

Tender Specification

Relamping project

(REV_3)

Igoumenitsa Port Authority S.A.

IPA S.A.



Ο.Λ.ΗΓ. Α.Ε.

ΟΡΓΑΝΙΣΜΟΣ ΛΙΜΕΝΟΣ ΗΓΟΥΜΕΝΙΤΣΑΣ

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1. Relamping project

1.1 Requirements for the project

The offer must include:

- 1) Design of a new lighting system:
 - a. Total new LED lighting installed power
 - b. Provider must calculate the percentage of reduction of the new lighting compared to the current old lighting
 - c. Provider must calculate the energy saving due to the lights dimming
 - d. Lux level study: the lux level of each part of the port, object of replacement of lights, must be indicated. After the completion of the work, if the declared lux level will not be respected, through measurements on fields, the provider must replace the lights in order to be compliant with the declared lux level, without extra charge.
- 2) According the requirements and of the European and Greek standards for the required lighting needs in relation to the specific use of the areas of the port:
 - a. For the extreme part of the quay near the sea, average lux level must be 50 lux
 - b. For the most internal part of the terminal average lux level must be 30 lux
 - c. For the parking areas average lux level must be 20 lux

In the images below, red areas must be covered with 30 lux and the green area must be covered with 50 lux. The parking areas must be covered with 20 lux.

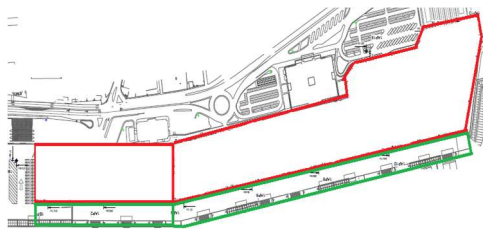


Figure 1. Phase A



Figure 2. Phase B1



Figure 3. Phase B2

- 3) The replacement of the existing lights with new dimmable LED lights must take place for all the lights in the Phase A, Phase B1, and south part of Phase B2. In the Phase A and Phase B, as indicated in table 1, there are already currently installed LED lights must be re-used and moved into the old port and into the canopies.
- 4) LED lights must be dimmable in order to reduce the used power for each fixture
- 5) Remote control lighting system needs to be provided in order to control all the lights according to the real-time specific needs of the port and to monitor the main electrical variable of the whole lighting. The remote control and monitoring system must be provided for the all the new LED lights of the phase A and B1-2.

The software must let the user to control remotely all the fixtures setting different scenarios in order to adapt the lux level according to the real-time need of the ports. The different scenarios must be set by grouping the masts and set a percentage of dimming for each group.

The platform must be able to let the user to monitor all the main electrical variables of the fixtures, such as voltage, current, power, energy consumption etc. on real-time. All the data must be recorded and available to the user in a cloud-based software as well as automatic analysis must be shown by the software regarding the energy consumption of the lighting.

The software must be set in order to give the user different alarms in case of fault of the fixtures based on the parameters given by the maker.

All the lights must be turned on and turned off automatically according to the sunset and sunrise. For such a scope, luminosity sensors are not needed but sunset and sunrise timing can be used to turn off and turn on the lights accordingly during all the months of the year.

- 6) The provider must take into account that it is necessary to put floodlights, on the pillars near the sea, in a way to avoid glare at the incoming ships. A solution from the provider must be provided in order to ensure the 50 average lux level.
- 7) Installation of the lights must be included (including labor work on the ground for uninstalation of old lamps and installation of new LED lamps).
- 8) Warranty must be at least of 5 years.
- 9) Payment terms must be:
 - a. 35% prepayment with the signature contract
 - b. 30% with the start of work
 - c. 15% by delivery of the equipment
 - d. 20% with the commissioning performed by the client

1.2 Information for the project

The image below, describe the different areas of the port:

- Phase A
- Phase B
- Phase C (out of scope)
- Domestic Port (out of scope)
- Old Port

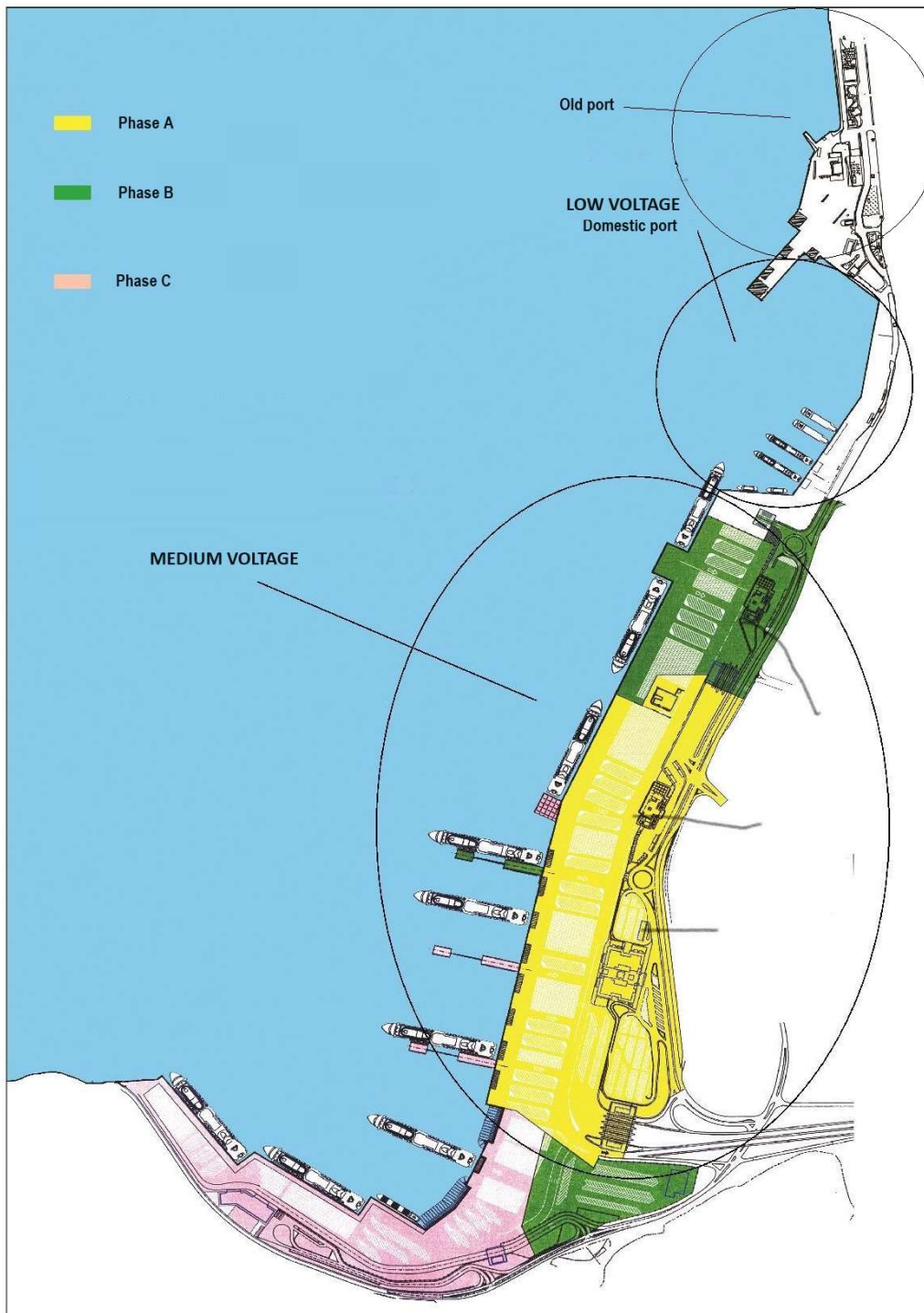


Figure 4. Port of Igoumenitsa

The following tables describe the power and the number of floodlights that are currently installed in the port.

PHASE A					
Number	LIGHTING MAST 30 m:	OLD FLOODLIGHT TYPE	FLOODLIGHTS	OLD FLOODLIGHT POWER (W)	TOTAL OLD POWER (kW)
1	P-1	SNF111 1xSON-T1000W-NB	7	1000	7
2	P-2	SNF111 1xSON-T1000W-NB	7	1000	7
3	P-3	450W LED	8	450	3.6
4	P-4	SNF111 1xSON-T1000W-NB	7	1000	7
5	P-5	SNF111 1xSON-T1000W-NB	8	1000	8
6	P-6	500W LED	7	500	3.5
7	P-7	SNF111 1xSON-T1000W-NB	8	1000	8
8	P-8	SNF111 1xSON-T1000W-NB	7	1000	7
9	P-9	SNF111 1xSON-T1000W-NB	8	1000	8
10	P-10	SNF111 1xSON-T1000W-NB	7	1000	7
11	P-11	SNF111 1xSON-T1000W-NB	8	1000	8
12	P-12	SNF111 1xSON-T1000W-NB	4	1000	4
13	P-13	SNF111 1xSON-T1000W-NB	5	1000	5
14	P-14	SNF111 1xSON-T1000W-NB	11	1000	11
15	P-15	SNF111 1xSON-T1000W-NB	7	1000	7
16	P-16	SNF111 1xSON-T1000W-NB	7	1000	7
17	P-17	SNF111 1xSON-T1000W-NB	5	1000	5
18	P-18	SNF111 1xSON-T1000W-NB	7	1000	7
19	P-19	SNF111 1xSON-T1000W-NB	6	1000	6
20	P-20	SNF111 1xSON-T1000W-NB	10	1000	10

PHASE B1						
Number	LIGHTING MAST 30 m:	OLD FLOODLIGHT TYPE	FLOODLIGHTS/ MAST	OLD FLOODLIGHT POWER (W)	TOTAL OLD POWER (kW)	
1	P-1	5*450W LED	5	450	2.25	
2	P-2	7*1000W Na	7	1000	7	
3	P-3	7*1000W Na	7	1000	7	
4	P-4	7*1000W Na	7	1000	7	
5	P-5	10*220W LED	10	220	2.2	
6	P-6	7*1000W Na	7	1000	7	
7	P-7	7*1000W Na	7	1000	7	
8	P-8	10*220W LED	10	220	2.2	
9	P-9	Out of scope (no need of replacement)				
10	P-10	7*450W LED	7	450	3.15	
11	P-11	14*220W LED	14	220	3.08	
12	P-12	14*220W LED	14	220	3.08	

PHASE B2					
Number	LIGHTING MAST 30 m:	OLD FLOODLIGHT TYPE	FLOODLIGHTS/ MAST	OLD FLOODLIGHT POWER (W)	TOTAL OLD POWER (kW)
1	P-13	7*1000W Na	7	1000	7
2	P-14	7*1000W Na	7	1000	7
3	P-15	7*1000W Na	7	1000	7

OLD PORT					
Number	LIGHTING MASTS 15 m:	OLD FLOODLIGHT TYPE	FLOODLIGHT TYPE	OLD FLOODLIGHT POWER (W)	TOTAL OLD POWER (kW)
1	P-1	400W Na	10	400	4
2	P-2	400W Na	6	400	2.4
3	P-3	400W Na	12	400	4.8
4	P-4	400W Na	6	400	2.4
5	P-5	400W Na	12	400	4.8
6	P-6	400W Na	12	400	4.8
7	P-7	400W Na	10	400	4
8	P-8	400W Na	8	400	3.2
9	P-9	400W Na	6	400	2.4

EXTERNAL SHELTERS					
Number	-	OLD FLOODLIGHT TYPE	FLOODLIGHT TYPE	OLD FLOODLIGHT POWER (W)	TOTAL OLD POWER (kW)
1	-	250W Na	200	250	50

Table 1. Existing lights power

In the following pages, drawing of the plants indicating the position of the masts is shown.

On the old port, no drawings are available so survey must be performed.

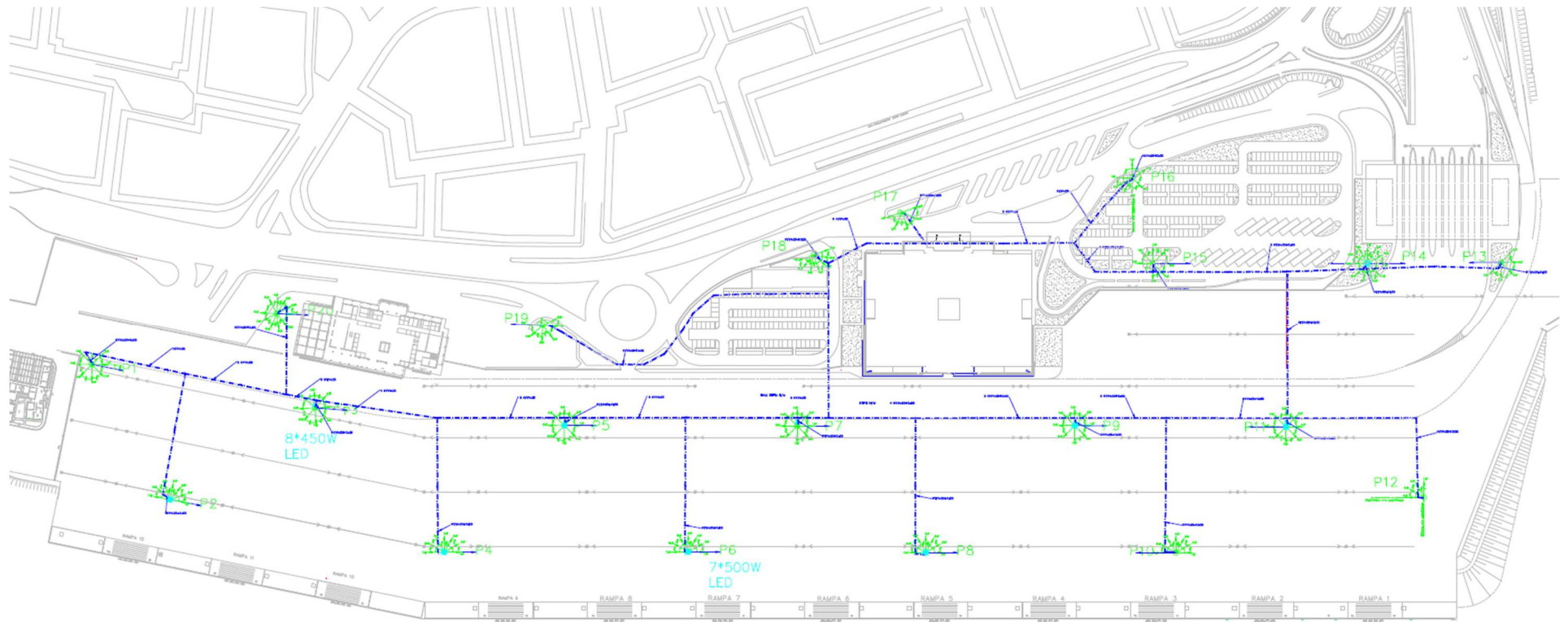


Figure 5 Phase A - Lighting

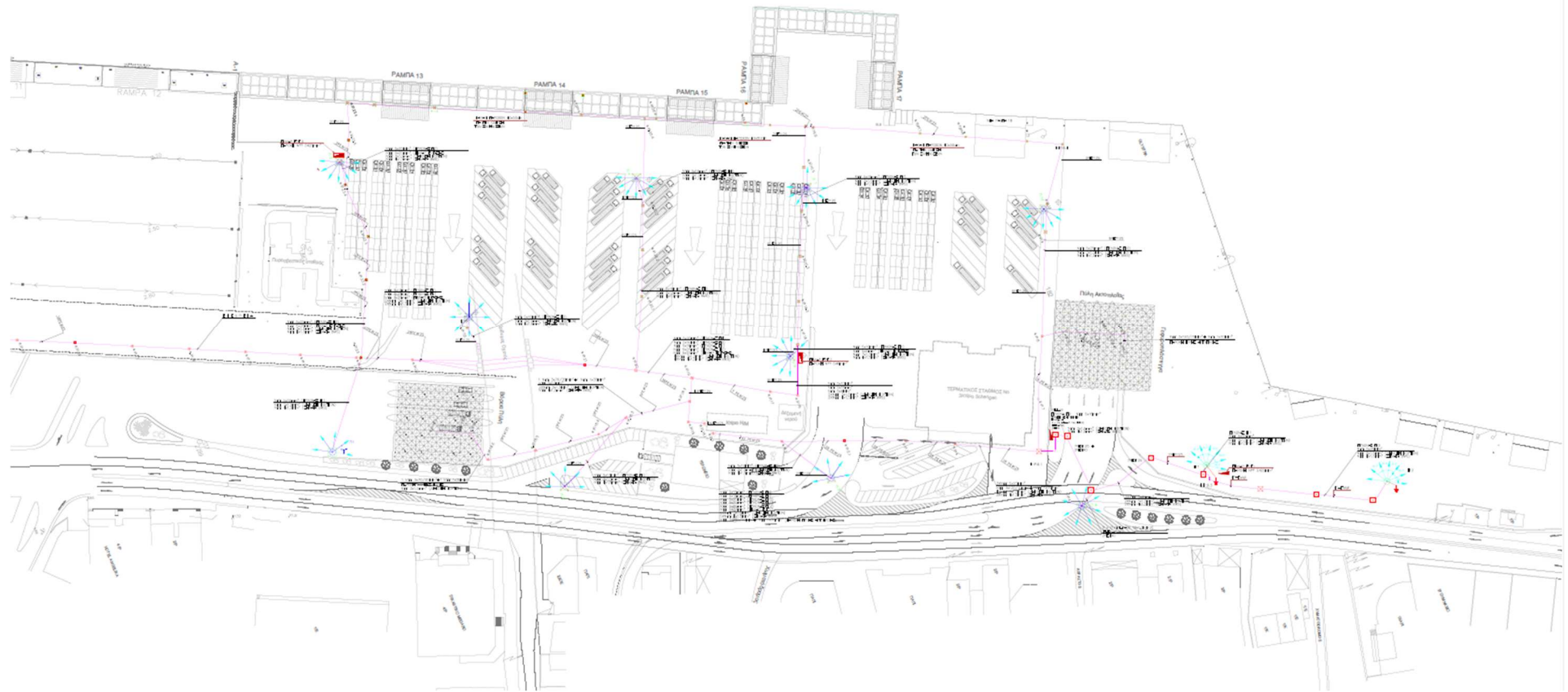


Figure 6 Phase B1 – Lighting

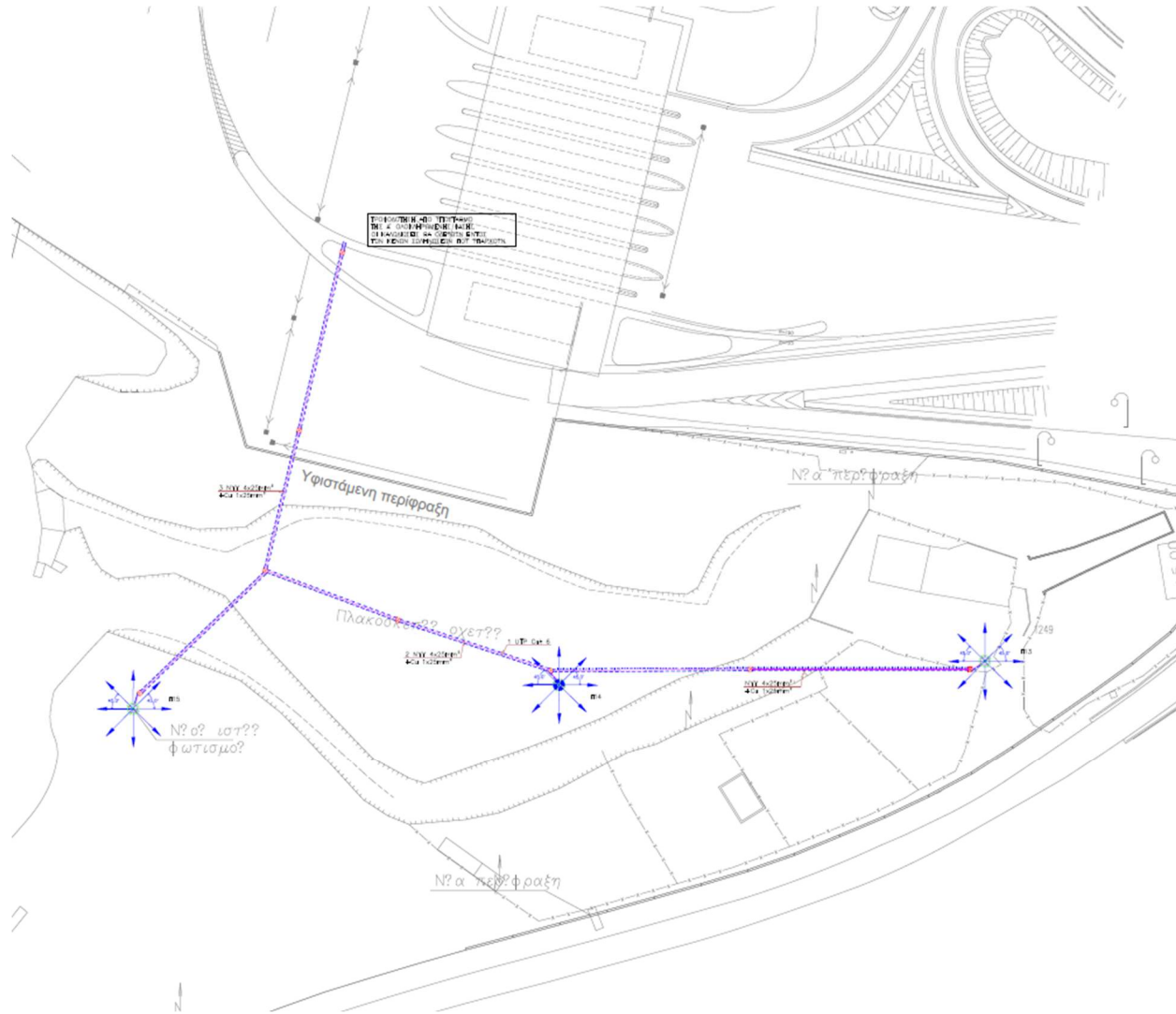


Figure 7 Additional Phase B2 – Lighting

The following image indicates the canopies, whose lighting must be included in the relamping project.

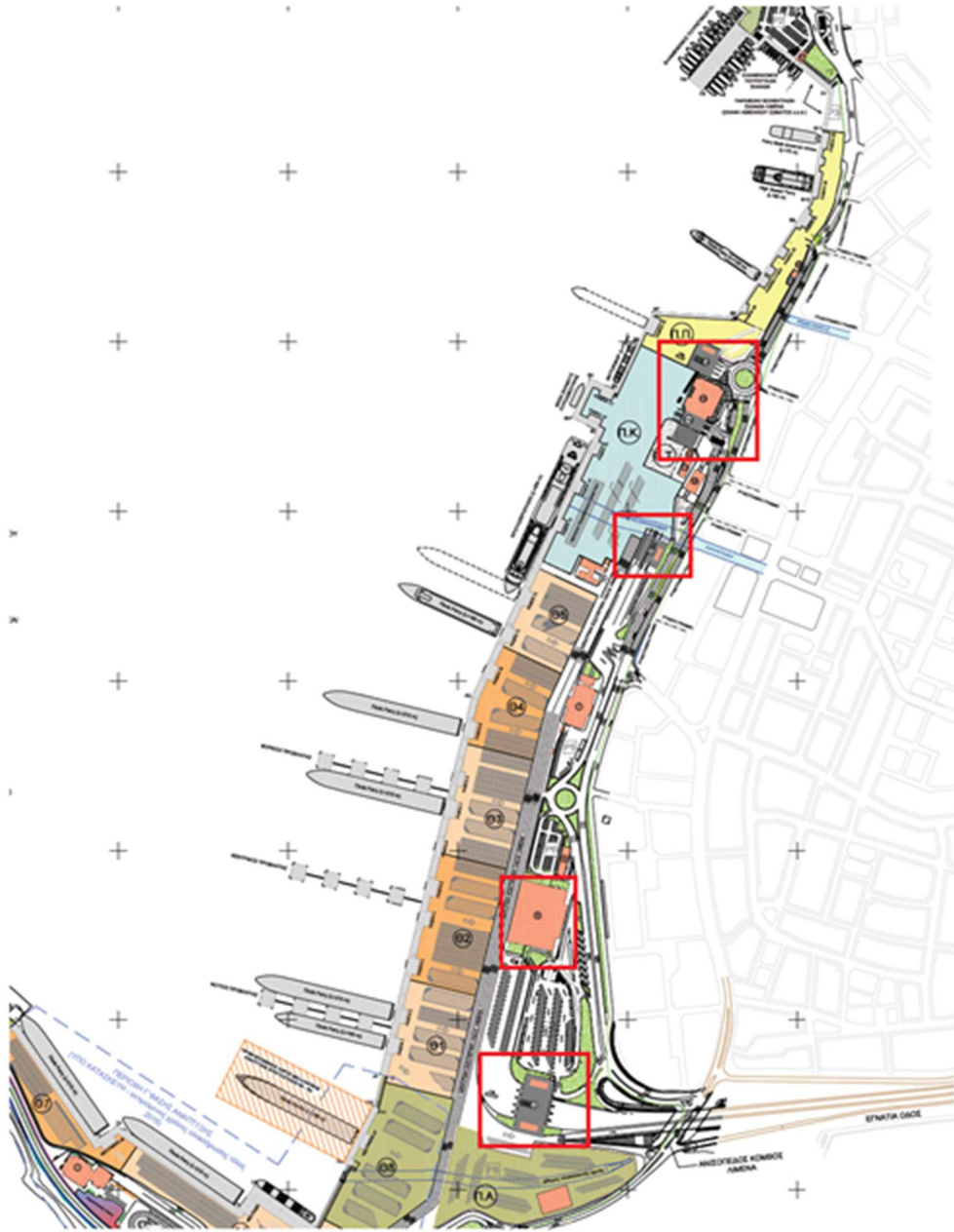


Figure 8. Canopies of the port