Advanced
LIGHTING TECHNOLOGIES

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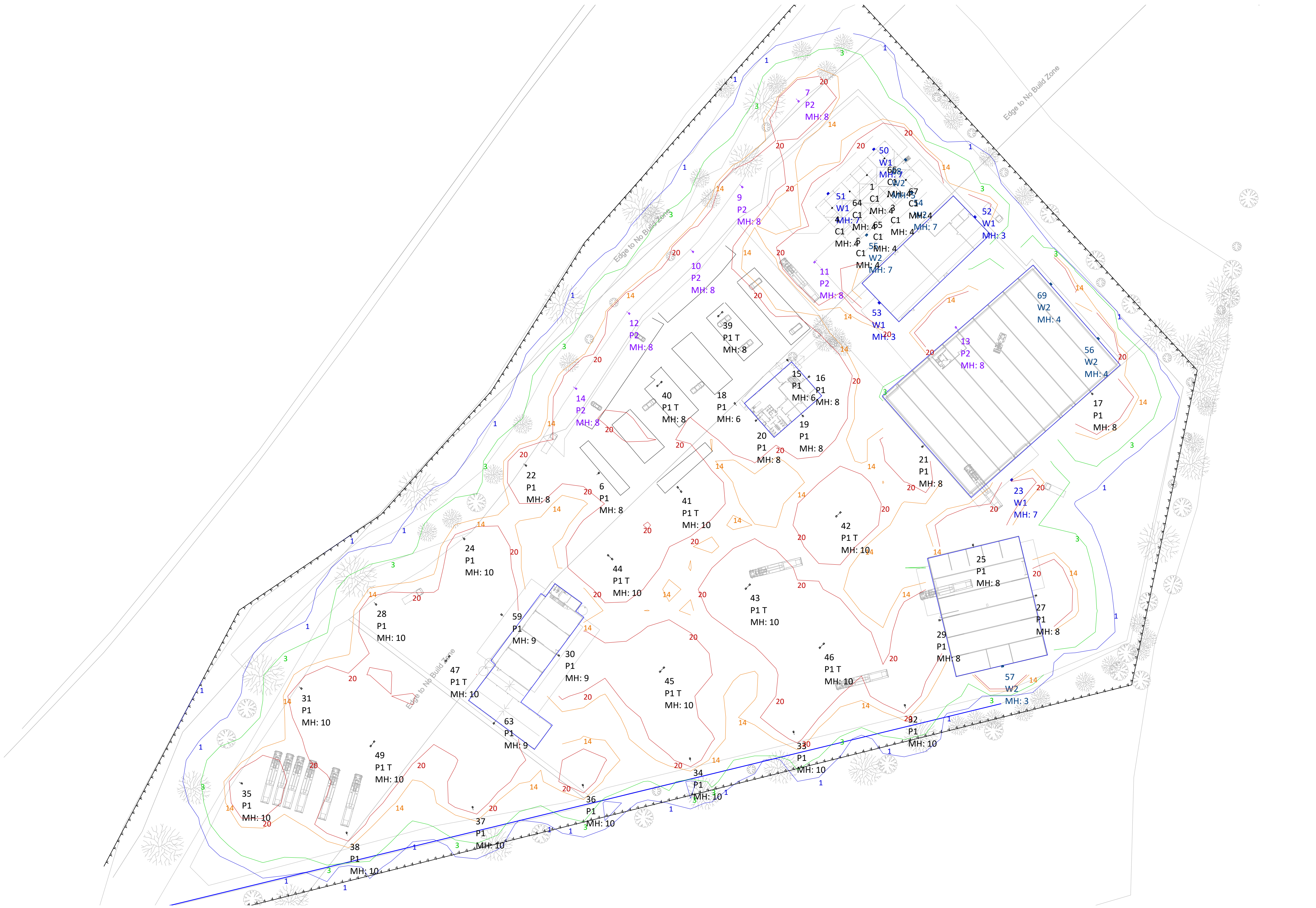

GENERAL NOTES:

1. Lighting calculations are based upon initial lamp lumens with a maintenance factor applied & derived in accordance with AS/NZS 1158 as shown below. When calculating Obtrusive and Spill Lighting, calculation is Initial Luminance - LLF 1.000

2. Isolux lines show illuminance values at grade.

3. Luminaires are mounted at the heights & tilts as indicated on the drawing.

4. All luminaires have 0deg upcast (flat glass).

5. All poles are CREE 'PS' Premium Steel, Crown-Weld,base plate mounted & Finished in Powedercoat Black.

6. Lighting calculations are subject to the accuracies & tolerances in accordance with AS/NZS 3827.1:1998 & AS/NZS 3827.2:1998. These accuracies & tolerances include variances in the building dimensions & obstructions, surface finishes, luminaire positioning & aiming, ambient temperature, atmospheric conditions, luminaire photometry, lamp output, lighting design software, electrical supply & instrument calibration.

MAINTENACE FACTOR (MF)

Lamp Lumen Maintenace Factor (LLMF)
* LED lamp lumen depreciation after 50,000 hours of operation
- Cree TD-13 data (in accordance with IESNA TM-21-11 & LM-80-08) utilised to obtain this value, 15degC average night time ambient

Luminaire Maintenance Factor (LMF)
* IP6X Luminaire IP rating
* Urban Environmental Zone
* Luminaire cleaning every 72 months
- Value obtained from table 3.2 of AS/NZS 1158.3.1:2020

Calculation Summary

Label	CalcType	Avg	Units
ObtrusiveLight_1_Cd_Seg1	Obtrusive - Cd	163.82	N.A.
ObtrusiveLight_1_Cd_Seg2	Obtrusive - Cd	114.78	N.A.
ObtrusiveLight_1_Cd_Seg3	Obtrusive - Cd	380.30	N.A.
ObtrusiveLight_1_Cd_Seg4	Obtrusive - Cd	612.84	N.A.
ObtrusiveLight_1_Cd_Seg5	Obtrusive - Cd	874.80	N.A.
ObtrusiveLight_1_Cd_Seg6	Obtrusive - Cd	933.75	N.A.
ObtrusiveLight_1_Cd_Seg7	Obtrusive - Cd	1098	N.A.
ObtrusiveLight_1_Cd_Seg8	Obtrusive - Cd	943.56	N.A.
ObtrusiveLight_1_Ill_Seg1	Obtrusive - Ill	0.40	Lux
ObtrusiveLight_1_Ill_Seg2	Obtrusive - Ill	0.05	Lux
ObtrusiveLight_1_Ill_Seg3	Obtrusive - Ill	0.12	Lux
ObtrusiveLight_1_Ill_Seg4	Obtrusive - Ill	0.25	Lux
ObtrusiveLight_1_Ill_Seg5	Obtrusive - Ill	0.33	Lux
ObtrusiveLight_1_Ill_Seg6	Obtrusive - Ill	0.36	Lux
ObtrusiveLight_1_Ill_Seg7	Obtrusive - Ill	0.45	Lux
ObtrusiveLight_1_Ill_Seg8	Obtrusive - Ill	0.29	Lux

Luminaire Schedule

Symbol	Arrangement	Label	Luminaire Watts	Qty	LLF	Description
	Back-Back	P1 T	182	10	1.000	ADLT Twin Energy TRE, 182W 200 optic BLS, 4000K, Black
	Single	P1	182	25	1.000	ADLT Energy TRE, 182W 200 optic BLS, 4000K, Black
	Single	C1	80	8	1.000	ADLT DOT Series, 80W, C12 optic, 4000K, White, Surface mount
	Single	W1	70.82	5	1.000	ADLT XSPW, 8L 4ME, 4000K, Black
	Single	W2	70.17	6	1.000	ADLT XSPW, 8L 2ME, 4000K, Black
	Single	P2	182	7	1.000	ADLT Energy TRE 182W, SCP optic, 4000K, Black

TITLE
ADLT Obtrusive Lighting Calculation

CLIENT
Waste Management - Te Krearea Business Park, Lower Hutt

PROJECT #

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Designed	Richard Bolderson
Checked	
Date	11/07/2023
Scale	N.T.S.

REVISION

#	DATE	DESCRIPTION
		DRAFT
	11/07/2023	Spill Lighting Calculation

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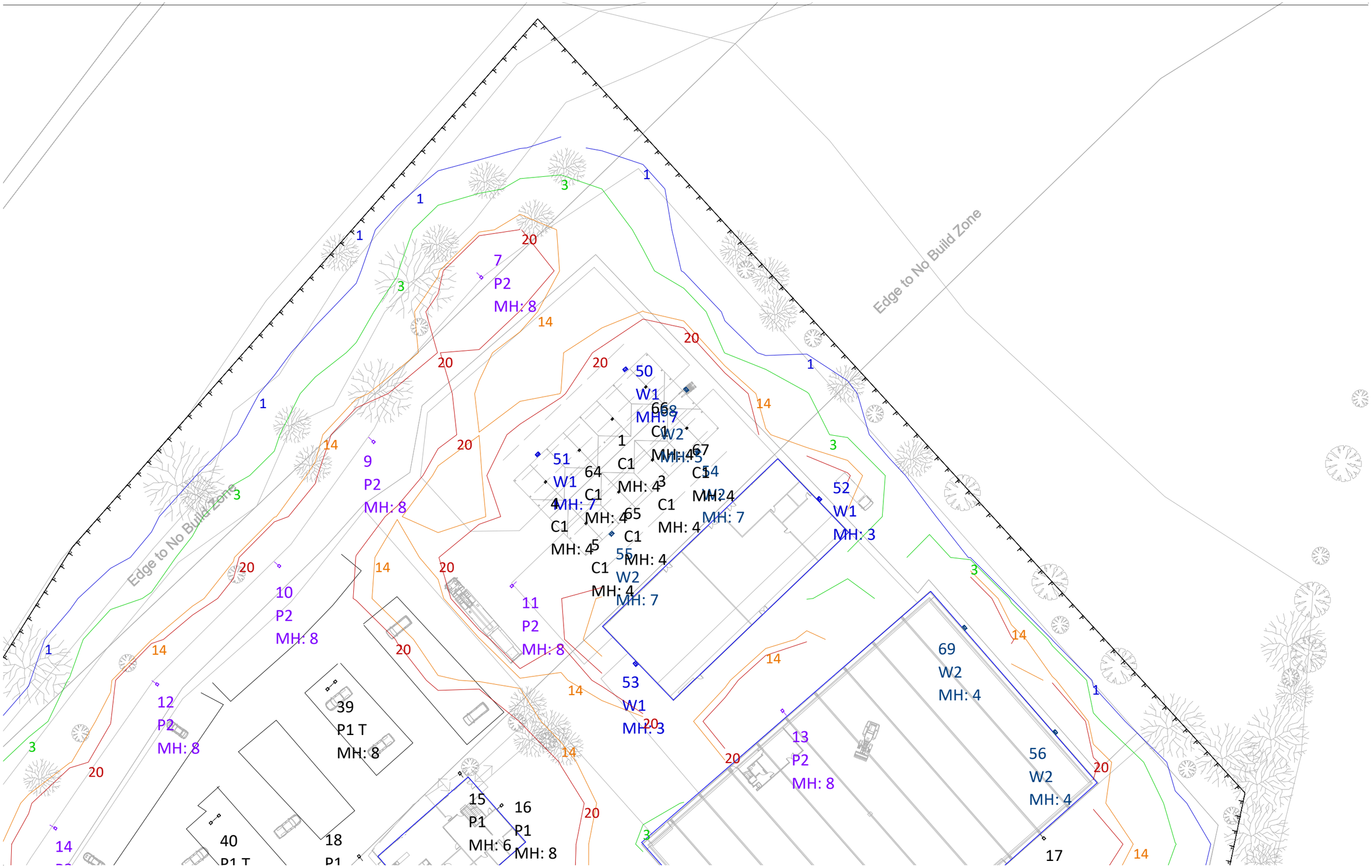

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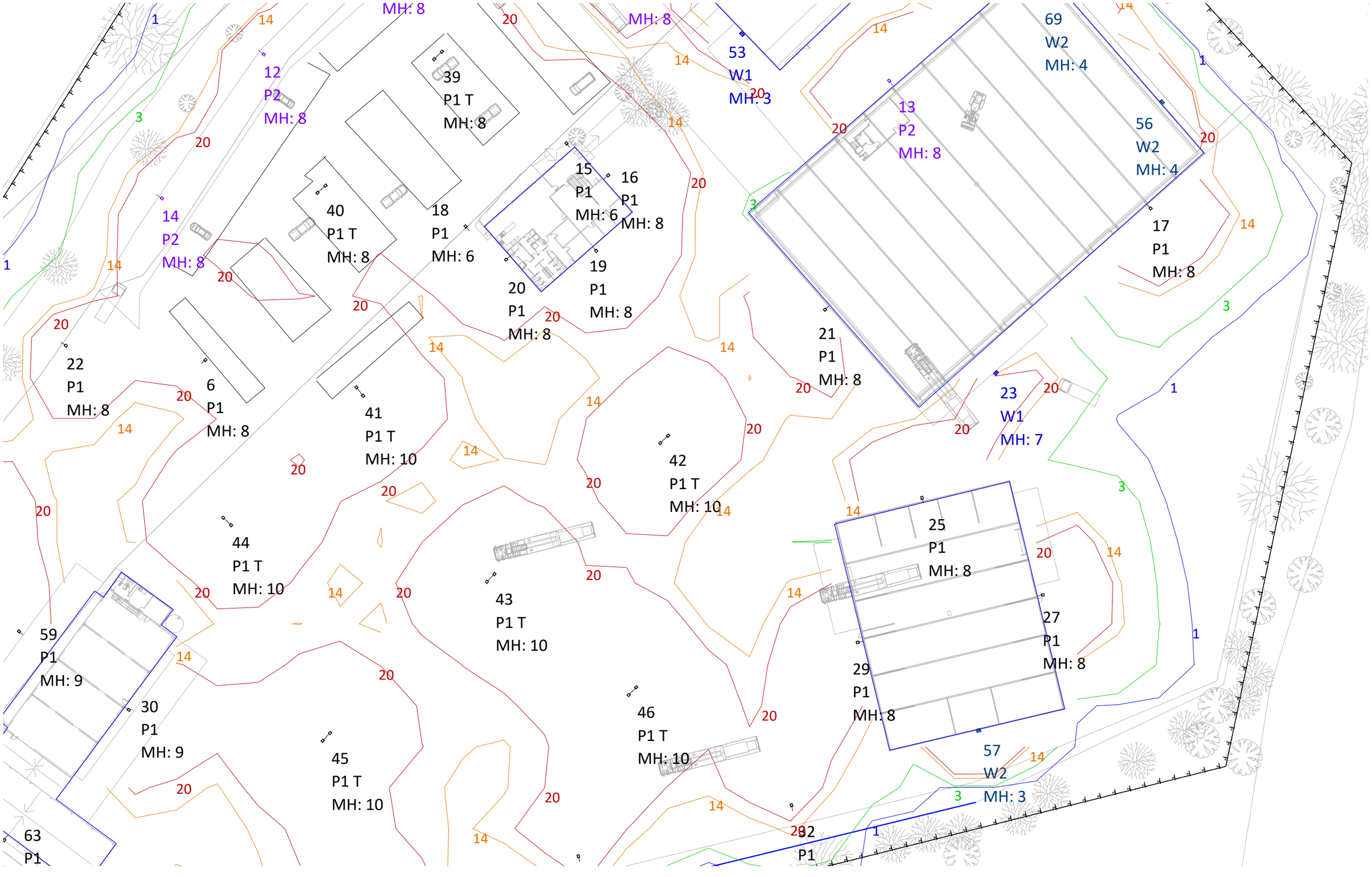

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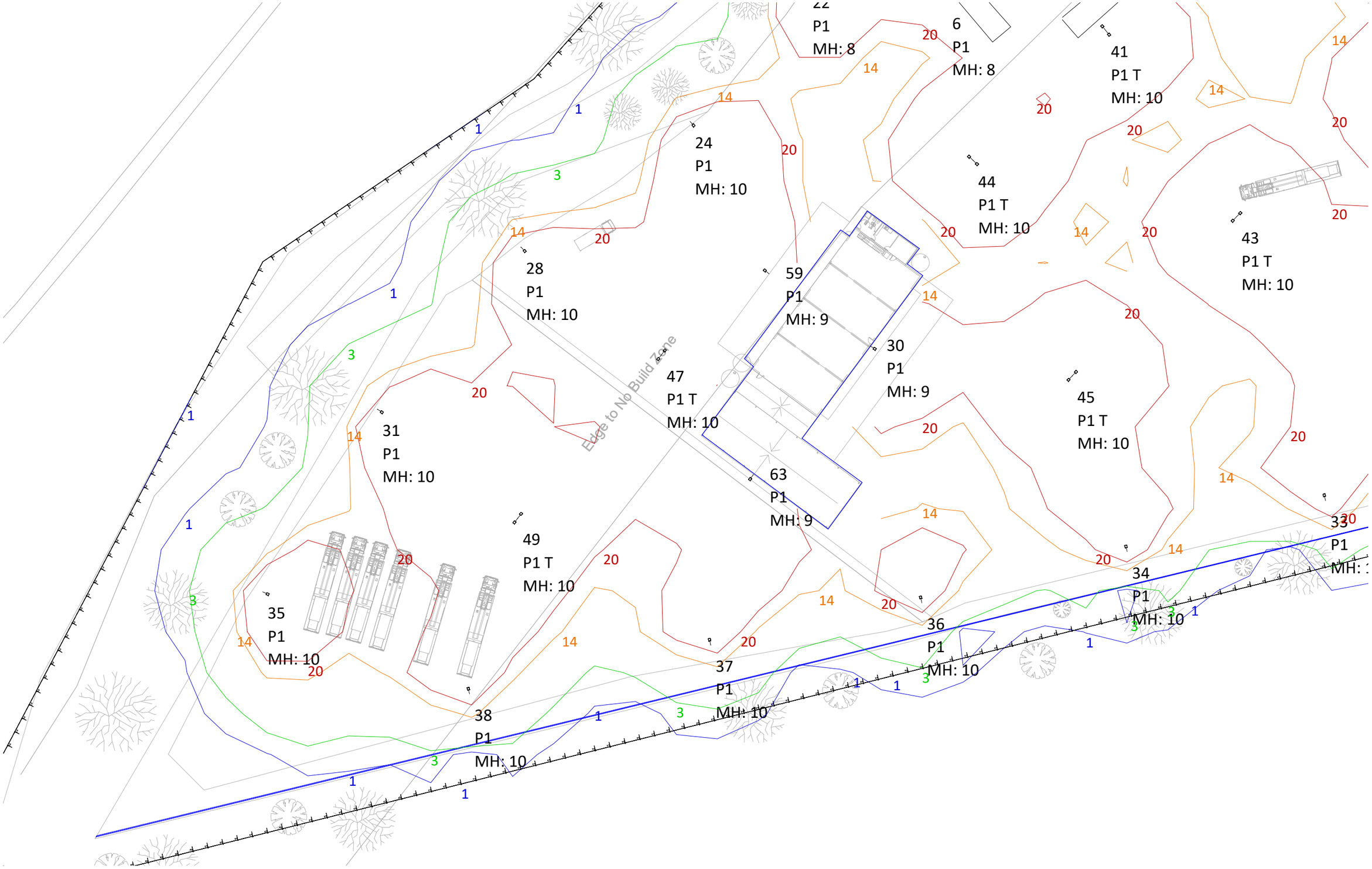

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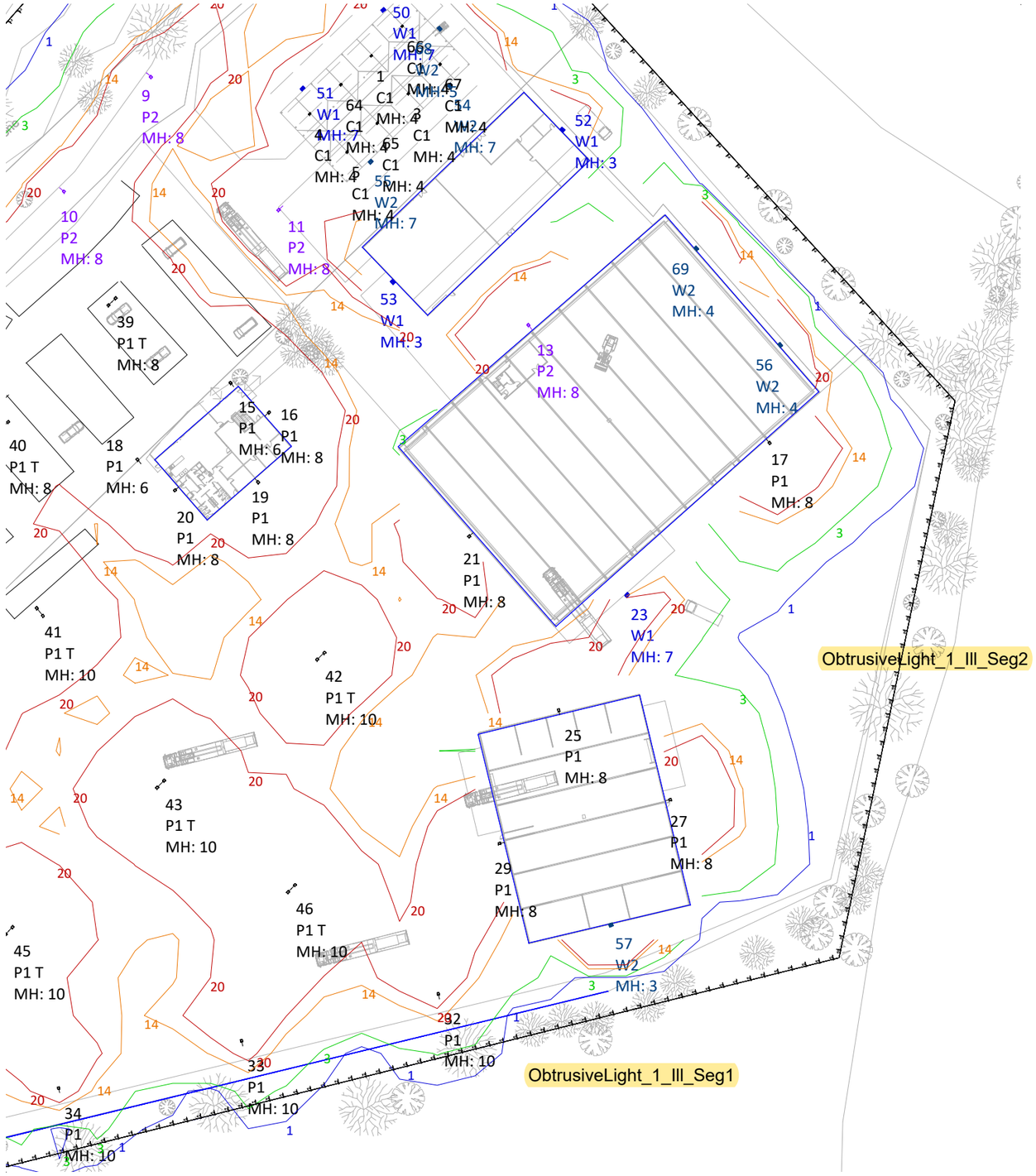

Calculation Summary					
Label	Avg	Max	Min	Min/Max	Units
ObtrusiveLight_1_Cd_Seg1	163.82	775	3	0.00	Candela
ObtrusiveLight_1_Cd_Seg2	114.78	647	0	0.00	Candela
ObtrusiveLight_1_Cd_Seg3	380.30	1027	0	0.00	Candell
ObtrusiveLight_1_Cd_Seg4	612.84	923	399	0.43	Candela
ObtrusiveLight_1_Cd_Seg5	874.80	1548	520	0.34	Candela
ObtrusiveLight_1_Cd_Seg6	933.75	1611	419	0.26	Candela
ObtrusiveLight_1_Cd_Seg7	1098	2579	413	0.16	Candela
ObtrusiveLight_1_Cd_Seg8	943.56	4273	8	0.00	Candela
ObtrusiveLight_1_Ill_Seg1	0.40	3.1	0.0	0.00	Lux
ObtrusiveLight_1_Ill_Seg2	0.05	0.3	0.0	0.00	Lux
ObtrusiveLight_1_Ill_Seg3	0.12	0.9	0.0	0.00	Lux
ObtrusiveLight_1_Ill_Seg4	0.25	1.0	0.0	0.00	Lux
ObtrusiveLight_1_Ill_Seg5	0.33	1.0	0.0	0.00	Lux
ObtrusiveLight_1_Ill_Seg6	0.36	0.8	0.1	0.13	Lux
ObtrusiveLight_1_Ill_Seg7	0.45	1.1	0.1	0.09	Lux
ObtrusiveLight_1_Ill_Seg8	0.29	1.1	0.0	0.00	Lux

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Obtrusive Light - Compliance Report

AS 4282-1997, Commercial, Pre-Curfew
Filename: SPILL Waste Management RB (June 20th) TRE
11/07/2023 5:13:05 pm

Illuminance

Maximum Allowable Value: 25 Lux

Calculations Tested (8):

Calculation Label	Test Results	Max. Illum.	
ObtrusiveLight_1_Ill_Seg1		**PASS**	3.1
ObtrusiveLight_1_Ill_Seg2		**PASS**	0.3
ObtrusiveLight_1_Ill_Seg3		**PASS**	0.9
ObtrusiveLight_1_Ill_Seg4		**PASS**	1.0
ObtrusiveLight_1_Ill_Seg5		**PASS**	1.0
ObtrusiveLight_1_Ill_Seg6		**PASS**	0.8
ObtrusiveLight_1_Ill_Seg7		**PASS**	1.1
ObtrusiveLight_1_Ill_Seg8		**PASS**	1.1

Luminous Intensity (Cd) Per Luminaire

Maximum Allowable Value: 7500 Cd
Control Angle: 83 Degrees

Luminaire Locations Tested (71)
Test Results: **PASS**

All Luminaire Locations (71):

Lum.No.	Label	Cd	Tilt	Roll	Spin
1	C1	49	0	0	0
3	C1	49	0	0	0
4	C1	49	0	0	0
5	C1	49	0	0	0
64	C1	49	0	0	0
65	C1	49	0	0	0
66	C1	49	0	0	0
67	C1	49	0	0	0
6	P1	228	0	0	0
15	P1	228	0	0	0
16	P1	228	0	0	0
17	P1	228	0	0	0
18	P1	228	0	0	0
19	P1	228	0	0	0
20	P1	228	0	0	0
21	P1	228	0	0	0
22	P1	228	0	0	0
24	P1	228	0	0	0
25	P1	228	0	0	0
27	P1	228	0	0	0
28	P1	228	0	0	0
29	P1	228	0	0	0
30	P1	228	0	0	0
31	P1	228	0	0	0
35	P1	228	0	0	0
59	P1	228	0	0	0
63	P1	228	0	0	0
32	P1	6076	10	0	0
33	P1	6076	10	0	0
34	P1	6076	10	0	0
36	P1	6076	10	0	0
37	P1	6076	10	0	0
38	P1	6076	10	0	0
39	P1 T	228	0	0	0
39	P1 T	228	0	0	0
40	P1 T	228	0	0	0
40	P1 T	228	0	0	0

41	P1 T	228	0	0	0
41	P1 T	228	0	0	0
42	P1 T	228	0	0	0
42	P1 T	228	0	0	0
43	P1 T	228	0	0	0
43	P1 T	228	0	0	0
44	P1 T	228	0	0	0
44	P1 T	228	0	0	0
45	P1 T	228	0	0	0
45	P1 T	228	0	0	0
46	P1 T	228	0	0	0
46	P1 T	228	0	0	0
47	P1 T	228	0	0	0
47	P1 T	228	0	0	0
49	P1 T	228	0	0	0
49	P1 T	228	0	0	0
7	P2	1000	0	0	0
9	P2	1000	0	0	0
10	P2	1000	0	0	0
11	P2	1000	0	0	0
12	P2	1000	0	0	0
13	P2	1000	0	0	0
14	P2	1000	0	0	0
23	W1	1039	0	0	0
50	W1	1039	0	0	0
51	W1	1039	0	0	0
52	W1	1039	0	0	0
53	W1	1039	0	0	0
54	W2	930	0	0	0
55	W2	930	0	0	0
56	W2	930	0	0	0
57	W2	930	0	0	0
68	W2	930	0	0	0
69	W2	930	0	0	0

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