REPUBLIC OF LEBANON COUNCIL

FOR DEVELOPMENT & RECONSTRUCTION

AKKAR SAHLEH GOVERNMENTAL HOSPITAL

STRUCTURAL DRAWINGS
DETAILED FINAL DESIGN - PHASE 5

ETEC

JULY 2026

1- GENERAL NOTES

1-1 ALL STRUCTURAL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH ARCHITECTURAL AND ELECTROMECHANICAL DRAWINGS AND RELATED SPECIFICATIONS.

1-2 DO NOT SCALE FROM DRAWINGS. ALL DIMENSIONS SHOULD BE READ OR COMPUTED.

1-3 ALL DIMENSIONS ARE IN cm UNLESS OTHERWISE NOTED .
DIAMETER OF REINFORCING BARS IN MM,LEVELS ARE IN METERS ABOVE SEA LEVEL.

1-4 BLINDING CONCRETE TO BE PROVIDED UNDER FOOTINGS OR RAFT ACCORDING TO SPECIFICATIONS AND DETAILS.

1-5 NO BACKFILLING SHALL BE PERFORMED BEFORE CASTING THE SLABS THAT SUPPORT EARTH OR RETAINING WALL.

1-6 ALL PLANS ARE SEEN FROM BELOW EXCEPT FOR THE FOUNDATION PLAN SEEN FROM ABOVE.

1-7 BEFORE POURING ANY CONCRETE, THE CONTRACTOR SHOULD FIX ALL RESERVATIONS, SLEEVES, ELECTRICAL TUBES, PIPES, ETC.., AS INDICATED ON ELECTRO-MECHANICAL DRAWINGS AND SPECIFICATIONS.

1-8 ALL INSERTS FOR ELECTROMECHANICAL EQUIPMENTS, STEEL WORKS SHALL BE COORDINATED WITH THE RELATED SUPPLIER/CONTRACTOR AND EMBEDDED IN THE FORMWORK BEFORE POURING OF CONCRETE AND TO THE ENGINEER'S SATISFACTION.

1-9 TYPICAL DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN ON THE DWGS.

1-10 ALL CONSTRUCTION MATERIALS TO WHICH REFERENCE IS MADE IN THE DRAWINGS AND IN THE TYPICAL DETAILS SHALL CONFORM TO THE APPLICABLE CODES AND STANDARDS FOR CONSTRUCTION AND TO THE SPECIFICATIONS.

1-11 ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE UNLESS OTHERWISE NOTED.

1-12 ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE GENERAL REQUIREMENTS OF THE DRAWINGS, THE GENERAL CONDITIONS AND THE SPECIFICATIONS.

1-13 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUAINT HIMSELF AND ALL SUPERVISORY PERSONNEL WITH THE ABOVE-NAMED DRAWINGS AND DOCUMENTS.

1-14 THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING THE SITE OF THE PROPOSED WORK TO SATISFY HIMSELF AS TO THE EXISTING CONDITIONS RELATIVE TO THE CONTRACT.

1-15 THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. SHOULD ANY UNDERGROUND UTILITIES BE FOUND DIFFERENT THAN LOCATED. THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

1-16 CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR SETTING OUT LEVELS, GROOVES, CLIPS, MOULDS, ORNAMENTS AND OTHER EMBEDDED ITEMS TO BE CAST INTO CONCRETE. REFERENCE MUST ALSO BE MADE TO MECHANICAL & ELECTRICAL DRAWINGS FOR EMBEDDED ITEMS, PIPE SLEEVES, EQUIPMENT PADS AND OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS. ALL OPENINGS SHALL BE FORMED OR SLEEVED BEFORE PLACING CONCRETE. CONTRACTOR SHALL ALSO PROVIDE ALL NECESSARY INSERTS, TIES, CLIPS, ANCHORS, STRAPS, HANGERS, AND OTHER FASTENING DEVICES AS REQUIRED BY REFFERING TO SPECIALTY'S DRAWINGS. NO PIPES, DUCTS, CONDUIT, SLEEVES ETC. SHALL BE CAST INTO STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED AND APPROVED BY THE ENGINEER.

1-17 BUILDING SUPPORTING ELEMENTS (COLUMNS,WALLS & FOUNDATIONS) ARE DESIGNED TO WITHSTAND A GROUND FLOOR + 3 FLOORS ABOVE (INCLUDING BUILDINGS WITH ONLY GF , GF +1 , OR GF +2).

2- LOADS ASSUMPTIONS

UNLESS NOTED ON DRAWINGS, THE FOLLOWING IS TO BE CONSIDERED AS TYPICAL AND APPLICABLE:

2-1 BASIS OF DESIGN: ACI-08 CODE

2-2 THE ASSUMED SEISMIC PARAMETERS ARE:
SEISMIC ZONE FACTOR Z=0.25g
(S=1.2, S1=0.4)
SOIL PROFILE TYPE SC
SEISMIC IMPORTANCE FACTOR I=1.25

2-3 THE WIND DESIGN COEFFICIENTS ARE:
WIND SPEED 85 mph
EXPOSURE TYPE C
IMPORTANCE FACTOR I=1.25

2-4 LIVE LOAD
LIVE LOADS WILL BE CONSIDERED ACCORDING TO ASCE-7-05 (CHAPTER 4)

2-5 LATERAL PRESSURE OF SOIL
SPECIFIC WEIGHT OF SOIL = 18 KN/m^3 FOR FILL MATERIALS
SPECIFIC WEIGHT OF SATURATED SOIL= 20 KN/m^3

3- FOUNDATION NOTES

3-1 THE SOIL SUPPORTING FOUNDATION (OR SLAB-ON-GRADE) SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT.

3-2 ALL UNSUITABLE MATERIALS SHALL BE REMOVED AND ACCEPTABLE GRANULAR FILL COMPACTED 95% OF MAX. DRY DENSITY SHALL BE USED FOR BACKFILLING.

3-3 REFER TO MECHANICAL DRAWINGS FOR UNDERFLOOR PIPES, PITS, DRAINAGE SYSTEM AND SPECIAL GRANULAR FILL MATERIALS REQUIRED.

3-4 THE FOUNDATION DESIGN IS DONE ACCORDING TO A SOIL BEARING CAPACITY OF 1.75 kg/cm?, THE CONTRACTOR SHALL VERIFY THE ACTUAL SOIL BEARING CAPACITY ACCORDING TO THE GEOTECHNICAL REPORT BEFORE PROCEEDING WITH THE WORK

3-5 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE STABILITY AND SAFETY OF THE CONSTRUCTION SITE THROUGHOUT THE PROJECT AREA. HE HAS TO VERIFY IF THE SOIL ALLOWABLE BEARING CAPACITY IS AT LEAST EQUAL TO THE BEARING CAPACITY USED IN THE DESIGN OF THE FOUNDATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL MINIMUM SOIL BEARING CAPACITY, AND TO REPORT THE FINDINGS TO THE STRUCTURAL ENGINEER.

3-6 ZONES OF UNSUITABLE MATERIAL,SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL IN ACCORDANCE WITH THE SOIL REPORT OR AS DIRECTED BY ENGINEER.

3-7 THE CONTRACTOR SHOULD TAKE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT ANY DAMAGE TO EXISTING BUILDING FOUNDATIONS OR FACILITIES, IF ANY, ADJACENT TO PROJECT, INCLUDING BRACING/SHORING, TO AVOID SETTLEMENTS DURING EXCAVATION IN IMMEDIATE VICINITY OF EXISTING FOOTINGS.

3-8 THE CONTRACTOR SHOULD INSPECT CAVITY PRESENCE UNDER EACH COLUMN AND WALL OF THE BUILDING. CAVITIES, IF ENCOUNTERED SHOULD BE FILLED WITH BLINDING CONCRETE, OR AS APPROVED BY ENGINEER.

4- FORMWORK

4-1 FORMS SHALL RESULT IN A FINAL STRUCTURE THAT CONFORMS TO FINAL GRADES, LINES AND DIMENSIONS OF THE MEMBERS AS REQUIRED BY THE SHOP DRAWINGS AND SPECIFICATIONS.

4-2 FORMS SHALL BE SUFFICIENTLY TIGHT TO PREVENT LEAKAGE OF MORTAR.

4-3 FORMS SHALL BE PROPERLY BRACED OR TIED TOGETHER TO MAINTAIN POSITION AND SHAPE.

4-4 FORMS AND THEIR SUPPORTS SHALL BE DESIGNED IN A WAY THAT DOES NOT DAMAGE PREVIOUSLY PLACED STRUCTURE.

4-5 NO CONSTRUCTION LOADS SHALL BE SUPPORTED ON, NOR ANY SHORING REMOVED FROM ANY PART OF THE STRUCTURE UNDER CONSTRUCTION EXCEPT WHEN THAT PORTION OF THE STRUCTURE IN COMBINATION WITH THE REMAINING FORMING AND SHORING SYSTEM HAS SUFFICIENT STRENGTH TO SUPPORT SAFELY ITS WEIGHT AND LOADS PLACED THEREON.

4-6 STRIPPING FORMS AND SHORES SHALL BE MINIMUM AS FOLLOWS:
FOUNDATIONS.....1 DAY
COLUMNS AND WALLS.....2 DAYS
BEAMS (SIDES).....2 DAYS
SLABS.....14 DAYS
BEAMS & GIRDERS.....21 DAYS

4-7 FORMWORK SHALL COMPLY WITH THE REQUIREMENTS OF "GUIDE TO FORMWORK OF CONCRETE" ACI 347 LATEST EDITION

4-8 FORMWORK SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.

4-9 FAIR FACE CONCRETE FINISH, CHAMFERS, JOINTS AND OTHERS SHALL CONFORM TO INSTRUCTIONS OF THE ENGINEER.

5- BEAMS & GIRDERS

5-1 CAMBER ALL BEAMS AND GIRDERS AT LEAST 5mm PER METER SPAN GREATER THAN 5.0m UNLESS NOTED OTHER WISE

5-2 FOR TWO OR MORE LAYERS OF REINFORCING BARS, USE SEPARATORS SPACED AT 1m ON CENTER. A MINIMUM OF 2 SEPARATORS SHALL BE USED.

5-3 NO SPLICE SHALL BE PERMITTED ON BEAMS AND GIRDERS WHERE CRITICAL BENDING STRESS OCCURS. TENSION SPLICE IF REQUIRED SHALL BE 50 DIA FOR ALL BARS. LAP SPLICES SHALL BE WIRED TOGETHER. SPLICE TOP BARS AT MID SPAN, BOTTOM BARS AT SUPPORT, NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE PERMITTED TO BE SPLICED.

6- CONCRETE MIXES & PLACING

6-1 THREE TYPES OF CONCRETE ARE SPECIFIED :

- CONCRETE FOR BLINDING AND CYCLOPEAN CONCRETE : 200 KG CEMENT OF ORDINARY PORTLAND CEMENT PER CUBIC METER OF CONCRETE.
- CONCRETE FOR INFRASTRUCTURAL ELEMENTS RAFT,FOOTINGS,SLAB ON GRADE: 350 KG OF SUPPER SULPHATE CEMENT TYPE V PER CUBIC METER OF CONCRETE. MAX W/C=0.45
- CONCRETE FOR STRUCTURAL ELEMENTS COLUMNS,BEAMS,WALLS,SLABS: 350 KG OF ORDINARY PORTLAND CEMENT (TYPE I) PER CUBIC METER OF CONCRETE. MAX W/C=0.40.

6-2 UNLESS OTHERWISE SPECIFIED, THE MINIMUM 28 DAYS COMPRESSIVE STRENGTHS ARE:

- BLINDING/LEAN CONCRETE	f'c=20 MPa
- CYCOPEAN CONCRETE (40% STONES 10-20cm INCORPORATED)	f'c=20 MPa
- COLUMNS, RETAINING WALL	f'c=35 MPa
- FOOTINGS,SLABS & BEAMS	f'c=30 MPa

6-3 ALL CONCRETE SHALL BE MOIST FOR A MINIMUM OF SEVEN CONSECUTIVE DAYS IMMEDIATELY AFTER POURING BY THE USE OF WET BURLAP, FOG SPRAYING OR OTHER APPROVED METHODS.

6-4 ORDINARY PORTLAND CEMENT TYPE I SHALL BE USED IN ALL UPPERSTRUCTURE ELEMENTS.

6-5 CONCRETE SHALL BE DEPOSITED IN ITS FINAL POSITION WITHOUT SEGREGATION, RE-HANDLING OR FLOWING. NO DEPOSITING OF CONCRETE SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS, UNLESS AUTHORIZED IN WRITING BY THE DESIGNERS.

7- REINFORCED CONCRETE

UNLESS NOTED ON DRAWINGS, THE FOLLOWING IS TO BE CONSIDERED AS TYPICAL AND APPLICABLE:

7-1 BASIS OF DESIGN: THE ACI CODE

7-2 PARTICULAR CARE SHOULD BE GIVEN TO THE PLACING OF REINFORCEMENT, THE MIXING AND CASTING OF CONCRETE, AND ACCORDING TO THE SPECIFICATIONS FOR THIS TRADE.

7-3 CONCRETE POURS SHALL PREFERABLY BE CONTINUOUS BETWEEN JOINTS.

7-4 THE MINIMUM CONCRETE PROTECTIVE COVER FOR REINFORCEMENT SHALL BE AS PER UBC 97:

-FOR COLUMNS:	EXTERNAL	4 cm
-FOR BEAMS:	EXTERNAL	3 cm
	INTERNAL OR EMBEDDED	2.5 cm
-FOR INTERNAL WALLS NOT EXPOSED TO WEATHER :		2.5 cm
-FOR EXTERNAL WALLS EXPOSED TO WEATHER :		3 cm
-FOR WALLS EXPOSED TO EARTH:		5 cm
-WATER TANK WALLS:		5 cm
-FOR SOLID SLABS:		2.5 cm
-FOR SLAB ON GRADE:		3.5 cm
-FOR FOOTINGS:		5 cm
-FOR TIE BEAMS:		4 cm

7-5 FOR ALL ELECTROMECHANICAL RESERVATIONS IN WALLS, SLABS AND BEAMS, EXACT LOCATION TO BE COORDINATED WITH ELECTROMECHANICAL DRAWINGS.

7-6 OPENINGS SMALLER THAN 150mm MAY BE FORMED EITHER BY BOXING OUT OR BY CAREFUL DRILLING BY CORE CUTTER AFTER CASTING.

7-7 ALL CONCRETE REINFORCEMENT SHALL BE DETAILED, FABRICATED, LABELED, SUPPORTED AND SPACED IN FORMS AND SECURED IN PLACE IN ACCORDANCE WITH THE PROCEDURES AND REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", ACI 318 AND THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE

7-8 ALL CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED AND CLEANED IMMEDIATELY PRIOR TO POURING NEW CONCRETE,THE SURFACE OF THE CONCRETE AT ALL JOINTS SHALL BE ROUGHENED MINIMUM 6mm,THOROUGHLY CLEANED AND ALL LAITANCE REMOVED PRIOR TO PLACING ADJOINING CONCRETE.

7-9 THE SEQUENCE OF POURING CONCRETE SHALL BE SUCH AS TO MINIMIZE SHRINKAGE.

7-10 ALL REINFORCEMENT SHALL BE CONTINUED ACROSS CONSTRUCTION JOINTS UNLESS NOTED OTHERWISE

7-11 PROVIDE 1LAYER OF 250 MICRON POLYETHYLENE SHEET VAPOR BARRIER UNDER RAFT OR SLAB ON GRADE

7-12 REINFORCING STEEL TO BE BENT AND PLACED IN ACCORDANCE WITH "MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES (ACI 315-CURRENT EDITION)".

7-13 MAXIMUM AGGREGATE SIZE TO BE 2cm.

7-14 PROVIDE CONTINUOUS KEYWAYS AT RETAINING WALL CONSTRUCTION JOINTS.

7-15 ALL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED.

7-16 MAXIMUM SPACING OF BAR SUPPORTS IN RAFT OR SLAB ON GRADE TO BE 1.2m.

7-17 DRILLING IN BEAMS AND COLUMNS FOR MOULDING INSTALLATION OR ANY OTHER PURPOSE, SHOULD BE DONE WITH EXTREME CARE TO AVOID CUTTING ANY OF THE STEEL REINFORCING. LOCATE BARS AND STIRRUPS BEFORE ANY DRILLING.THE CONTRACTOR TO PROVIDE INFORMATION ON HIS PROCEDURE IN WRITING TO STRUCTURAL ENGINEER BEFORE ANY DRILLING.

7-18 FOR ONE WAY SLAB, BARS ALONG SHORTER SPAN SHALL BE PLACED BELOW THOSE ALONG THE LONGER SPAN AT CENTER AND OVER THE LONGER SPAN BARS NEAR THE SUPPORT UNLESS OTHERWISE INDICATED OR SHOWN IN DETAILS.

7-19 ALL ANCHORAGE OF REINFORCEMENT IN FOUNDATION FOR COLUMNS, WALLS AND STAIRS WILL BE PROVIDED ACCORDING TO COLUMNS, WALLS AND STAIRS DRAWINGS.

8- STEEL WORKS

8-1 ALL STRUCTURAL STEEL WORK TO BE CARRIED OUT IN CONFORMITY WITH THE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND TECHNICAL SPECIFICATIONS. STRUCTURAL STEEL SHALL BE AT LEAST ASTM A36 QUALITY.

8-2 ANTI-CORROSION PROTECTION SHALL BE CARRIED OUT AFTER FABRICATION ACCORDING TO TECHNICAL SPECIFICATIONS.

8-3 BOLTS SHALL BE OF GRADE 8.8 UNLESS OTHERWISE INDICATED. THEY SHALL BE OF APPROVED MANUFACTURE.

8-4 FABRICATION WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH SHOP DRAWINGS APPROVED BY THE ENGINEER.

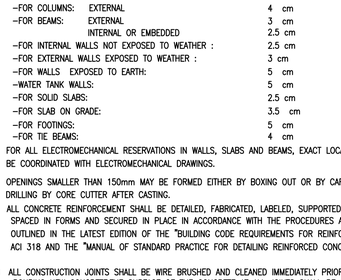
8-5 ERECTION PROCEDURES SHALL BE SUBMITTED FOR APPROVAL.

8-6 FABRICATION WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH AN INTERNATIONALLY RECOGNISED CODE OF PRACTICE IN AN APPROVED WORKSHOP EXPERIENCED IN THIS TYPE OF WORK.

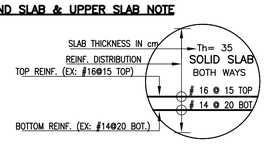
8-7 ERECTION SHALL BE CARRIED OUT BY COMPETENT CREWS EXPERIENCED IN THIS TYPE OF WORK.

8-8 SUITABLE APPROVED EQUIPMENT SHALL BE USED.

9- STRUCTURAL NOTATIONS

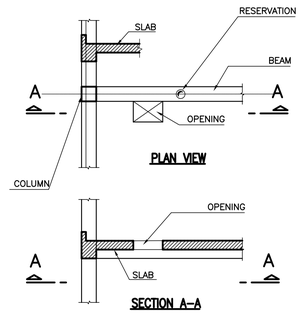


GROUND SLAB & UPPER SLAB NOTE



FORMWORK

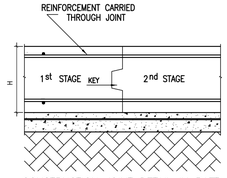
1- CONCRETE LINES IN DRAWINGS.



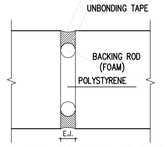
2- SYMBOLS

COLUMN	C	DETAIL	DET
WALL	W	DIAMETER	ø
BEAM	B	DRAWING(S)	DWG(S)
RIB	R	EXCAVATION LEVEL	E.L.
JOIST	J	FLOOR	FL
GRADE BEAM	GB	MISCELLANEOUS	MISC
THICKNESS	TH	NATURAL GROUND LEVEL	NGL
EXPANSION JOINT	EJ	NOT TO SCALE	NTS
CONSTRUCTION JOINT	CJ	OPENING	OPNG
BOTTOM	BOT.	SOLID SLAB	SS
CLEAR	CLR	TYPICAL	TYP
CONCRETE LEVEL	C.L.		

3- JOINTS

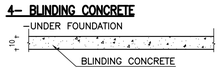


CONSTRUCTION JOINT DETAIL IN RAFT

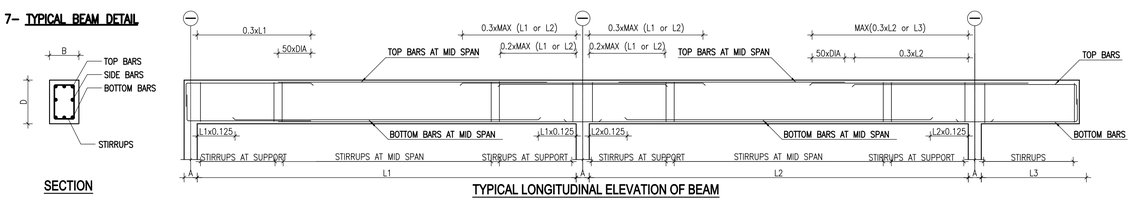


EXPANSION JOINT FOR SLAB

4- BLINDING CONCRETE



7- TYPICAL BEAM DETAIL



TYPICAL LONGITUDINAL ELEVATION OF BEAM

8- LINTELS ABOVE MASONRY OPENINGS

OPENING Length (cm) / Width (cm)	150	250	350	500
10	2T10, #8@15, 20, 10	-	-	-
15	4T10, #8@15, 20, 15	4T10, #8@15, 20, 15	2T10, #8@15, 30, 15, 2T12	2T10, 2T10, #8@15, 40, 15, 2T12
20	4T10, #8@15, 20, 20	4T10, #8@15, 20, 20	2T10, #8@15, 30, 20, 2T12	2T10, 2T10, #8@15, 40, 20, 2T12
25	2T10, #8@15, 20, 2T12, 25	2T10, #8@15, 20, 2T12, 25	2T10, #8@15, 30, 2T12, 35	2T10, 2T10, #8@15, 40, 25, 2T14

-LINTELS SHALL BEAR ON MASONRY 20cm ON EACH SIDE OF OPENING.

9- LINTELS ABOVE MASONRY WALLS FOR BRACING:

MASONRY WALLS SHALL BE LATERALLY SUPPORTED IN EITHER HORIZONTAL OR THE VERTICAL DIRECTION AT INTERVALS NOT EXCEEDING THE FOLLOWING:

1- WALL HEIGHT > 400cm PROVIDE CONTINUOUS LINTEL AT OPENINGS LEVEL.
2- WALL HEIGHT > 400cm AND LENGTH > 500cm PROVIDE VERTICAL ELEMENT 40cm WIDTH WALL THICKNESS EVERY 300cm.

REINFORCEMENT

1- STRENGTH, SIZES USED, SPLICE LENGTH

HIGH TENSILE STEEL
T8 T10 T12 T16 T20 T25

- UNLESS OTHERWISE NOTED ON DRAWINGS, ALL REINFORCEMENT HIGH TENSILE STEEL
INCLUDING TIES AND STIRRUPS SHALL BE
HIGH TENSILE STEEL (MIN. YIELD STRENGTH) 420 Mpa
MS MILD STEEL(MIN. YIELD STRENGTH) 240 MPa
- UNLESS OTHERWISE NOTED, MINIMUM SPLICE LENGTH FOR HIGH TENSILE STEEL TO BE AS FOLLOWS:

HTS HIGH TENSILE STEEL 50 x BAR DIAMETER	MS MILD STEEL 65 x BAR DIAMETER
T8 - 40cm	ø6 - 39cm
T10 - 50cm	ø8 - 52cm
T12 - 60cm	
T16 - 80cm	
T20 - 100cm	
T25 - 125cm	

2- SYMBOL

T	DEFORMED BAR
@	SPACING CENTRE TO CENTRE
L	LENGTH OF BARS (WHEN APPLICABLE)
⟷	LIMIT OF AREA COVERED BY BARS
ST	STIRRUP

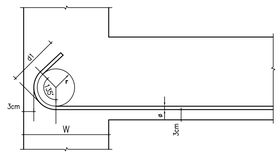
- REINFORCEMENT SHOWN IN PLAN FOR ALL SLABS EXCEPT IN FOUNDATIONS:

ADDITIONAL	ADD.
ALTERNATE	ALT.
CONTINUOUS	CONT.
REINFORCING	REINF
REINFORCED CONCRETE	RC
VERTICAL	VER
HORIZONTAL	HOR
BOTTOM	BOT
TOP	TOP

3- MINIMUM BENDING DIAMETER

STANDARD HOOK & BEND

HOOK DEG.	HOOK SHAPE	BEND DEG.	BEND SHAPE	HOOP & STIRRUPS
180°	4d, 4d	≤90°	d, d	3d
135°	d, 6d			4d ds16
90°	d, 12d			4d d≥16, 4d d≥29

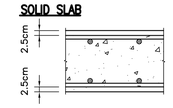


LENGTH d1 (in cm) FOR 135° HOOK

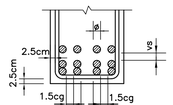
SUPPORT WIDTH W (cm) \ DIAMETER ø (mm)	10	12	14	16	20	25	32
20	15	19	23	27	36	46	60
25	13	17	21	25	34	44	58
30	11	15	19	23	32	42	56
35	9	13	17	21	30	40	55
40	7	11	15	19	28	38	53
45	5	9	13	17	26	36	51

5- REINFORCEMENT COVER & SPACING

SOLID SLAB

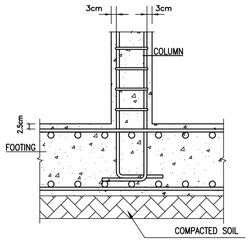


BEAM

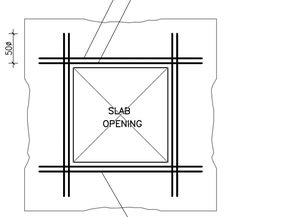


vs ≥ MAX (ø ;(cg=2.5cm))
hs ≥ 7 cm

FOOTING AND COLUMN

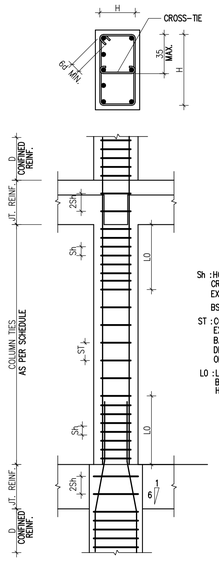


6-TYPICAL CONCRETE OPENING DETAIL



IN TWO WAY SLAB EXTEND BARS UP TO BEAM SUPPORT OMIT TRIMMER BARS WHERE OPENING IS FRAMED BY BEAM

8- TYPICAL COLUMN REINFORCEMENT DETAILS



Sh :HOOP & SUPPLEMENTARY CROSS-TIES SPACING NOT EXEED BS/4 OR 10cm
BS SMALL COLUMN DIMENSION
ST :COLUMN TIE SPACING NOT EXEED 16xdb OF VERTICAL BARS, 48db OF TIES, SMALLER DIMENSION OF COLUMN CROSS-SECTION OR 20cm (db: DIAMETER OF BAR)
LO :LARGEST COLUMN DIMENSION, BUT NOT LESS THAN ONE SIXTH CLEAR HEIGHT OR 45 CM.

TYPICAL COLUMN ELEV. SHOWING DOWELS AND TIES SPACING

LIST OF DRAWINGS

DWG NO.	TITLE	SCALE
S-01	LEGEND,GENERAL NOTES AND LIST OF DRAWINGS	-
S-02	EXCAVATION PLAN	1/100
S-03	FOUNDATION PLAN	1/100
S-04	FOUNDATION, GRADE BEAM, COLUMN & WALL DETAILS	1/25
S-05	CORE WALL REINFORCEMENT DETAILS	1/25
S-06	SLAB ON GRADE PLAN	1/100
S-07	BASEMENT UPPER SLAB FRAMING PLAN	1/100
S-08	GROUND FLOOR UPPER SLAB FRAMING PLAN	1/100
S-09	1st FLOOR UPPER SLAB FRAMING PLAN	1/100
S-10	BASEMENT UPPER SLAB BEAM DETAILS B1 TO B14	1/100,1/20
S-11	GROUND & 1st FLOORS UPPER SLAB BEAM DETAILS B15 TO B34	1/100,1/20
S-12	BASEMENT UPPER SLAB RIBS & DOUBLE RIBS DETAILS	1/100,1/25
S-13	GROUND & 1st FLOORS UPPER SLAB RIBS & DOUBLE RIBS DETAILS	1/100,1/25
S-14	STAIRS ST1 PLANS & SECTION	1/50,1/25
S-15	STAIRS ST2 PLANS & SECTION	1/50,1/25
S-16	GUARD HOUSE & FENCE PLANS & DETAILS	1/50,1/25
S-17	RAMP PLAN, SECTIONS & DETAILS	1/50,1/25
S-18	EXTERNAL WORKS DETAILS	1/200
S-19	STAIRS ST3 PLANS AND SECTION	1/50,1/25

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

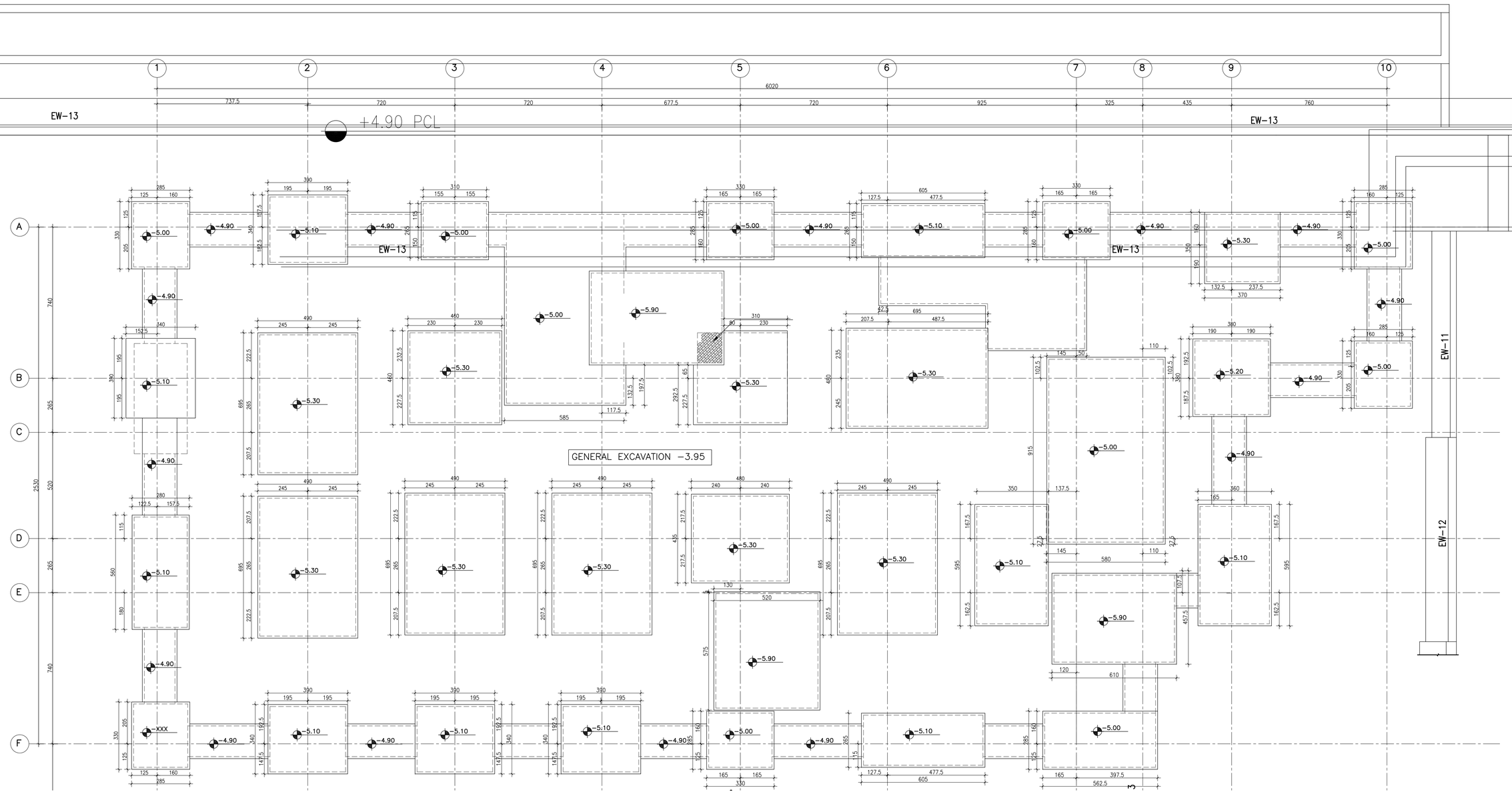
PROJECT:

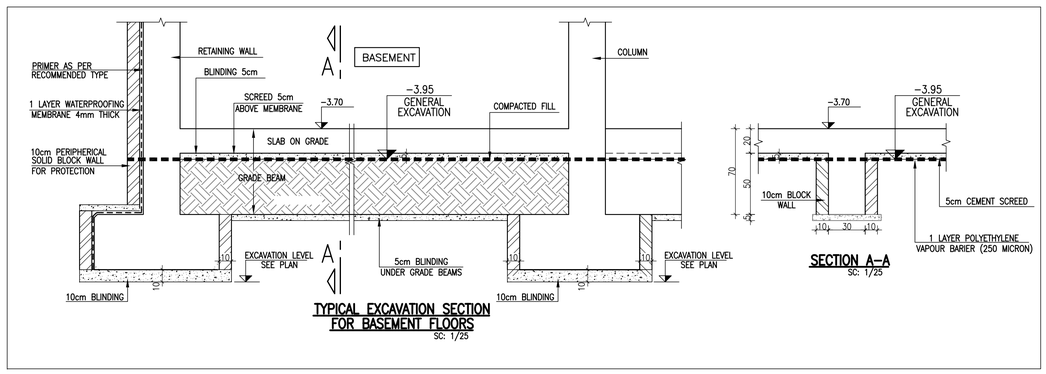
AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

LEGEND - GENERAL NOTES AND LIST OF DRAWINGS

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE:	ASGH-S01
CHECKED BY:	A.H.	JUL 2026		SIZE:	A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE:	1/100
DRAWING NO.:	S01			REVISION:	





Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

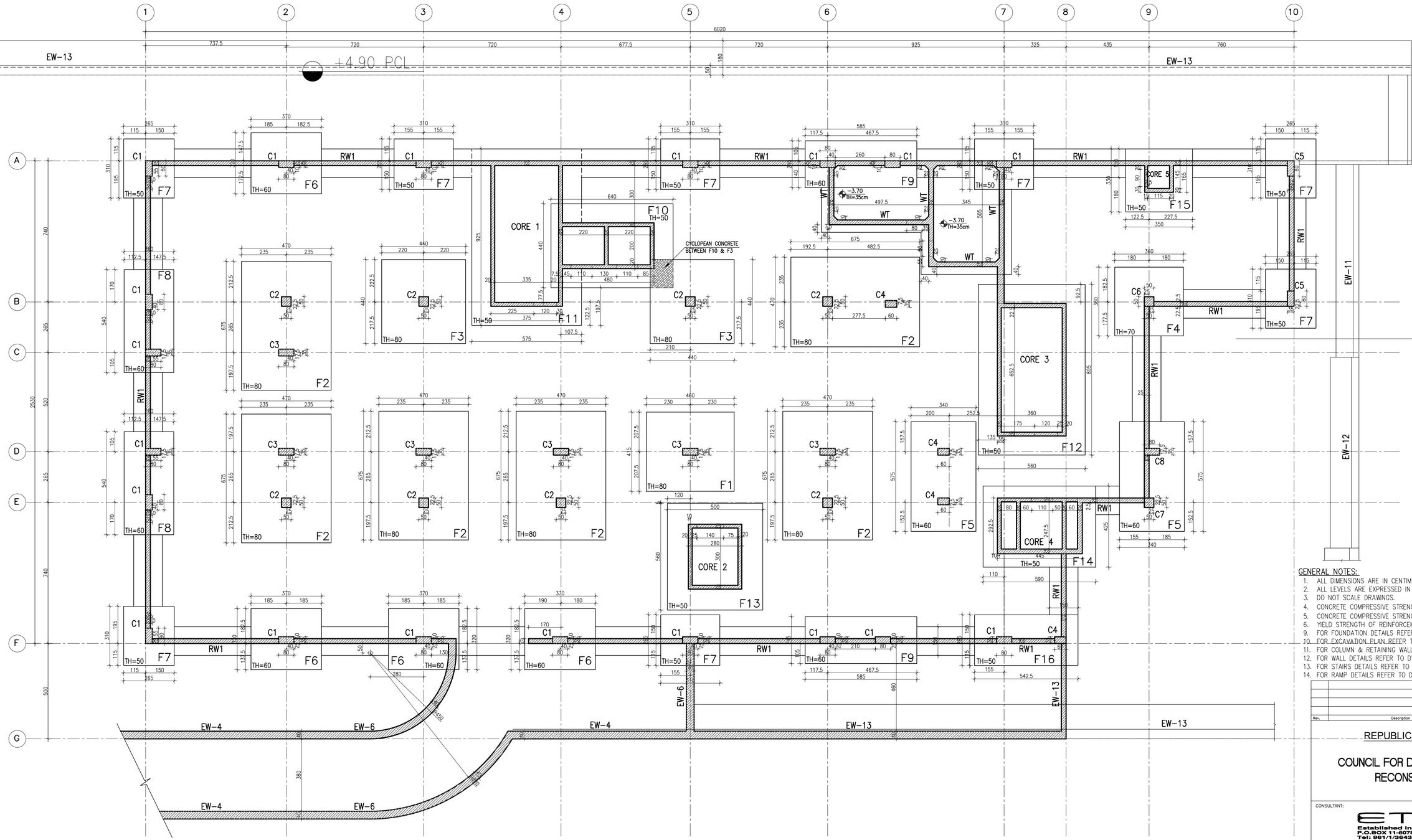
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

EXCAVATION PLAN

	Name	Date	Signature	
DRAWN BY:	E.A.	JUL 2026		FILE: ASGH-S02
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100
DRAWING NO.:	S02			REVISION:



GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.
9. FOR FOUNDATION DETAILS REFER TO DWG S-04
10. FOR EXCAVATION PLAN REFER TO DWG S-02
11. FOR COLUMN & RETAINING WALL DETAILS REFER TO DWG S-04
12. FOR WALL DETAILS REFER TO DWG S-05
13. FOR STAIRS DETAILS REFER TO DWG. S-14 & S-15
14. FOR RAMP DETAILS REFER TO DWG S-17

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC

Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : eteceal@cyberia.net.lb
WEB SITE: WWW. eteceal.com

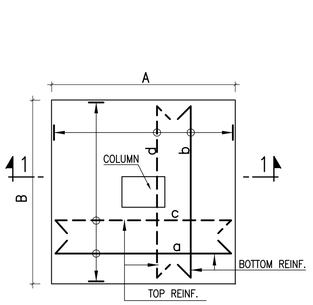
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

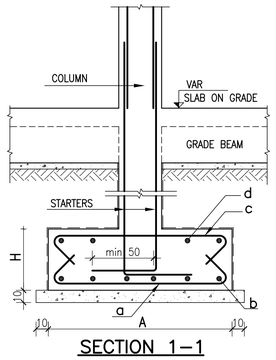
TITLE:

FOUNDATION PLAN

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S03
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100
DRAWING NO.:	S03			REVISION:



TYPICAL FOOTING – PLAN



SECTION 1–1

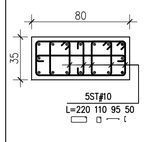
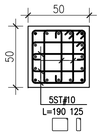
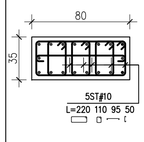
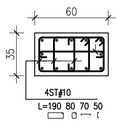
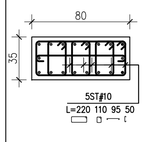
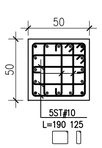
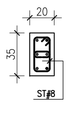
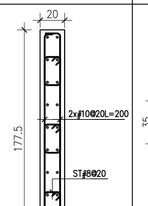
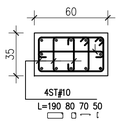
FOOTING SCHEDULE q_{all} =1.75kg/cm²

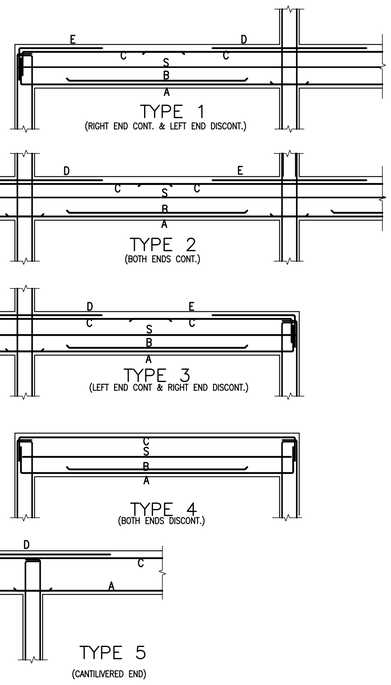
FOOTING	FORMWORK			BOTTOM REINFORCEMENT		TOP REINFORCEMENT	
	A	B	H	a ⟷	b ↕	c ⟷	d ↕
F1	415	460	80	31#16L=450	28#16L=500	4#12L=450	4#12L=500
F2	470	675	80	35#20L=500	25#20L=700	35#12L=500	25#12L=700
F3	440	440	80	30#16L=475	30#16L=475	4#12L=475	4#12L=475
F4	360	360	70	25#16L=400	25#16L=400	4#12L=400	4#12L=400
F5	340	575	60	30#16L=375	19#16L=600	30#12L=375	19#12L=600
F6	320	370	60	26#16L=350	22#16L=400	4#12L=400	4#12L=400
F7	265	310	50	17#16L=300	15#16=350	4#12L=300	4#12L=350
F8	260	540	60	37#16L=300	19#16L=575	37#12L=300	19#12L=575
F9	245	585	60	40#16L=275	18#16L=625	40#12L=275	18#12L=625
F10	440	640	50	33#14L=475	23#14L=675	33#12L=475	23#12L=675
F11	SEE PLAN		50	#14@20	#14@20	#14@20	#14@20
F12	560	895	50	45#14L=600	29#14L=950	45#14L=600	29#14L=950
F13	500	560	50	29#16L=550	26#16L=600	29#14L=550	26#14L=600
F14	425	590	50	31#14L=450	23#14L=625	31#14L=450	23#14L=625
F15	330	350	50	18#16L=350	17#16L=375	18#14L=350	17#14L=375
F16	265	542.5	50	28#16L=300	15#16=575	4#12L=300	4#12L=575

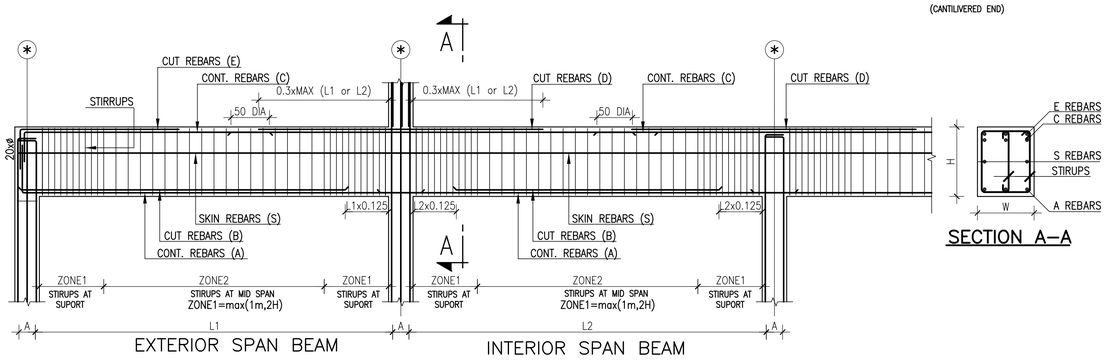
SCHEDULE OF GRADE BEAMS

MARK	CONCRETE SECTION		REINFORCED STEEL BARS, REBARS								SUPPORT END CONTINUITY
			BOTTOM REBARS	TOP REBARS			SKIN REBARS	STIRRUPS		REBARS TYPE	
	WIDTH	HEIGHT	CONTIN.	CUT	CONTIN.	CUT		CONTIN.	CLOSED TYPE		
	W	H	A	B	C	D	E	S	ZONE 1	ZONE 2	
GB1	30	70	3#20	_	3#20	–	–	2x2#12	2#10@150	2#10@200	TYPE 1 RIGHT END CONT.
GB2	30	70	3#20	_	3#20	–	–	2x2#12	2#10@150	2#10@200	TYPE 2 BOTH ENDS CONT.
GB3	30	70	3#20	_	3#20	–	–	2x2#12	2#10@150	2#10@200	TYPE 3 LEFT ENDS CONT.
GB4	30	70	3#20	_	3#20	–	–	2x2#12	2#10@150	2#10@200	TYPE 4 BOTH ENDS DISCONT.
GB5	30	50	3#16	_	3#12	–	–	2x2#12	2#10@150	#10@200	TYPE 4 BOTH ENDS DISCONT.
GB6	30	50	3#16	_	3#16	–	–	2x2#12	2#10@150	#10@200	TYPE 5 CANTELEVERED END

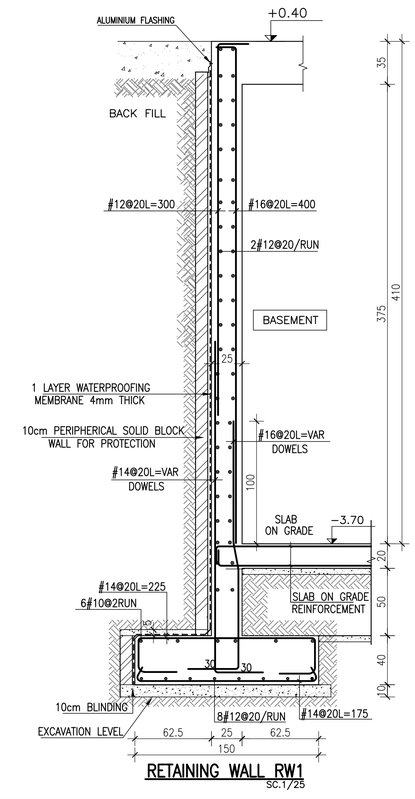
COLUMNS SCHEDULE

	C1	C2	C3	C4	C5/C8	C6/C7	C9	C10	C11
	 5ST#10 L=220 110 95 50	 5ST#10 L=190 125	 5ST#10 L=220 110 95 50	 4ST#10 L=190 80 70 50	 5ST#10 L=220 110 95 50	 5ST#10 L=190 125	 ST#8	 2x#10@20L=200 ST#8@20	 4ST#10 L=190 80 70 50
FOUNDATION	16#20L=VAR	16#20L=VAR	16#16L=VAR	12#16L=VAR	16#16L=VAR	16#16L=VAR	–	16#16L=VAR	–
BASEMENT FLOOR	16#20L=500	16#20L=500	16#16L=500	12#16L=500	16#16L=500	16#16L=500	–	–	–
GROUND FLOOR	16#20L=500	16#20L=500	16#16L=500	12#16L=500	16#16L=500 (C5)	16#16L=500 (C6)	–	16#16L=400	–
1ST FLOOR	16#20L=500	16#20L=500	16#16L=500	12#16L=500	–	–	–		12#16L=150 12#16L=500
ROOF	–	–	–	–		–	6#14L=350	–	–

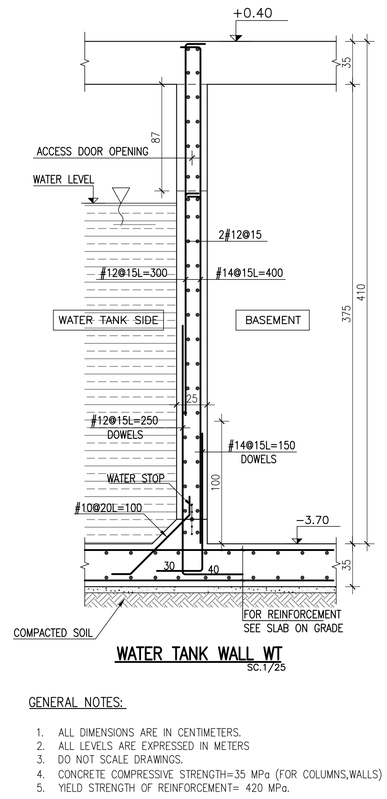




SECTION A–A



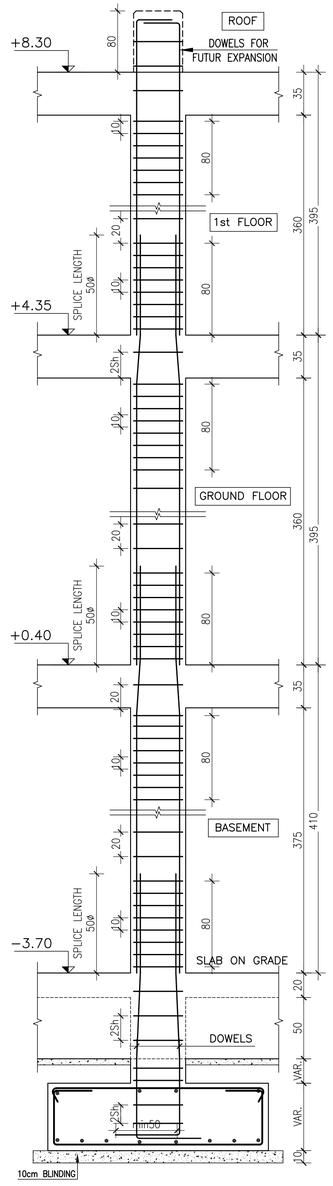
RETAINING WALL RW1
SC.1/25



WATER TANK WALL WT
SC.1/25

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
5. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.



TYPICAL COLUMN DETAIL
NTS.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : eteceal@cyberia.net.lb
WEB SITE: WWW. eteceal.com

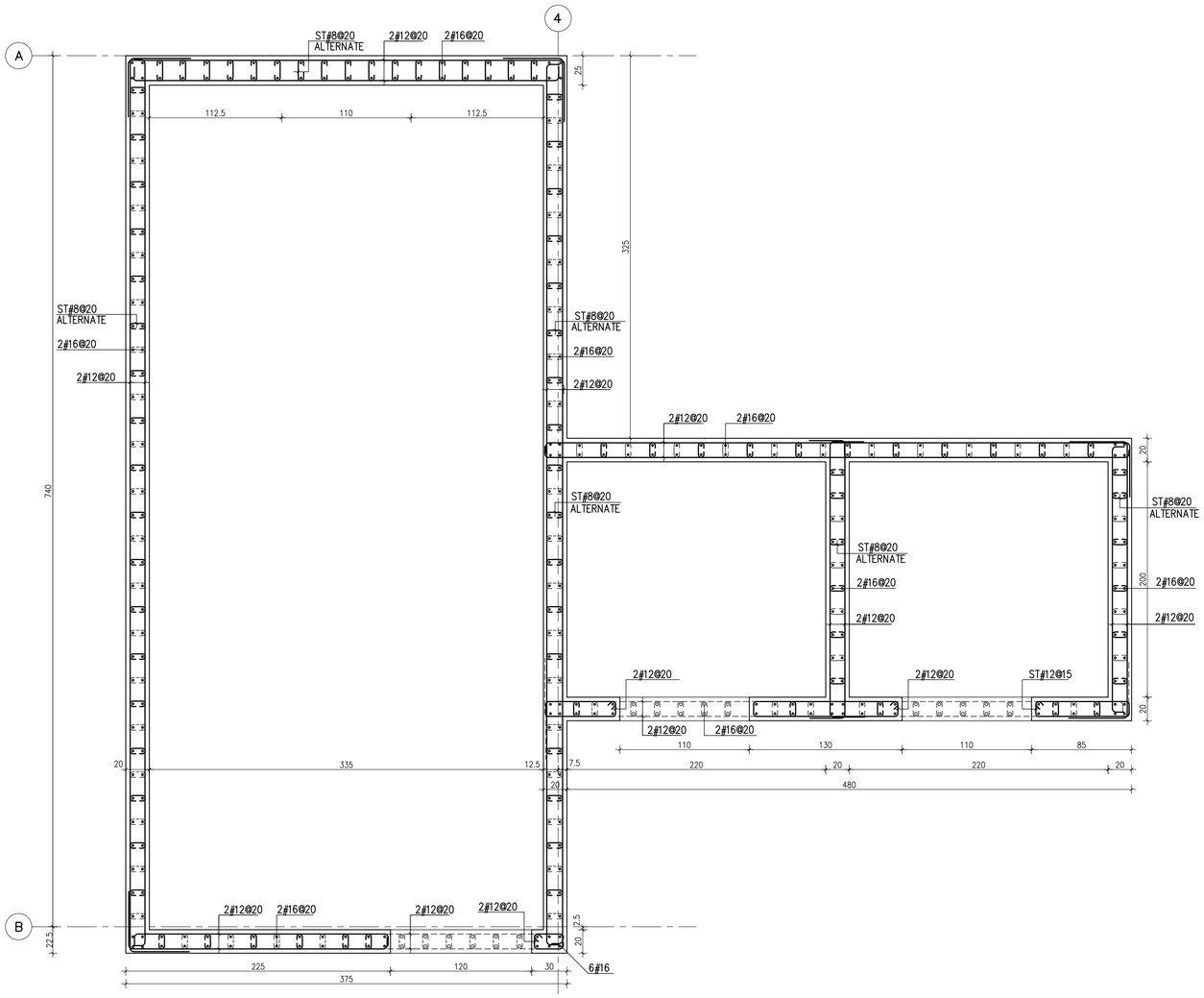
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

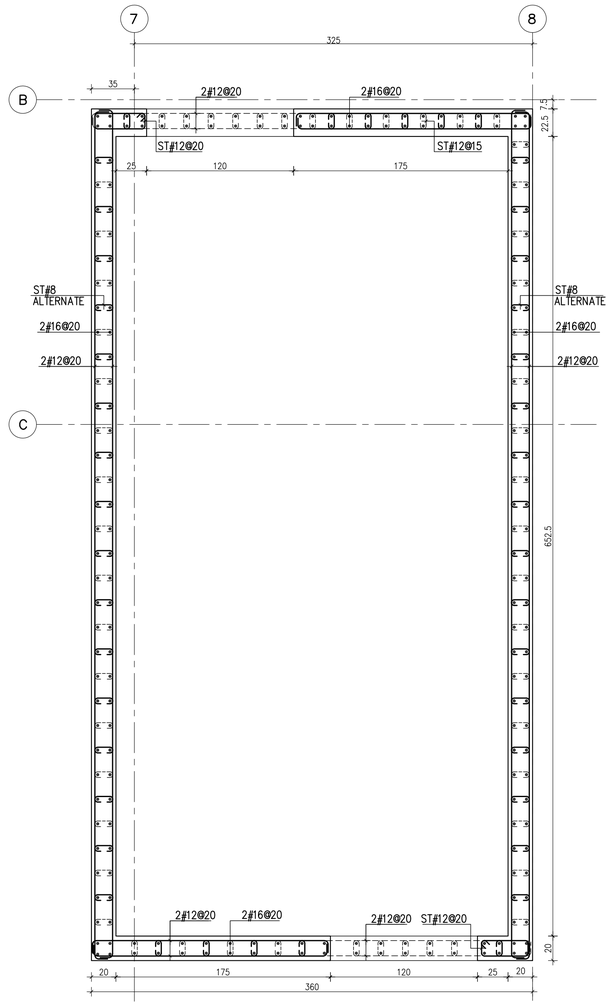
TITLE:

FOUNDATION , GRADE BEAM
COLUMN + WALL DETAILS

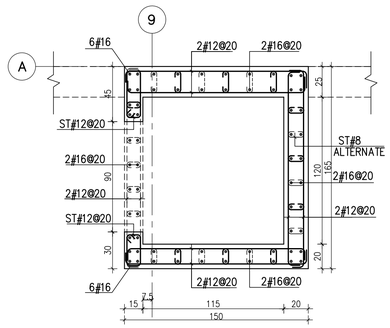
	Name	Date	Signature	
DRAWN BY:	E.A.	JUL 2026		FILE: ASGH–S04
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/25
DRAWING NO.:	S04			REVISION:



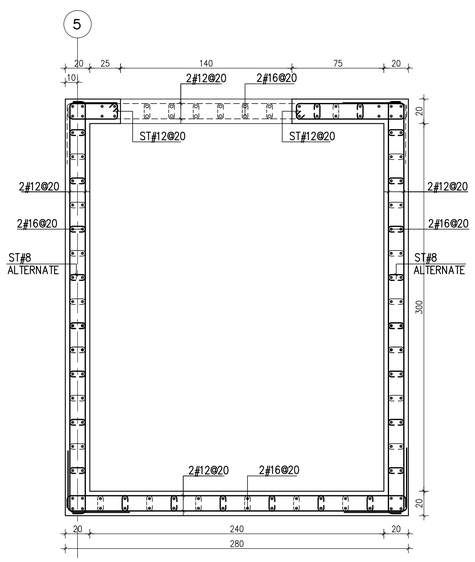
CORE1 DETAIL
SC.1/25



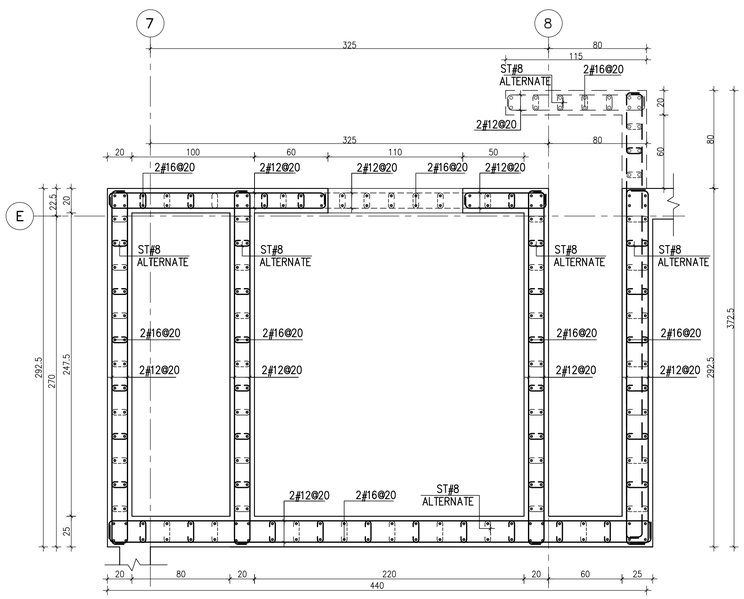
CORE3 DETAIL
SC.1/25



CORE5 DETAIL
SC.1/25



CORE2 DETAIL
SC.1/25



CORE4 DETAIL
SC.1/25

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
5. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-0078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

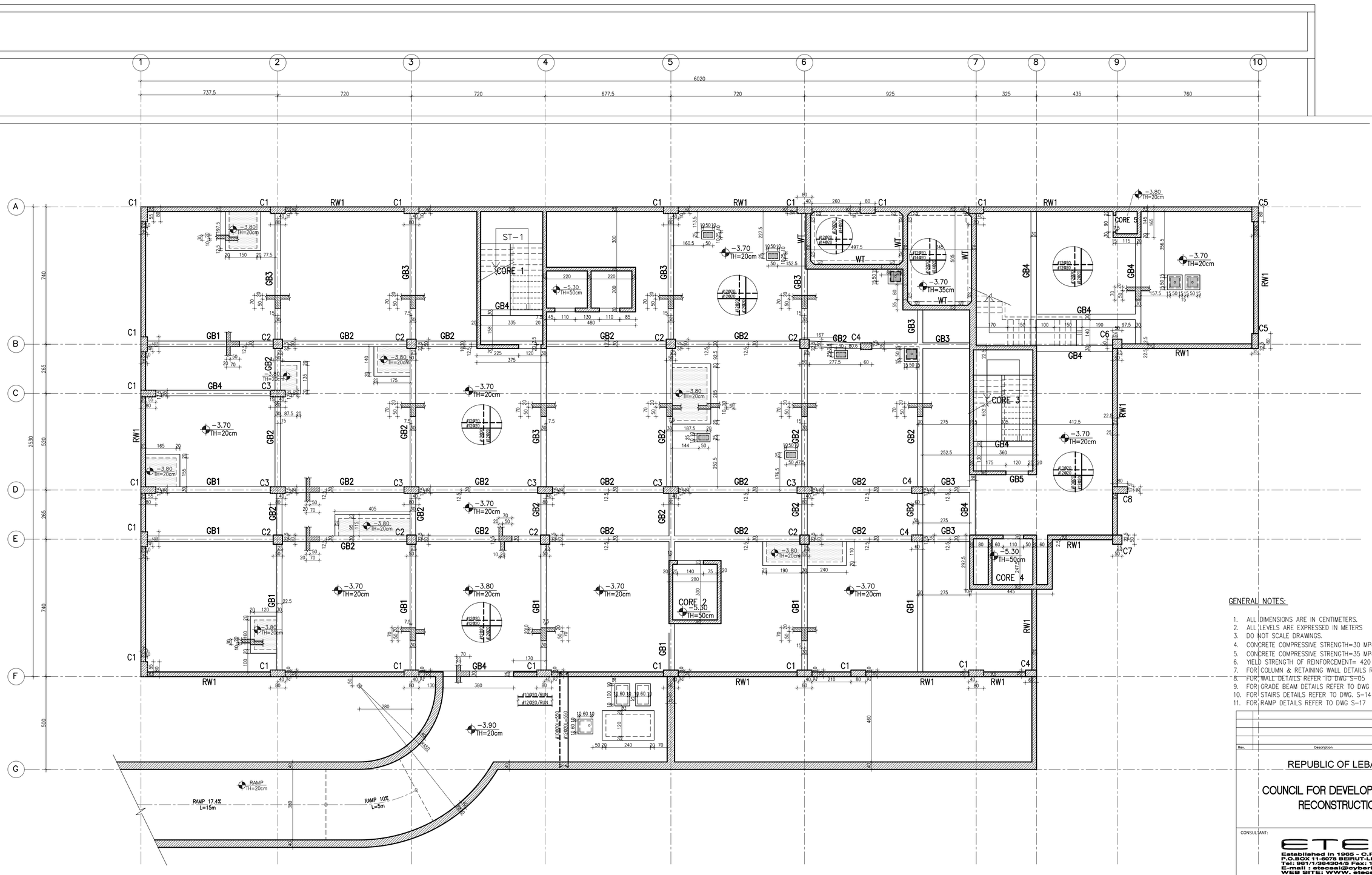
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

CORE WALLS REINFORCEMENT DETAILS

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S05
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/25
DRAWING NO.:	S05			REVISION:



GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.
7. FOR COLUMN & RETAINING WALL DETAILS REFER TO DWG S-04
8. FOR WALL DETAILS REFER TO DWG S-05
9. FOR GRADE BEAM DETAILS REFER TO DWG S-04
10. FOR STAIRS DETAILS REFER TO DWG. S-14 & S-15
11. FOR RAMP DETAILS REFER TO DWG S-17

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-8078 BEIRUT-LEBANON
Tel: 961/1/364306/8 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

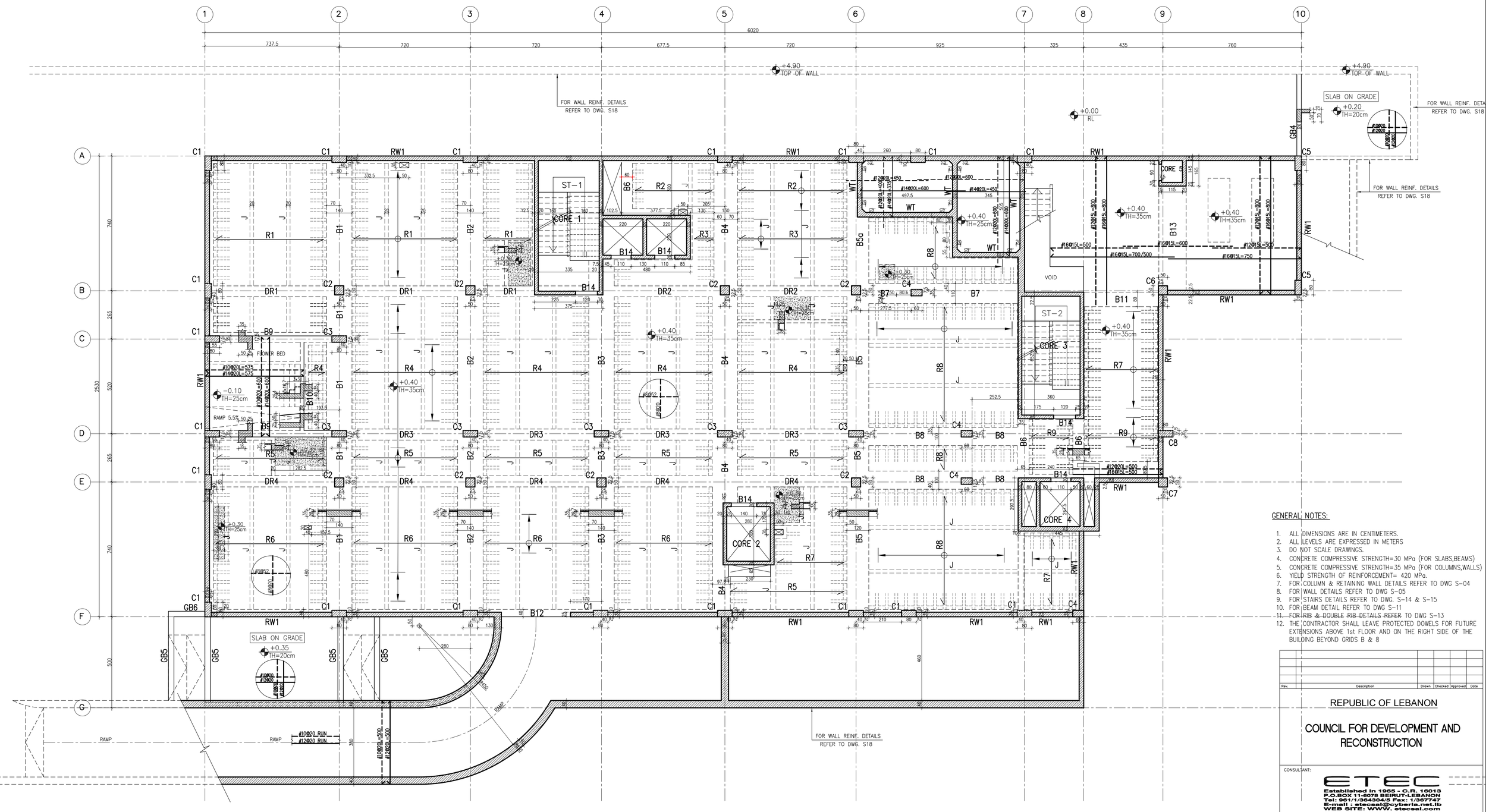
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

SLAB ON GRADE PLAN

	Name	Date	Signature	
DRAWN BY:	E.A.	JUL 2026		FILE: ASGH-S06
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100
DRAWING NO.:	S06			REVISION:



GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.
7. FOR COLUMN & RETAINING WALL DETAILS REFER TO DWG S-04
8. FOR WALL DETAILS REFER TO DWG S-05
9. FOR STAIRS DETAILS REFER TO DWG. S-14 & S-15
10. FOR BEAM DETAIL REFER TO DWG S-11
11. FOR RIB & DOUBLE RIB DETAILS REFER TO DWG S-13
12. THE CONTRACTOR SHALL LEAVE PROTECTED DOWELS FOR FUTURE EXTENSIONS ABOVE 1st FLOOR AND ON THE RIGHT SIDE OF THE BUILDING BEYOND GRIDS B & 8

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-0078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

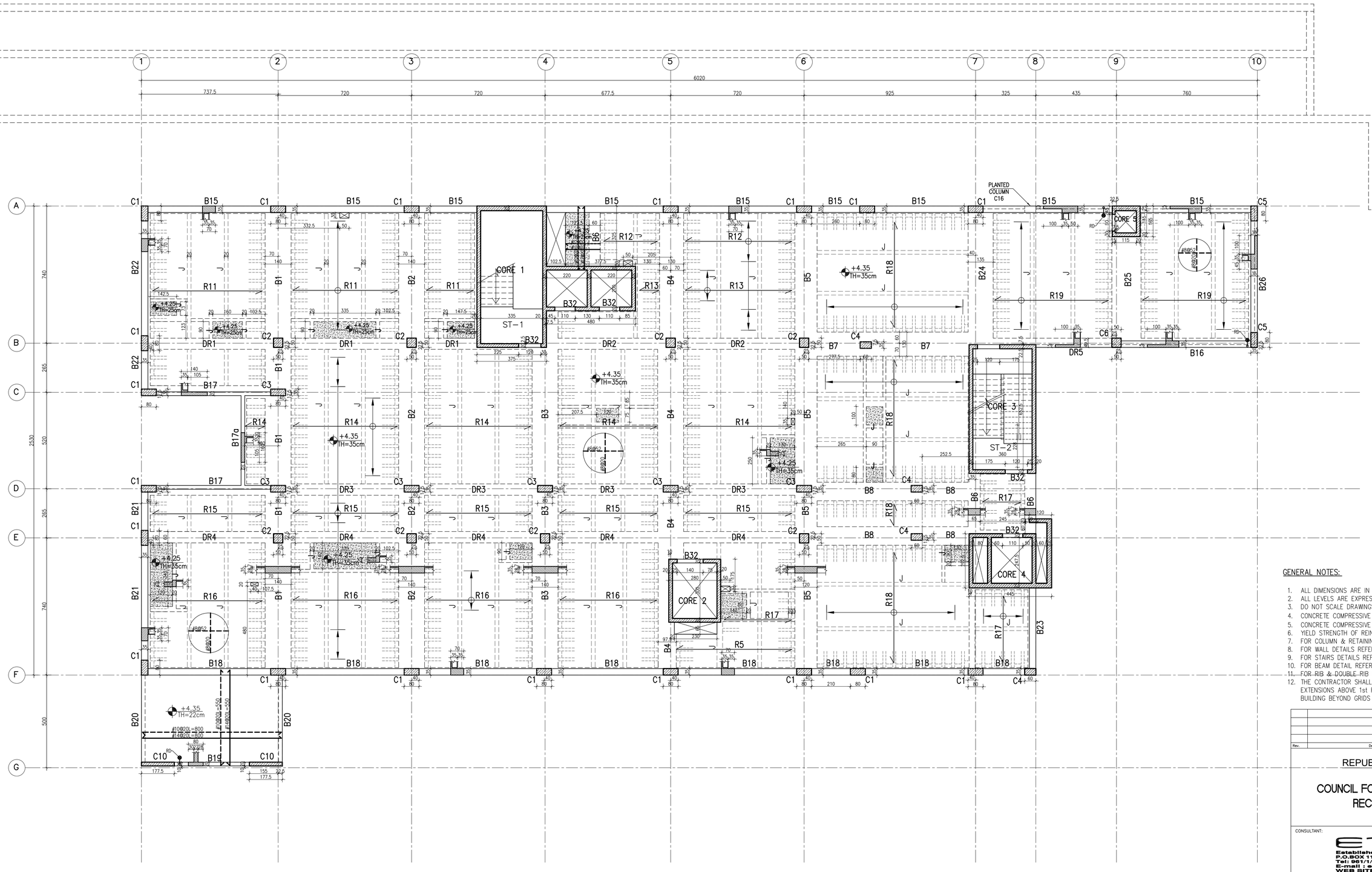
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

BASEMENT UPPER SLAB
FRAMING PLAN

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S07	
CHECKED BY:	A.H.	JUL 2026		SIZE: A1	
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100	
DRAWING NO.:	S07			REVISION:	



GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.
7. FOR COLUMN & RETAINING WALL DETAILS REFER TO DWG S-04
8. FOR WALL DETAILS REFER TO DWG S-05
9. FOR STAIRS DETAILS REFER TO DWG. S-14 & S-15
10. FOR BEAM DETAIL REFER TO DWG S-11
11. FOR RIB & DOUBLE RIB DETAILS REFER TO DWG S-13
12. THE CONTRACTOR SHALL LEAVE PROTECTED DOWELS FOR FUTURE EXTENSIONS ABOVE 1st FLOOR AND ON THE RIGHT SIDE OF THE BUILDING BEYOND GRIDS B & 8

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-0078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

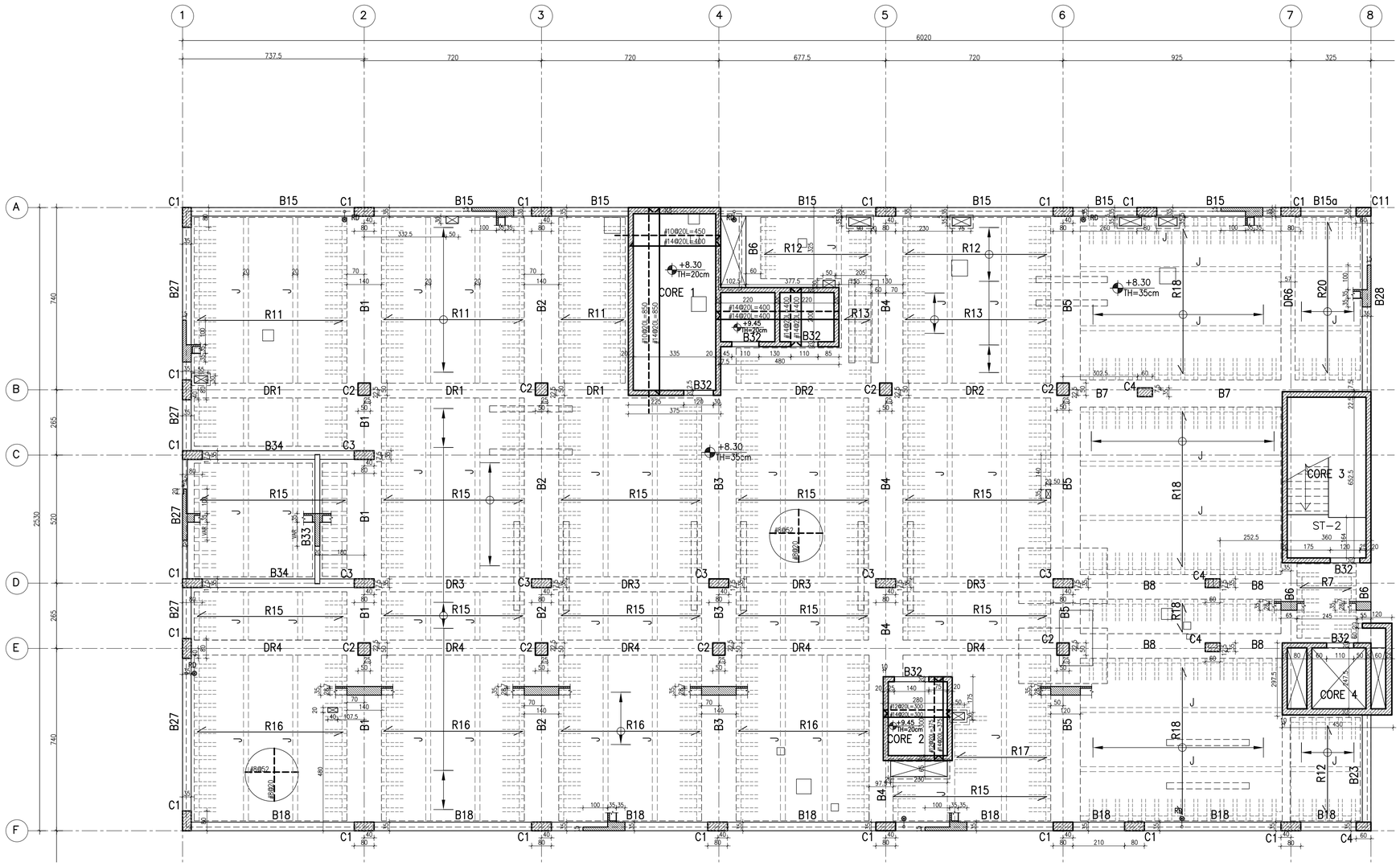
PROJECT:

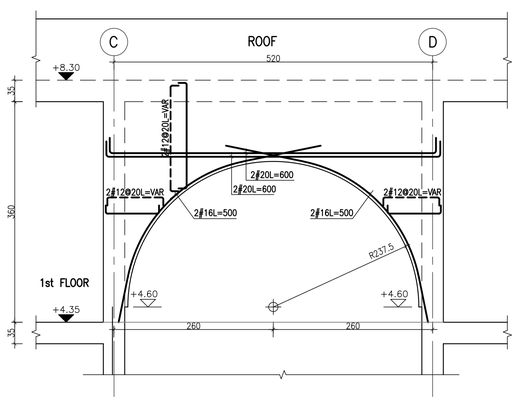
AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

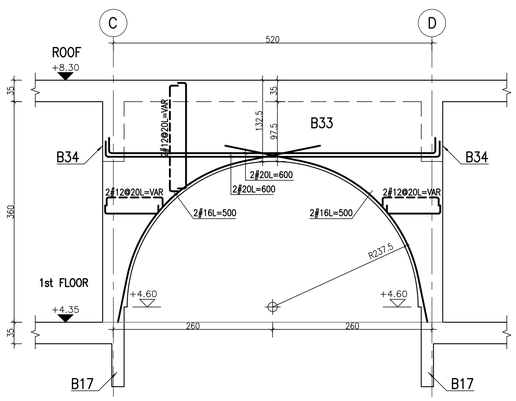
GROUND FLOOR UPPER SLAB FRAMING PLAN

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S08	
CHECKED BY:	A.H.	JUL 2026		SIZE: A1	
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100	
DRAWING NO.:	S08			REVISION:	

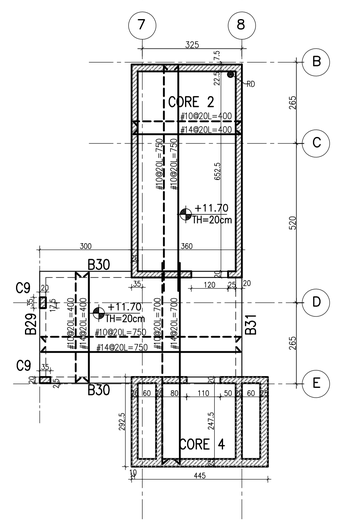




MAIN ENTRANCE PORSHE ELEVATION
SC. 1/50



INTERNAL ARCHE ELEVATION
SC. 1/50



GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.
7. FOR COLUMN & RETAINING WALL DETAILS REFER TO DWG S-04
8. FOR WALL DETAILS REFER TO DWG S-05
9. FOR STAIRS DETAILS REFER TO DWG. S-14 & S-15
10. FOR BEAM DETAIL REFER TO DWG S-11
11. FOR RIB & DOUBLE RIB DETAILS REFER TO DWG S-13
12. THE CONTRACTOR SHALL LEAVE PROTECTED DOWELS FOR FUTURE EXTENSIONS ABOVE 1st FLOOR AND ON THE RIGHT SIDE OF THE BUILDING BEYOND GRID 8

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5079 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

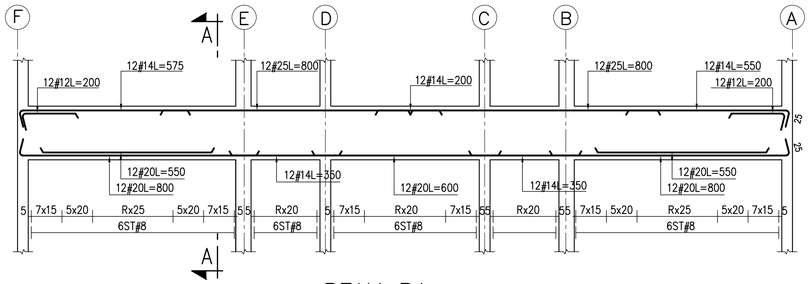
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

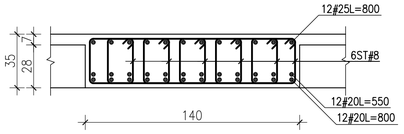
TITLE:

1st FLOOR UPPER SLAB FRAMING PLAN

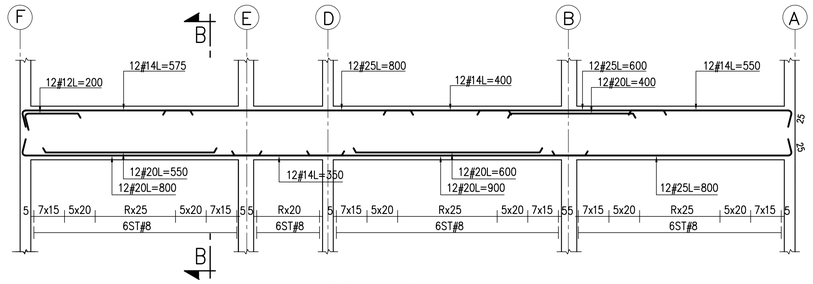
DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S09
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100
DRAWING NO.:	S09			REVISION:



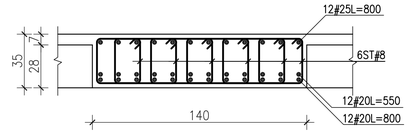
BEAM B1
SC. H:1/100
V:1/20



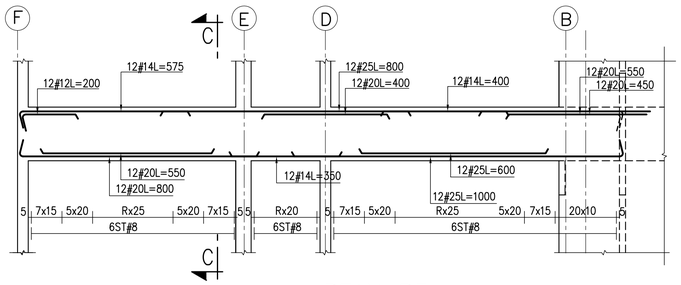
SECTION A–A
SC. 1/20



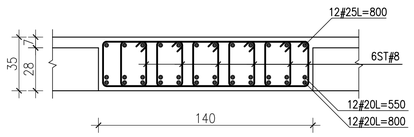
BEAM B2
SC. H:1/100
V:1/20



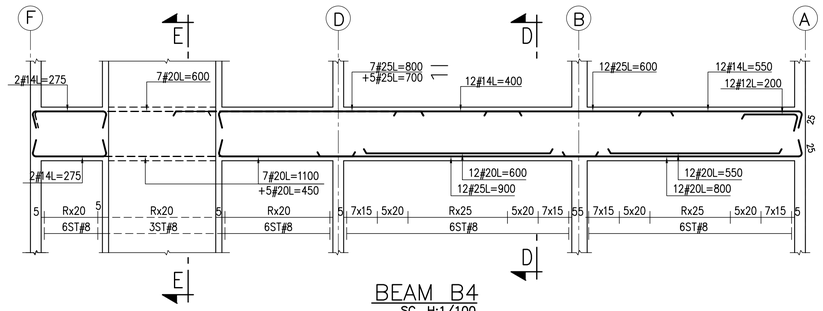
SECTION B–B
SC. 1/20



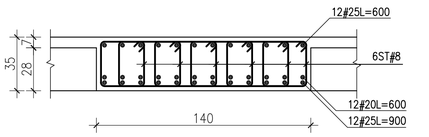
BEAM B3
SC. H:1/100
V:1/20



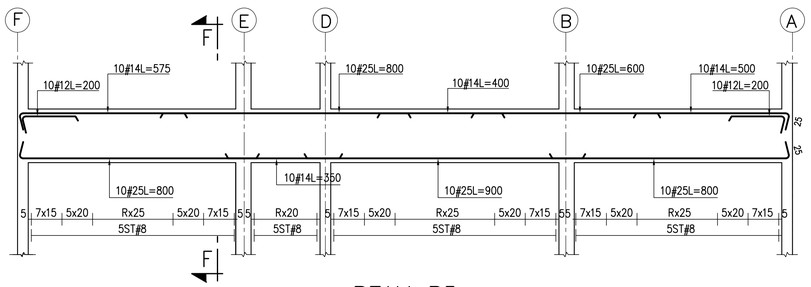
SECTION C–C
SC. 1/20



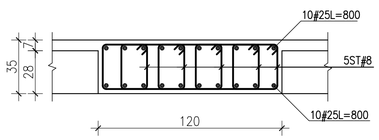
BEAM B4
SC. H:1/100
V:1/20



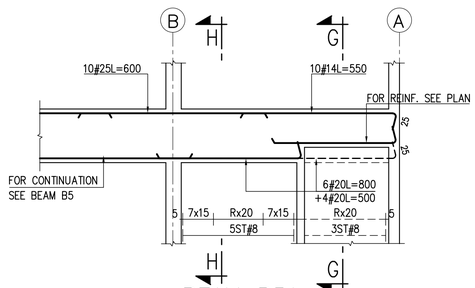
SECTION D–D
SC. 1/20



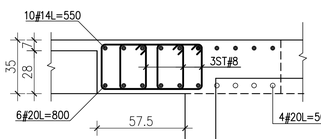
BEAM B5
SC. H:1/100
V:1/20



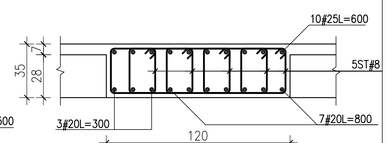
SECTION F–F
SC. 1/20



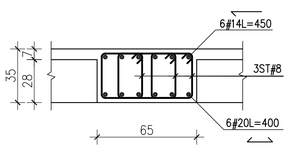
BEAM B5A
SC. H:1/100
V:1/20



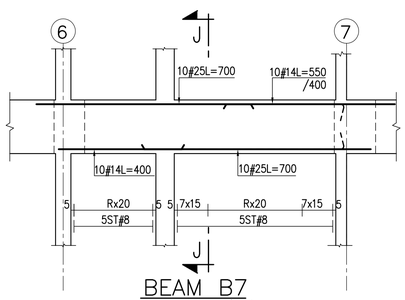
SECTION G–G
SC. 1/20



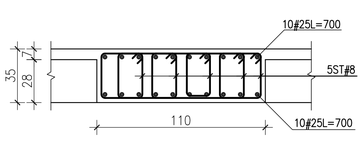
SECTION H–H
SC. 1/20



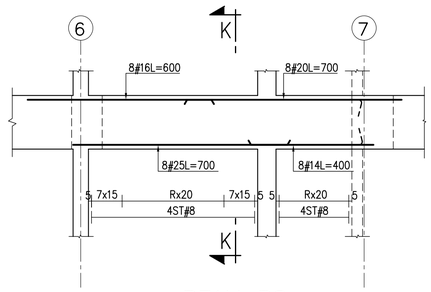
SECTION BEAM B6
SC. 1/20



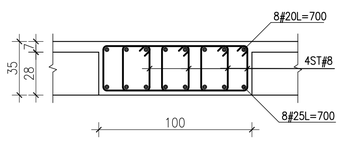
BEAM B7
SC. H:1/100
V:1/20



SECTION J–J
SC. 1/20



BEAM B8
SC. H:1/100
V:1/20



SECTION K–K
SC. 1/20

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

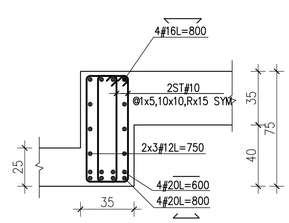
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

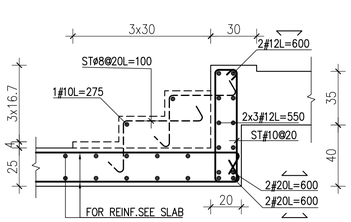
TITLE:

BASEMENT UPPER SLAB
BEAM DETAILS B1 TO B14

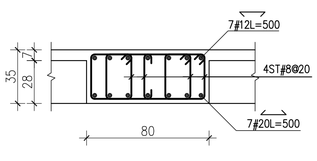
DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH–S10
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100 1/20
DRAWING NO.:	S10			REVISION:



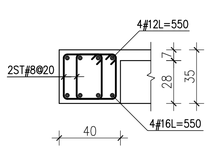
SECTION BEAM B9
SC. 1/20



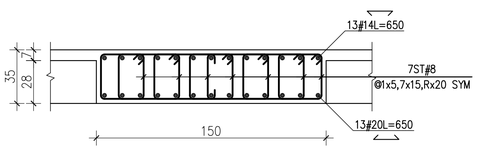
SECTION BEAM B10
SC. 1/20



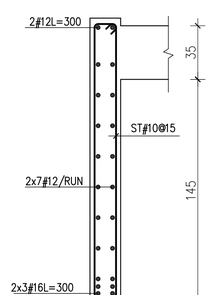
SECTION BEAM B11
SC. 1/20



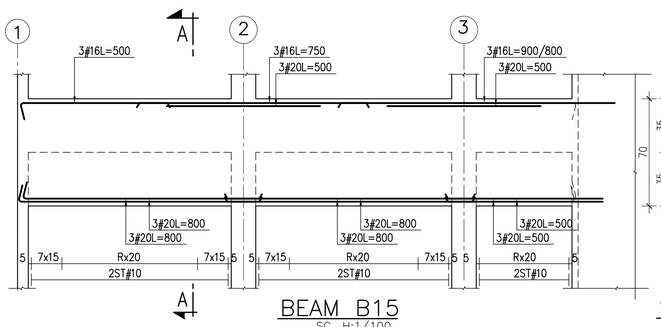
SECTION BEAM B12
SC. 1/20



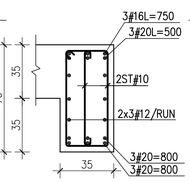
SECTION BEAM B13
SC. 1/20



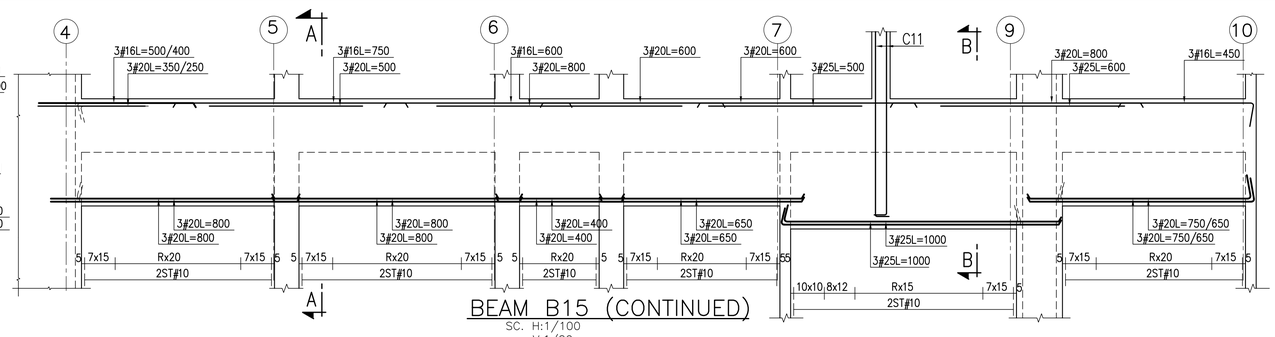
SECTION BEAM B14
SC. 1/20



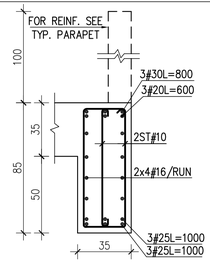
BEAM B15
SC. H:1/100
V:1/20



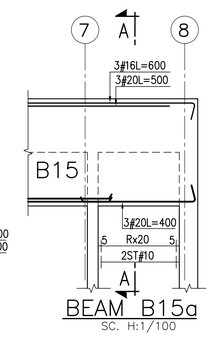
SECTION A–A
SC. 1/20



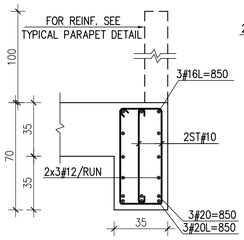
BEAM B15 (CONTINUED)
SC. H:1/100
V:1/20



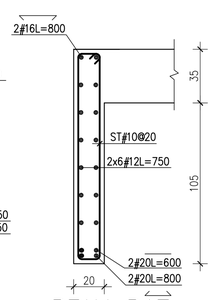
SECTION B–B
SC. 1/20



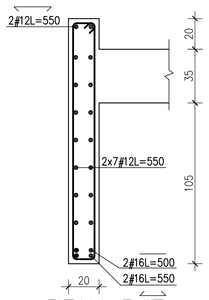
BEAM B15a
SC. H:1/100



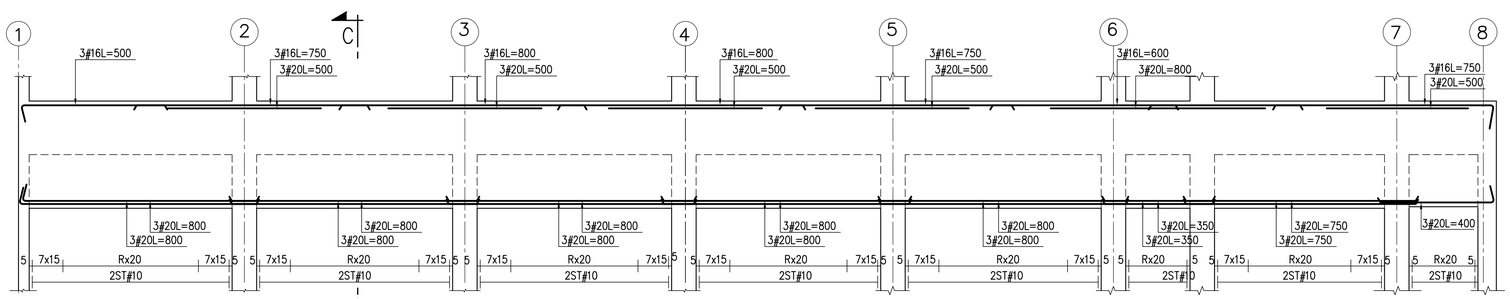
BEAM B16
SC. 1/20



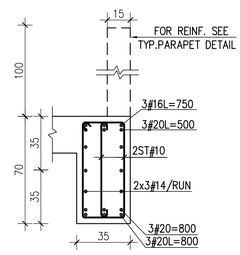
BEAM B17
SC. 1/20



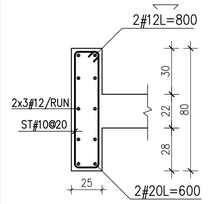
BEAM B17a
SC. 1/20



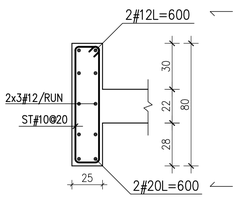
BEAM B18
SC. H:1/100
V:1/20



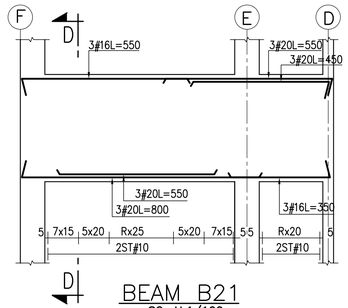
SECTION C–C
SC. 1/20



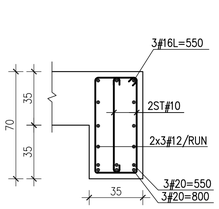
BEAM B19
SC. 1/20



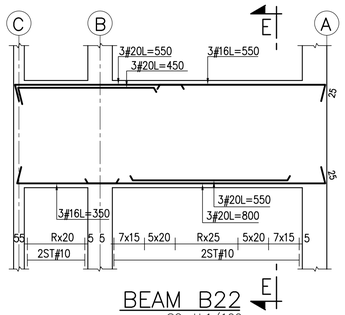
BEAM B20
SC. 1/20



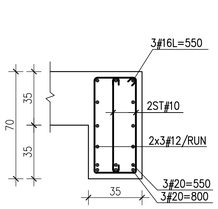
BEAM B21
SC. H:1/100
V:1/20



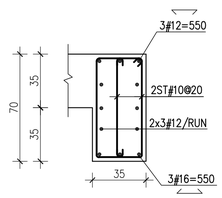
SECTION D–D
SC. 1/20



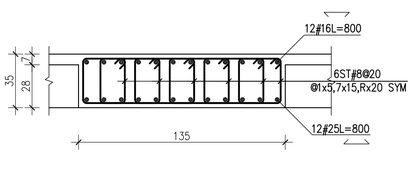
BEAM B22
SC. H:1/100
V:1/20



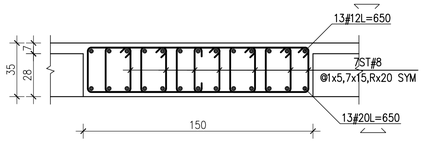
SECTION E–E
SC. 1/20



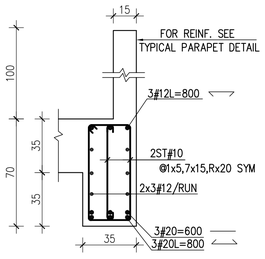
BEAM B23
SC. 1/20



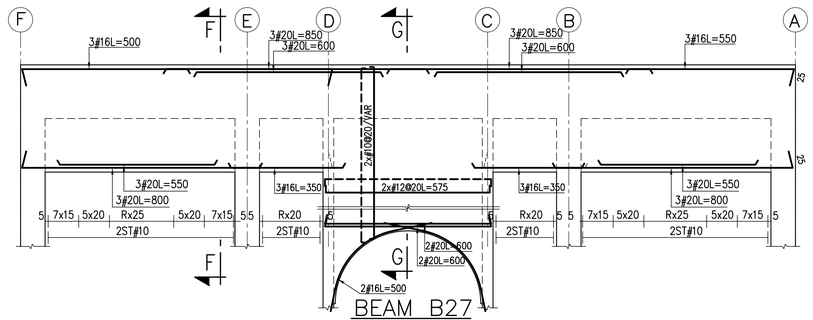
BEAM B24
SC. 1/20



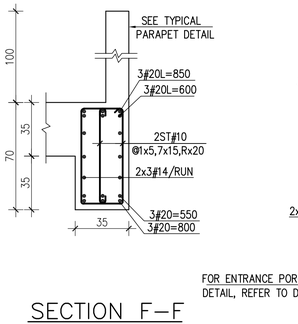
BEAM B25
SC. 1/20



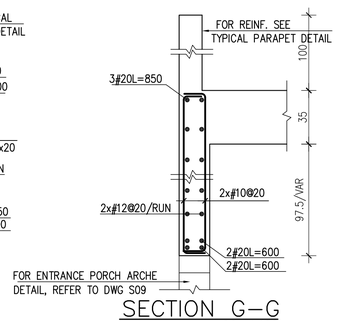
BEAM B26
SC. 1/20



BEAM B27
SC. H:1/100
V:1/20



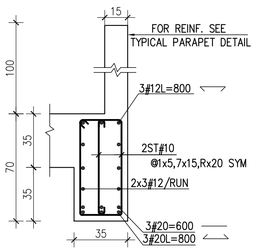
SECTION F–F
SC. 1/20



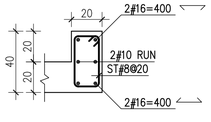
SECTION G–G
SC. 1/20

GENERAL NOTES:

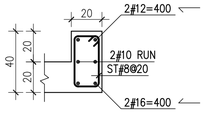
1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.



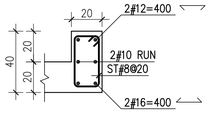
BEAM B28
SC. 1/20



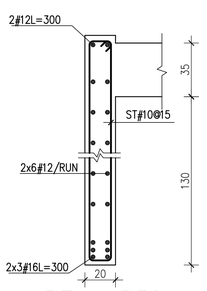
BEAM B29
SC. 1/20



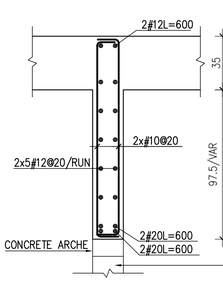
BEAM B30
SC. 1/20



BEAM B31
SC. 1/20

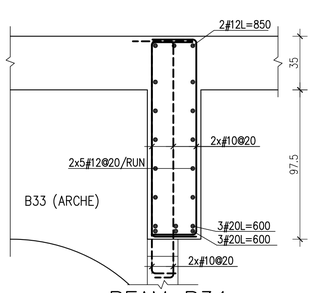


BEAM B32
SC. 1/20

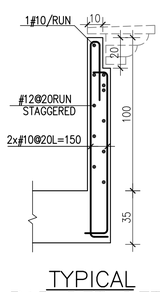


NOTE:
FOR ENTRANCE PORCH ARCHE
FORMWORK, REFER TO DWG S09

BEAM B33
SC. 1/20



BEAM B34
SC. 1/20



TYPICAL PARAPET DETAIL
SC. 1/20

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

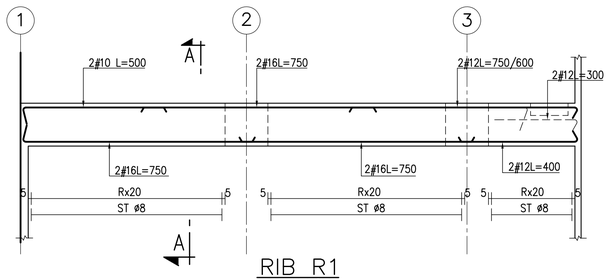
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

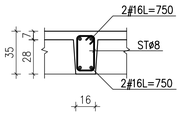
TITLE:

GROUND & 1st FLOORS UPPER SLAB
BEAM DETAILS B15 TO B34

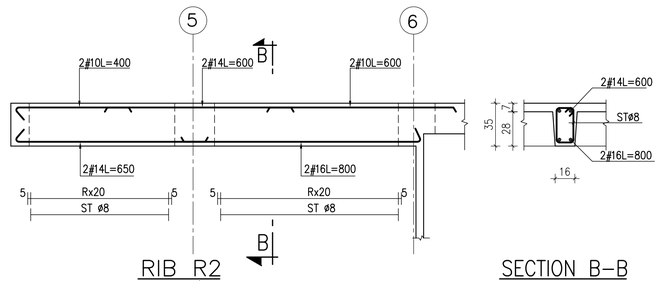
	Name	Date	Signature	
DRAWN BY:	E.A.	JUL 2026		FILE: ASGH-S11
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100 1/20
DRAWING NO.:	S11			REVISION:



RIB R1
SC. H:1/100
V:1/20

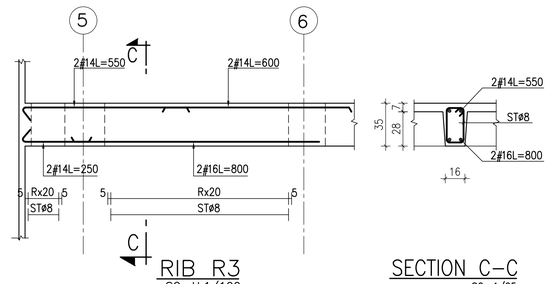


SECTION A–A
SC. 1/25



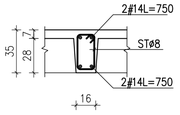
RIB R2
SC. H:1/100
V:1/20

SECTION B–B
SC. 1/25

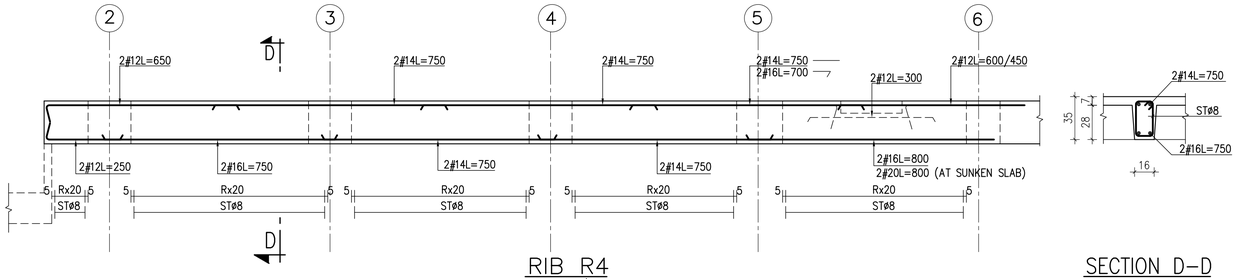


RIB R3
SC. H:1/100
V:1/20

SECTION C–C
SC. 1/25

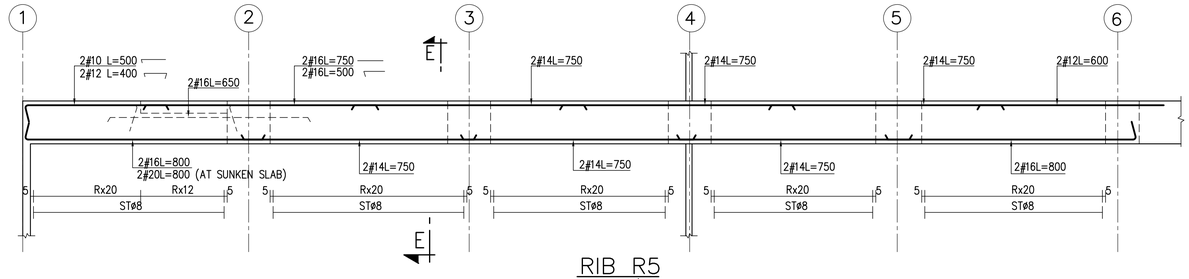


SECTION E–E
SC. 1/25

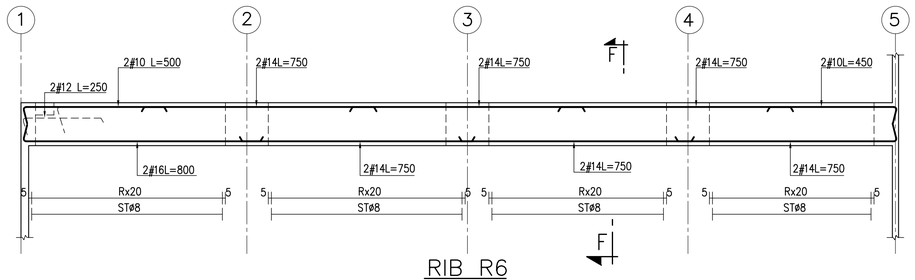


RIB R4
SC. H:1/100
V:1/20

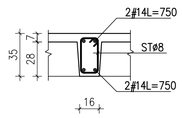
SECTION D–D
SC. 1/25



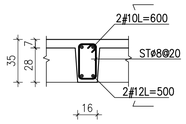
RIB R5
SC. H:1/100
V:1/20



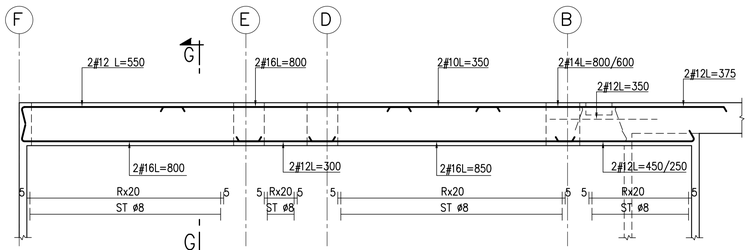
RIB R6
SC. H:1/100
V:1/20



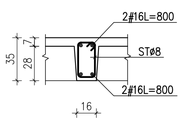
SECTION F–F
SC. 1/25



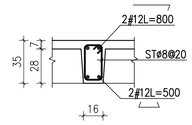
RIB R7
V:1/20



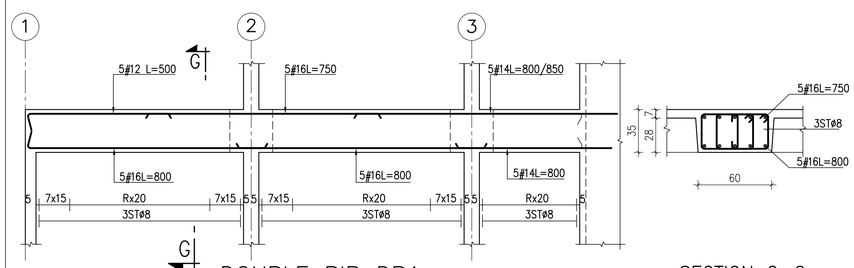
RIB R8
SC. H:1/100
V:1/20



SECTION G–G
SC. 1/25

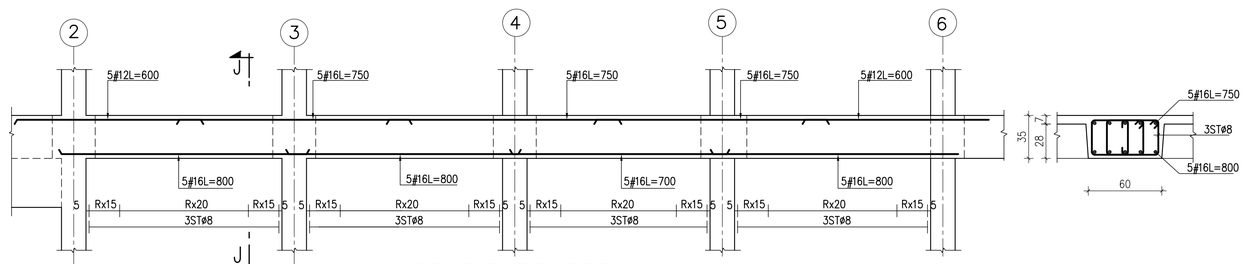


RIB R9
V:1/20



DOUBLE RIB DR1
SC. H:1/100
V:1/20

SECTION G–G
SC. 1/25

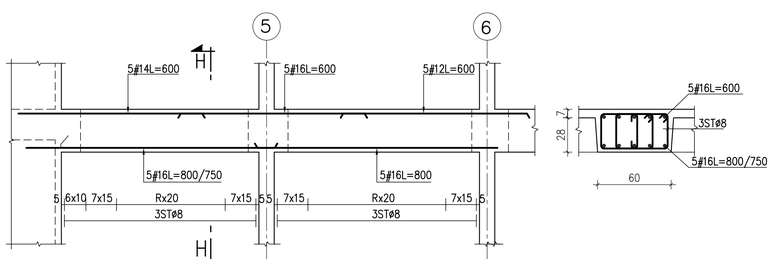


DOUBLE RIB DR3
SC. H:1/100
V:1/20

SECTION J–J
SC. 1/25

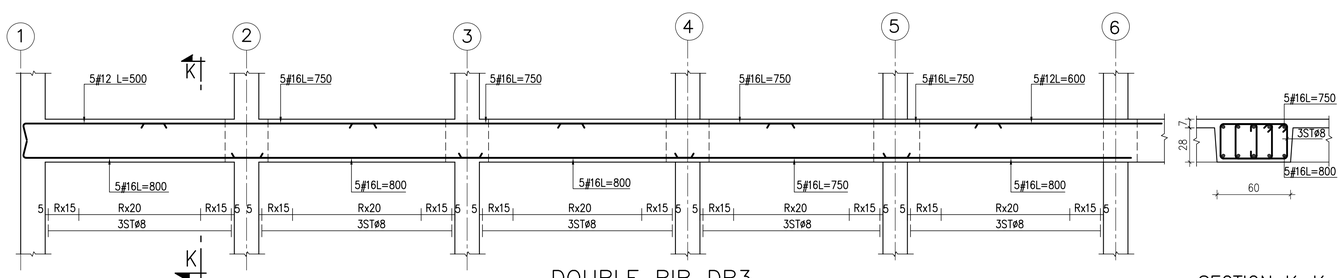
GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.



DOUBLE RIB DR2
SC. H:1/100
V:1/20

SECTION H–H
SC. 1/25



DOUBLE RIB DR3
SC. H:1/100
V:1/20

SECTION K–K
SC. 1/25

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-6079 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

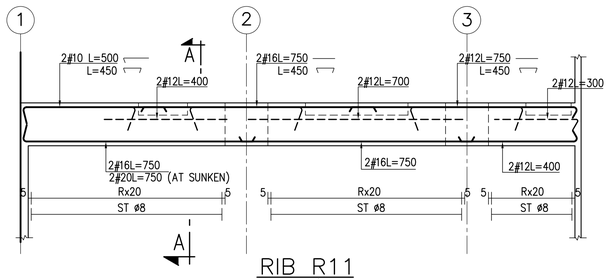
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

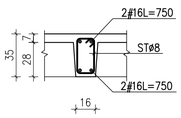
TITLE:

BASEMENT UPPER SLAB
RIBS & DOUBLE RIBS DETAILS

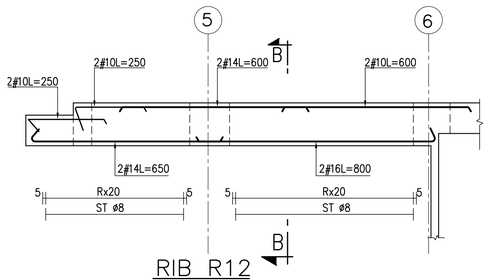
DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S12
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100 1/20
DRAWING NO.:	S12			REVISION:



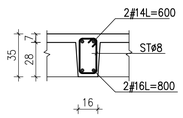
RIB R11
SC. H:1/100
V:1/20



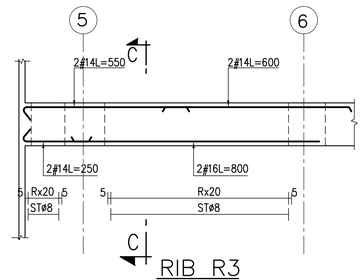
SECTION A–A
SC. 1/25



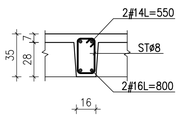
RIB R12
SC. H:1/100
V:1/20



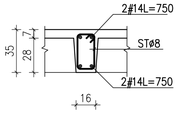
SECTION B–B
SC. 1/25



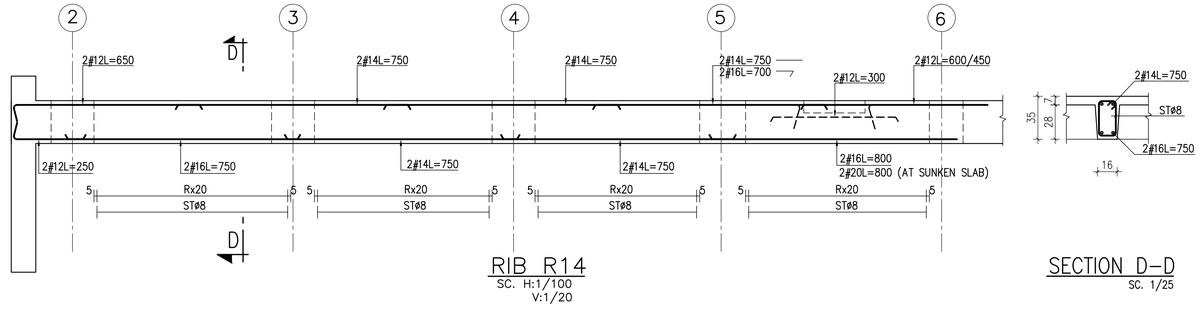
RIB R3
SC. H:1/100
V:1/20



SECTION C–C
SC. 1/25

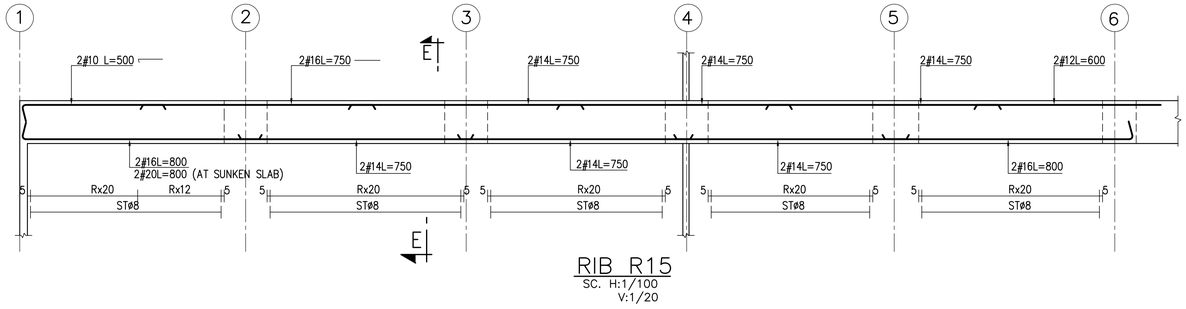


SECTION E–E
SC. 1/25

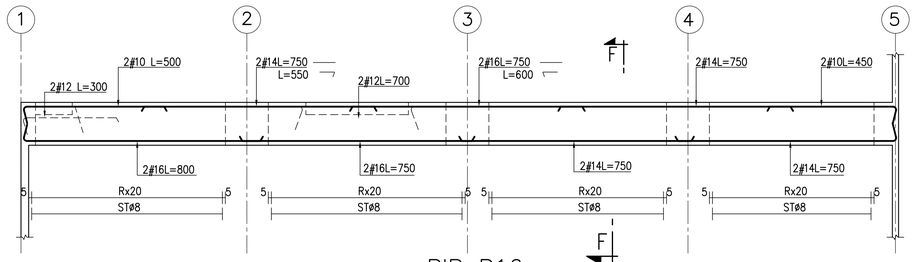


RIB R14
SC. H:1/100
V:1/20

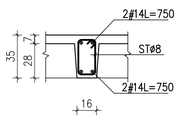
SECTION D–D
SC. 1/25



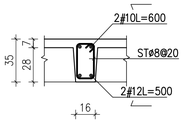
RIB R15
SC. H:1/100
V:1/20



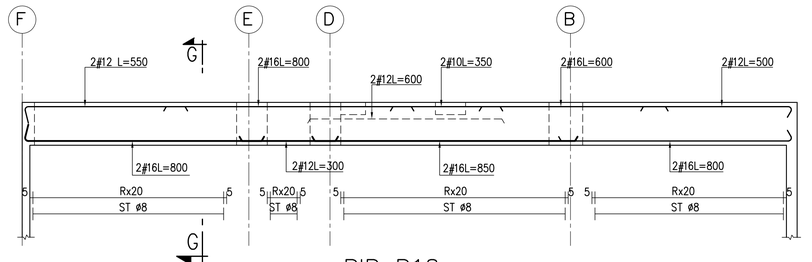
RIB R16
SC. H:1/100
V:1/20



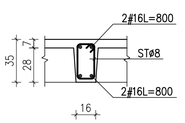
SECTION F–F
SC. 1/25



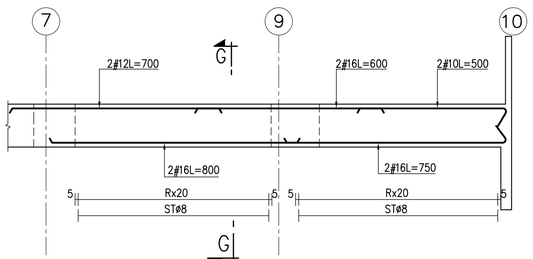
RIB R17
V:1/20



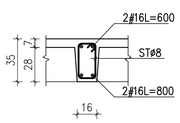
RIB R18
SC. H:1/100
V:1/20



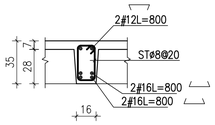
SECTION G–G
SC. 1/25



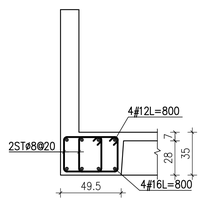
RIB R19
SC. H:1/100
V:1/20



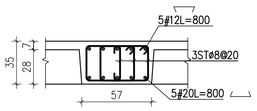
SECTION G–G
SC. 1/25



RIB R20
V:1/20



DOUBLE RIB DR5
SC. H:1/100
V:1/20



DOUBLE RIB DR6
SC. H:1/100
V:1/20

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-6079 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

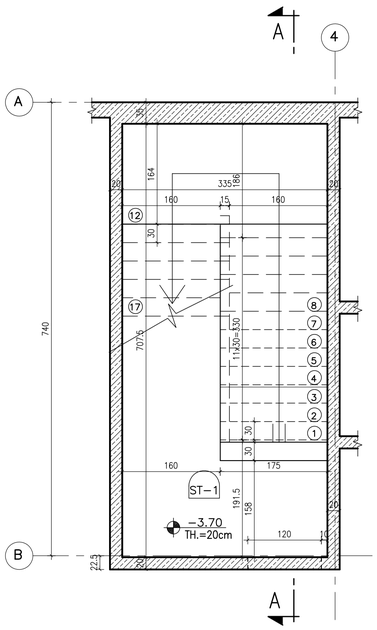
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

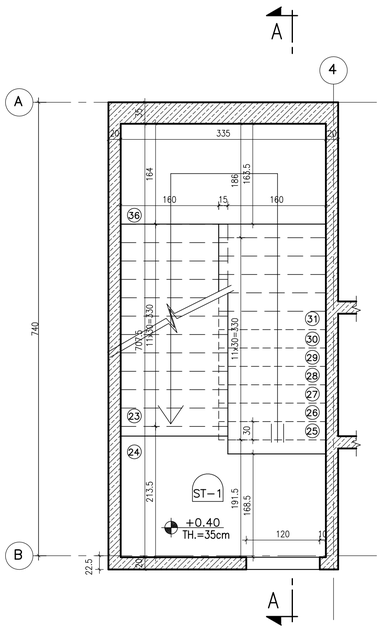
TITLE:

GROUND & 1st UPPER SLAB
RIBS & DOUBLE RIBS DETAILS

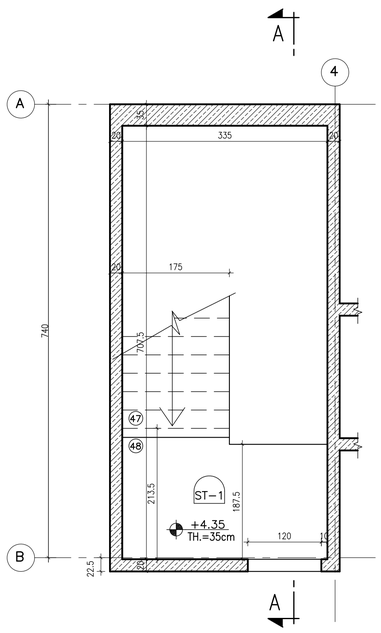
DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S12
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/100 1/25
DRAWING NO.:	S13			REVISION:



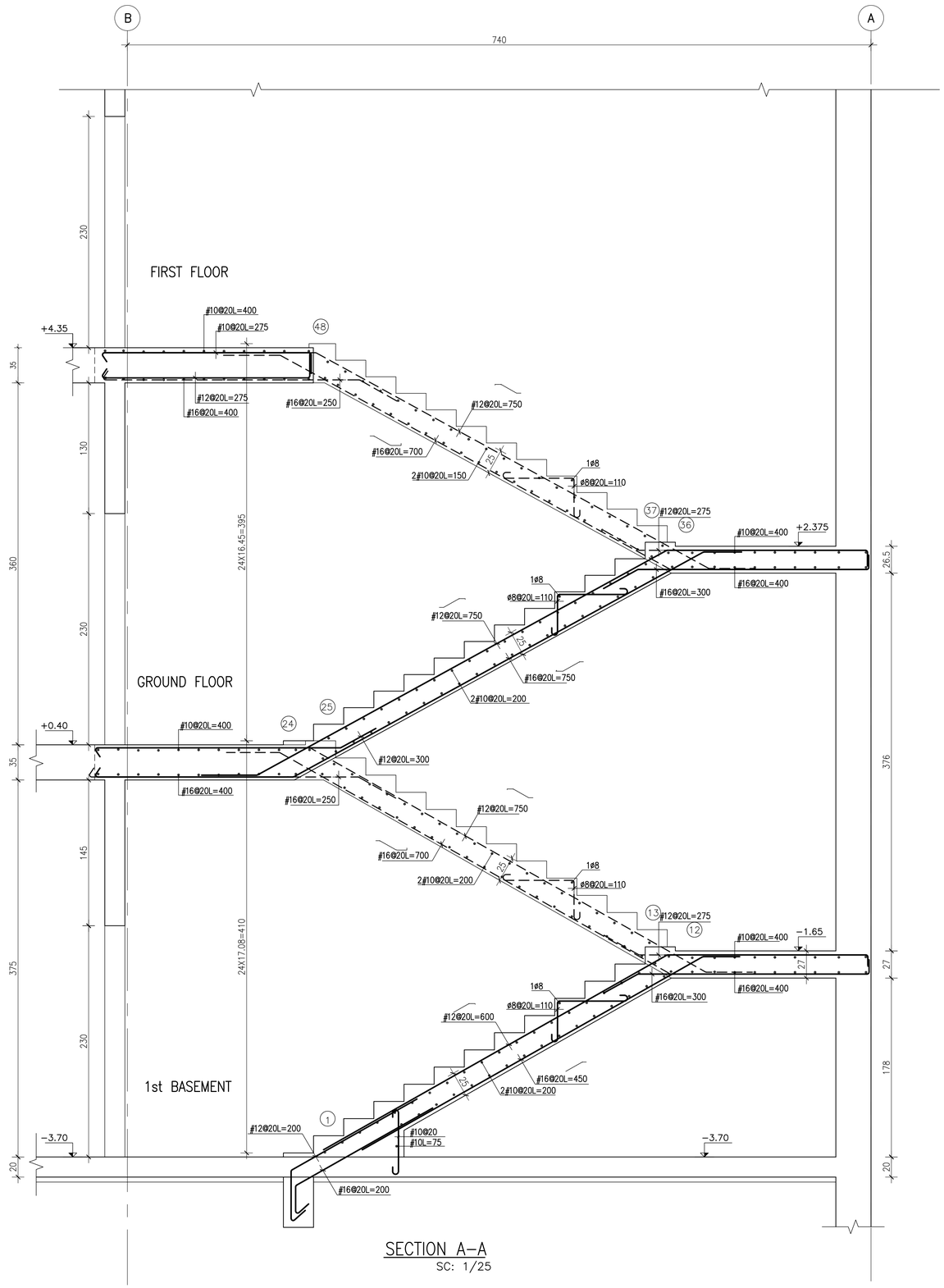
BASEMENT PLAN
SC: 1/50



GROUND FLOOR PLAN
SC: 1/50



FIRST FLOOR PLAN
SC: 1/50



SECTION A–A
SC: 1/25

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW.etecsal.com

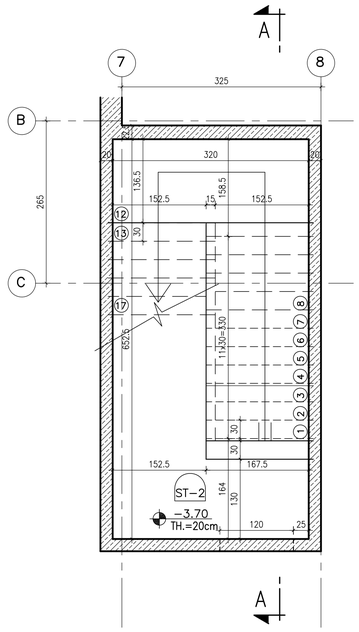
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

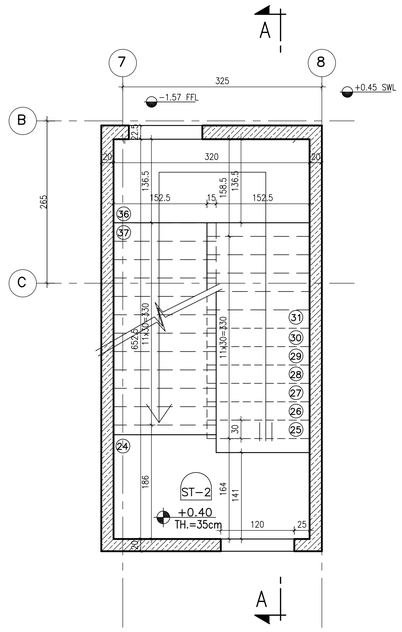
TITLE:

STAIRS ST1
PLANS AND SECTION

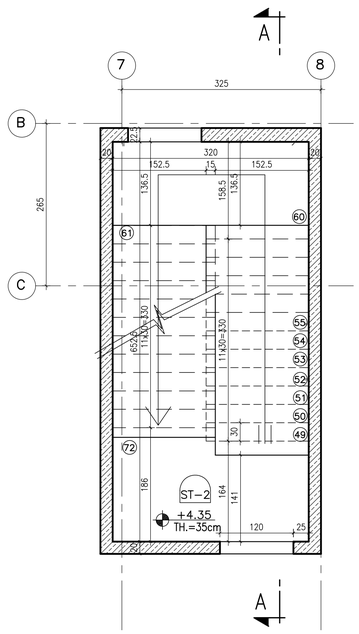
DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S01	
CHECKED BY:	A.H.	JUL 2026		SIZE: A1	
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/50 1/20	
DRAWING NO.:	S14			REVISION:	



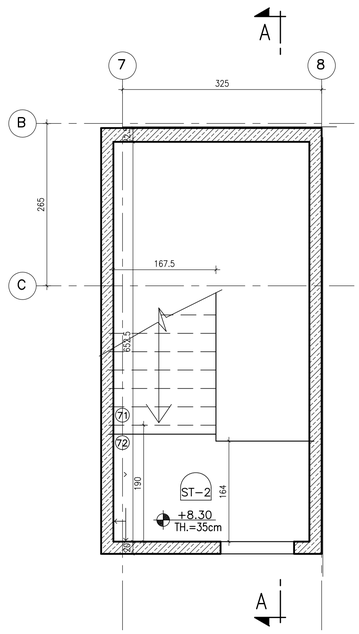
BASEMENT PLAN
SC: 1/50



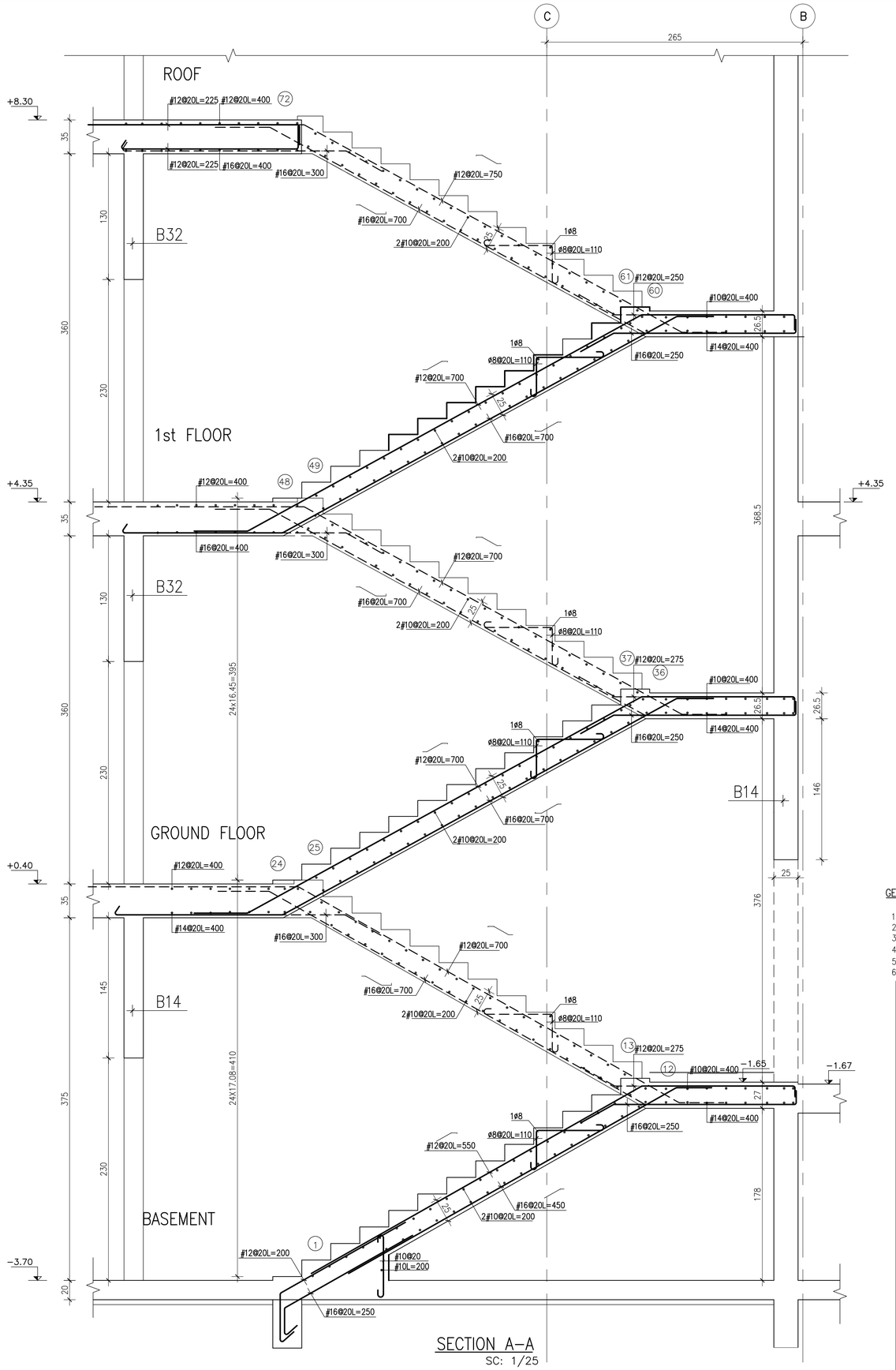
GROUND FLOOR PLAN
SC: 1/50



FIRST FLOOR PLAN
SC: 1/50



ROOF PLAN
SC: 1/50



SECTION A-A
SC: 1/25

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC

Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

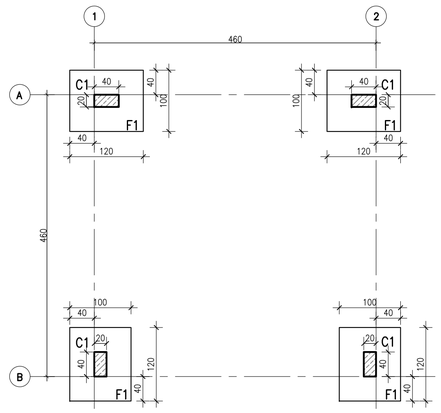
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

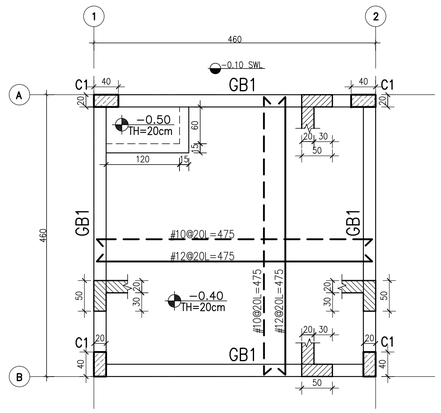
TITLE:

STAIRS ST2
PLANS AND SECTION

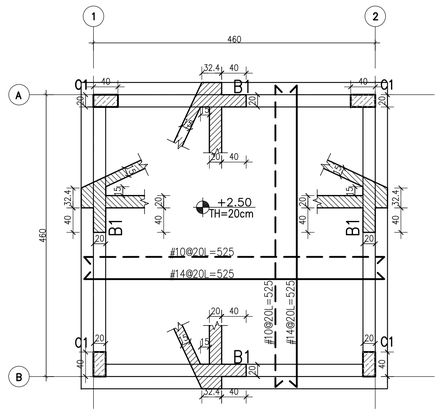
DRAWN BY:	Name: E.A.	Date: JUL 2026	Signature	FILE: ASGH-S01
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/50 1/20
DRAWING NO.:	S15			REVISION:



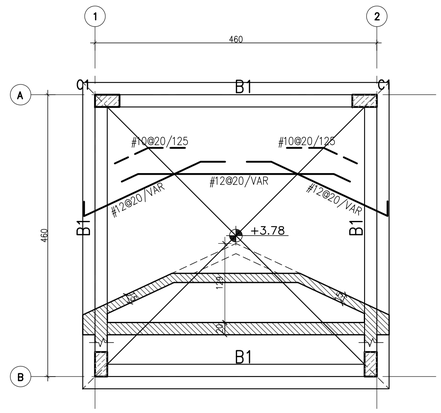
GUARD HOUSE
FOUNDATION PLAN
SC: 1/50



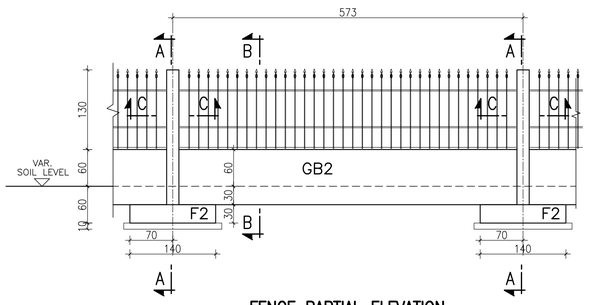
GUARD HOUSE
SLAB ON GRADE PLAN
SC: 1/50



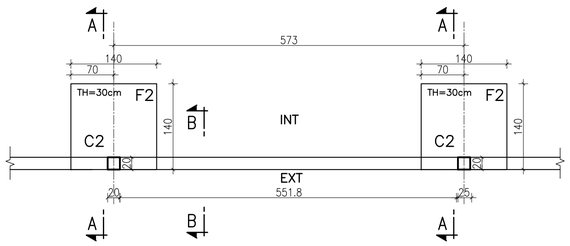
GUARD HOUSE
GROUND UPPER SLAB PLAN
SC: 1/50



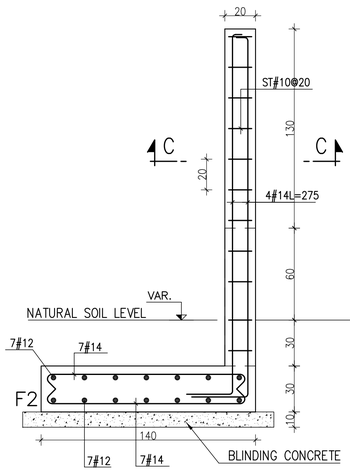
GUARD HOUSE
ROOF PLAN



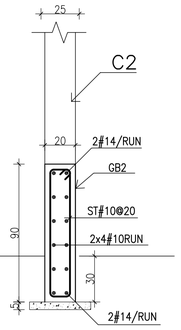
FENCE PARTIAL ELEVATION
SC: 1/50



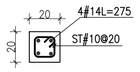
FENCE FOUNDATION PLAN
SC: 1/50



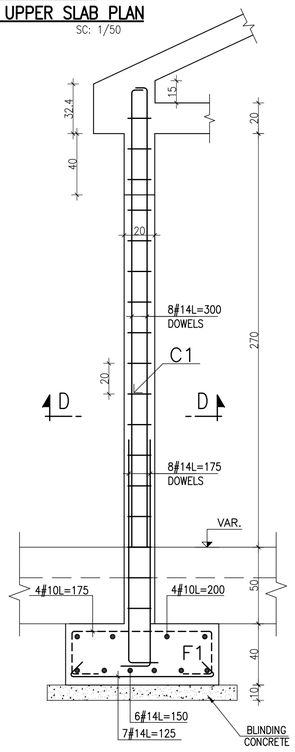
SECTION A−A
SC.1/20



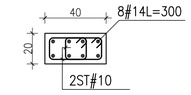
SECTION B−B
SC. 1/20



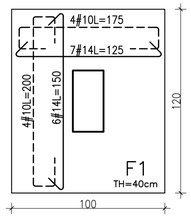
COLUMN C2
SECTION C−C
SC. 1/20



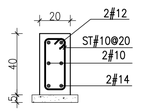
COLUMN C1 ELEVATION
SC.1/20



SECTION D−D
SC.1/20



FOOTING F1
SC.1/20



GRADE BEAM GB1
SC. 1/20

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-8078 BEIRUT-LEBANON
Tel: 961/1/354304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

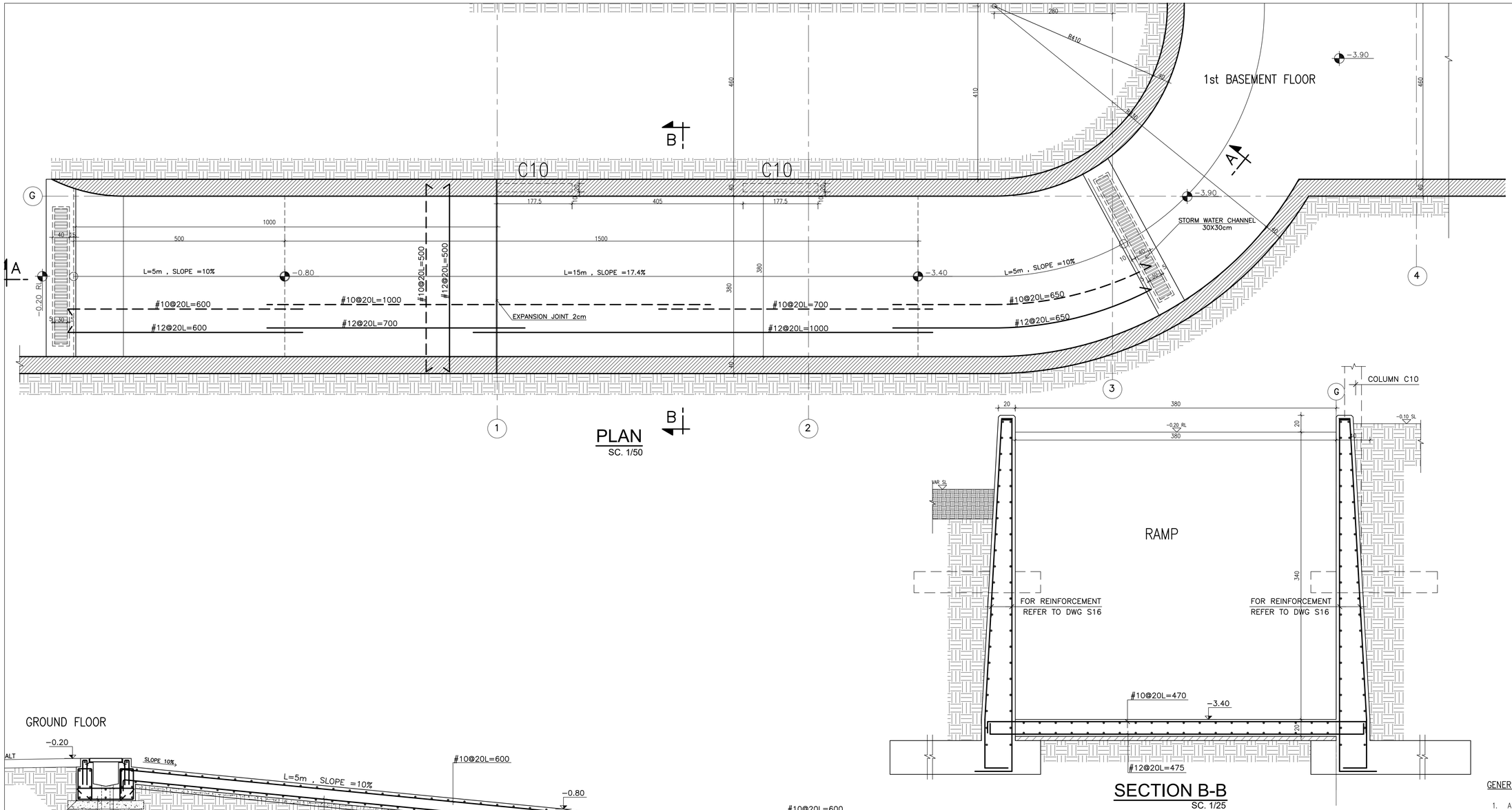
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

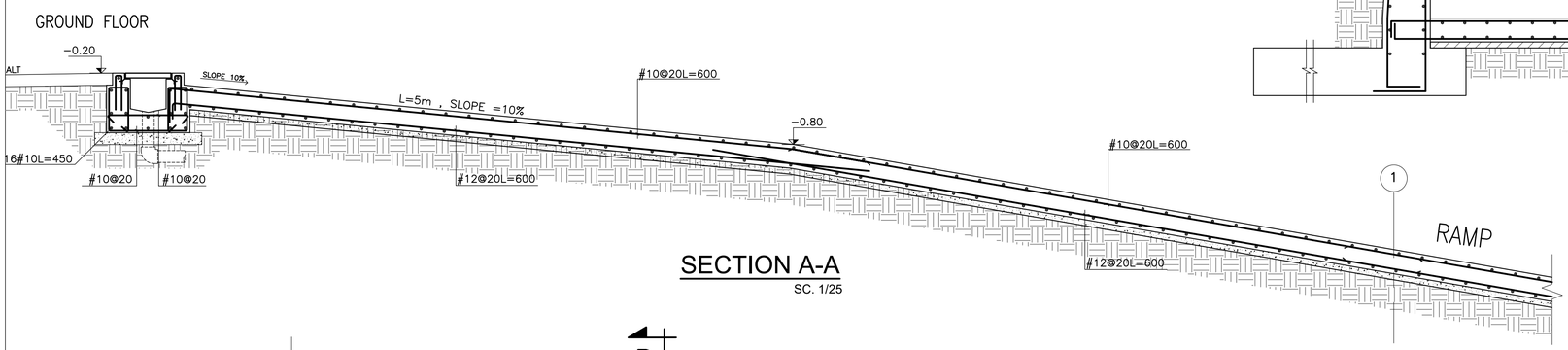
GUARD HOUSE & FENCE DETAILS

	Name	Date	Signature	
DRAWN BY:	E.A.	JUL 2026		FILE: ASGH−S16
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/50 1/25
DRAWING NO.:	S16			REVISION:

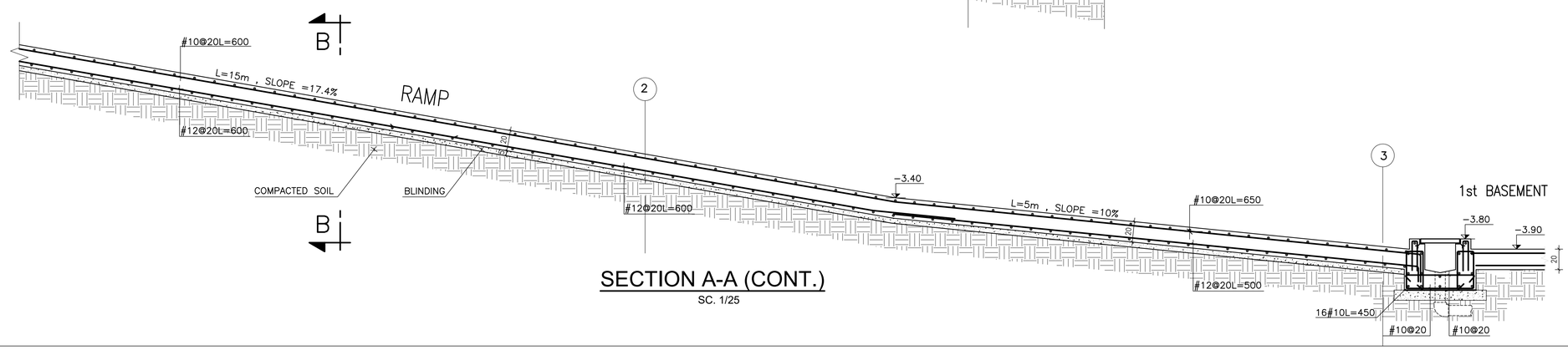


PLAN
SC. 1/50

SECTION B-B
SC. 1/25



SECTION A-A
SC. 1/25



SECTION A-A (CONT.)
SC. 1/25

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-6078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

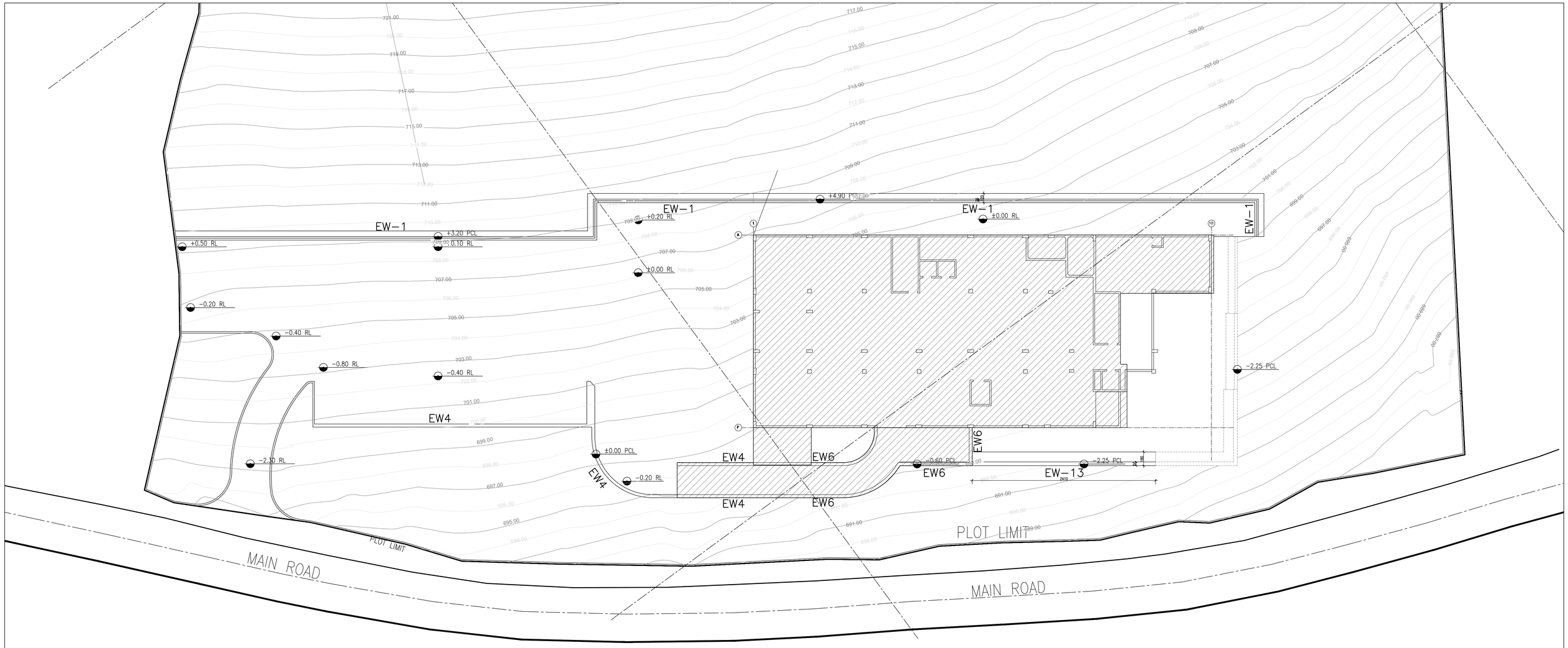
PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

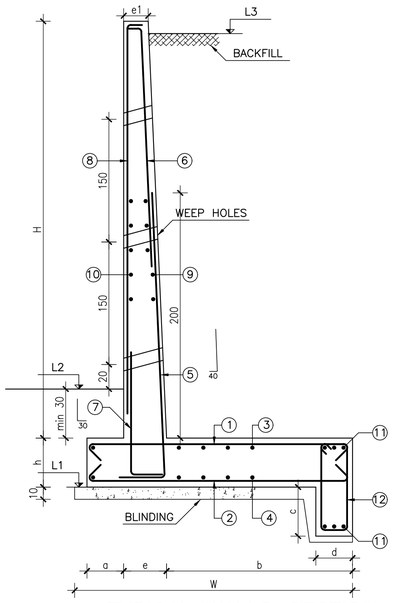
RAMP PLAN ,SECTIONS + DETAILS

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S17
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/50 1/25
DRAWING NO.:	S17			REVISION:

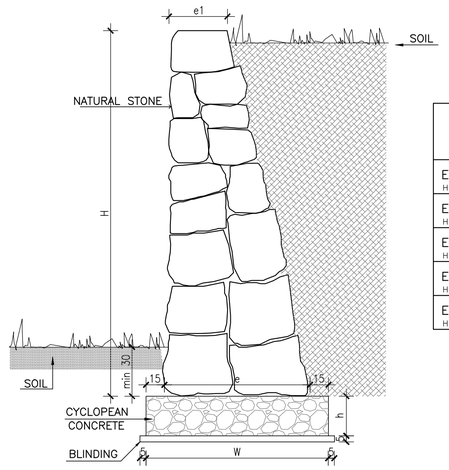


EXTERNAL RETAINING WALL SCHEDULE

NAME	FOOTING				WALL			KEY		LEVELS				REINFORCEMENT											
	h	W	a	b	e	e1	H max.	c	d	L1	L2	L3	L4	1	2	3	4	5	6	7	8	9	10	11	12
EW1	20	120	25	75	20	20	100	–	–	VAR	VAR	VAR	VAR	ST#10 @20	–	10#10	10#10	#12@20	–	#10@25	–	#10@25	#10@25	–	–
EW2	25	140	25	95	20	20	150	–	–	VAR	VAR	VAR	VAR	#12@20	#10@20	#10@25	#10@25	#14@20	–	#10@25	–	#10@25	#10@25	–	–
EW3	25	170	25	120	25	20	200	–	–	VAR	VAR	VAR	VAR	#12@20	#12@20	#10@25	#10@25	#14@20	–	#10@20	–	#10@25	#10@25	–	–
EW4	30	210	30	150	25	20	250	–	–	VAR	VAR	VAR	VAR	#12@20	#12@20	#10@20	#10@20	#14@20	#12@20	#10@20		#10@20	#10@20	–	–
EW5	30	230	30	170	30	20	300	–	–	VAR	VAR	VAR	VAR	#14@20	#12@20	#10@20	#10@20	#16@20	#14@20	#10@20	–	#10@20	#10@20	–	–
EW6	40	260	30	190	40	20	350	–	–	VAR	VAR	VAR	VAR	#14@20	#12@20	#10@20	#10@20	#16@20	#14@20	#10@20	–	#10@20	#10@20	–	–
EW7	45	285	30	210	45	20	400	–	–	VAR	VAR	VAR	VAR	#16@20	#12@20	#10@20	#10@20	#16@20	#14@20	#12@20	#12@20	#10@20	#10@20	–	–
EW8	50	310	30	230	50	20	450	–	–	VAR	VAR	VAR	VAR	#16@20	#12@20	#10@20	#10@20	#12@20	#14@20	#12@20	#12@20	#12@20	#12@20	–	–
EW9	50	330	30	250	50	20	500	–	–	VAR	VAR	VAR	VAR	#16@20	#12@20	#10@20	#10@20	#12@20	#14@20	#12@20	#12@20	#12@20	#12@20	–	–



TYPICAL WALLS SECTION



GRAVITY STONE WALL

TYPE	FOOTING		STONE WALL	
	h	W	e	e1
EW-10 H=2.0m	25	140	100	25
EW-11 H=2.5m	25	160	130	30
EW-12 H=3.0m	30	180	150	40
EW-13 H=3.5m	30	210	180	50
EW-14 H=4.0m	40	250	220	50

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.
7. DATUM LEVEL +697.30 EQUAL TO ±0.00 BUILDING PROJECT LEVEL

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:
ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

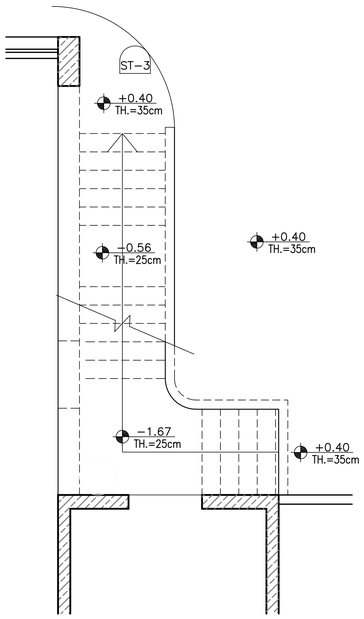
PROJECT:

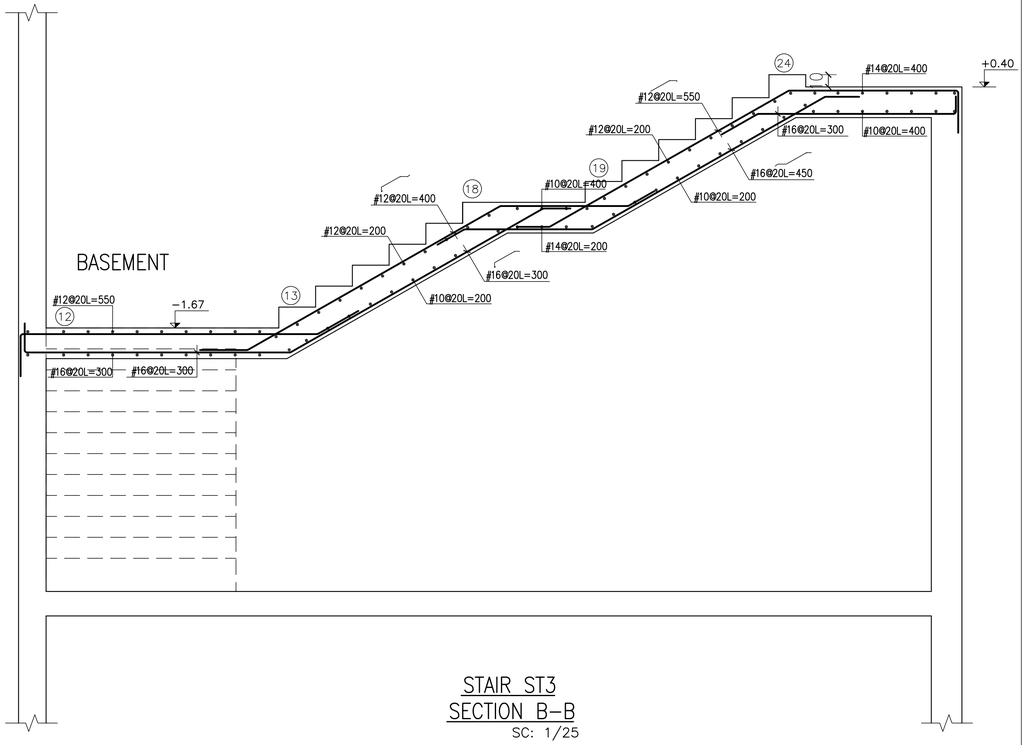
AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

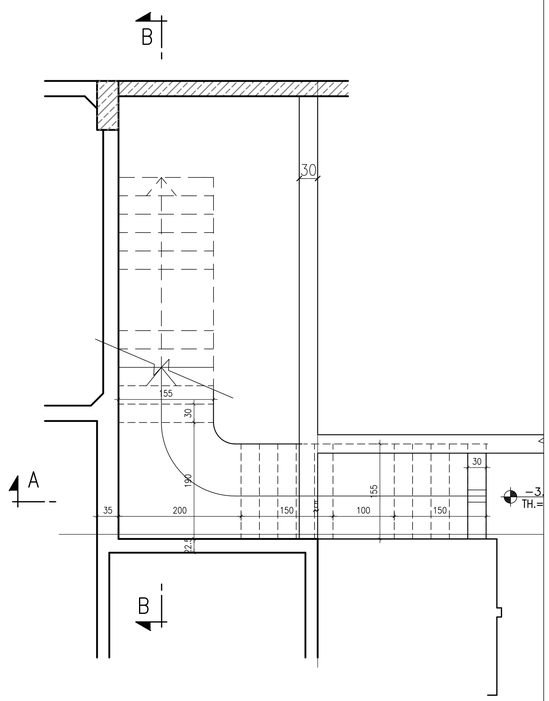
EXTERNAL WORK DETAILS

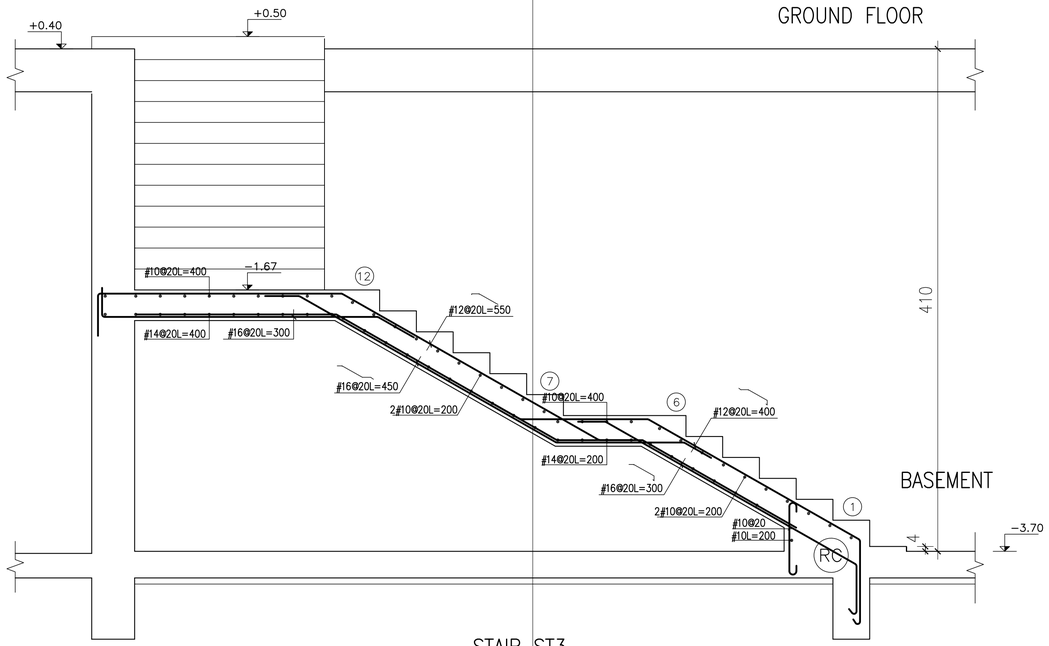
DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S18
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: AS SHOWN
DRAWING NO.:	S18			REVISION:





STAIR ST3
SECTION B-B
SC: 1/25





STAIR ST3
SECTION A-A
SC: 1/25

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN CENTIMETERS.
2. ALL LEVELS ARE EXPRESSED IN METERS
3. DO NOT SCALE DRAWINGS.
4. CONCRETE COMPRESSIVE STRENGTH=30 MPa (FOR SLABS,BEAMS)
5. CONCRETE COMPRESSIVE STRENGTH=35 MPa (FOR COLUMNS,WALLS)
6. YIELD STRENGTH OF REINFORCEMENT= 420 MPa.

Rev.	Description	Drawn	Checked	Approved	Date

REPUBLIC OF LEBANON

COUNCIL FOR DEVELOPMENT AND RECONSTRUCTION

CONSULTANT:

ETEC
Established in 1965 - C.R. 16013
P.O.BOX 11-5078 BEIRUT-LEBANON
Tel: 961/1/364304/5 Fax: 1/367747
E-mail : etecsal@cyberia.net.lb
WEB SITE: WWW. etecsal.com

PROJECT:

AKKAR SAHLEH GOVERNMENTAL HOSPITAL
DETAILED FINAL DESIGN
PHASE 5

TITLE:

STAIRS ST3
PLANS AND SECTION

DRAWN BY:	Name E.A.	Date JUL 2026	Signature	FILE: ASGH-S01
CHECKED BY:	A.H.	JUL 2026		SIZE: A1
APPROVED BY:	E.A.J.	JUL 2026		SCALE: 1/50 1/25
DRAWING NO.:	S19			REVISION: