

# قرارات

## وزارة الكهرباء والطاقة المتجددة

قرار وزارى رقم ٩٦ لسنة ٢٠٢٤

صادر بتاريخ ٢٢/٥/٢٠٢٤

### وزير الكهرباء والطاقة المتجددة

بعد الاطلاع على قانون الكهرباء الصادر بالقرار بقانون رقم ٨٧ لسنة ٢٠١٥

ولانحته التنفيذية ؛

وعلى النظام الأساسى للشركة المصرية لنقل الكهرباء ؛

وعلى مذكرة رئيس مجلس إدارة الشركة المصرية لنقل الكهرباء بتاريخ ٢٤/٤/٢٠٢٤ ؛

### قرر:

**مادة ١ -** يتم تنفيذ وإقامة وشد الموصلات للأبراج من البرج رقم (٣) وحتى البرج

رقم (٢٧) بالخط الكهربائى (العاشر ٥٠٠/بليبىس الجديدة) جهد ٢٢٠ كيلوفولت

بطول حوالى (٩,٥ كم) الواقعة بنطاق جمعية العدالة بمحافظة الشرقية (بالقوة

الجبرية) ، وذلك على الأرض التى يمر بها هذا الخط ، وذلك طبقاً للمسار الموضح

بالخرائط المساحية ، ويكون تنفيذ الأعمال على النحو التالى :

أعمال الحفر لكل برج .

أعمال إحلال التربة للأبراج .

- أعمال الخرسانة العادية والمسلحة للأبراج .
  - أعمال العزل بالبيوتامين للأبراج .
  - أعمال ردم من تربة الحفر للأبراج .
  - أعمال تركيب العازلات وشد الموصلات وسلك الأرضى للأبراج .
- مادة ٢ -** ينشر هذا القرار وملحقاته فى الوقائع المصرية ، ويودع بمكتب الشهر العقارى المختص ، وعلى جميع المختصين تنفيذه .

وزير الكهرباء والطاقة المتجددة


**دكتور/ محمد شاكر المرقبى**

كشف بأسماء الملاك الظاهرين المعترضين  
على تنفيذ البرج رقم (٣) وحتى البرج رقم (٢٧) بالخط الكهربائى  
(العاشر ٥٠٠/بليبس الجديدة) جهد (٢٢٠) ك.ف بمحافظة الشرقية

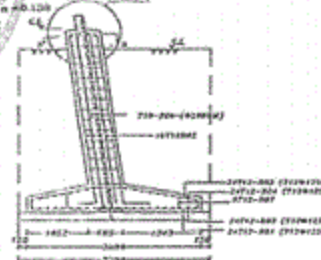
م	الاسم	العنوان	المحافظة
١	أيمن فريد أبو حديد بصفته رئيس مجلس إدارة الجمعية التعاونية الزراعية للاستصلاح وتعمير وتنمية الأراضى	ميدان الطيارة - بليبس - شرقية	الشرقية

العدد ١٤٢ كر ١٤٣٥

FOUNDER TYPE	TOWER BODY WIDTHS		
B	5.00m	8.00m	13.00m
B-1	5.00m	8.00m	13.00m
B-2	5.00m	8.00m	13.00m
B-3	5.00m	8.00m	13.00m




SECTION B-B




SECTION A-A

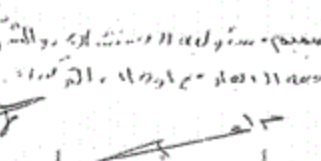
TOP AND CORNER REINFORCEMENT DETAIL



PAD BOTTOM REINFORCEMENT PLAN



PAD TOP REINFORCEMENT PLAN



Excavation		Foundation		Foundation		Foundation	
Per Footing	Per Tower	No.	Length (m)	Area (m²)	Volume (m³)	No.	Length (m)
20.330	2.000	12	3.000	36.00	108.00	12	3.000
22.230	2.000	12	3.000	36.00	108.00	12	3.000

**NOTES:**

- 1 - Foundations are designed for the following soil conditions:-
  - Allowable bearing capacity = 12000 Kg/cm<sup>2</sup>
  - Depth of foundation from ground level = 3.500 m
  - Ground water level (GW) = -3.500 m
- 2 - Foundations should be placed on a layer of 70 concrete 15 cm thickness
- 3 - Fixing of concrete should be made without any interruption
- 4 - Reinforcement bars to be used should be high grade steel at 02 of minimum yield strength = 2600 Kg/cm<sup>2</sup>
- 5 - Soil backfilling material shall be according to approved soil classification and to be compacted in layers and each layer should not be less than 300 of the max dry density determined from standard proctor test on per soil report.
- 6 - If any Soil exist at the bottom of the excavation pit, Soil replacement layers shall be used according to soil investigation report.
- 7 - Casting must be done for the first 3 days after concrete placing
- 8 - All dimensions must be checked against the steel tower working drawings
- 9 - Minimum cube strength ( 28 days ) for foundation concrete = 280 Kg/cm<sup>2</sup>
- 10 - Minimum cube strength ( 28 days ) for bed layer concrete = 210 Kg/cm<sup>2</sup>
- 11 - Minimum concrete cover for reinforcement bars should be from (40) mm
- 12 - All dimensions are in millimeters
- 13 - Template must be used during concrete pouring
- 14 - Substitute rebaring should be used in substituted concrete.

NO.	DESCRIPTION	DATE	BY	CHECKED

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY S.E.C.

ELASTIC POWER SYSTEMS  
 ENGINEERING COMPANY  
 (GARIBARA)

EGYPTIAN MECHANICAL and ELECTRICAL PRODUCTS  
 (GARIBARA)

PROJECT NO. ELASHER 500 / LRT2 220KV OHFL  
 Foundation Details For Tower Types (B - B-1 - D-12 - D-13)  
 (Soil Class 3 Without Soil Replacement)

DATE 2024/07/03

BY M.A. EL-SHARAF

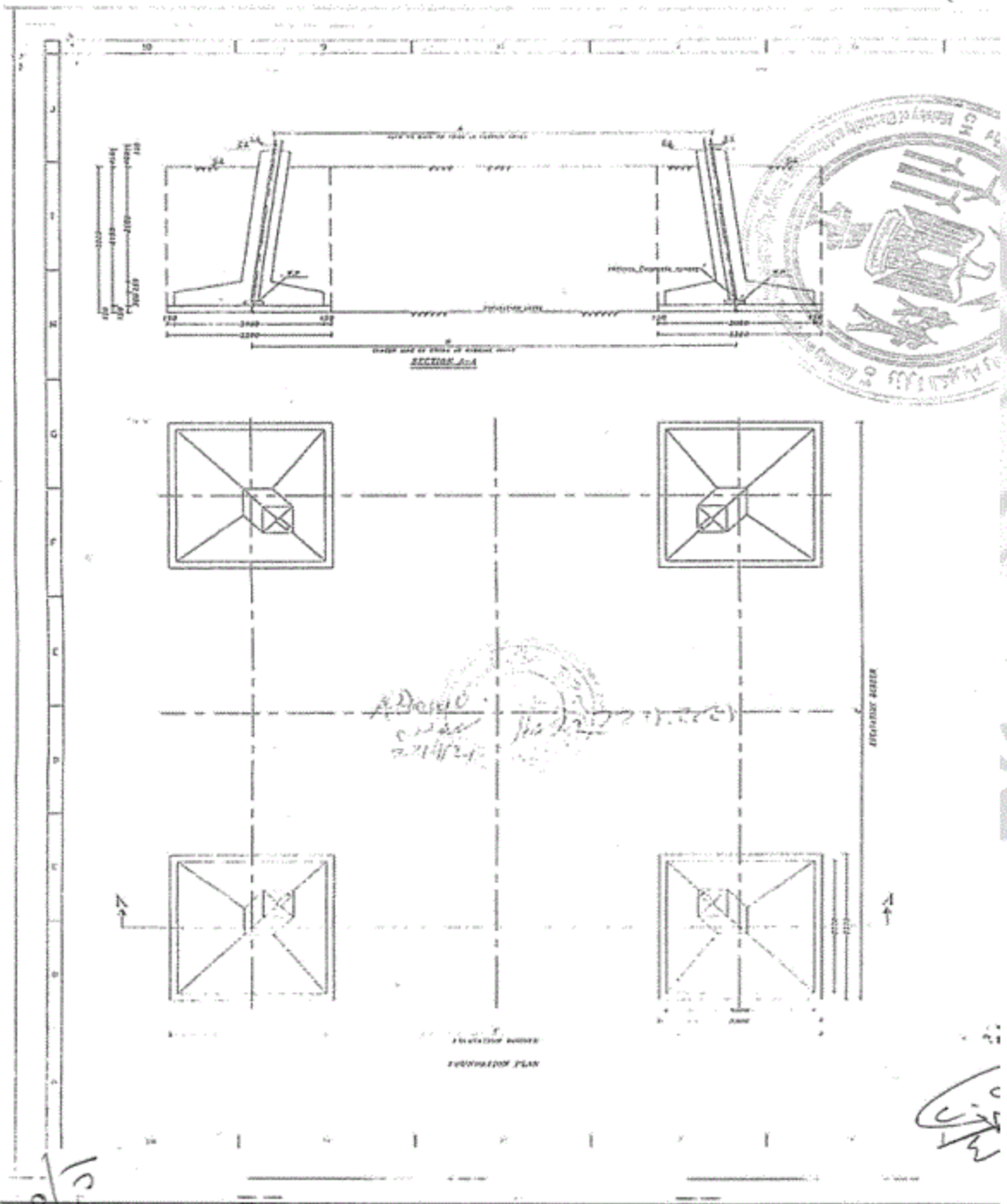
CHECKED A.F. EL-SHARAF

APPROVED M.A. EL-SHARAF

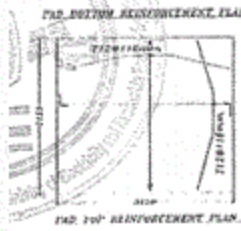
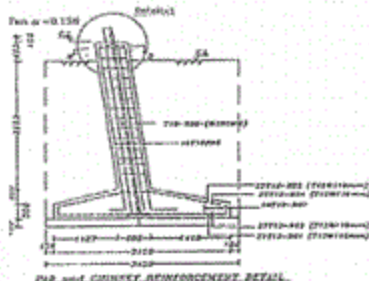
المهندس سيد محمد سعيد السيد  
 10/2  
 1/4



مست



العدد ١٤٢ - ٣ يولية ٢٠٢٤



Handwritten notes in Arabic, including a signature and date.

Part No.	Description	Quantity	Unit	Remarks
1	Excavation	1.00	m <sup>3</sup>	
2	Formwork	2.00	m <sup>2</sup>	
3	Reinforcement	1.00	kg	
4	Concrete	1.00	m <sup>3</sup>	
5	Gravel	1.00	m <sup>3</sup>	
6	Water	1.00	m <sup>3</sup>	
7	Oil	1.00	kg	
8	Other	1.00	kg	

- Foundations are designed for the following soil conditions:
  - Allowable bearing capacity = 1.500 kg/cm<sup>2</sup>
  - Depth of foundation from ground level = 3.500
  - Ground water level 2000
- The contractor is obliged to verify all soil conditions and recommendations stated in the approved soil investigation report include but not be limited to, contact contact report Type, soil replacement, insulation, etc.
- Foundation should be placed on a layer of FC concrete 15 cm thickness
- Setting of concrete should be made without any interruption
- Reinforcement bars to be used should be high grade steel of 52 of minimum yield strength = 5000 kg/cm<sup>2</sup>
- Soil handling material shall be according to approved soil investigation and to be compacted in layers and each layer should not be less than 300 at the max dry density determined from standard proctor test as per soil report
- If City Soil exist at the bottom of the excavation pit, soil replacement layers shall be used according to soil investigation report.
- Curing should be done for the first 3 days after concrete placing
- All dimensions must be checked against the steel tower workshop drawings
- Minimum cube strength ( 28 days ) for foundation concrete = 200 kg/cm<sup>2</sup>
- Minimum cube strength ( 28 days ) for bed layer concrete = 100 kg/cm<sup>2</sup>
- Minimum concrete cover for reinforcement bars should be from (F1) Cm
- All dimensions are in millimeters.
- Templates must be used during concrete pouring
- Substrate existing content should be used in reinforced concrete.

REVISION	NO.	DESCRIPTION	DATE
1	1	Issued for approval	2024/07/03

NO.	DATE	DESCRIPTION
1	2024/07/03	Issued for approval

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY

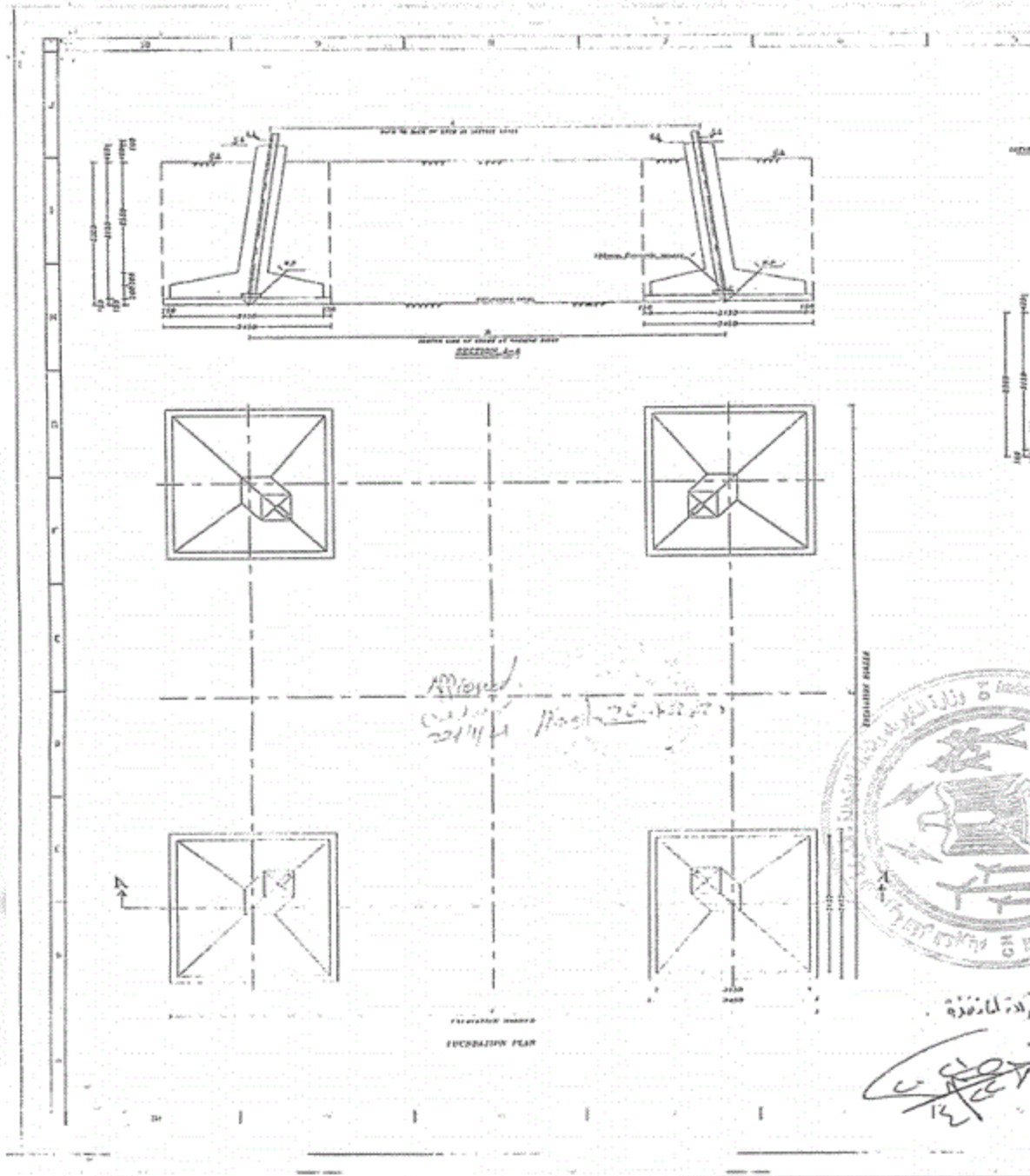
E P S  
 ELECTRIC POWER SYSTEMS  
 ENGINEERING COMPANY

EGYPT MECHANICAL and ELECTRICAL PRODUCTS  
 (MAREKAMA)

PROJECT NO.	PROJECT NAME	CLIENT	DATE
EL ASHER 500 KV/132 KV CHIEF	Foundations Details For Tower Egan	(S) (27)	
DESIGN CLASS: 3	Without Soil Report (revised)		
DESIGNER	CHECKER	DATE	SCALE
2024/07/03	A1	2024/07/03	1:1

Handwritten signature and date: 2024/7/3

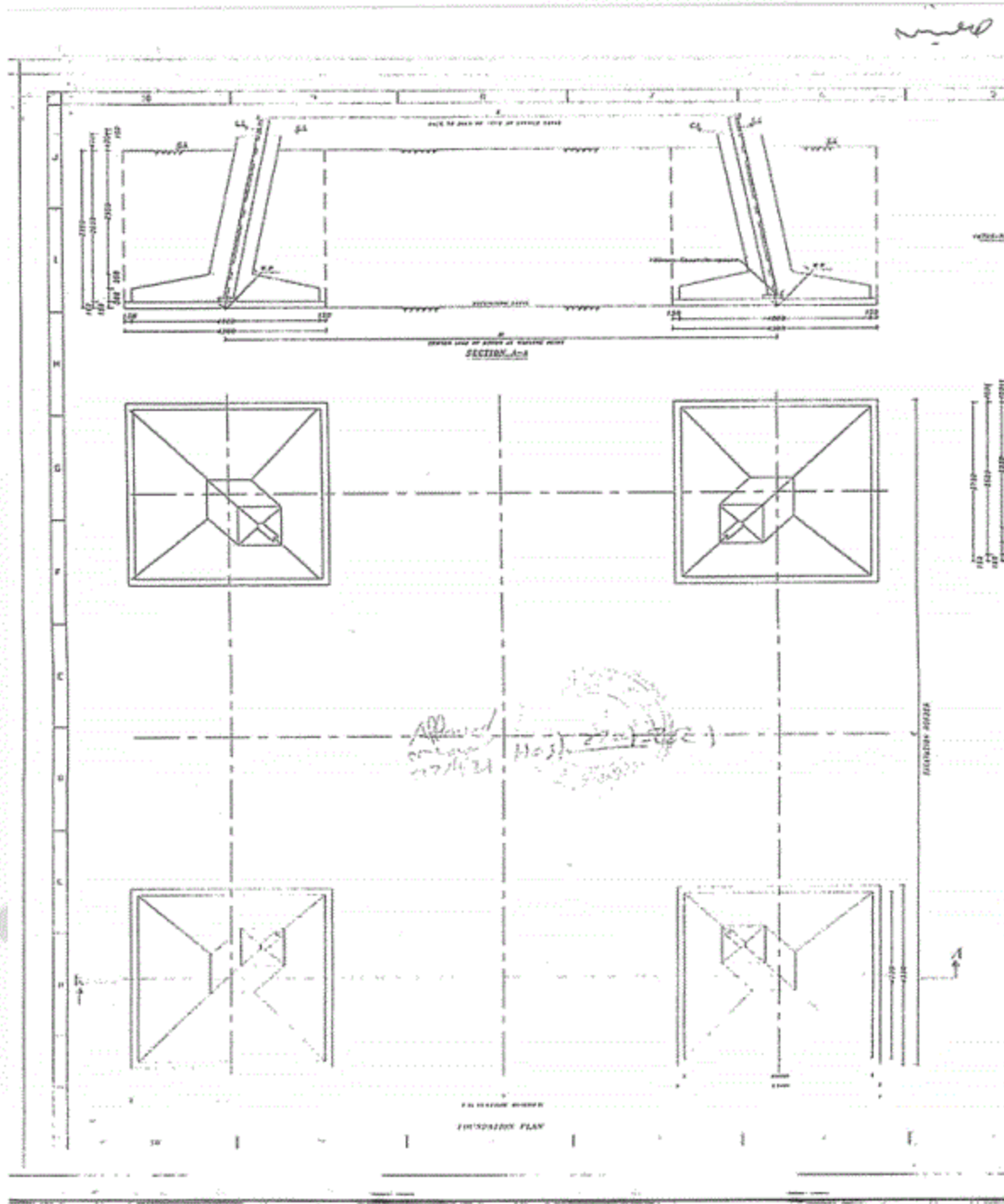




٥-٦٠٢٠٢٤-١٣٣١







المرور ١٤٢٠

POWER SIDE	NUMBER	DIAMETER	LENGTH	WEIGHT	REMARKS
1	10000	100	1000	1000	
2	10000	100	1000	1000	
3	10000	100	1000	1000	
4	10000	100	1000	1000	
5	10000	100	1000	1000	
6	10000	100	1000	1000	
7	10000	100	1000	1000	
8	10000	100	1000	1000	
9	10000	100	1000	1000	
10	10000	100	1000	1000	

Type	Sketch	Qty	Unit	Total length	Total weight	Remarks
1	[Sketch]	100	m	10000	10000	
2	[Sketch]	100	m	10000	10000	
3	[Sketch]	100	m	10000	10000	
4	[Sketch]	100	m	10000	10000	
5	[Sketch]	100	m	10000	10000	
6	[Sketch]	100	m	10000	10000	
7	[Sketch]	100	m	10000	10000	
8	[Sketch]	100	m	10000	10000	
9	[Sketch]	100	m	10000	10000	
10	[Sketch]	100	m	10000	10000	
TOTAL		1000		100000	100000	

NOTES:

- Foundations are designed for the following soil conditions:
  - allowable bearing capacity = 4.500 kg/cm<sup>2</sup>
  - Depth of foundation from ground level = 4.50M
  - Ground water level = 0.00
- The contractor is obliged to verify all soil conditions and communicate them to the consultant in writing before any work is started to correct possible ground Type, soil replacement, foundation, etc.
- Prevalence should be placed on a layer of FC concrete 15 cm thickness
- Pouring of concrete should be made without any interruption
- Displacement bars to be used should be high grade steel at 32 at minimum yield strength = 2800 kg/cm<sup>2</sup>
- Soil bedding material shall be according to approved soil classification and to be compacted in layers and each layer should not be less than 80% of the area dry density determined from standard proctor test as per soil report
- If City Soil exist at the bottom of the excavation pit, Soil replacement layers shall be used according to soil investigation report.
- Curing must be done for the first 3 days after concrete placing
- All dimensions must be checked against the steel bar workshop drawings
- Minimum cube strength [ 28 days ] for foundation concrete = 280 kg/cm<sup>2</sup>
- Minimum cube strength [ 28 days ] for bed layer concrete = 200 kg/cm<sup>2</sup>
- Minimum concrete cover for reinforcement bars should be from (3.0) cm
- All dimensions are in millimeters
- Templates must be used during concrete pouring
- Diaphane embedding cement should be used in restitutions concrete.

الدفع مسئولية التصميم والبناء لشركة التنفيذ -  
مراجعة ودراسة مع الجهات الرقابية -

ARAB REPUBLIC OF EGYPT  
MINISTRY OF ELECTRICITY AND ENERGY  
EGYPTIAN ELECTRICITY TRANSMISSION COMPANY E.E.T.C

ELECTRIC POWER SYSTEMS  
ENGINEERING COMPANY  
E.P.S.

EGYPTIAN CHEMICAL and ALLIANCE PROJECTS  
(SUDAN AREA)

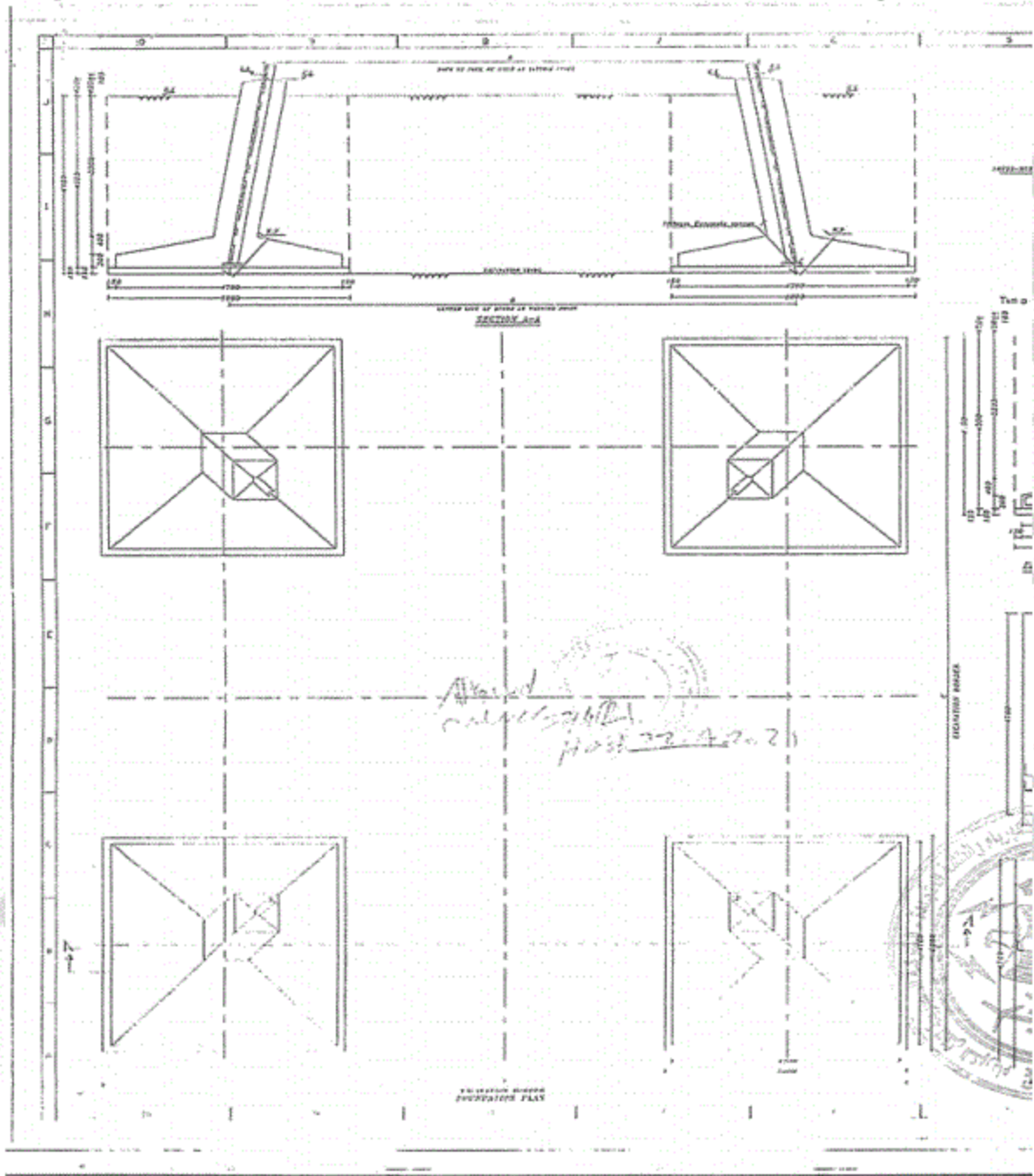
CLASHIER SUD 110KV/220KV/330KV  
Foundation Details for Tower Eppon.  
(Sheet 12 from 13 Sheets Total Project amount)

DATE: 15/07/2024  
SCALE: 1:1000  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
APPROVED BY: [Name]

المرور ١٤٢٠


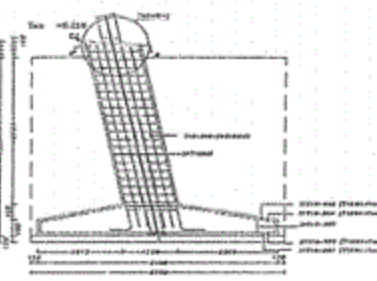




٩٦ - ٩٧



العدد ١٤٢ - ٢٠٢٤

SOILS TYPE	NO. OF INVESTIGATIONS	NO. OF TESTS	NO. OF SOILS
1	1	1	1
2	1	1	1
3	1	1	1
4	1	1	1
5	1	1	1
6	1	1	1
7	1	1	1
8	1	1	1
9	1	1	1
10	1	1	1

TEST NO.	DATE	DEPTH (m)	SOIL TYPE	WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	UNSATURATED SWELLING (%)	UNIT WEIGHT (kg/m³)	COMPRESSION INDEX	PERMEABILITY (cm/s)	STRENGTH (kN/m²)	REMARKS
101	10/10/2023	1.0	CL	25.0	50.0	25.0	0.05	1800	0.5	1.0E-08	100	
102	10/10/2023	2.0	CL	28.0	55.0	27.0	0.06	1750	0.6	1.5E-08	120	
103	10/10/2023	3.0	CL	30.0	60.0	30.0	0.07	1700	0.7	2.0E-08	140	
104	10/10/2023	4.0	CL	32.0	65.0	33.0	0.08	1650	0.8	2.5E-08	160	
105	10/10/2023	5.0	CL	35.0	70.0	35.0	0.09	1600	0.9	3.0E-08	180	
106	10/10/2023	6.0	CL	38.0	75.0	37.0	0.10	1550	1.0	3.5E-08	200	
107	10/10/2023	7.0	CL	40.0	80.0	40.0	0.11	1500	1.1	4.0E-08	220	
108	10/10/2023	8.0	CL	42.0	85.0	43.0	0.12	1450	1.2	4.5E-08	240	
109	10/10/2023	9.0	CL	45.0	90.0	45.0	0.13	1400	1.3	5.0E-08	260	
110	10/10/2023	10.0	CL	48.0	95.0	47.0	0.14	1350	1.4	5.5E-08	280	

**NOTES:**  
 1 - Foundations are designed for the following soil conditions :-  
 - Allowable bearing capacity = 1200 kg/cm²  
 - Depth of foundation from ground level = 4.0 m  
 - Ground water level 0.0 m  
 The contractor is obliged to verify all soil conditions and characteristics stated in the approved soil investigation report include but not be limited to, correct correct report type - soil replacement - consolidation - etc.  
 2 - Foundation should be placed on a layer of PE concrete 15 cm thickness  
 3 - Finishing of concrete should be made without any interruptions  
 4 - Reinforcement bars to be used should be high grade steel at 22 or minimum yield strength = 2000 kg/cm²  
 5 - Soil desludging material used as according to approved soil classification and to be compacted in layers and each layer should not be less than 900 at the max dry density determined from standard proctor test as per soil report.  
 6 - If 10% Silt salt at the bottom of the excavation pit, soil replacement layer shall be used according to soil investigation report.  
 7 - Curing must be done for the first 3 days after concrete placing  
 8 - All dimensions must be checked against the steel laser working drawings  
 9 - Minimum cube strength ( 28 days ) for foundation concrete = 200 kg/cm²  
 10 - Minimum concrete cover for reinforcement bars should be from 100 mm  
 11 - All dimensions are in millimeters  
 12 - Shrinkage must be used during concrete pouring  
 13 - Shrinkage reducing cement should be used in reinforced concrete.

- التصميم مسئولية الاستشاريين والمهندسين  
 - مراجع الابعاد مع لوائح الترسيمات

PREPARED: M. El-Dokki  
 CHECKED: A. El-Dokki  
 APPROVED: M. El-Dokki

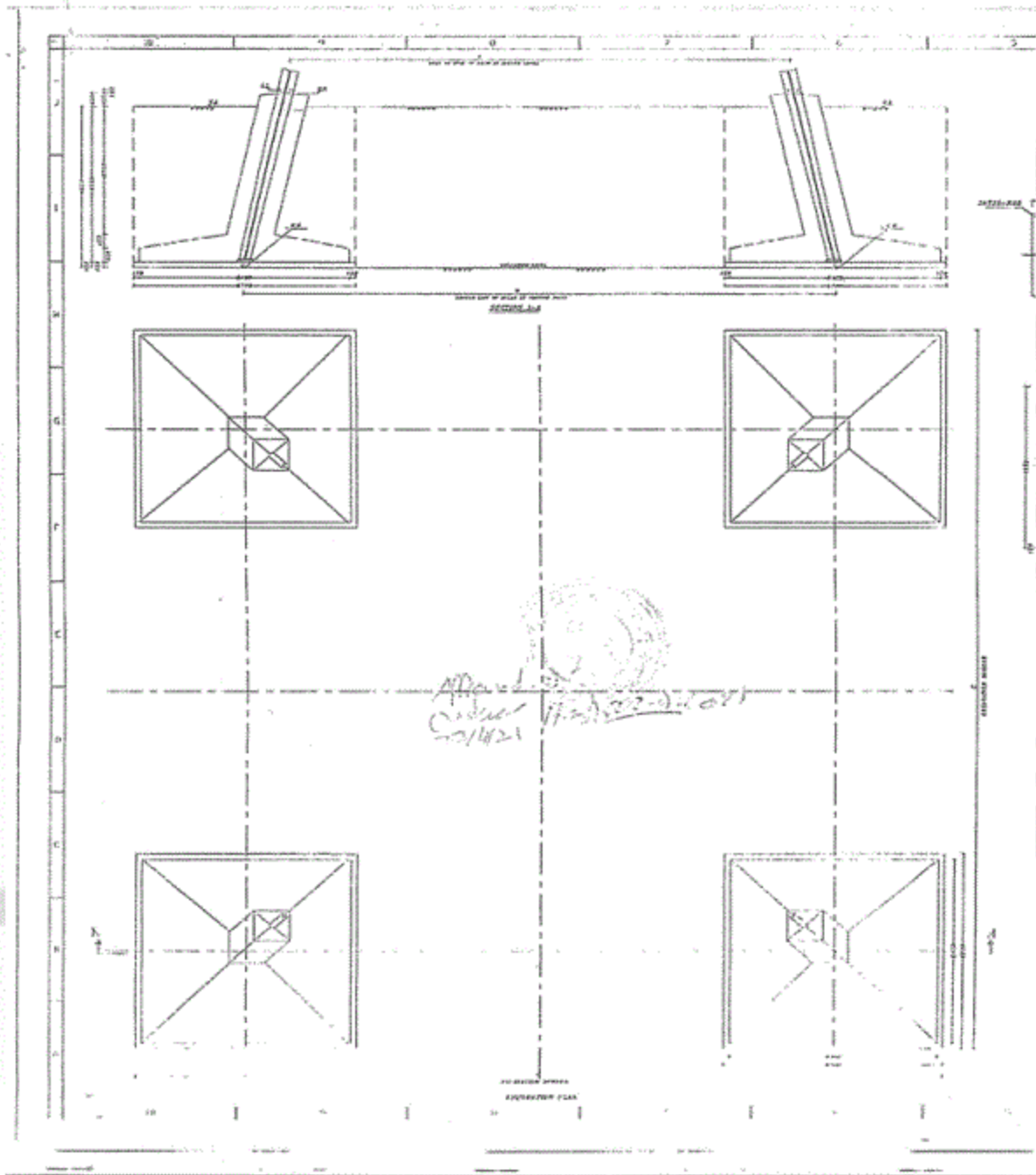
DRAWING NO: 204-020/03-031  
 SHEET NO: 01

10/10/2023

الوقائع المصرية

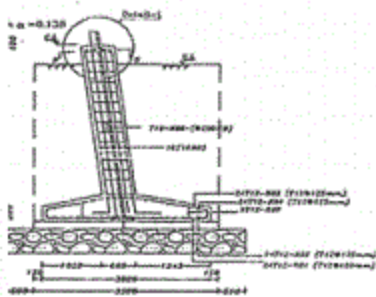


جديس



العدد ١٤٢ - ٢٠٢٤

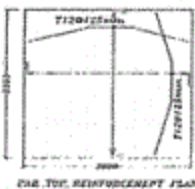
TOUR'S TYPE	DIMENSIONS	
1	1500	1500
2	1500	1500
3	1500	1500
4	1500	1500
5	1500	1500
6	1500	1500
7	1500	1500
8	1500	1500
9	1500	1500
10	1500	1500
11	1500	1500
12	1500	1500
13	1500	1500
14	1500	1500



12 and CHIMNEY REINFORCEMENT DETAIL



12A 30773K REINFORCEMENT PLAN



12B TOP REINFORCEMENT PLAN

المصمم: د. محمد عبد الله  
 المهندس: د. محمد عبد الله

TYPE	SEARCH	DI	DI	DI	TOTAL	TOTAL	REMARKS
(mm)		(mm)	(mm)	(mm)	(mm)	(mm)	
12	1500	1500	1500	1500	1500	1500	01
12	1500	1500	1500	1500	1500	1500	02
12	1500	1500	1500	1500	1500	1500	03
12	1500	1500	1500	1500	1500	1500	04
12	1500	1500	1500	1500	1500	1500	05
12	1500	1500	1500	1500	1500	1500	06
12	1500	1500	1500	1500	1500	1500	07
12	1500	1500	1500	1500	1500	1500	08
12	1500	1500	1500	1500	1500	1500	09
12	1500	1500	1500	1500	1500	1500	10
12	1500	1500	1500	1500	1500	1500	11
12	1500	1500	1500	1500	1500	1500	12
12	1500	1500	1500	1500	1500	1500	13
12	1500	1500	1500	1500	1500	1500	14

**NOTES:**

- Foundations are designed for the following soil conditions:
  - Admittable bearing capacity = 10000 kg/cm<sup>2</sup>
  - Depth of foundation from ground level = 3.00m - 4.00m
  - Ground water level DWT
- The contractor is obliged to verify all soil conditions and recommendations stated in the approved soil investigation report include but not be limited to, correct column design type, soil replacement, etc.
- Foundation should be placed on a layer of F8 compacted 15% soil.
- Finishing of concrete should be made without any interruption.
- Reinforcement bars to be used should be high grade steel at least of minimum yield strength = 3800 kg/cm<sup>2</sup>.
- Soil backfilling material shall be according to approved soil classification and to be compacted in layers and each layer should not be less than 300 mm at the specified density determined from standard proctor test on per soil report.
- 200 dia. DWT shall exist at the bottom of the excavation pit. Soil replacement layer shall be used according to soil investigation report.
- Curing must be done for the first 3 days after concrete placing.
- All dimensions must be checked against the steel bar reinforcement drawings.
- Minimum cube strength (28 days) for foundation concrete = 280 kg/cm<sup>2</sup>.
- Minimum cube strength (28 days) for all layer concrete = 210 kg/cm<sup>2</sup>.
- Minimum concrete cover for reinforcement bars should be 50 mm (50) mm.
- All dimensions are in millimeters.
- Templates must be used during concrete pouring.
- 24 hours curing period should be used for reinforced concrete.

LEVEL	WORKING LEVEL	GROUND LEVEL	CONCRETE LEVEL	FOUNDATION LEVEL

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY E.E.T.C.

ELECTRIC POWER SYSTEMS  
 ENGINEERING COMPANY  
 E.P.S.E.

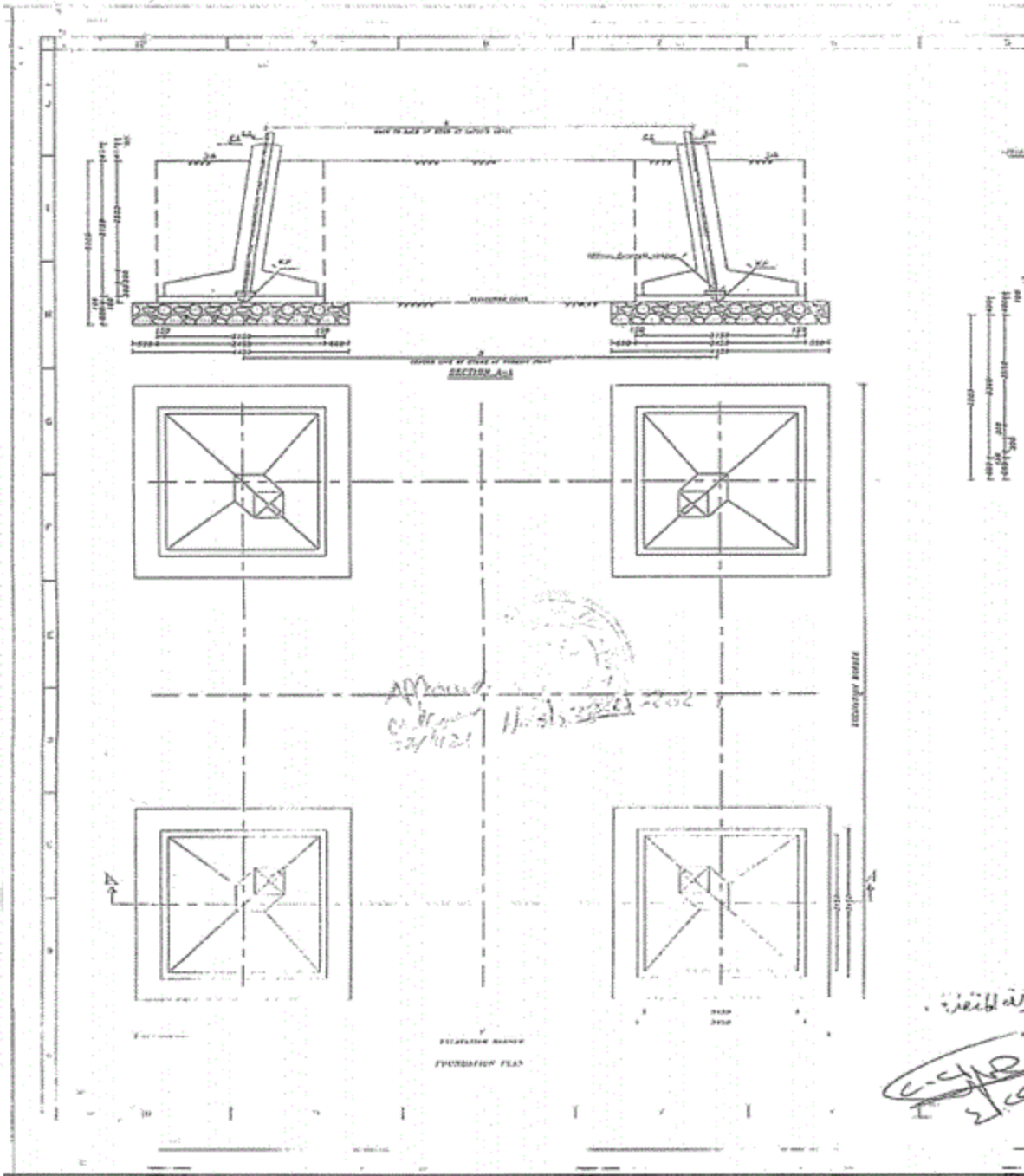
EGYPT MECHANICAL AND ELECTRICAL PROJECTS  
 (SAMPROMKA)

EL ASHER 500 / LRT2 220KV OHTL  
 Foundation Details For Tower Types  
 (B - B=2 - B=12 - B=15)  
 (For Chms 3 With Soil Replacement)

DESIGNED BY	AS AND LEAD	DATE	14/04/2024
CHECKED BY	AT LEAD	DATE	14/04/2024
APPROVED BY	AS AND LEAD	DATE	14/04/2024

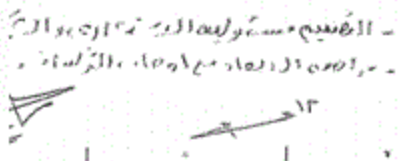
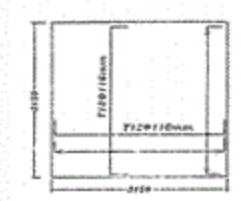
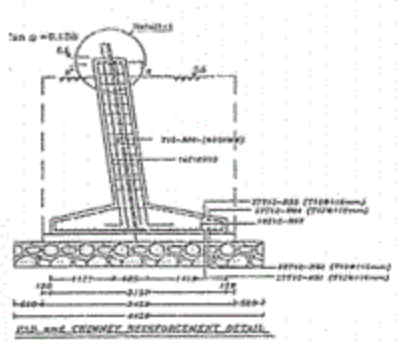


حسين



العدد ١٤٢ - مؤر ٩٦ -

NUMBER	DATE	NUMBER	DATE
1	17/10	1	17/10



ITEM	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	Concrete	1.225	m <sup>3</sup>	1200	1470
2	Reinforcement	2.144	kg	1500	3216
3	Formwork	2.144	m <sup>2</sup>	1000	2144
4	Stirrups	2.144	kg	1500	3216
5	Other	0.000			0.000
Total					10036

ITEM	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL
1	Concrete	1.225	m <sup>3</sup>	1200	1470
2	Reinforcement	2.144	kg	1500	3216
3	Formwork	2.144	m <sup>2</sup>	1000	2144
4	Stirrups	2.144	kg	1500	3216
5	Other	0.000			0.000
Total					10036

**NOTES**

- 1 - Foundations are designed for the following soil conditions :-  
 - Allowable bearing capacity = 1000 kg/cm<sup>2</sup>  
 - Depth of foundation from ground level = 3.00m - Extension level = 3.00m  
 - Ground water level 2.87
- 2 - The contractor is obliged to verify all soil conditions and reinforcement details in the approved soil investigation report, include but not be limited to, column ground level, soil replacement, reinforcement details.
- 3 - Foundation should be placed on a layer of 50 concrete 15 cm thickness.
- 4 - Finishing of concrete should be made without any interferences.
- 5 - Reinforcement bars to be used should be high grade steel at 50 of ultimate tensile strength = 5000 kg/cm<sup>2</sup>.
- 6 - Soil dechlorinating material shall be according to approved soil investigation and to be mentioned in report and each layer should not be less than 500 of the soil dry density determined from standard proctor test as per soil report.
- 7 - If Soil Salt exist at the bottom of the excavation pit, Soil replacement layers shall be used according to soil investigation report.
- 8 - Curing must be done for the first 3 days after concrete placing.
- 9 - All dimension must be checked against the steel form workshop drawing.
- 10 - Minimum tube strength ( 28 days ) for foundation concrete = 200 kg/cm<sup>2</sup>.
- 11 - Minimum concrete cover for reinforcement bars should be 20mm (20) cm.
- 12 - All dimensions are in millimeters.
- 13 - Scaffolding must be used during concrete pouring.
- 14 - Sulphate resisting cement should be used in reinforced concrete.

**LEGEND**

Working Plan	FOUNDATION OF CHIMNEY
Ground Level	GROUND LEVEL
Concrete Level	CONCRETE LEVEL
Building Level	BUILDING LEVEL

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY E.E.T.C

ELECTRIC POWER SYSTEMS  
 ENGINEERING COMPANY  
 E.P.S.

EGYPT MECHANICAL AND ELECTRICAL PRODUCTS  
 (KAHIRAH)

EL ASHER 500 / LRT2 220KV OHTL  
 Foundation Details For Tower Types  
 (B-27)  
 (Steel Class 3 With Soil Reinforcement)

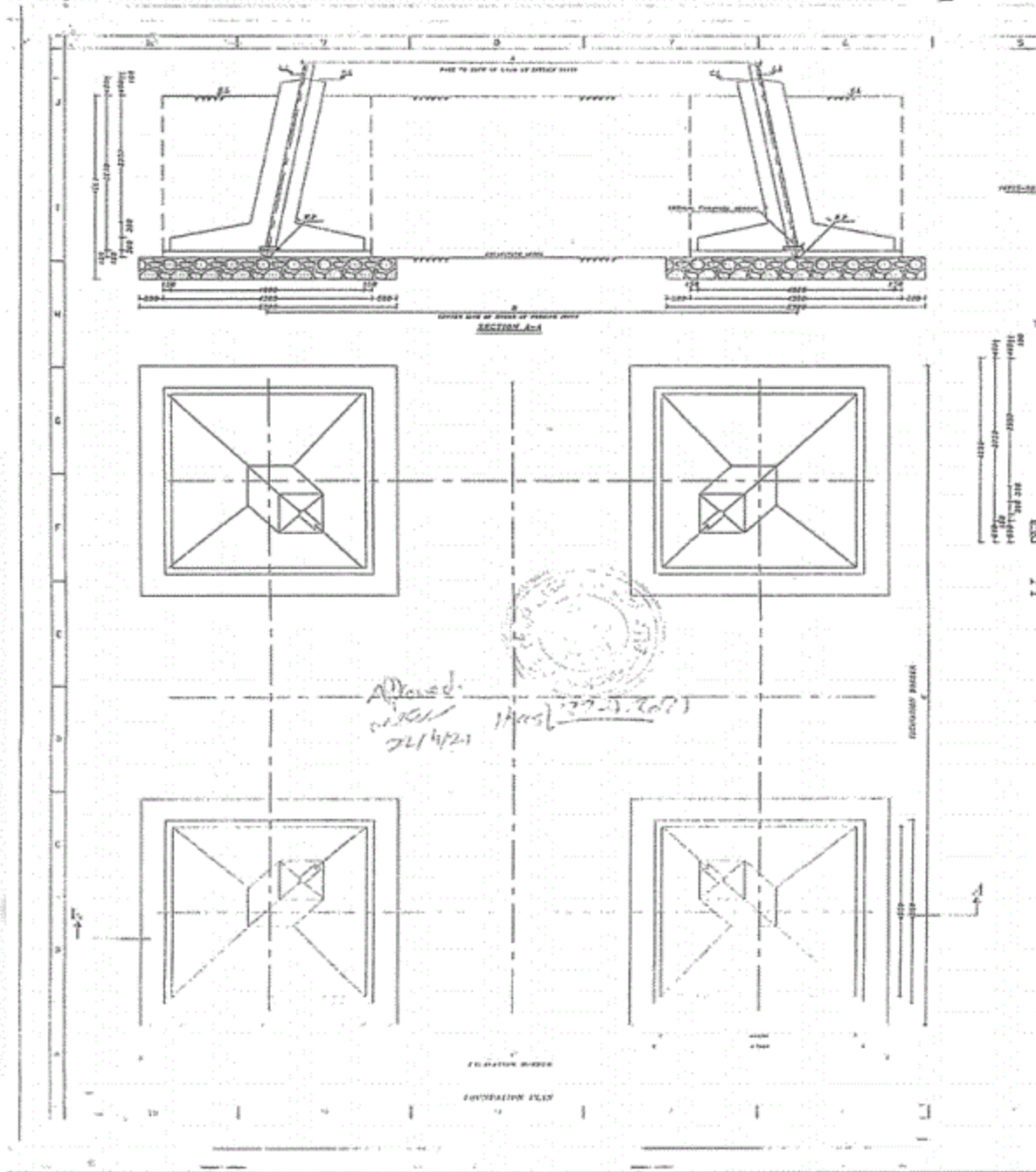
FOR FOUNDATION	SOIL CLASS	FOUNDATION	FOUNDATION
CHIMNEY	A7 SAND	FOUNDATION	FOUNDATION
FOUNDATION	SOIL CLASS	FOUNDATION	FOUNDATION

Handwritten notes and signatures in the top right corner.





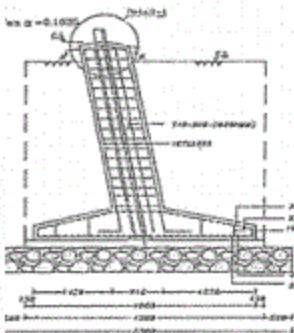
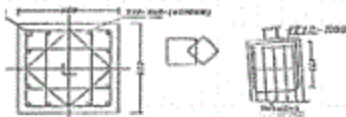
مخطط



مخطط

العدد ١٤٢ - ٩٦٠

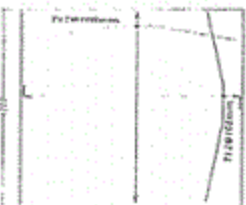
INDEX FILE	NO.	DESCRIPTION	DATE
...	...	...	...



SECTION 3-3



SECTION 3-4



SECTION 3-5

Excavation	Volume	Quantity	Price	Amount	Unit
Excavation	14.845	2070	2.17	44833.65	m³
...	...	...	...	...	...

Item No.	Description	Qty	Unit	Rate	Amount	Remarks
1	...	...	...	...	...	...
2	...	...	...	...	...	...

- 1 - Foundation are designed for the following soil conditions:
  - Allowable bearing capacity = 1.000 kg/cm²
  - Depth of foundation from ground level = 3.75m - Excavation level = 4.50m
  - Ground water level = 0.75m
- 2 - The contractor is obliged to verify all soil conditions and recommendations stated in the approved soil investigation report include but not be limited to, cement content, gravel type, soil replacement, boulders, etc.
- 3 - Foundation should be placed on a layer of FC concrete 15 cm thickness.
- 4 - Placing of concrete should be made without any interruption.
- 5 - Horizontal bars to be used should be high grade steel at 32 of minimum yield strength = 3550 kg/cm².
- 6 - Soil bracing material shall be according to approved soil classification and to be supported in layers and each layer should not be less than 30% of the soil dry density determined from standard proctor test as per soil report.
- 7 - If any soil with at the bottom of the excavation pit, soil replacement layers shall be used according to soil investigation report.
- 8 - Curing must be done for the first 3 days after concrete placing.
- 9 - All dimensions must be checked against the steel layer workshop drawings.
- 10 - Minimum cube strength (28 days) for foundation concrete = 200 kg/cm².
- 11 - Minimum cube strength (28 days) for bed layer concrete = 200 kg/cm².
- 12 - Minimum concrete cover for reinforcement bars should be 75mm (7.5) cm.
- 13 - All dimensions are in millimeters.
- 14 - Temporary work to be used during concrete placing.
- 15 - Synthetic covering sheet should be used in reinforced concrete.

تصميم مسؤولية الاستشارة والشركة المنفذة  
 لإرضاء الرقاع لوقائق الرقاع

NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL
1	...	...	...	...	...
2	...	...	...	...	...

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY E.E.T.C

ELECTRIC POWER SYSTEMS  
 ENGINEERING COMPANY

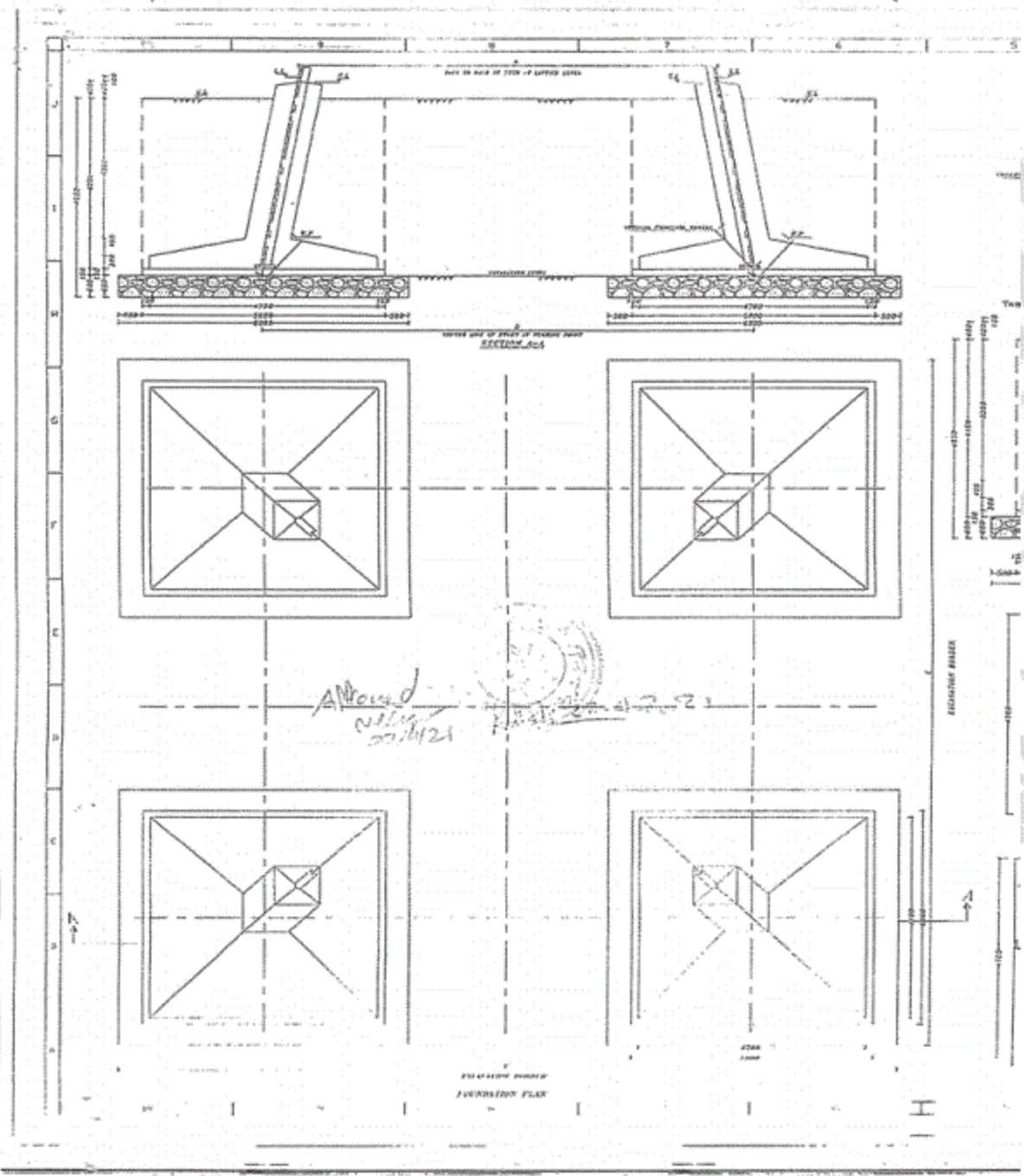
EGYPT MECHANICAL and ELECTRICAL PROJECTS  
 (P.A.F.O.M.E.P.)

EL ASHRAH 500 / 11KV / 220KV OHTEL  
 Foundation Details of Tower Types  
 (Deck = 100x100 - 100x120 - 100x150)  
 (Steel Deck = 3 With Soil Replacement)

DATE: 15/07/2024  
 DRAWING NO: 001/2024/001/01  
 SHEET NO: 01 OF 01



٥ - ١١١



١ العدد ١٤٢ - كرازر ١

TOWER TYPE	TOWER DIMENSIONS			Erection	Performance	Function	Plate Material	Reinforcement	Weight
	A	B	C						
500	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-1	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-2	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-3	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-4	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-5	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-6	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-7	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-8	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-9	10000	5000	10000	10000	10000	10000	10000	10000	10000
500-10	10000	5000	10000	10000	10000	10000	10000	10000	10000

Type	Sketch	No	Length (m)	Weight (kg)	Remarks
500		1	10000	10000	
500		2	5000	5000	
500		3	10000	10000	
500		4	5000	5000	
500		5	10000	10000	
500		6	5000	5000	
500		7	10000	10000	
500		8	5000	5000	
500		9	10000	10000	
500		10	5000	5000	
500		11	10000	10000	
500		12	5000	5000	
500		13	10000	10000	
500		14	5000	5000	
500		15	10000	10000	
500		16	5000	5000	
500		17	10000	10000	
500		18	5000	5000	
500		19	10000	10000	
500		20	5000	5000	
500		21	10000	10000	
500		22	5000	5000	
500		23	10000	10000	
500		24	5000	5000	
500		25	10000	10000	
500		26	5000	5000	
500		27	10000	10000	
500		28	5000	5000	
500		29	10000	10000	
500		30	5000	5000	
500		31	10000	10000	
500		32	5000	5000	
500		33	10000	10000	
500		34	5000	5000	
500		35	10000	10000	
500		36	5000	5000	
500		37	10000	10000	
500		38	5000	5000	
500		39	10000	10000	
500		40	5000	5000	
500		41	10000	10000	
500		42	5000	5000	
500		43	10000	10000	
500		44	5000	5000	
500		45	10000	10000	
500		46	5000	5000	
500		47	10000	10000	
500		48	5000	5000	
500		49	10000	10000	
500		50	5000	5000	
500		51	10000	10000	
500		52	5000	5000	
500		53	10000	10000	
500		54	5000	5000	
500		55	10000	10000	
500		56	5000	5000	
500		57	10000	10000	
500		58	5000	5000	
500		59	10000	10000	
500		60	5000	5000	
500		61	10000	10000	
500		62	5000	5000	
500		63	10000	10000	
500		64	5000	5000	
500		65	10000	10000	
500		66	5000	5000	
500		67	10000	10000	
500		68	5000	5000	
500		69	10000	10000	
500		70	5000	5000	
500		71	10000	10000	
500		72	5000	5000	
500		73	10000	10000	
500		74	5000	5000	
500		75	10000	10000	
500		76	5000	5000	
500		77	10000	10000	
500		78	5000	5000	
500		79	10000	10000	
500		80	5000	5000	
500		81	10000	10000	
500		82	5000	5000	
500		83	10000	10000	
500		84	5000	5000	
500		85	10000	10000	
500		86	5000	5000	
500		87	10000	10000	
500		88	5000	5000	
500		89	10000	10000	
500		90	5000	5000	
500		91	10000	10000	
500		92	5000	5000	
500		93	10000	10000	
500		94	5000	5000	
500		95	10000	10000	
500		96	5000	5000	
500		97	10000	10000	
500		98	5000	5000	
500		99	10000	10000	
500		100	5000	5000	

NOTES:

- Foundations are designed for the following soil conditions:
  - Allowable bearing capacity = 1500 kg/cm<sup>2</sup>
  - Depth of foundation from ground level = 4.5M - Excavation level = 4.50M
  - Ground water level = 0.0M
- The contractor is obliged to verify all soil conditions and recommendations stated in the approved soil investigation report include but not be limited to, correct correct type, soil replacement, stabilization, etc.
- Foundations should be placed on a layer of PC concrete 15 cm thickness.
- Placing of concrete should be made without any interruption.
- Reinforcement bars to be used should be high grade steel at 50 of minimum yield strength = 3600 kg/cm<sup>2</sup>.
- Soil backfilling material shall be according to approved soil classification and to be compacted in layers and each layer should not be less than 100% of the max dry density determined from standard proctor test as per soil report.
- If 50% S&P exist at the bottom of the excavation pit, S&P replacement layers shall be used according to soil investigation report.
- Curing must be done for the first 7 days after concrete pouring.
- All dimensions must be checked against the most lower matching drawings.
- Minimum cube strength ( 28 days ) for foundation concrete = 200 kg/cm<sup>2</sup>
- Minimum cube strength ( 14 days ) for bed layer concrete = 200 kg/cm<sup>2</sup>
- Maximum concrete cover for reinforcement bars should be from (7.5) Cm
- All dimensions are in millimeters.
- Template must be used during concrete pouring.
- Calculation results annex should be used in reinforced concrete.

APPROVED BY: *(Signature)*

FOR THE ENGINEER RESPONSIBLE DESIGN

FOR THE REINFORCEMENT PLAN

DIMENSIONS OF SOIL CLASS 3	
Ground Level	10000
Concrete Level	4500
Excavation Level	4500

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY E.E.T.C

ELECTRIC POWER SYSTEMS  
 ENGINEERING COMPANY  
 E.P.S.

EGYPT MECHANICAL AND ELECTRICAL PROJECTS  
 (R.A.P.P.H.E.C.A)

EL ASHER 500 / LRT2 220KV OHTL  
 Foundation Details For Tower Types  
 (500 - 1000-3 - 500-12 - 500-15)  
 (Soil Class 3 With Soil Replacement)

PREPARED: M. SAAD / 10/10/2023 / 10/10/2023 / 10/10/2023 / 10/10/2023 / 10/10/2023

CHECKED: A.1 / 10/10/2023 / 10/10/2023 / 10/10/2023 / 10/10/2023 / 10/10/2023

APPROVED: M. SAAD / 10/10/2023 / 10/10/2023 / 10/10/2023 / 10/10/2023 / 10/10/2023

PROJECT NO: -M4-5002-S-010R

DATE: 10/10/2023

SCALE: A3

NO. OF SHEETS: 0

TOTAL SHEETS: 01

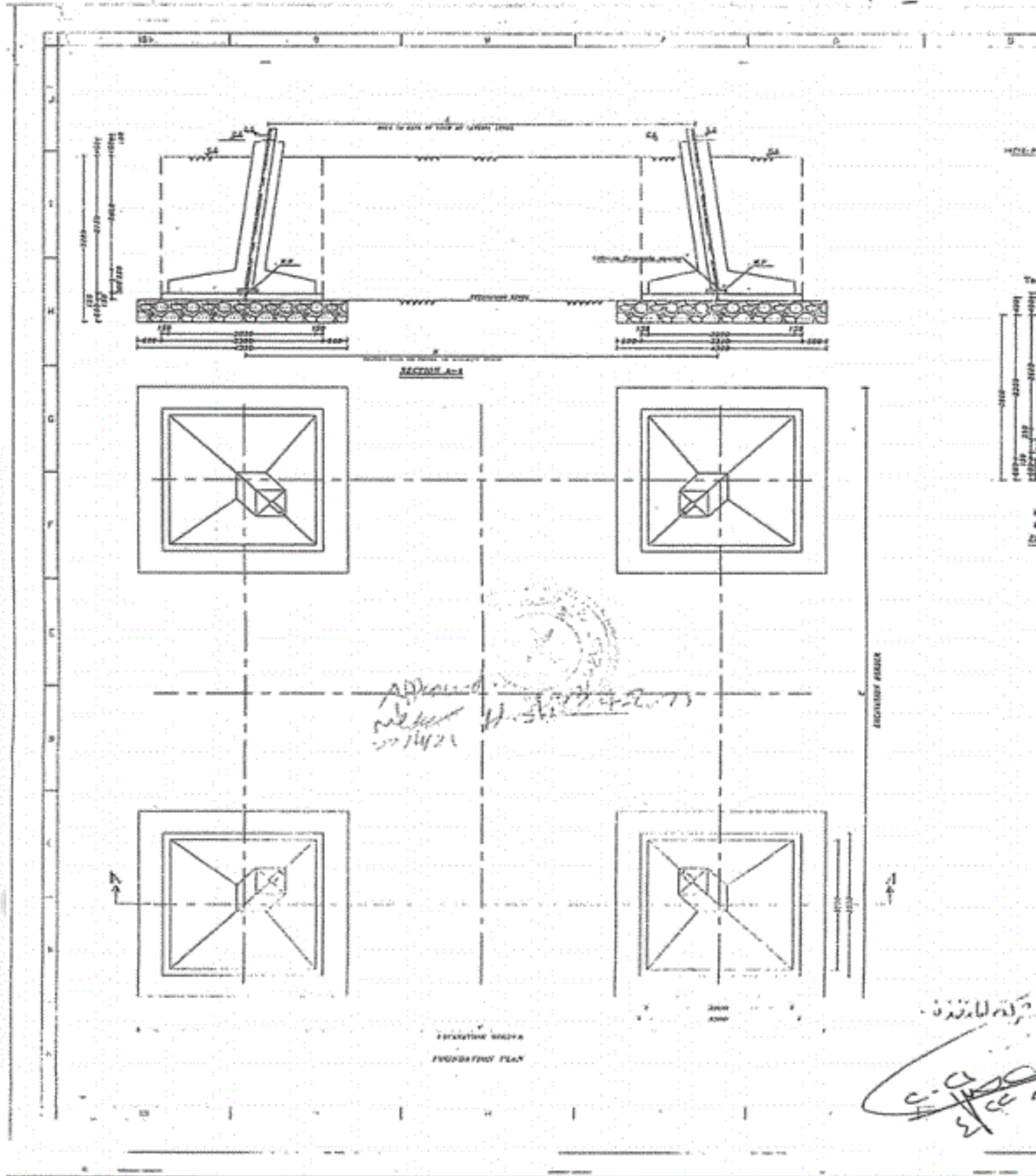
Handwritten notes in Arabic script.



Handwritten signature and stamp in Arabic.



٩- ص ١٠٠



العدد ١٤٢ - كوار ٦

REINERS TYPE	REINERS DIMENSIONS			REINERS WEIGHTS		REINERS VOLUMES		REINERS PERCENTAGES		REMARKS
NO.	SECTION	LENGTH	DIAMETER	WEIGHT	VOLUME	PERCENTAGE	PERCENTAGE	PERCENTAGE	PERCENTAGE	
1	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
2	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
3	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
4	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
6	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
7	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
8	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
9	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
10	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
11	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
12	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
13	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
14	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
15	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
16	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
17	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
18	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
19	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
20	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
21	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
22	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
23	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
24	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
25	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
26	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
27	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
28	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
29	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
30	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
31	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
32	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
33	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
34	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
35	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
36	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
37	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
38	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
39	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
40	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
41	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
42	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
43	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
44	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
45	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
46	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
47	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
48	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
49	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	
50	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	

FIG. NO. 1. CRANK REINFORCEMENT DETAIL.

FIG. NO. 2. REINFORCEMENT PLAN.

**NOTES**

- 1 - Foundation are designed for the following soil conditions:
  - Allowable bearing capacity = 1000 kg/cm<sup>2</sup>
  - Depth of foundation from ground level = 4.00 m - Excavation level = 1.00 m
  - Ground water level 0.00 m
- 2 - The contractor is obliged to verify all soil conditions and recommendations stated in the approved soil investigation report before but not be limited to, contact existing ground type, soil replacement, consolidation, etc.
- 3 - Foundation should be placed on a layer of FC concrete 15 cm thickness
- 4 - Piling of concrete should be made without any interruption.
- 5 - Reinforcement bars to be used should be high grade steel at 22 or minimum yield strength = 3000 kg/cm<sup>2</sup>
- 6 - Soil strutting material shall be according to approved soil investigation and shall be subjected in layers and each layer should not be less than 50% of 100 (max. dry) density determined from standard proctor test as per soil report.
- 7 - 3" City Soil suit at the bottom of the excavation pit. Soil replacement layers shall be used according to soil investigation report.
- 8 - Curing must be done for the first 3 days after concrete placing
- 9 - All dimensions must be checked against the steel lower working drawings
- 10 - Minimum cube strength (28 days) for foundation concrete = 200 kg/cm<sup>2</sup>
- 11 - Minimum cube strength (28 days) for and layer concrete = 210 kg/cm<sup>2</sup>
- 12 - Minimum concrete cover for reinforcement bars should be from (20) cm
- 13 - All dimensions are in millimeters
- 14 - Template must be used during concrete pouring
- 15 - Scaffolding resting against should be used in retaining concrete.

الكهنة مسئولية التصميم والرسومات الهندسية  
 في وجه الوعاة في لوجات الرئاسات

ARAB REPUBLIC OF EGYPT  
 MINISTRY OF ELECTRICITY AND ENERGY  
 EGYPTIAN ELECTRICITY TRANSMISSION COMPANY E.E.T.C

ELECTRIC POWER SYSTEMS  
 ENGINEERING COMPANY  
 NUMBER 10 EL-DOKKI  
 CAIRO EGYPT

EGYPT MECHANICAL AND ELECTRICAL PROJECTS  
 (SAHABOURA)

PROJECT TITLE  
 EL ASHER 500 / LV12 220KV OHTL  
 Foundation Details For Tower Types  
 (B90 - B90+3 - B90+12 - B90+15)  
 (Soil Class 3 With Soil Replacement)

PREPARED BY: M. Alal El-Dokki  
 DATE: 1/1/2024  
 DRAWN BY: A. Farouk  
 DATE: 1/1/2024  
 CHECKED BY: M. El-Sayed  
 DATE: 1/1/2024

REVISIONS

NO.	DESCRIPTION	DATE
0	Issue for approval	1/1/2024
1	Issue for construction	1/1/2024

