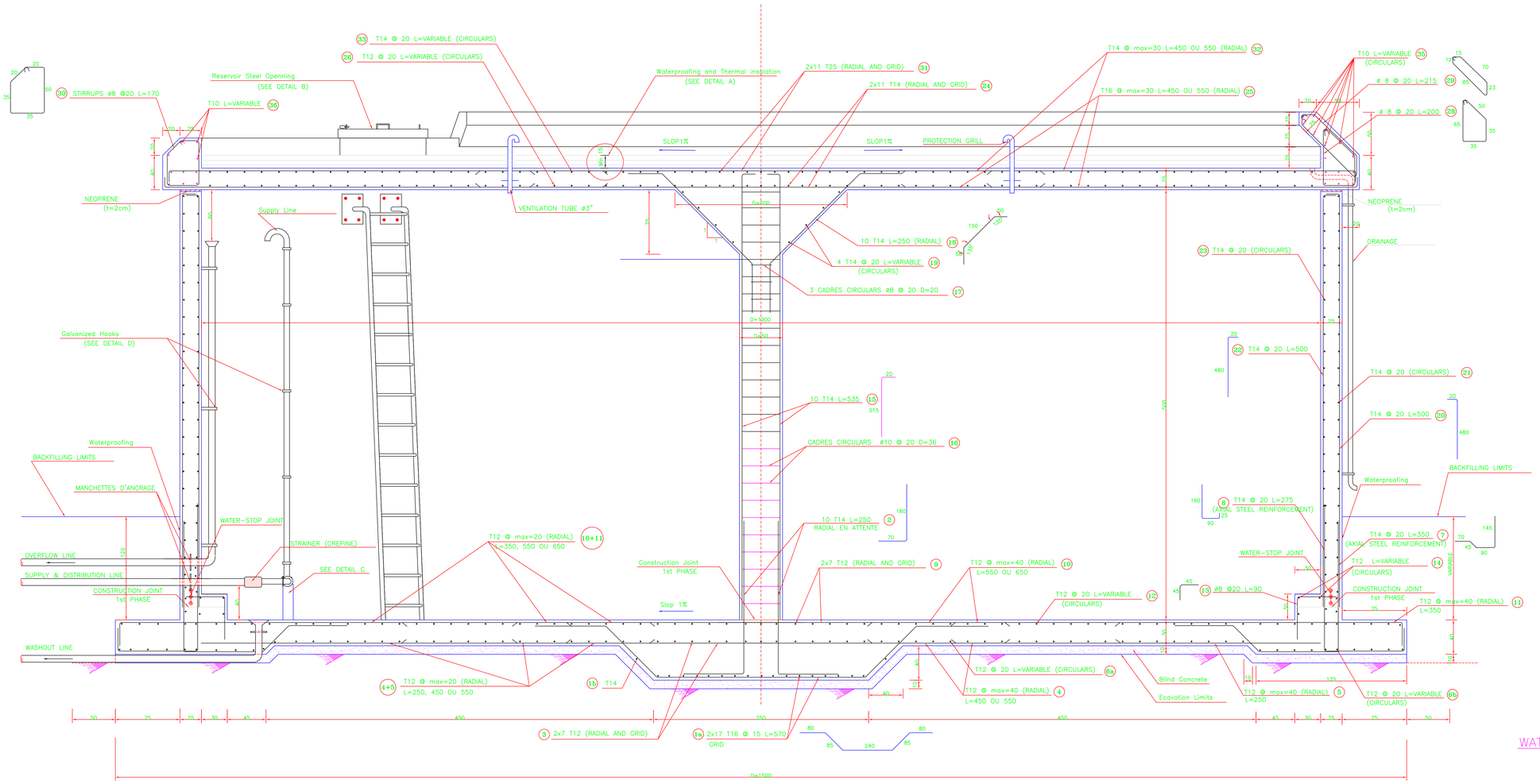
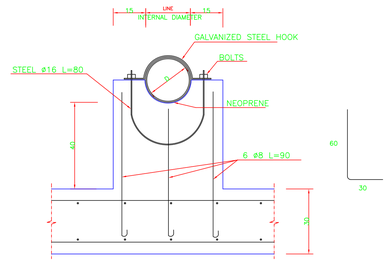
NOTES

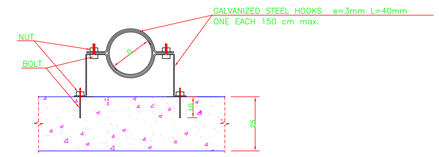
a) PORTABLE CAPACITY OF THE FOUNDATION SOIL> 2 Kg / cm^2
b) DETERMINATION OF CONCRETE: 350 KG OF CEMENT / m^3
c) BLINDING CONCRETE: 150 Kg OF CEMENT /m^3
d) RESISTANCE OF CONCRETE TO COMPRESSION AFTER 28 DAYS > 300 Kg/cm^2
e) HIGH GRIP FRAMES (NOTED T) TYPE FE E40
f) SMOOTH REINFORCEMENTS (ø NOTED) TYPE FE E24
g) COATING OF STEELS = 4cm
h)ALL DIMENSIONS IN CENTIMETERS UNLESS OTHERWISE INDICATED
i) DIAMETERS OF FRAMING IN MILLIMETERS
j) LENGTH OF RECOVERY 50ø UNLESS OTHERWISE INDICATED



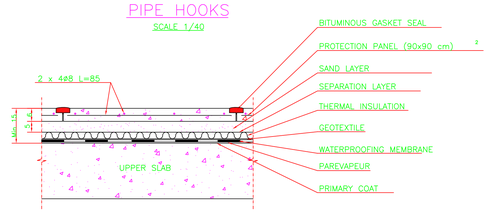
RESERVOIR 500 m^3
FORMWORK AND STEEL REINFORCEMENT
SCALE : 1/20



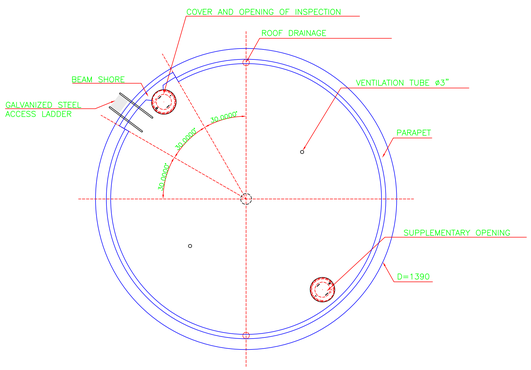
DETAIL C
SUPPORT OF A CONDUCT
Ech. : 1/40



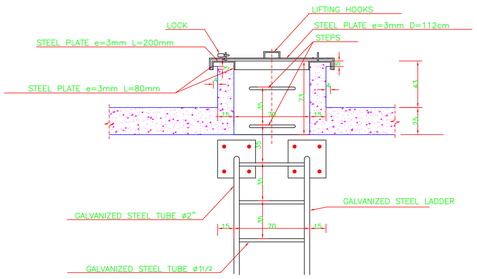
DETAIL D
PIPE HOOKS
SCALE 1/40



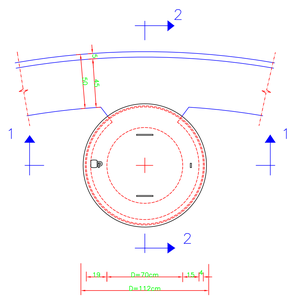
WATERPROOFING AND THERMAL INSULATION
DETAIL A
Ech. : 1/40



RESERVOIR ROOF PLAN
Scale : 1/200

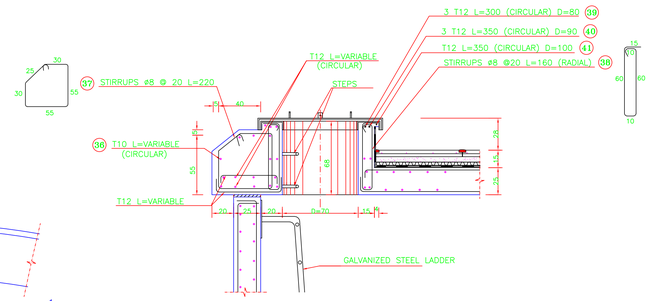


SECTION 1–1



PLAN VIEW

COVER AND OPENING OF INSPECTION
DETAIL B
Scale : 1/20



SECTION 2–2 – STEEL REINFORCEMENT DETAILS

Lebanese Republic

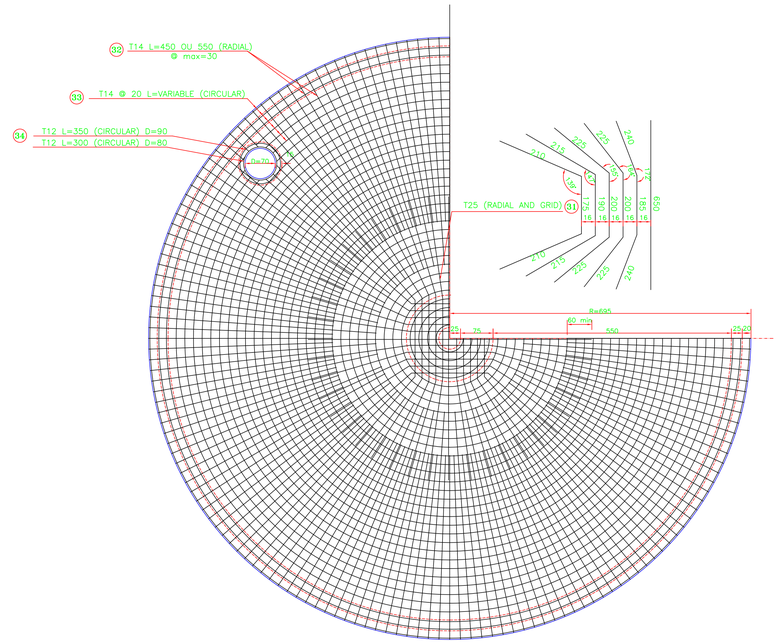
Ministry of Energy and Water
Directorate of Water & Electrical Resources

Ain Majdaline 500m³ Ground Reservoir

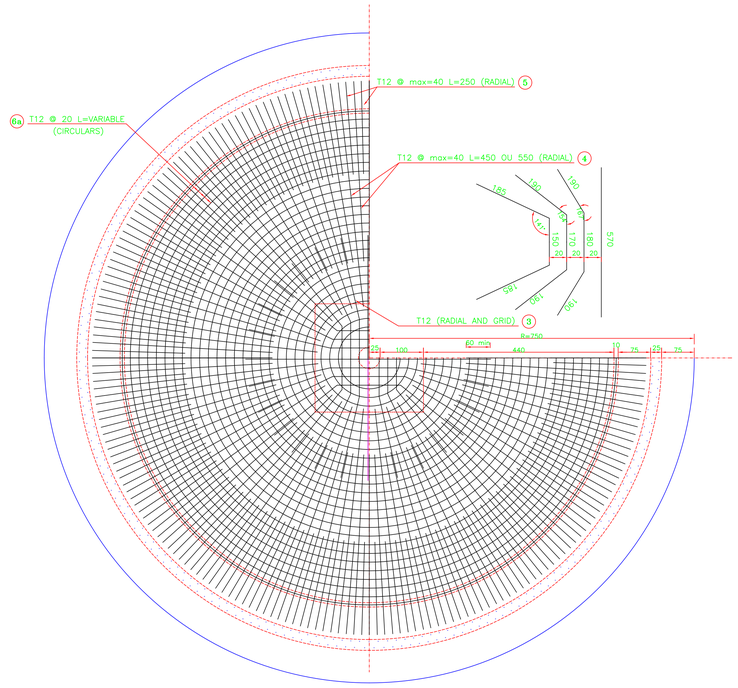
PROJECT: Construction of New Ground Water Reservoir in Ain Majdaline Village-Caza Jezzine	DATE: September 2017
DWG TITLE: Structural - Plan,Sections & Details	Designed By: F.H. / Drawn By: D.G.
SCALE: 1/200-1/40-1/20	Checked By: F.H. / Approved By: N.C.
REMARKS:	
	DWG N°: Dwg: 2/4
	REVISION: / DATE:

unicef

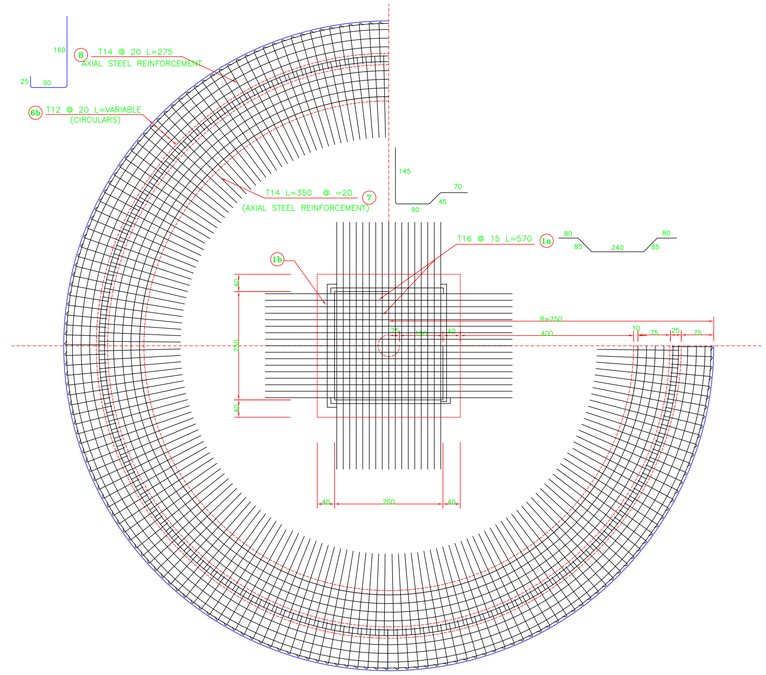
20171014_UNICEF_MoEW_Ain Majdalaine 500m3 Ground Reservoir_V 0 0 1



UPPER SLAB
UPPER REINFORCEMENTS
Scale : 1/50



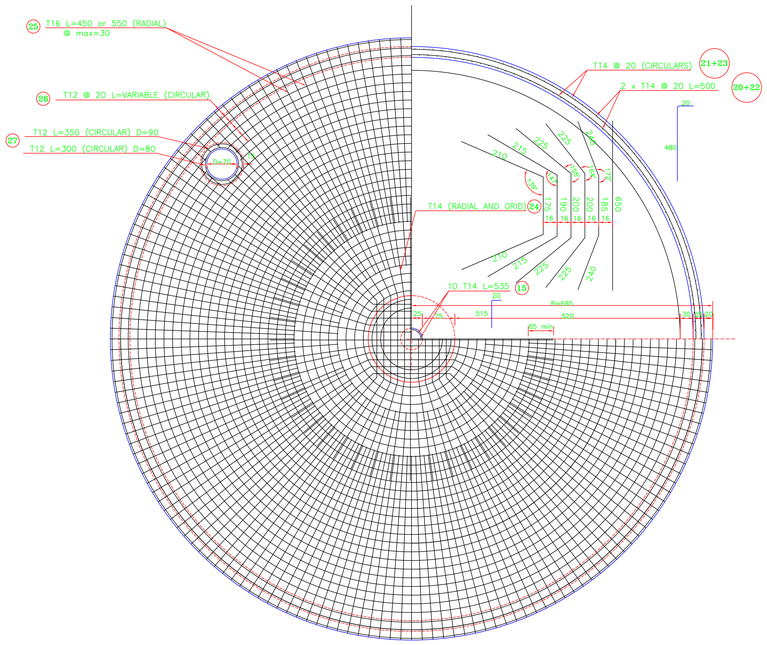
LOWER SLAB-LOWER REINFORCEMENT
Scale : 1/50



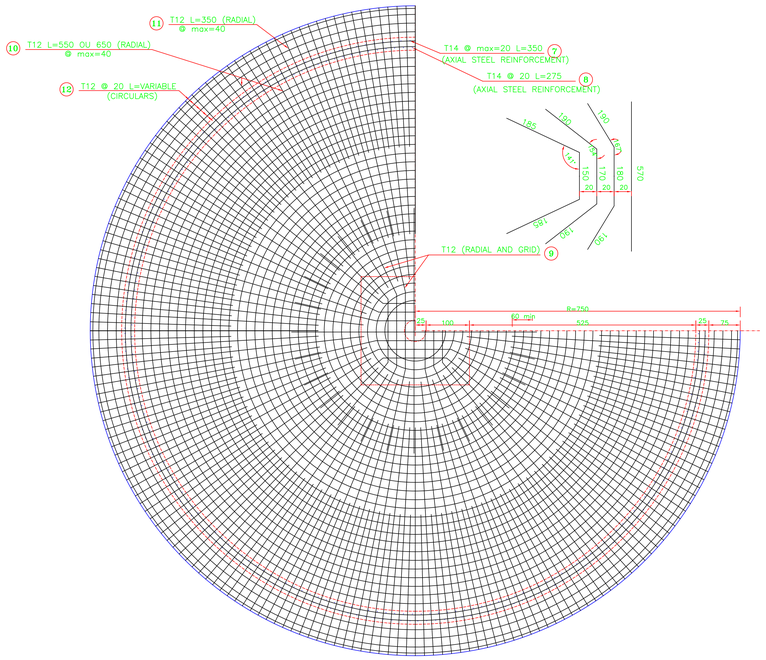
FONDATION OF WALLS AND LOWER SLAB
LOWER REINFORCEMENTS
Scale : 1/50

NOTE:

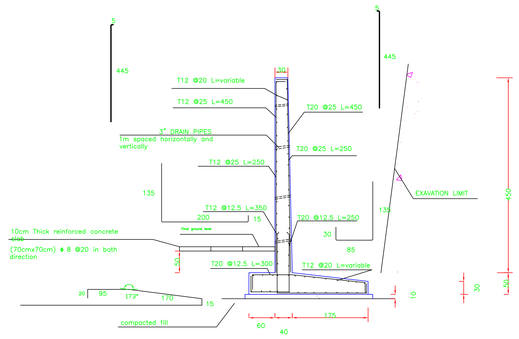
THE FRAMES RADIAL HOLD THE PILLAR NOT SHOWN TO AVOID CLUTTERING DRAWING.



UPPER SLAB
LOWER REINFORCEMENT
Scale : 1/50



FONDATION AND LOWER SLAB
UPPER REINFORCEMENT
Scale : 1/50



Lebanese Republic

Ministry of Energy and Water
Directorate of Water & Electrical Resources

Ain Majdaline 500m³ Ground Reservoir

PROJECT: Construction of New Ground Water Reservoir in Ain Majdaline Village-Caza Jezzine	DATE: September 2017
DWG TITLE: Upper & Lower Slab Reinforcement Steel - Plan View	Designed By: F.H. / Drawn By: D.G.
SCALE: 1/50	Checked By: F.H. / Approved By: N.C.
REMARKS:	

unicef

DWG N°: Dwg: 3/4

REVISION:	DATE:

20171014_UNICEF_MoEW_Ain Majdalaine 500m3 Ground Reservoir_V 0 0 1

Desc.	ø	Type	e (cm)	CIRCLE RADIUS (cm)	CIRCLE Nb	BAR LENGTH Secondary (cm)	TYPICAL BAR Nb	TYPICAL BAR LENGTH (cm)
1a	16		15				34	570
1b	14						4	325
2	14						10	250
3	12						4	520
3	12						4	550
3	12						4	560
3	12						2	570
4	12		max80				84	450
4	12		max80				28	550
5	12		max40				112	250
6a	12		20	70	1		1	500
6a	12		20	90	1		1	625
6a	12		20	110	1	210	1	600
6a	12		20	130	1	235	1	700
6a	12		20	150	1	260	1	800
6a	12		20	170	1	430	2	600
6a	12		20	190	1	175	2	600
6a	12		20	210	1	300	2	600
6a	12		20	230	1	225	2	700
6a	12		20	250	1	350	2	700
6a	12		20	270	1	275	2	800
6a	12		20	290	1	260	3	600
6a	12		20	310	1		3	700
6a	12		20	330	1	215	3	700
6a	12		20	350	1		3	800
6a	12		20	370	1	165	3	800
6a	12		20	390	1	290	3	800
6a	12		20	410	1		4	700
6a	12		20	430	1	200	4	700
6a	12		20	450	1	325	4	700
6a	12		20	470	1		4	800
6a	12		20	490	1	180	4	800
6a	12		20	510	1	305	4	800
6a	12		20	530	1	190	5	700
6a	12		20	550	1	315	5	700

Desc.	ø	Type	e (cm)	CIRCLE RADIUS (cm)	CIRCLE Nb	BAR LENGTH Secondary (cm)	TYPICAL BAR Nb	TYPICAL BAR LENGTH (cm)
6a	12		20	570	1		5	800
6b	12		20	575	1		5	800
6b	12		20	595	1		5	800
6b	12		20	615	1	225	5	800
6b	12		20	635	1	350	5	800
6b	12		20	656.1	1	340	6	700
6b	12		20	668.9	1	425	6	700
6b	12		20	690	1		6	800
6b	12		20	710	1		6	800
6b	12		20	730	1	205	6	800
6b	12		20	744	1	295	6	800
7	14		20				211	350
8	14		20				206	275
9	12						4	520
9	12						4	550
9	12						4	560
9	12						2	570
10	12		max80				84	550
10	12		max80				28	650
11	12		max40				112	350
12	12		20	70	1		1	500
12	12		20	90	1		1	625
12	12		20	110	1	210	1	600
12	12		20	130	1	235	1	700
12	12		20	150	1	260	1	800
12	12		20	170	1	430	2	600
12	12		20	190	1	175	2	600
12	12		20	210	1	300	2	600
12	12		20	230	1	225	2	700
12	12		20	250	1	350	2	700
12	12		20	270	1	275	2	800
12	12		20	290	1	260	3	600
12	12		20	310	1		3	700
12	12		20	330	1	215	3	700
12	12		20	350	1		3	800

Desc.	ø	Type	e (cm)	CIRCLE RADIUS (cm)	CIRCLE Nb	BAR LENGTH Secondary (cm)	TYPICAL BAR Nb	TYPICAL BAR LENGTH (cm)
12	12		20	370	1	165	3	800
12	12		20	390	1	290	3	800
12	12		20	410	1		4	700
12	12		20	430	1	200	4	700
12	12		20	450	1	325	4	700
12	12		20	470	1		4	800
12	12		20	490	1	180	4	800
12	12		20	510	1	305	4	800
12	12		20	530	1	190	5	700
12	12		20	550	1	315	5	700
12	12		20	570	1		5	800
12	12		20	590	1		5	800
12	12		20	610	1	195	5	800
12	12		20	630	1	320	5	800
12	12		20	656.1	1	340	6	700
12	12		20	668.9	1	425	6	700
12	12		20	690	1		6	800
12	12		20	710	1		6	800
12	12		20	730	1	205	6	800
12	12		20	744.20	1	295	6	800
13	8		20	650		305	197	90
14	12			653.4	1	325	6	700
14	12			625.4	2	290	5	800
15	14						10	535
16	10		20	18	26		1	150
17	8		20	10	3		1	100
18	14						10	250
19	14		20	30	1		1	260
19	14		20	52	1		1	395
19	14		20	74	1		1	535
19	14		20	95	1		1	665
20	14		20				211	500
21	14		20	668.9	25	600	5	800
22	14		20				206	500

Desc.	ø	Type	e (cm)	CIRCLE RADIUS (cm)	CIRCLE Nb	BAR LENGTH Secondary (cm)	TYPICAL BAR Nb	TYPICAL BAR LENGTH (cm)
23	14		20	656.1	25	400	6	700
24	14						4	595
24	14						4	620
24	14						4	650
24	14						4	650
24	14						4	665
24	14						2	650
25	16		max60				132	450
25	16		max60				44	550
26	12		20	70	1		1	500
26	12		20	90	1		1	625
26	12		20	110	1	210	1	600
26	12		20	130	1	235	1	700
26	12		20	150	1	260	1	800
26	12		20	170	1	430	2	600
26	12		20	190	1	175	2	600
26	12		20	210	1	300	2	600
26	12		20	230	1	225	2	700
26	12		20	250	1	350	2	700
26	12		20	270	1	275	2	800
26	12		20	290	1	260	3	600
26	12		20	310	1		3	700
26	12		20	330	1	215	3	700
26	12		20	350	1		3	800
26	12		20	370	1	165	3	800
26	12		20	390	1	290	3	800
26	12		20	410	1		4	700
26	12		20	430	1	200	4	700
26	12		20	450	1	325	4	700
26	12		20	470	1		4	800
26	12		20	490	1	180	4	800
26	12		20	510	1	305	4	800
26	12		20	530	1	190	5	700
26	12		20	550	1	315	5	700
26	12		20	570	1		5	800

Desc.	ø	Type	e (cm)	CIRCLE RADIUS (cm)	CIRCLE Nb	BAR LENGTH Secondary (cm)	TYPICAL BAR Nb	TYPICAL BAR LENGTH (cm)
26	12		20	590	1		5	800
26	12		20	610	1	195	5	800
26	12		20	630	1	320	5	800
26	12		20	650	1	305	6	700
26	12		20	670	1	430	6	700
26	12		20	688.8	1		6	800
27	12			40	1		1	300
27	12			45	1		1	350
28	8		20				195	200
29	8		20				195	215
30	8		20				17	170
31	25						4	595
31	25						4	620
31	25						4	650
31	25						4	650
31	25						4	665
31	25						2	650
32	14		max60				132	450
32	14		max60				44	550
33	14		20	30	1		1	260
33	14		20	50	1		1	385
33	14		20	70	1		1	510
33	14		20	90	1		1	635
33	14		20	110	1	130	1	700
33	14		20	130	1	155	1	800
33	14		20	150	1	280	2	800
33	14		20	170	1		2	600
33	14		20	190	1	205	2	600
33	14		20	210	1	130	2	700
33	14		20	230	1		2	800
33	14		20	250	1	180	2	800
33	14		20	270	1	305	2	800
33	14		20	290	1	300	3	600
33	14		20	310	1	130	3	700
33	14		20	330	1	255	3	700

Desc.	ø	Type	e (cm)	CIRCLE RADIUS (cm)	CIRCLE Nb	BAR LENGTH Secondary (cm)	TYPICAL BAR Nb	TYPICAL BAR LENGTH (cm)
33	14		20	350	1		3	800
33	14		20	370	1	205	3	800
33	14		20	390	1	330	3	800
33	14		20	410	1	125	4	700
33	14		20	430	1	250	4	700
33	14		20	450	1		4	800
33	14		20	470	1		4	800
33	14		20	490	1		5	700
33	14		20	510	1	125	5	700
33	14		20	530	1	250	5	700
33	14		20	550	1	375	5	700
33	14		20	570	1		5	800
33	14		20	590	1	125	5	800
33	14		20	610	1	255	5	800
33	14		20	630	1	250	6	700
33	14		20	650	1	375	6	700
33	14		20	670	1		6	800
33	14		20	688.9	1		6	800
34	12			40	1		1	300
34	12			45	1		1	350
35	10			689.7	1	100	6	700
35	10			672.5	1	155	5	800
35	10			655.3	3		5	800
35	10			642	2		5	800
35	10			630.3	2		5	800
36	10			655.3	2		1	445
36	10			672	1		1	450
36	10			689.7	1		1	460
37	8		20				4	220
38	8		20				14	160
39	12			40	3		1	300
40	12			45	3		1	350
41	12			50	1		1	350

TOTAL STEEL WEIGHT	17053 Kg

Lebanese Republic

Ministry of Energy and Water

Directorate of Water & Electrical Resources

Ain Majdaline 500m³ Ground Reservoir

PROJECT:
Construction of New Ground Water Reservoir in Ain Majdaline Village-Caza Jezzine

DATE: September 2017

DWG TITLE: Reinforcement Steel Details

Designed By: F.H.
Drawn By: D.G.
Checked By: F.H.
Approved By: N.C.

SCALE: N.T.S

REMARKS:

DWG N°: Dwg: 4/4

REVISION:	DATE:

unicef

20171014_UNICEF_MoEW_Ain Majdalaine 500m3 Ground Reservoir_V 0 0 1