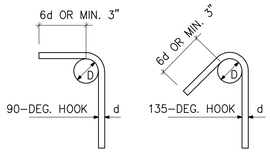
K. ABBREVIATIONS & SYMBOLS

@	AT THE RATE OF
B	BOTTOM
BW	BOTHWAYS
c/c	CENTRE TO CENTRE
CL	CLEAR
D,d	DEPTH, THICKNESS
EF	EACH FACE
EJ	EXPANSION JOINT
EL.	STRUCTURAL ELEVATION
EQ	EQUAL
FF	FAR FACE
FFL	FINISHED FLOOR LEVEL
FGL	FINISHED GROUND LEVEL
GS	SLAB ON GRADE
H	HORIZONTAL
NF	NEAR FACE
NSL	EXISTING/NATURAL SURFACE LEVEL
NSP	NOT SHOWN ON PLAN
NTS	NOT TO SCALE
SOP	SURVEY OF PAKISTAN
ST	STIRUPPS
T	TOP
TYP.	TYPICAL
UNO	UNLESS NOTED OTHERWISE
V	VERTICAL
≥	GREATER THAN OR EQUAL TO
≤	LESS THAN OR EQUAL TO
ø	DIAMETER IN INCHES UNO
	LEVEL ON PLAN
℄	CENTRE LINE
L	ANGLE
[	CHANNEL



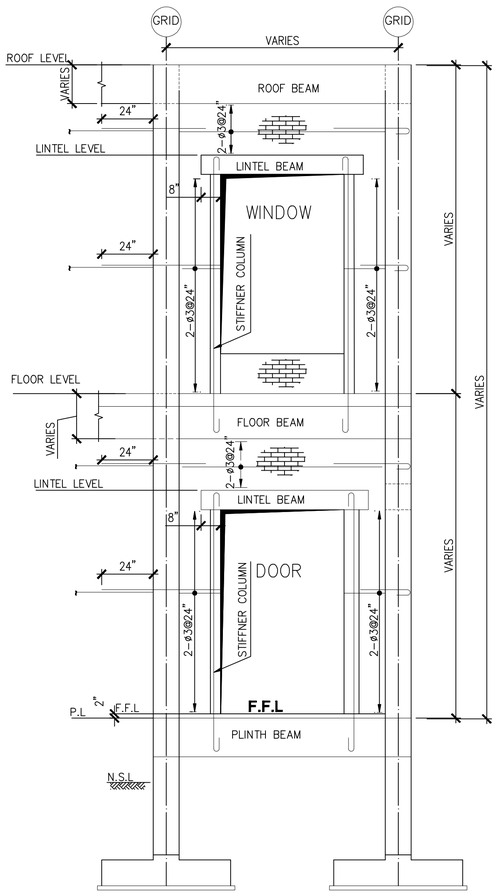
STANDARD BAR HOOKS (MAIN BARS)

BAR DIA	D
ø3	2½"
#4	3"
#5	4"
#6	4"
#8	6"
#9	7"
#11	8½"

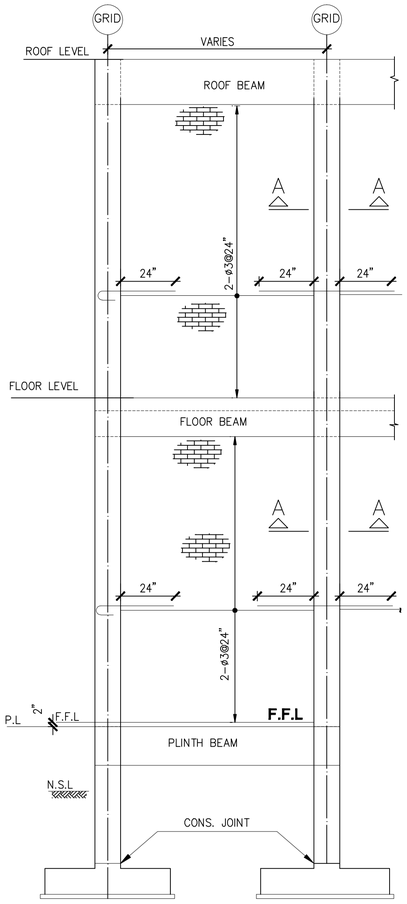


STIRRUPS AND TIE HOOKS

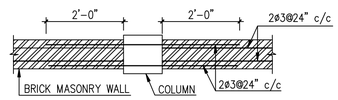
BAR DIA	D
ø3	1½"
#4	2"
#5	2½"



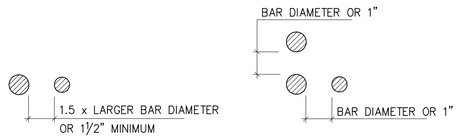
TYPICAL WALL REINFORCEMENT DETAIL WITH OPENING



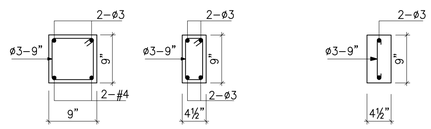
TYPICAL WALL REINFORCEMENT DETAIL



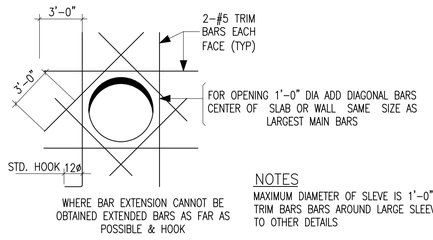
SECTION A–A
(TYP. WALL–COLUMN JOINT DETAIL)



VERTICAL BAR SPACING BAR SPACING IN BEAM

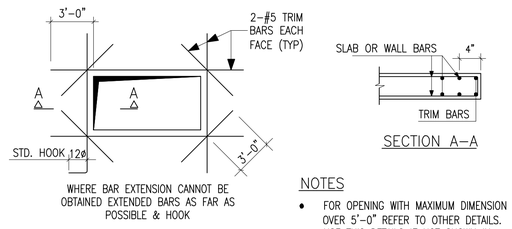


TYPICAL DETAIL OF LINTELS (UP TO 5'–0" CLEAR SPAN) TYPICAL DETAIL OF STIFFNER COLUMN



NOTES
MAXIMUM DIAMETER OF SLEVE IS 1'–0" FOR TRIM BARS BARS AROUND LARGE SLEEVE REFER TO OTHER DETAILS

REINFORCEMENT AROUND SLEEVE IN SLABS & WALLS (TYP)



SECTION A–A

NOTES
- FOR OPENING WITH MAXIMUM DIMENSION OVER 5'–0" REFER TO OTHER DETAILS.
- USE THIS DETAILS IF NOT SHOWN IN DESIGN DRAWINGS

REINFORCEMENT DETAIL AT OPENING IN SLAB & WALLS (TYP)

SCALE = 1"=6'

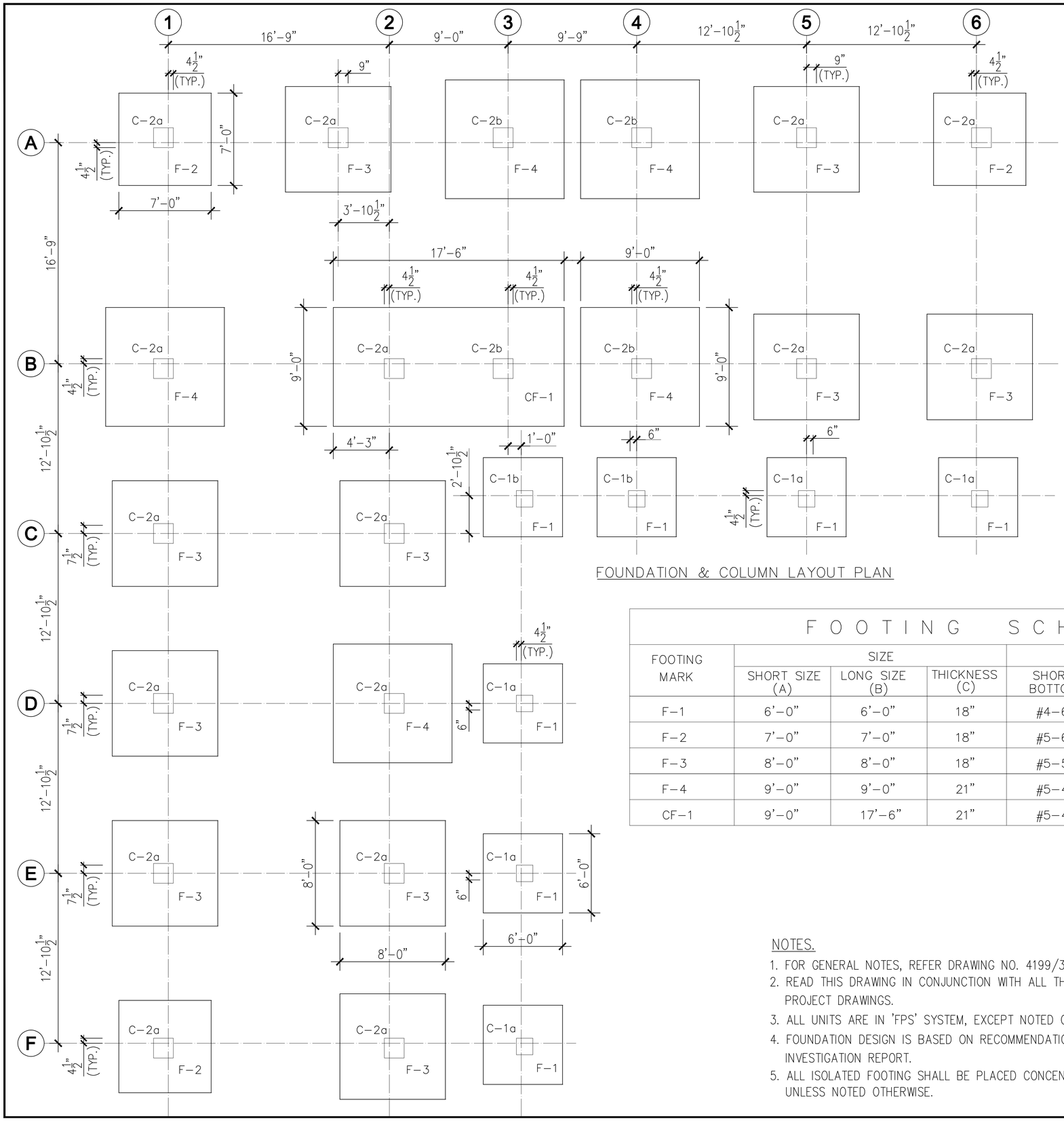
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

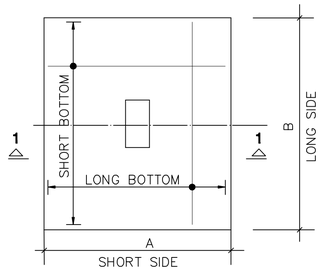
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
GENERAL NOTES (SHEET 2 OF 2)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

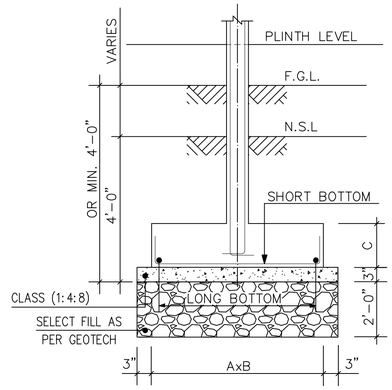
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G02	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/03G02	0



FOUNDATION & COLUMN LAYOUT PLAN



PLAN OF ISOLATED FOOTING



SECTION OF ISOLATED FOOTING (TYP)
(SEC 1-1)

FOOTING SCHEDULE

FOOTING MARK	SIZE			REINFORCEMENT			
	SHORT SIZE (A)	LONG SIZE (B)	THICKNESS (C)	SHORT BOTTOM	LONG BOTTOM	SHORT TOP	LONG TOP
F-1	6'-0"	6'-0"	18"	#4-6"	#4-6"	-	-
F-2	7'-0"	7'-0"	18"	#5-6"	#5-6"	-	-
F-3	8'-0"	8'-0"	18"	#5-5"	#5-5"	-	-
F-4	9'-0"	9'-0"	21"	#5-4"	#5-4"	-	-
CF-1	9'-0"	17'-6"	21"	#5-4"	#5-4"	#4-6"	#4-6"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS OF GEOTECHNICAL INVESTIGATION REPORT.
5. ALL ISOLATED FOOTING SHALL BE PLACED CONCENTRIC WITH THE COLUMNS UNLESS NOTED OTHERWISE.

SCALE = 1"=6'

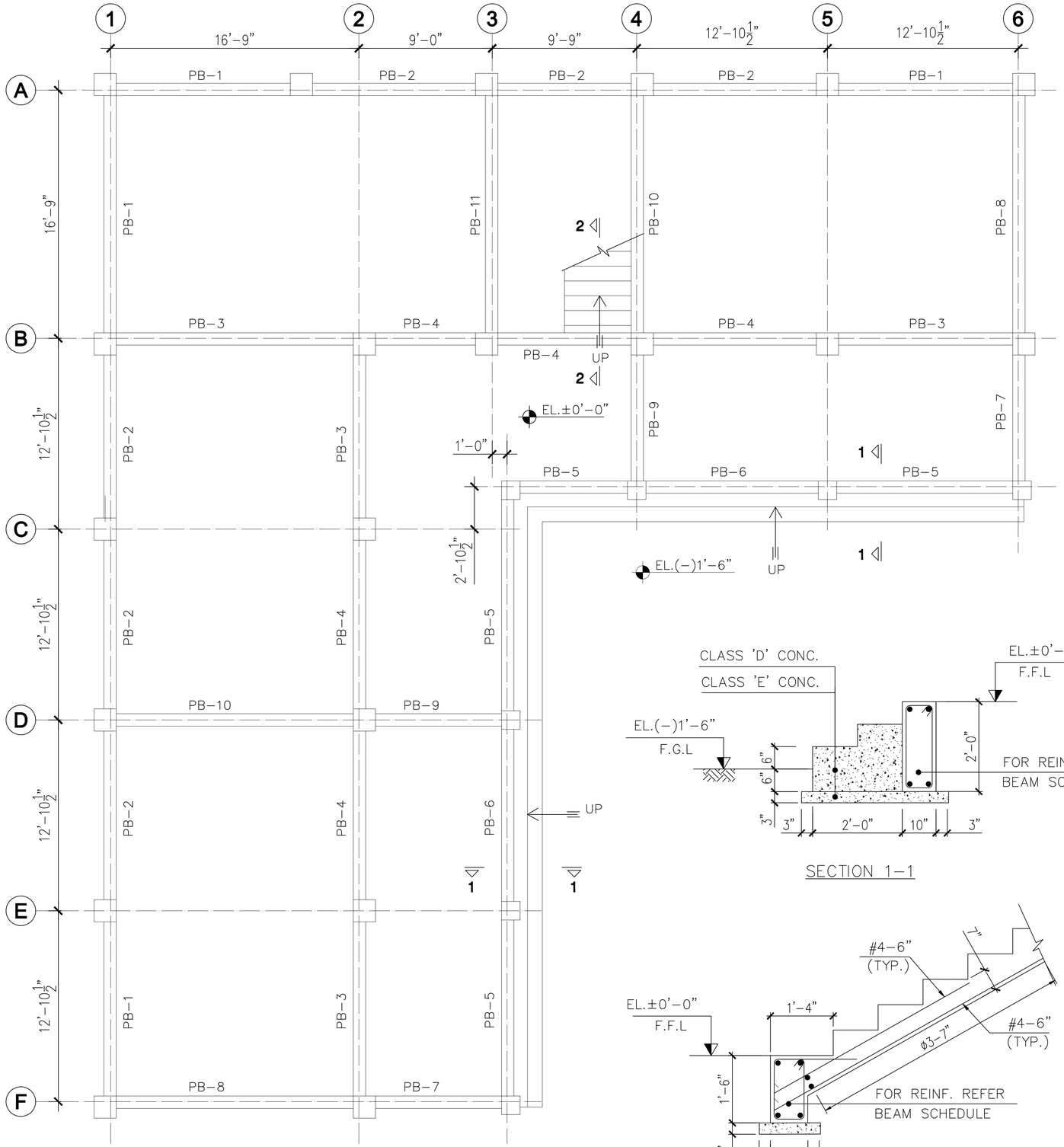
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

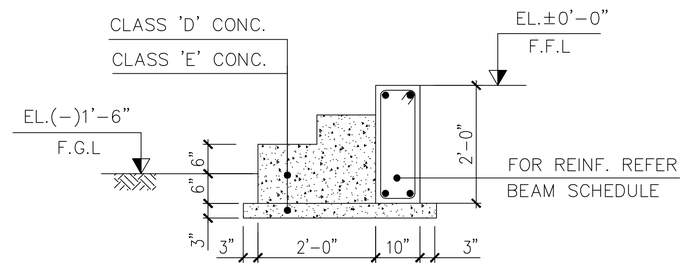
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
FOUNDATION & COLUMN LAYOUT PLAN AND DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G03	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G03	0
SUBM. TALHA AFZAL			

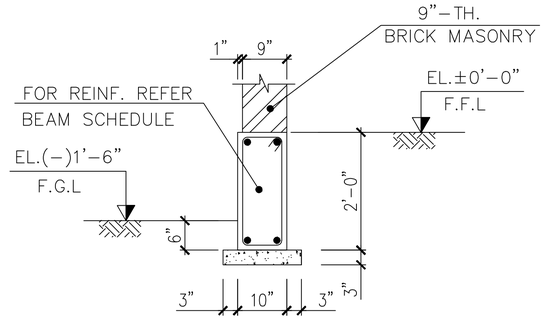


FRAMING PLAN AT EL.±0'-0"

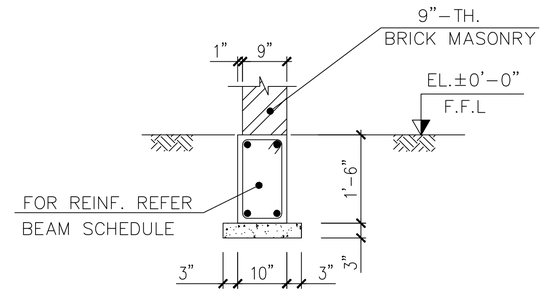


SECTION 1-1

SECTION 2-2



TYP. SECTION OF EXTERNAL PLINTH BEAMS



TYP. SECTION OF INTERNAL PLINTH BEAMS

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G10.

SCALE = 1"=6'

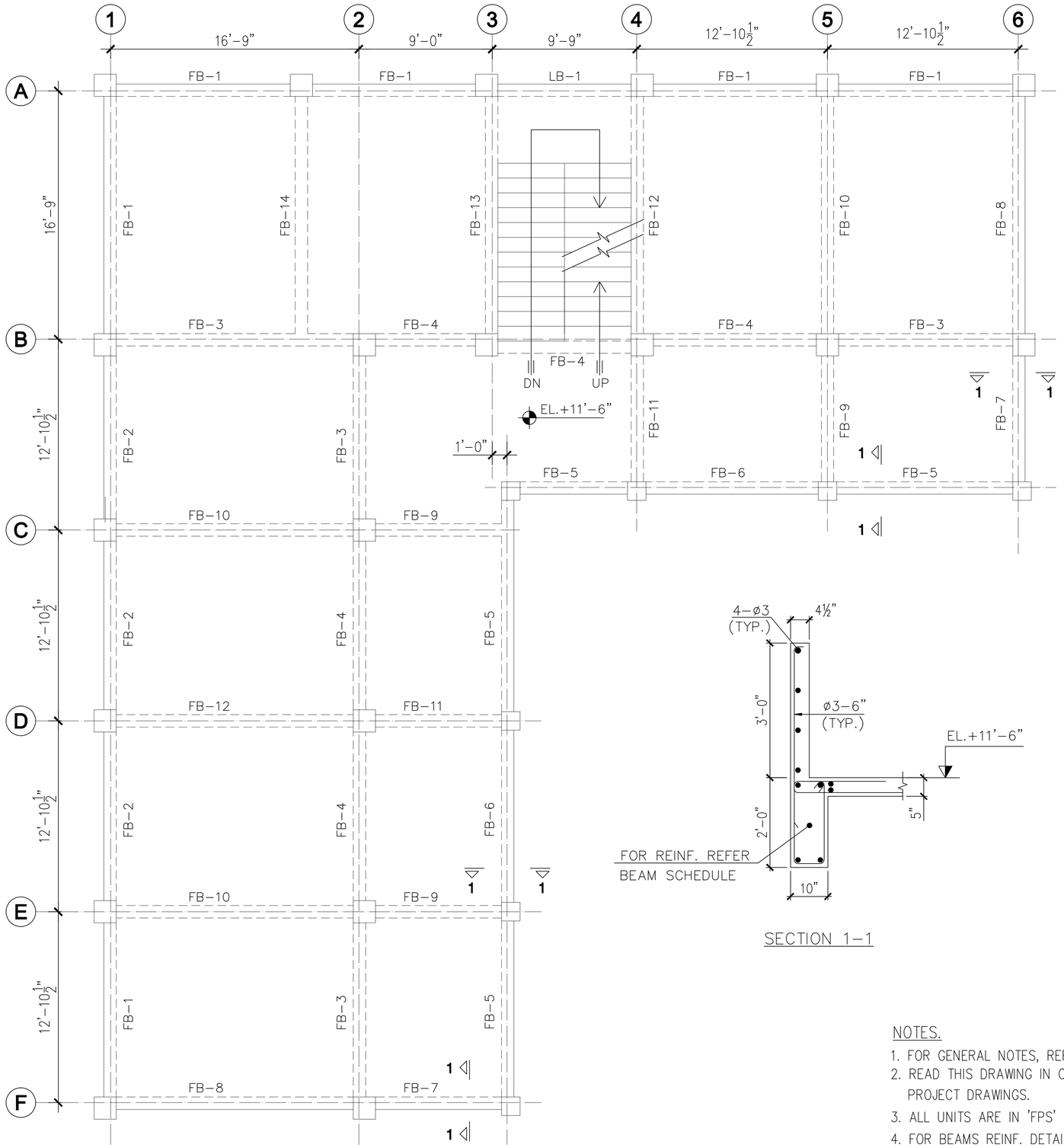
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
FRAMING PLAN AT EL.±0'-0"

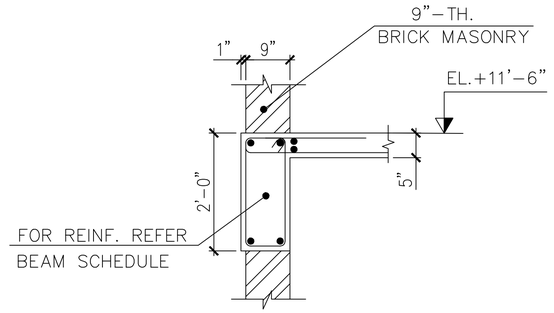
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. S. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G04	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G04	0
SUBM. TALHA AFZAL			

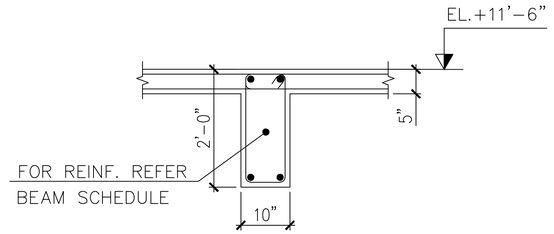


FRAMING PLAN AT EL.+11'-6"

SECTION 1-1



TYP. SECTION OF EXTERNAL FLOOR BEAMS



TYP. SECTION OF INTERNAL FLOOR BEAMS

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G11.
5. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.

SCALE = 1"=6'

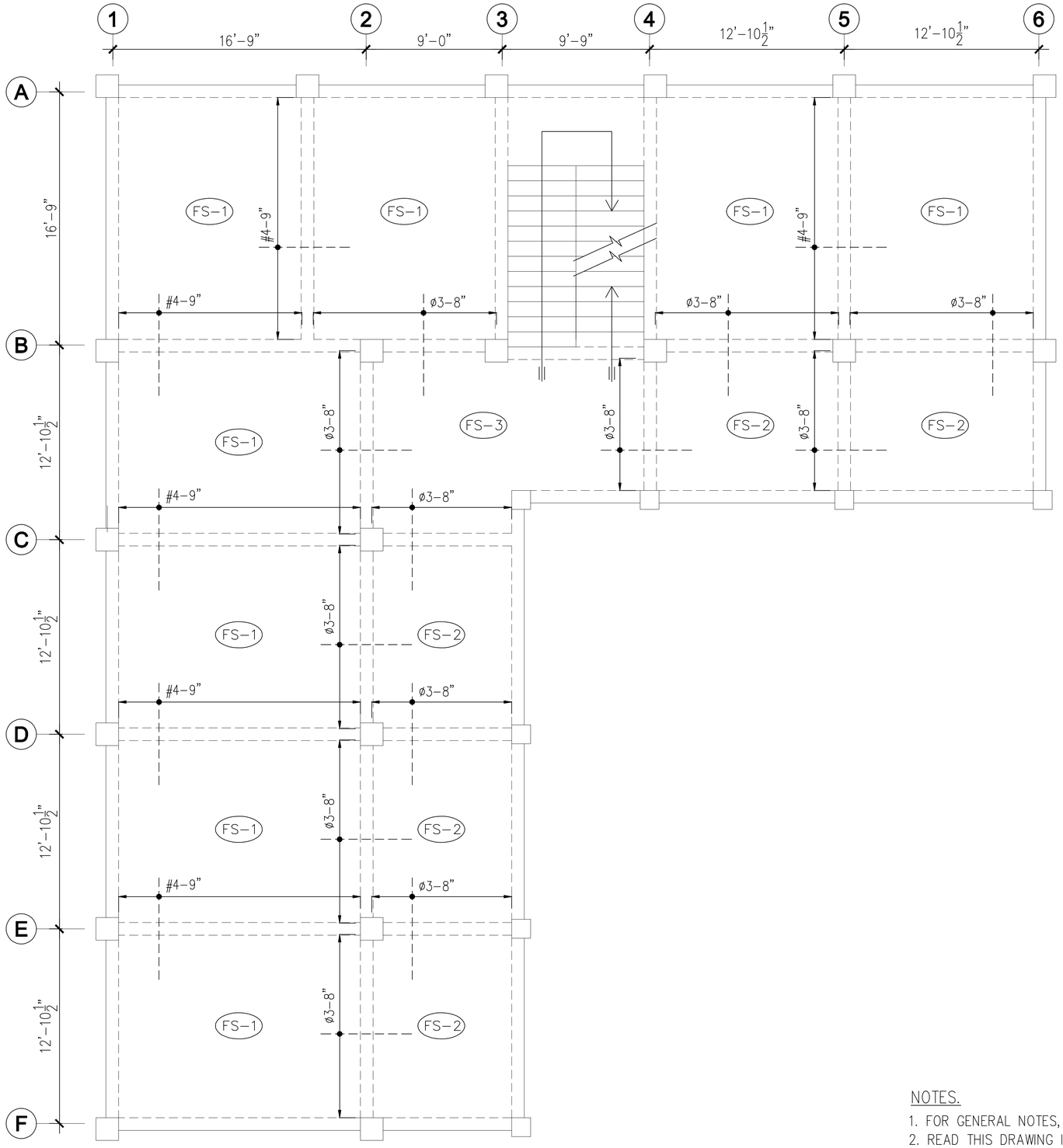
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

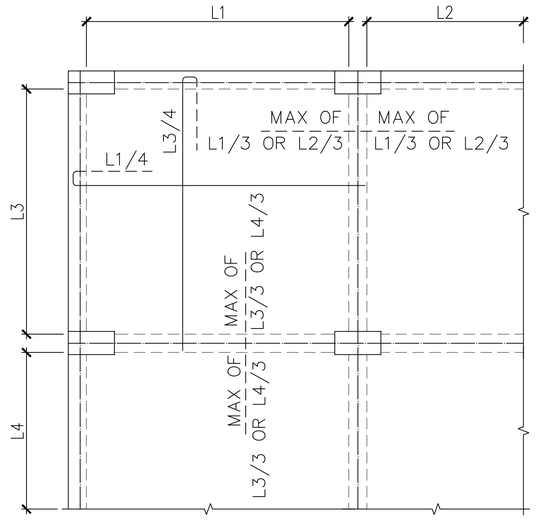
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
FRAMING PLAN AT EL.+11'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G05	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G05	0
SUBM. TALHA AFZAL			



SLAB REINFORCEMENT PLAN AT EL.+11'-6"



TYPICAL SLAB REINFORCEMENT PLAN

SLAB REINFORCEMENT SCHEDULE

SLAB MARKS	SLAB THICKNESS	BOTTOM REINFORCEMENT	
		SHORT BOTTOM	LONG BOTTOM
FS-1	5"	ø3-7"	ø3-8"
FS-2	5"	ø3-8"	ø3-8"
FS-3	5"	ø3-7"	ø3-8"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.
5. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

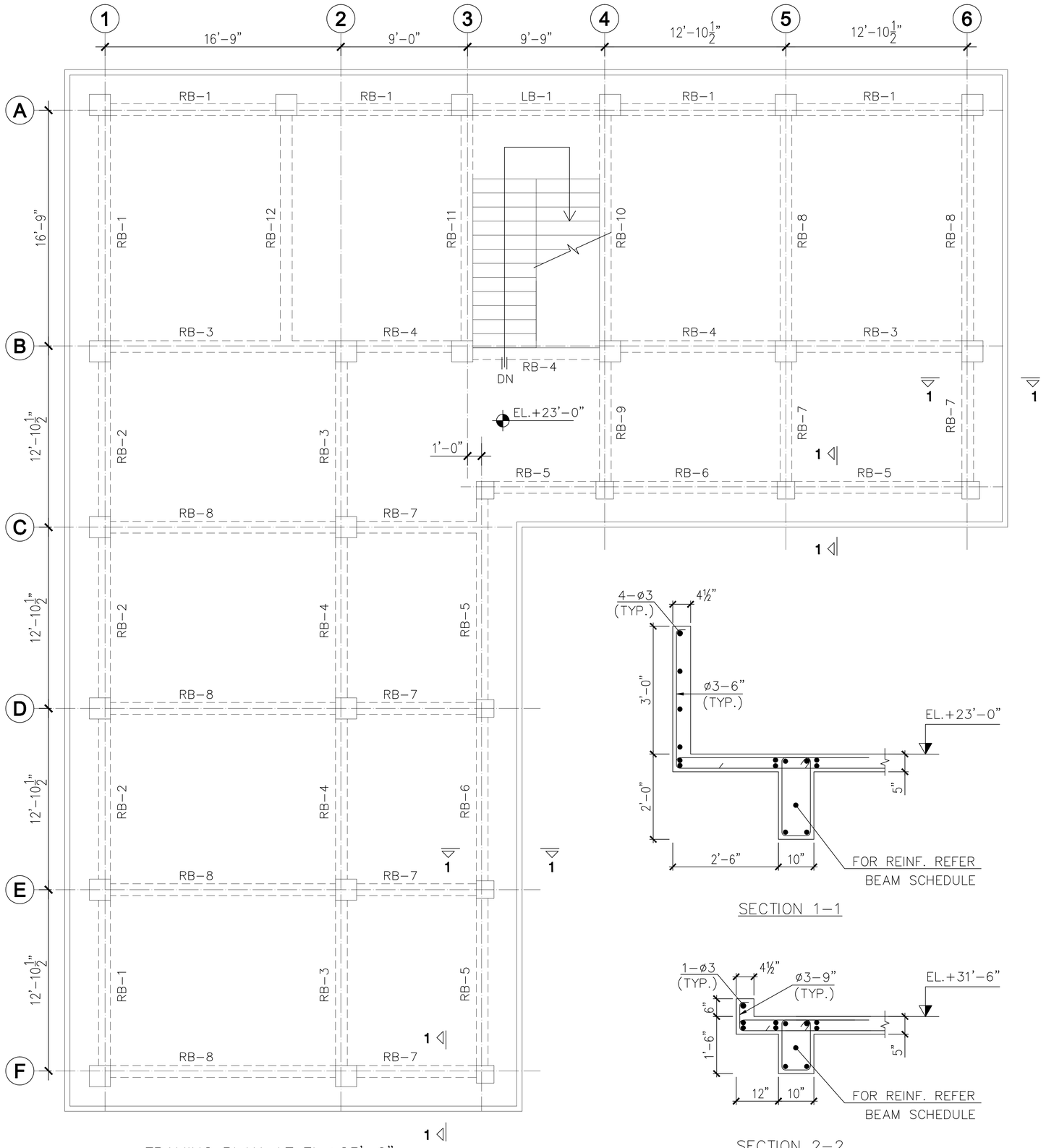
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

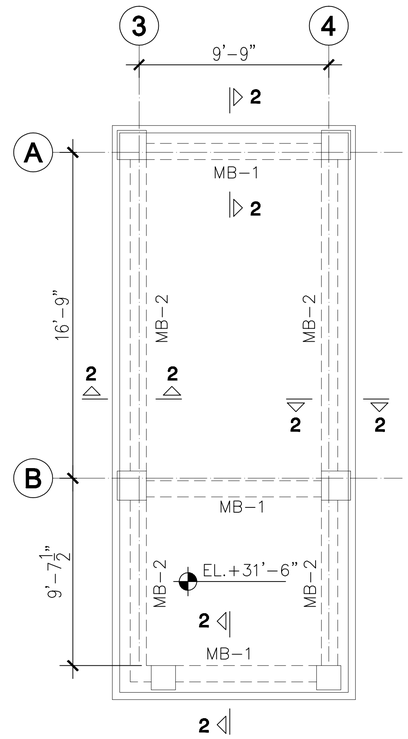
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
SLAB REINFORCEMENT PLAN AT EL.+11'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G06	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G06	0
SUBM. TALHA AFZAL			



FRAMING PLAN AT EL.+23'-0"



FRAMING PLAN AT EL.+31'-6"

SECTION 1-1

SECTION 2-2

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR BEAMS REINF. DETAILS REFER DRAWING NO. 4199/323/C/01G12.
5. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

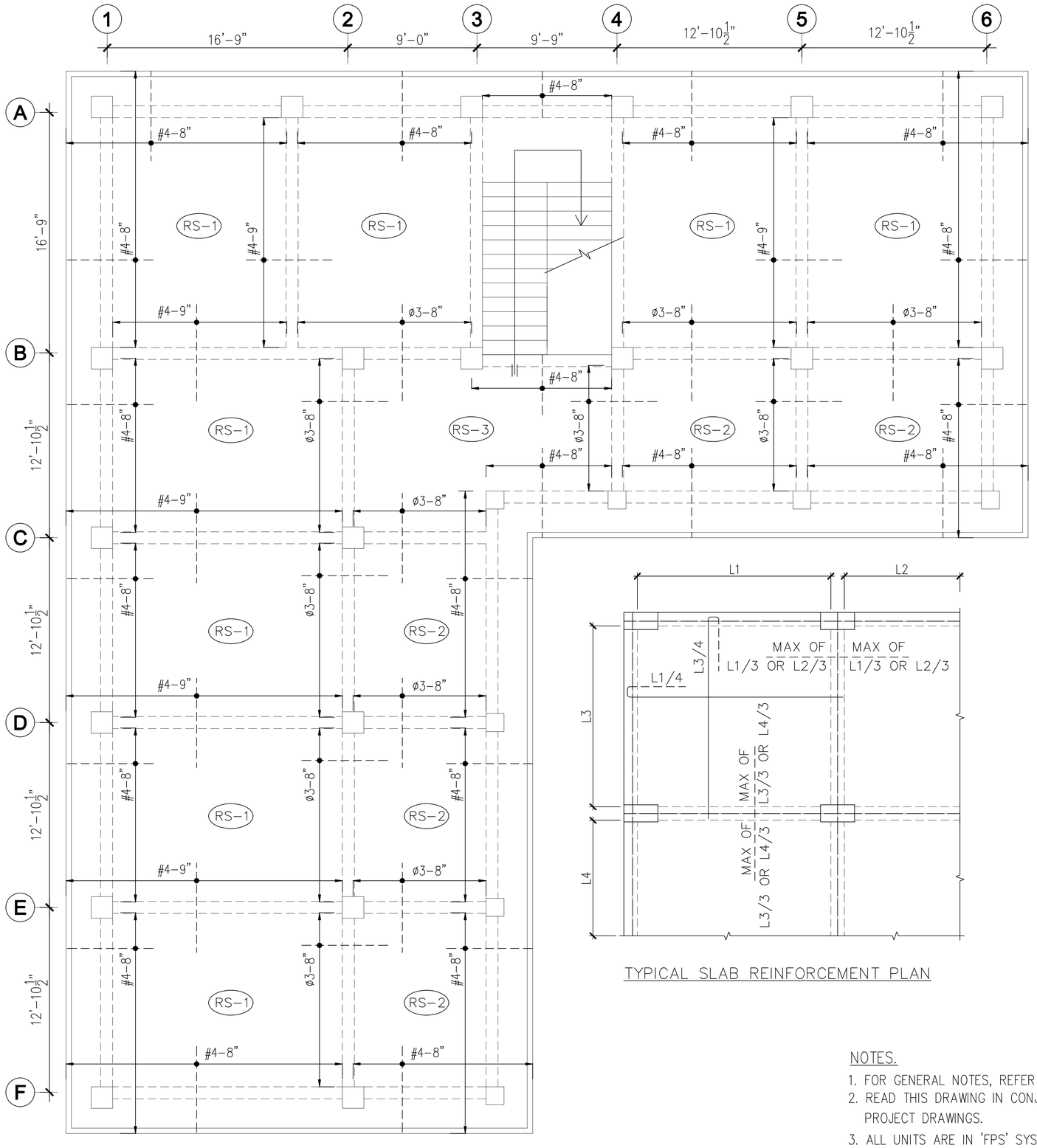
CONSTRUCTION OF GOVT. PRIMARY SCHOOL

ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS

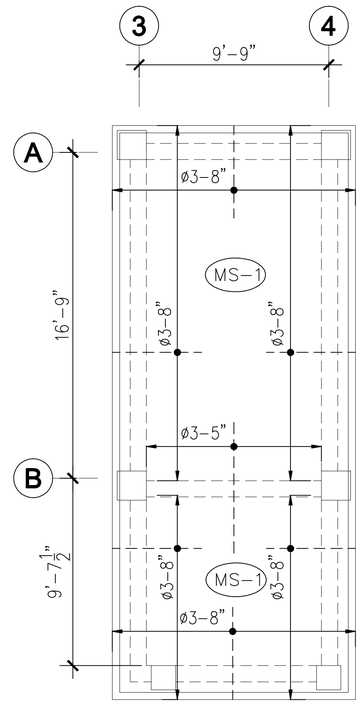
FRAMING PLAN AT EL.+23'-0" & EL.+31'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G07	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/03G07	0



SLAB REINFORCEMENT PLAN AT EL.+23'-0"



SLAB REINFORCEMENT PLAN AT EL.+31'-6"

TYPICAL SLAB REINFORCEMENT PLAN

SLAB REINFORCEMENT SCHEDULE

SLAB MARKS	SLAB THICKNESS	BOTTOM REINFORCEMENT	
		SHORT BOTTOM	LONG BOTTOM
RS-1	5"	ø3-7"	ø3-8"
RS-2	5"	ø3-8"	ø3-8"
RS-3	5"	ø3-7"	ø3-8"
MS-1	5"	ø3-8"	ø3-9"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. ALL SLABS ARE 5"-TH. EXCEPT NOTED OTHERWISE.
5. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

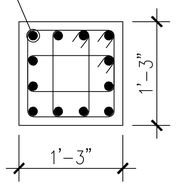
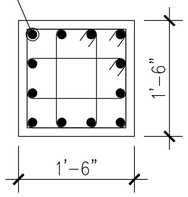
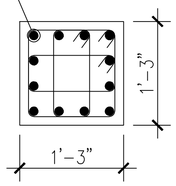
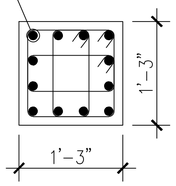
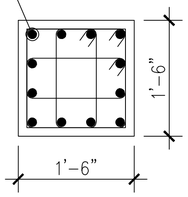
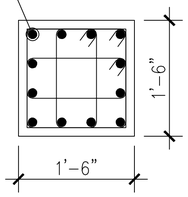
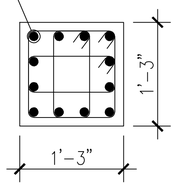
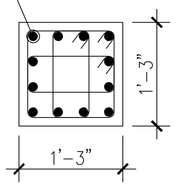
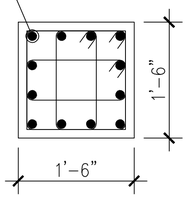
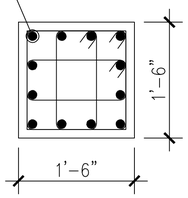
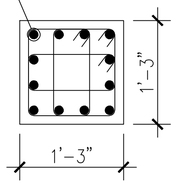
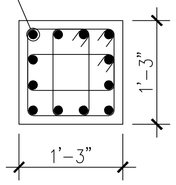
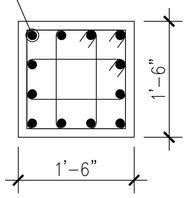
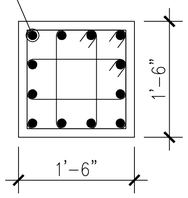
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

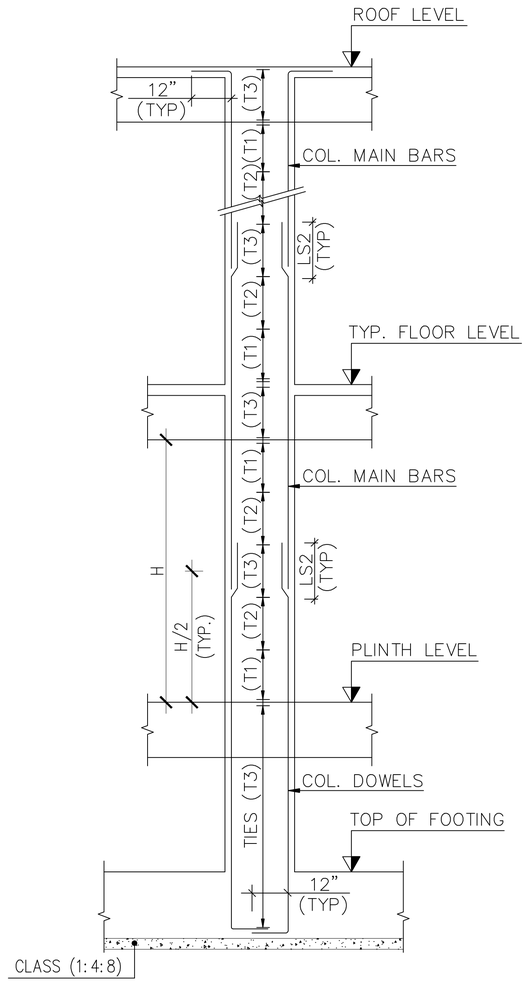
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
SLAB REINFORCEMENT PLAN AT EL.+23'-0" & EL.+31'-6"

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA			
FILE 03G08	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
CKD. UMER LATIF	DATE	DRAWING NO.	REV.
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/03G08	0

ELEVATION \ MARK	C–1a	C–1b	C–2a	C–2b
FROM EL.+11'–6" TO EL.+23'–0"	–	12–#5 		12–#5 
FROM EL.+11'–6" TO EL.+23'–0"	12–#5 	12–#5 	12–#6 	12–#6 
FROM EL.(±)0'–0" TO EL.+11'–6"	12–#5 	12–#5 	12–#6 	12–#6 
FROM TOP OF FOUNDATION TO EL.(±)0'–0"	12–#5 	12–#5 	12–#6 	12–#6 
TIES T1	7–3XØ3–4"	7–3XØ3–4"	7–3XØ3–4"	7–3XØ3–4"
TIES T2	3XØ3–4"	3XØ3–4"	3XØ3–4"	3XØ3–4"
TIES T3	3XØ3–4"	3XØ3–4"	3XØ3–4"	3XØ3–4"
REMARKS				



TYPICAL COLUMN ELEVATION

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR FINAL COLUMN ELEVATION, SEE RESPECTIVE FRAMING PLANS.

SCALE = 1"=6'

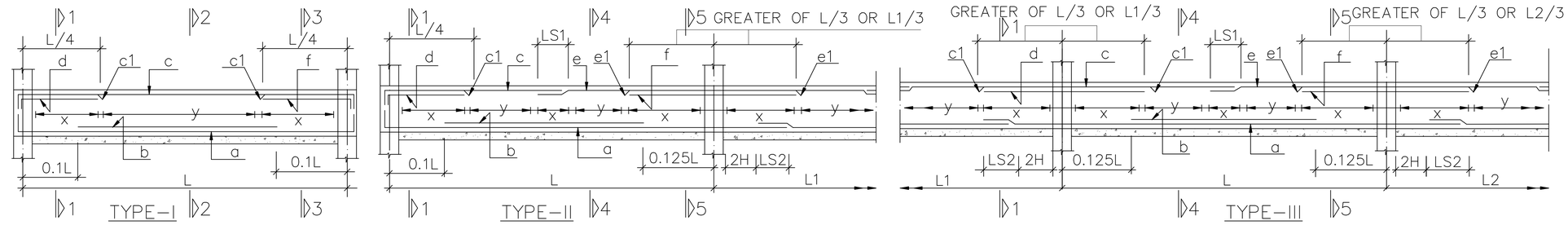
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

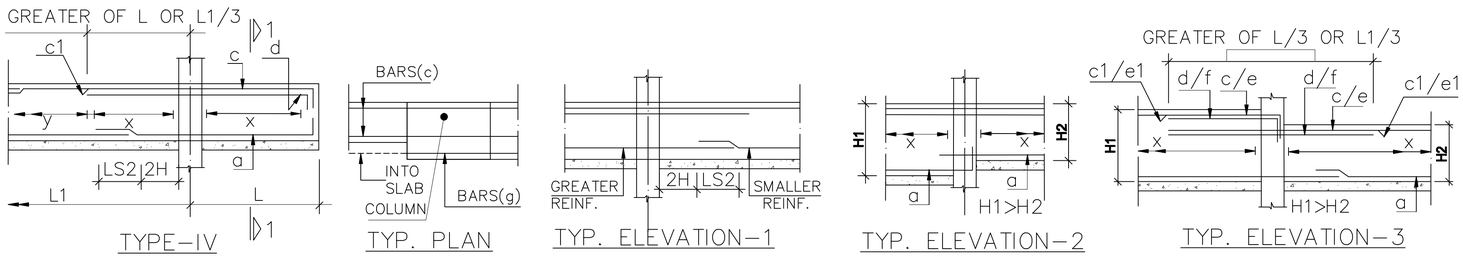
UNHCR PAKISTAN

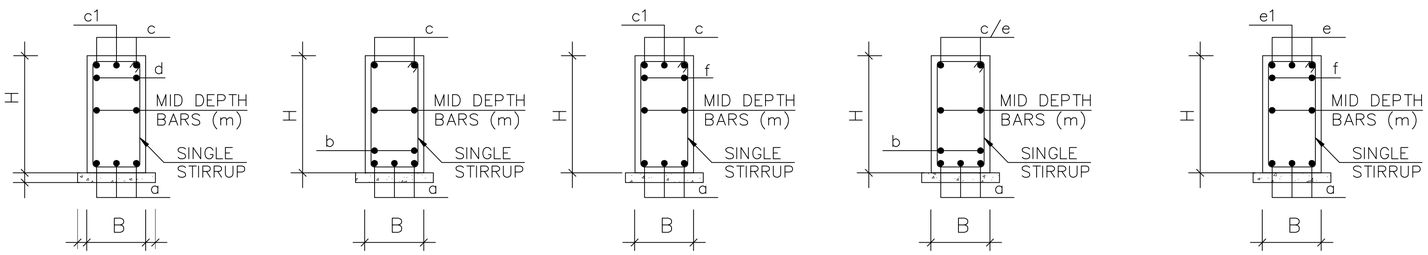
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
COLUMN SCHEDULE

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. S. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G09	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/03G09	0







TYP. SEC.1-1
MAX. 3 BARS IN ONE LAYER

TYP. SEC.2-2
MAX. 3 BARS IN ONE LAYER

TYP. SEC.3-3
MAX. 3 BARS IN ONE LAYER

TYP. SEC.4-4
MAX. 3 BARS IN ONE LAYER

TYP. SEC.5-5
MAX. 3 BARS IN ONE LAYER

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H AND AT LAP LOCATIONS.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
10-BARS "b,d & f" SHALL BE PROVIDED IN SECOND LAYER UNLESS NOTED OTHERWISE.
11-THE LOCATION OF LAPS SHOWN IN TYPE II,III & IV IS INDICATED ONLY IT MAY BE ELIMINATED.
12-LAPS (IF REQUIRED.) SHALL BE PROVIDED AT LOCATION SHOWN ON THE TYPICAL ELEVATIONS USING MAXIMUM AVAILABLE LENGTH.
13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

P L I N T H B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
PB-1	10"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-2	10"X24"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-3	10"X18"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-4	10"X18"	III	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	-	-	-	ø3-4"	ø3-8"	
PB-5	10"X24"	II	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
PB-6	10"X24"	III	3-#4	-	2-#4	1-#4	-	2-#4	1-#4	-	-	-	ø3-4"	ø3-8"	
PB-7	10"X24"	II	3-#5	-	2-#5	1-#5	-	2-#5	1-#5	2-#4	-	-	ø3-4"	ø3-8"	
PB-8	10"X24"	II	3-#5	-	2-#5	1-#5	2-#4	2-#5	1-#5	2-#4	-	-	ø3-4"	ø3-8"	
PB-9	10"X18"	II	3-#5	-	2-#5	1-#4	-	2-#5	-	2-#4	-	-	ø3-4"	ø3-8"	
PB-10	10"X18"	II	3-#5	-	2-#5	-	2-#4	2-#5	-	2-#4	-	-	ø3-4"	ø3-8"	
PB-11	10"X18"	II	3-#5	-	3-#5	-	2-#4	-	-	2-#4	-	-	ø3-4"	ø3-8"	
LB-1	10"X18"	I	3-#5	-	3-#5	-	-	-	-	-	-	-	ø3-4"	ø3-4"	

SPECIAL NOTE:-
THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

SCALE = 1"=6'

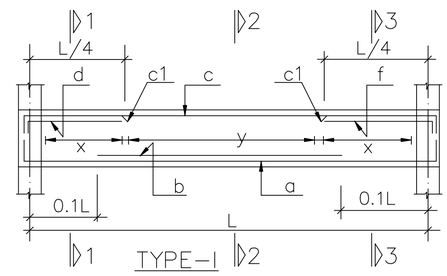
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

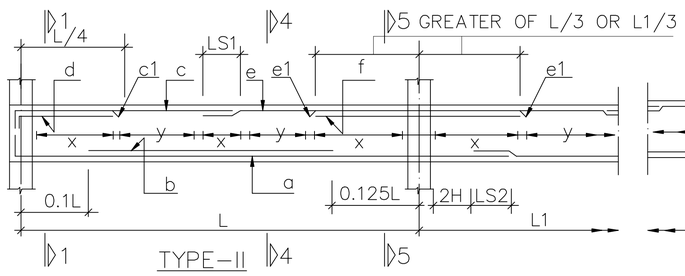
UNHCR PAKISTAN

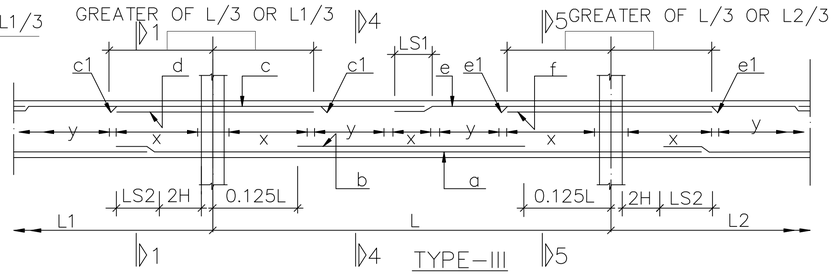
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
PLINTH BEAM SCHEDULE & DETAILS

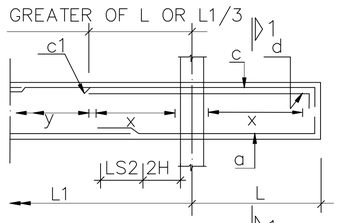
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

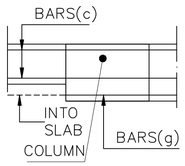
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G10	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/03G10	0
SUBM. TALHA AFZAL	OCT.,2022		

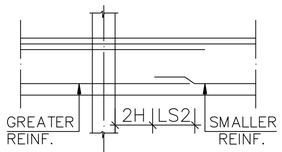


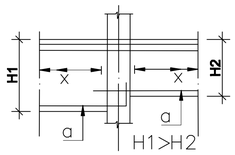


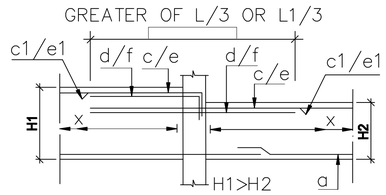


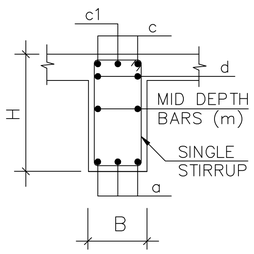




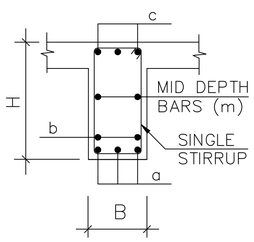




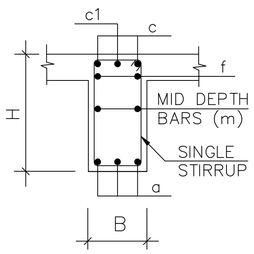




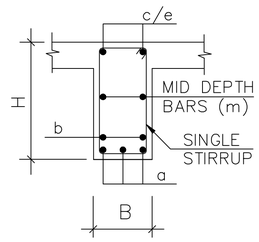
TYP. SEC.1-1
MAX. 3 BARS IN ONE LAYER



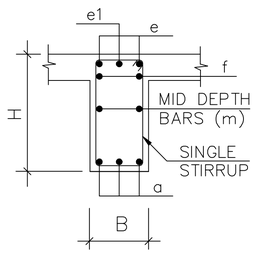
TYP. SEC.2-2
MAX. 3 BARS IN ONE LAYER



TYP. SEC.3-3
MAX. 3 BARS IN ONE LAYER



TYP. SEC.4-4
MAX. 3 BARS IN ONE LAYER



TYP. SEC.5-5
MAX. 3 BARS IN ONE LAYER

F L O O R B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
FB-1	10"X24"	II	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-2	10"X24"	III	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-3	10"X24"	II	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-3a	10"X24"	II	3-#5	–	2-#5	–	2-#5	2-#5	1-#5	–	–	–	ø3-4"	ø3-4"	
FB-4	10"X24"	III	3-#5	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-5	10"X24"	II	3-#4	–	2-#5	1-#4	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
FB-6	10"X24"	III	3-#4	–	2-#5	1-#4	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
FB-7	10"X24"	II	3-#5	–	2-#6	–	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-8	10"X24"	II	3-#5	–	2-#6	1-#6	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-9	10"X24"	II	3-#5	–	2-#6	–	–	2-#6	1-#5		–	–	ø3-4"	ø3-8"	
FB-10	10"X24"	II	3-#5	–	2-#6	1-#5	–	2-#6	1-#5	–	–	–	ø3-4"	ø3-8"	
FB-11	10"X24"	II	3-#5	–	2-#6	–	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-12	10"X24"	II	3-#5	–	2-#6	1-#6	–	2-#6	1-#6	–	–	–	ø3-4"	ø3-8"	
FB-13	10"X24"	I	3-#5	–	2-#6	1-#5	–	–	–	–	–	–	ø3-4"	ø3-8"	
FB-14	10"X24"	I	3-#5	–	2-#5	1-#5	–	–	–	–	–	–	ø3-4"	ø3-8"	

SPECIAL NOTE:-

THE LAP LOCATIONS SHOWN ARE INDICATIVE ONLY.THEY MAY BE ELIMINATED ALTOGETHER OR ADJUSTED WHILE PREPARING BAR BENDING SCHEDULE WITH STRICT ADHERENCE TO THESE LAP LOCATIONS IN ALL SPANS.

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2-READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3-ALL DIMENSIONS ARE IN "FPS" UNITS EXCEPT NOTED OTHERWISE.
4-FOR SUPPORT CONDITION REFER FRAMING PLAN.
5-FIRST STIRRUP SHALL BE PLACED AT 2" FROM THE FACE OF SUPPORT.
6-X = 2H AND AT LAP LOCATIONS.
7-SEE TYPICAL PLAN FOR DIFFERENT WIDTHS OF BEAMS.
8-SEE TYPICAL ELEVATION-2 & 3 FOR DIFFERENT DEPTHS OF BEAMS.
9-SEE TYPICAL ELEVATION-1 FOR LAP LOCATION.
10-BARS "b,d & f" SHALL BE PROVIDED IN SECOND LAYER UNLESS NOTED OTHERWISE.
11-THE LOCATION OF LAPS SHOWN IN TYPE II,III & IV IS INDICATED ONLY IT MAY BE ELIMINATED.
12-LAPS (IF REQUIRED.) SHALL BE PROVIDED AT LOCATION SHOWN ON THE TYPICAL ELEVATIONS USING MAXIMUM AVAILABLE LENGTH.
13-FOR TOP REINF. AT COMMON CONTINUOUS END OF TWO BEAMS THE GREATER OF THE TWO REINF. SHALL BE PROVIDED.

SCALE = 1"=6'

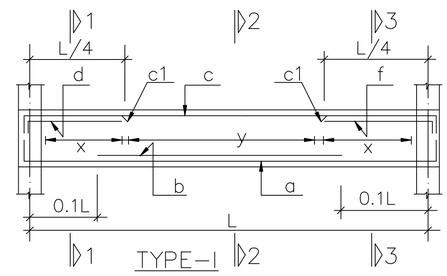
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

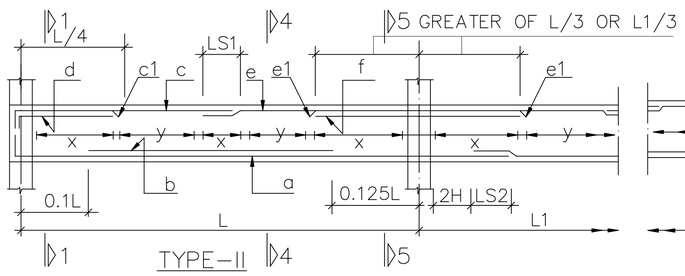
UNHCR PAKISTAN

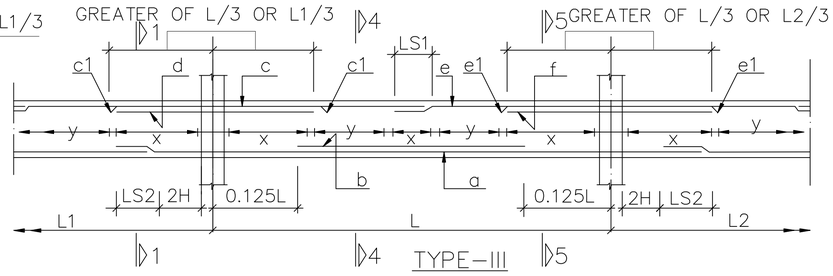
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
FLOOR BEAM SCHEDULE & DETAILS

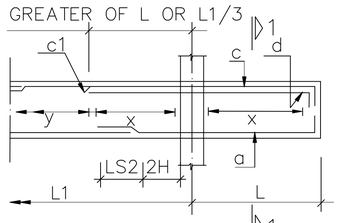
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

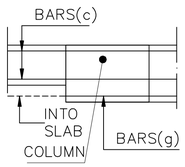
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G11	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G11	0
SUBM. TALHA AFZAL			

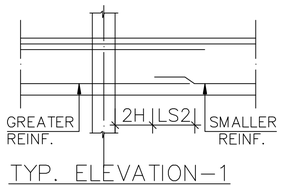


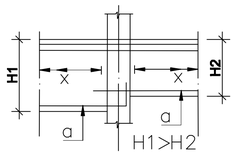


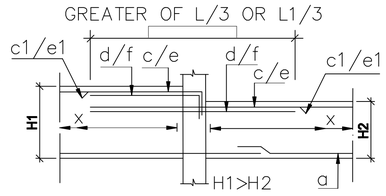


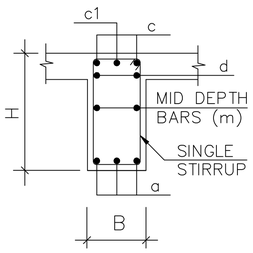


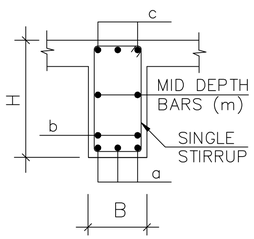


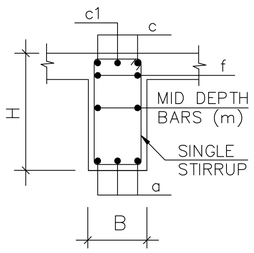


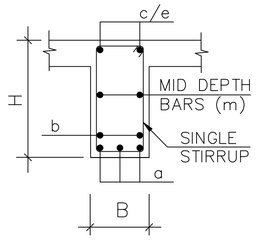


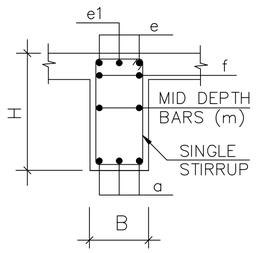












R O O F & M U M T Y B E A M S C H E D U L E

BEAM MARK	SIZE (BxH)	TYPE	LONGITUDINAL REINFORCEMENT										STIRRUPS		REMARKS
			a	b	c	c1	d	e	e1	f	g	m	x	y	
RB-1	10"X24"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-2	10"X24"	III	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-3	10"X24"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-3a	10"X24"	II	3-#4	–	2-#4	–	2-#4	2-#4	1-#4	–	–	–	ø3-4"	ø3-4"	
RB-4	10"X24"	III	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-5	10"X24"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-6	10"X24"	III	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-7	10"X24"	II	3-#4	–	2-#5	–	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-8	10"X24"	II	3-#4	–	2-#5	1-#4	–	2-#5	1-#4	–	–	–	ø3-4"	ø3-8"	
RB-9	10"X24"	II	3-#4	–	2-#5	–	–	2-#5	1-#5		–	–	ø3-4"	ø3-8"	
RB-10	10"X24"	II	3-#4	–	2-#5	1-#5	–	2-#5	1-#5	–	–	–	ø3-4"	ø3-8"	
RB-11	10"X24"	I	3-#4	–	2-#5	1-#5	–	–	–	–	–	–	ø3-4"	ø3-8"	
RB-12	10"X24"	I	3-#4	–	2-#4	1-#4	–	–	–	–	–	–	ø3-4"	ø3-8"	
M U M T Y B E A M S															
MB-1	10"X18"	I	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	
MB-2	10"X18"	II	3-#4	–	2-#4	1-#4	–	2-#4	1-#4	–	–	–	ø3-4"	ø3-8"	

NOTES

1-FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
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SPECIAL NOTE:-

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SCALE = 1"=6'

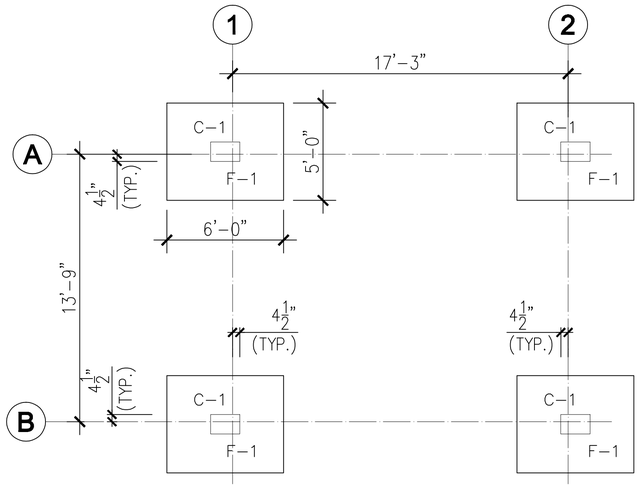
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

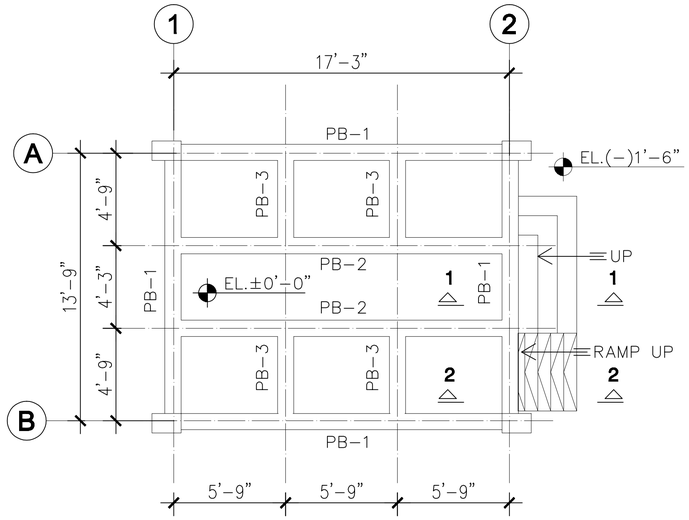
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
ROOF & MUMTY BEAM SCHEDULE & DETAILS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

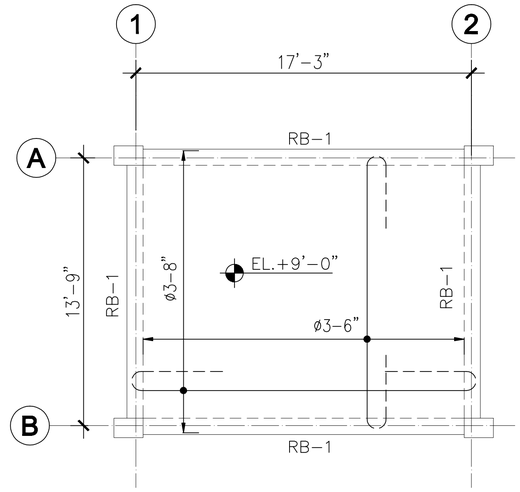
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G12	DATE	DRAWING NO.	REV.
CKD. UMER LATIF	OCT.,2022	4199/323/C/03G12	0
SUBM. TALHA AFZAL			



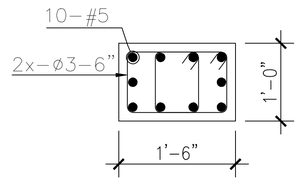
FOUNDATION & COLUMN LAYOUT PLAN



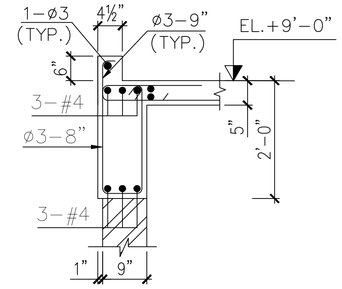
FRAMING PLAN AT EL.±0'-0"



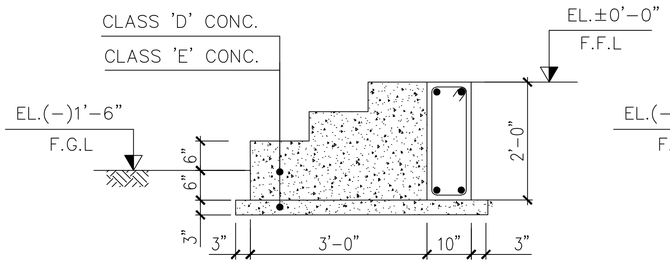
FRAMING & SLAB REINF. PLAN AT EL.+9'-0"



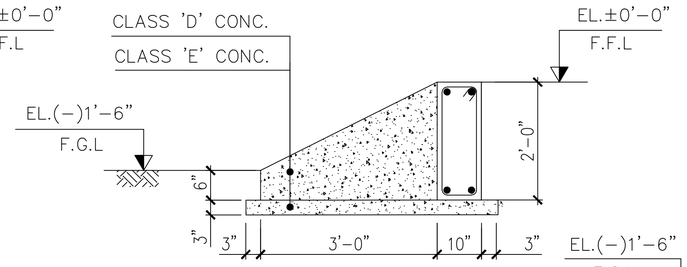
COLUMN C-1



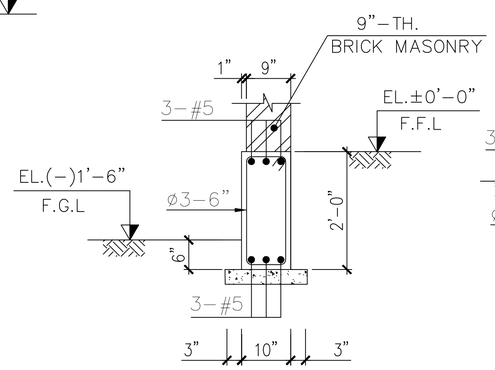
TYP. SECTION OF ROOF BEAMS



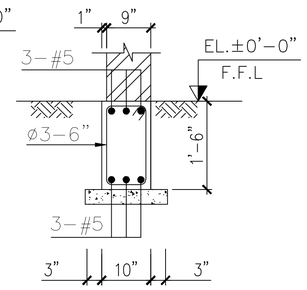
SECTION 1-1



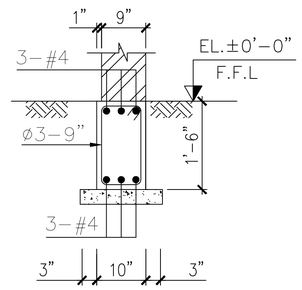
SECTION 2-2



PB-1



PB-2



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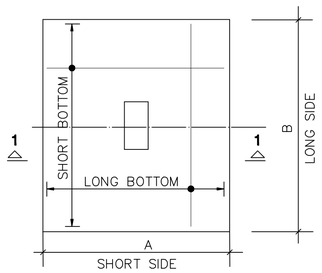
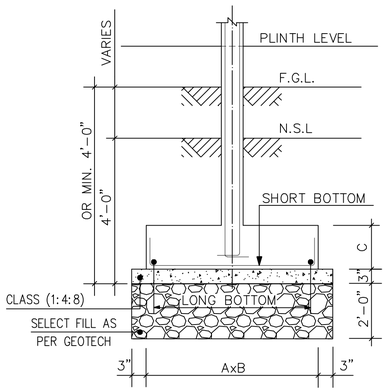


PLAN OF ISOLATED FOOTING



SECTION OF ISOLATED FOOTING (TYP) (SEC 1-1)

FOOTING SCHEDULE

FOOTING MARK	SIZE			REINFORCEMENT	
	SHORT SIZE (A)	LONG SIZE (B)	THICKNESS (C)	SHORT BOTTOM	LONG BOTTOM
F-1	5'-0"	6'-0"	18"	#4-6"	#4-6"

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOUNDATION DESIGN IS BASED ON RECOMMENDATIONS OF GEOTECHNICAL INVESTIGATION REPORT.
5. ALL ISOLATED FOOTING SHALL BE PLACED CONCENTRIC WITH THE COLUMNS UNLESS NOTED OTHERWISE.
6. ALL EXTERNAL PLINTH BEAMS ARE 10"x24" EXCEPT NOTED OTHERWISE.
7. ALL INTERNAL PLINTH BEAMS ARE 10"x18" EXCEPT NOTED OTHERWISE.
8. ALL ROOF BEAMS ARE 10"x24" EXCEPT NOTED OTHERWISE.
9. ALL SLABS ARE 5" THICK EXCEPT NOTED OTHERWISE.
10. ALL BINDER BARS SHALL BE ø3-12" c/c.

SCALE = 1"=6'

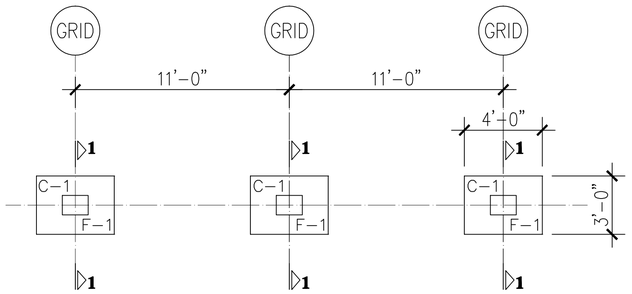
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

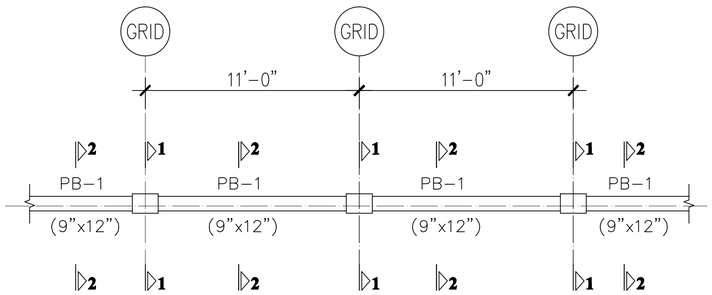
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
STRUCTURAL DETAILS OF TOILET BLOCK

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

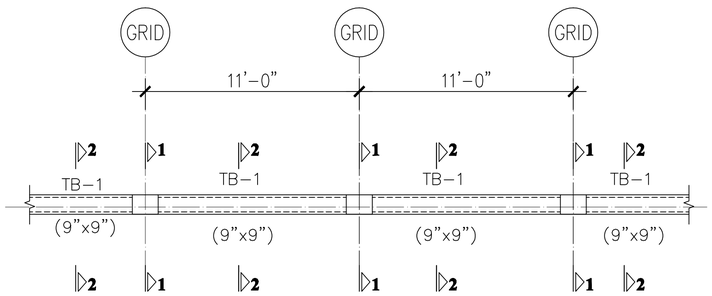
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G13	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/03G13	0
SUBM. TALHA AFZAL	OCT.,2022		



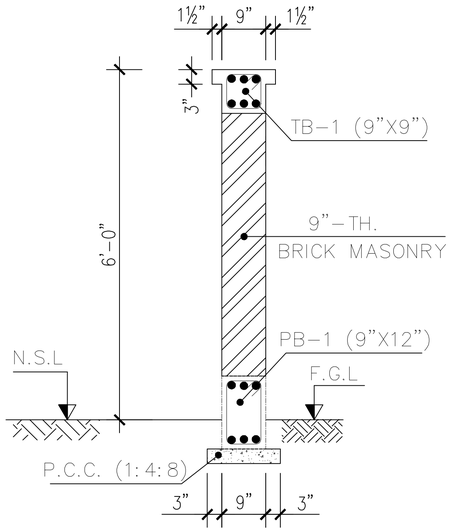
TYP. FOUNDATION AND COLUMN LAYOUT PLAN OF BOUNDARY WALL



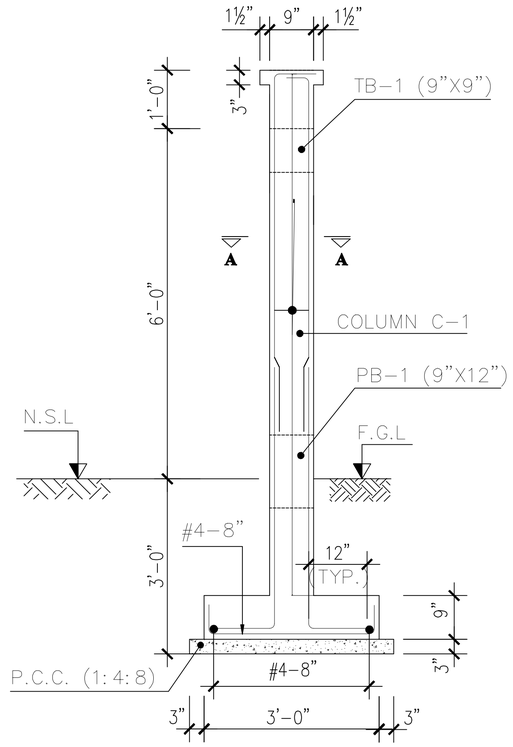
LAYOUT PLAN OF PLINTH BEAM



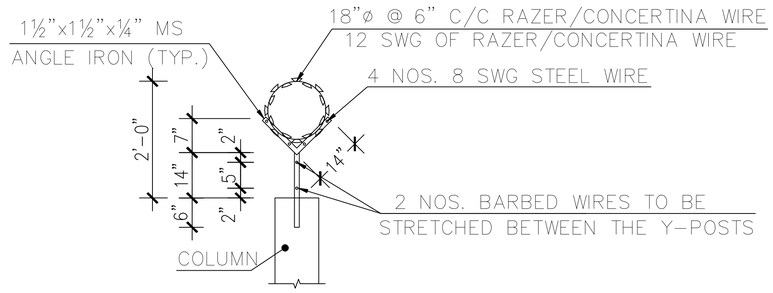
LAYOUT PLAN OF TOP BEAM



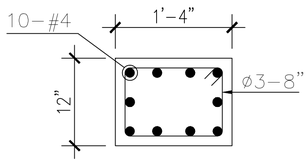
SECTION 2-2



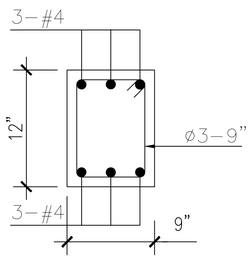
SECTION 1-1



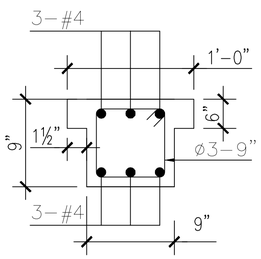
TYPICAL DETAIL OF Y POST CONNECTION AT COLUMN LOCATION



SECTION A-A
(C-1)



PB-1
(9"X12")



TB-1
(9"X9")

NOTES.

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH ALL THE RELEVANT PROJECT DRAWINGS.
3. ALL UNITS ARE IN 'FPS' SYSTEM, EXCEPT NOTED OTHERWISE.
4. FOR LAYOUT OF BOUNDARY WALL REFER, RESPECTIVE ARCH. DWG.
5. FOR EXP. JOINT LOCATION REFER, ARCH. DWG.

SCALE = 1"=6'

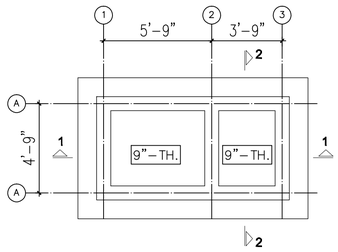
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

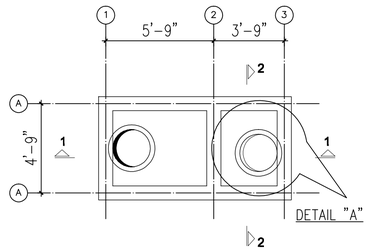
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
STRUCTURAL DETAILS OF BOUNDARY WALLS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

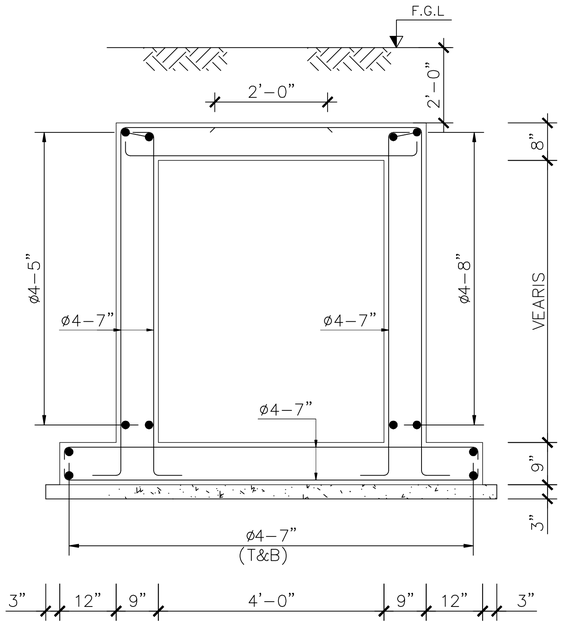
		RECOMMENDED	VER./CKD.	APPROVED
DESN.	NESPAK			
DWN.	G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE	03G14	DATE	DRAWING NO.	REV.
CKD.	UMER LATIF			
SUBM.	TALHA AFZAL	OCT.,2022	4199/323/C/03G14	0



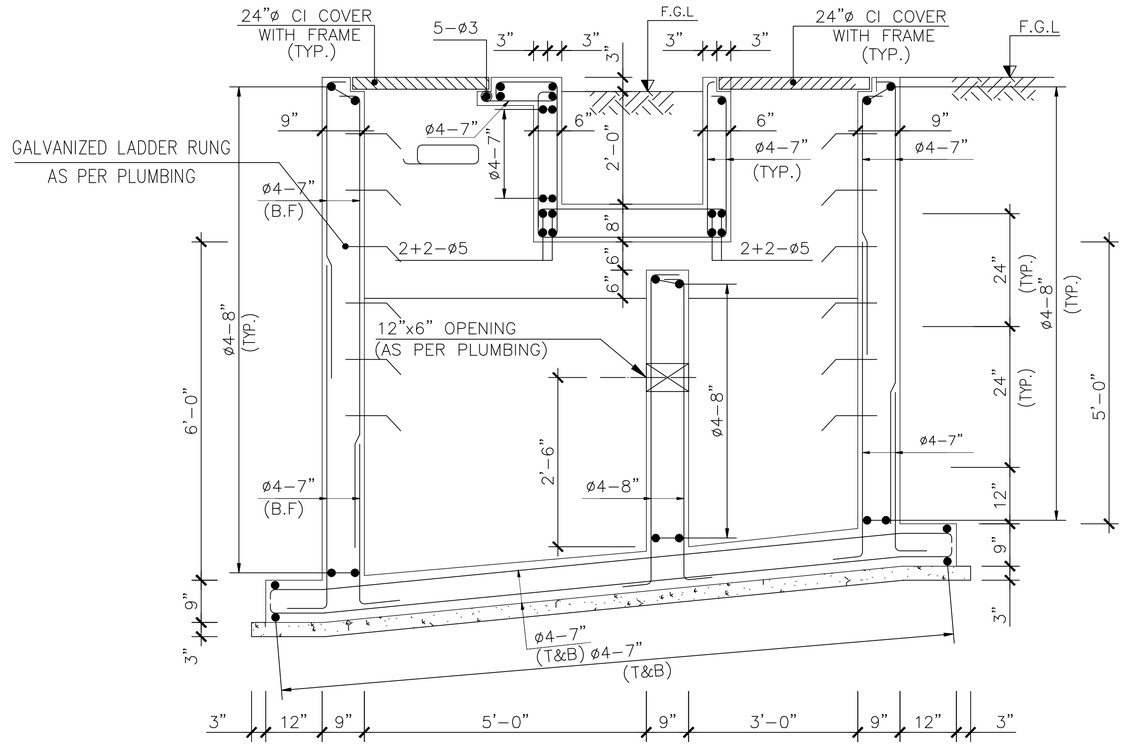
BOTTOM SLAB PLAN OF SEPTIC TANK



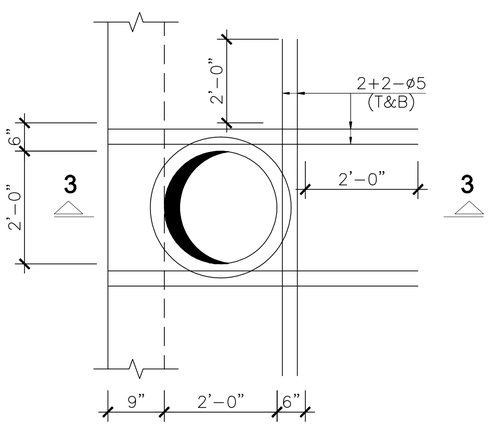
TOP SLAB PLAN OF SEPTIC TANK



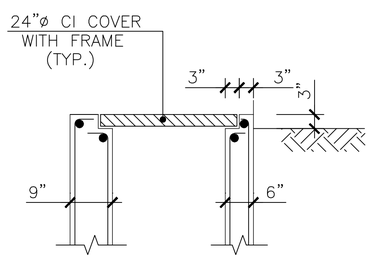
SECTION 2-2



SECTION 1-1



DETAIL "A"



SECTION 3-3

NOTES:

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH THE RELEVANT PLUMBING AND OTHER SERVICES DRAWINGS.
3. ALL STRUCTURAL CONCRETE SHALL BE CLASS 'C' HAVING MINIMUM 28-DAYS CUBE STRENGTH OF 2,400.00 psi
4. LEAN CONCRETE SHALL BE TYP. "E" TYPE HAVING MINIMUM 28-DAYS CUBE STRENGTH OF 1200 psi
5. ALL REINFORCING BARS SHALL BE GRADE-40 DEFORMED STEEL HAVING MINIMUM YIELD STRENGTH OF 40,000 psi, CONFORMING TO ASTM A615.
6. CLEAR COVER TO REINFORCEMENT SHALL BE AS UNDER:
   BOTTOM SLAB = 1½" (ALL FACES)
   TOP SLAB = 3/4" (ALL FACES)
   WALLS = 1½" (BOTH FACES)
7. BACKFILLING AGAINST THE WALLS SHALL NOT BE DONE UNTIL TOP SLAB IS CAST AND CURED.
8. ALL THE STRUCTURAL SURFACES AGAINST WHICH EARTH IS TO BE FILLED SHALL BE COATED WITH TWO (02) COATS OF HOT BITUMEN AS PER SPECIFICATIONS.

SCALE = 1"=8'

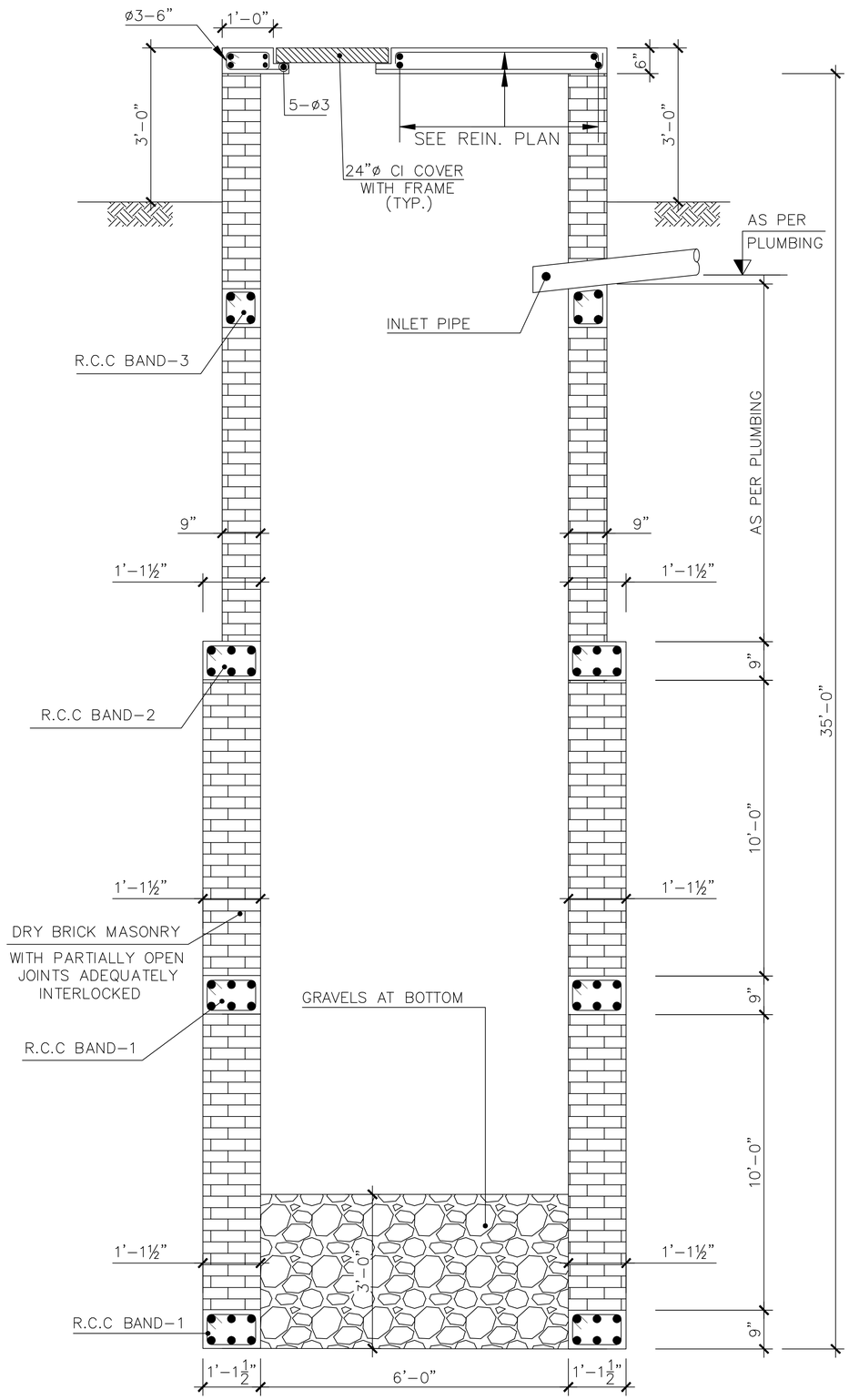
REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

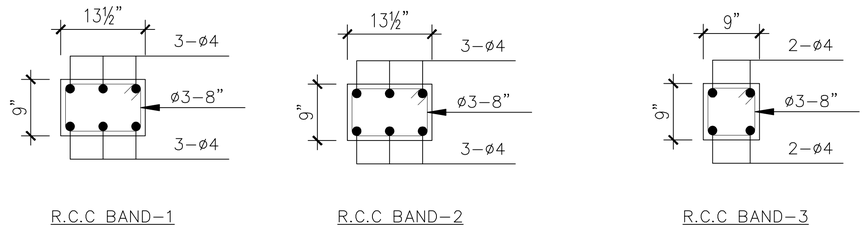
CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
STRUCTURAL DETAILS OF SEPTIC TANK

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

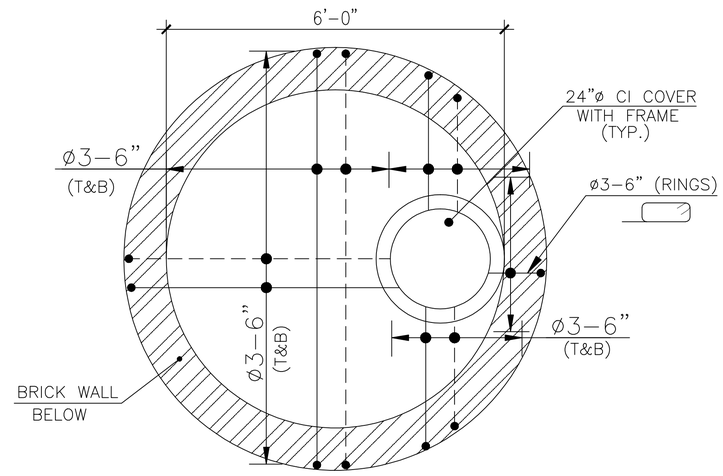
	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G15	DATE	DRAWING NO.	REV.
CKD. UMER LATIF		4199/323/C/03G15	0
SUBM. TALHA AFZAL	OCT.,2022		



SECTION OF SOAKAGE PIT



R.C.C BAND–1 R.C.C BAND–2 R.C.C BAND–3



TOP SLAB PLAN OF SOAKAGE PIT
(6" THICK)

NOTES:

1. FOR GENERAL NOTES, REFER DRAWING NO. 4199/323/C/01G01 & 01G02.
2. READ THIS DRAWING IN CONJUNCTION WITH THE RELEVANT PLUMBING AND OTHER SERVICES DRAWINGS.
3. ALL STRUCTURAL CONCRETE SHALL BE CLASS 'C' HAVING MINIMUM 28–DAYS CUBE STRENGTH OF 2,400.00 psi
4. ALL REINFORCING BARS SHALL BE GRADE–40 DEFORMED STEEL HAVING MINIMUM YIELD STRENGTH OF 40,000 psi, CONFORMING TO ASTM A615.
5. CLEAR COVER TO REINFORCEMENT SHALL BE AS UNDER:
   SLAB = 3/4" (ALL FACES)
   BEAMS = 1½"

SCALE = 1"=8'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL
ZAFFAR MAIDAN, MANSEHRA
STRUCTURAL LAYOUTS
STRUCTURAL DETAILS OF SOAKAGE PIT

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. G. MUSTAFA	UMER LATIF	TALHA AFZAL	AAMIR RASHEED
FILE 03G16	DATE	DRAWING NO.	REV.
CKD. UMER LATIF			
SUBM. TALHA AFZAL	OCT.,2022	4199/323/C/03G16	0

SYMBOLS AND DESCRIPTIONS

ELECTRICAL WORKS

S. #	SYMBOL	DESCRIPTION	STATUS
1		MSB -- MAIN SWITCH BOARD	N.A.
2		DB -- DISTRIBUTION BOARD	
3		CP -- CONTROL PANEL	N.A.
4		PDB -- POWER DISTRIBUTION BOARD	N.A.
5		TRIPLE POLE, 500 VOLTS, MOULDED CASE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
6		TRIPLE POLE, 500 VOLTS, MINIATURE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
7		SINGLE POLE, 250 VOLTS, MINIATURE CIRCUIT BREAKER (RUPTURING CAPACITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	
8	FP	FOUR POLE, 500 VOLTS, RESIDUAL CURRENT CIRCUIT BREAKER (SENSITIVITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	N.A.
9	DP	DOUBLE POLE, 250 VOLTS, RESIDUAL CURRENT CIRCUIT BREAKER (SENSITIVITY INDICATED ON THE DRAWINGS & MENTIONED IN THE RELEVANT BOQ ITEM)	N.A.
10		INSTRUMENTS PROTECTION FUSE (ONE NO.)	
11		INSTRUMENTS PROTECTION FUSES (THREE NOS.)	
12	VSS	VSS – VOLTMETER SELECTOR SWITCH (RY-YB-BR-OFF-RN)	
13	ASS	ASS – AMMETER SELECTOR SWITCH (R-Y-B-OFF)	
14	A	AC AMMETER (MEASURING RANGE INDICATED ON DRAWING)	
15	V	AC VOLTMETER (MEASURING RANGE INDICATED ON DRAWING)	
16		ONE NO. SINGLE PHASE CURRENT TRANSFORMER (TRANSFORMATION RATIO INDICATED ON DRAWINGS)	
17		THREE NOS. SINGLE PHASE CURRENT TRANSFORMERS (TRANSFORMATION RATIOS INDICATED ON DRAWINGS)	
18		PHASE INDICATION LAMPS R – RED Y – YELLOW B – BLUE	
19	F	CEILING FAN 56 INCH (1422mm) SWEEP	
20	10"	EXHAUST FAN WITH METALLIC BLADES (10" DIA)	
21	12"	EXHAUST FAN WITH METALIC BLADES & MOUNTING RING (12" DIA)	
22	18"	EXHAUST FAN WITH METALIC BLADES & MOUNTING RING (18" DIA)	N.A.
23		LIGHT CONTROL SWITCHES AND FAN DIMMERS	
24		13 AMPS 250 VOLTS COMBINED 2 + 3 PIN MULTI SOCKET UNIT WIRED WITH 2.5 SQ.mm PVC COPPER CABLE	
25		15 AMPS 250 VOLTS COMBINED 3 PIN SWITCH SOCKET UNIT WIRED WITH 4.0 SQ.mm PVC COPPER CABLE	
26		20 AMPS 250 VOLTS COMBINED 3 PIN SWITCH SOCKET UNIT WIRED WITH 4.0 SQ.mm PVC COPPER CABLE	
27		20A TP MCCB	N.A.

N.A. = NOT APPLICABLE

LIGHTING FIXTURES

S. #	SYMBOL	DESCRIPTION	STATUS
1		12 W LED DOWN LIGHTER	
2		7 W LED DOWN LIGHTER	
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

N.A. = NOT APPLICABLE

COMMUNICATIONS SYSTEMS

S. #	SYMBOL	DESCRIPTION	STATUS
1		WALL MOUNTED CAMERA	
2	SD	SMOKE DETECTOR	
3	HD	HEAT DETECTOR	
4	M	MANUAL CALL POINT	
5	FACP	FIRE ALARM CONTROL PANEL	
6		Duplex Face plate with 2 I/Os RJ-45 CAT-6 UTP telecommunication outlet	
7	CSNC	COMMUNICATION SYSTEMS DISTRIBUTION NETWORK	
8			
9			
10			
11			
12			
13			
14			

N.A. = NOT APPLICABLE

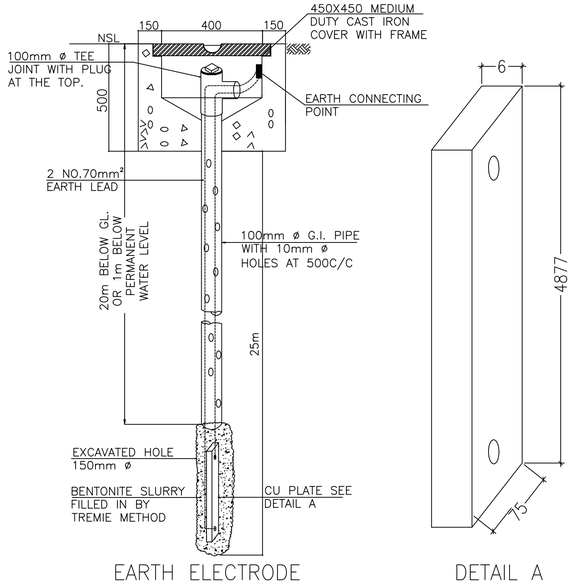


PLATE TYPE EARTH ELECTRODE

GENERAL NOTES

ELECTRICAL SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL ELECTRICAL DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.

THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE ELECTRICAL WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.

ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH BOQ, TECHNICAL SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, PLUMBING AND HVAC DRAWINGS & ALL OTHER RELEVANT DETAILS.

DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/ MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.

THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.

PROPER CO-ORDINATION OF ELECTRICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.

ALL NON-CURRENT CARRYING PARTS i.e. OUTER CASINGS OF EQUIPMENT SUCH AS HT & LT PANELS, DISTRIBUTIONS BOARDS, CABLE TRAYS, AUXILIARY CONSTRUCTIONS FOR EQUIPMENT ETC. SHALL BE CONNECTED TO THE GROUNDING/EARTHING SYSTEM AT REQUIRED NUMBER OF POINTS WITH SPECIFIED SIZES OF CONDUCTORS. WATER PIPES ALONG ELECTRICAL LINE SHALL BE BONDED TO THE EARTHING SYSTEM WITH 10mm² SINGLE CORE, COPPER CONDUCTOR PVC CABLE.

ELECTRICAL POINTS FOR EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS COMMUNICATION SYSTEMS, HVAC, PLUMBING ETC. THE LOCATION ON ELECTRICAL DRAWINGS IS ONLY INDICATIVE.

ARRANGEMENT OF ELECTRICAL EQUIPMENTS ON ELECTRICAL DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.

LOADS ON ALL PHASES SHALL BE BALANCED AT THE TESTING/ COMMISSIONING STAGE.

CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER OF TWO INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.

RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG LIGHT AND POWER WIRING. WHEREVER THE SIZE IS NOT SPECIFIED THE FOLLOWING CRITERIA SHALL BE OBSERVED TO DETERMINE MINIMUM CROSS SECTIONAL AREA OF EARTH CONTINUITY CONDUCTOR(ECC) IN RELATION TO THE AREA OF ITS PHASE CONDUCTORS. RUN DECARATE ECC FOR EACH CIRCUIT.

- ECC & PHASE CONDUCTOR OF SAME SIZE FOR UPTO AND INCLUDING 16mm² CABLES.
- 16mm² ECC FOR PHASE CONDUCTOR OF 16mm², 25mm² & 35 mm² CABLES.
- FOR CABLES OF 50mm² AND ABOVE SIZES, ECC IS HALF SIZE OF PHASE CONDUCTOR.
- MAXIMUM SIZE OF ECC IS 70mm².

THE MAXIMUM CAPACITY OF PVC CONDUITS FOR SIMULTANEOUS DRAWING OF PVC INSULATED CABLES SHALL BE DETERMINED AS PER BS 4607. THE FOLLOWING TABLE SHALL BE USED TO DETERMINE THE MAXIMUM NUMBER OF CABLES.

S. #	NOMINAL CONDUCTOR SIZE(SQMM)	NO. & DIA OF WIRES	NOMINAL OVERALL DIA	20 MM DIA (3/4" DIA)	25 MM DIA (1" DIA)	32 MM DIA (1¼" DIA)
1	1.5	1/1.38	3.1	10	18	30
2	2.5	1/1.78	3.5	8	14	23
3	2.5	7/0.67	3.8	7	12	20
4	4	7/0.85	4.3	5	9	15
5	6	7/1.04	4.9	4	7	12
6	10	7/1.35	6.2	2	4	7
7	16	7/1.70	7.3	–	3	5
8	25	7/2.14	9.0	–	2	3
9	35	19/1.53	10.3	–	–	2

NORMAL & EMERGENCY CIRCUITS SHALL RUN IN DECARATE CONDUITS.

ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.

THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.

THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.

MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL(F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

MAIN SWITCH BOARD	48 INCHES
DISTRIBUTION BOARD	48 INCHES
CONTROL PANEL	48 INCHES
ON/OFF PUSH BUTTON STATION	48 INCHES
DIMMER CONTROL UNIT	48 INCHES
LIGHT CONTROL SWITCH(ONE WAY/TWO WAY)	48 INCHES
5A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
20A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN KITCHEN(ABOVE COUNTER)	10 INCHES
15A SOCKET OUTLETS IN TOILETS	66 INCHES
16A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
32A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
63A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
CEILING FAN	96 INCHES
WALL FAN	84 INCHES
EXHAUST FAN	REFER ARCH. DRGS.

COMMUNICATION SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL COMMUNICATION SYSTEMS DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE COMMUNICATION SYSTEMS WORKS. IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL COMMUNICATION SYSTEMS DRAWINGS SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS, ITEMS OF B.O.Q., ARCHITECTURAL STRUCTURAL, HVAC, PLUMBING DRAWINGS AND ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO-ORDINATION OF COMMUNICATION SYSTEMS WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. TELEPHONE SYSTEM SHALL BE COMPLETE WITH INSTRUMENTS, EQUIPMENT AND INTERCONNECTING WIRING, TELEPHONE EXCHANGE, TELEPHONE OUTLETS, JUNCTION BOXES, CONDUITS OF SPECIFIED SIZES IN THE BUILDING, AND UNDERGROUND PIPES OF SPECIFIED SIZES SHOWN ON DRAWINGS SHALL BE PROVIDED. WHERE SIZE OF CONDUIT/PIPE IS NOT SPECIFIED SUITABLE SIZE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
8. POINTS FOR COMMUNICATION SYSTEMS EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS ELECTRICAL, HVAC, PLUMBING ETC. THE LOCATION ON COMMUNICATION SYSTEMS DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF COMMUNICATION SYSTEMS EQUIPMENTS ON DRAWINGS ARE TENTATIVE EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
10 CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER 2 INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
11. RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG COMMUNICATION SYSTEMS WIRING.
12. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
13. THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
14. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
15. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

TELEPHONE JUNCTION BOX	10 INCHES
TELEPHONE OUTLET	10 INCHES
INTERCOM CONTROL PACK	10 INCHES
INTERCOM STATION (WALL MOUNTED)	36 INCHES
FA SYSTEM CONTROL PANEL	10 INCHES
MANUAL CALL STATION	42 INCHES
AUDIO ALARM	100 INCHES

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

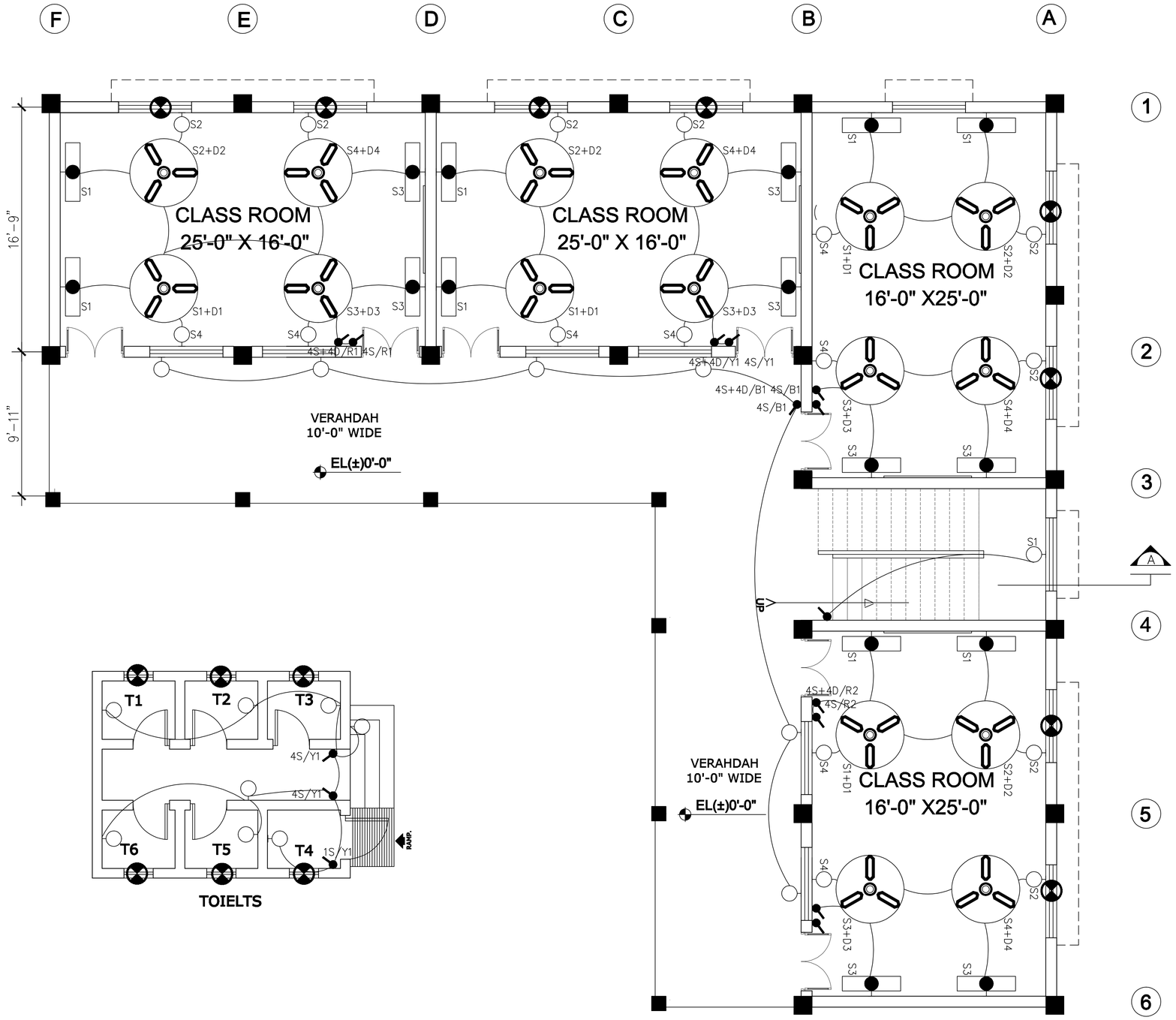
CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN MANSEHRA

LEGEND & GENERAL NOTES

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/03E01	0



TOIELTS

GROUND FLOOR PLAN

LIGHTING AND FANS LAYOYUT

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN

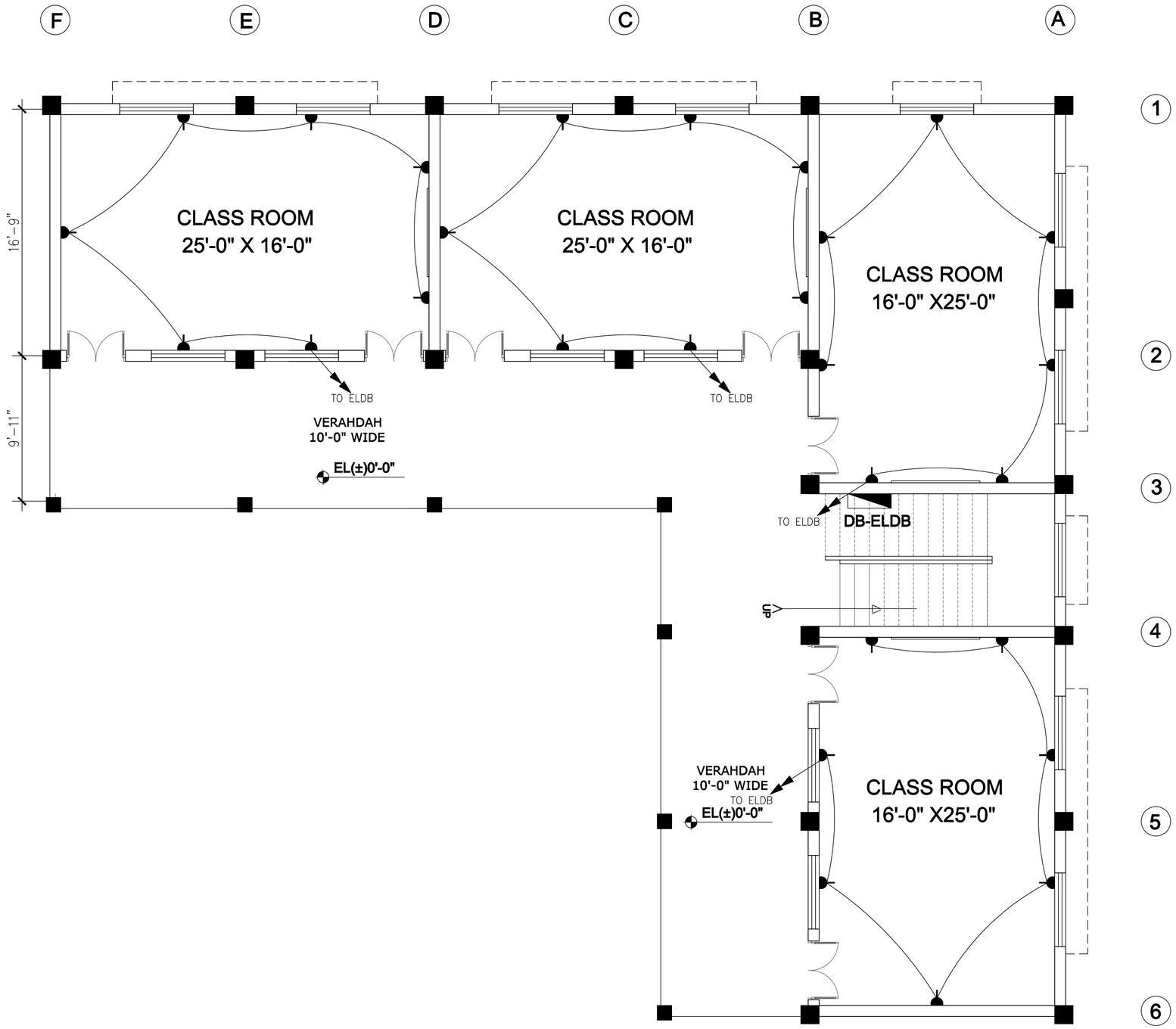
MANSEHRA

LIGHTING AND FANS LAYOYUT

GROUND FLOOR PLAN

NES PAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK	RASHID ULLAH	WAJAHAT	WAJAHAT
DWN. KALEEM			
FILE	DATE	DRAWING NO.	REV.
CKD. KALEEM	OCT.,2022	4199/325/C/03E02	0
SUBM. WAJAHAT			



POWER LAYOUT

GROUND FLOOR PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN

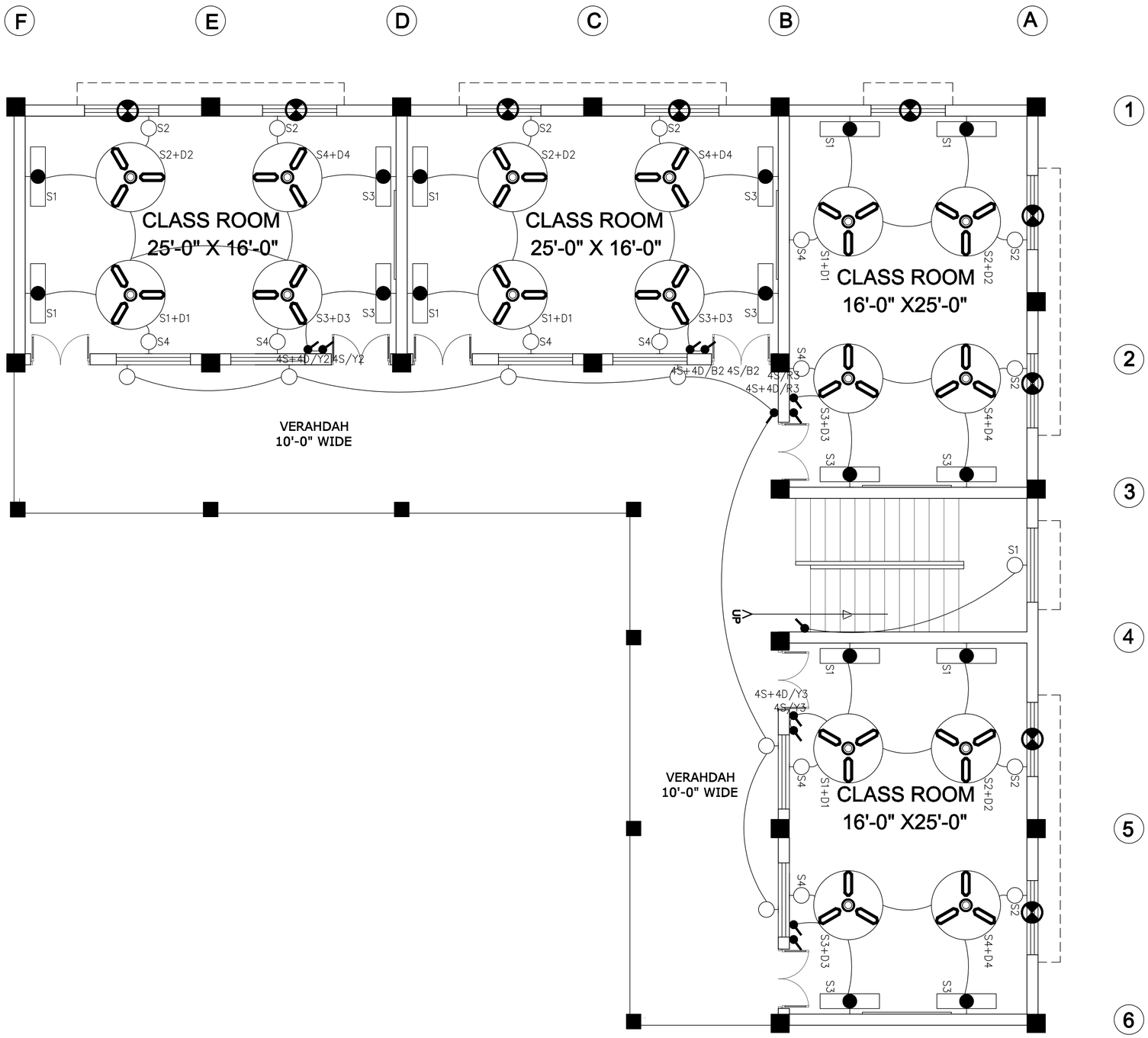
MANSEHRA

POWER LAYOUT

GROUND FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE	DATE	DRAWING NO.	REV.
CKD. KALEEM	OCT.,2022	4199/325/C/03E03	0
SUBM. WAJAHAT			



FIRST FLOOR PLAN
LIGHTING AND FANS LAYOYUT

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

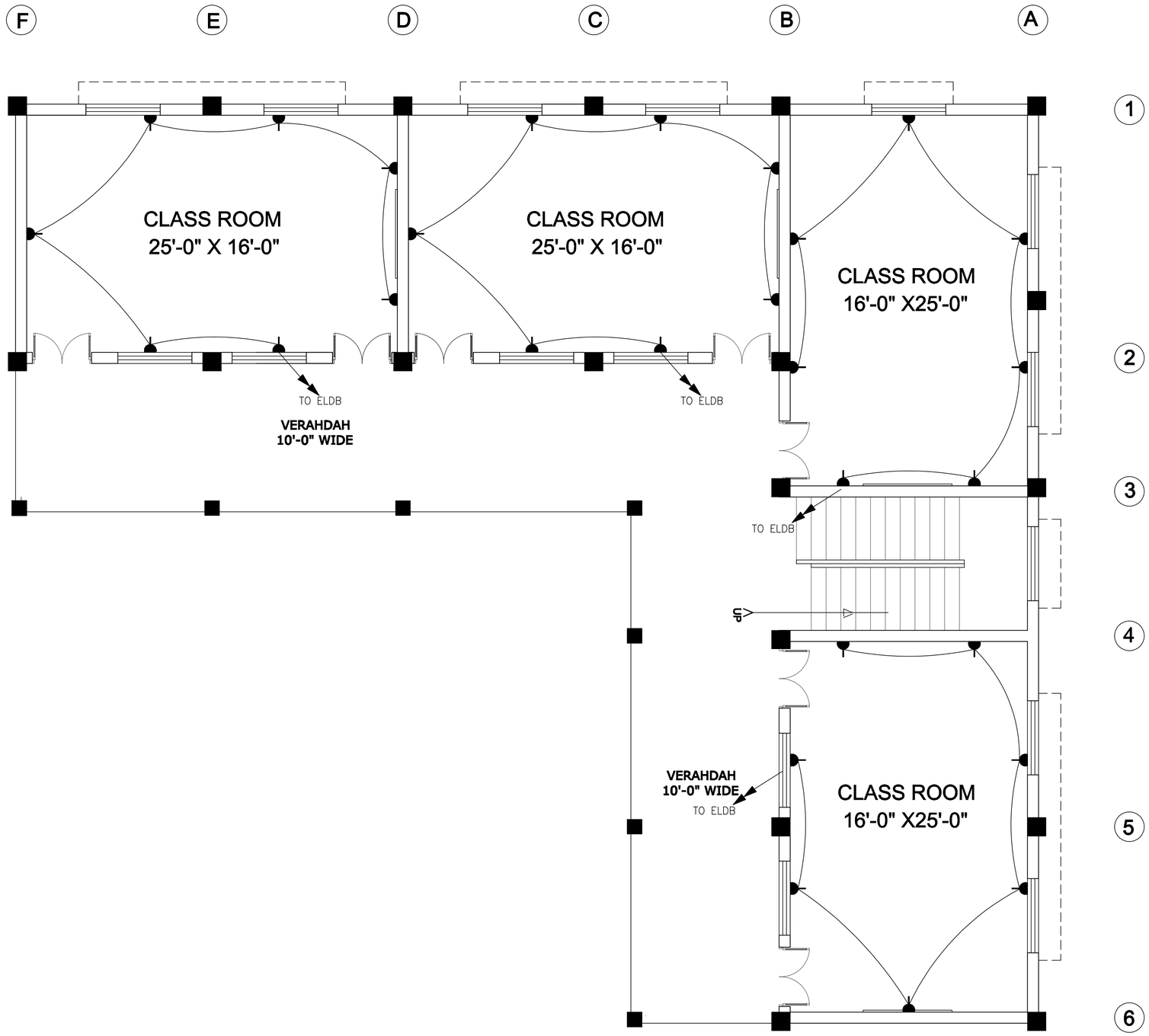
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
LIGHTING AND FANS LAYOYUT
FIRST FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/03E04	0



POWER LAYOUT

FIRST FLOOR PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN

MANSEHRA

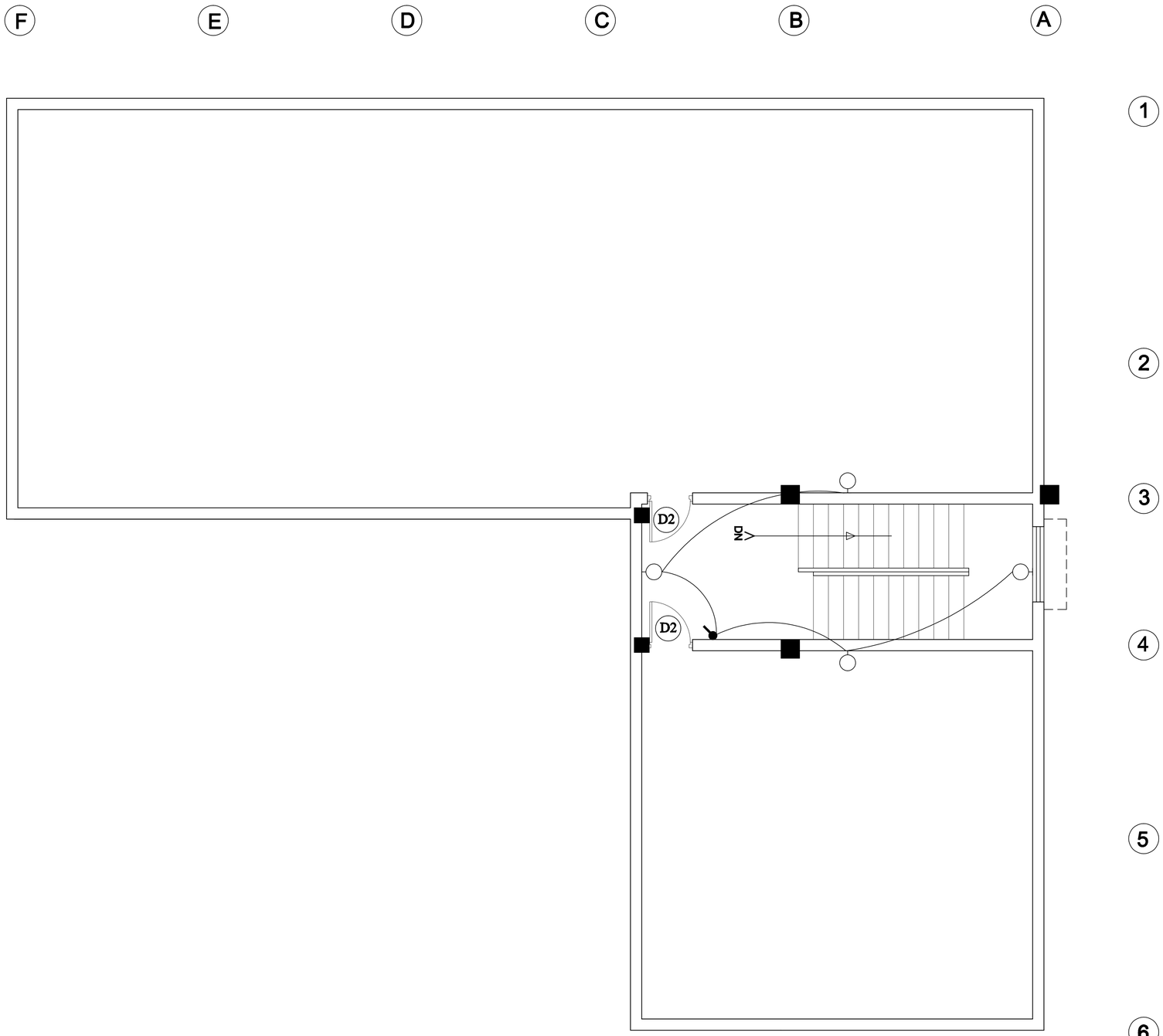
POWER LAYOUT

FIRST FLOOR PLAN

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/03E05	0



MUMTY PLAN

SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

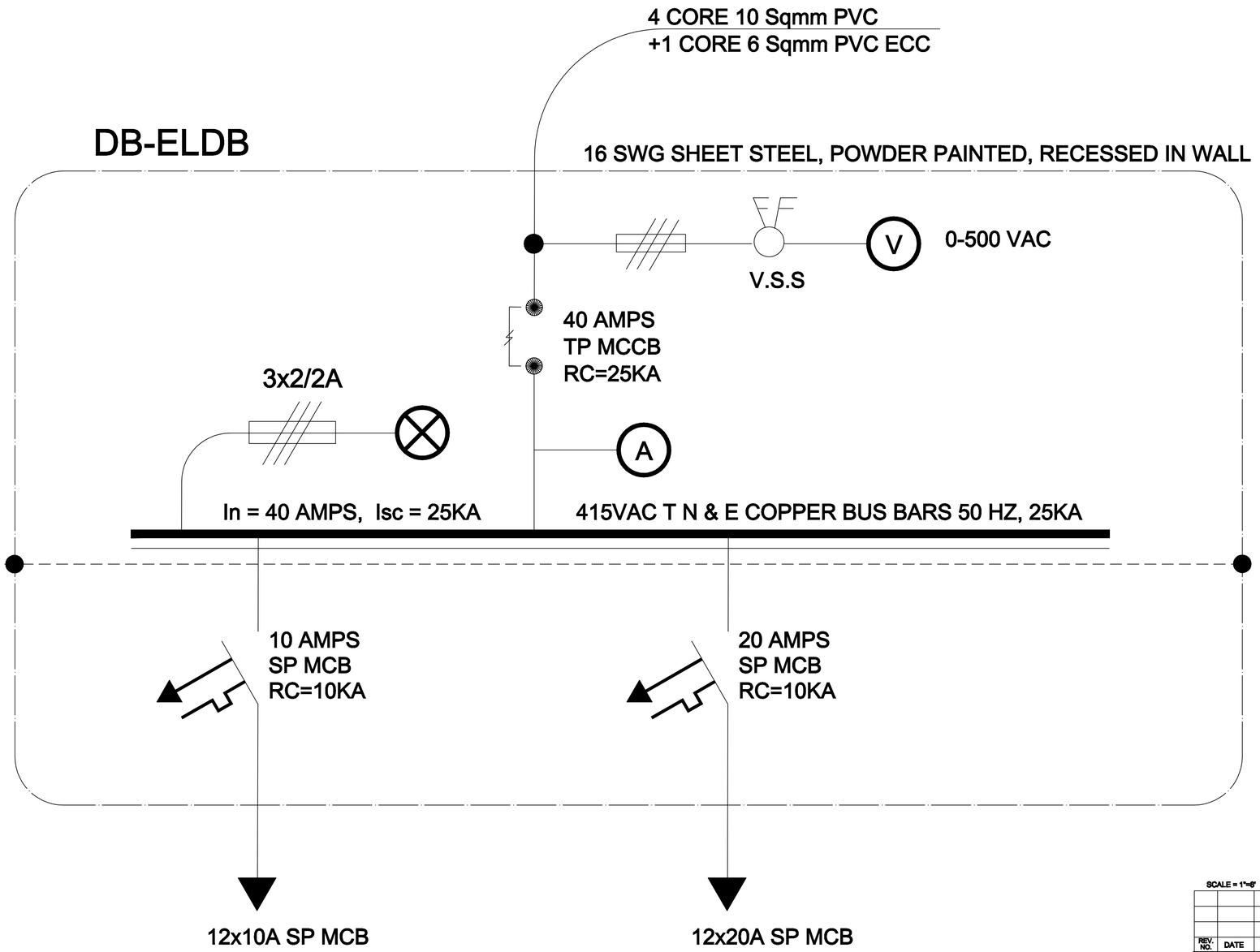
UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN
MANSEHRA
POWER LAYOYUT

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/03E06	0



SCALE = 1"=6'

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

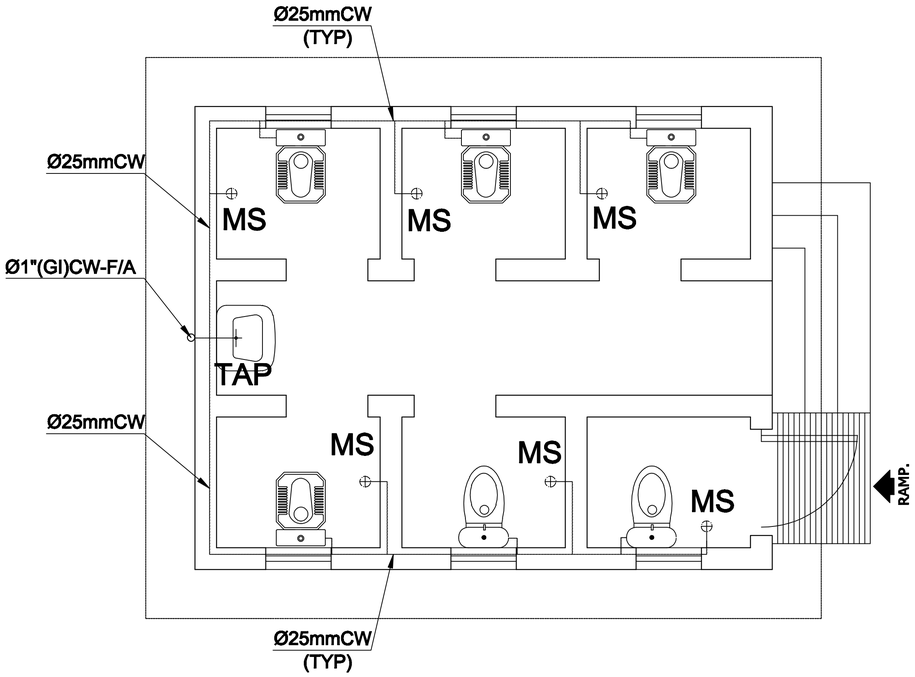
CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN MANSEHRA

SINGLE LINE DIAGRAM

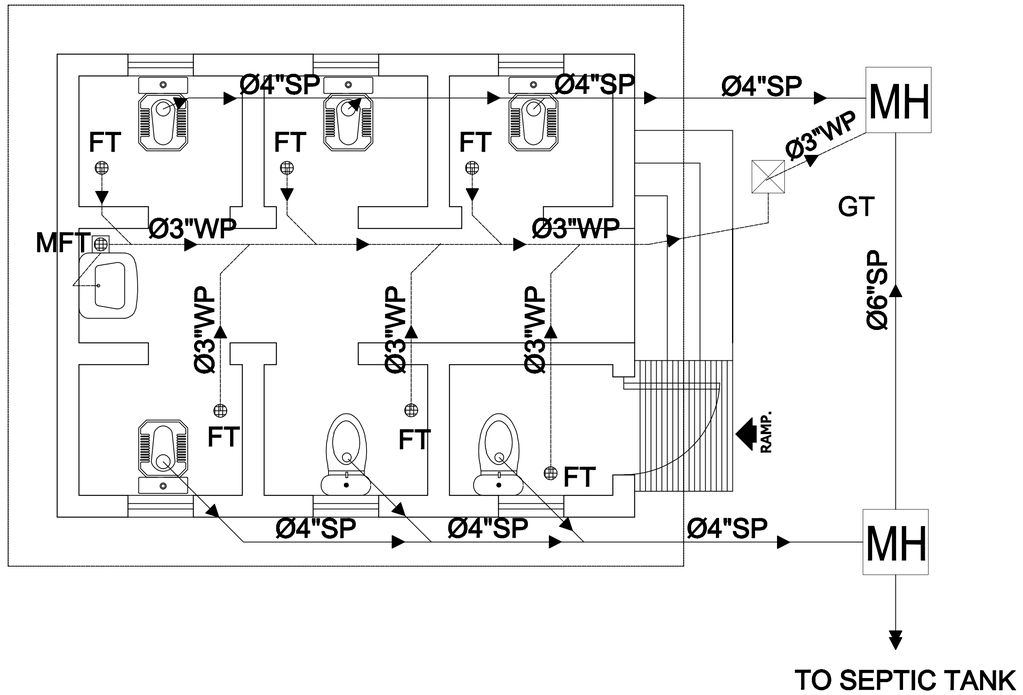
NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. KALEEM	RASHID ULLAH	WAJAHAT	WAJAHAT
FILE			
CKD. KALEEM			
SUBM. WAJAHAT			

DATE	DRAWING NO.	REV.
OCT.,2022	4199/325/C/03E07	0



WATER SUPPLY LAYOUT PLAN



SANITARY DRAINAGE LAYOUT PLAN

LEGEND

S.NO	DESCRIPTION	SYMBOL
1.	WATER TAP	WT
2.	MUSLIM SHOWER	MS
3	GAS WATER HEATER	GWH
4	GULLY TRAP	G.T
5	ASIAN WATER CLOSET	
6	ENGLISH WATER CLOSET	
7.	MULTI FLOOR TRAP	
8.	FLOOR TRAP	

REV. NO.	DATE	DESCRIPTION	BY	CKD.	APPR.

UNHCR PAKISTAN

CONSTRUCTION OF GOVT. PRIMARY SCHOOL ZAFFAR MAIDAN MANSEHRA

(WATER SUPPLY & SANITARY DRAINAGE LAYOUTS)

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT.) LTD. ISLAMABAD

	RECOMMENDED	VER./CKD.	APPROVED
DESN. NESPAK			
DWN. HASNAT ALI	MEHWISH AZIZ	NAVID AKHTAR	RASHID ULLAH
FILE	DATE	DRAWING NO.	REV.
CKD.			
SUBM. MEHWISH AZIZ	OCT.,2022	4199/324/C/03F01	0