



“INSTALAÇÃO DE TANQUES E ARMAZENAGEM PARA COMBUSTÍVEIS LÍQUIDOS NO TERMINAL NORTE DE GRANEIS LÍQUIDOS DO PORTO DE AVEIRO – PROJETO LIVERPOOL”

- PROJETO DE EXECUÇÃO-

ESTUDO DE IMPACTE AMBIENTAL

VOLUME IV – ANEXOS TÉCNICOS

MAIO DE 2022

NOTA INTRODUTÓRIA

A **TRIFÓLIO – ESTUDOS E PROJECTOS AMBIENTAIS E PAISAGÍSTICOS, LDA.**, elaborou o presente Estudo de Impacte Ambiental do Projeto para a “**Instalação de Tanques e Armazenagem para Combustíveis Líquidos no Terminal Norte de Graneis Líquidos do Porto de Aveiro – Projeto LIVERPOOL**”, adiante designado como “**Projeto LIVERPOOL**” no Porto de Aveiro para a **RNM–PRODUTOS QUÍMICOS, S.A.**, em fase de Projeto de Execução.

O Estudo de Impacte Ambiental compreende os seguintes volumes:

VOLUME I – RESUMO NÃO TÉCNICO

VOLUME II – RELATÓRIO SÍNTESE

VOLUME III – PEÇAS DESENHADAS

VOLUME IV – ANEXOS TÉCNICOS

A **TRIFÓLIO** agradece a todos os que colaboraram no fornecimento de informações e elementos de cartografia para a elaboração do presente estudo.

Lisboa, maio de 2022



TRIFÓLIO
Estudos e Projectos
Ambientais e Paisagísticos Lda

André Luís Carrêlo

Coordenador Executivo

Eng.º do Ambiente

Este documento foi redigido de acordo com as regras do Novo Acordo Ortográfico da Língua Portuguesa (aprovado pela Resolução da Assembleia da República n.º 26/91, de 23 de agosto).

ÍNDICE GERAL

1	PROJETO DE EXECUÇÃO	1
2	BIODIVERSIDADE	1
3	AMBIENTE SONORO.....	1
4	PAISAGEM – ANEXOS CARTOGRÁFICOS.....	1
5	PATRIMÓNIO CULTURAL.....	1
5.1	COMPONENTE TERRESTRE	1
5.1.1	Registo Fotográfico	1
5.1.2	Pedido de Autorização de Trabalhos Arqueológicos	3
5.1.3	Despacho de Aprovação do Pedido de Autorização de Trabalhos Arqueológicos.....	4
5.1.4	Desenhos Técnicos.....	7
5.2	COMPONENTE NÁUTICA E SUBAQUÁTICA.....	11
5.2.1	Pedido de Autorização de Trabalhos Arqueológicos	11
5.2.2	Pedido de Consulta de Processos	12
5.2.3	Autorização do Pedido de Autorização de Trabalhos Arqueológicos	13
5.2.4	Desenhos Técnicos.....	13
6	CÓPIA DAS RESPOSTAS DAS ENTIDADES CONTACTADAS.....	1

ÍNDICE DE QUADROS

QUADRO 1.1 – FLORA E VEGETAÇÃO	1
QUADRO 1.2 – AVIFAUNA.....	2
QUADRO 1.3 – HERPETOFAUNA	3
QUADRO 1.4 – MAMÍFEROS.....	3
QUADRO 2.1 – ANEXOS CARTOGRÁFICOS - PAISAGEM.....	1

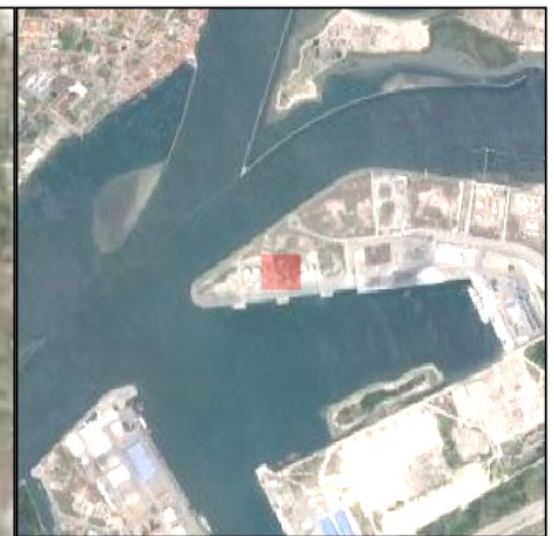
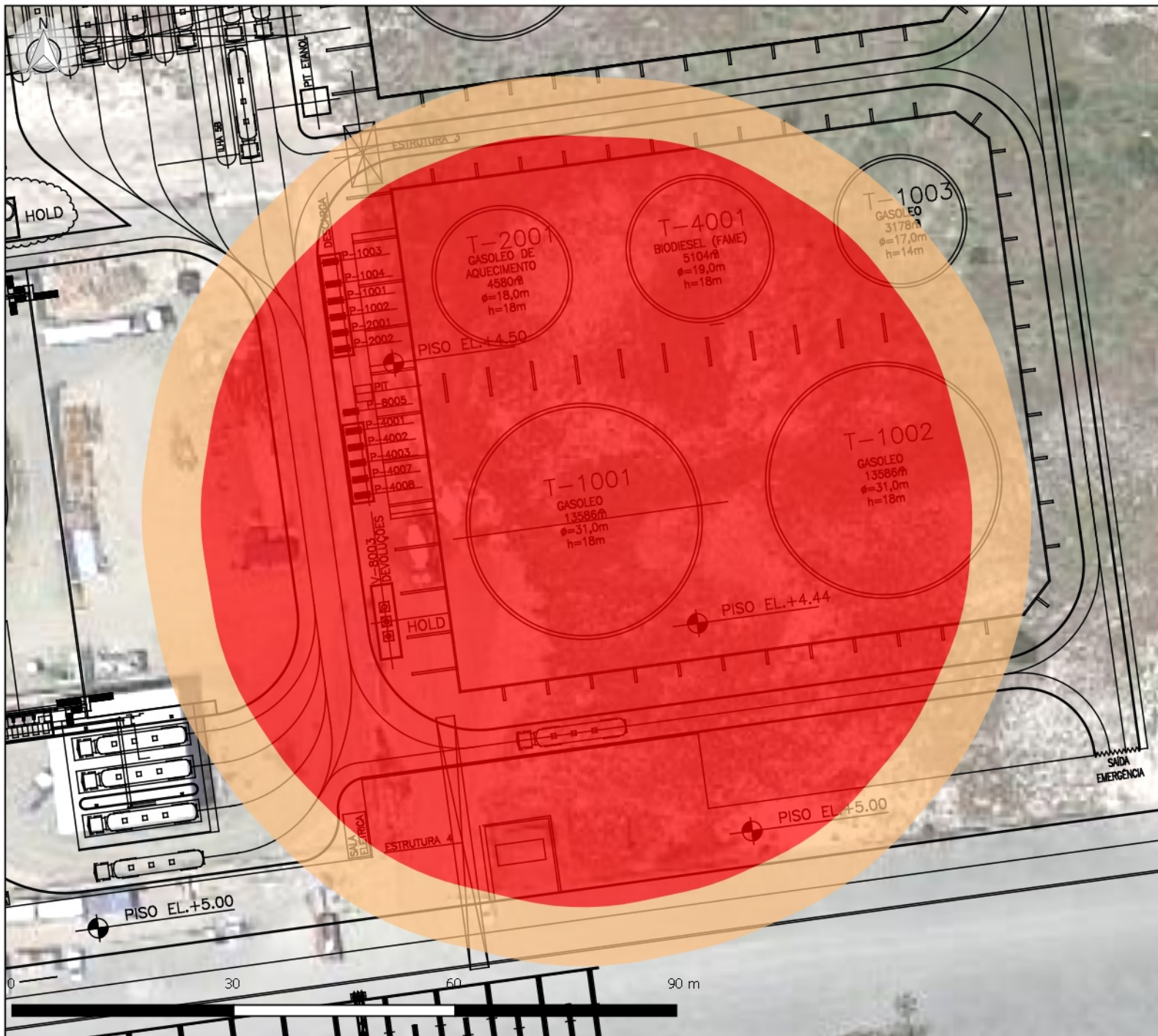
ÍNDICE DE FIGURAS

FIGURA 3.1 - F1 VISTA GERAL DE NORTE PARA SUL DA ÁREA PROSPETADA.....	1
FIGURA 3.2 - F2 VISTA DE PORMENOR DE ATERRO COM TOUT VENANT EVIDENCIADO NO SECTOR A2	1
FIGURA 3.3 - F3 VISTA DE PORMENOR DE UM FRAGMENTO DE CERÂMICA DE CONSTRUÇÃO (TIJOLO) CONTEMPORÂNEO NO SECTOR A1	2
FIGURA 3.4 - F4 VISTA DO ESTALEIRO DE APOIO ÀS ATIVIDADES NO SECTOR A3	2

1 PROJETO DE EXECUÇÃO

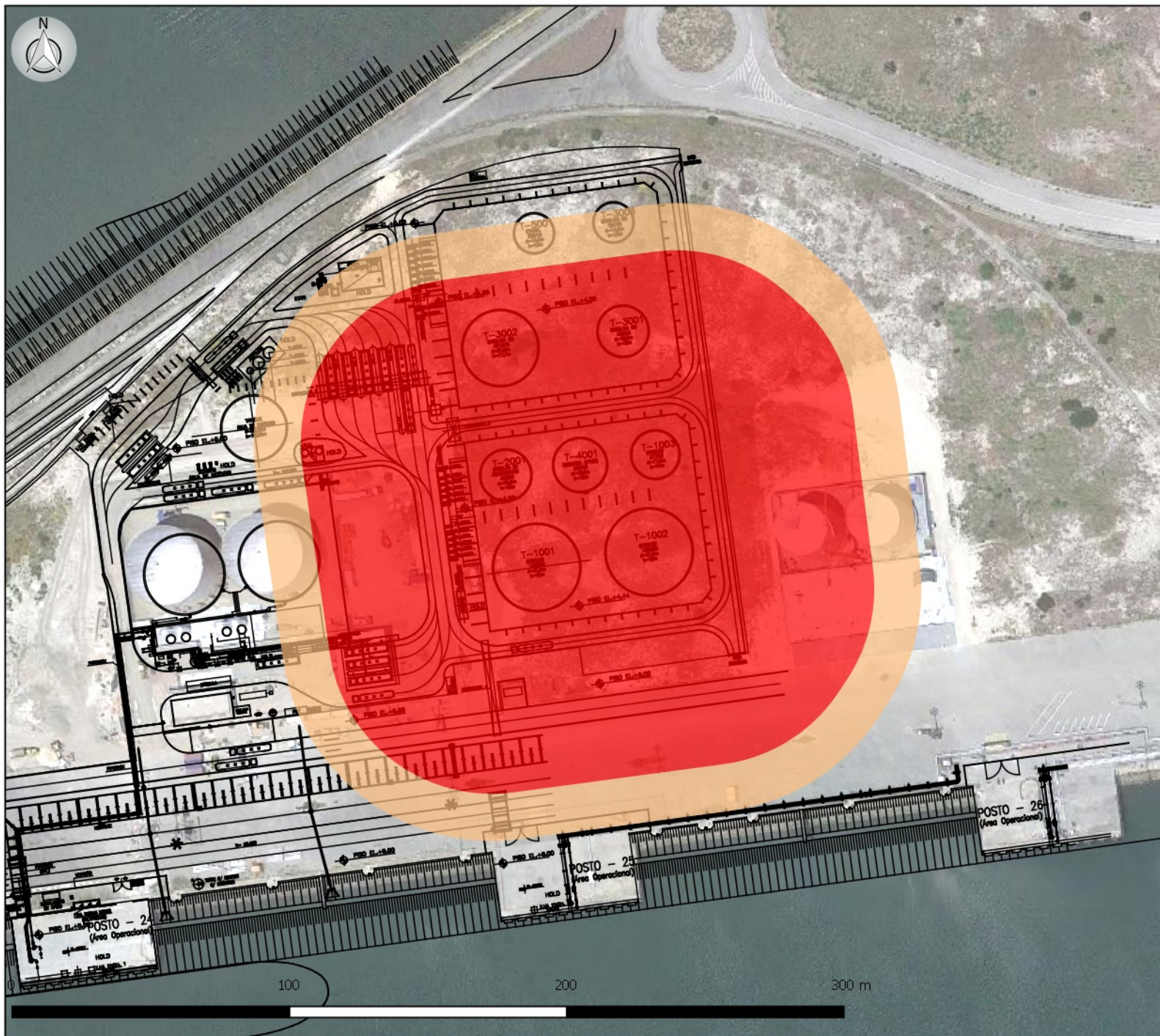
Consta do presente Anexo os seguintes elementos do Projeto de Execução:

- Memória Descritiva
- Plot Plan
- Projeto de Drenagem
- Fundações
- Piping
- P&ID
- Fire Protection System
- Arranjos Exteriores
- Reconhecimento Geológico – Geotécnico para o Projeto “Liverpool” em 2017, pela GEOMA - Geotecnia e Mecânica de Solos, Lda
- Avaliação de Compatibilidade de Localização:
 - Apêndice 1 – Plantas
 - Apêndice 2 – Fichas de Dados de Segurança de produtos
 - Apêndice 3 – Representações Gráficas dos Cenários
 - Apêndice 4 – Resultados PHAST



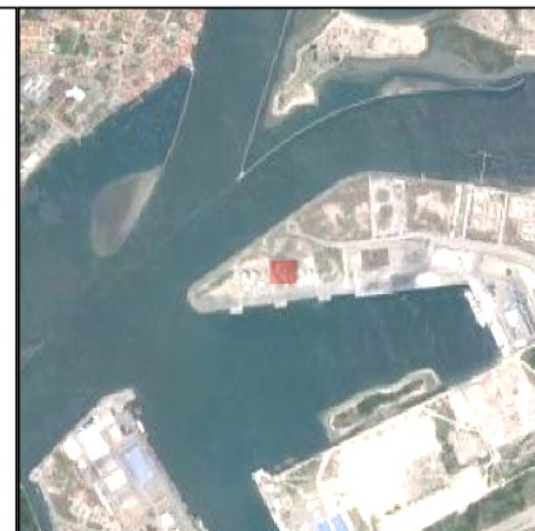
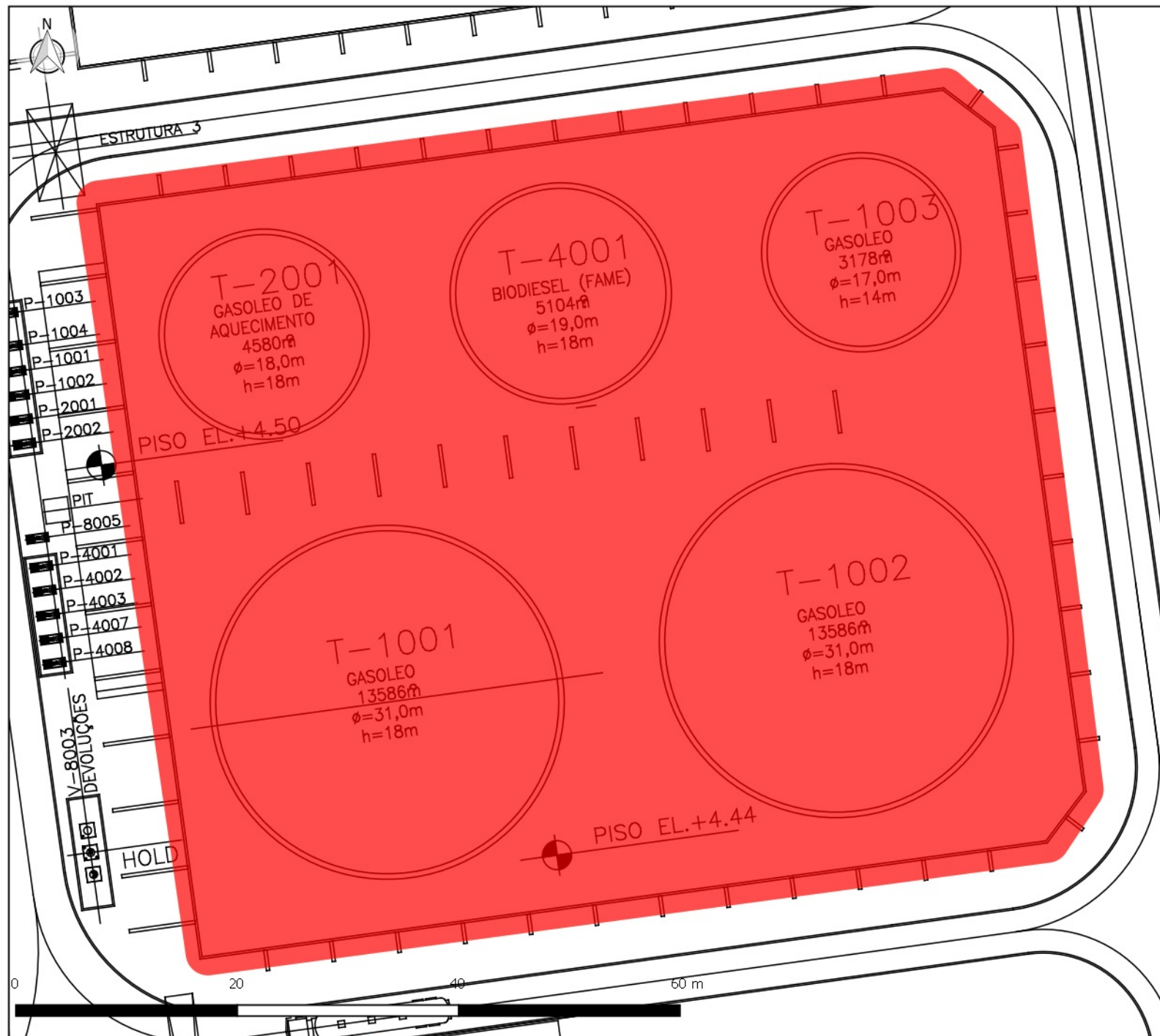
7 kW/m² ACL
5 kW/m² ACL

37 m
45 m



7 kW/m² ACL
5 kW/m² ACL

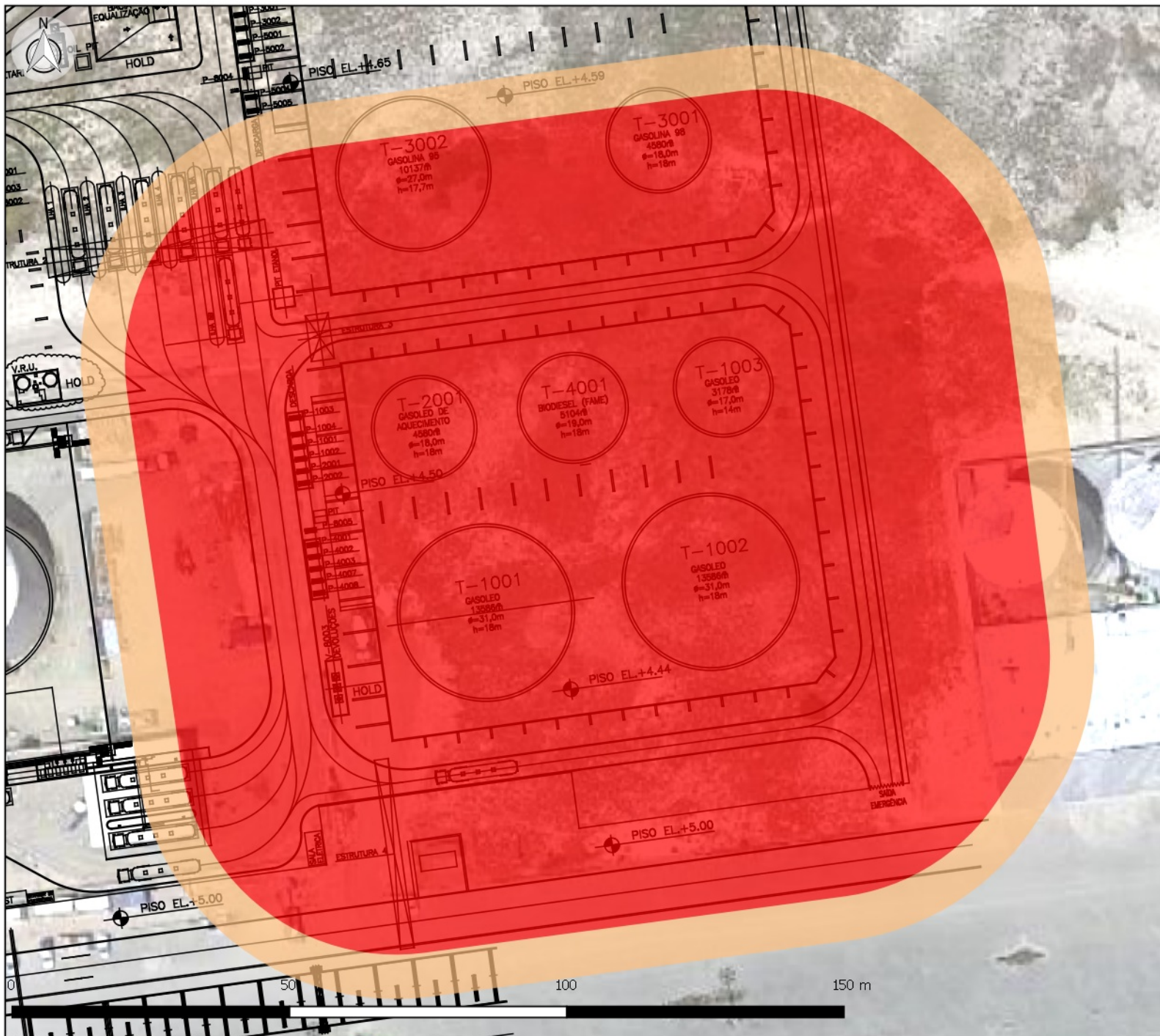
59 m
76 m



5 kW/m² ACL
7 kW/m² ACL

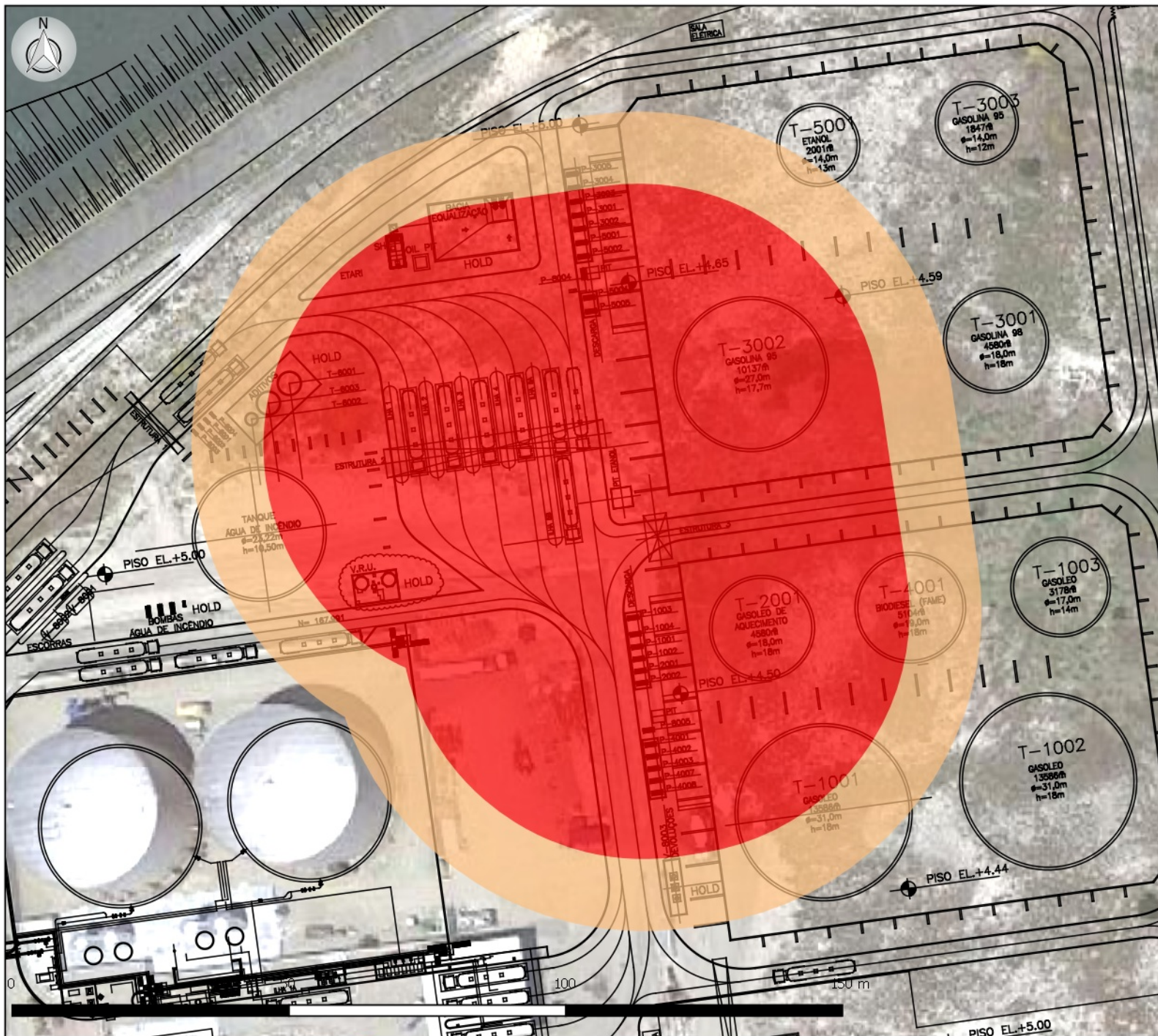
2 m

2 m



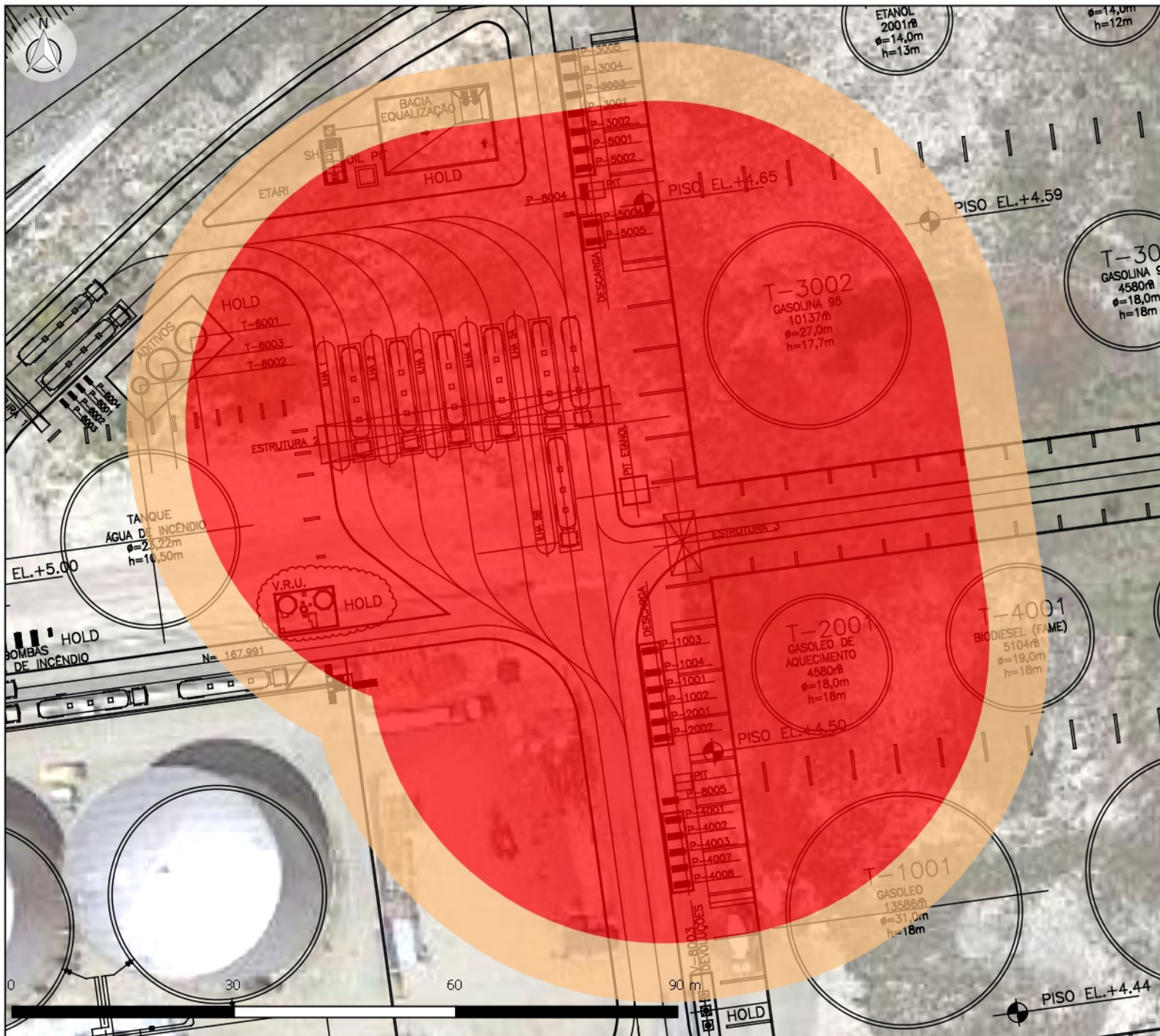
7 kW/m² ACL
5 kW/m² ACL

39 m
47 m



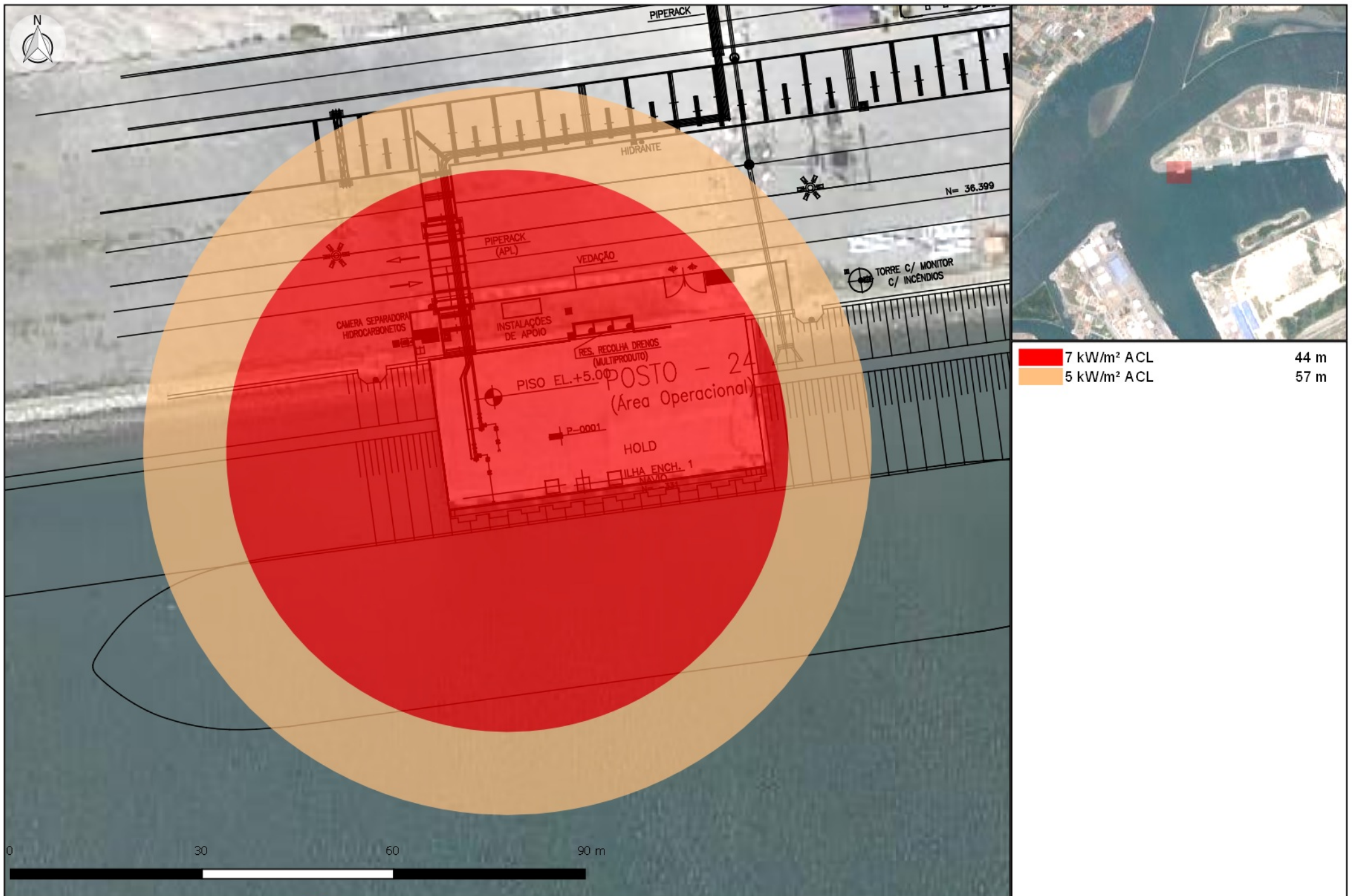
7 kW/m² ACL
5 kW/m² ACL

44 m
57 m

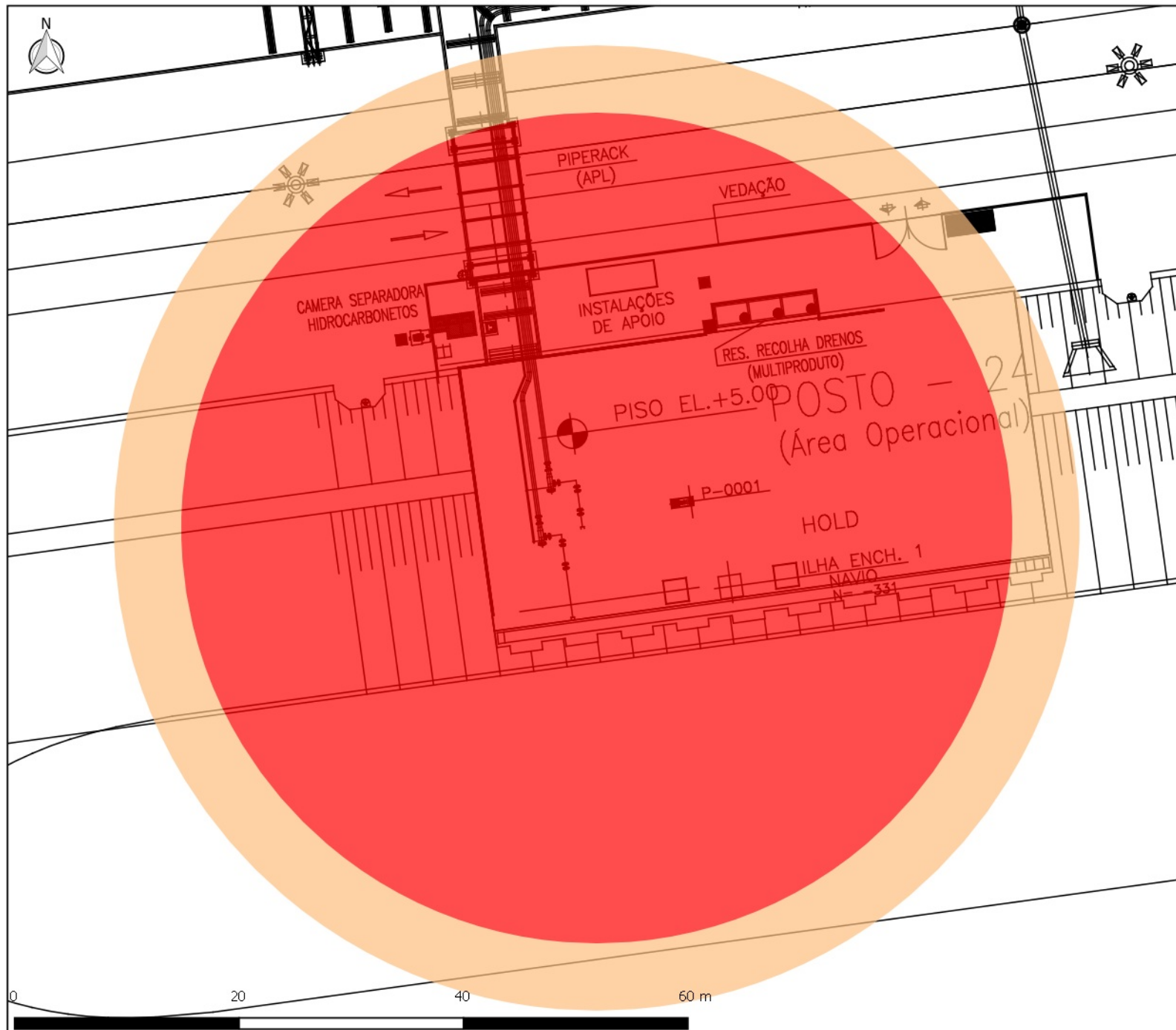


7 kW/m² ACL
5 kW/m² ACL

40 m
48 m

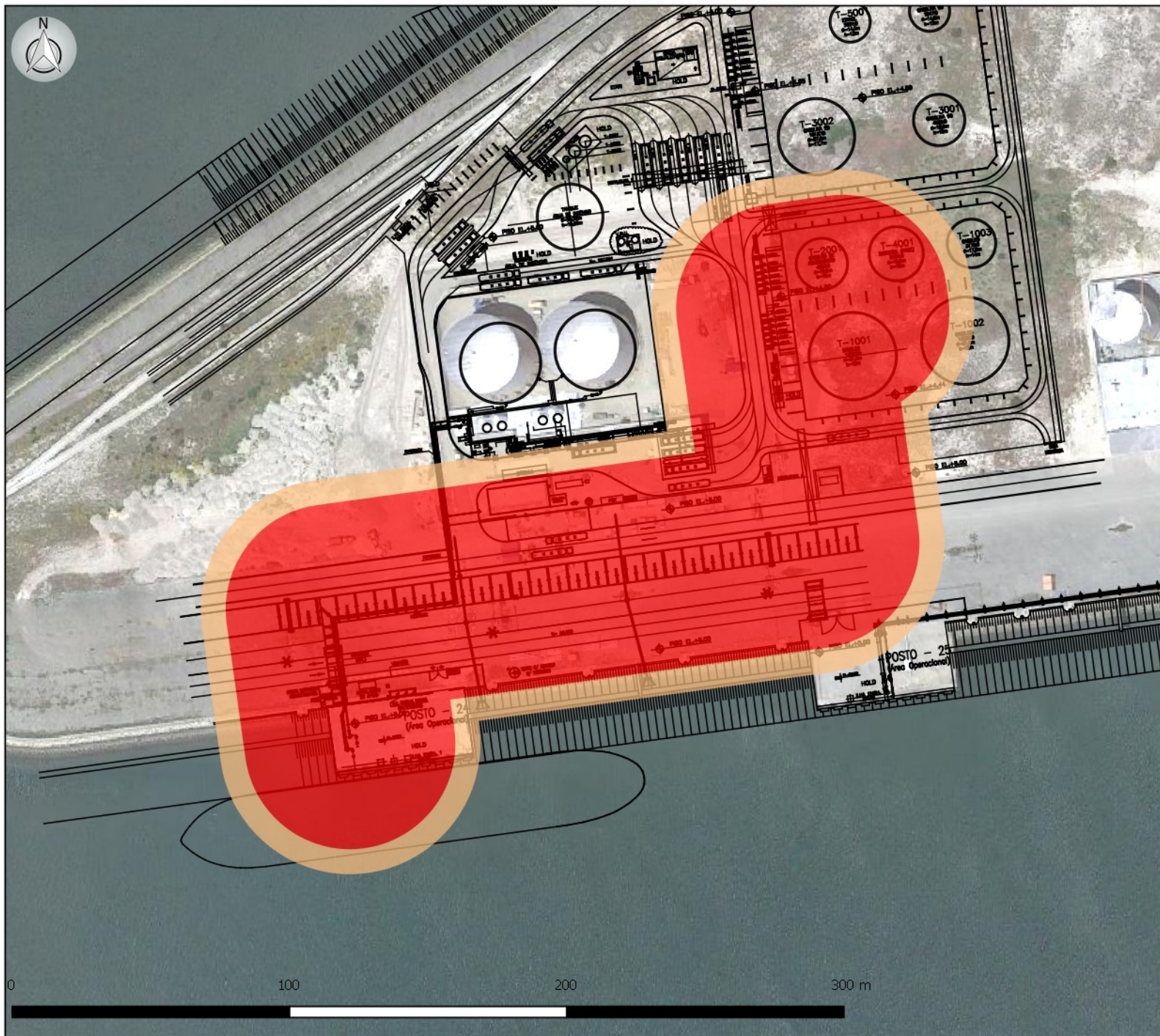


	7 kW/m ² ACL	44 m
	5 kW/m ² ACL	57 m



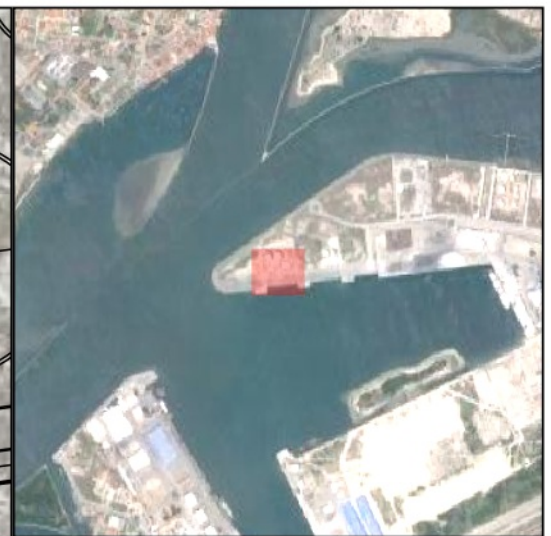
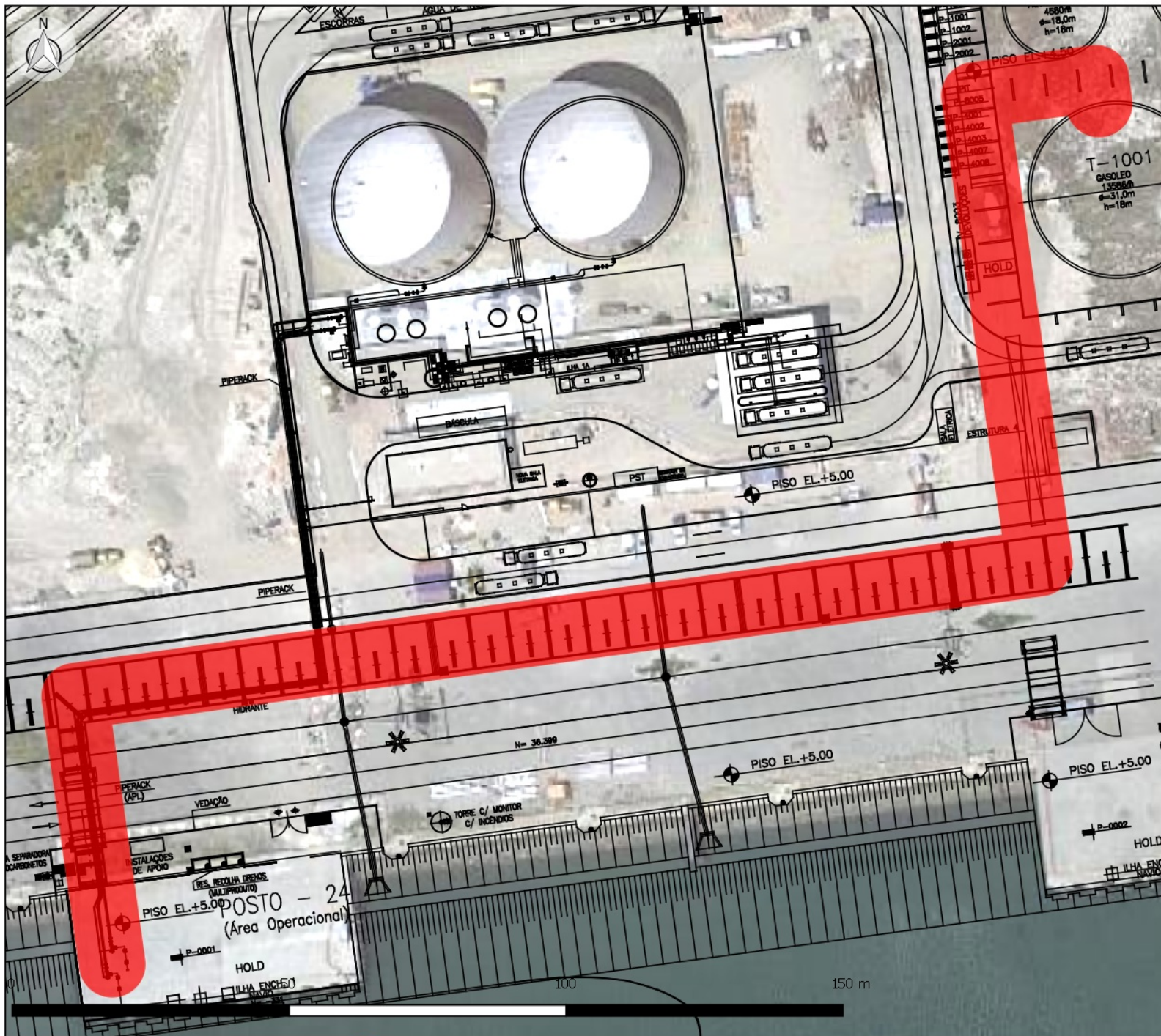
7 kW/m² ACL
5 kW/m² ACL

37 m
43 m



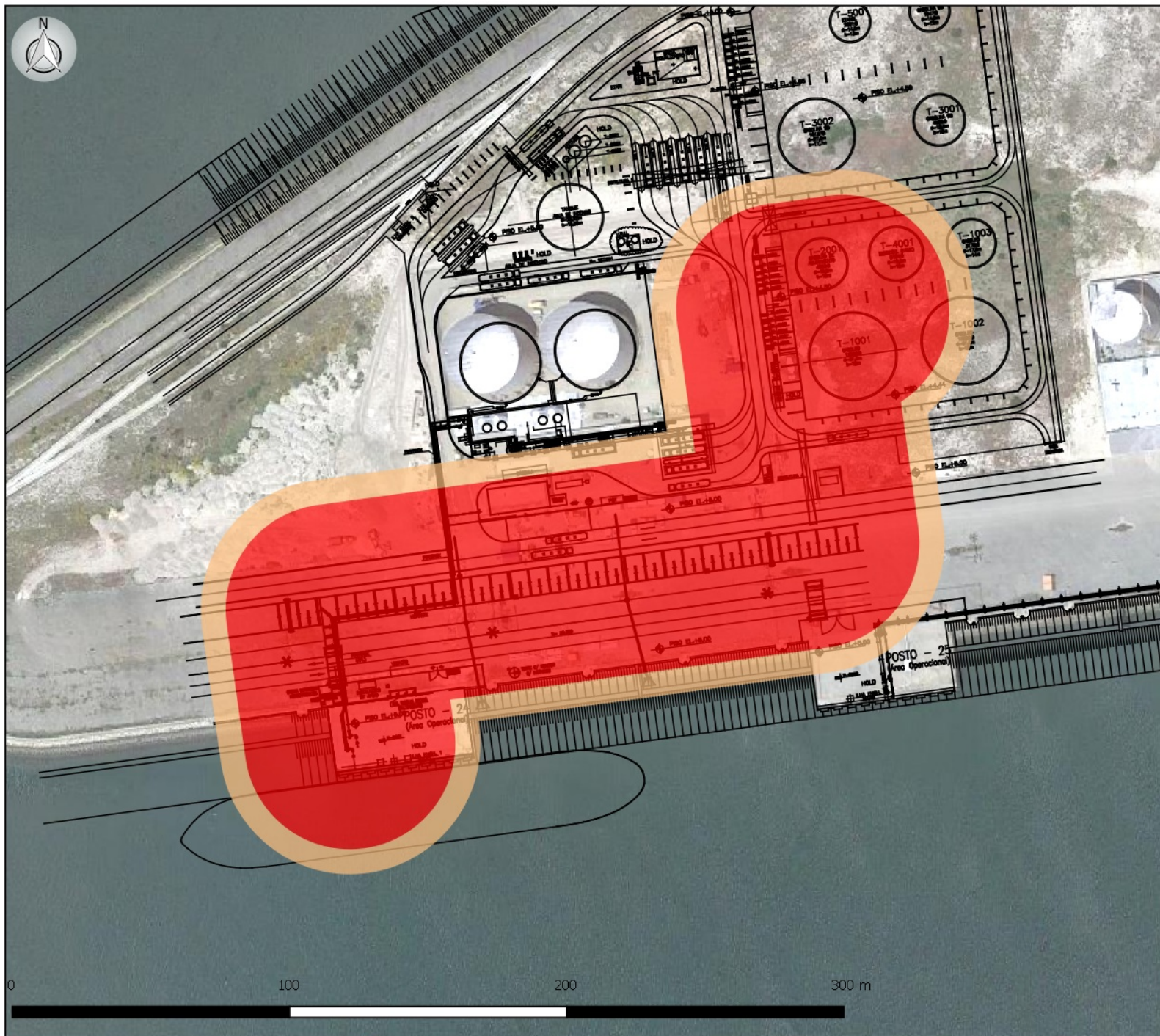
7 kW/m² ACL
5 kW/m² ACL

38 m
47 m



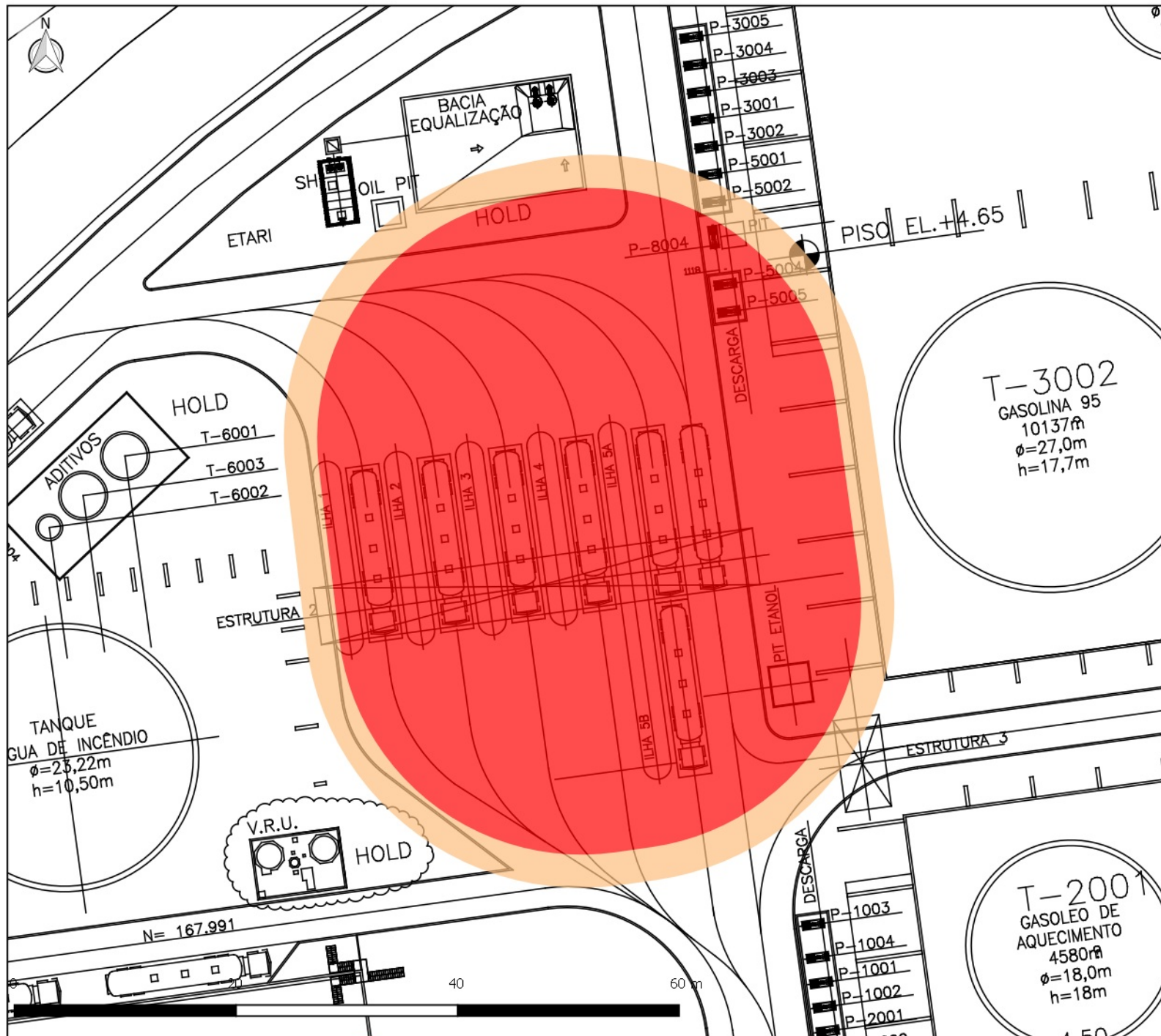
7 kW/m² ACL
5 kW/m² ACL

6 m
6 m



7 kW/m² ACL
5 kW/m² ACL

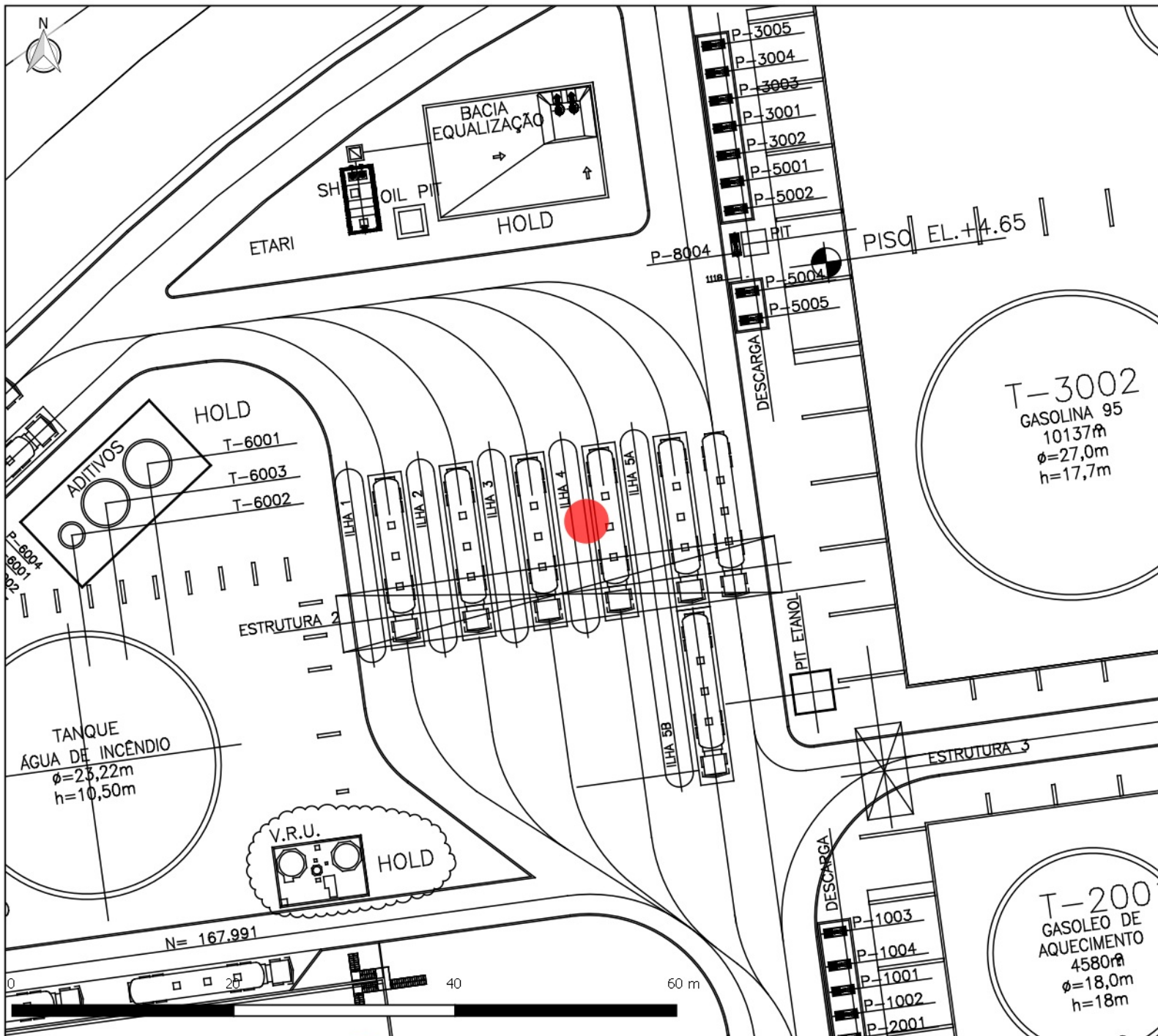
38 m
47 m



7 kW/m² ACL
5 kW/m² ACL

22 m

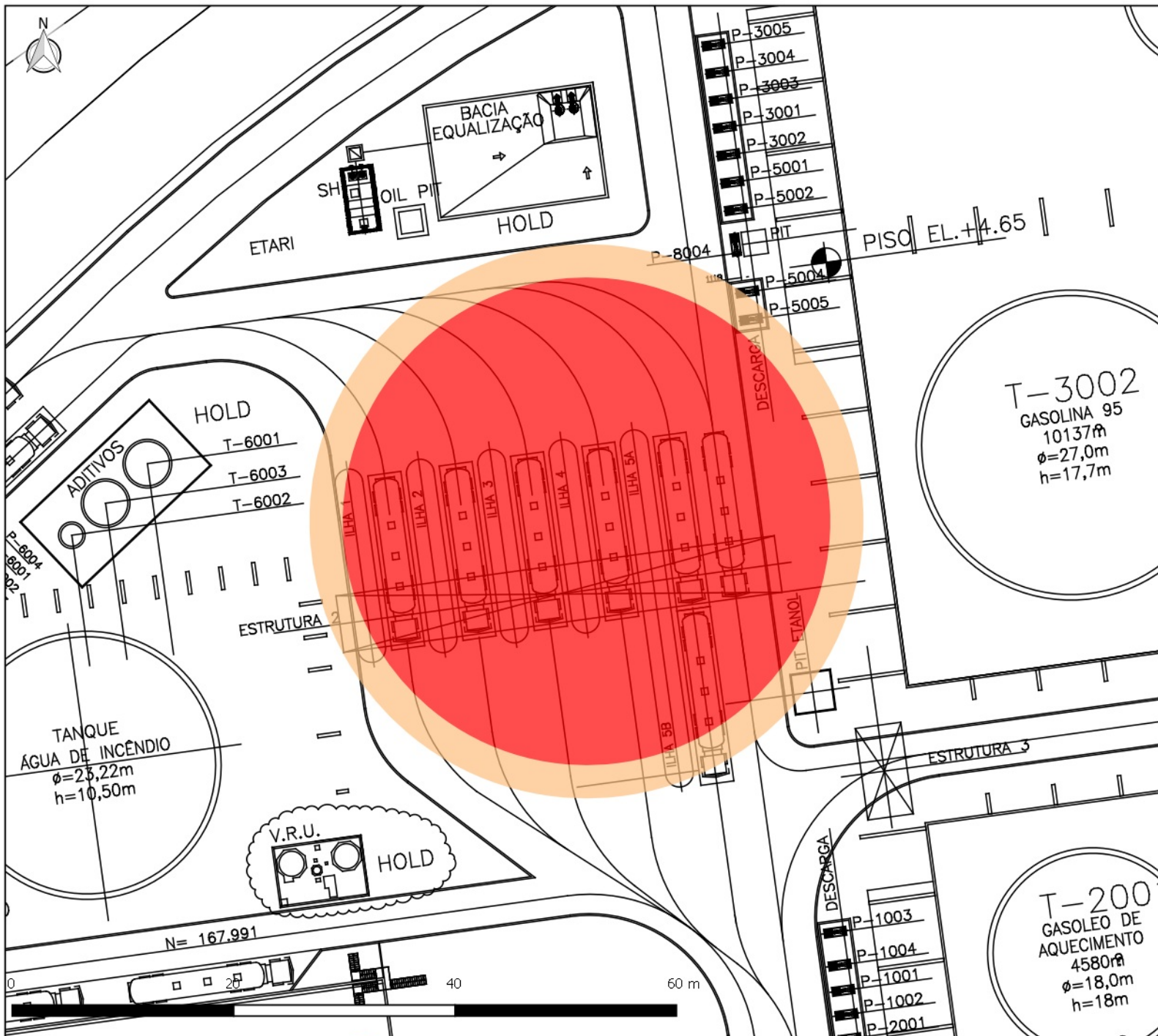
25 m



7 kW/m² ACL
5 kW/m² ACL

2 m

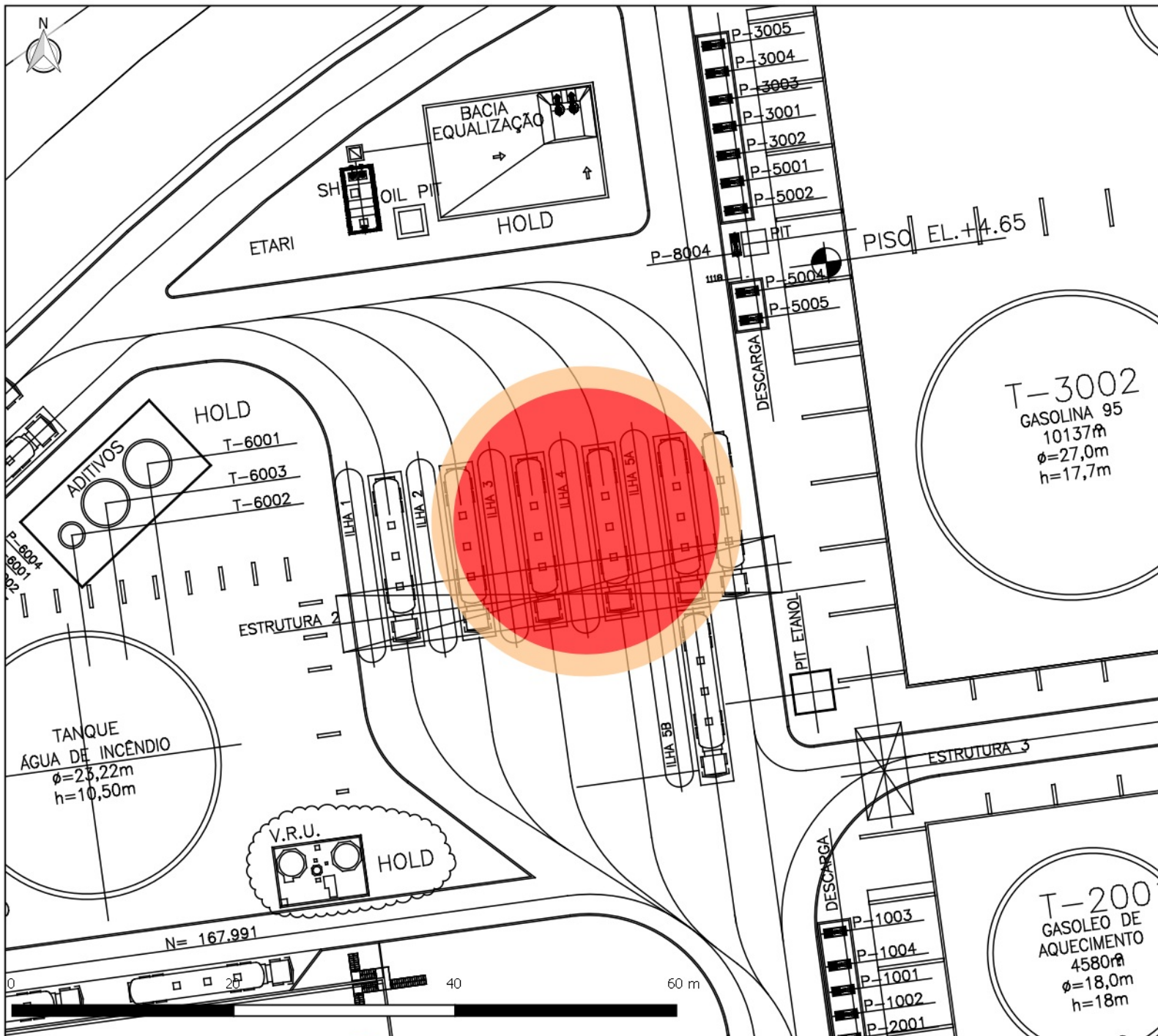
2 m



7 kW/m² ACL
5 kW/m² ACL

22 m

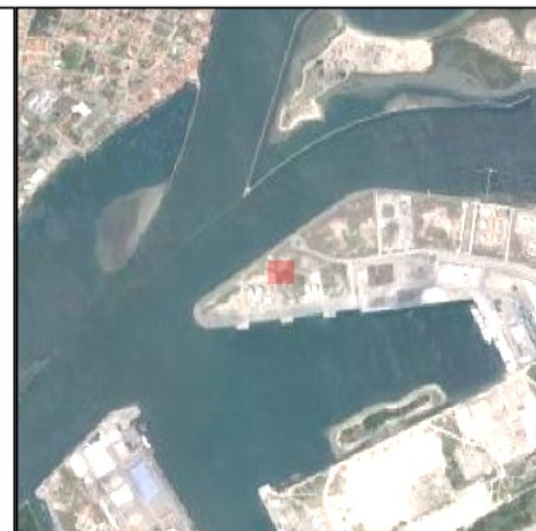
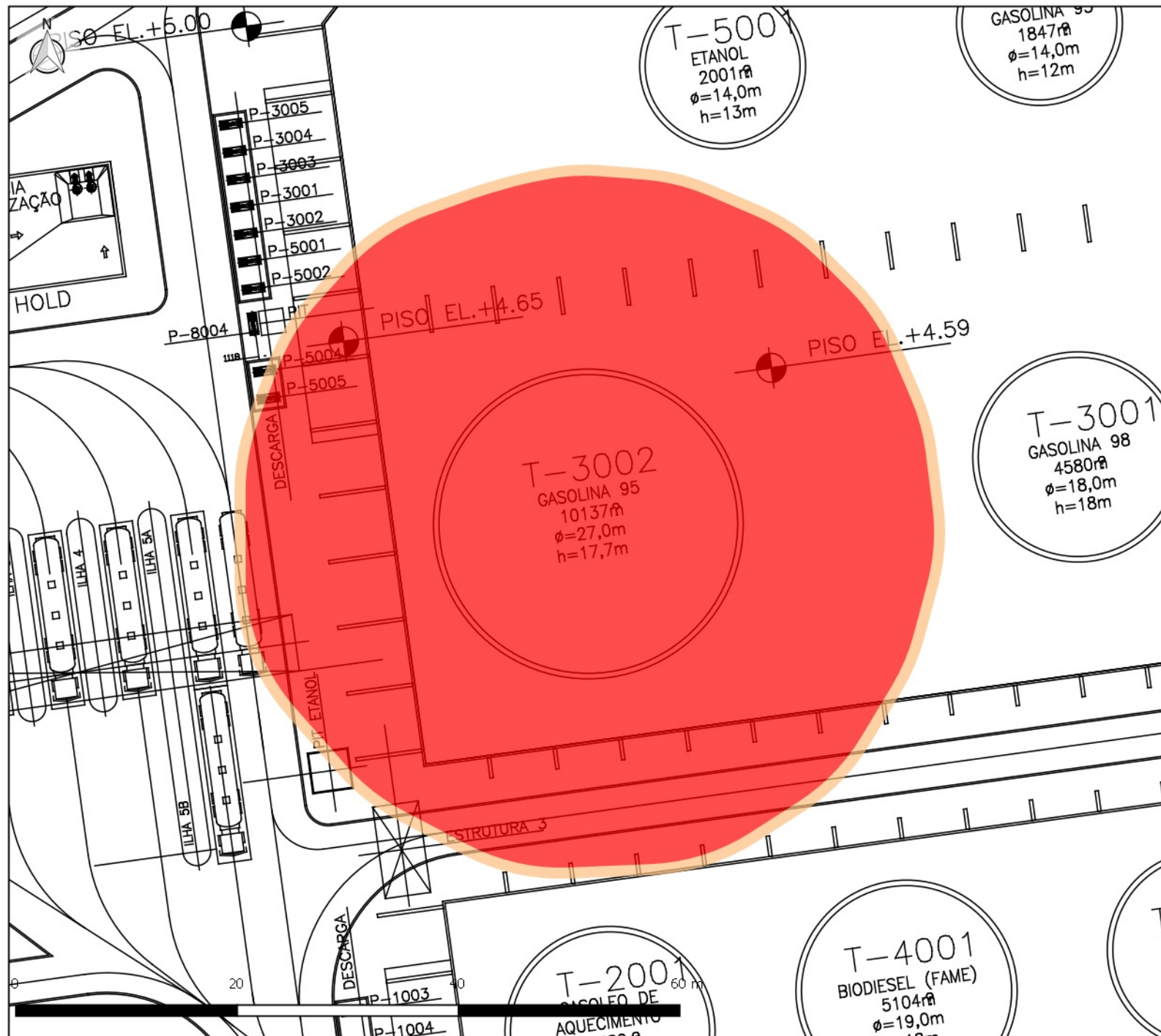
25 m



7 kW/m² ACL
5 kW/m² ACL

12 m

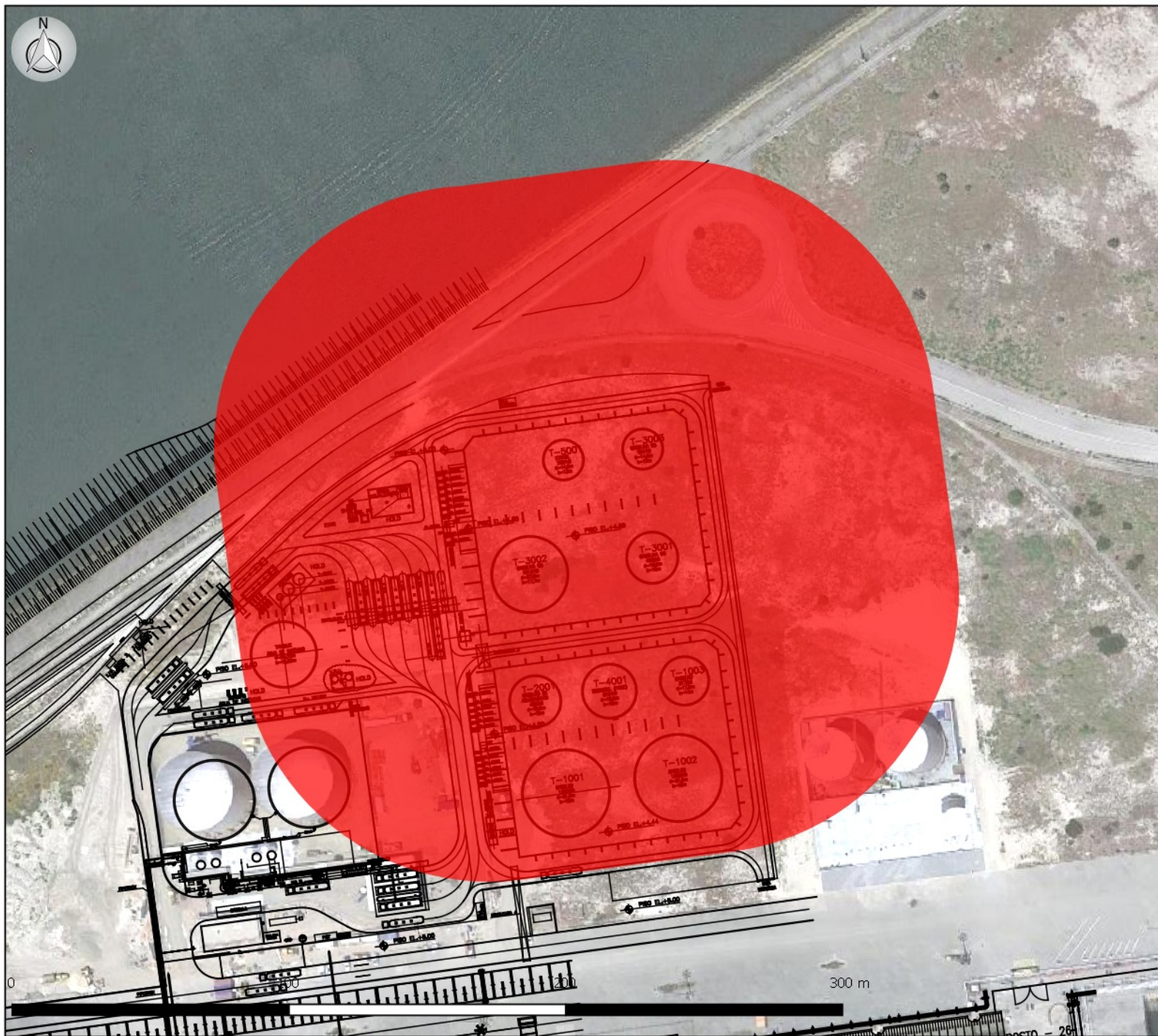
14 m



7 kW/m² ACL
5 kW/m² ACL

18 m

19 m



LIE/2 ACL

90 m

Projeto Liverpool
Novo Terminal de
Combustíveis de Aveiro

INERCO 
Portugal

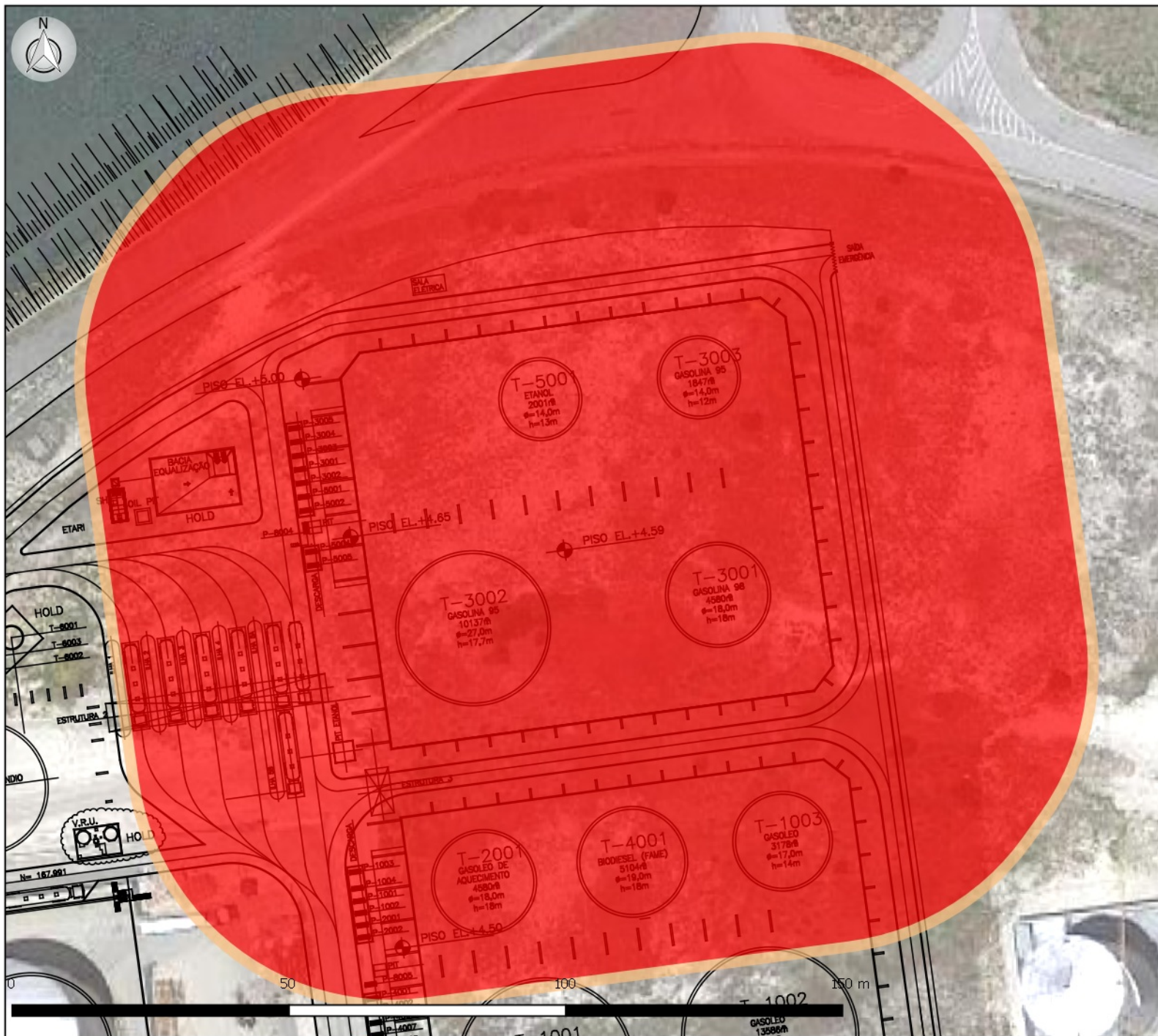
Acidente 15 - Rotura catastrófica tanque T-3002 de
Gasolina

Clima: 5.1/D

Cenário: Flash Fire

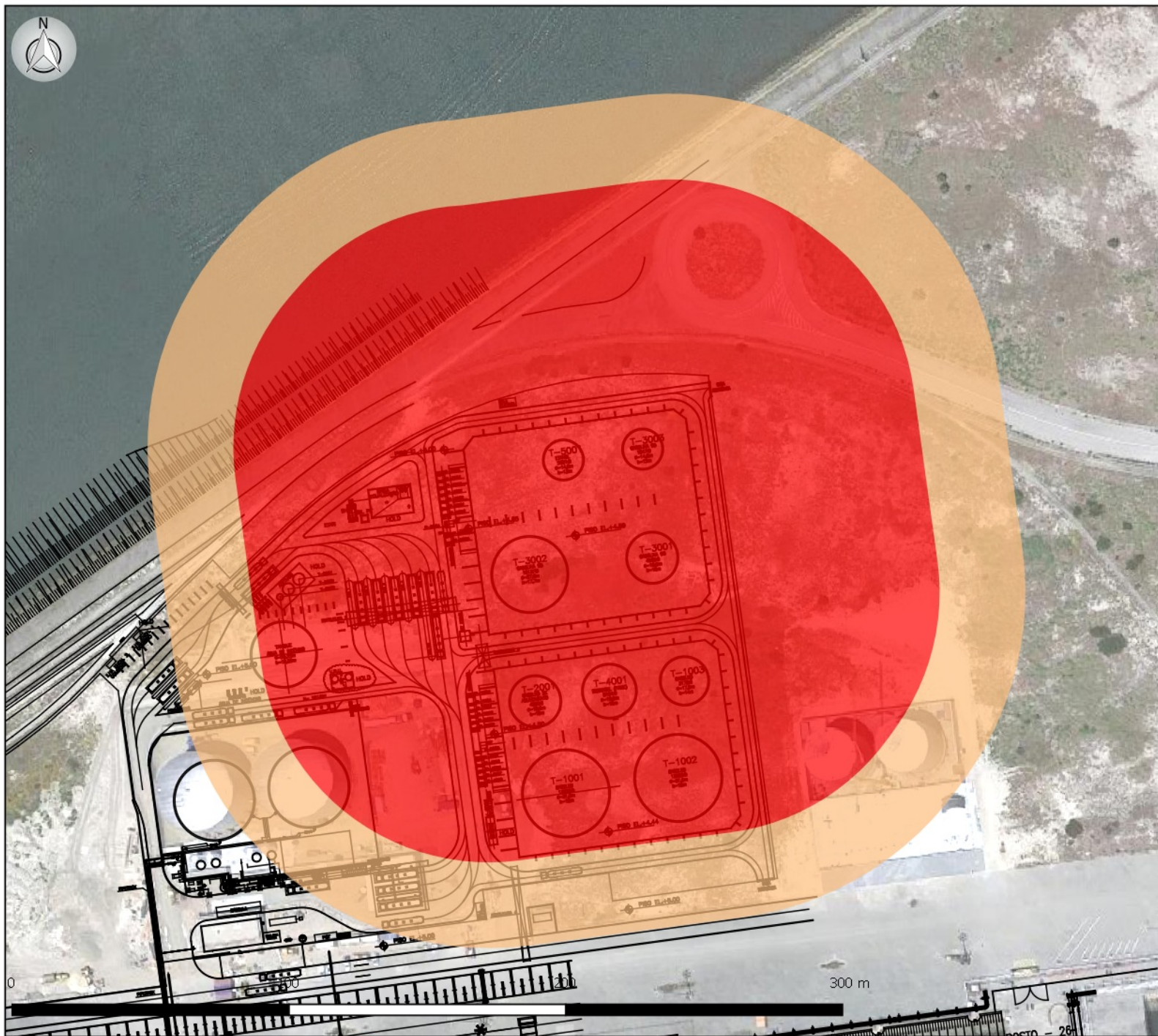
Data Rev. 0 Abril 2021

1:2.000



7 kW/m² ACL
5 kW/m² ACL

46 m
48 m



140 mbar ACL
50 mbar ACL

83 m
114 m

Projeto Liverpool
Novo Terminal de
Combustíveis de Aveiro

INERCO 
Portugal

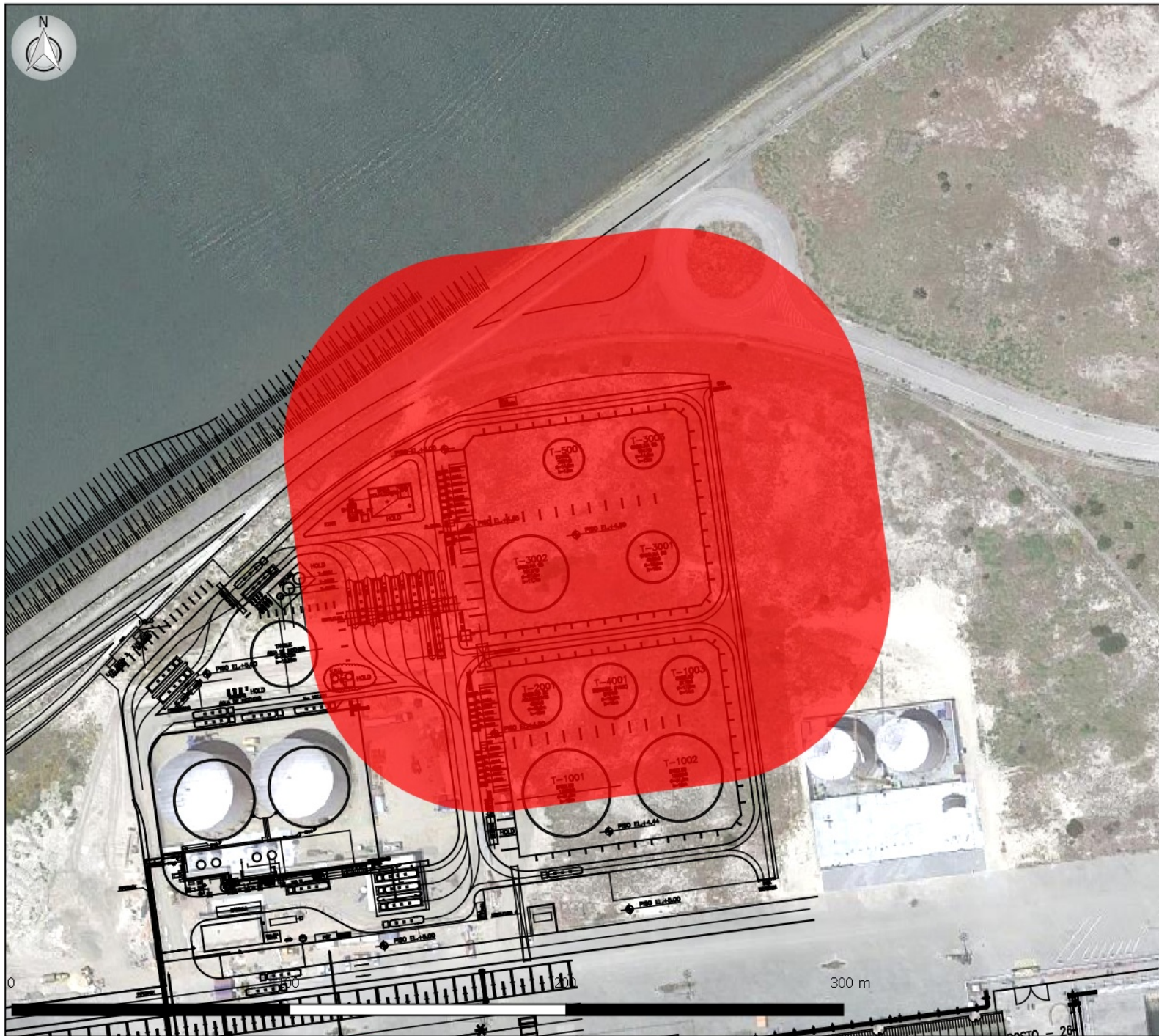
Acidente 16 - Fuga de 100 mm no tanque T-3002 de
Gasolina

Clima: 5.1/D

Cenário: Explosão

Data Rev. 0 Abril 2021

1:2.000



LIE/2 ACL

65 m

Projeto Liverpool
Novo Terminal de
Combustíveis de Aveiro

INERCO 
Portugal

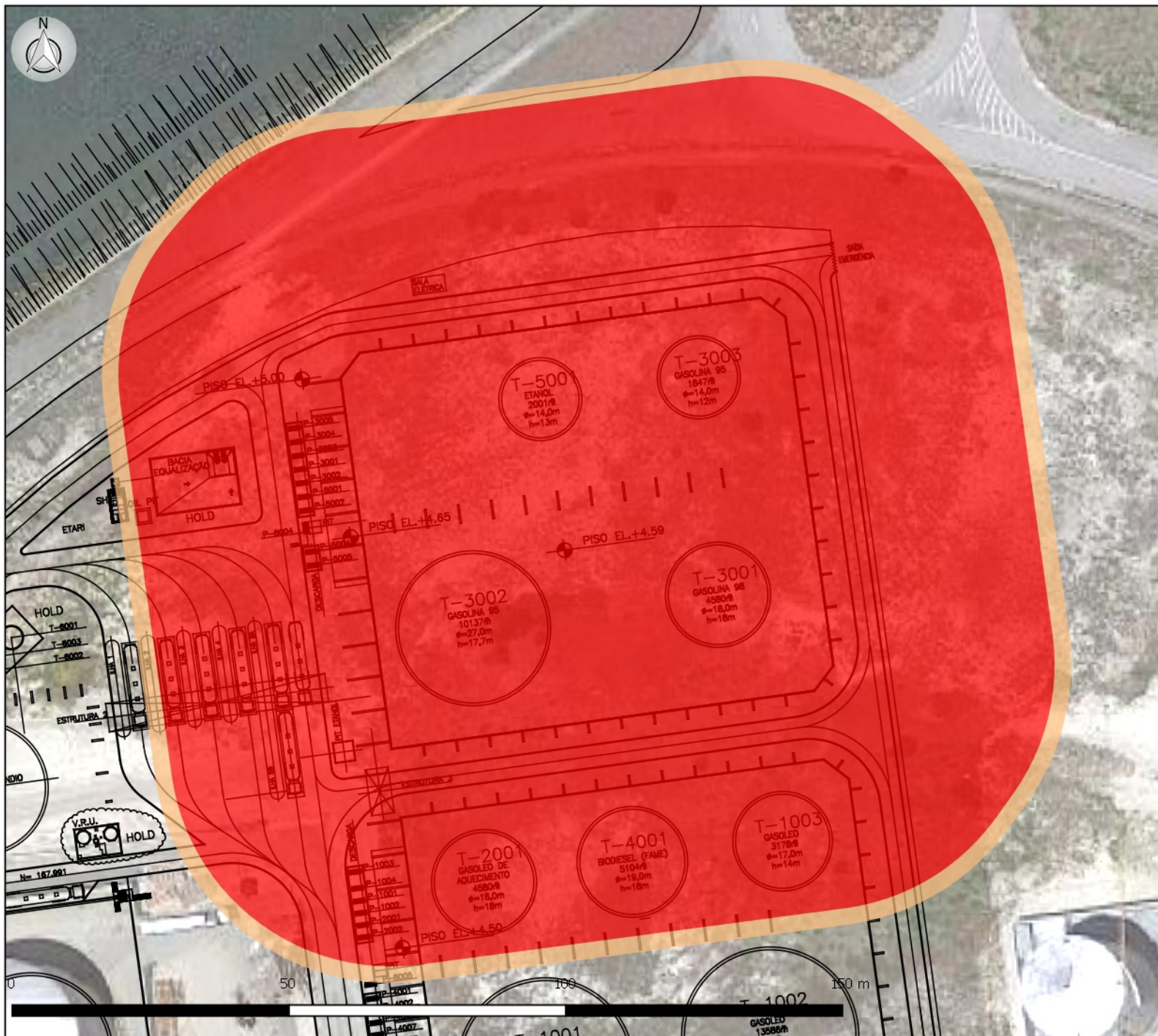
Acidente 16 - Fuga de 100 mm no tanque T-3002 de
Gasolina

Clima: 5.1/D

Cenário: Flash Fire

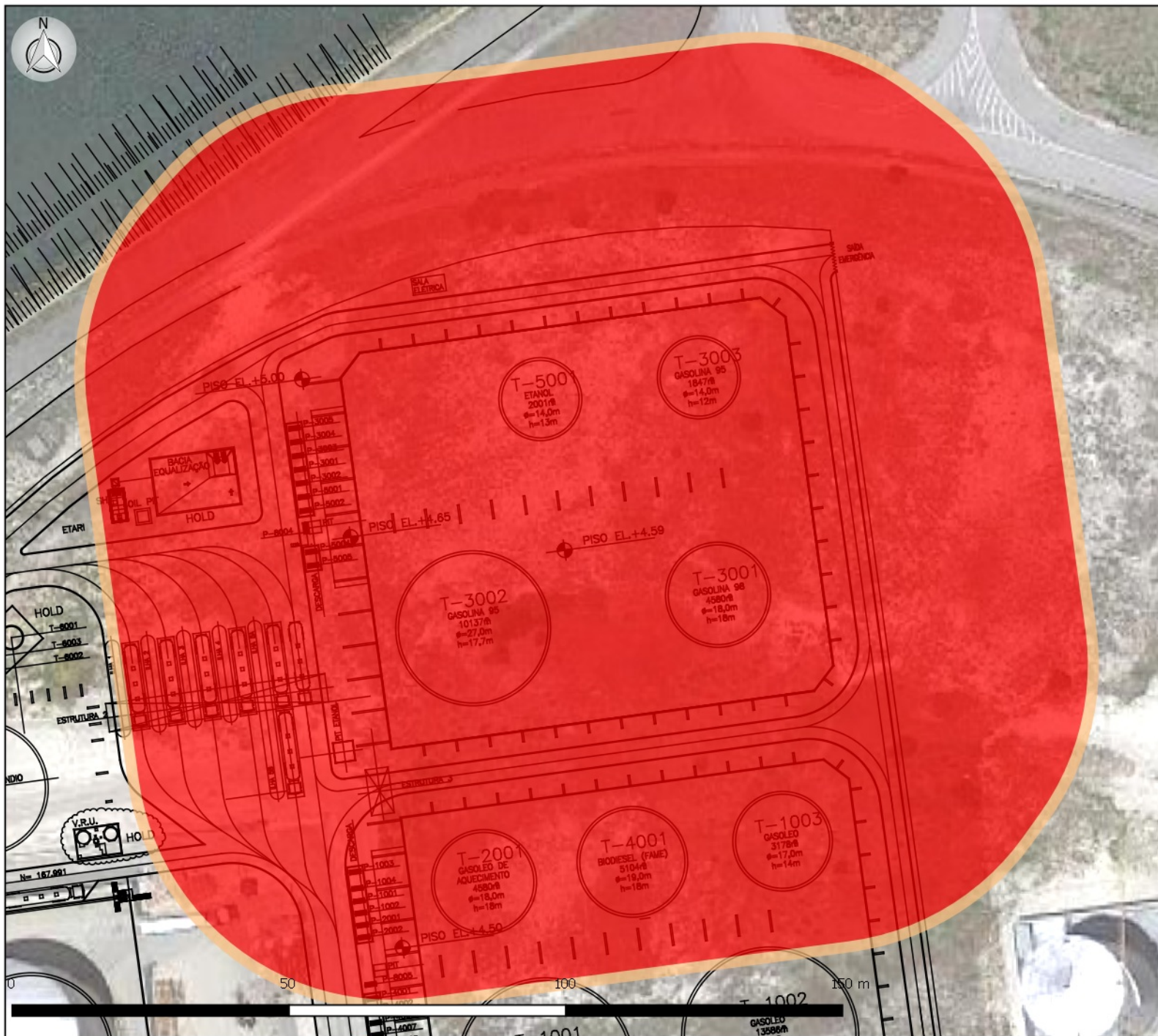
Data Rev. 0 Abril 2021

1:2.000



7 kW/m² ACL
5 kW/m² ACL

40 m
43 m



7 kW/m² ACL
5 kW/m² ACL

46 m
48 m

Projeto Liverpool
Novo Terminal de
Combustíveis de Aveiro

INERCO
Portugal

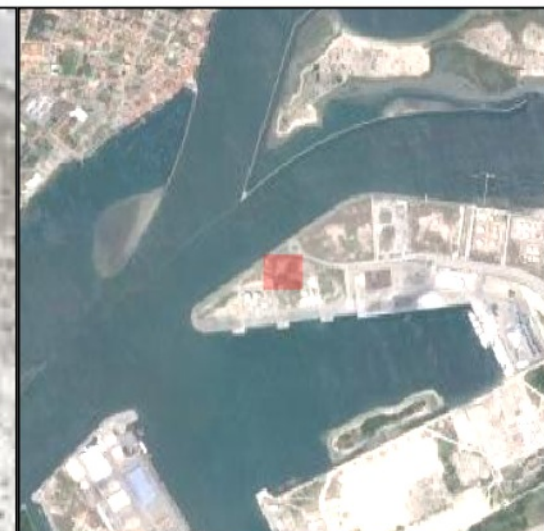
Acidente 16 - Fuga de 100 mm no tanque T-3002 de
Gasolina

Clima: 5.1/D

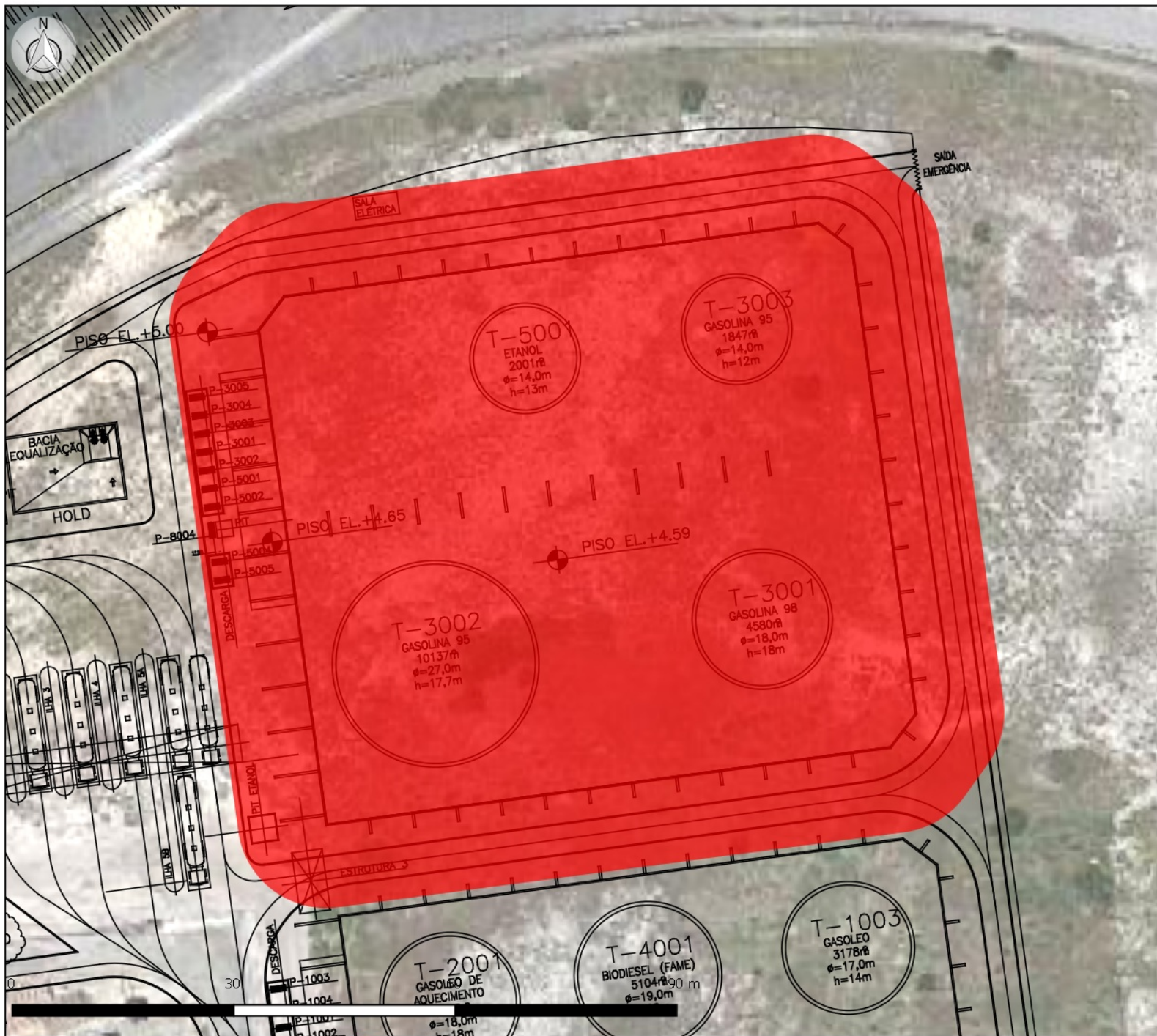
Cenário: Pool Fire

Data Rev. 0 Abril 2021

1:1.000

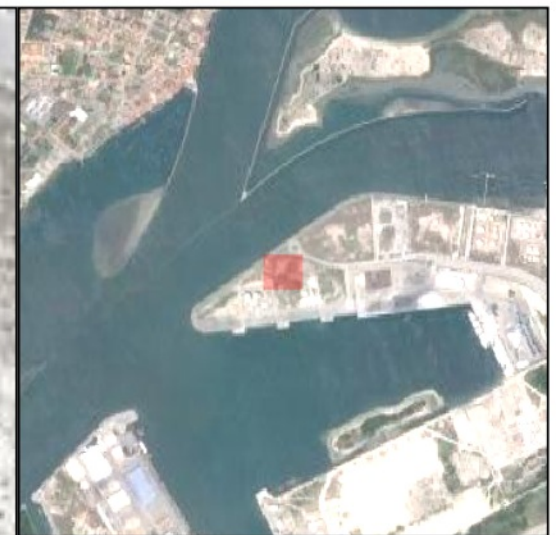


140 mbar ACL	13 m
50 mbar ACL	17 m

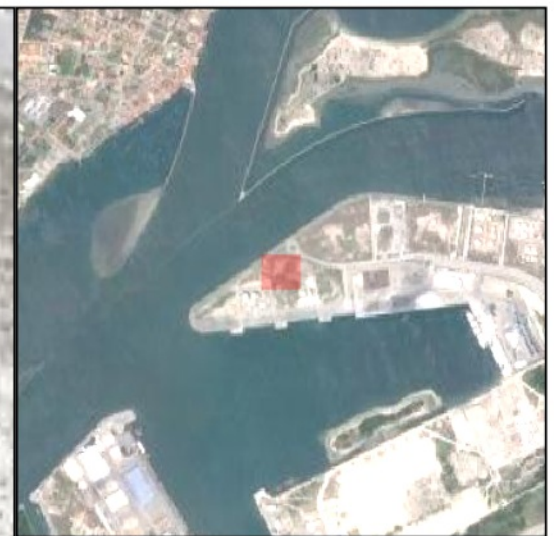
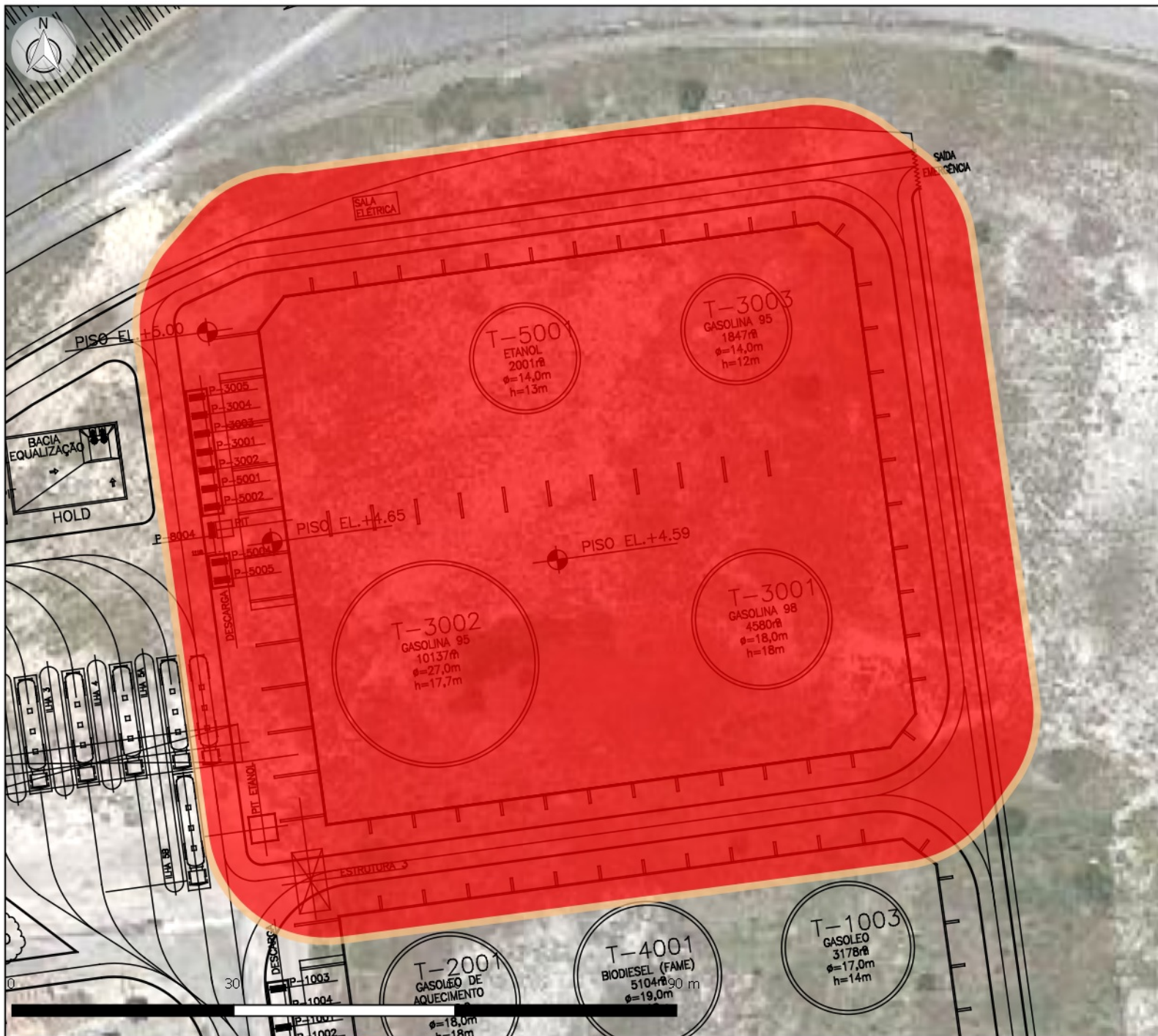


LIE/2 ACL

12 m

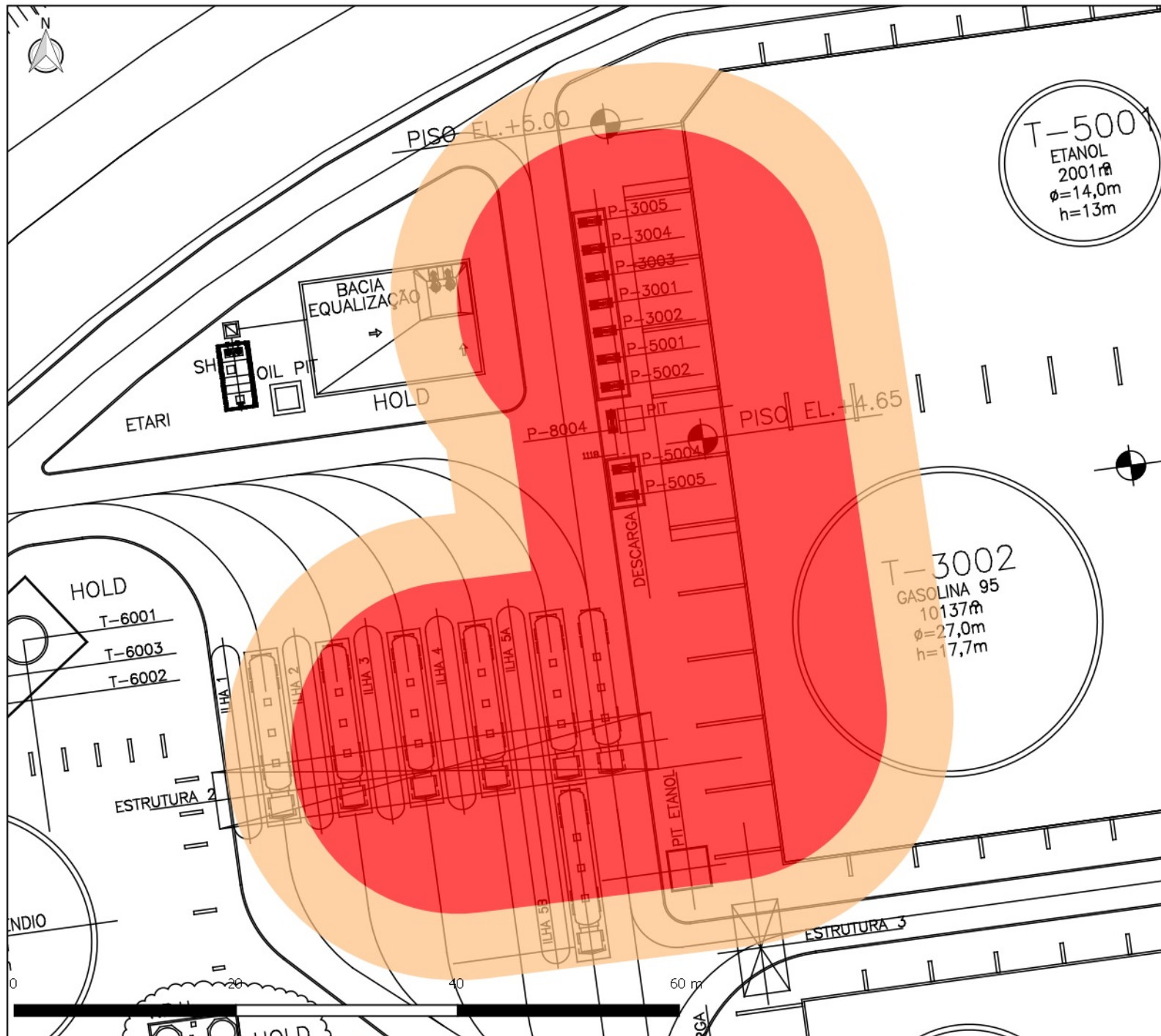


7 kW/m² ACL 9 m
5 kW/m² ACL 10 m



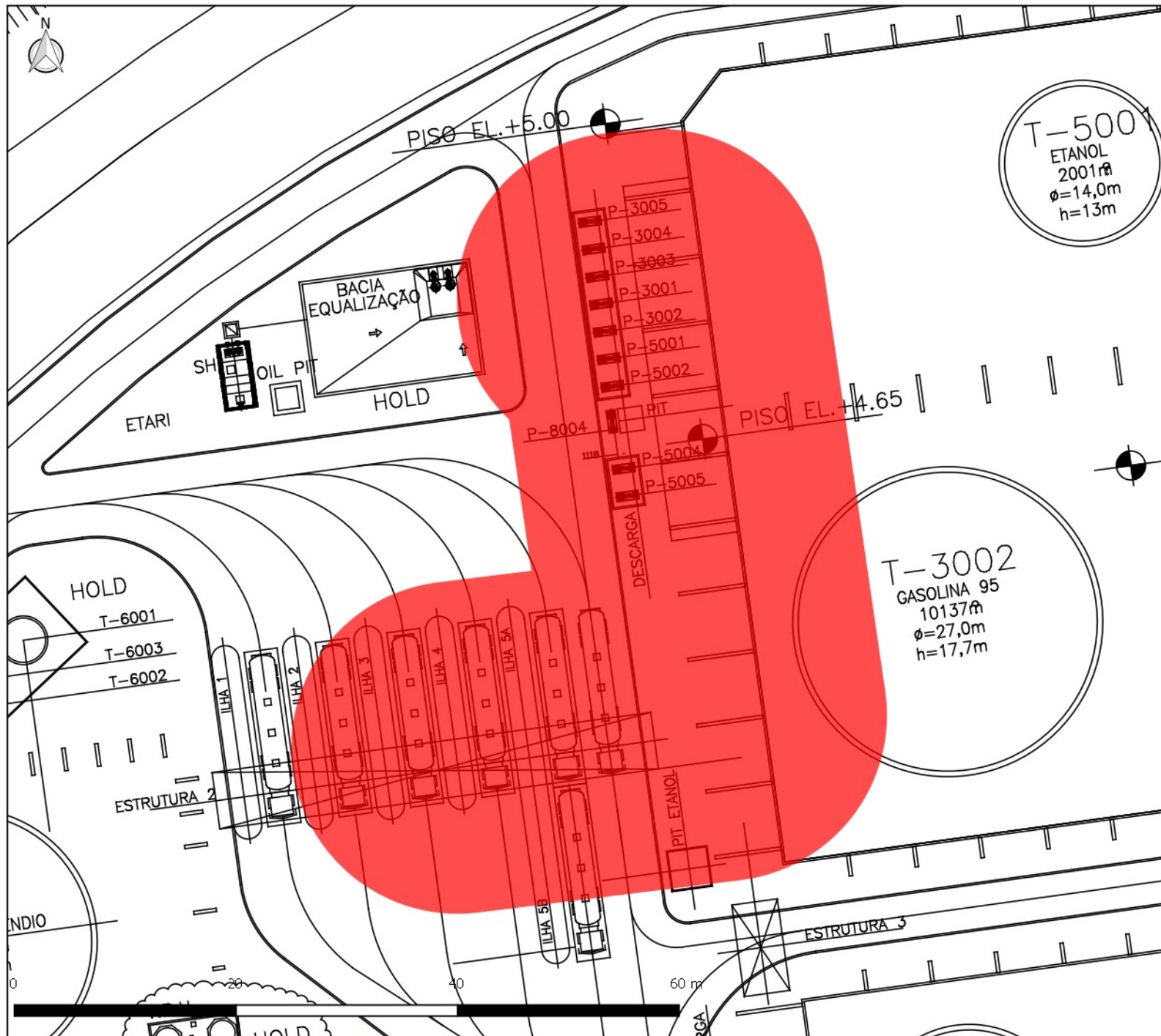
7 kW/m² ACL
5 kW/m² ACL

16 m
17 m



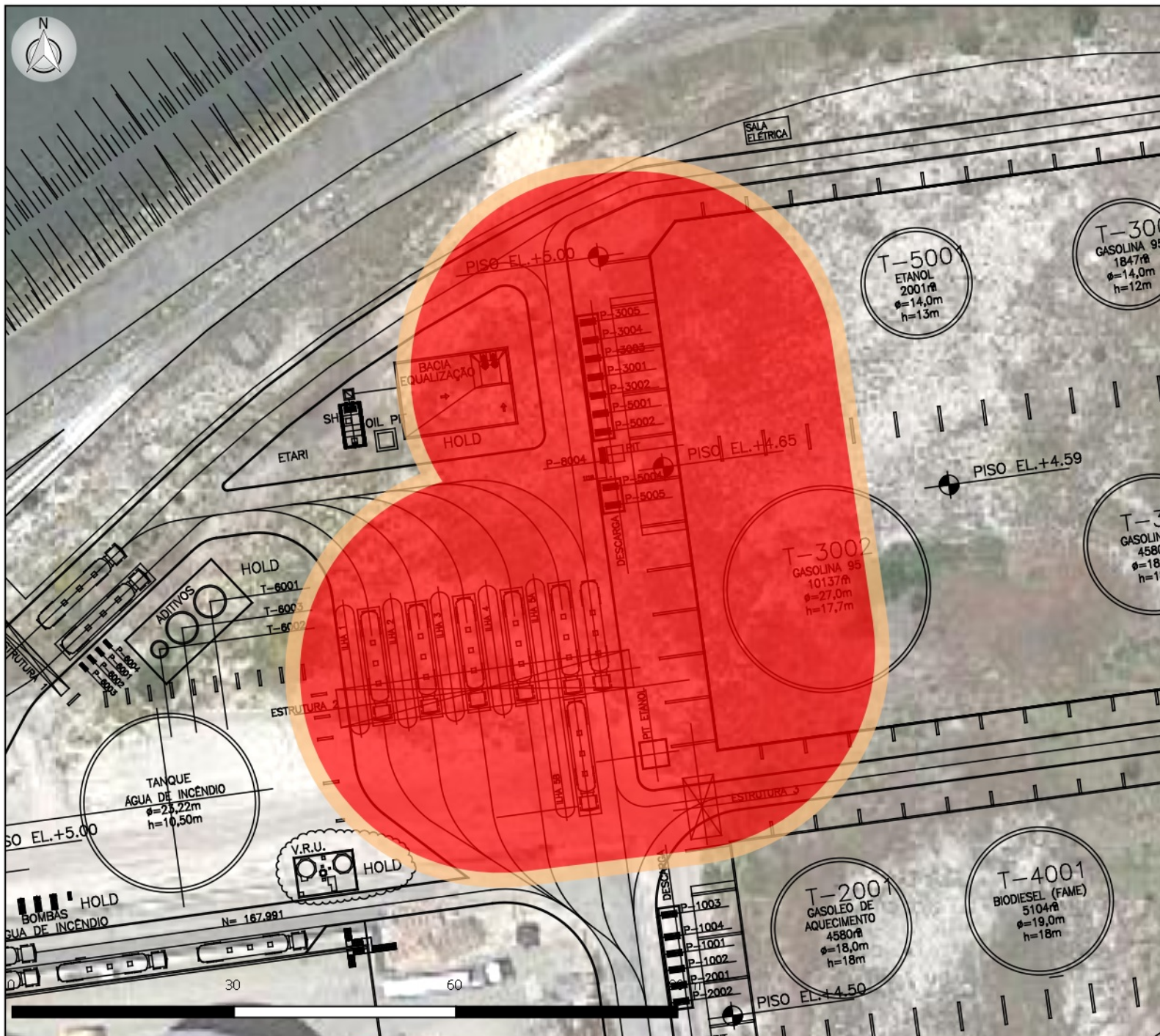
140 mbar ACL
50 mbar ACL

15 m
21 m

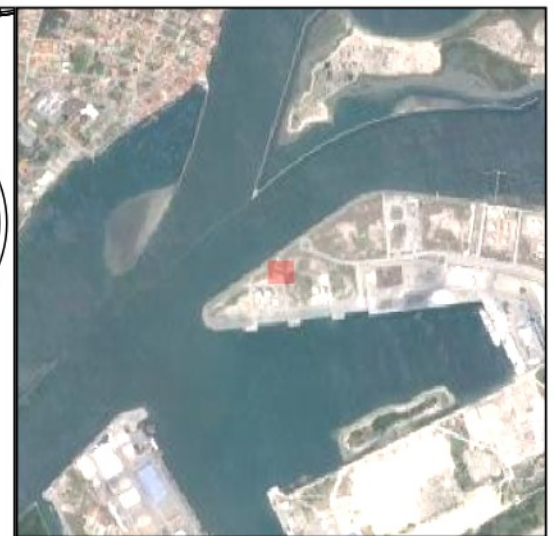
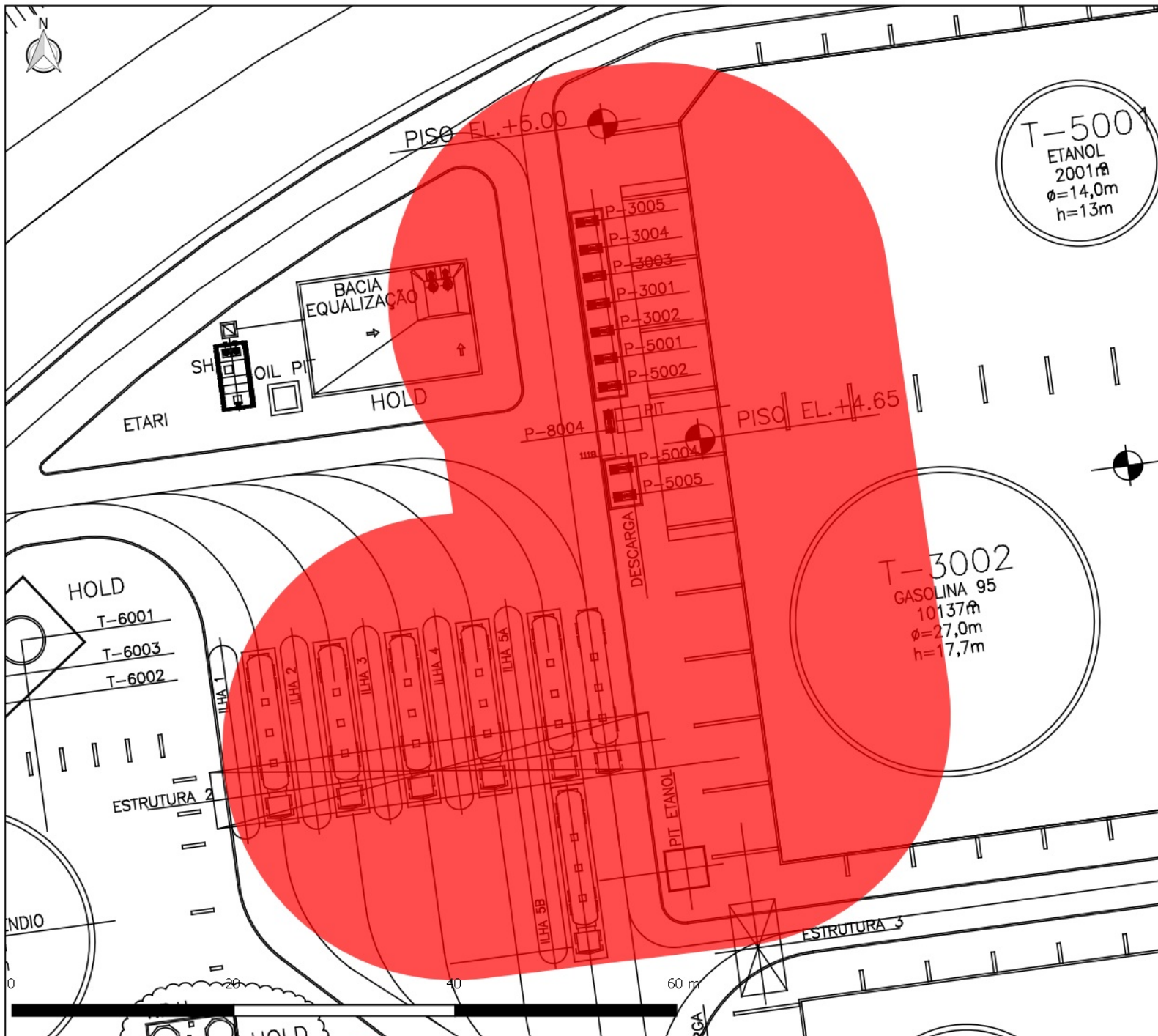


LIE/2 ACL

15 m

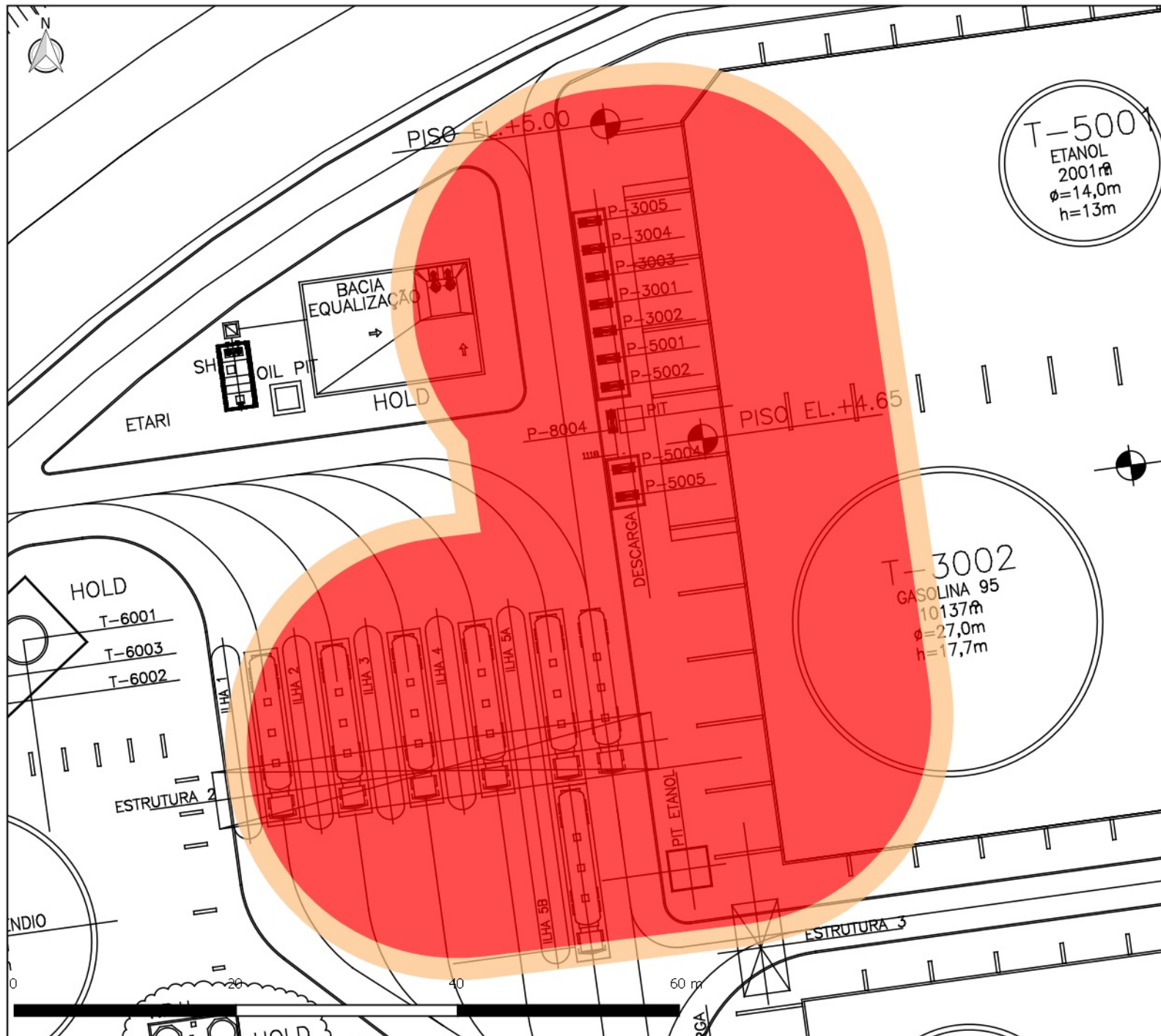


	7 kW/m ² ACL	27 m
	5 kW/m ² ACL	29 m



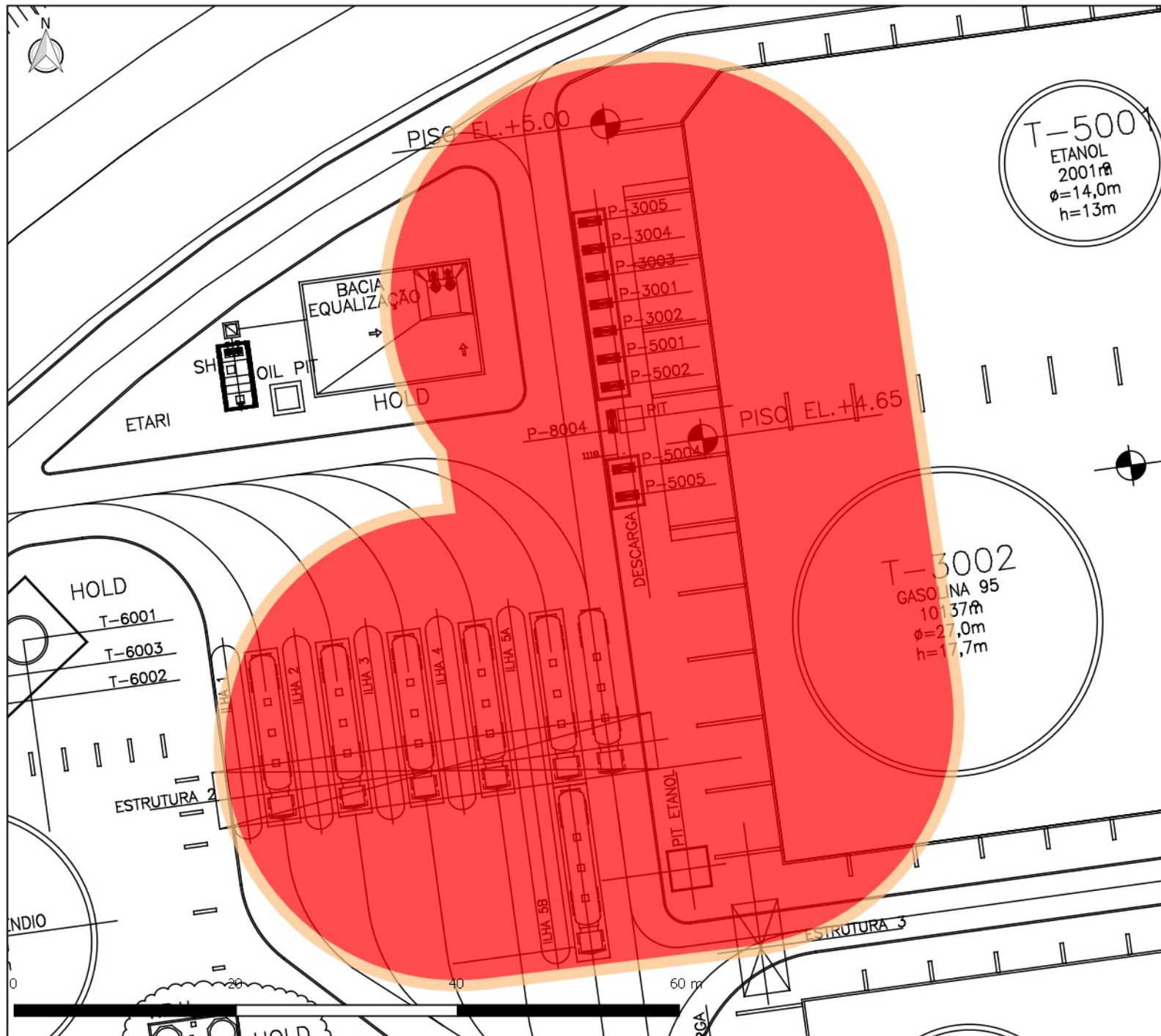
LIE/2 ACL

21 m



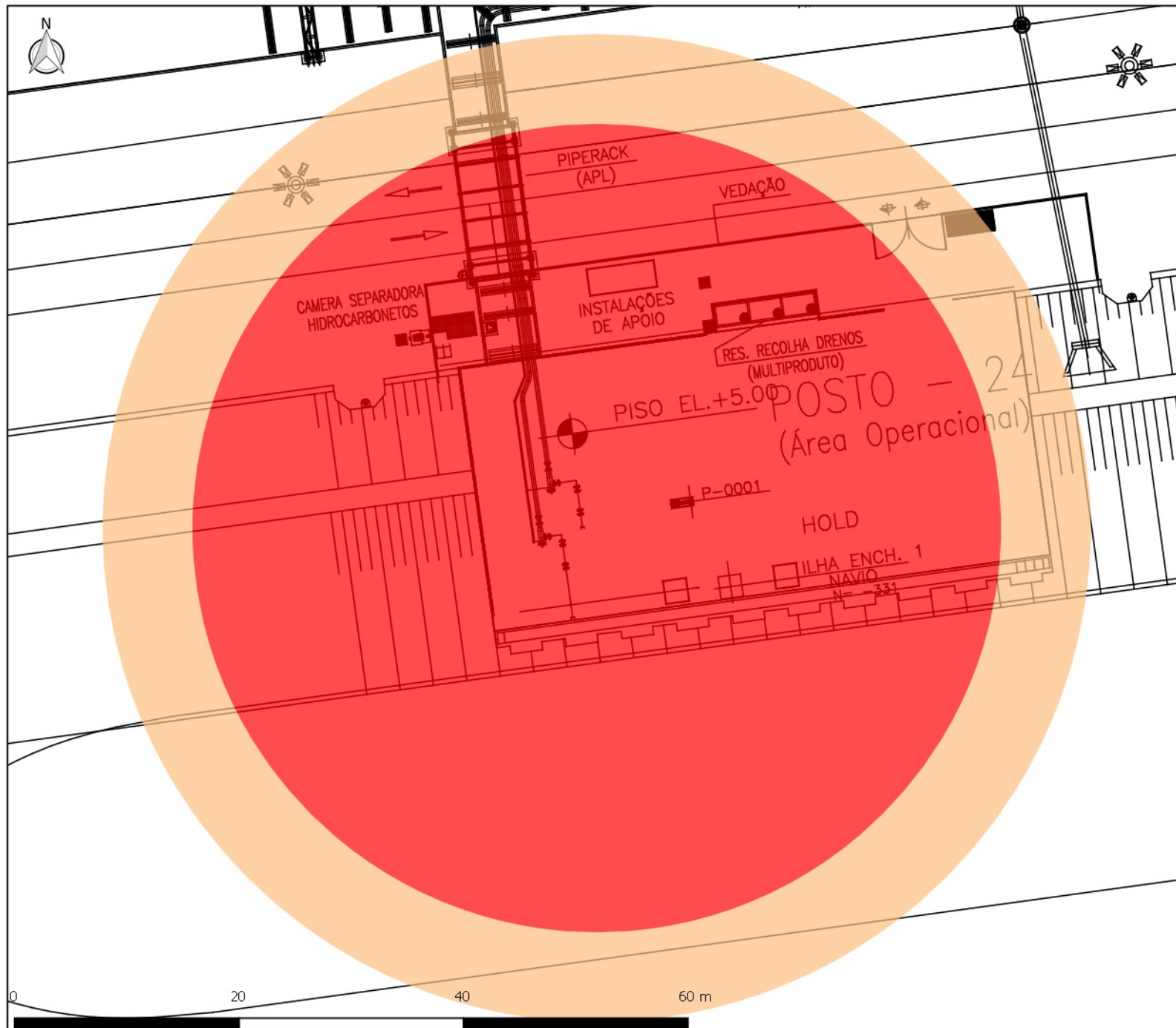
7 kW/m² ACL
5 kW/m² ACL

19 m
21 m



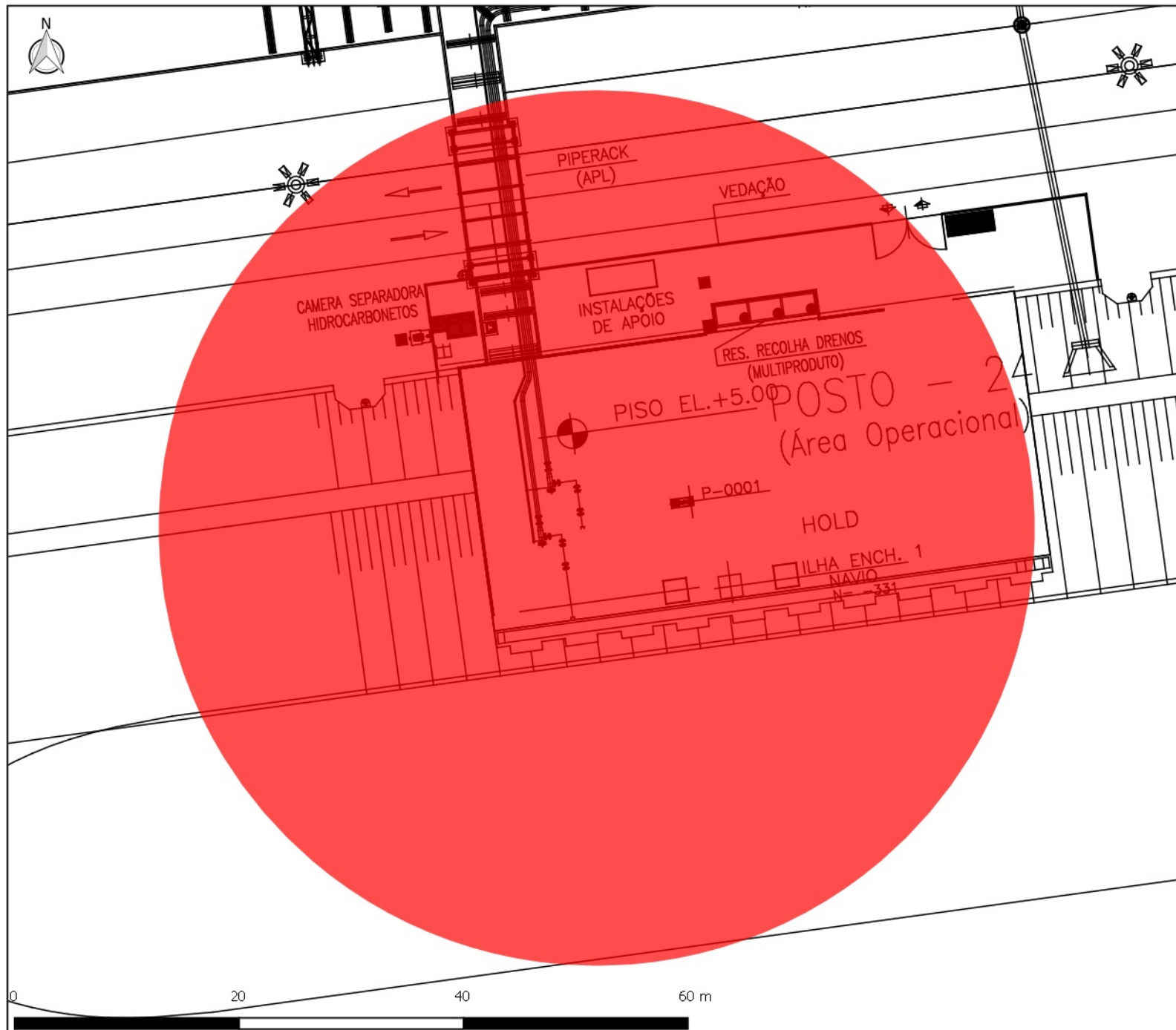
7 kW/m² ACL
5 kW/m² ACL

21 m
22 m



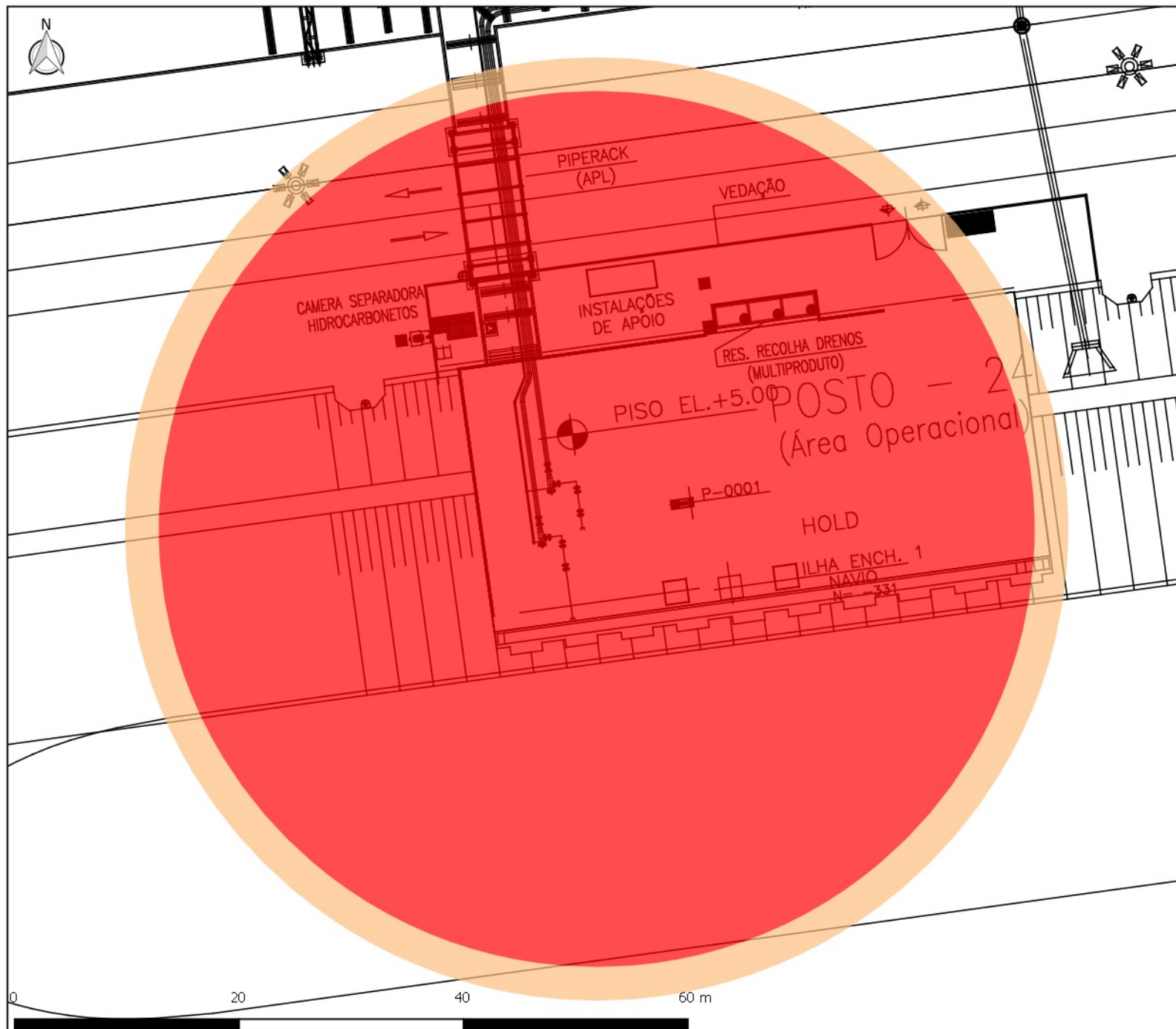
140 mbar ACL
50 mbar ACL

36 m
44 m



LIE/2 ACL

39 m



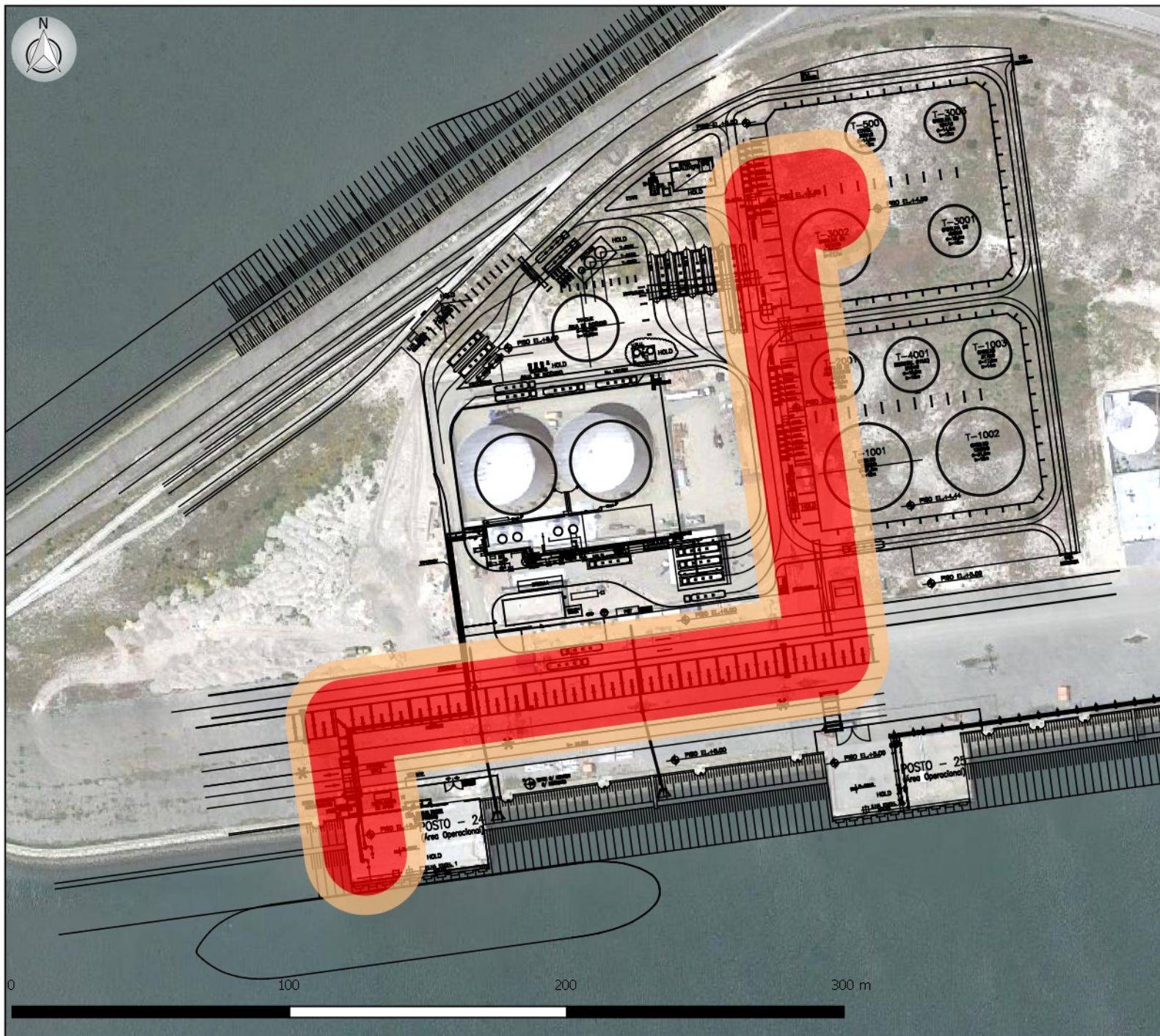
7 kW/m² ACL
5 kW/m² ACL

39 m
42 m



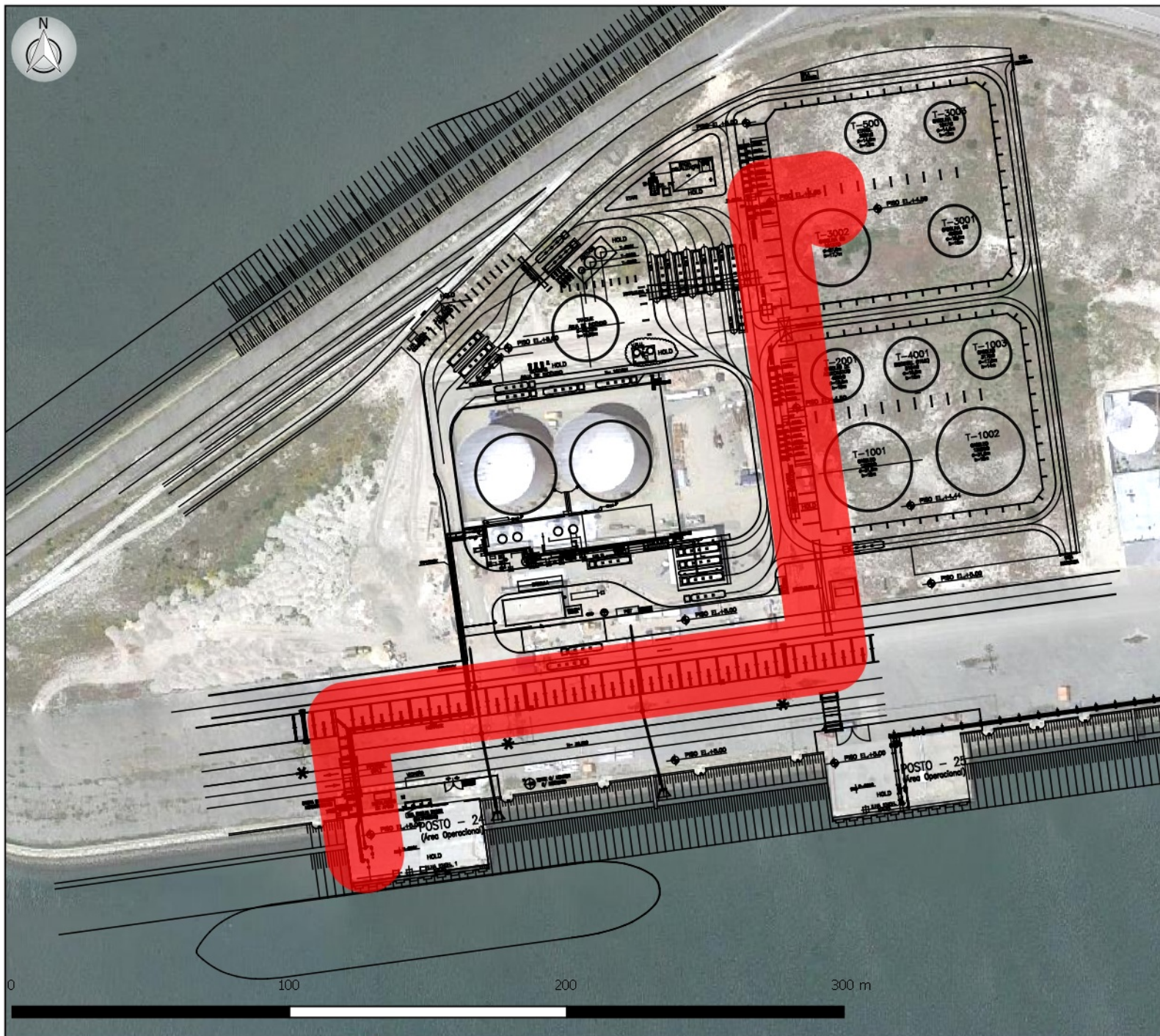
7 kW/m² ACL
5 kW/m² ACL

20 m
21 m



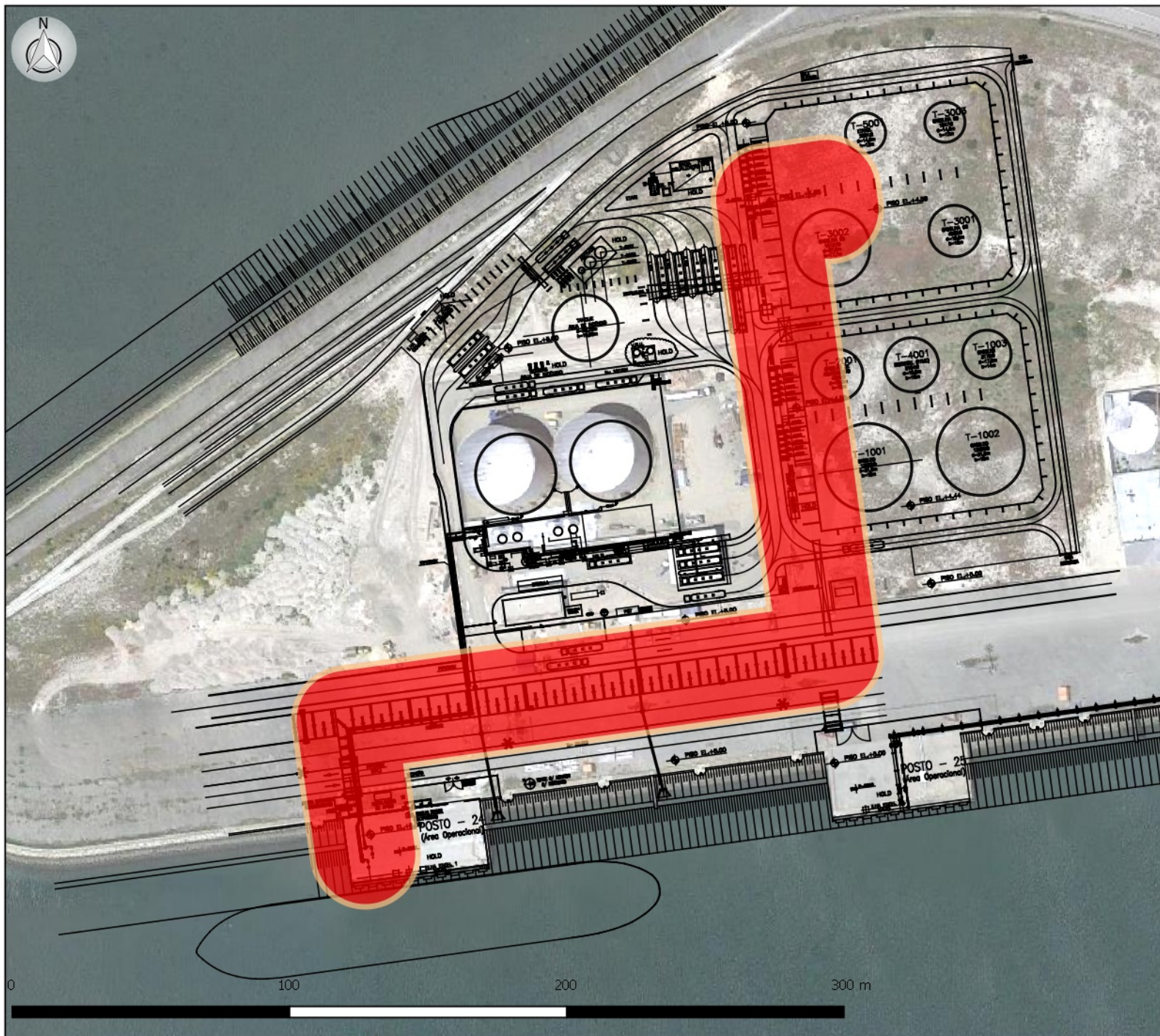
140 mbar ACL
50 mbar ACL

15 m
22 m



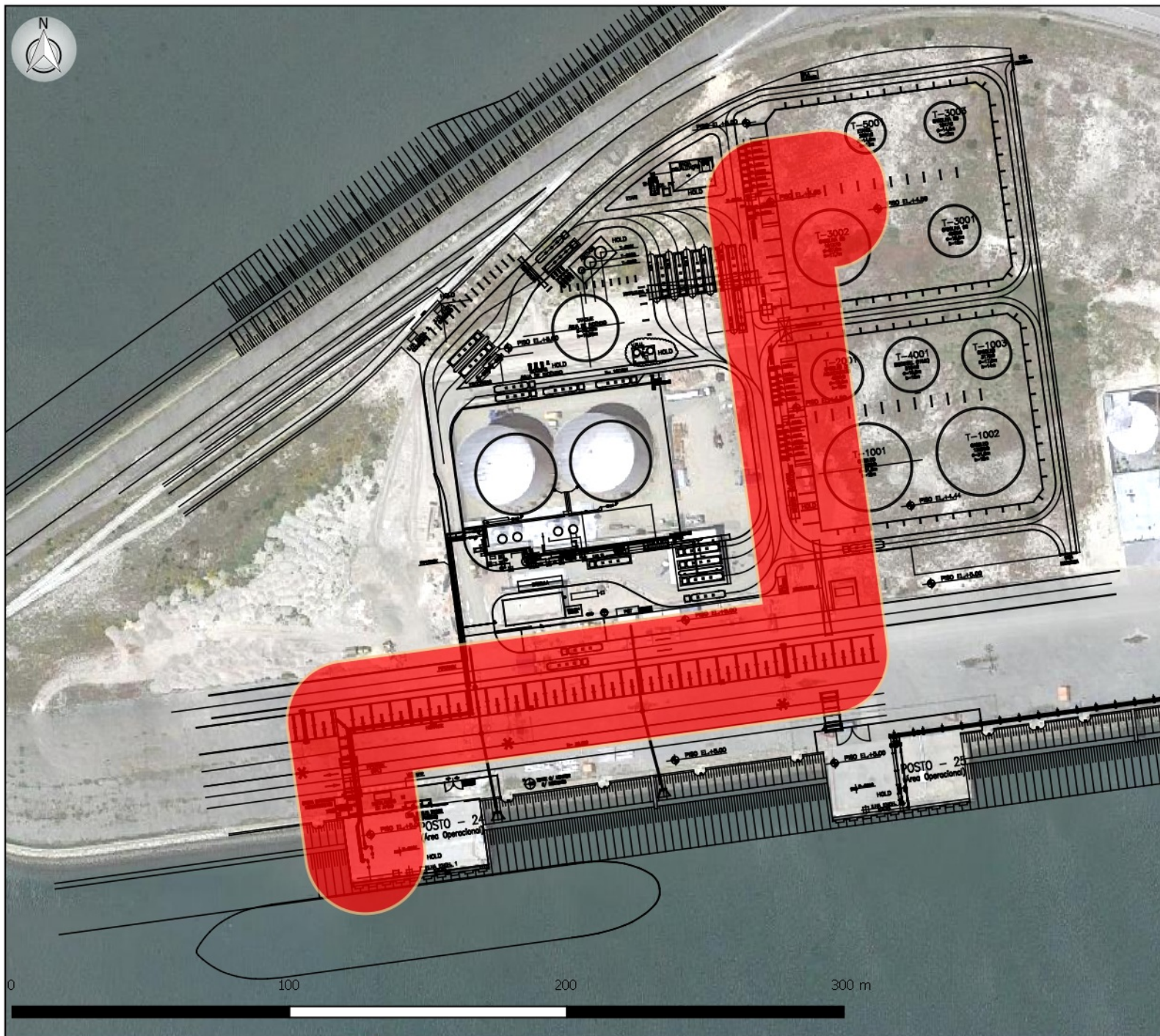
LIE/2 ACL

14 m



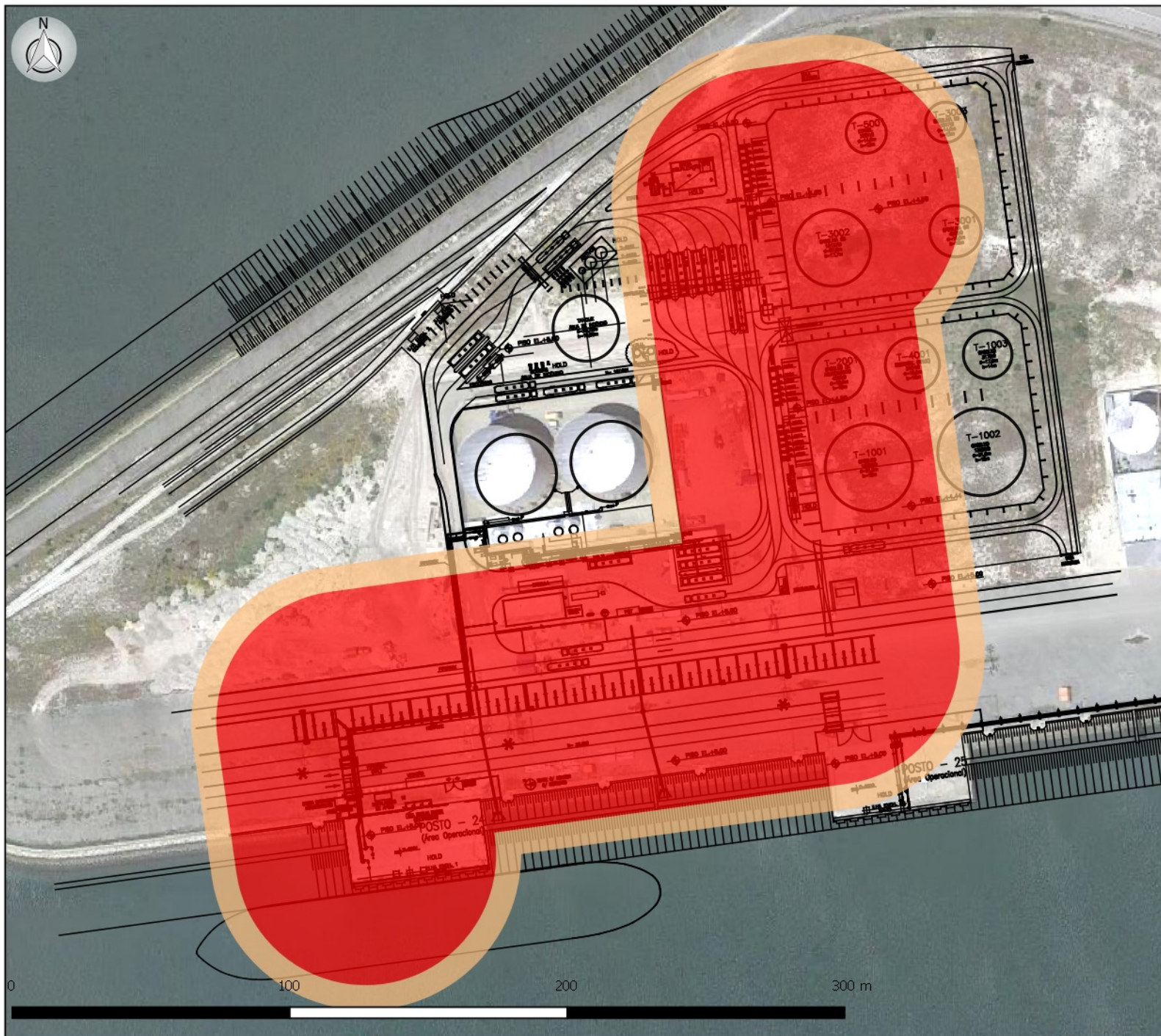
7 kW/m² ACL
5 kW/m² ACL

18 m
20 m



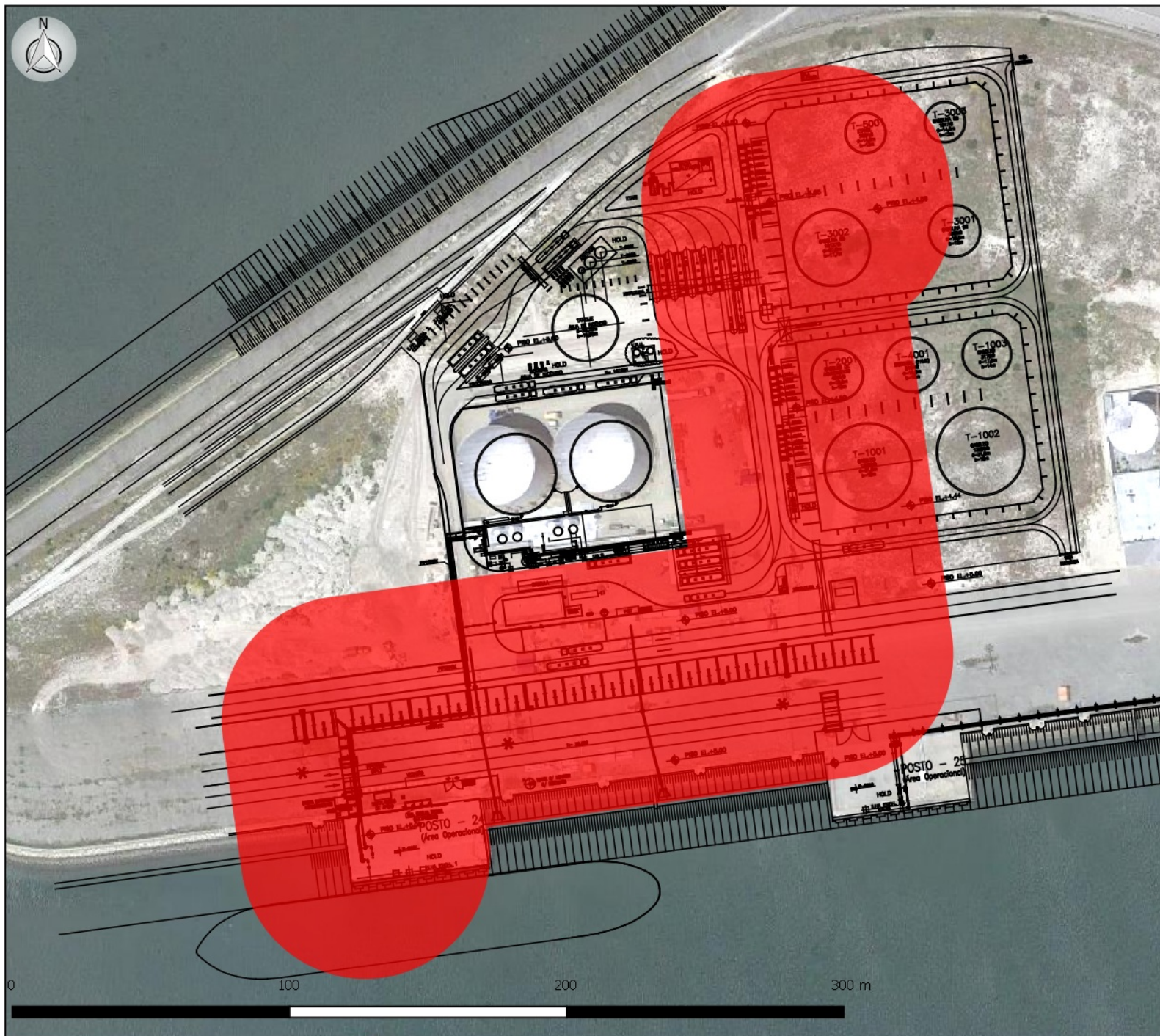
7 kW/m² ACL
5 kW/m² ACL

21 m
22 m



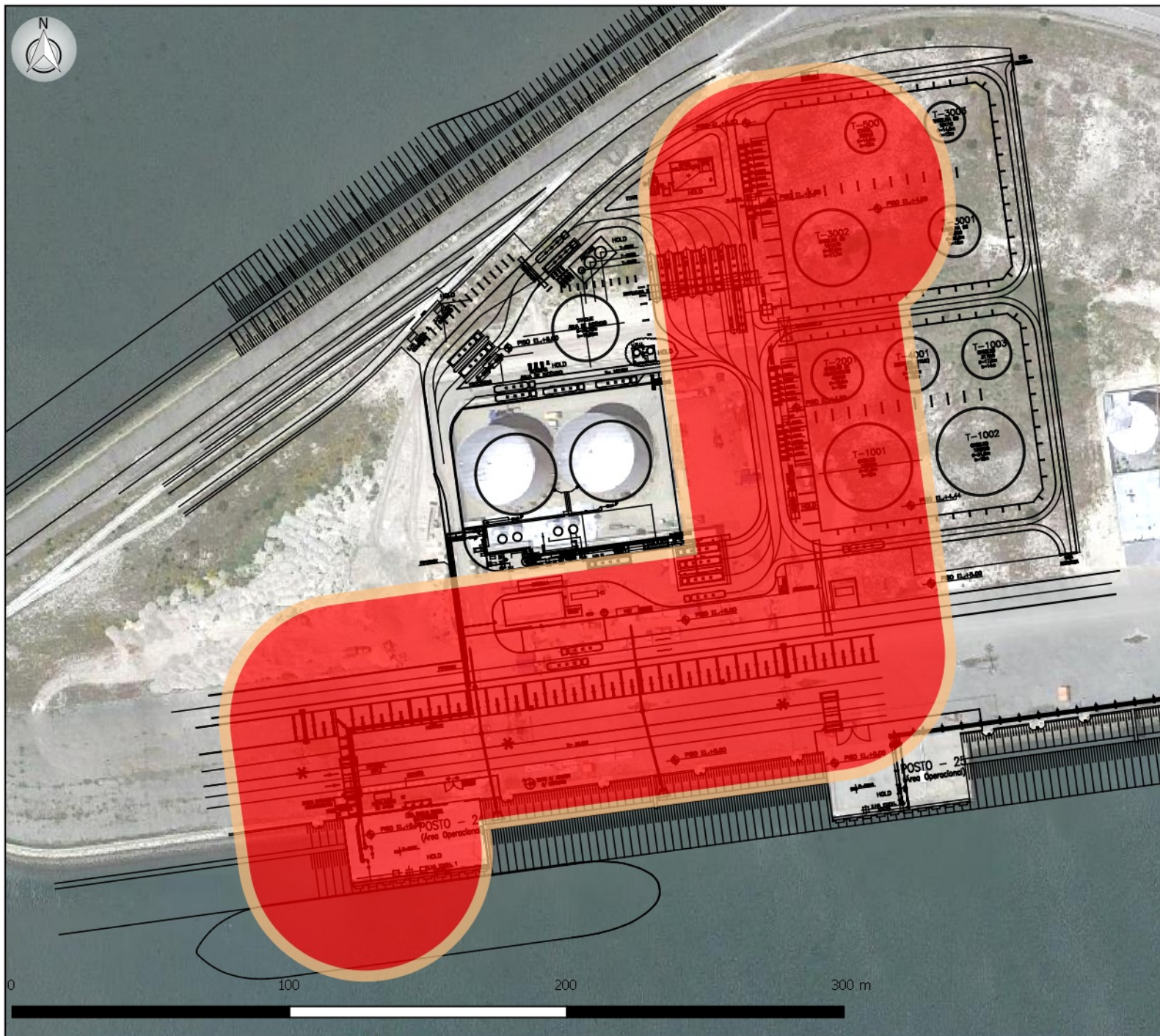
■ 140 mbar ACL
■ 50 mbar ACL

47 m
 56 m



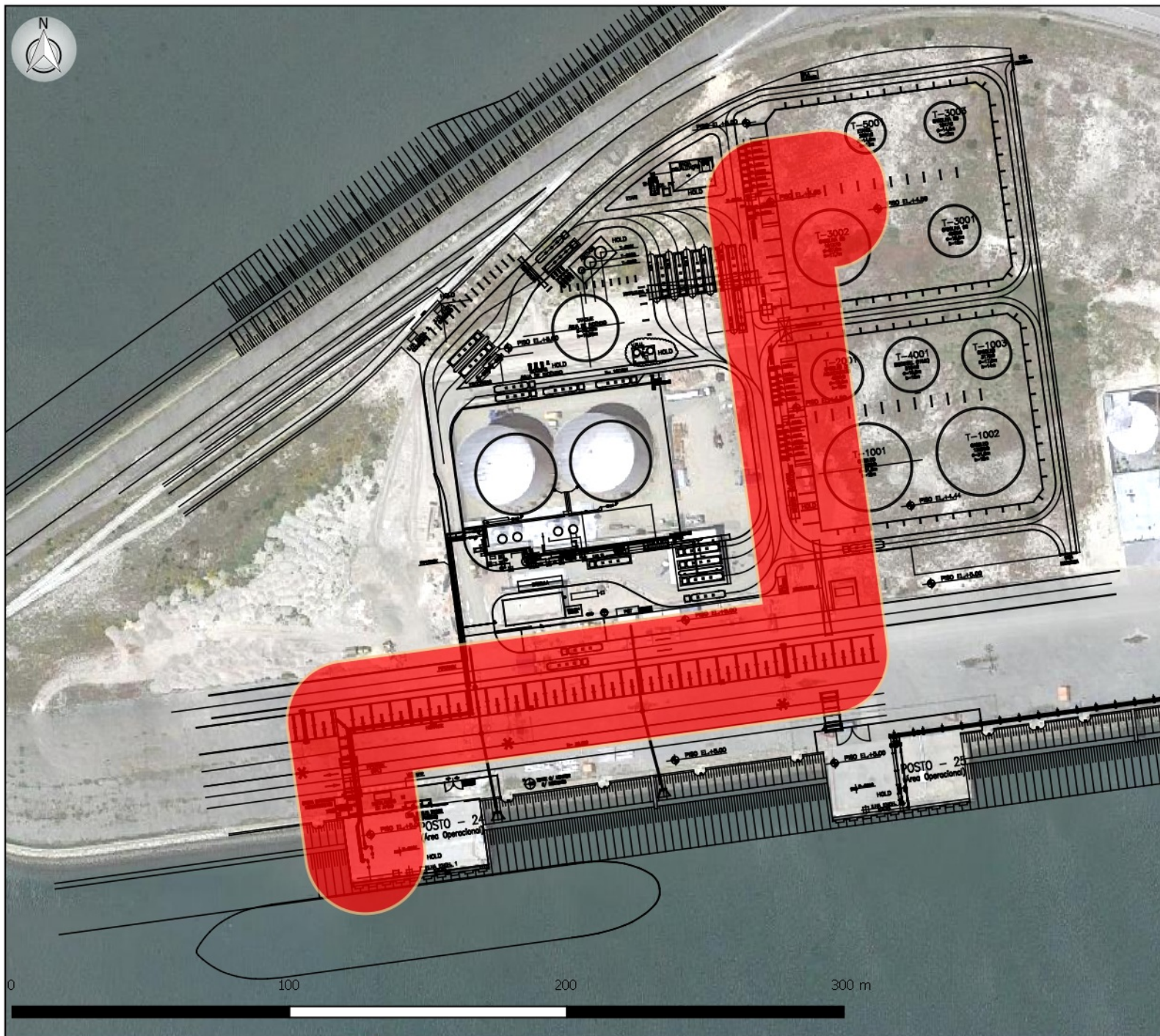
LIE/2 ACL

45 m



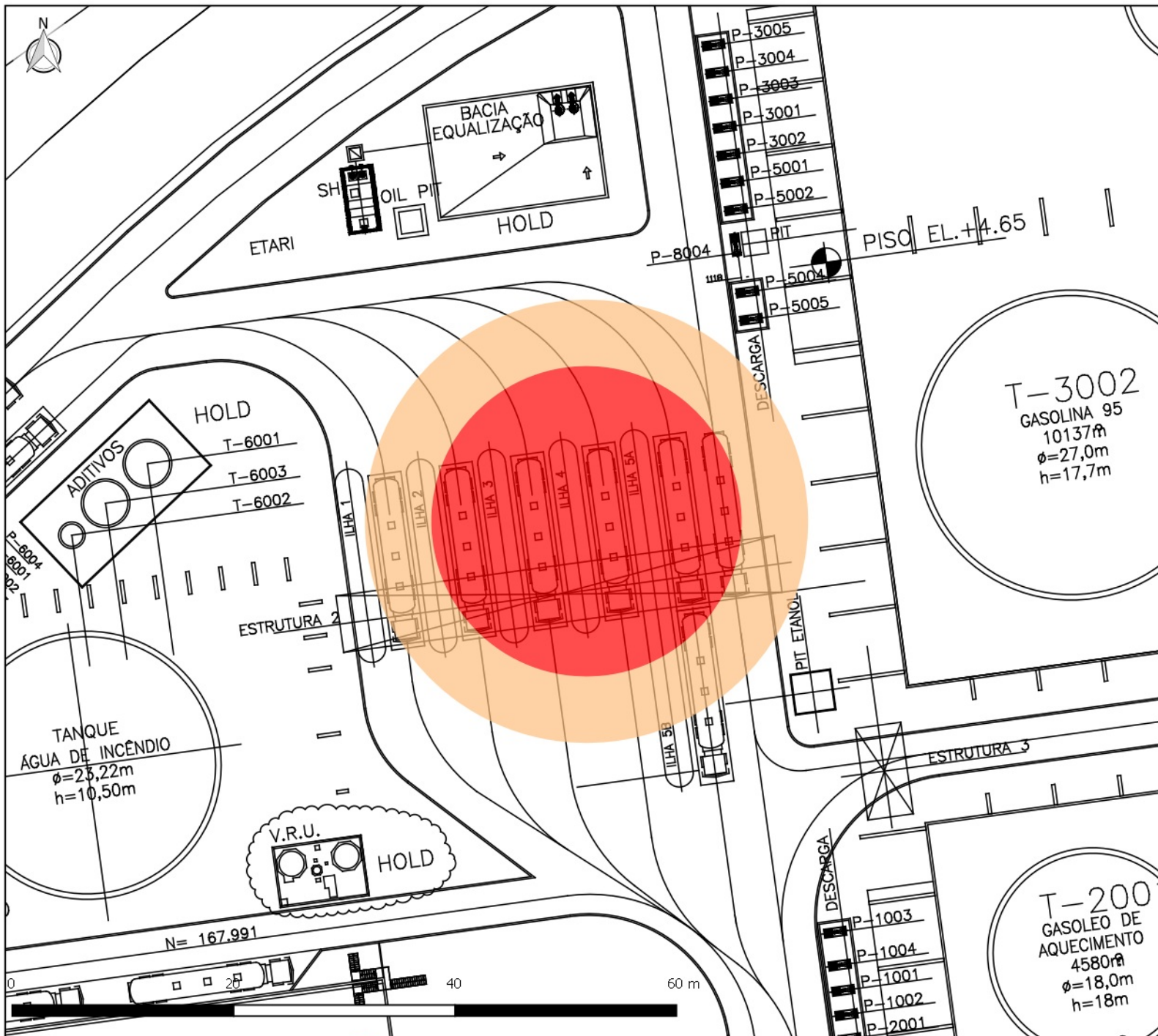
■ 7 kW/m² ACL
■ 5 kW/m² ACL

42 m
 46 m



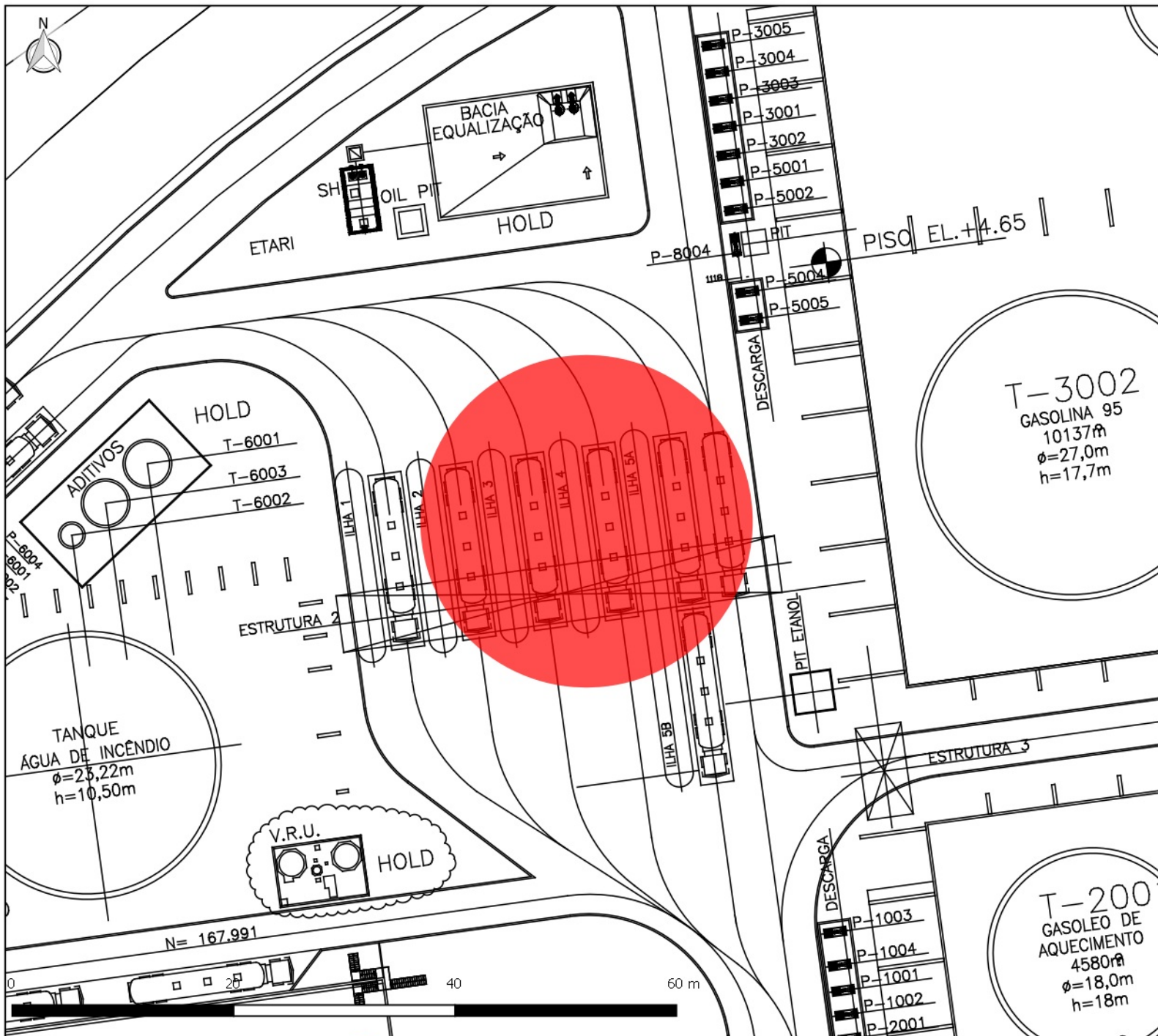
7 kW/m² ACL
5 kW/m² ACL

21 m
22 m



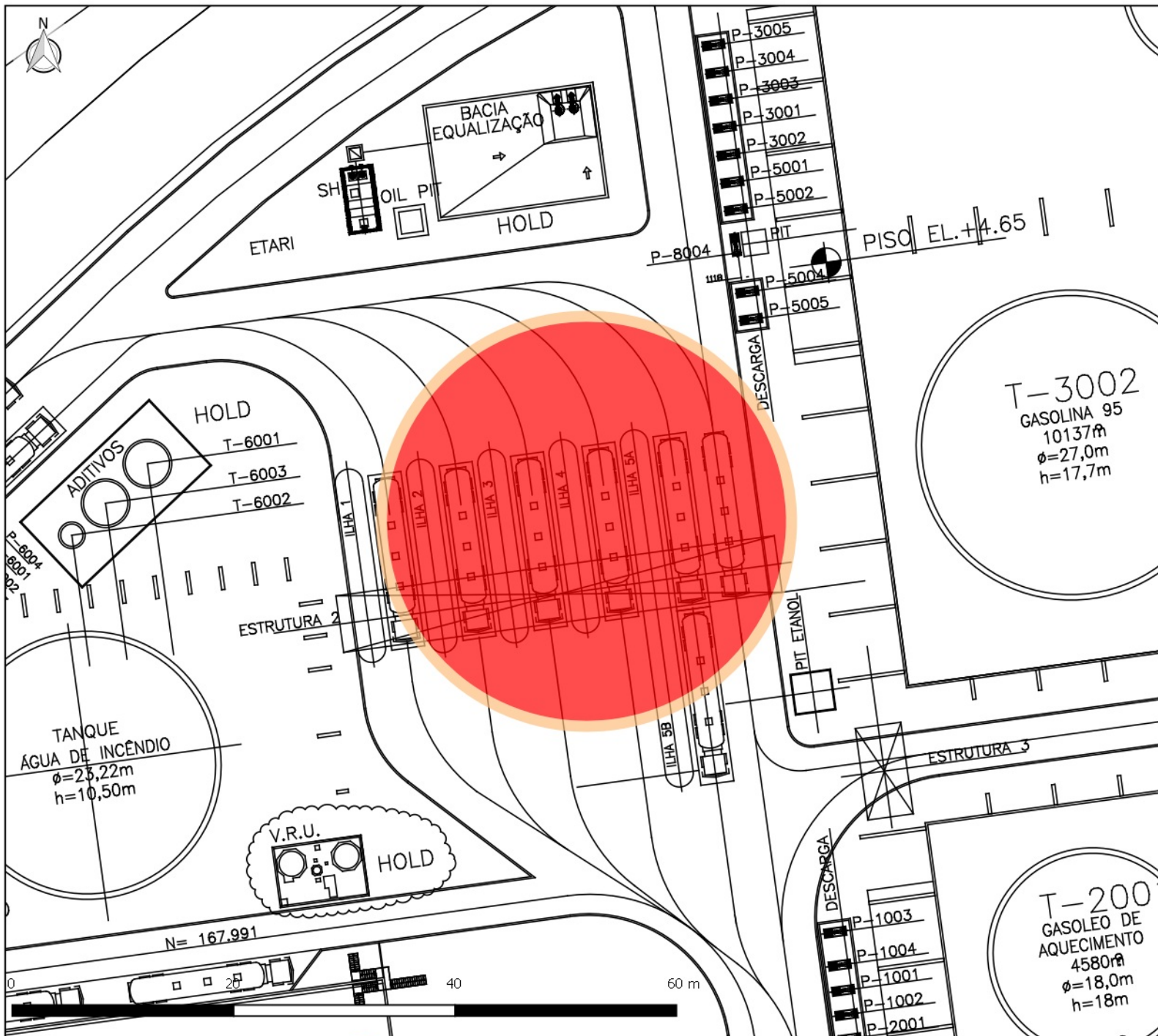
140 mbar ACL
50 mbar ACL

14 m
20 m



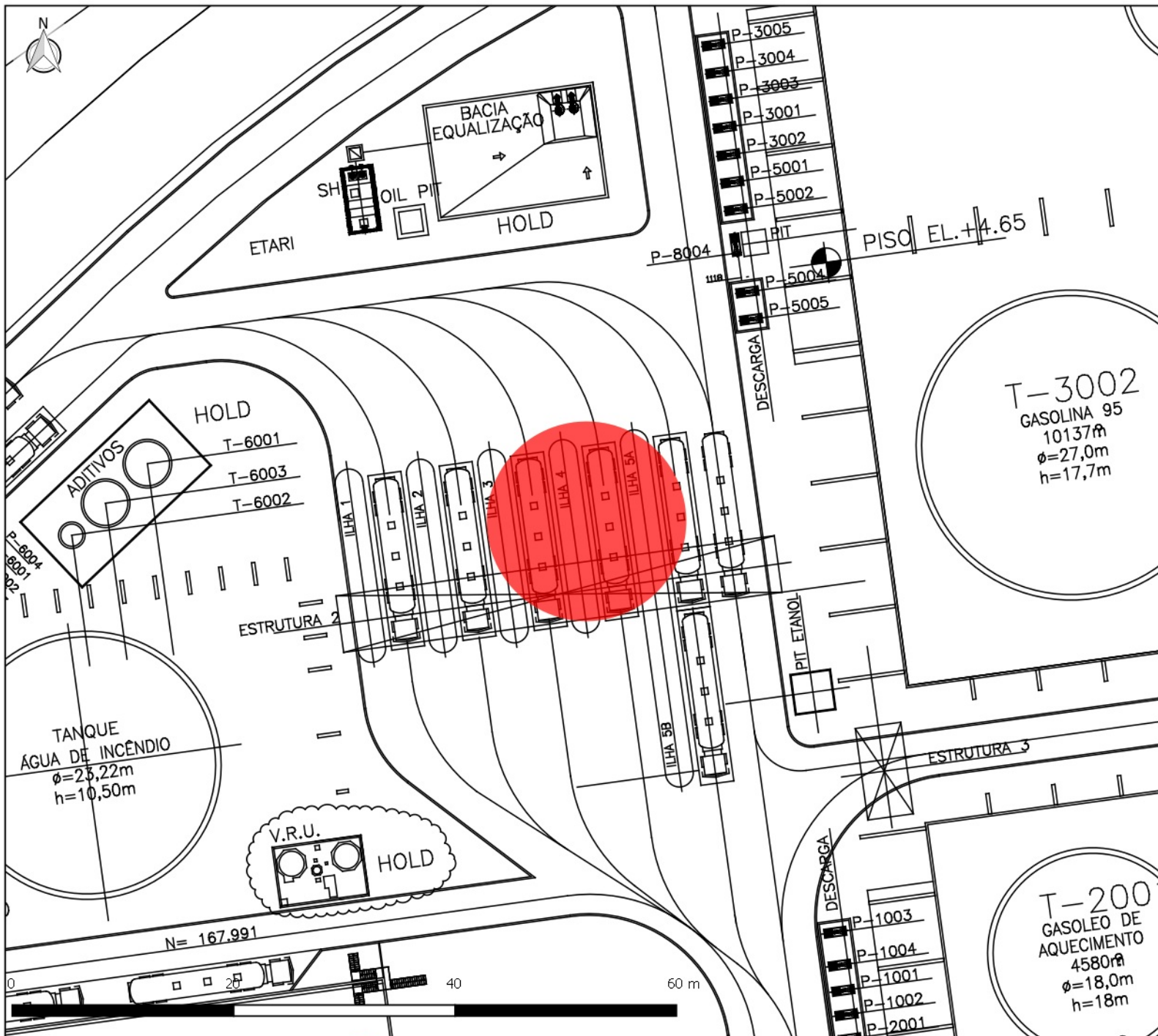
LIE/2 ACL

15 m



■ 7 kW/m² ACL
■ 5 kW/m² ACL

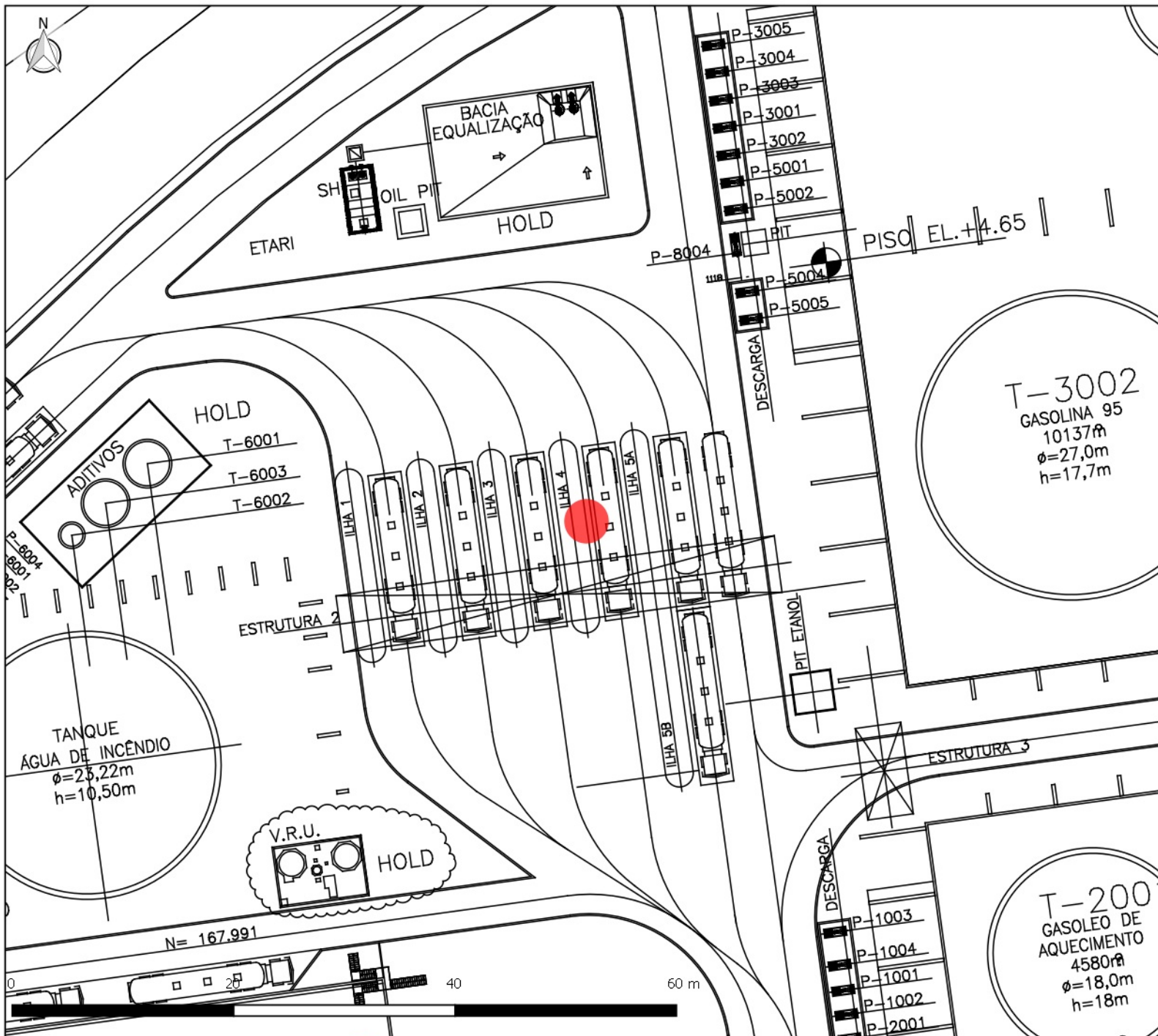
18 m
 19 m



7 kW/m² ACL
5 kW/m² ACL

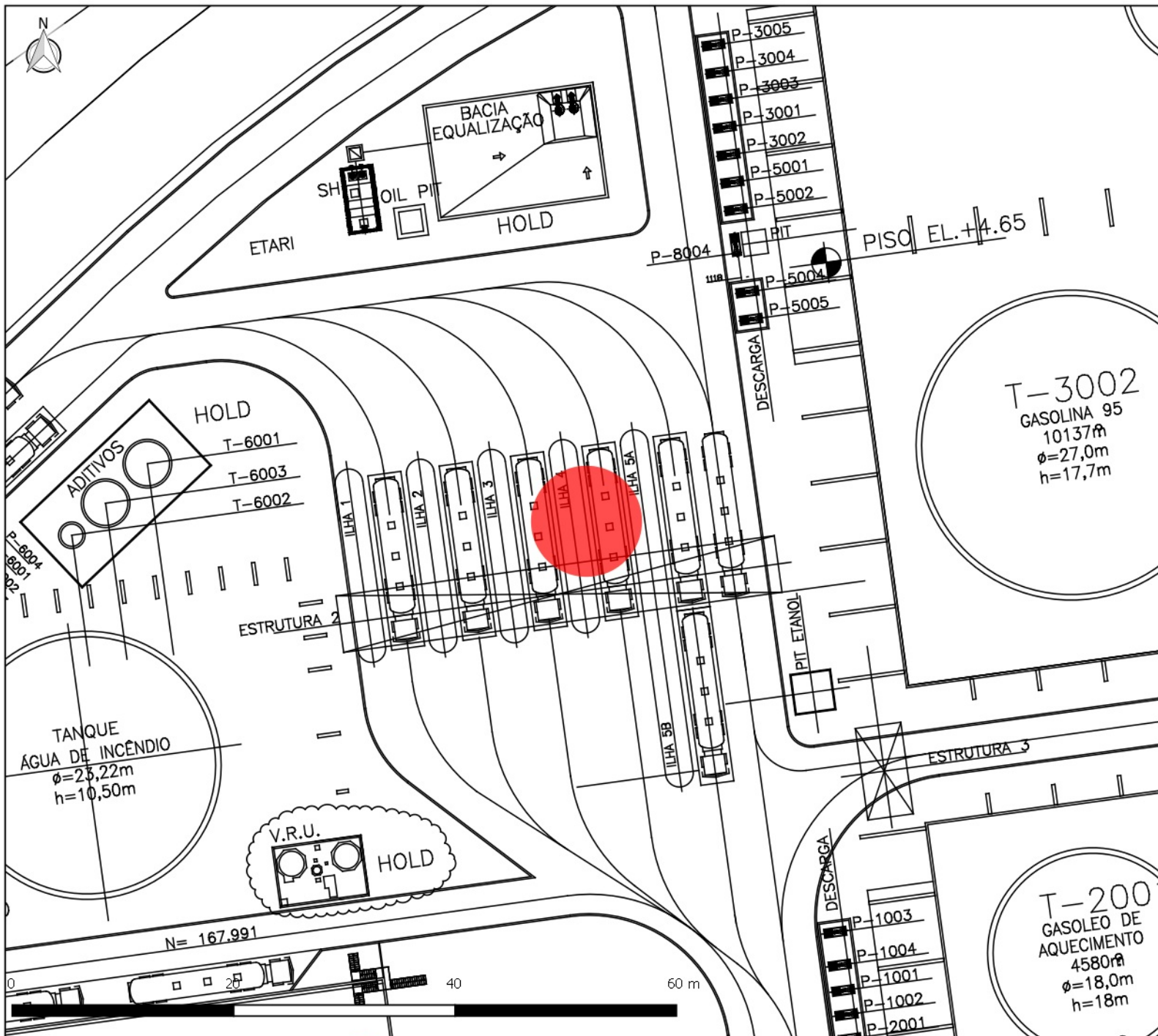
9 m

9 m



LIE/2 ACL

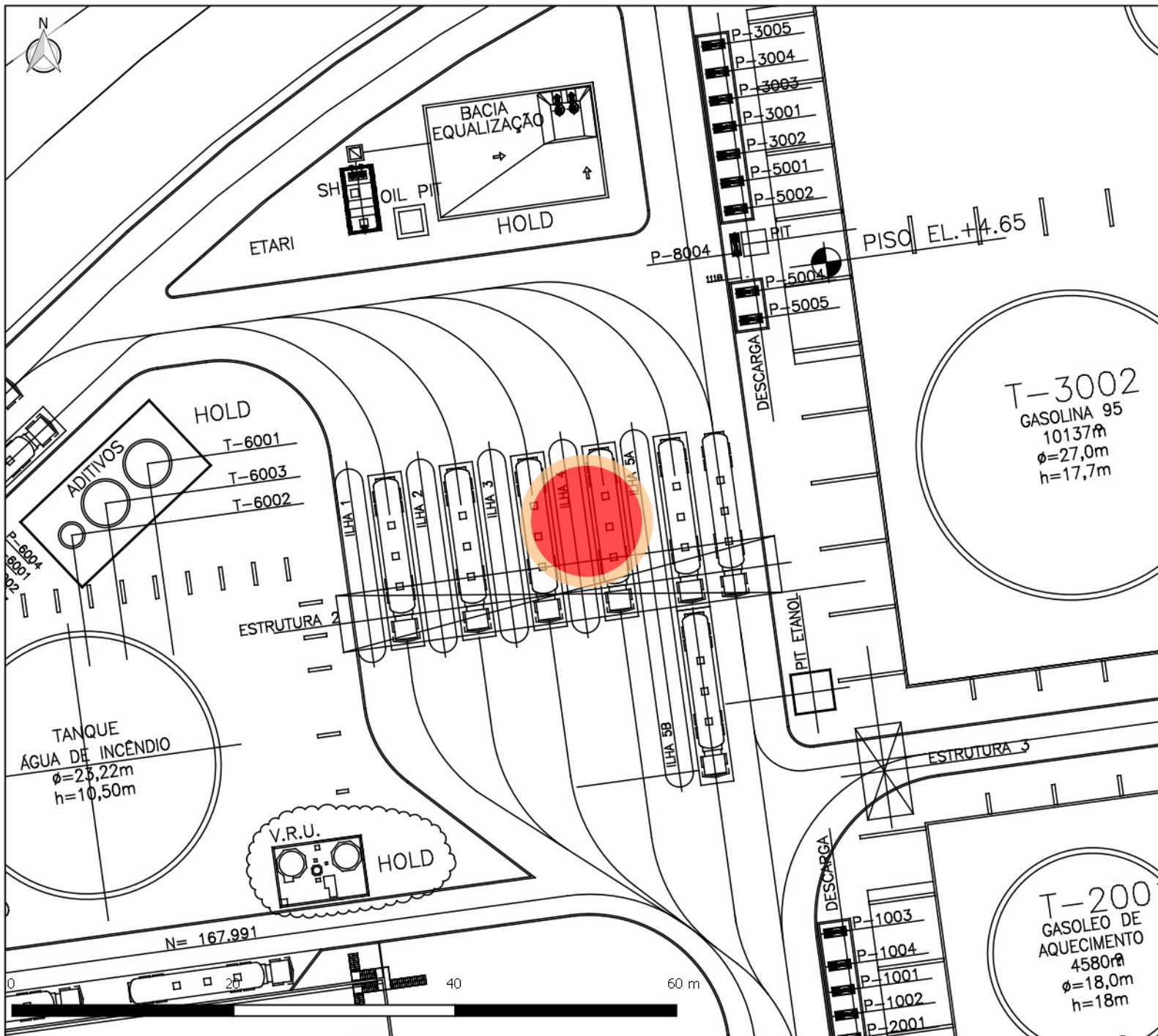
2 m



7 kW/m² ACL
5 kW/m² ACL

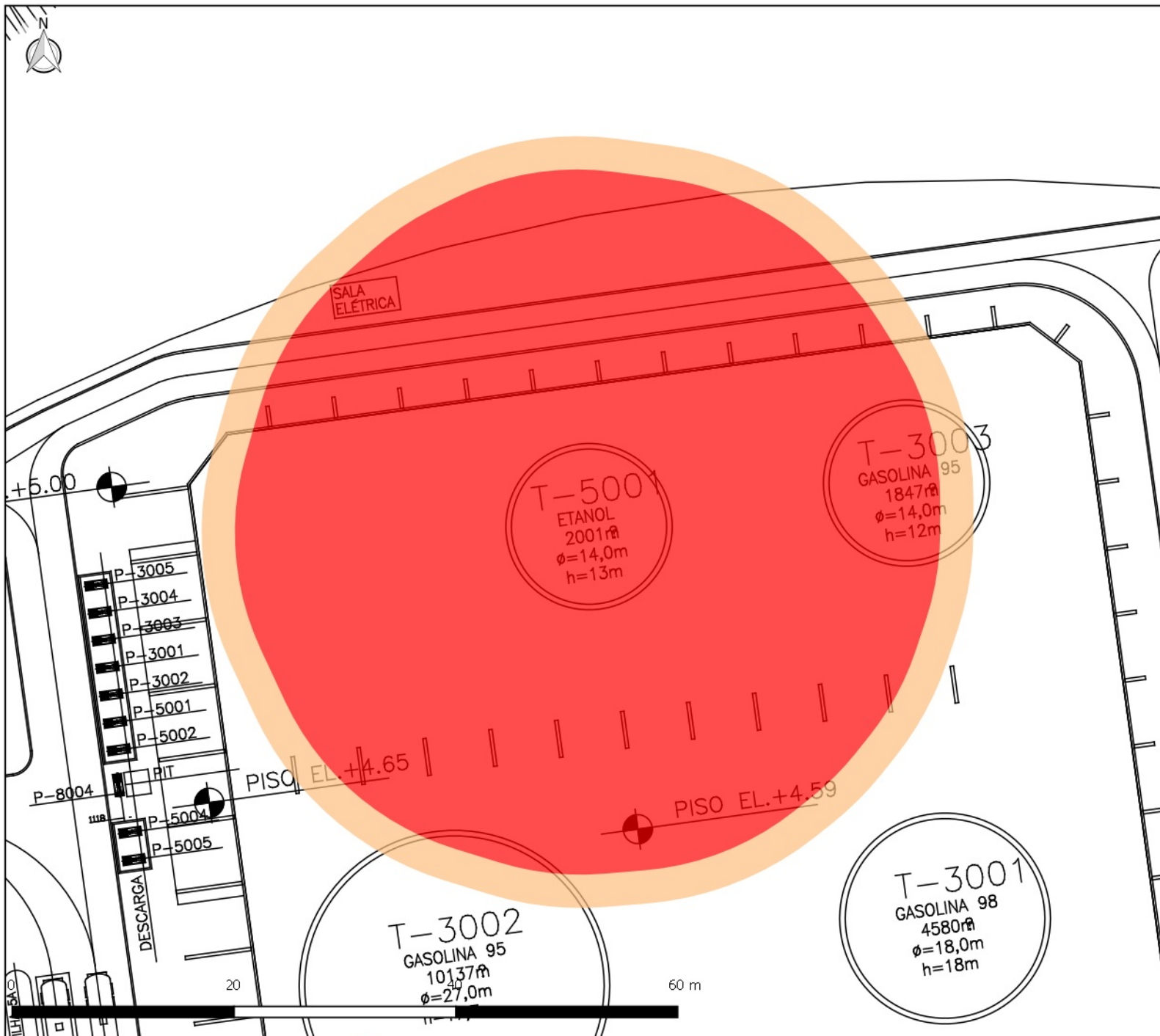
5 m

5 m



7 kW/m² ACL
5 kW/m² ACL

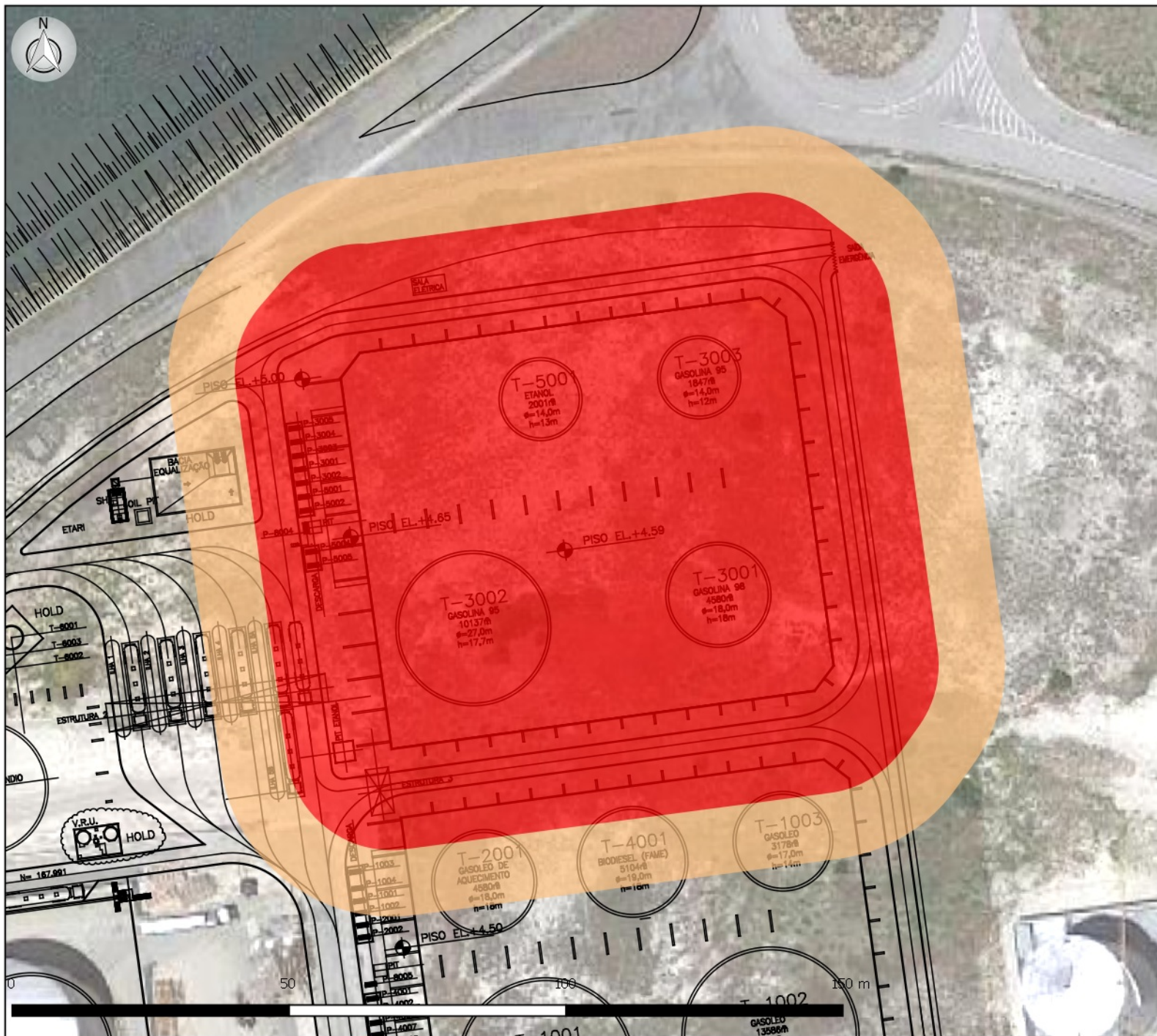
5 m
6 m



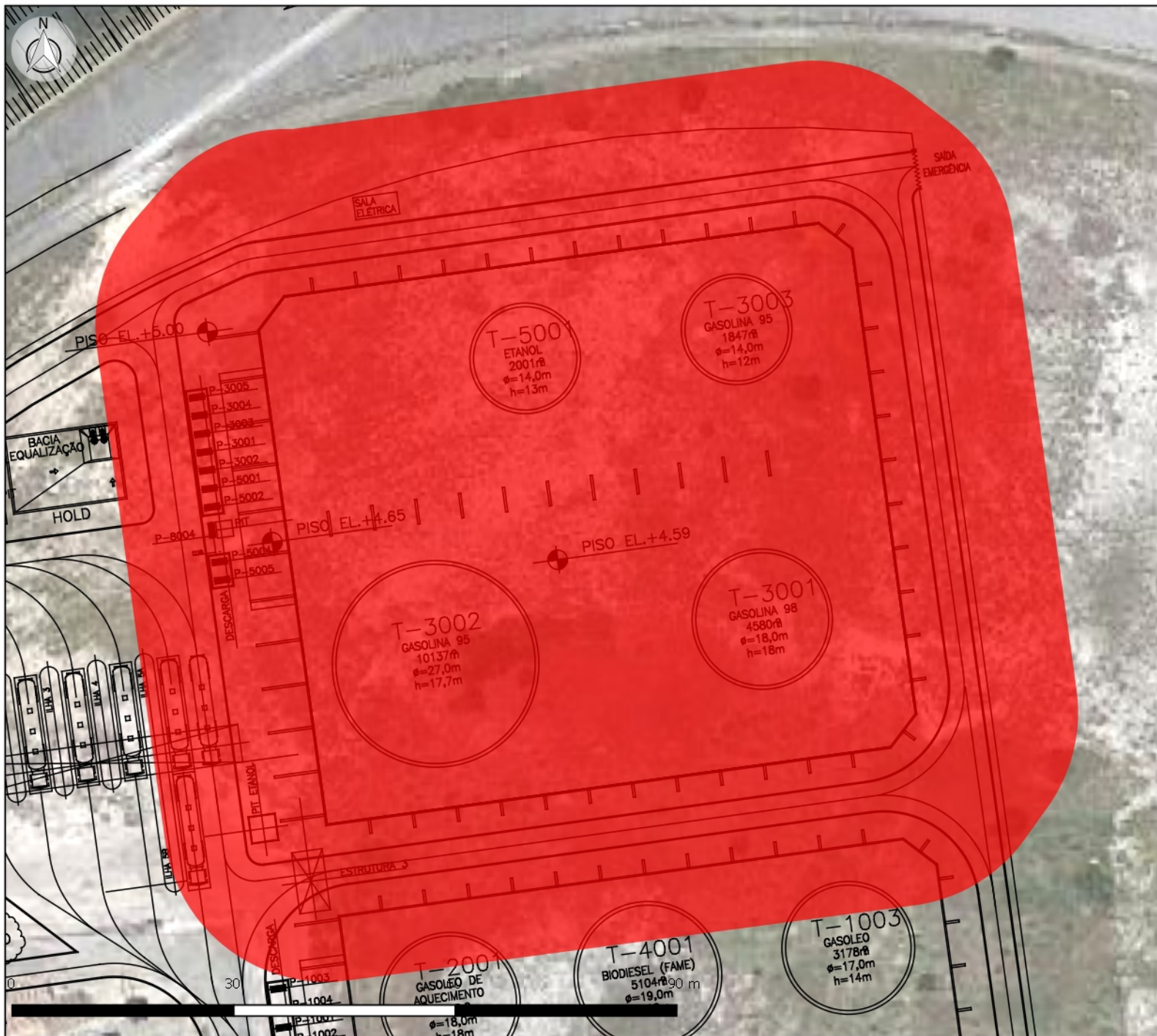
7 kW/m² ACL
5 kW/m² ACL

25 m

28 m

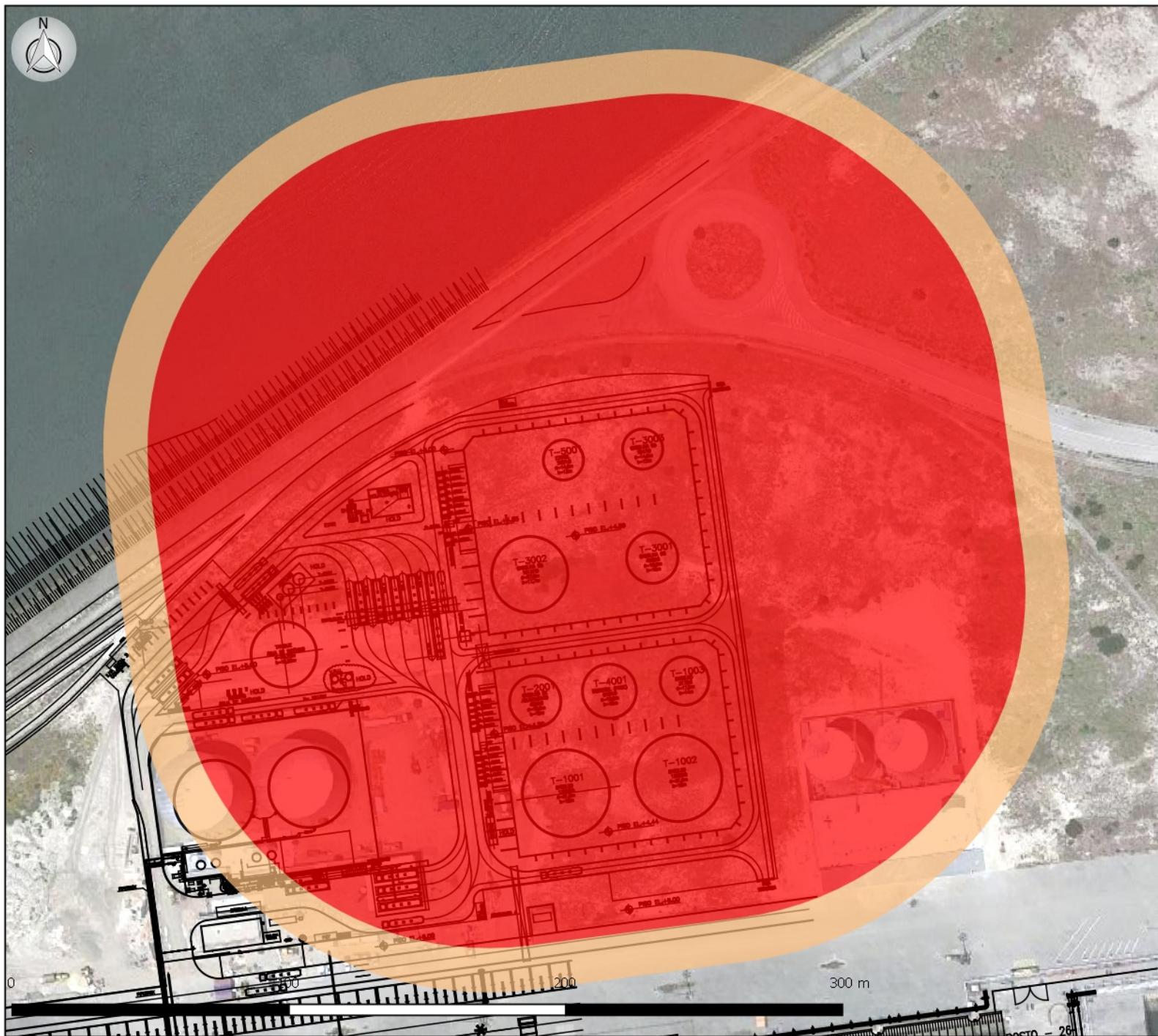


140 mbar ACL	19 m
50 mbar ACL	31 m



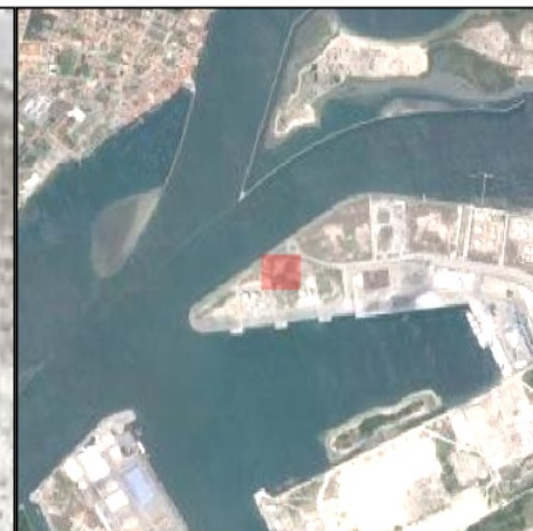
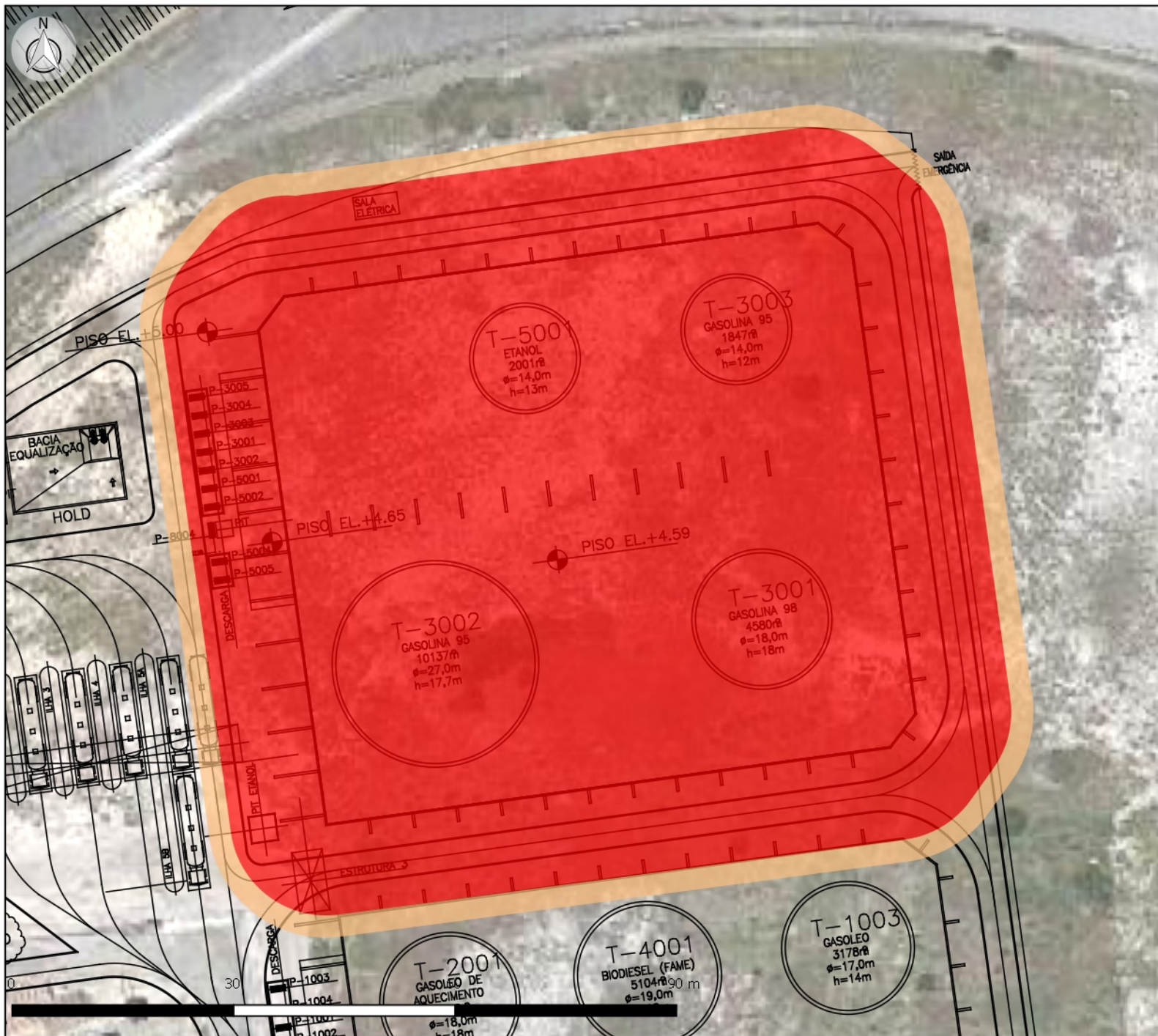
LIE/2 ACL

22 m



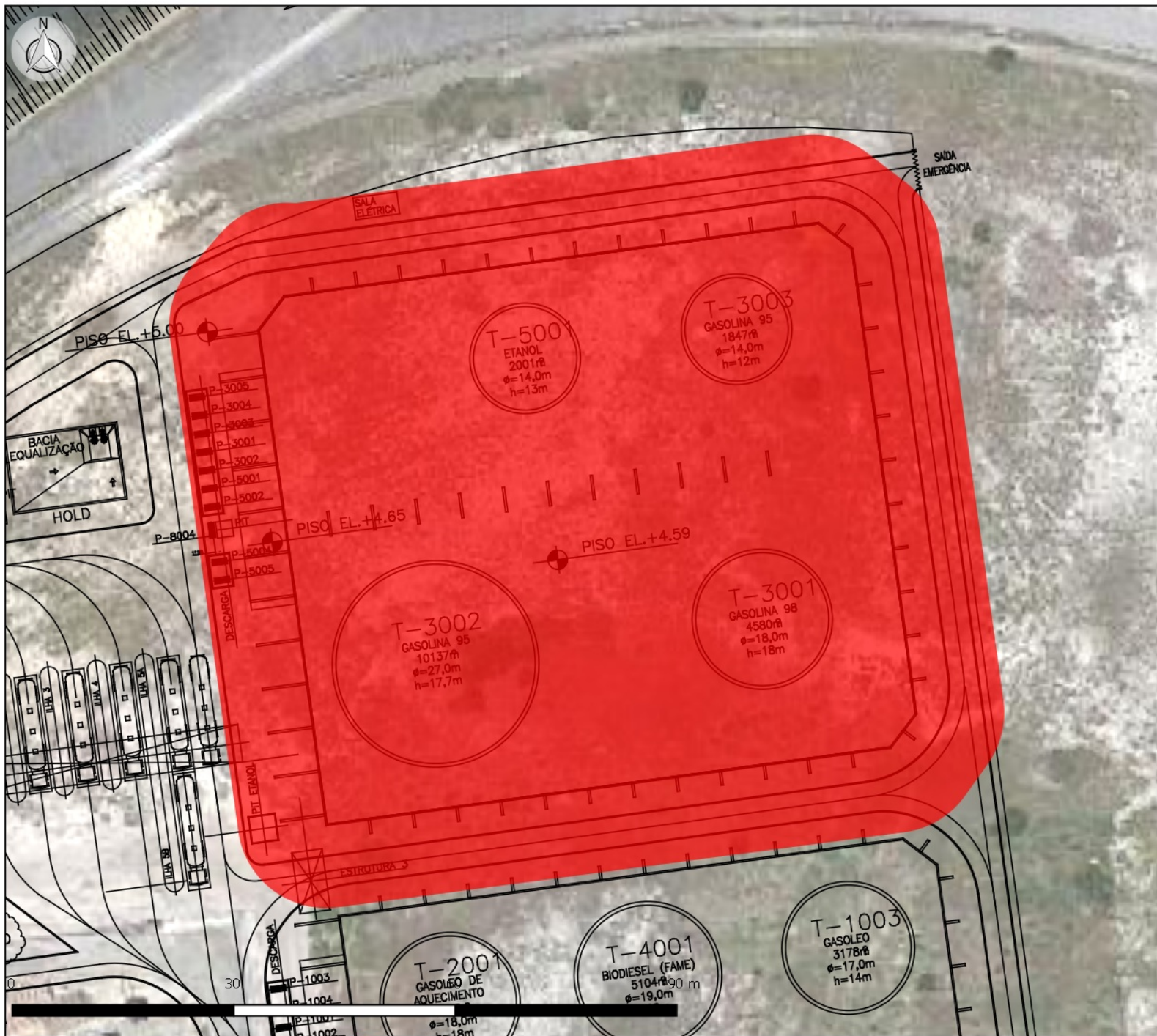
7 kW/m² ACL
5 kW/m² ACL

114 m
130 m



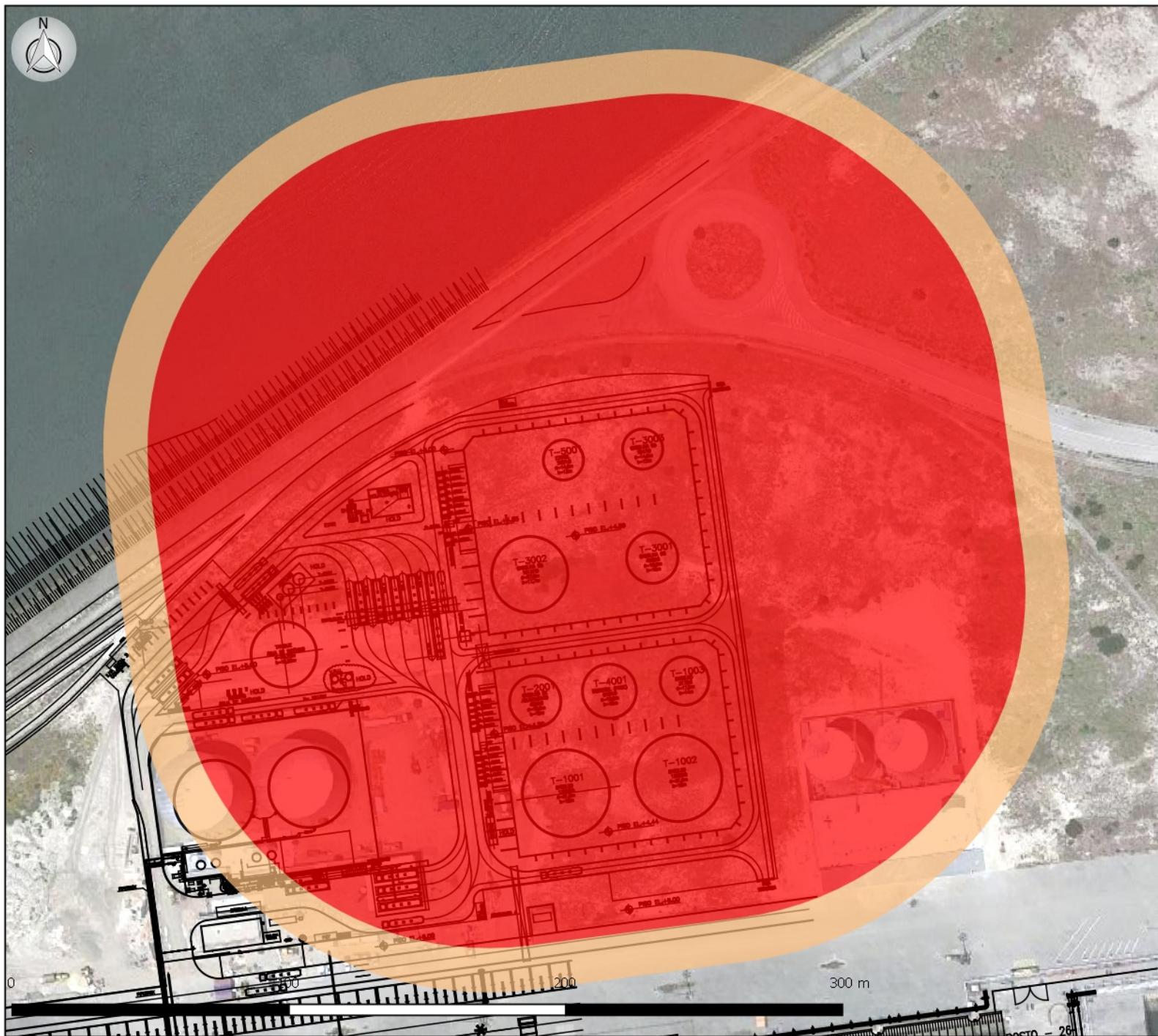
140 mbar ACL
50 mbar ACL

13 m
16 m



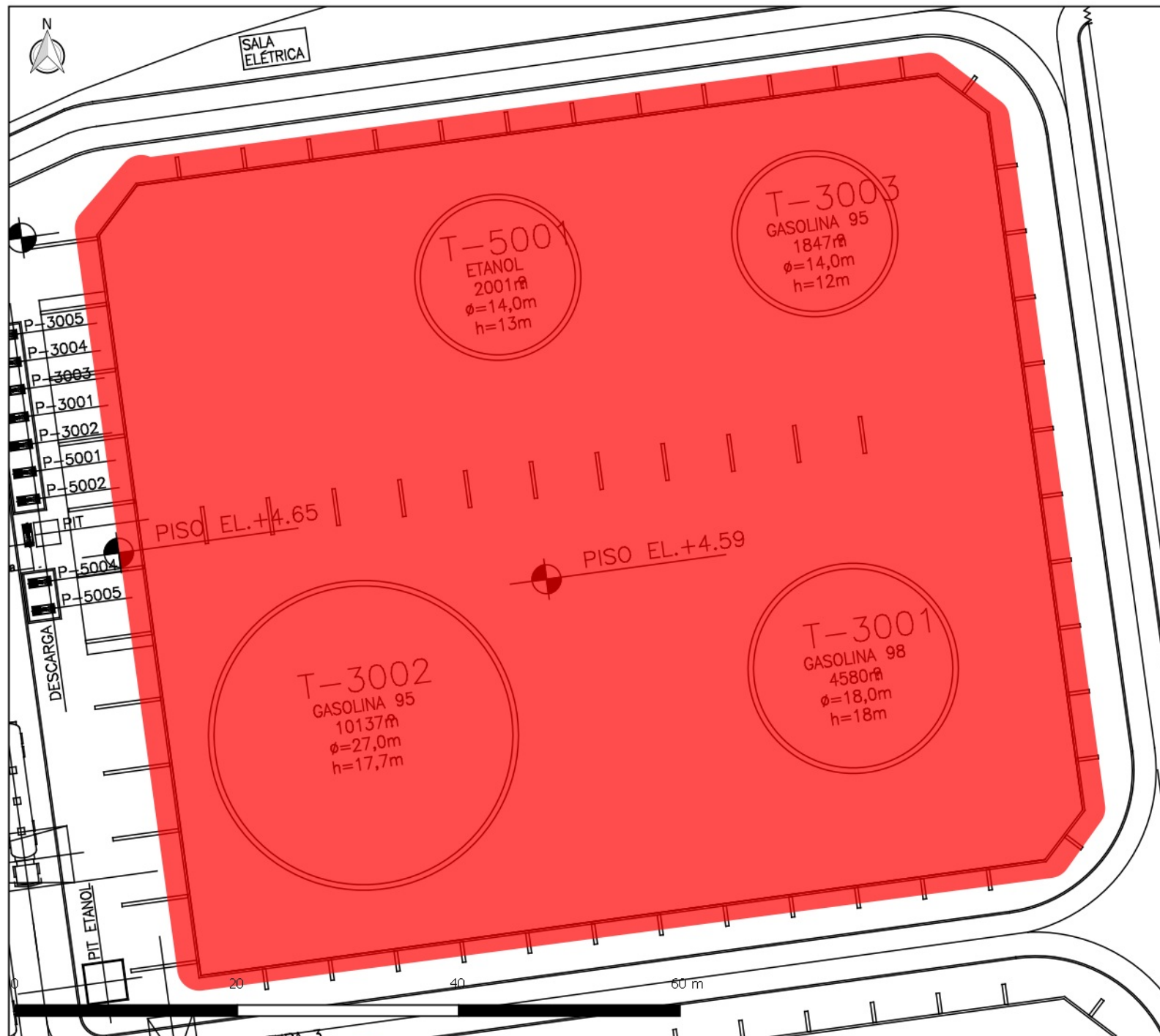
LIE/2 ACL

12 m



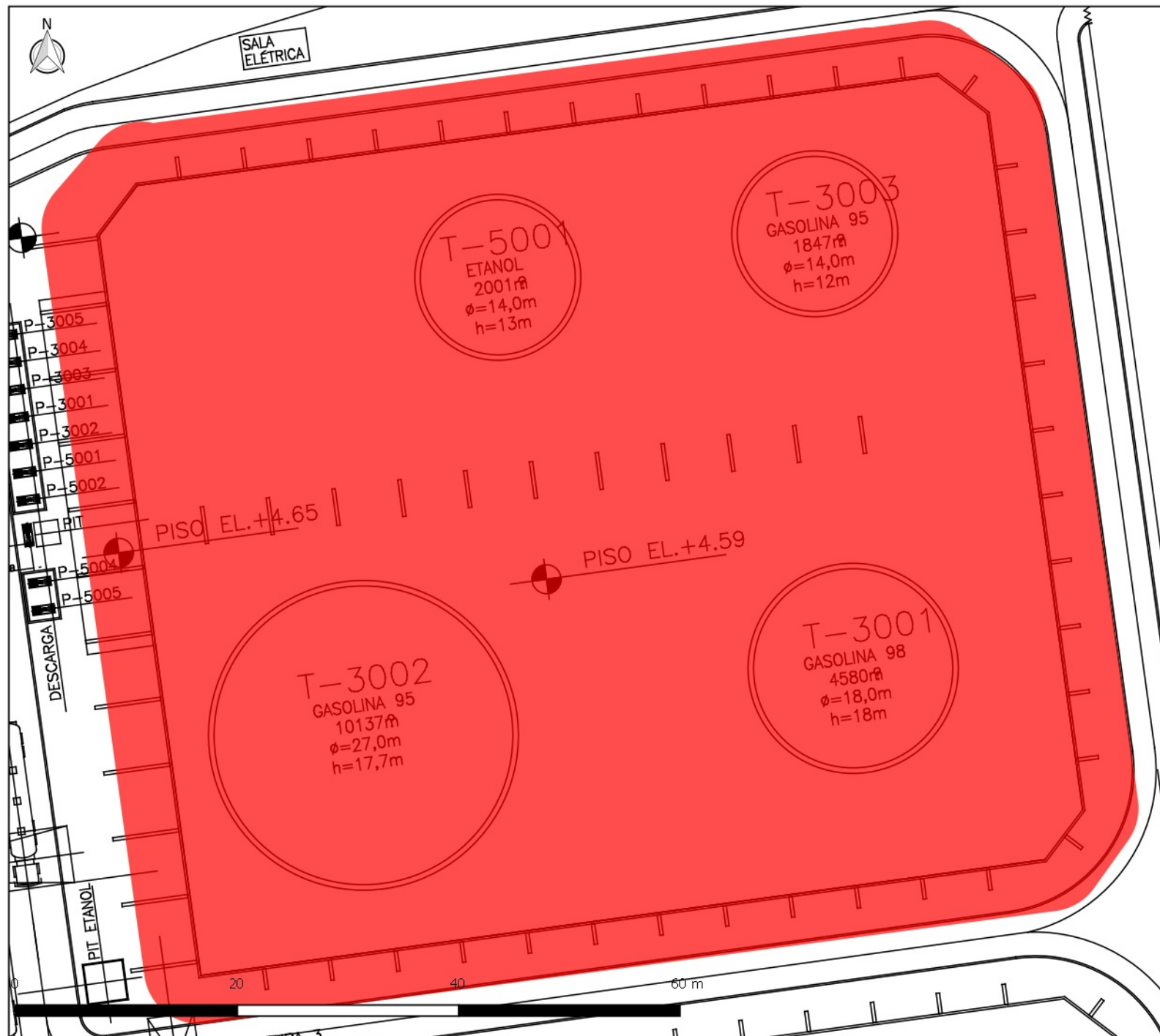
7 kW/m² ACL
5 kW/m² ACL

114 m
130 m



LIE/2 ACL

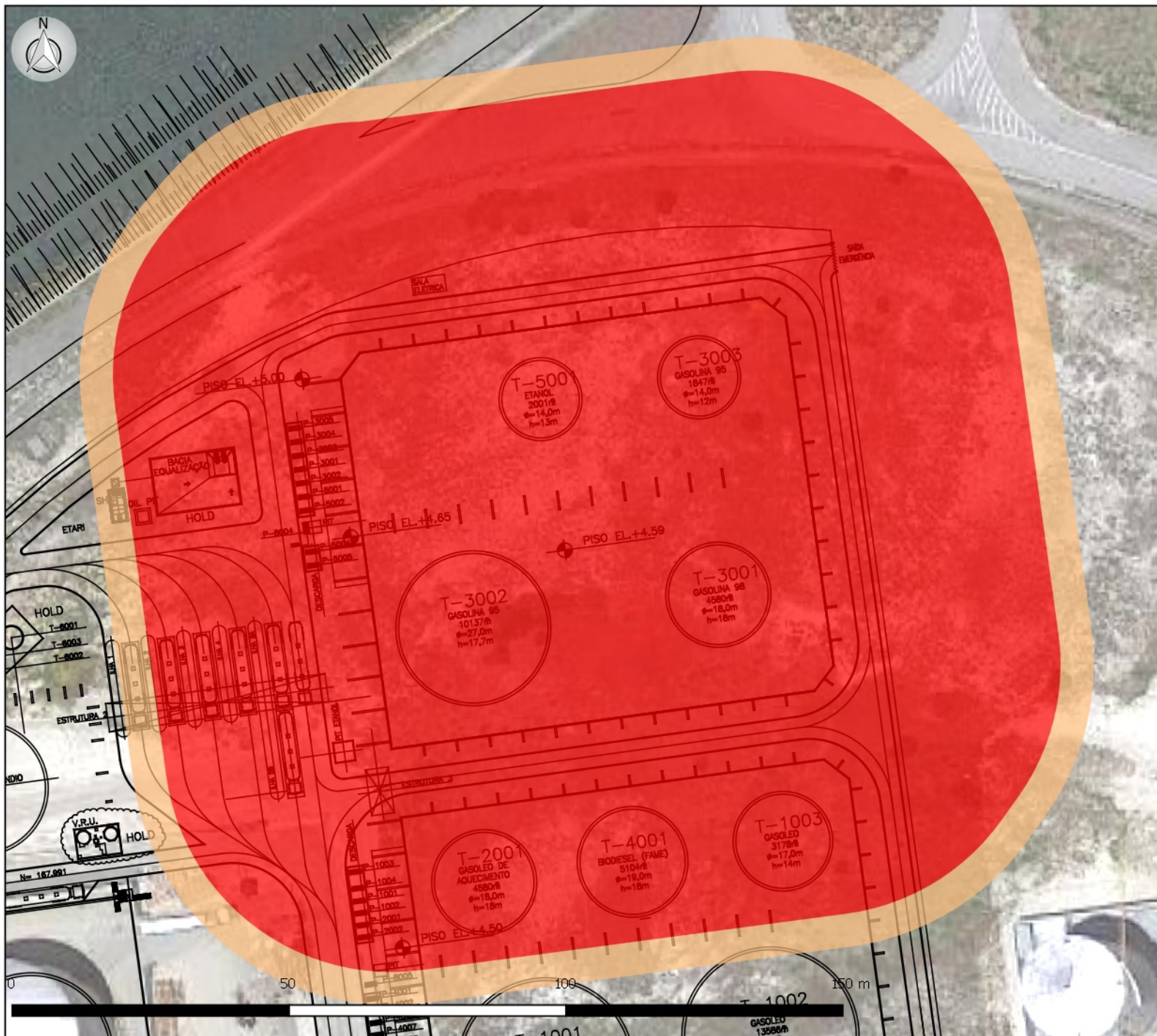
2 m



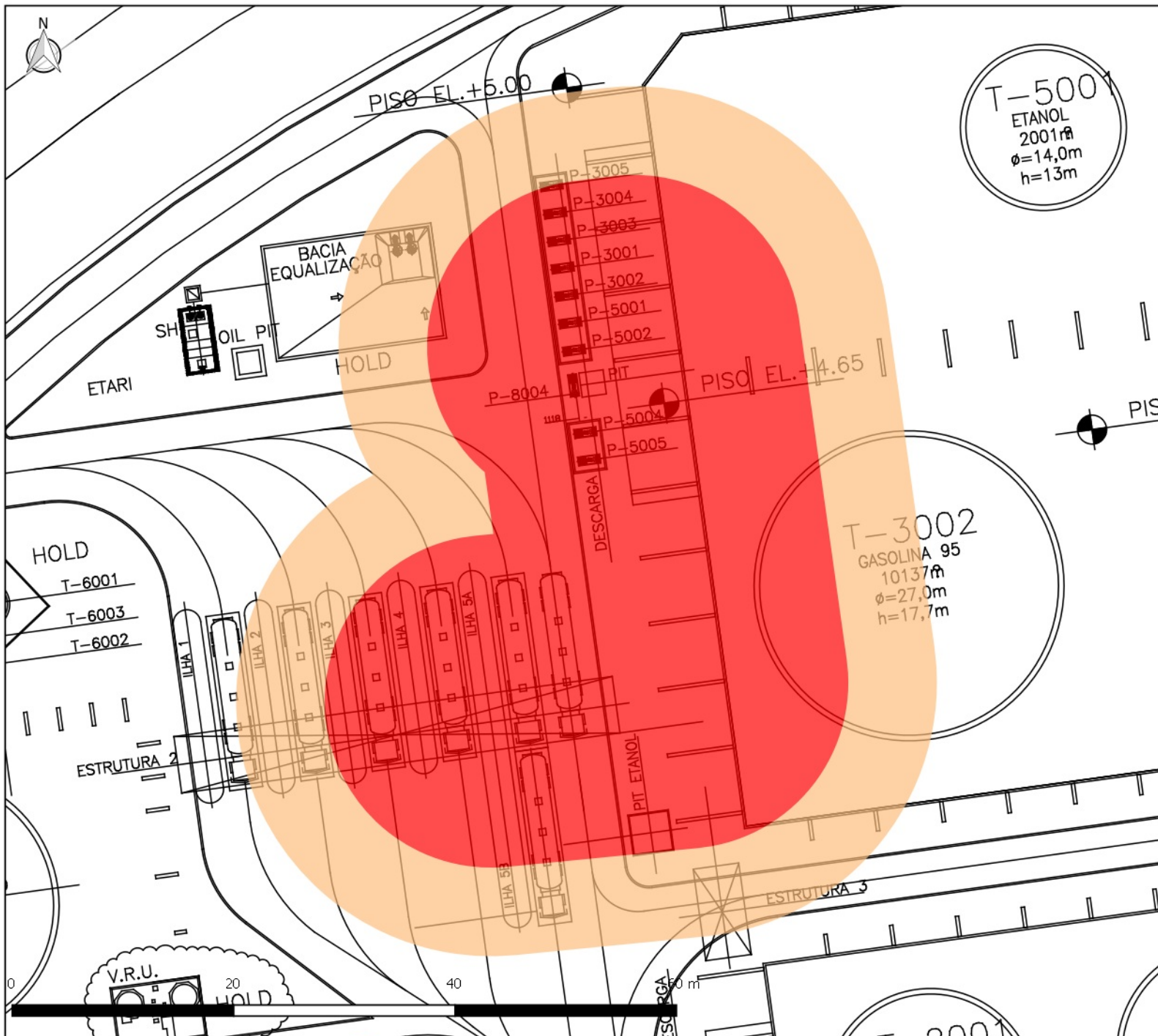
5 kW/m² ACL
7 kW/m² ACL

5 m

5 m

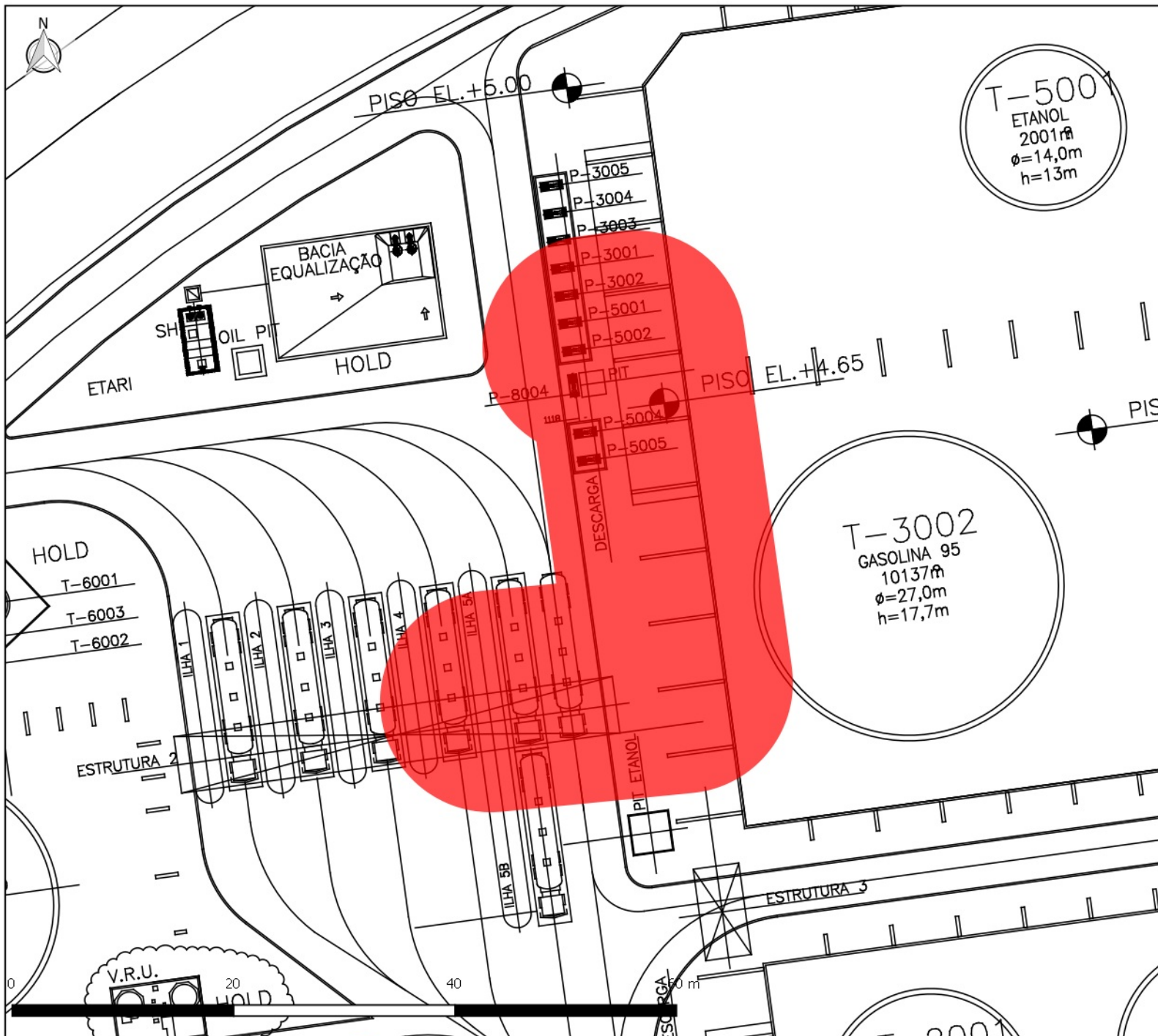


	7 kW/m ² ACL	41 m
	5 kW/m ² ACL	47 m

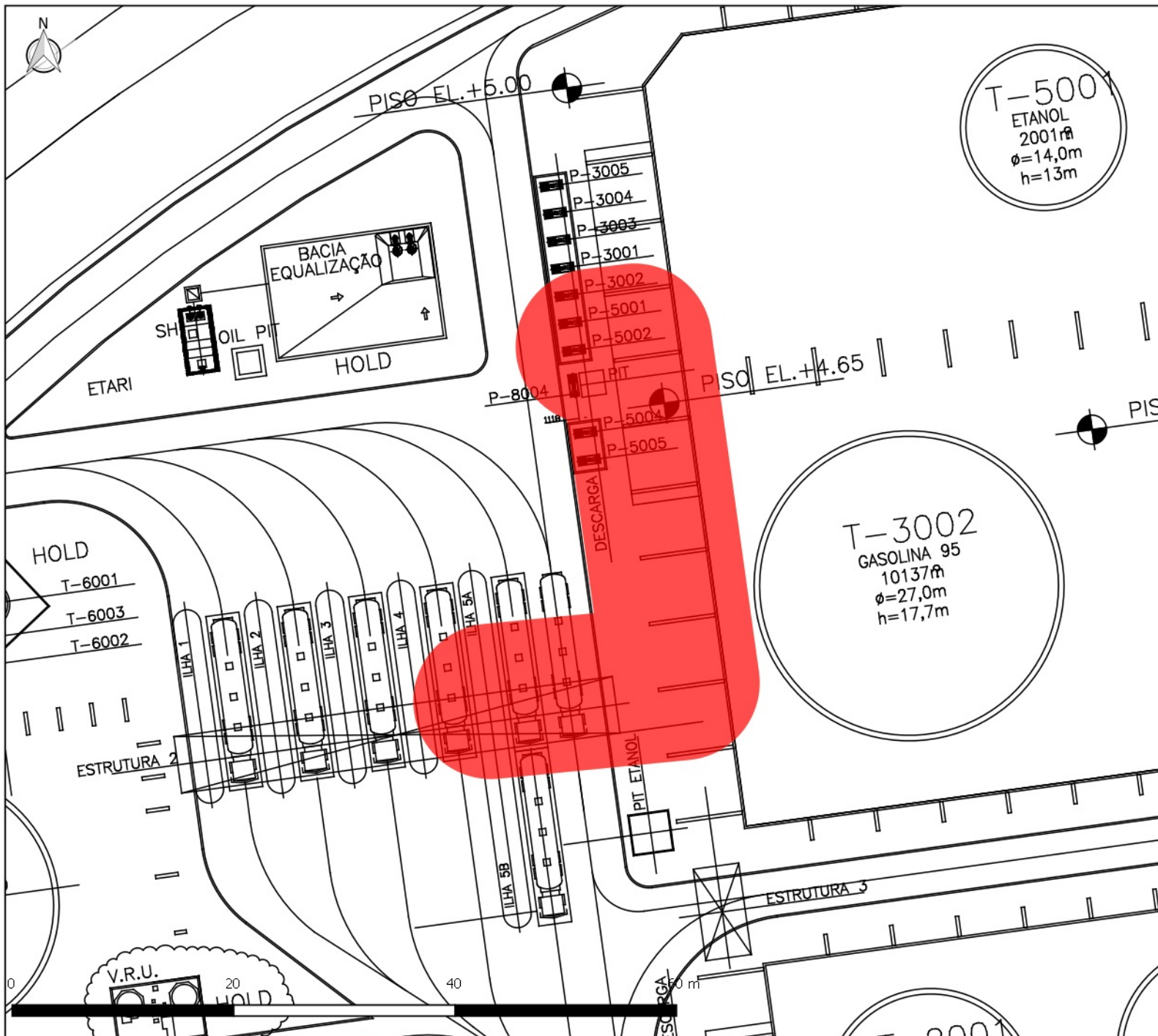


■ 140 mbar ACL
■ 50 mbar ACL

15 m
 23 m



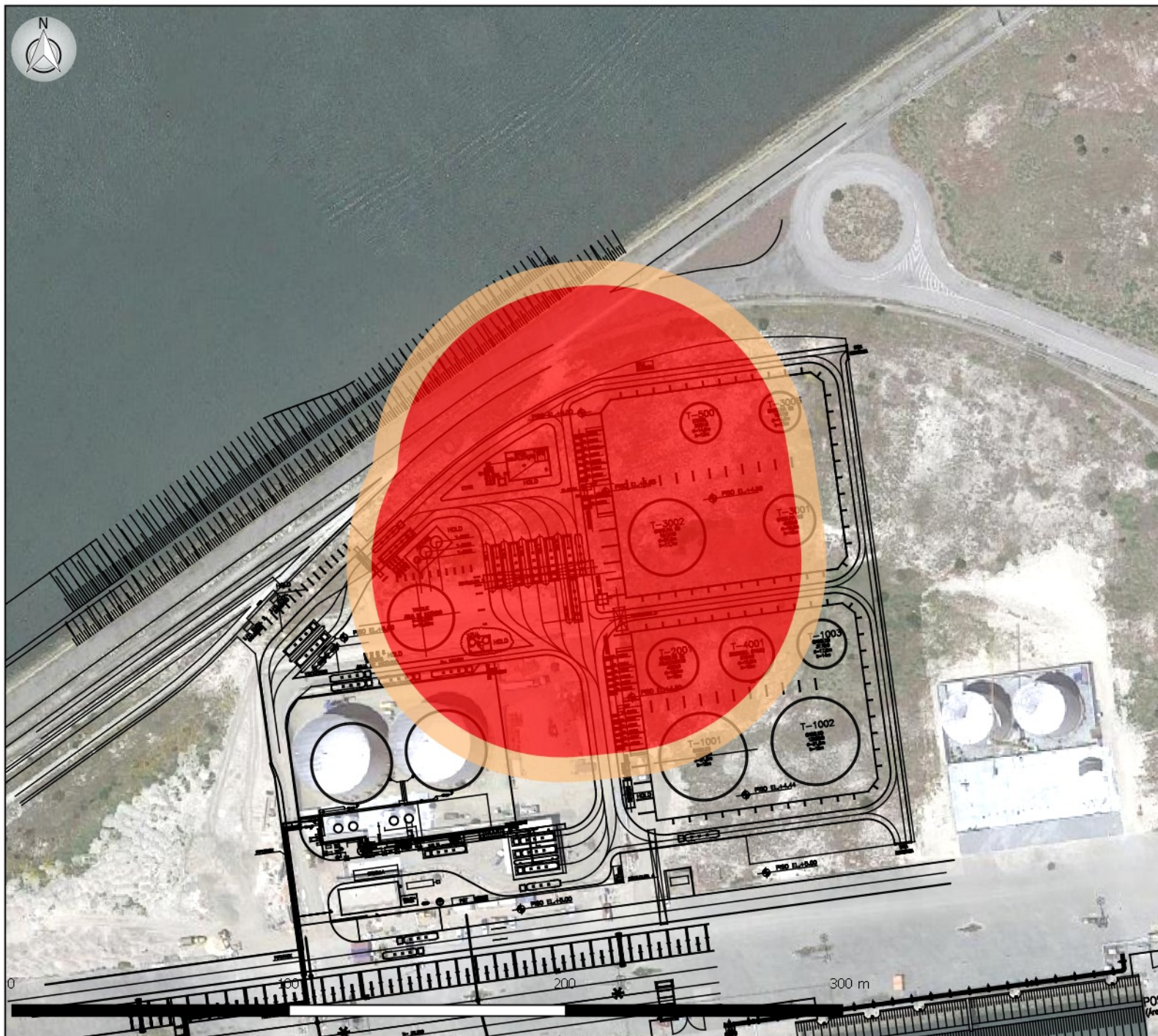
LIE/2 ACL 10 m



7 kW/m² ACL
5 kW/m² ACL

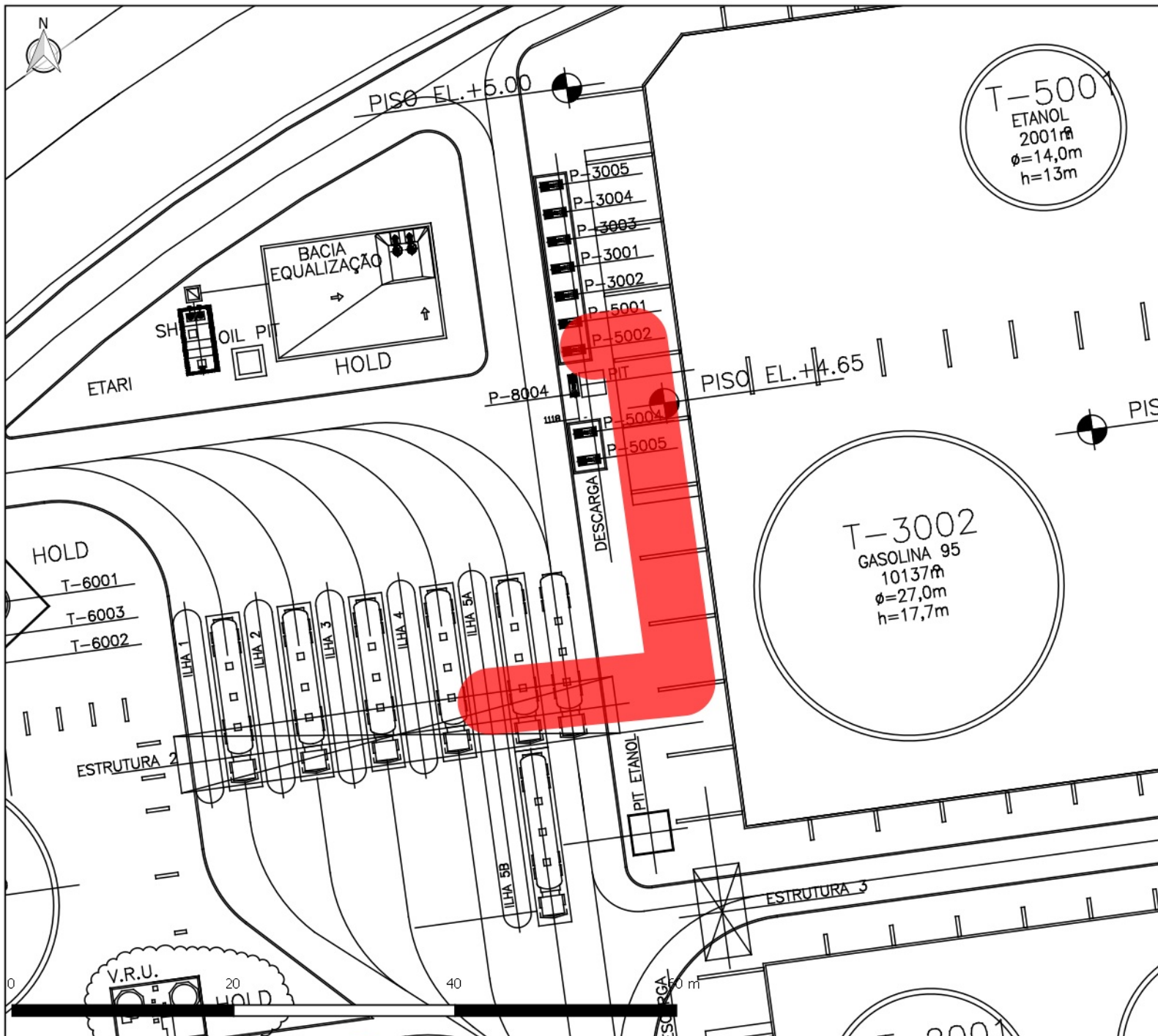
7 m

7 m

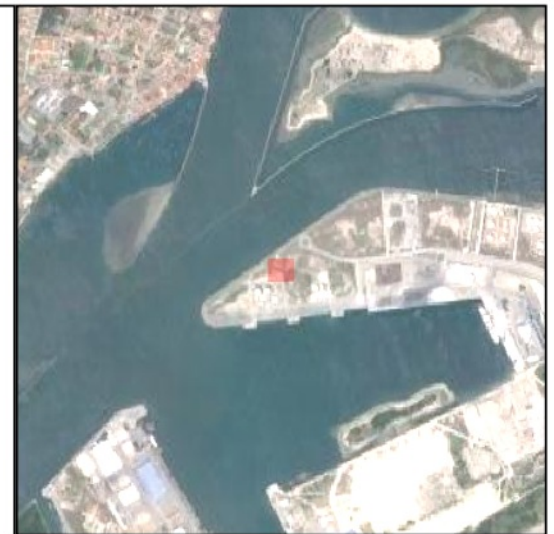
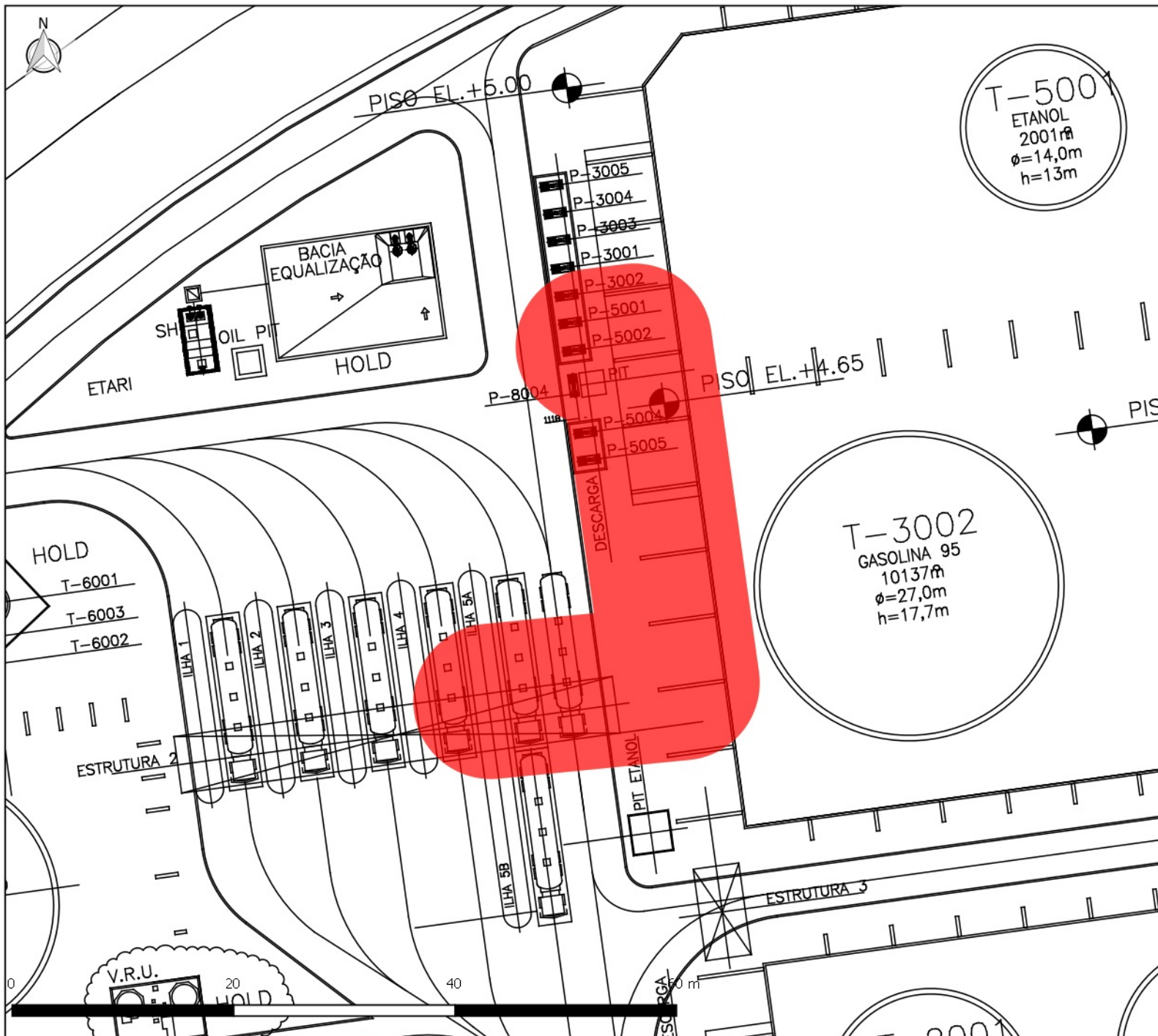


7 kW/m² ACL
5 kW/m² ACL

69 m
78 m

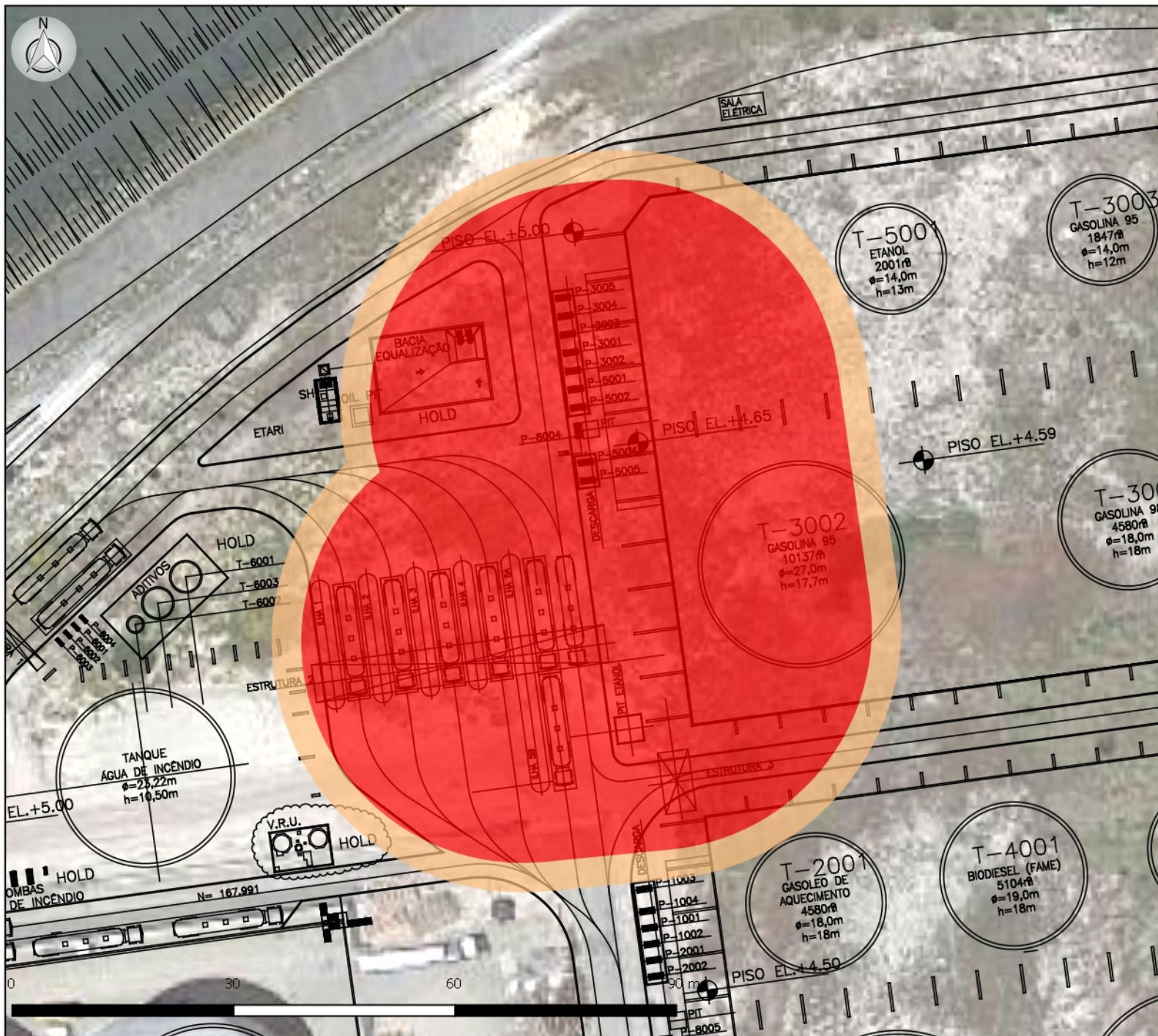


LIE/2 ACL 3 m



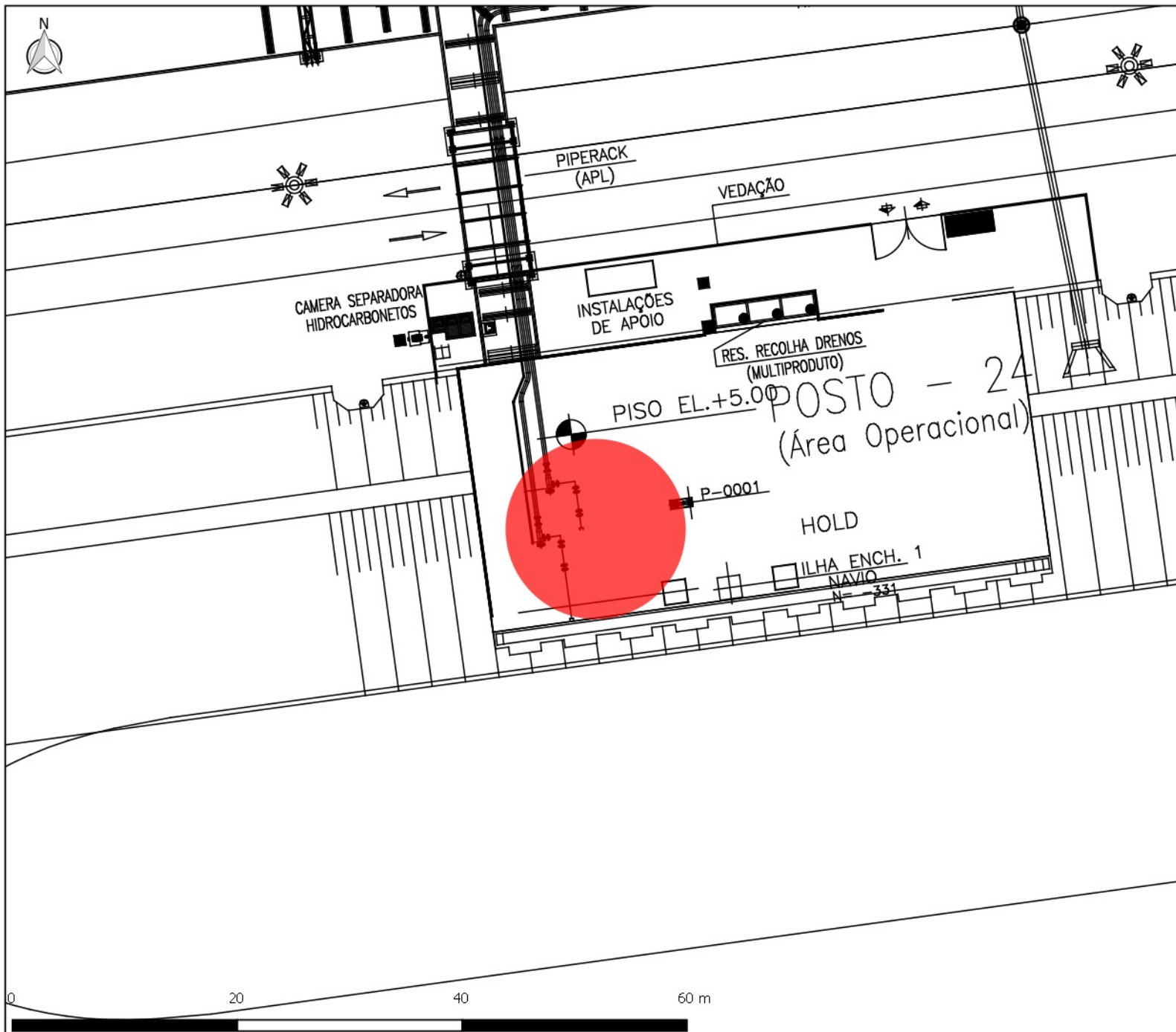
5 kW/m² ACL
7 kW/m² ACL

7 m
7 m



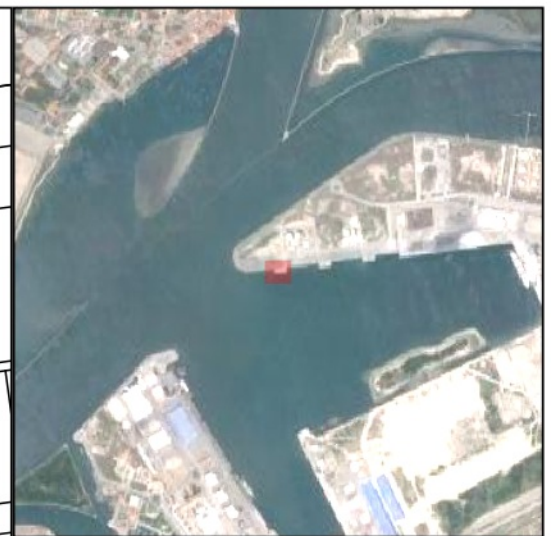
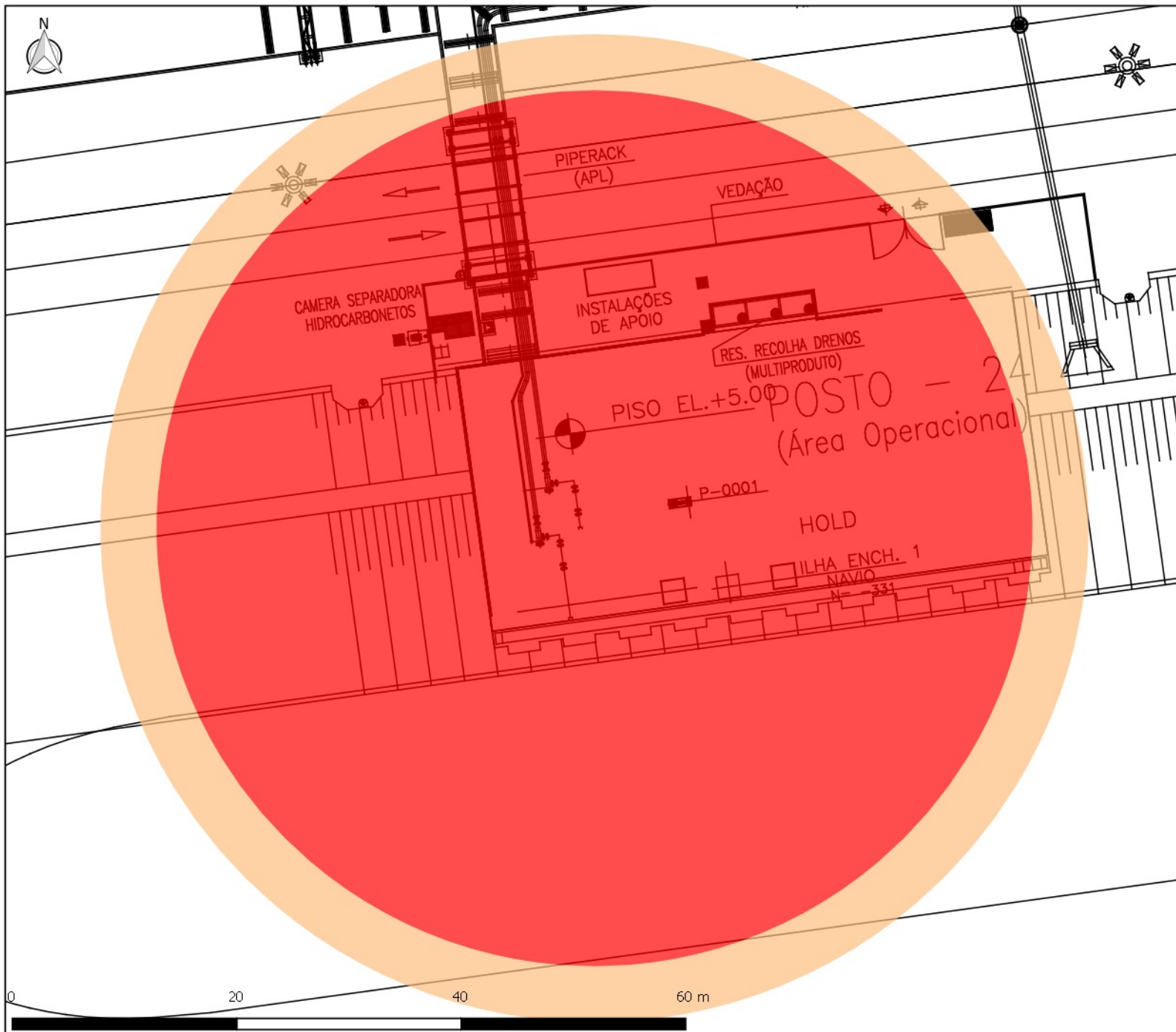
7 kW/m² ACL
5 kW/m² ACL

30 m
34 m

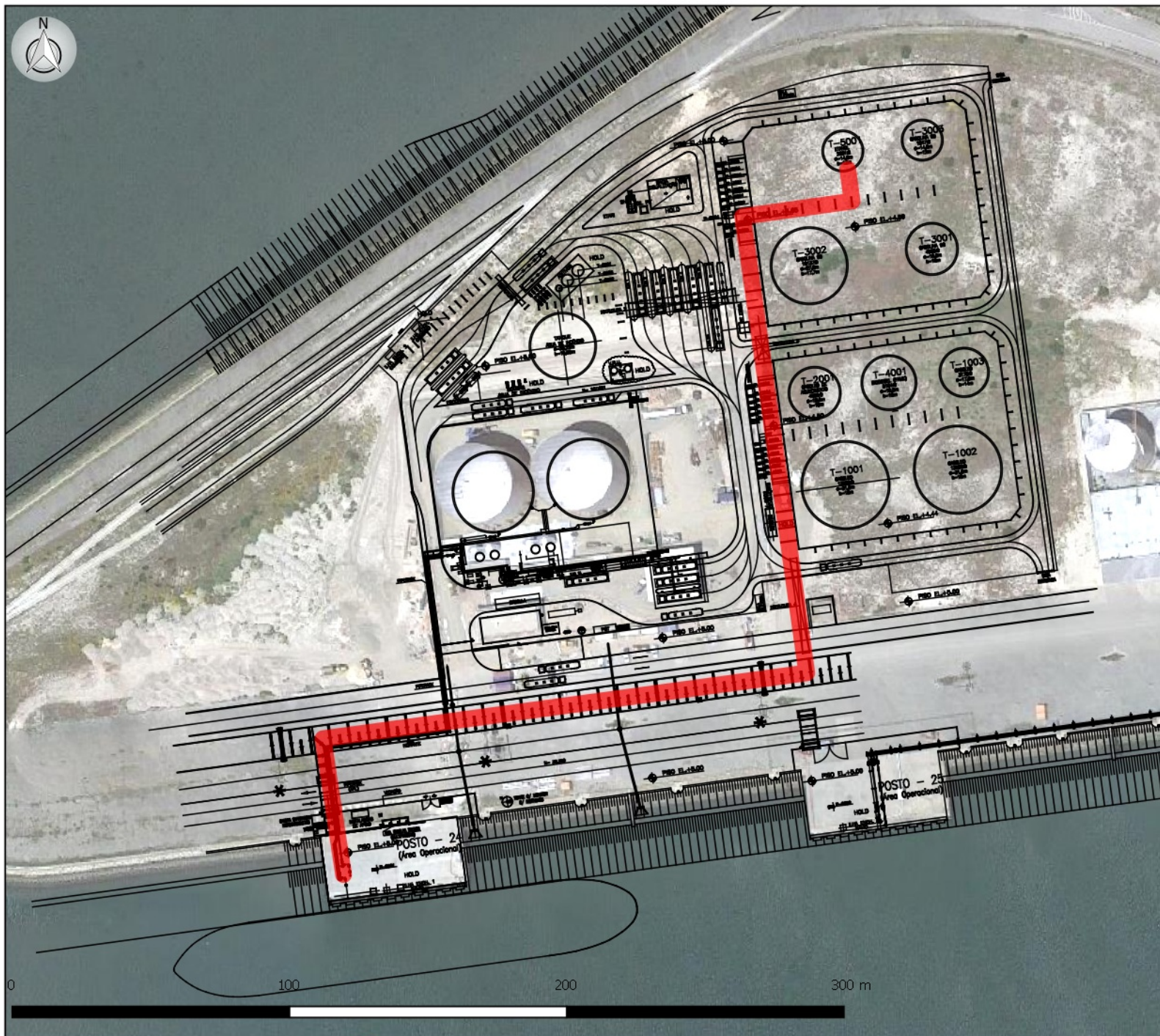


LIE/2 ACL

8 m

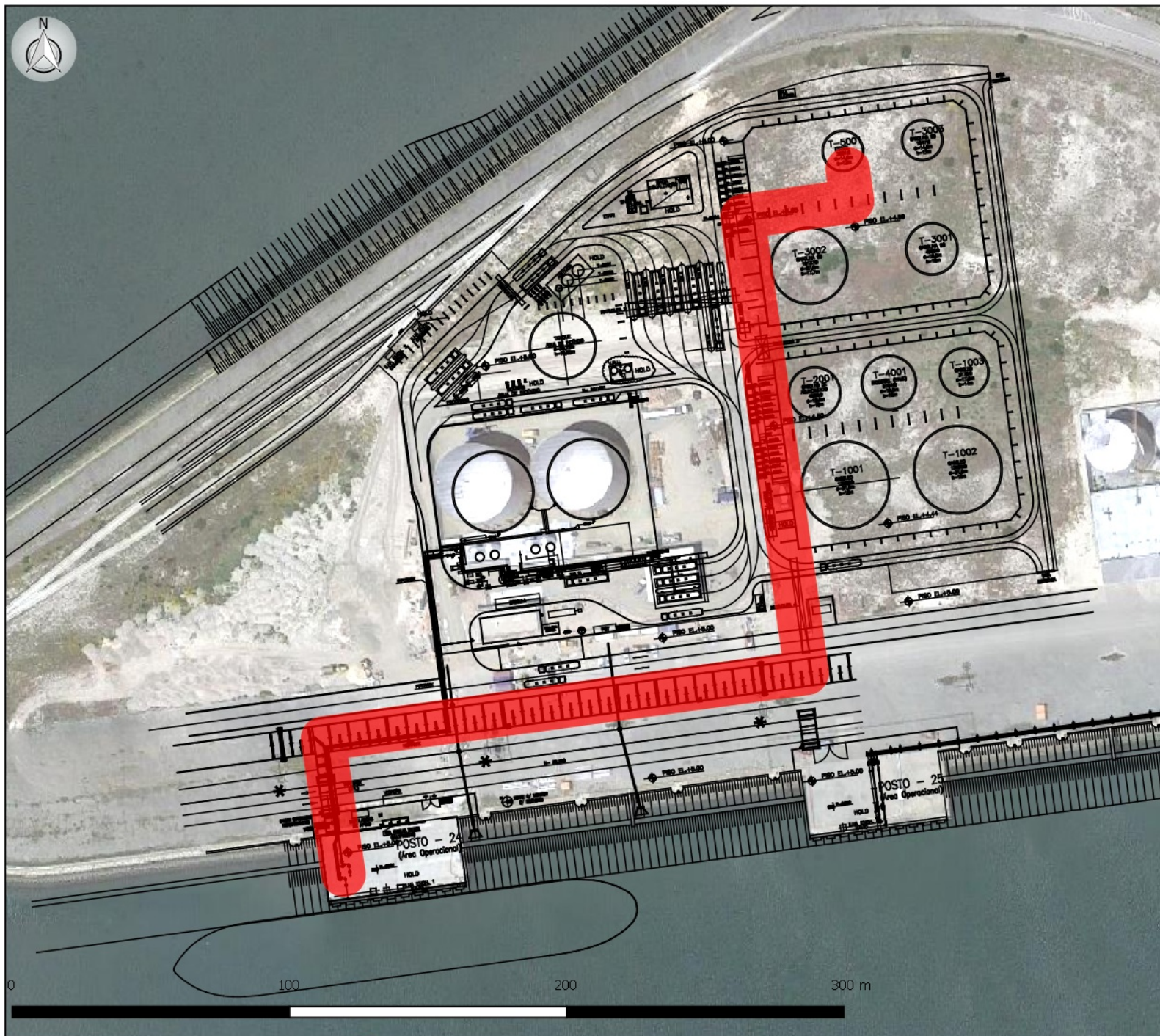


 7 kW/m ² ACL	39 m
 5 kW/m ² ACL	44 m



LIE/2 ACL

3 m



5 kW/m² ACL
7 kW/m² ACL

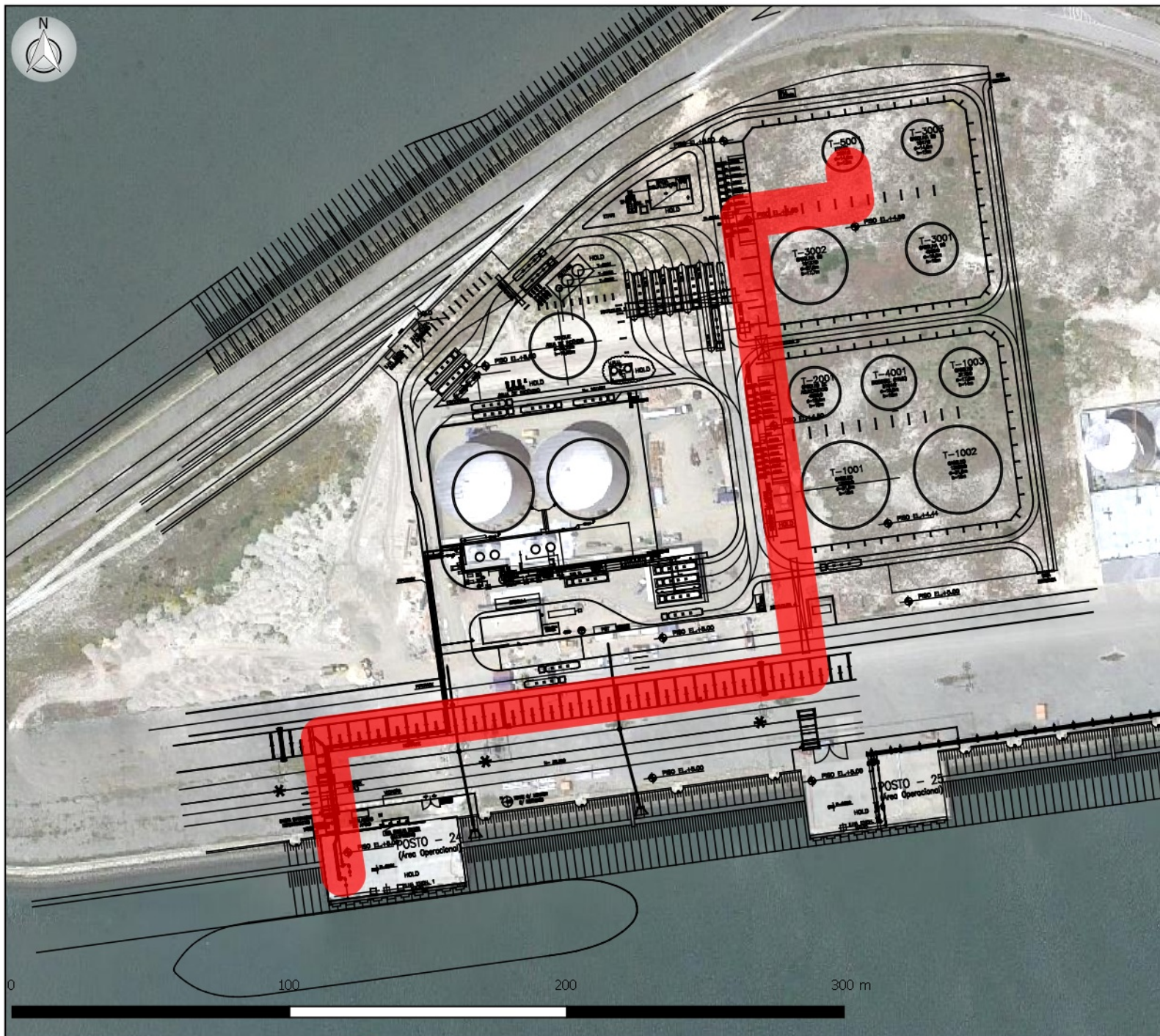
8 m

8 m



7 kW/m² ACL
5 kW/m² ACL

53 m
61 m



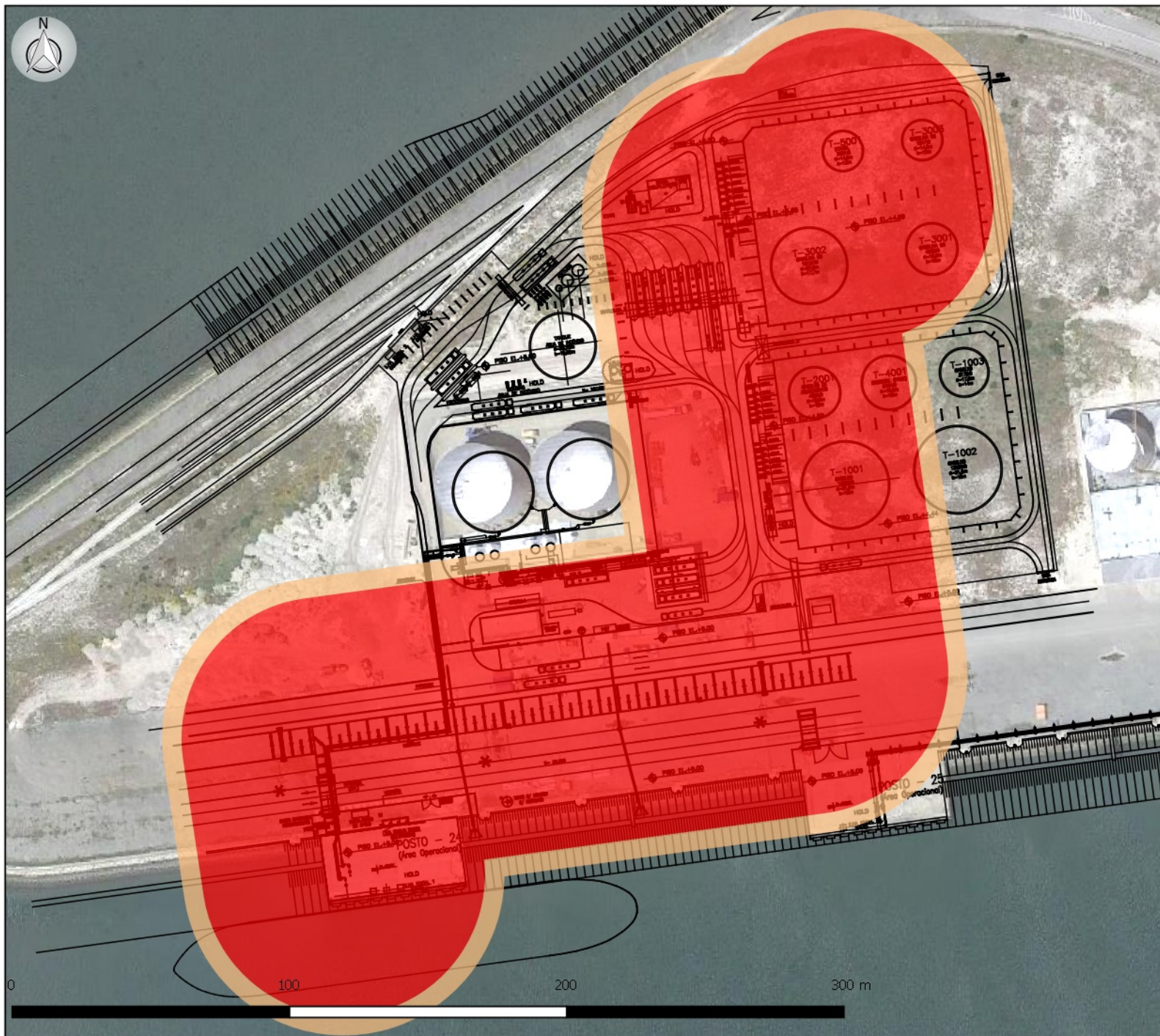
LIE/2 ACL

8 m



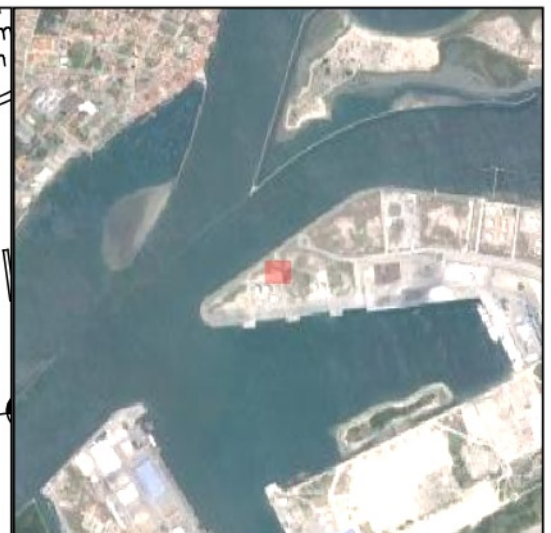
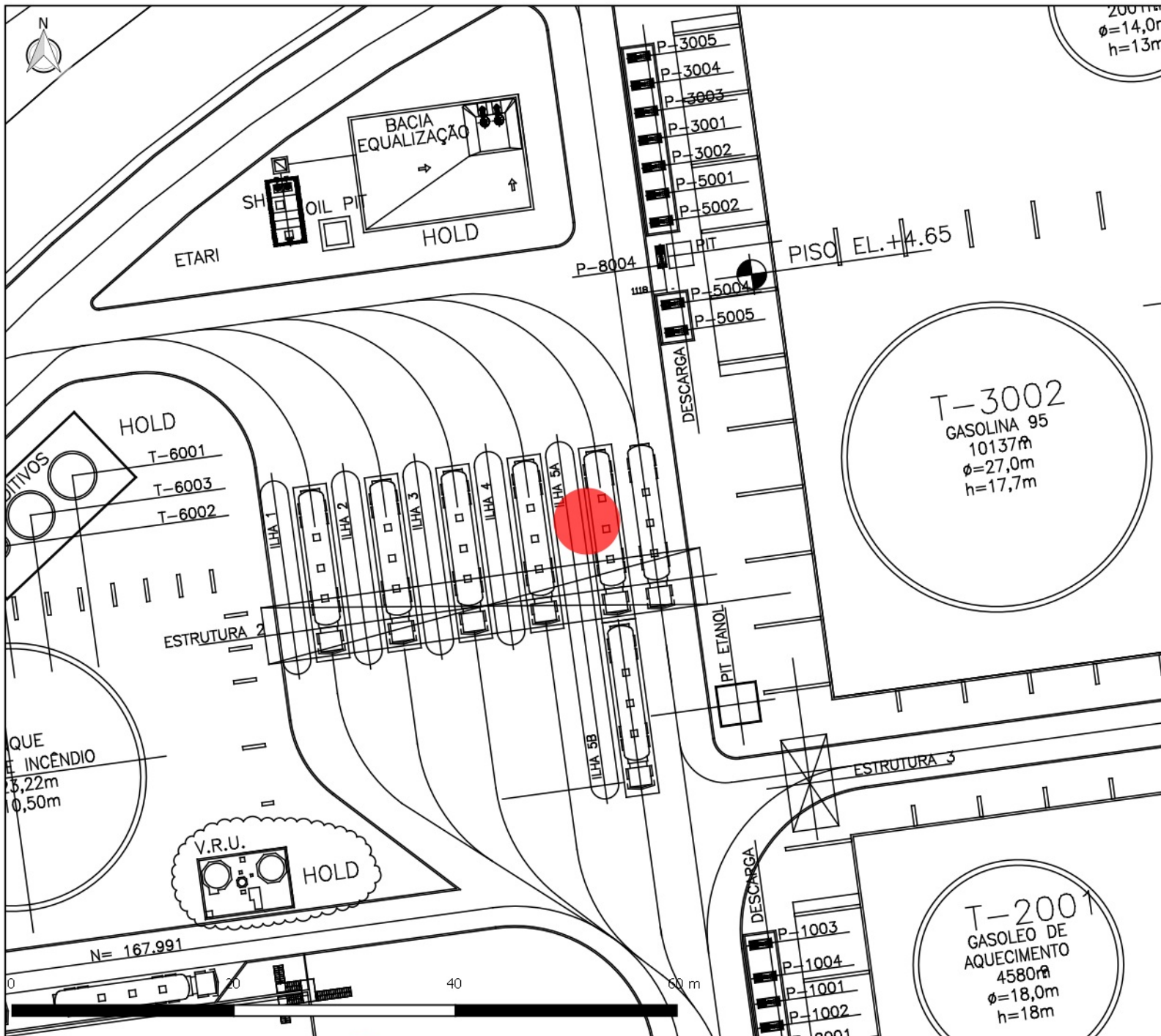
7 kW/m² ACL
5 kW/m² ACL

20 m
21 m

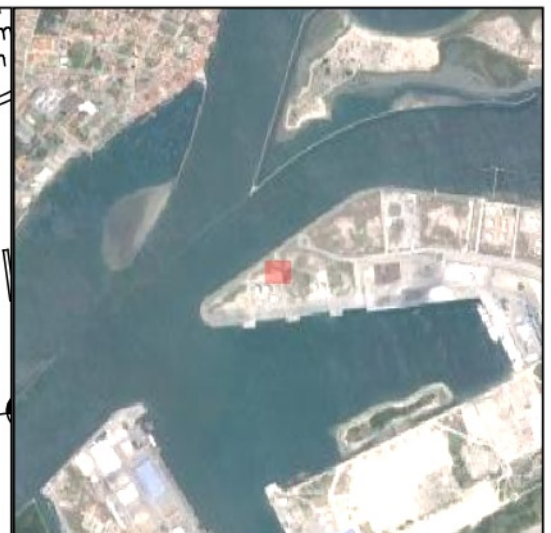
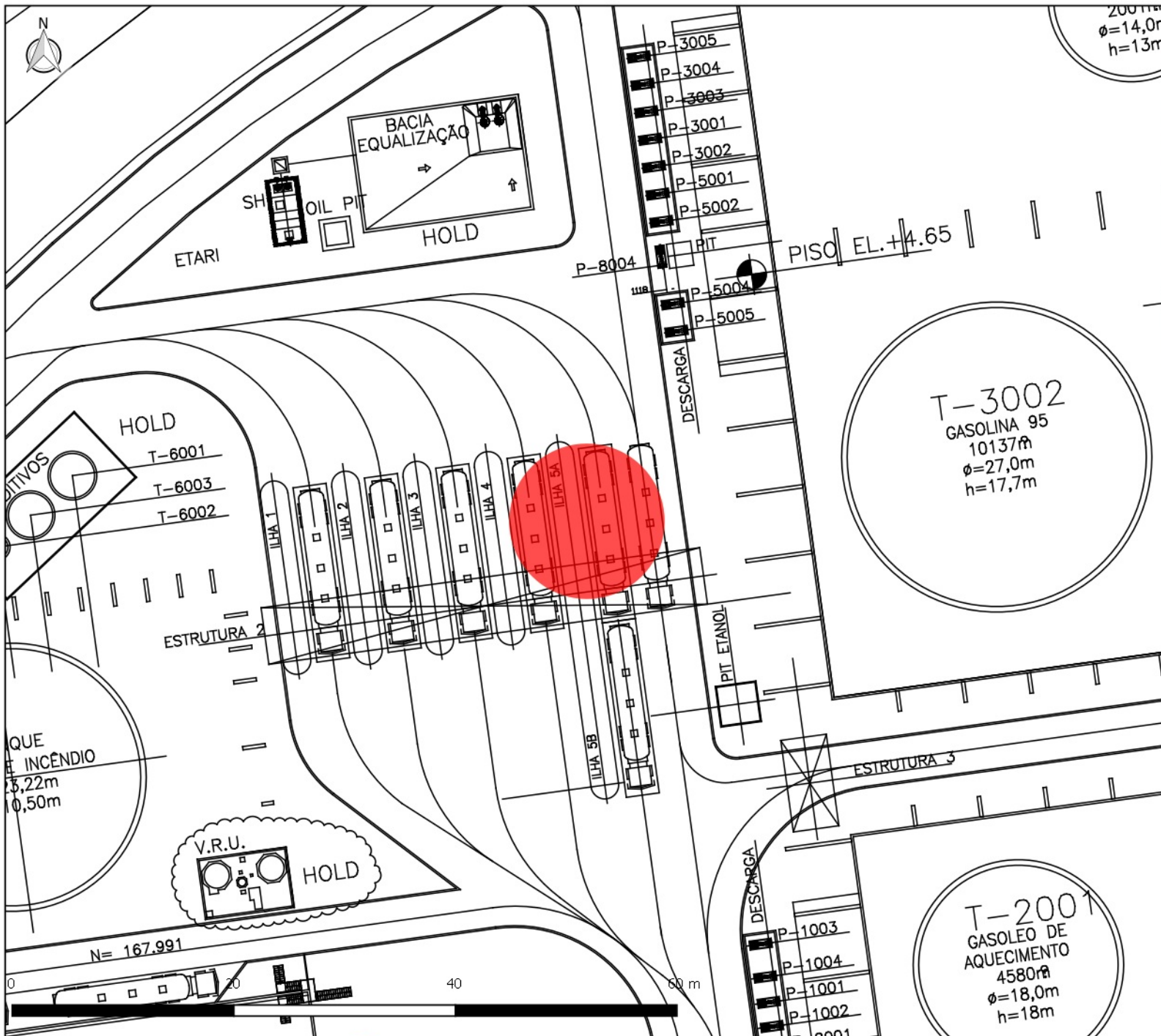


7 kW/m² ACL
5 kW/m² ACL

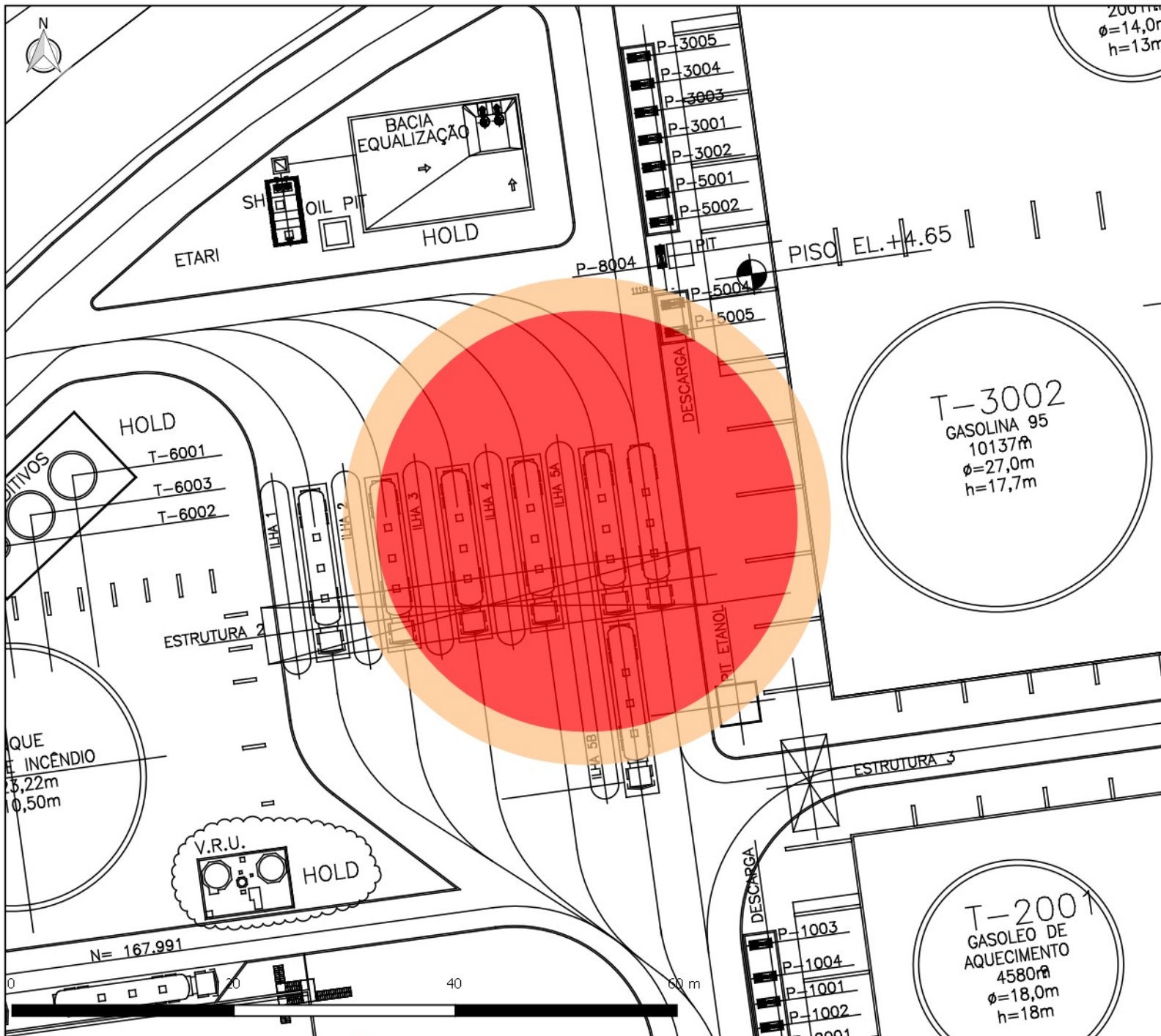
51 m
58 m



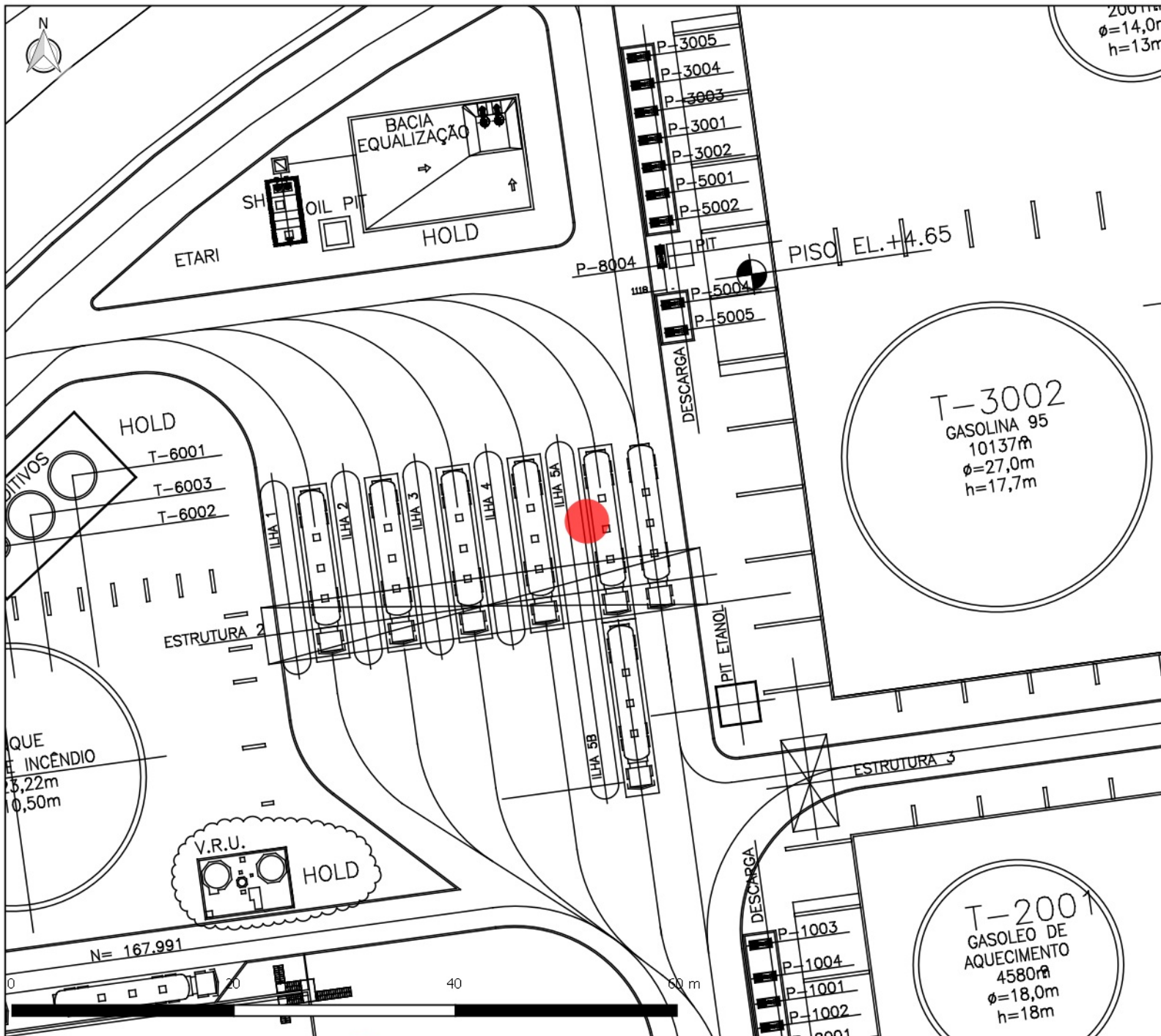
LIE/2 ACL 3 m



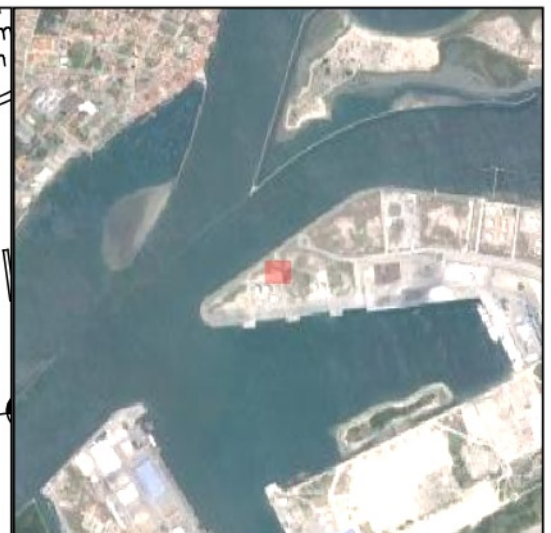
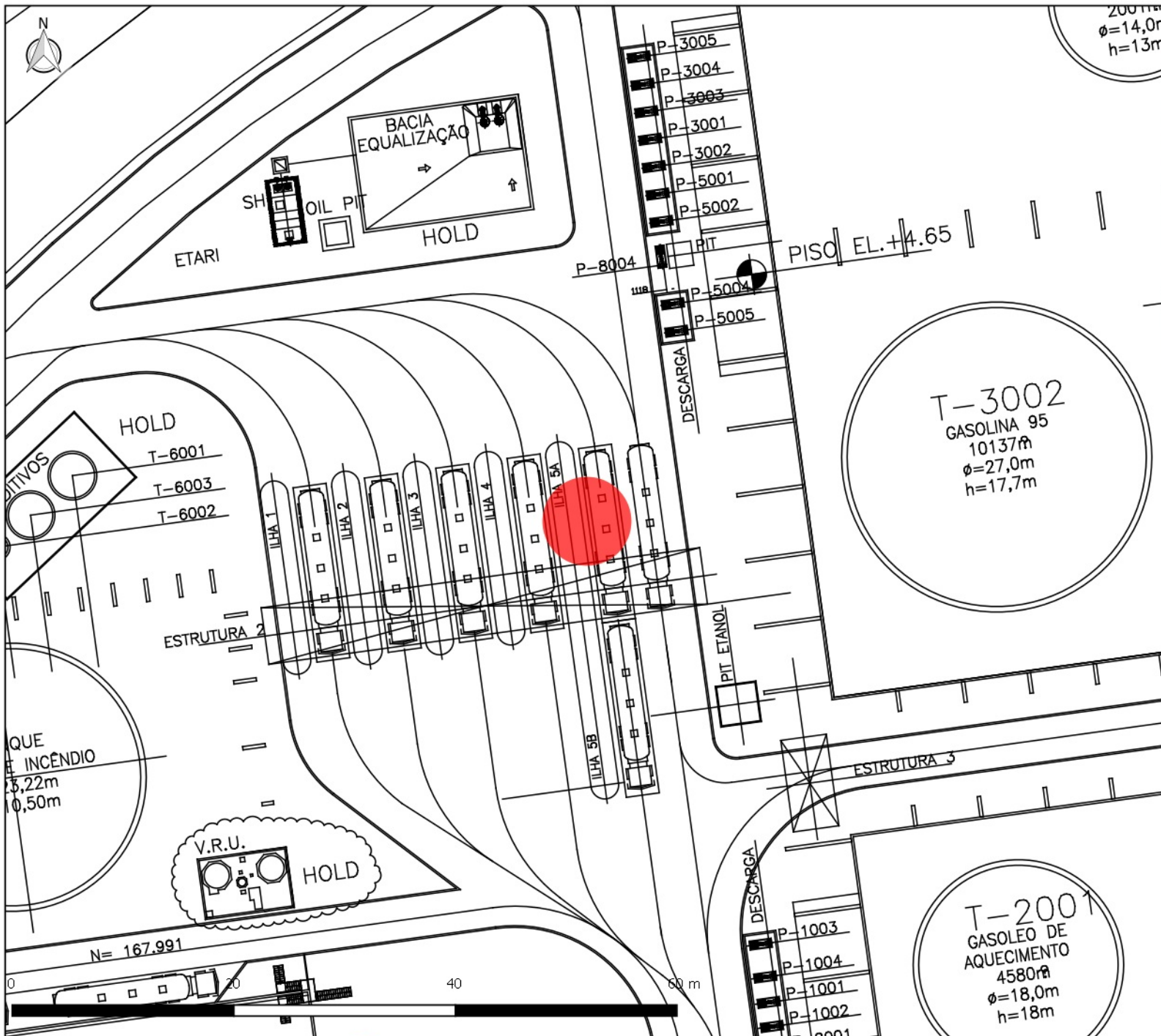
	7 kW/m ² ACL	7 m
	5 kW/m ² ACL	7 m



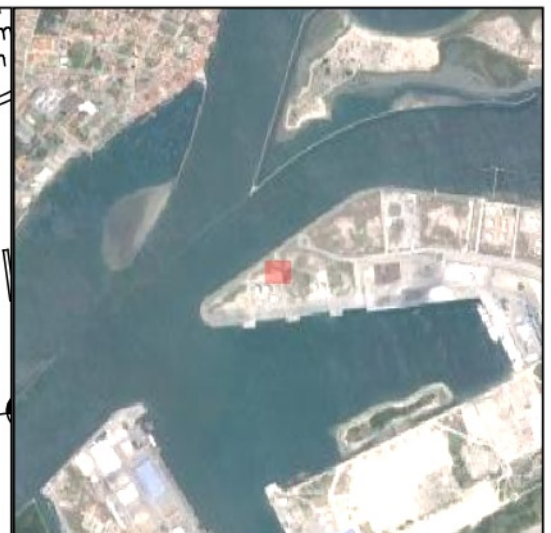
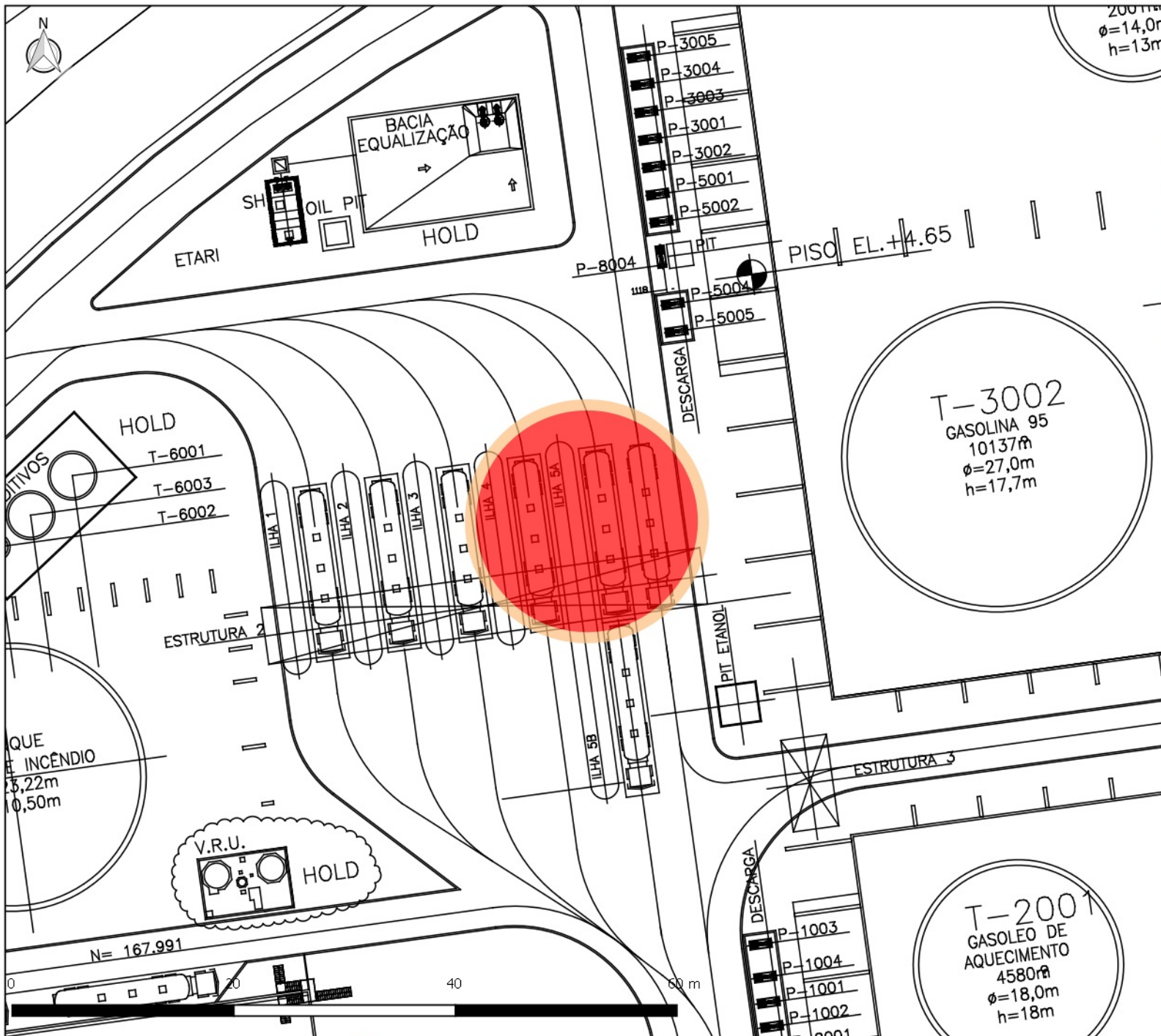
	7 kW/m ² ACL	19 m
	5 kW/m ² ACL	22 m



LIE/2 ACL 2 m



	7 kW/m ² ACL	4 m
	5 kW/m ² ACL	4 m



	7 kW/m ² ACL	10 m
	5 kW/m ² ACL	11 m

