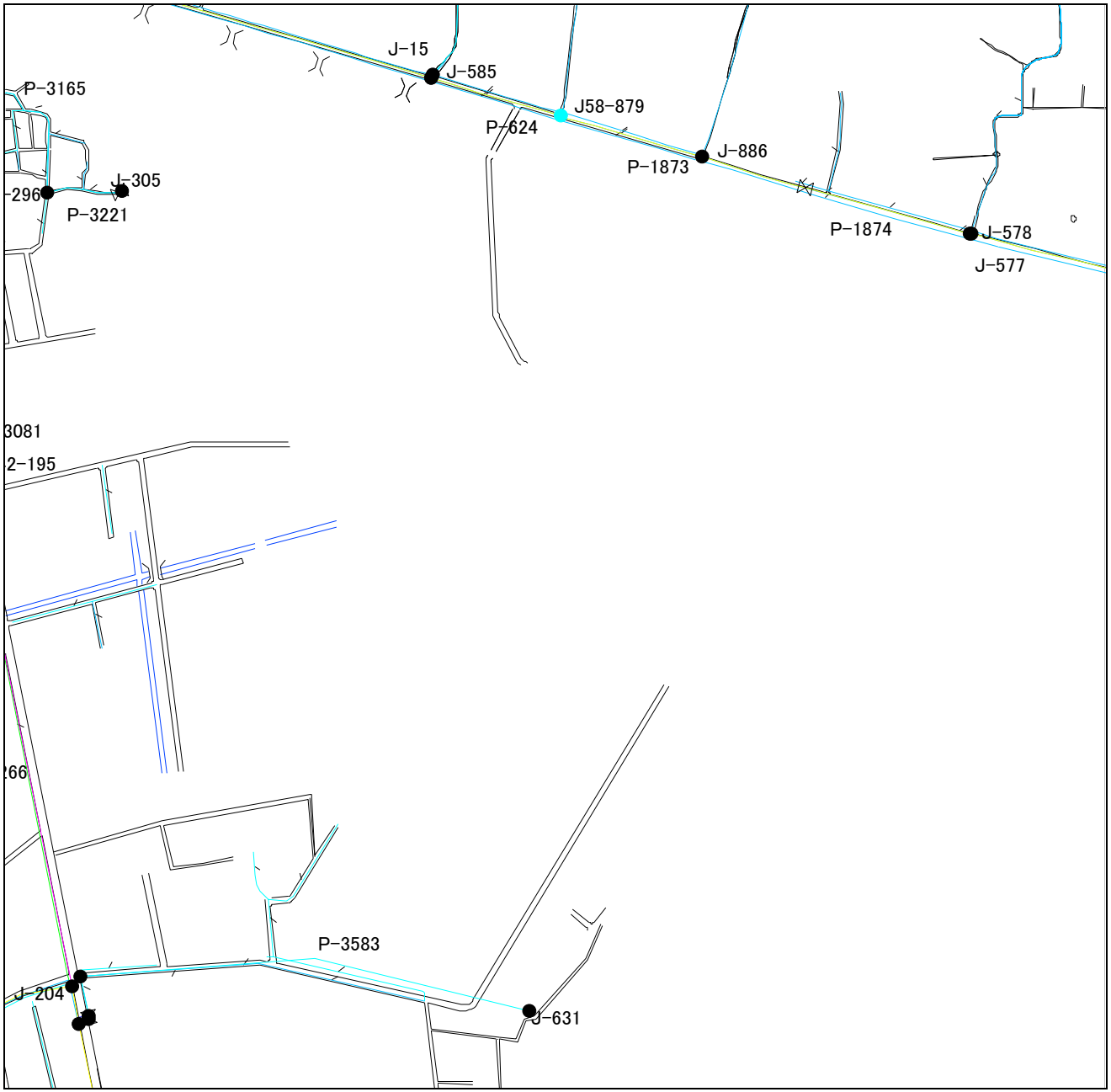
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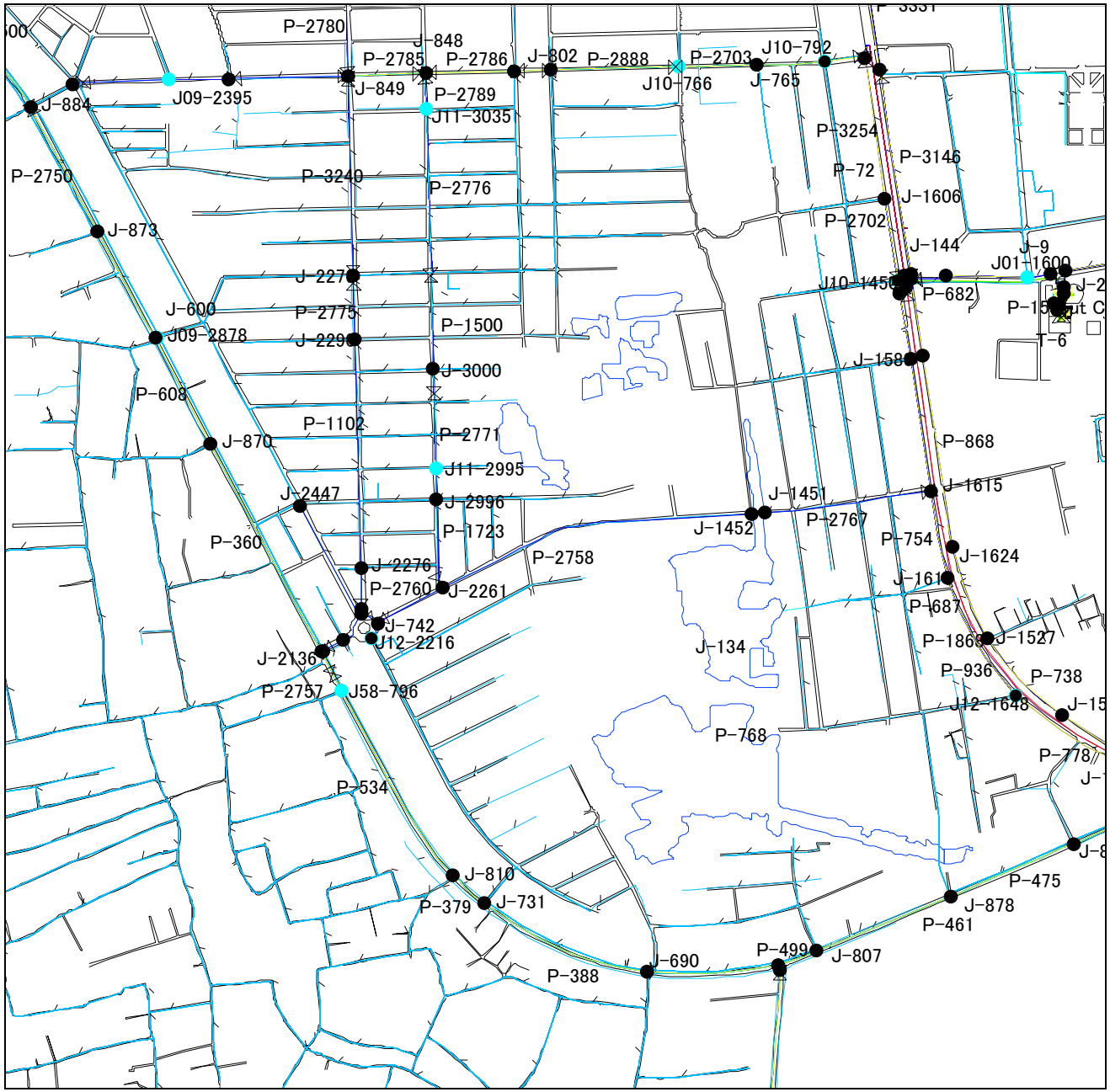
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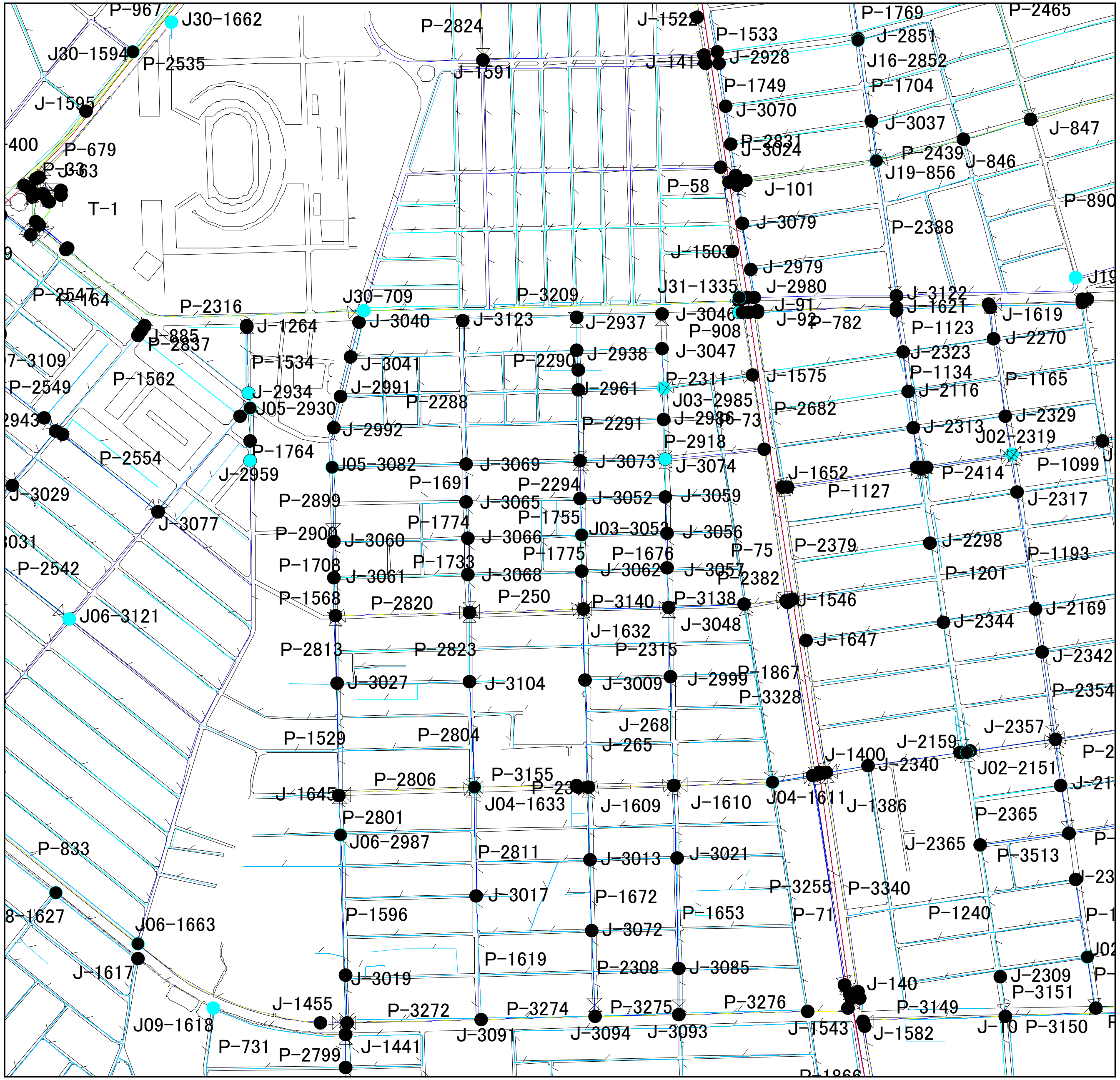

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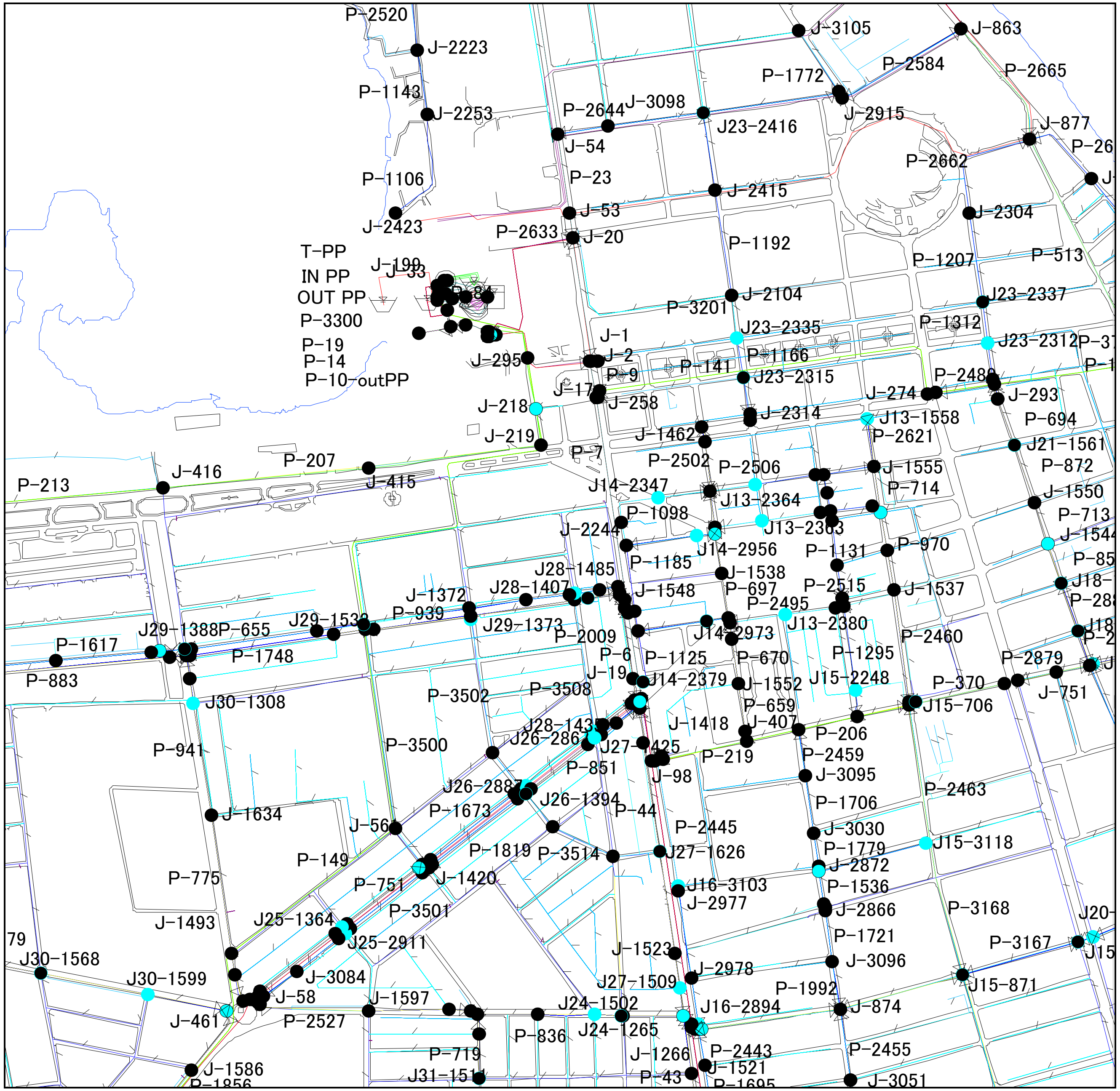
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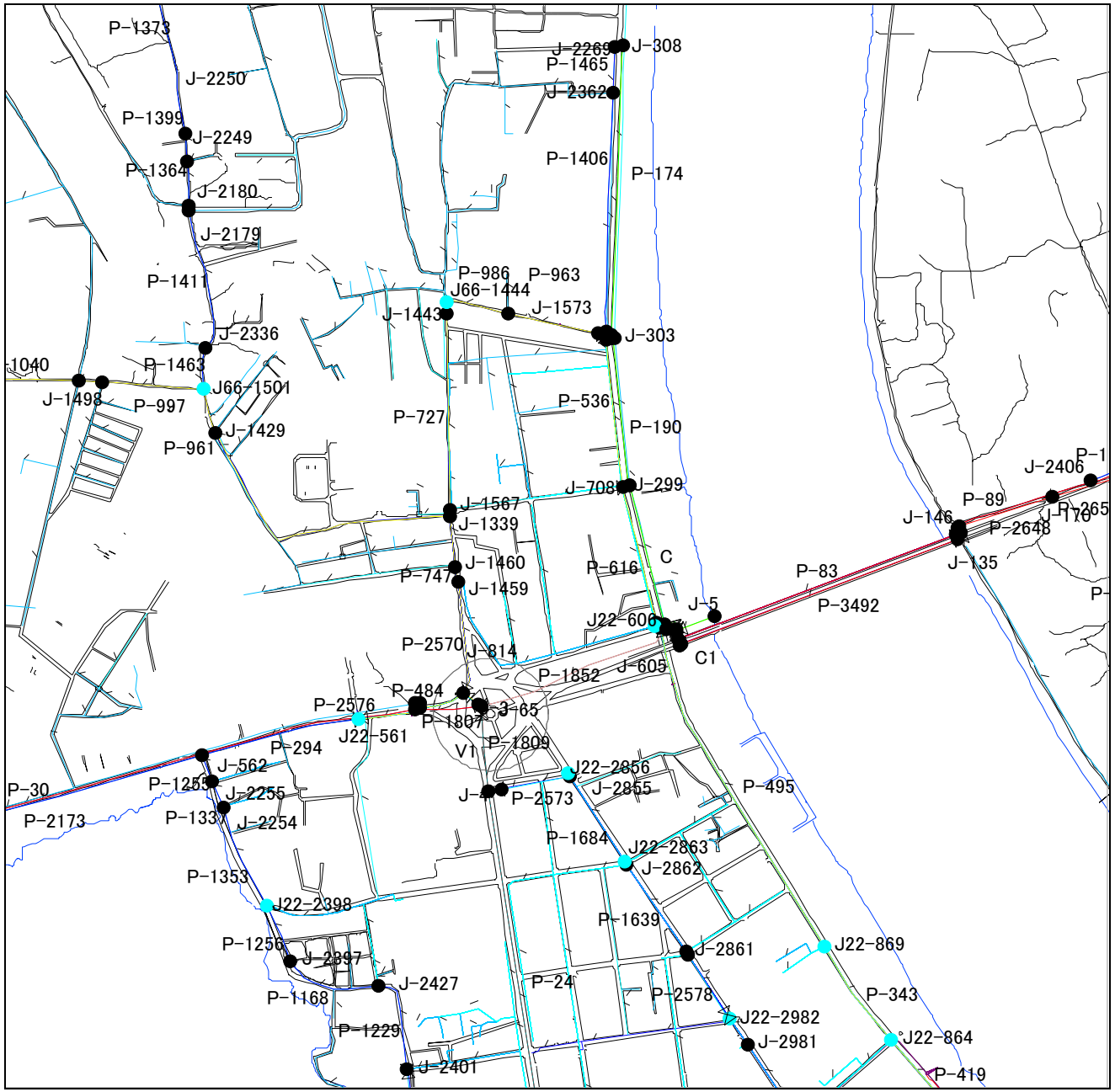
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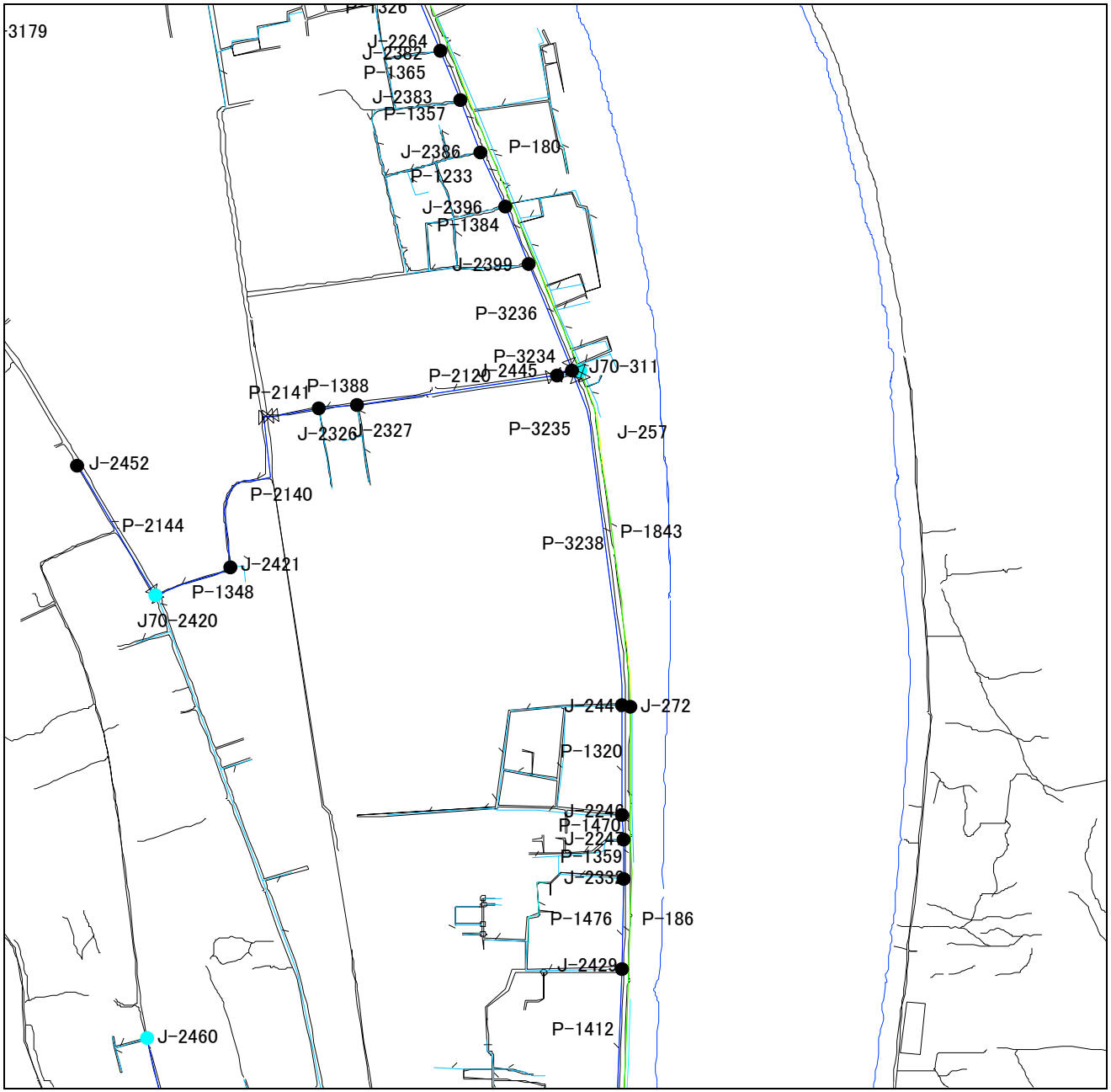
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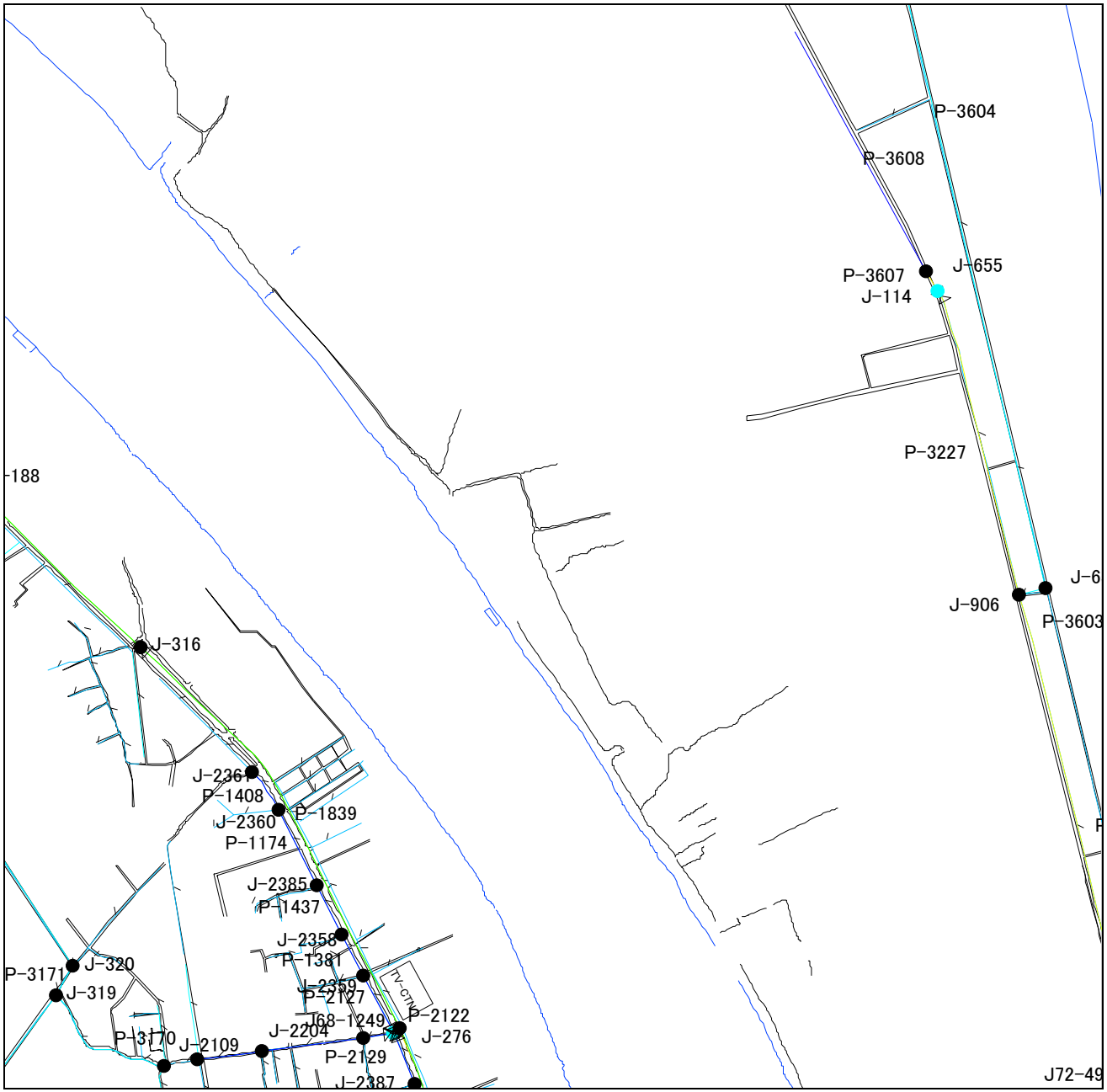
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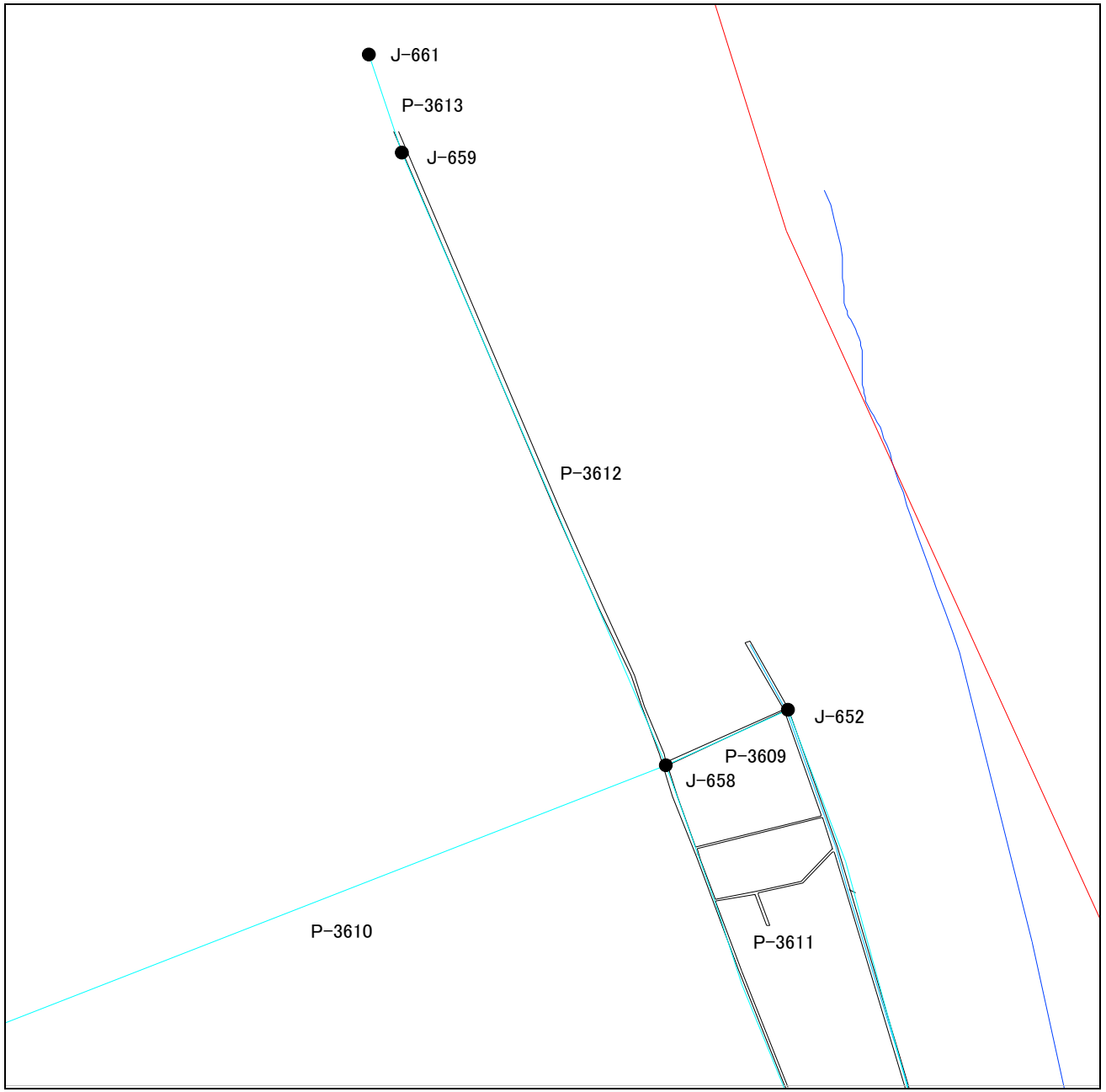

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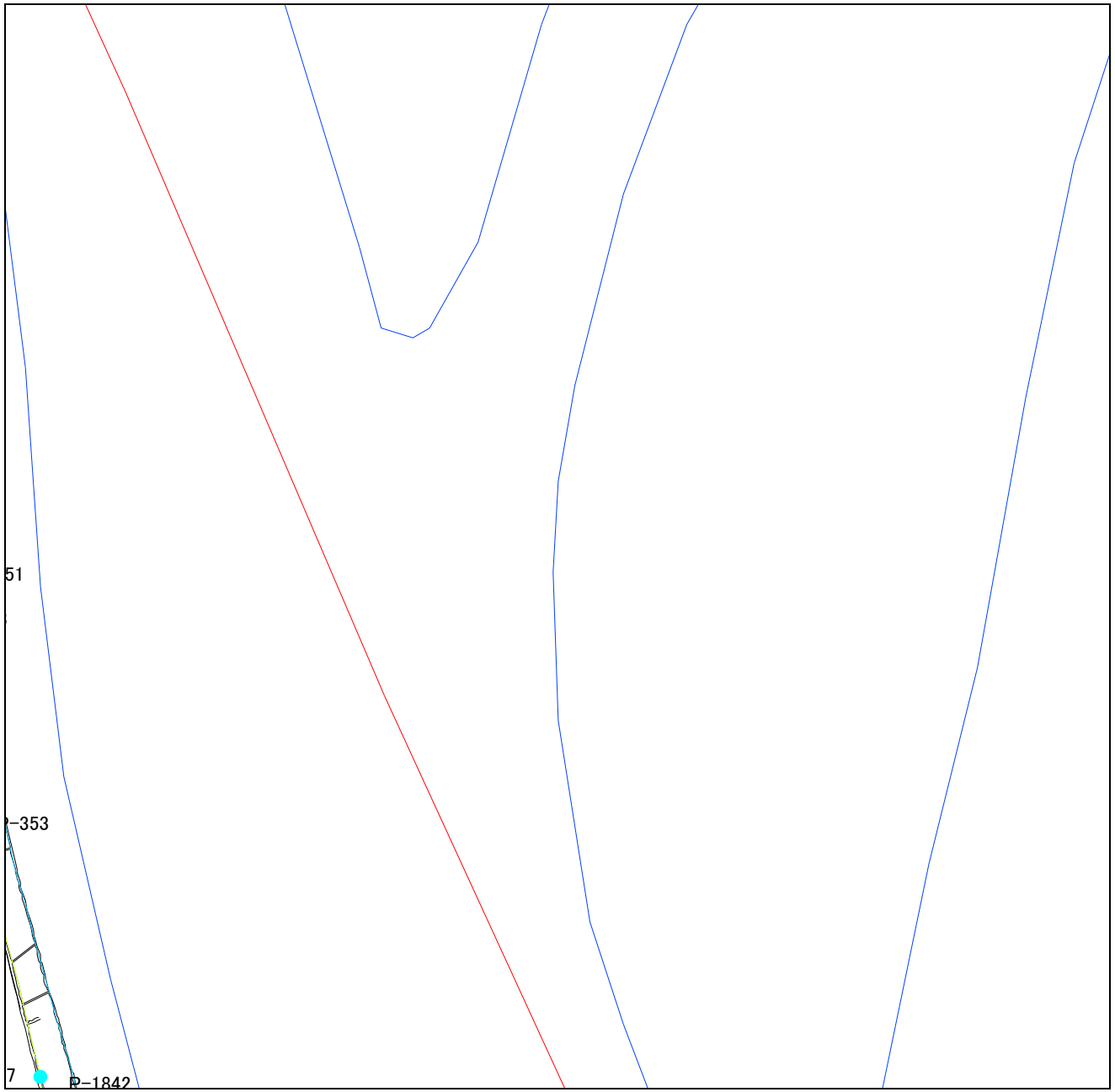

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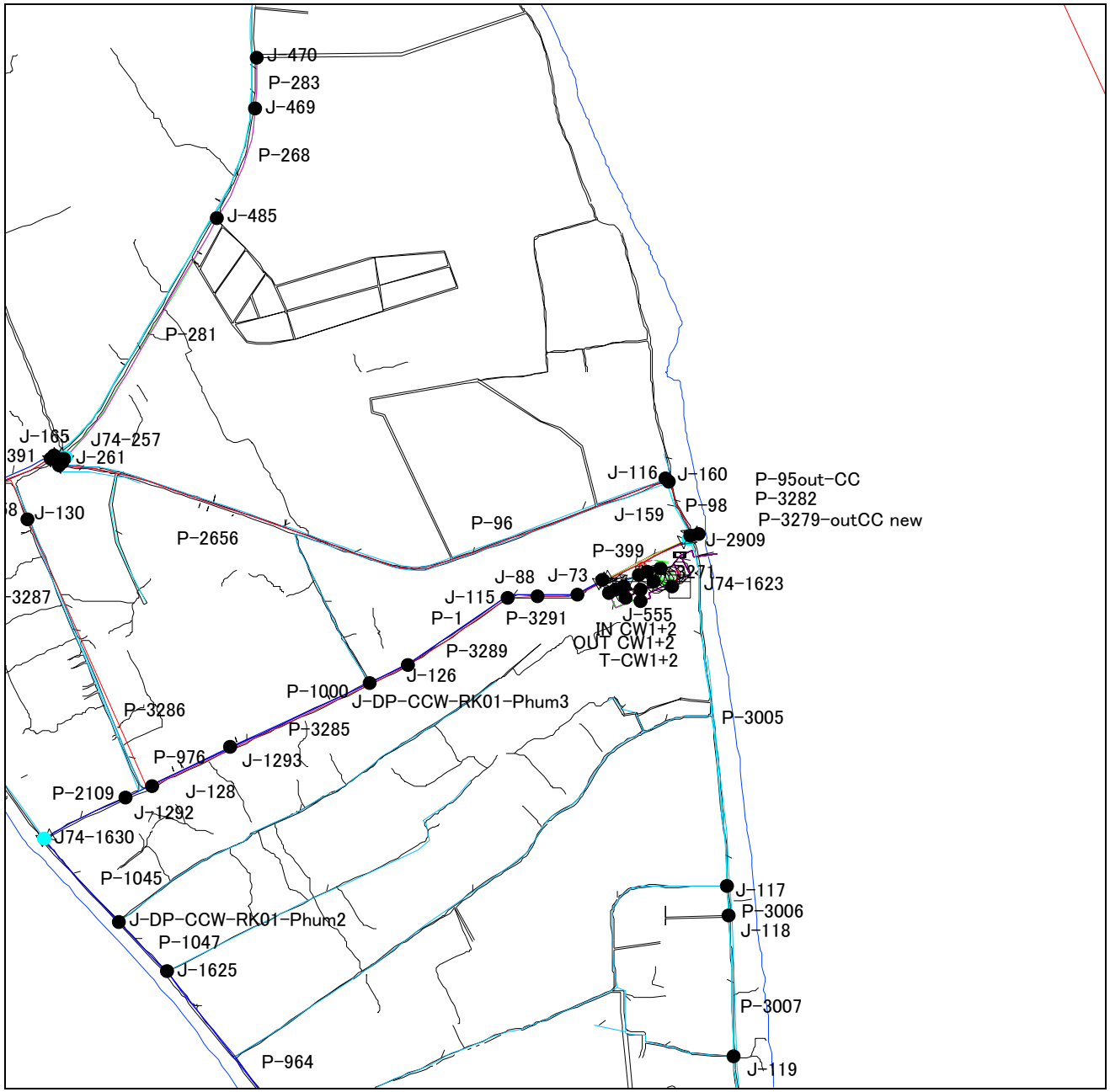
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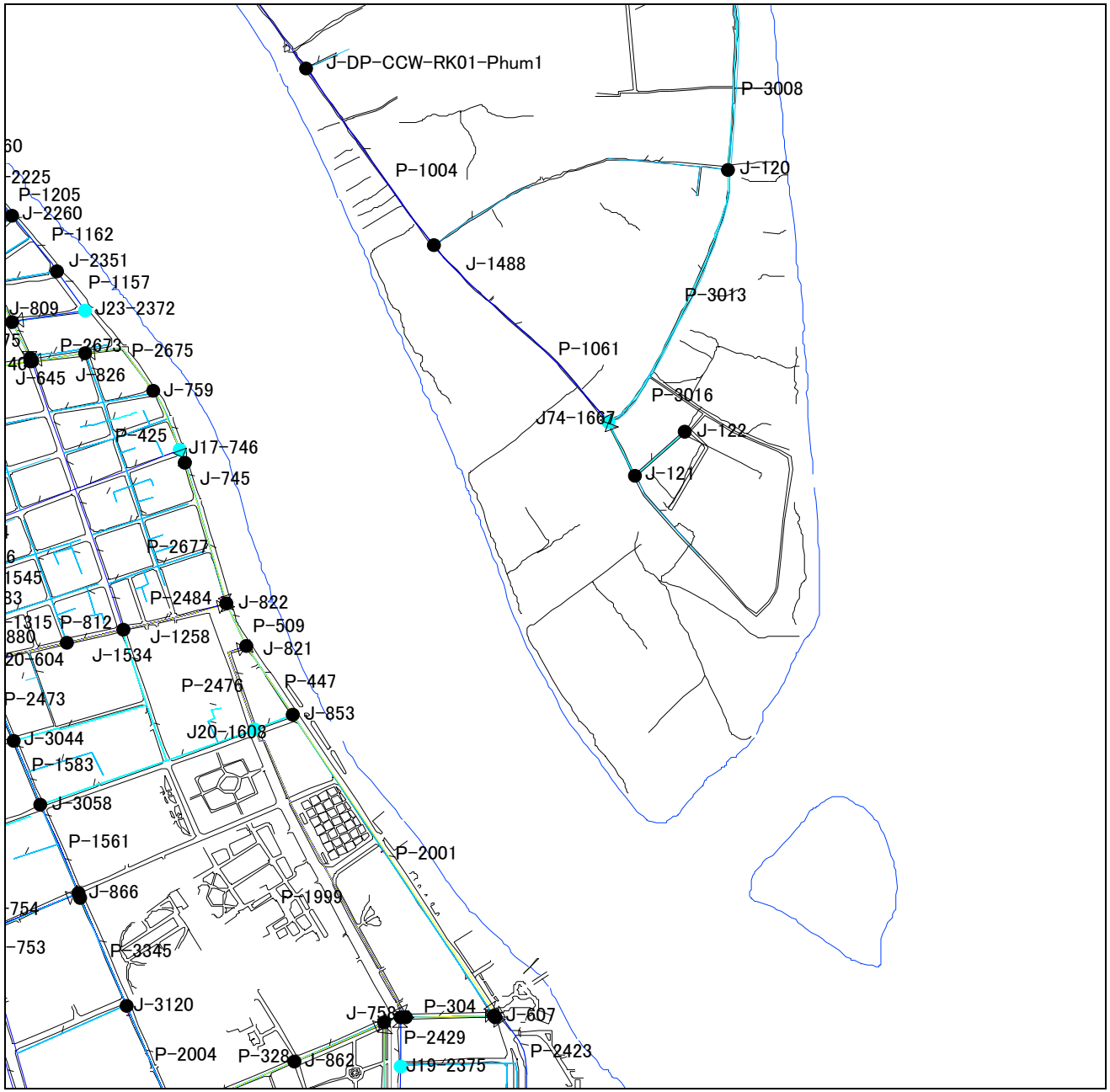
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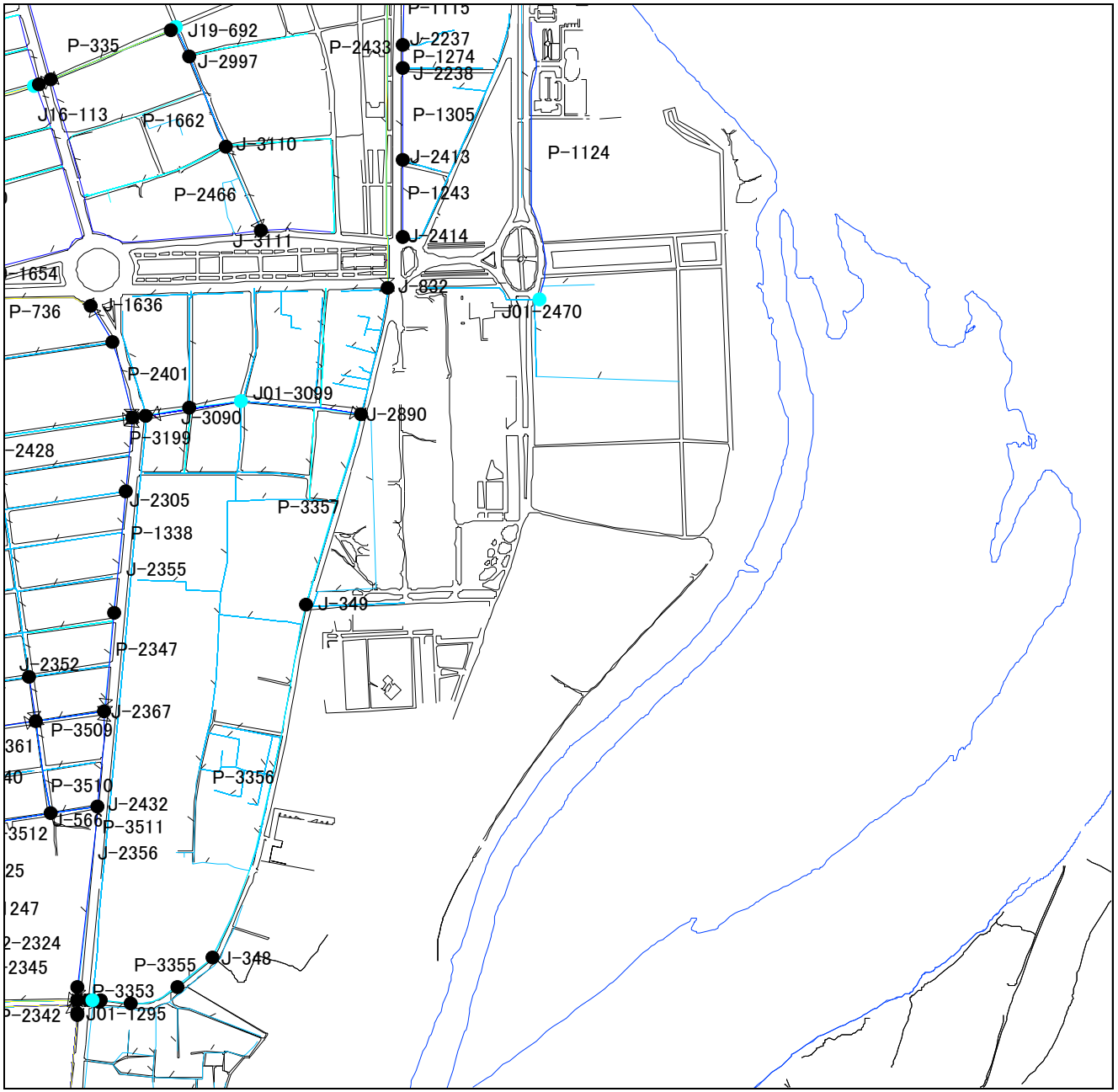
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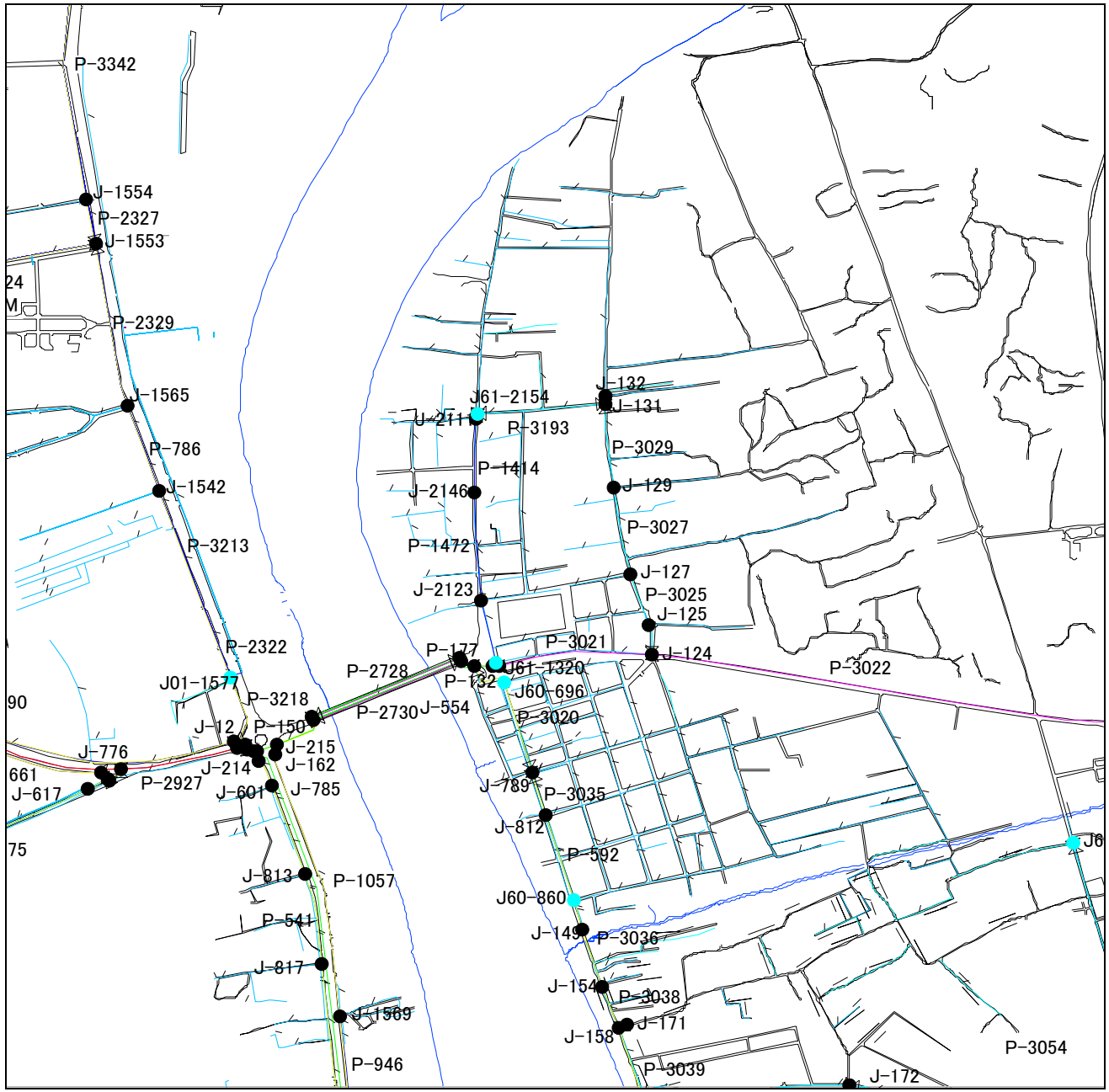
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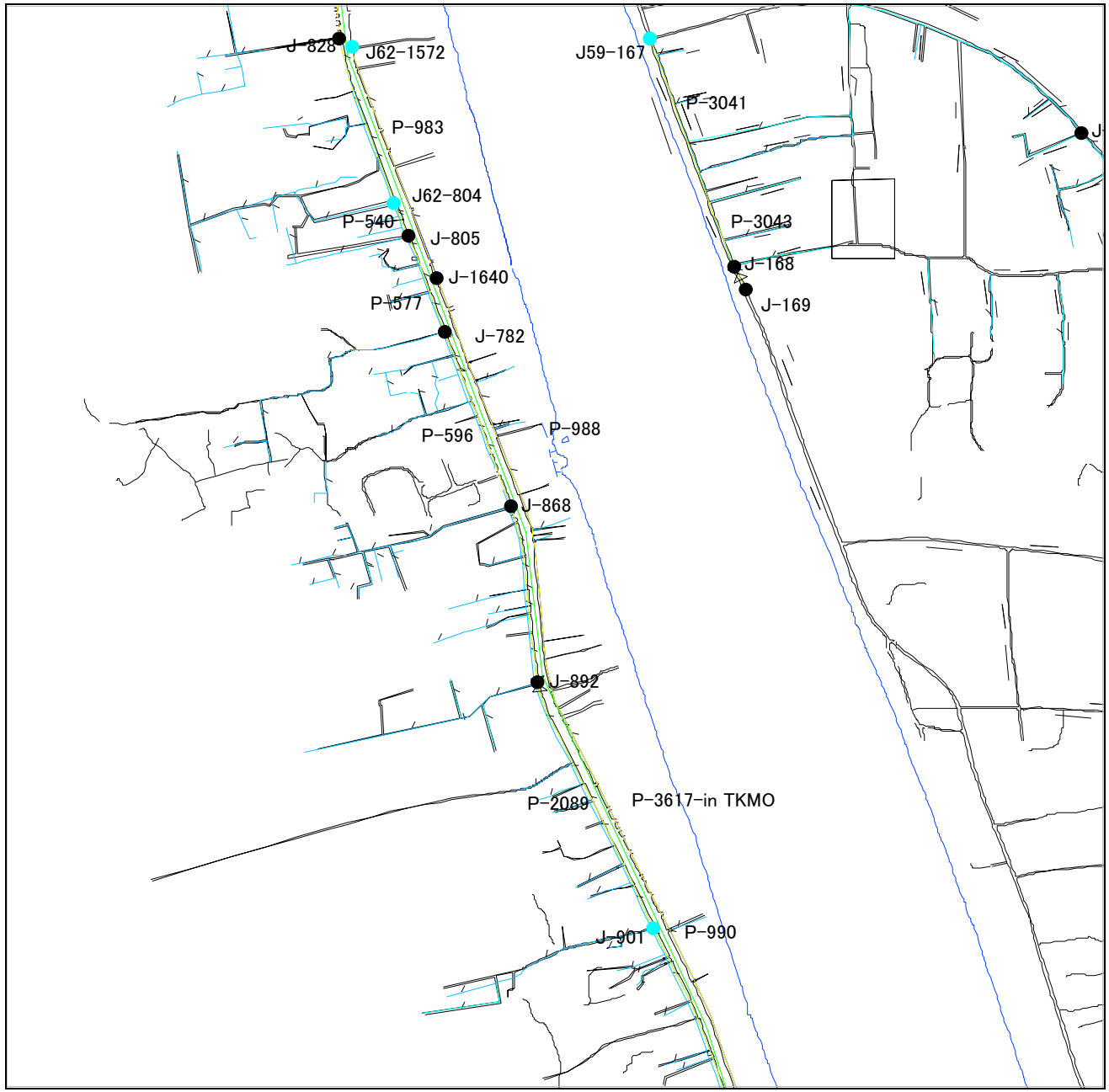
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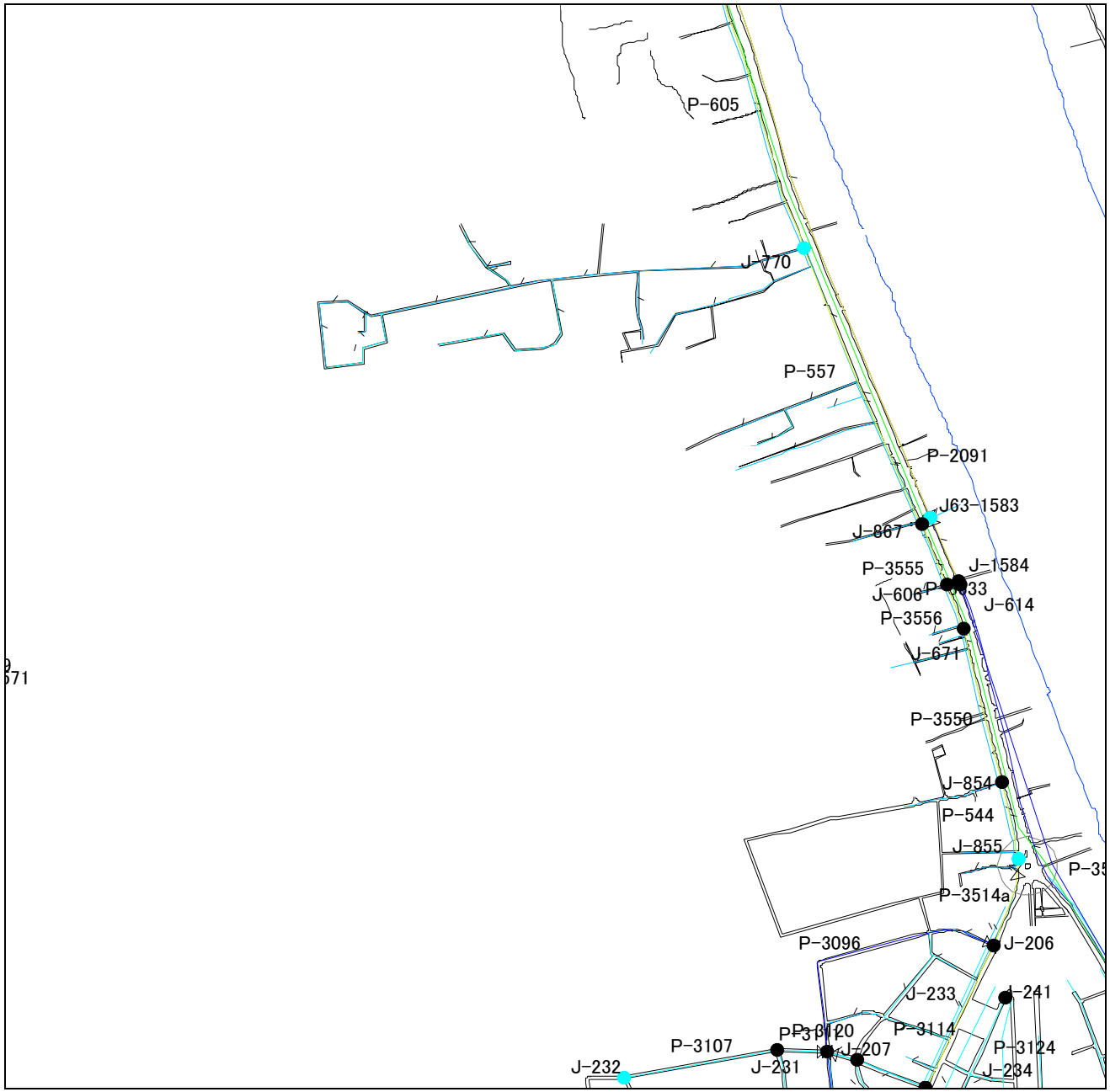
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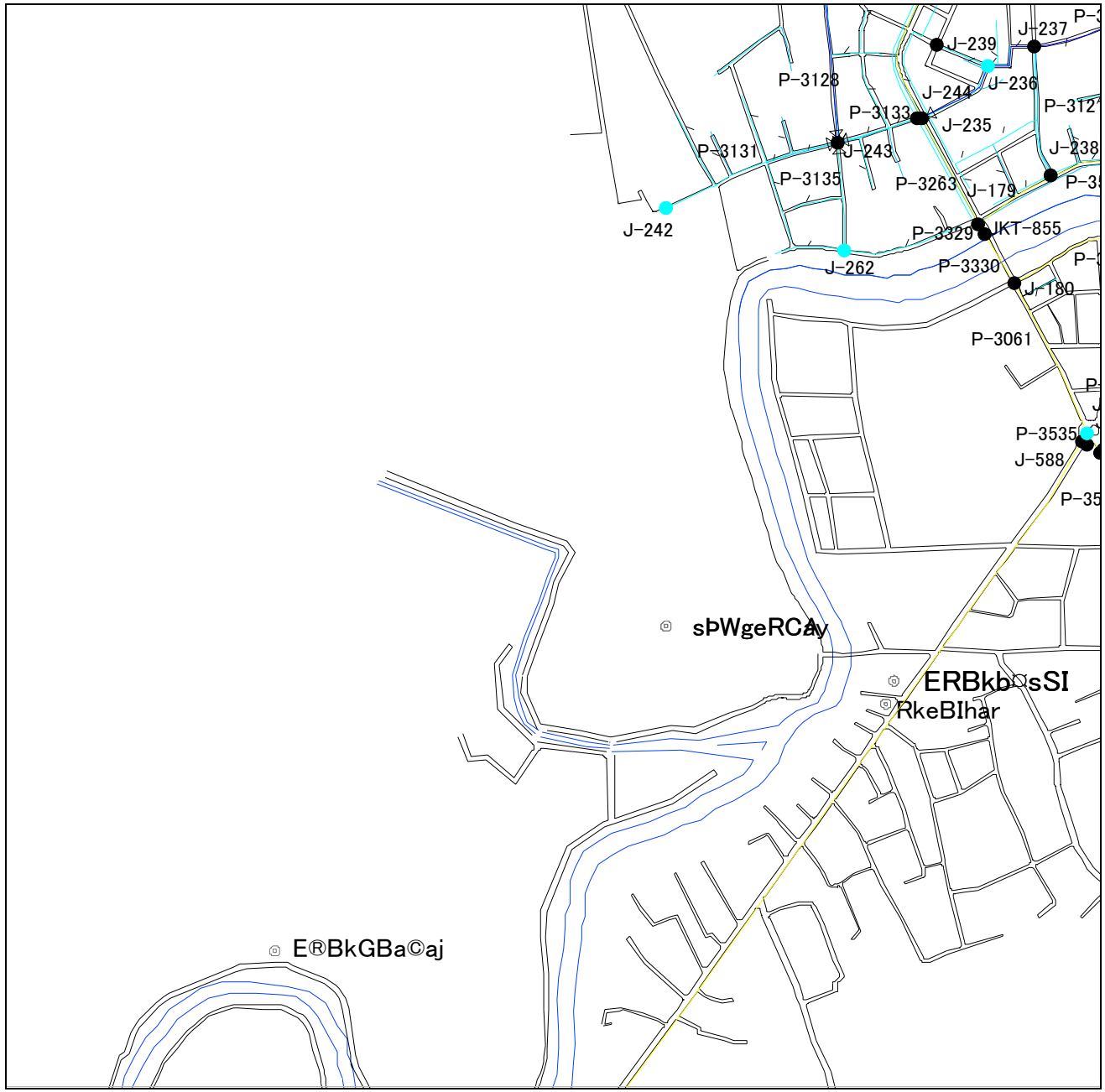
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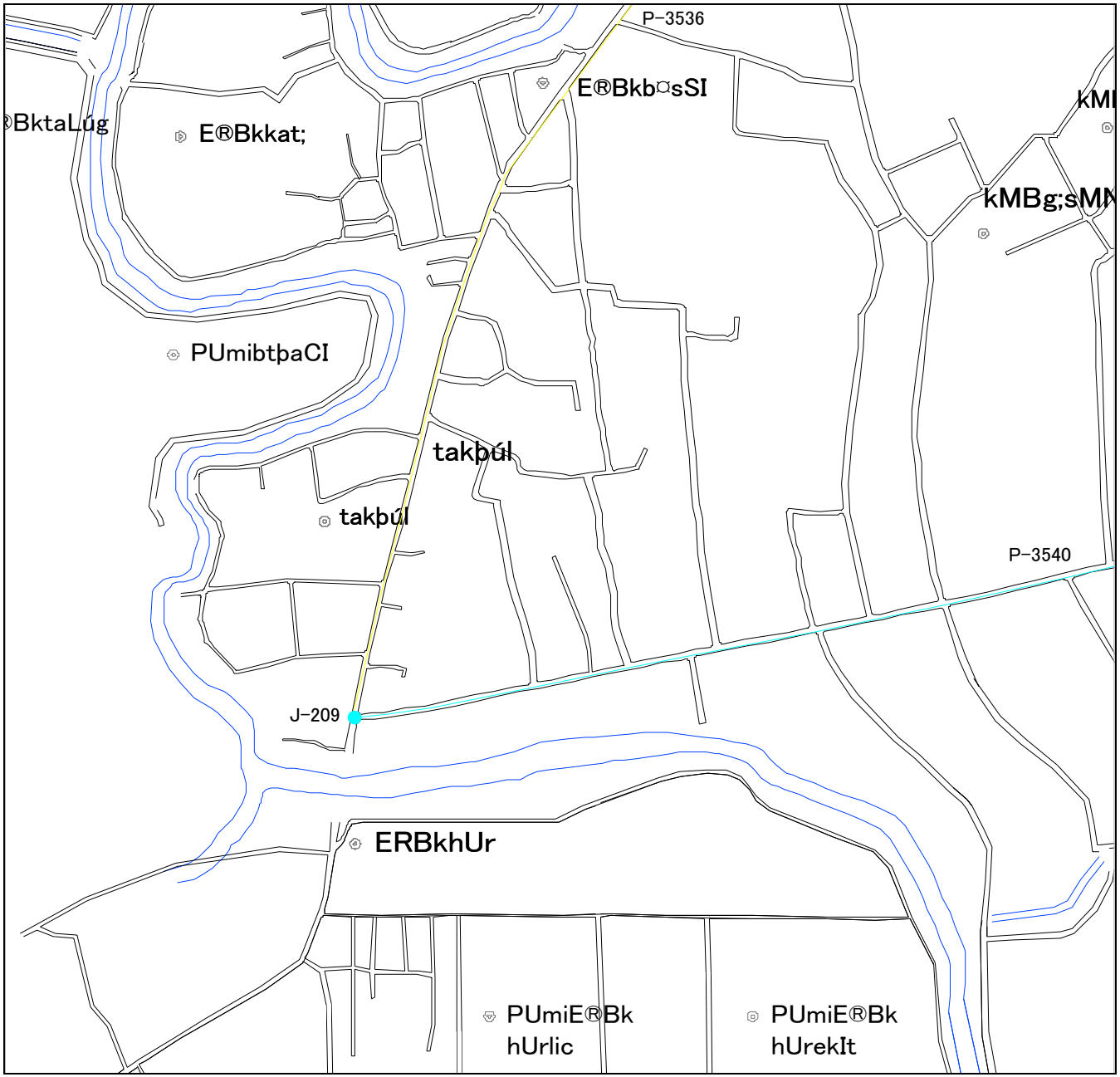
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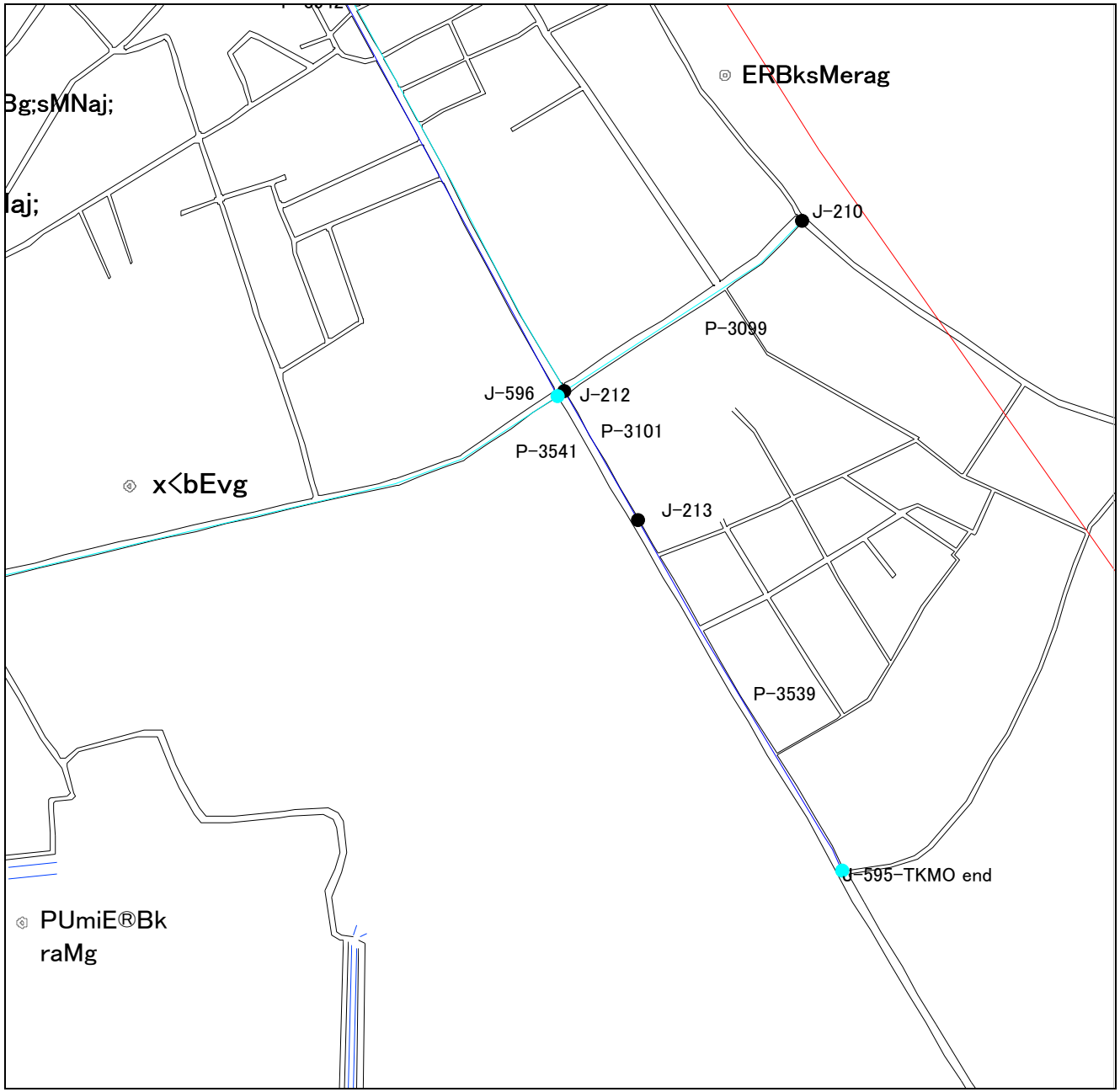
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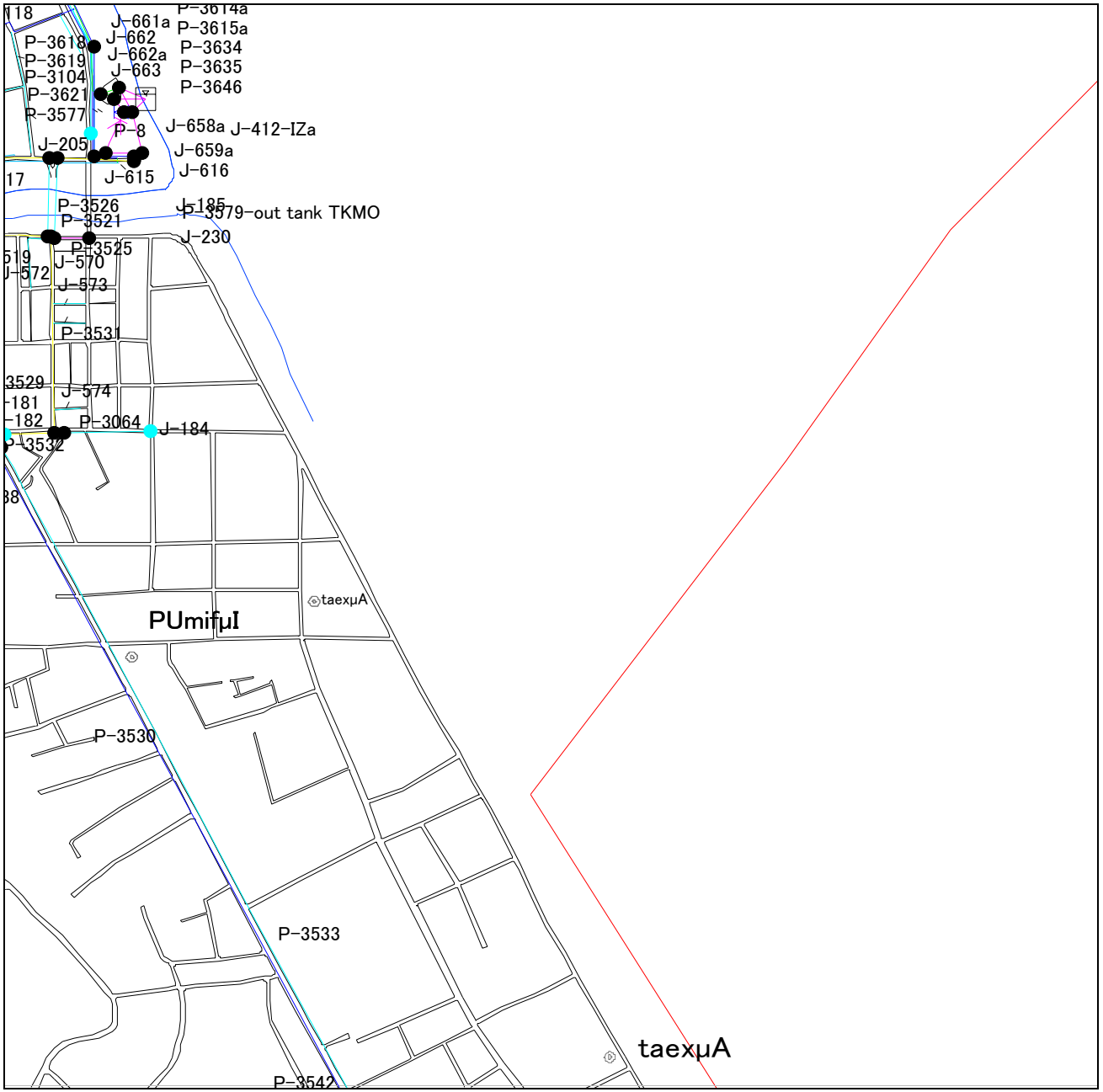
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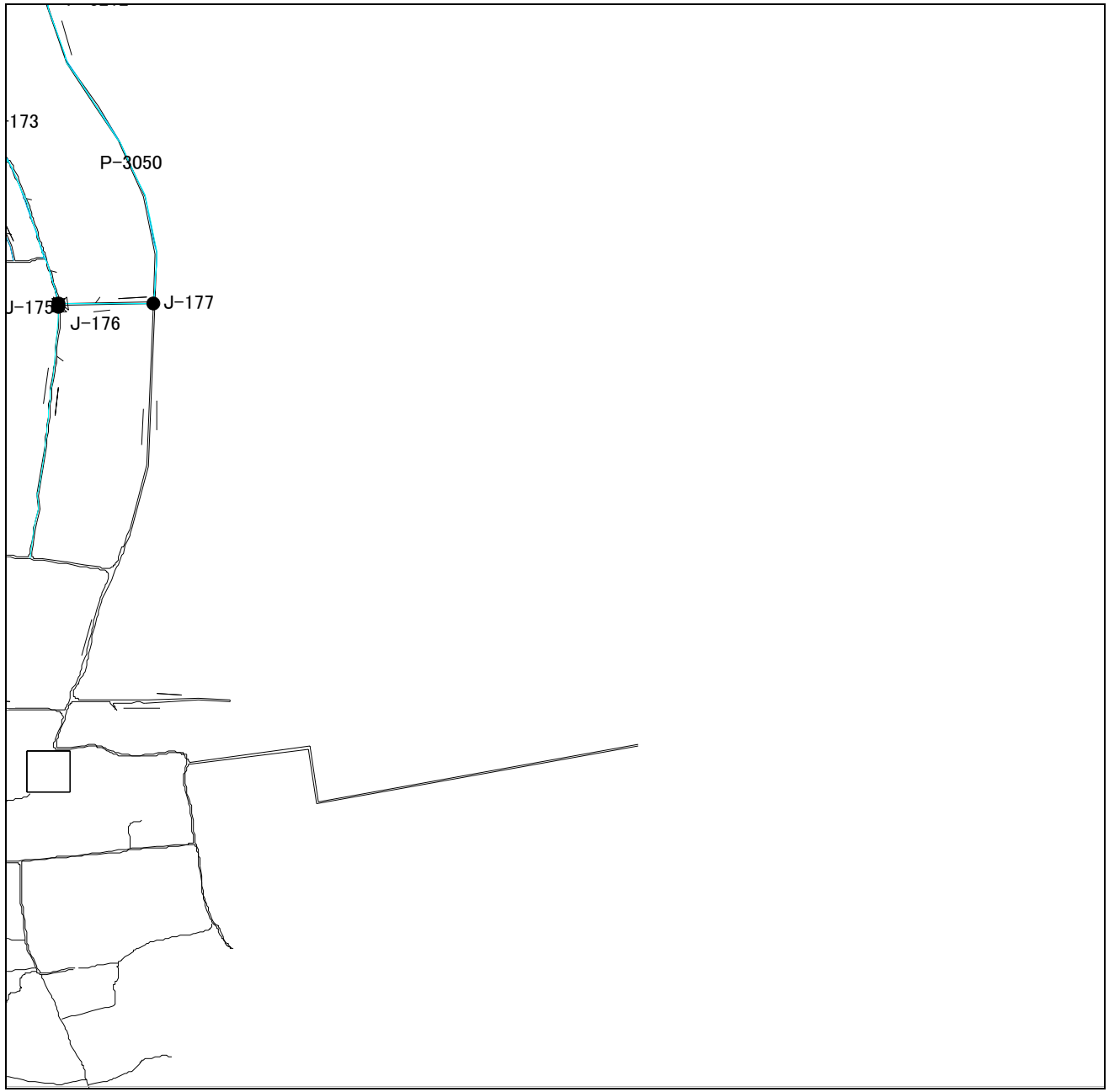

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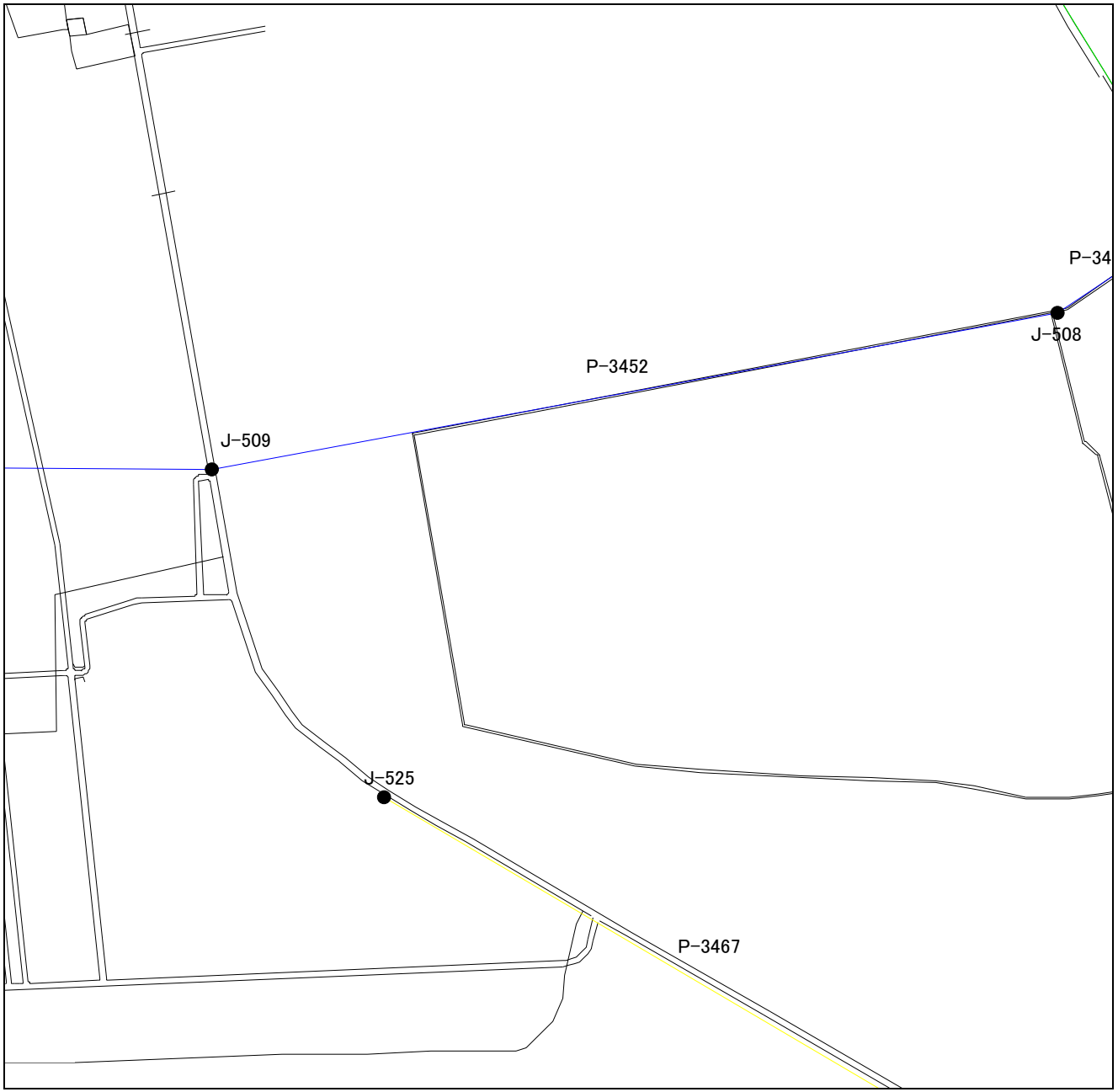

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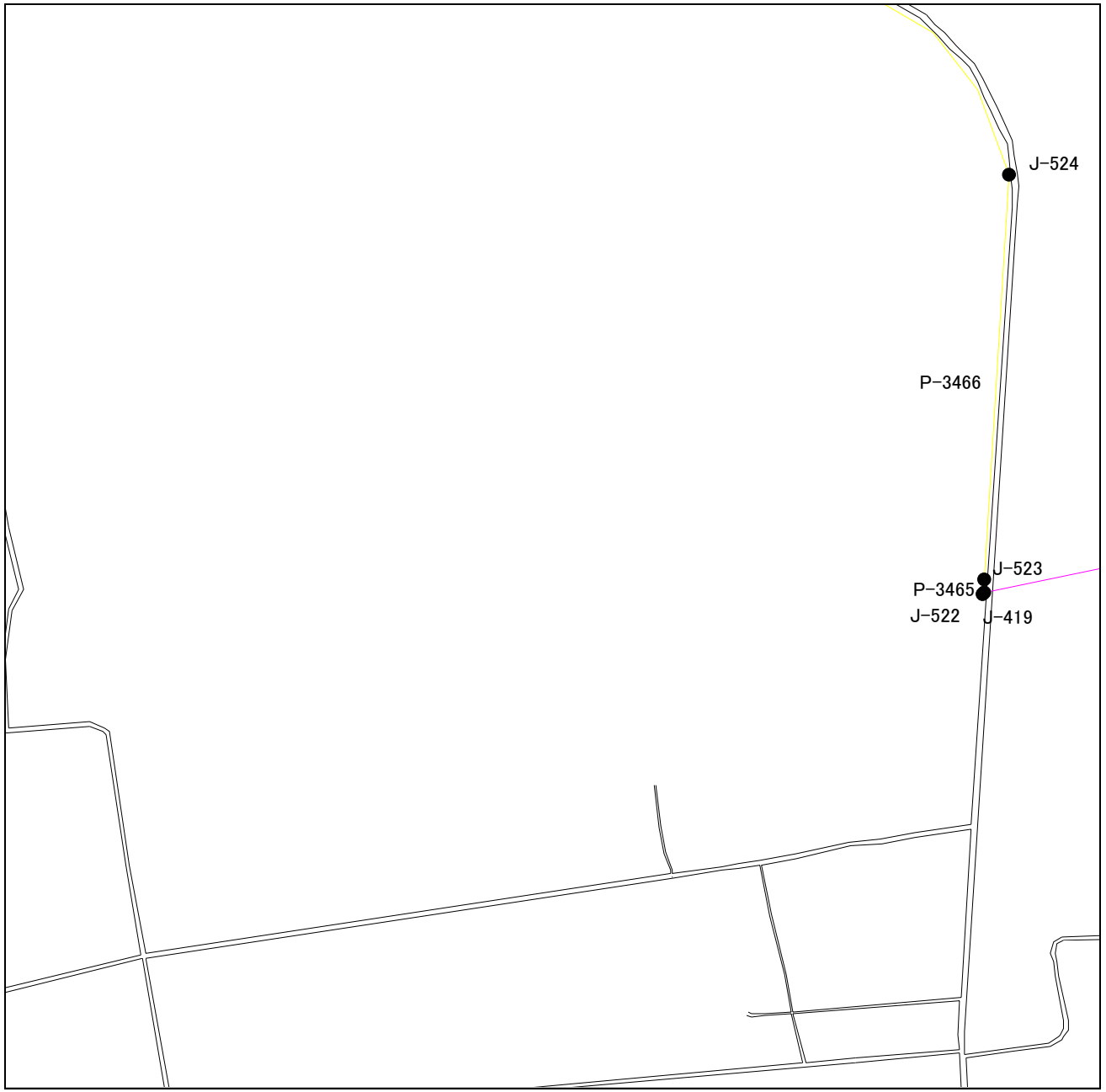

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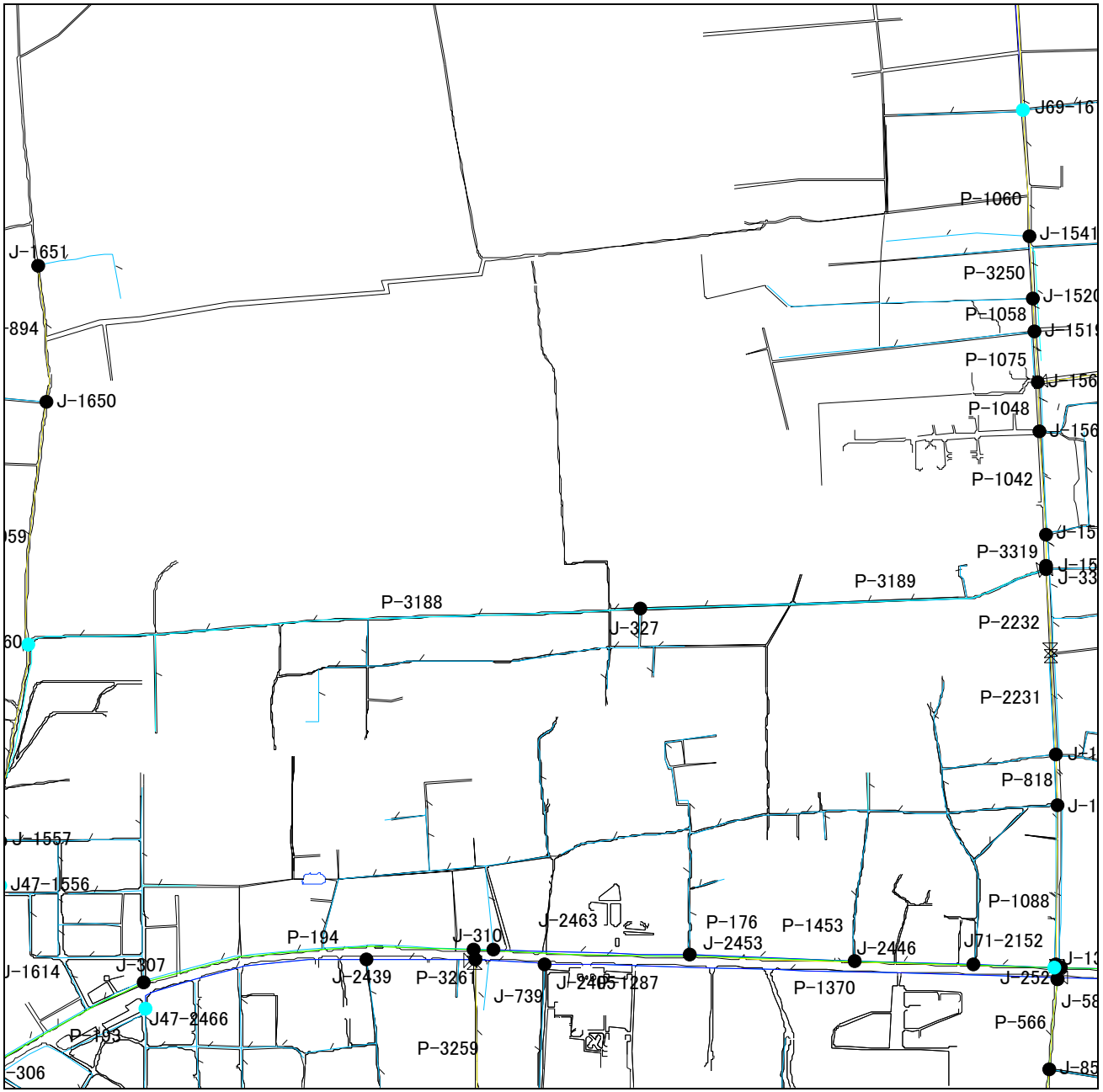
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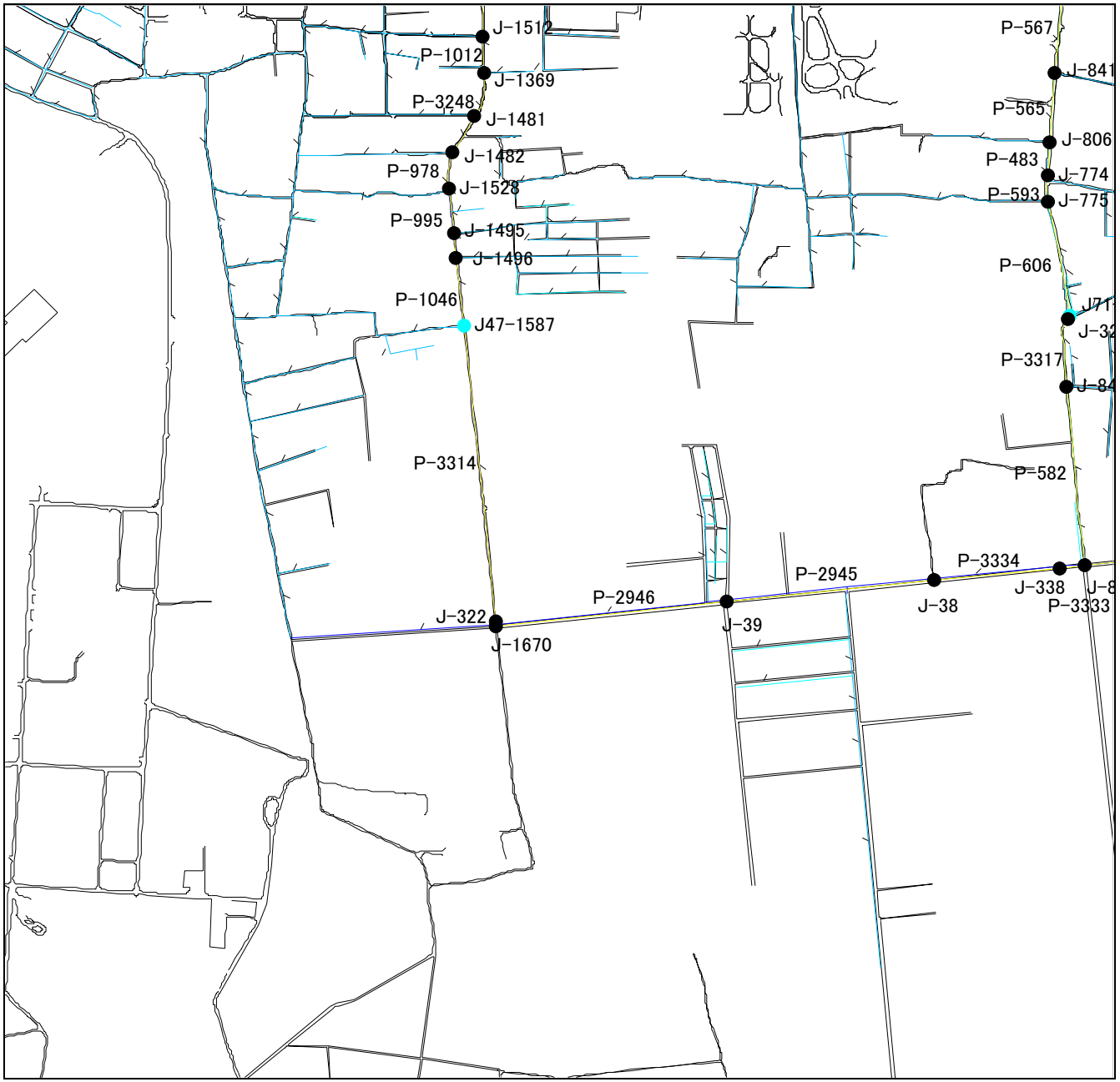
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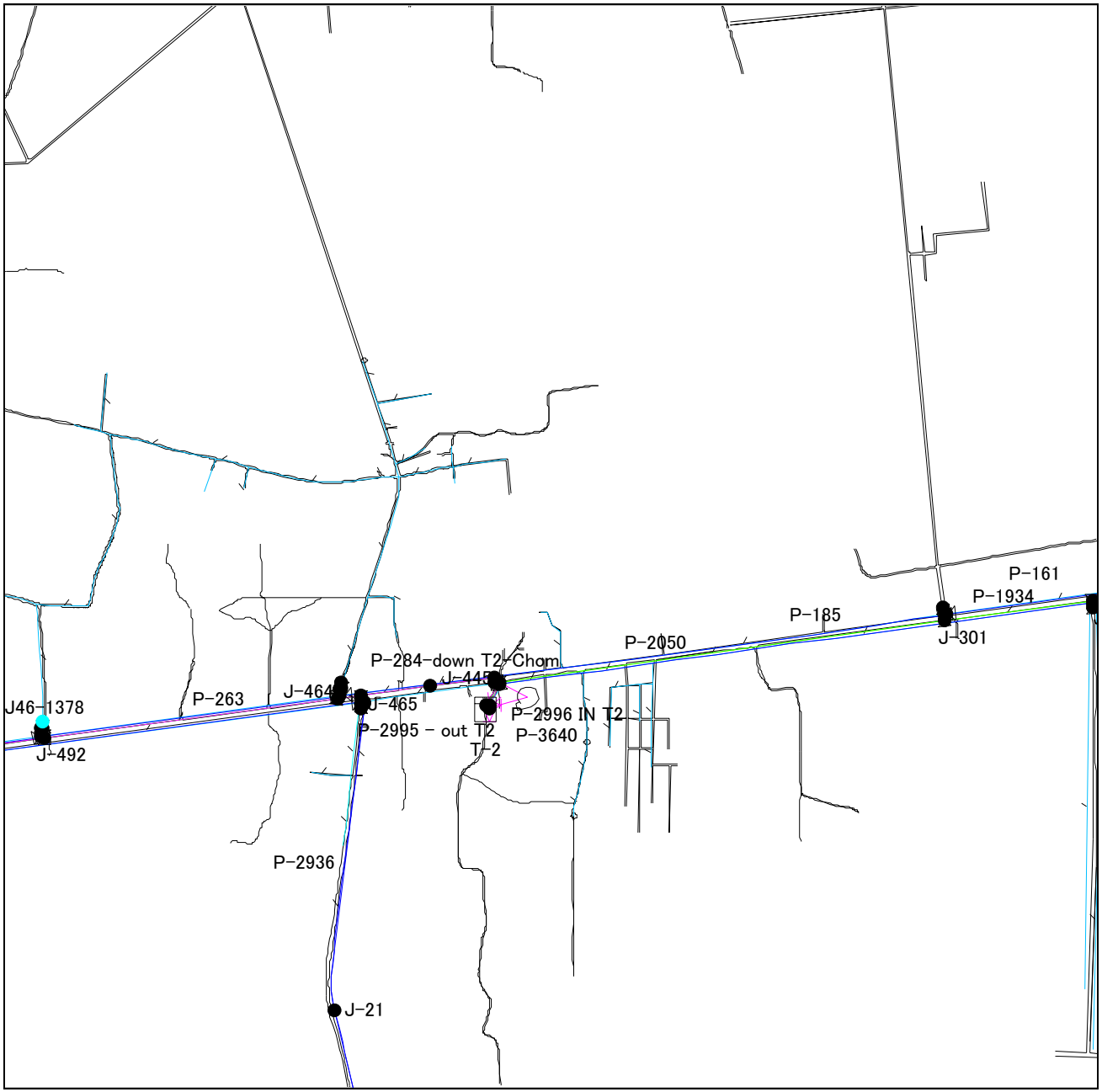
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P-2996 IN T2
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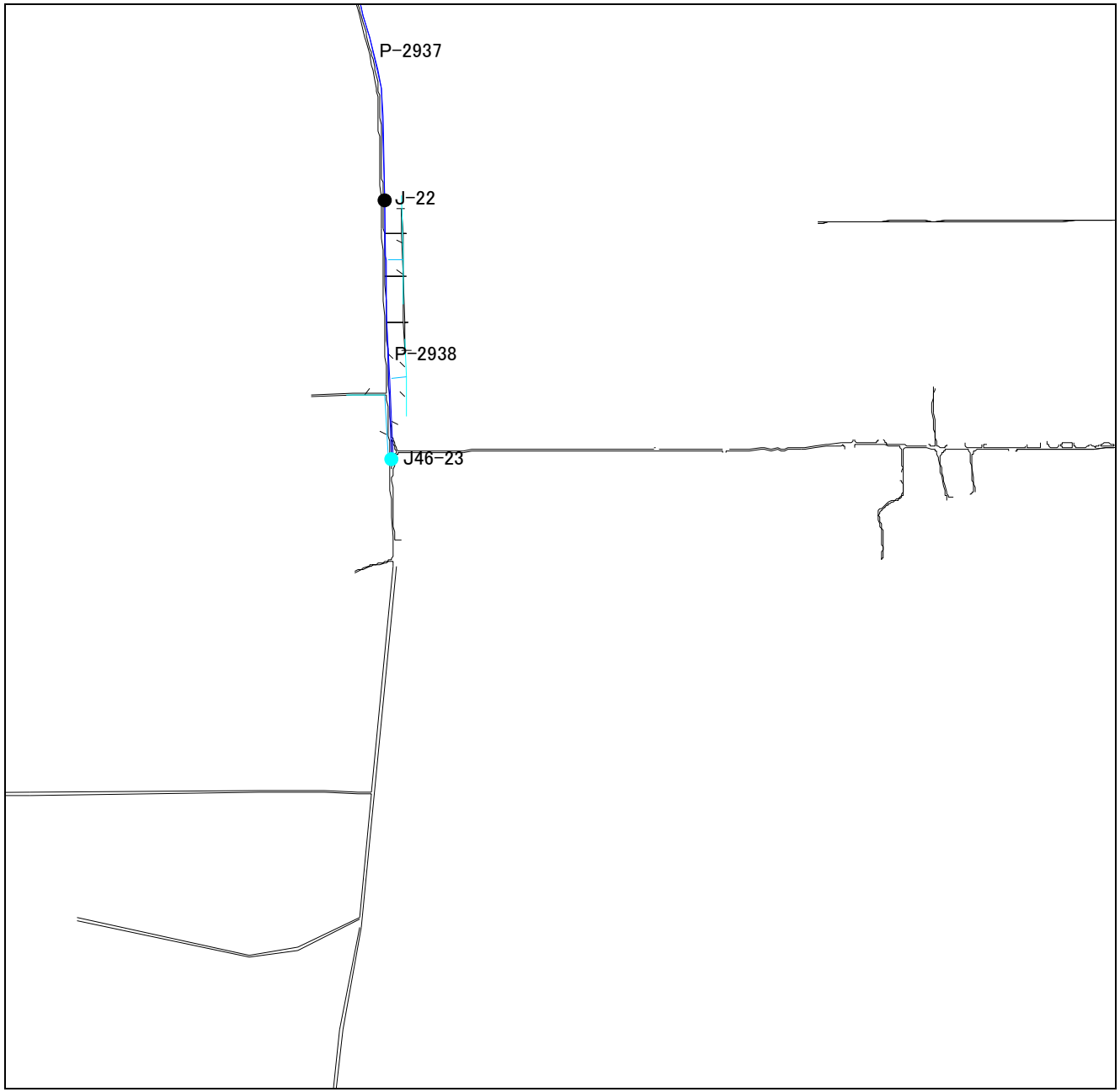

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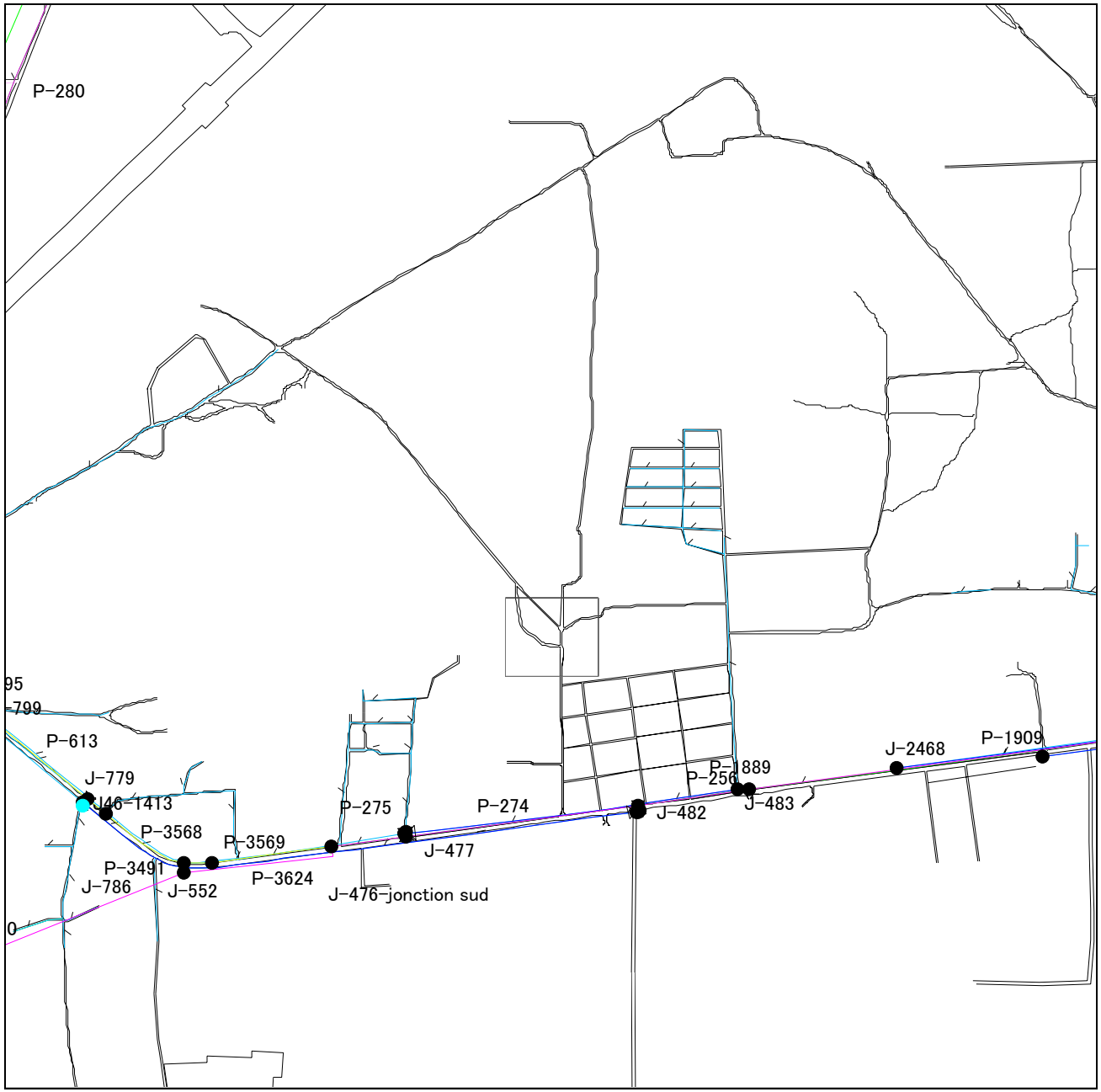
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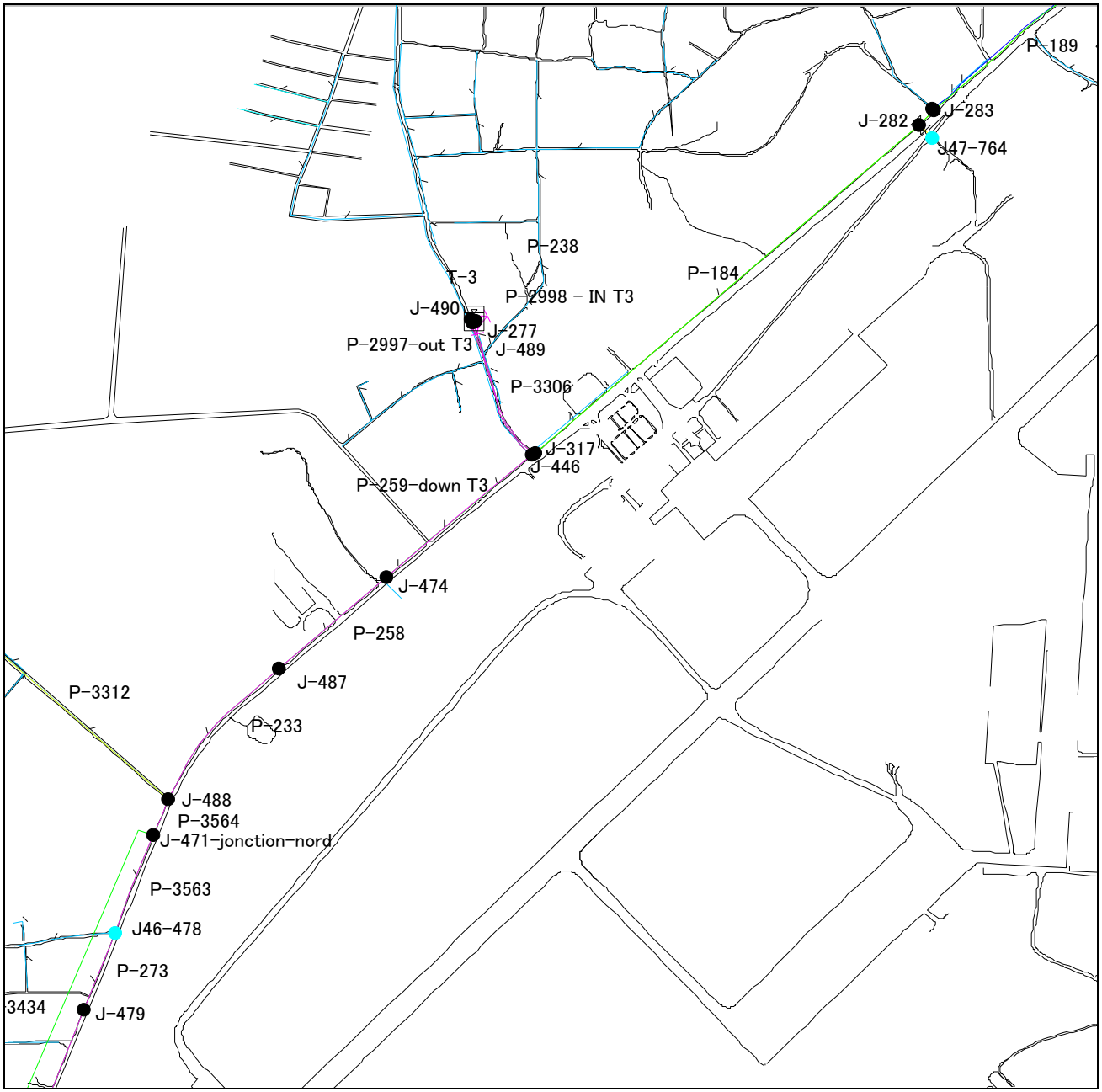
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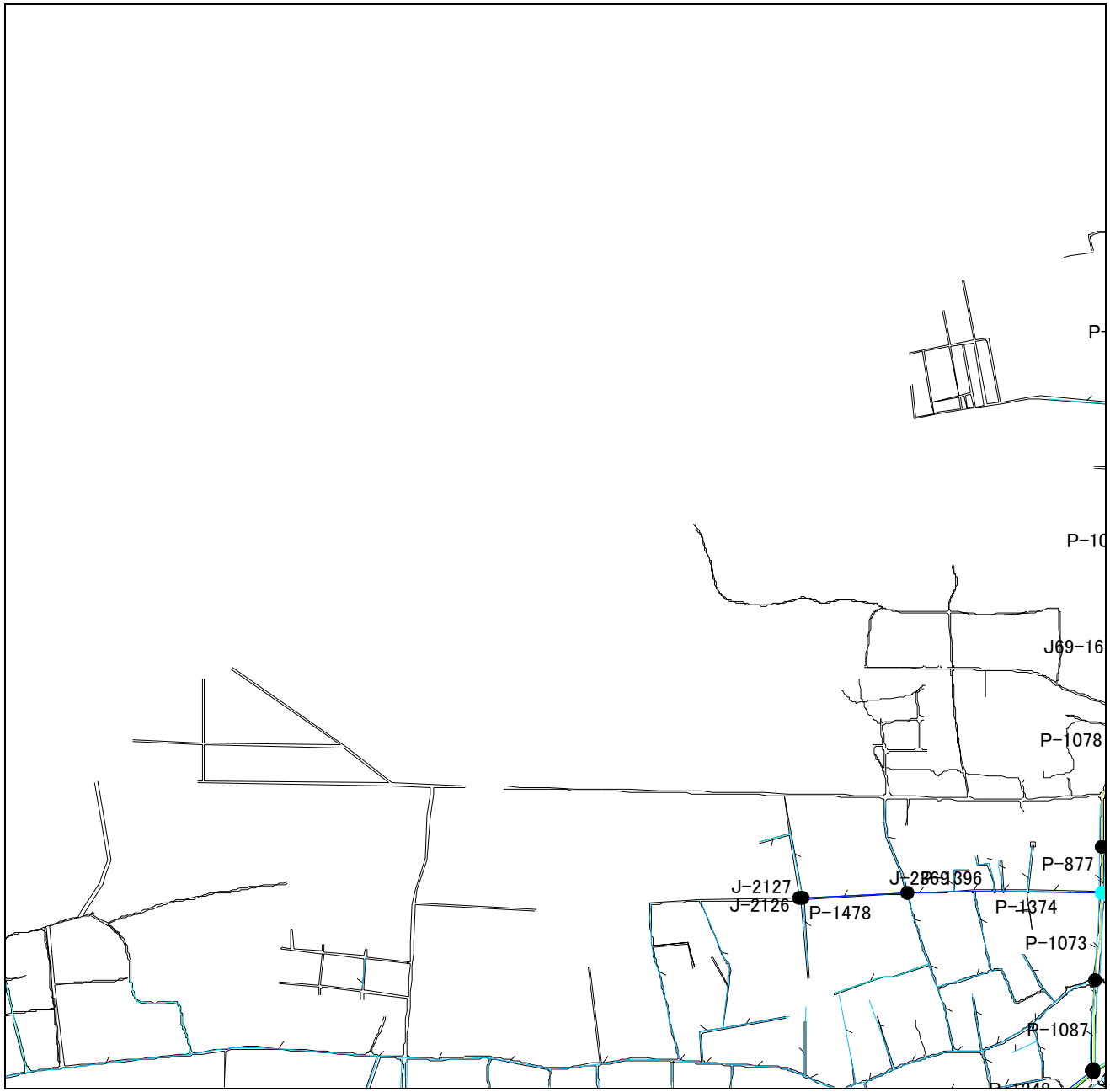

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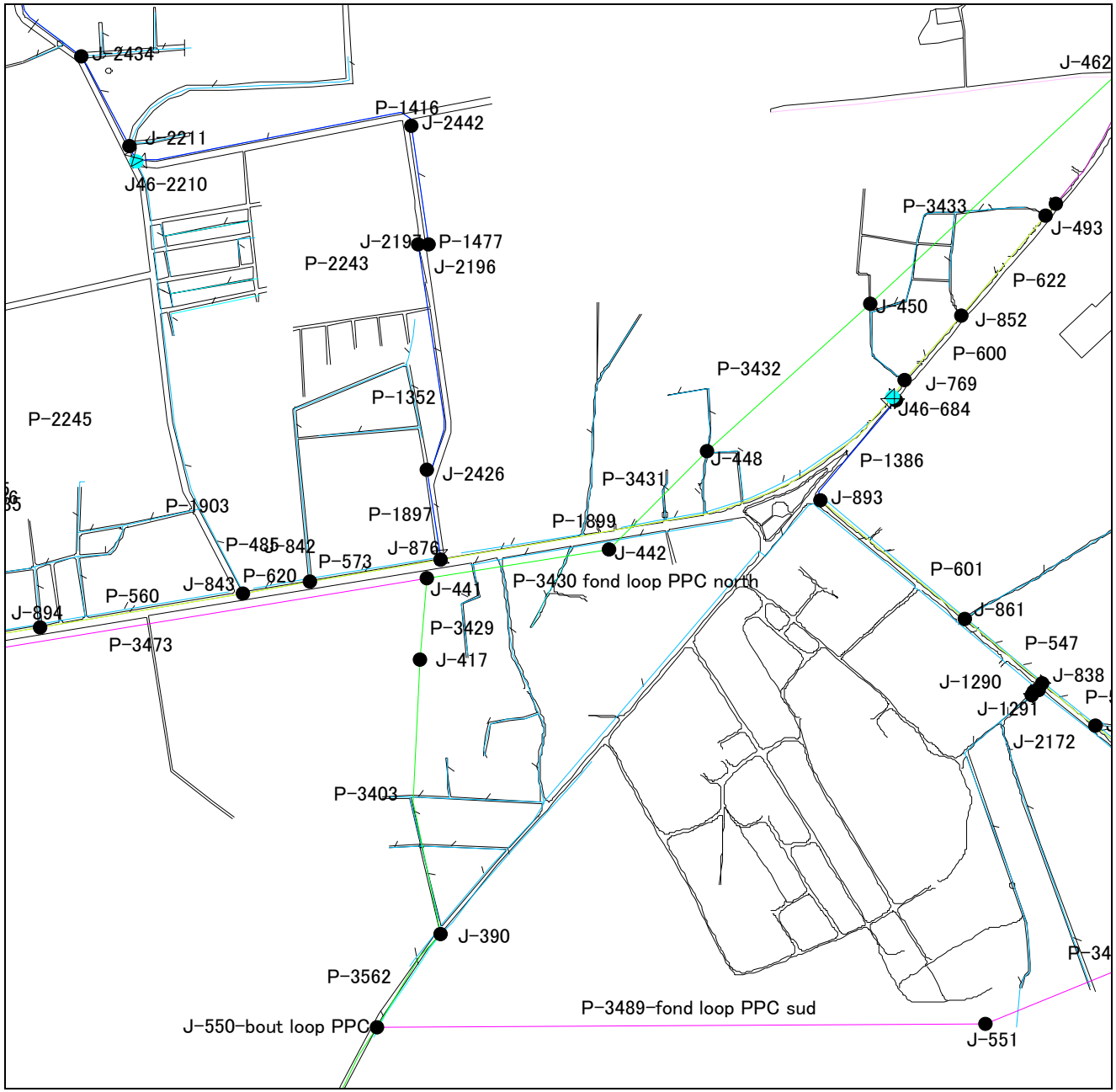
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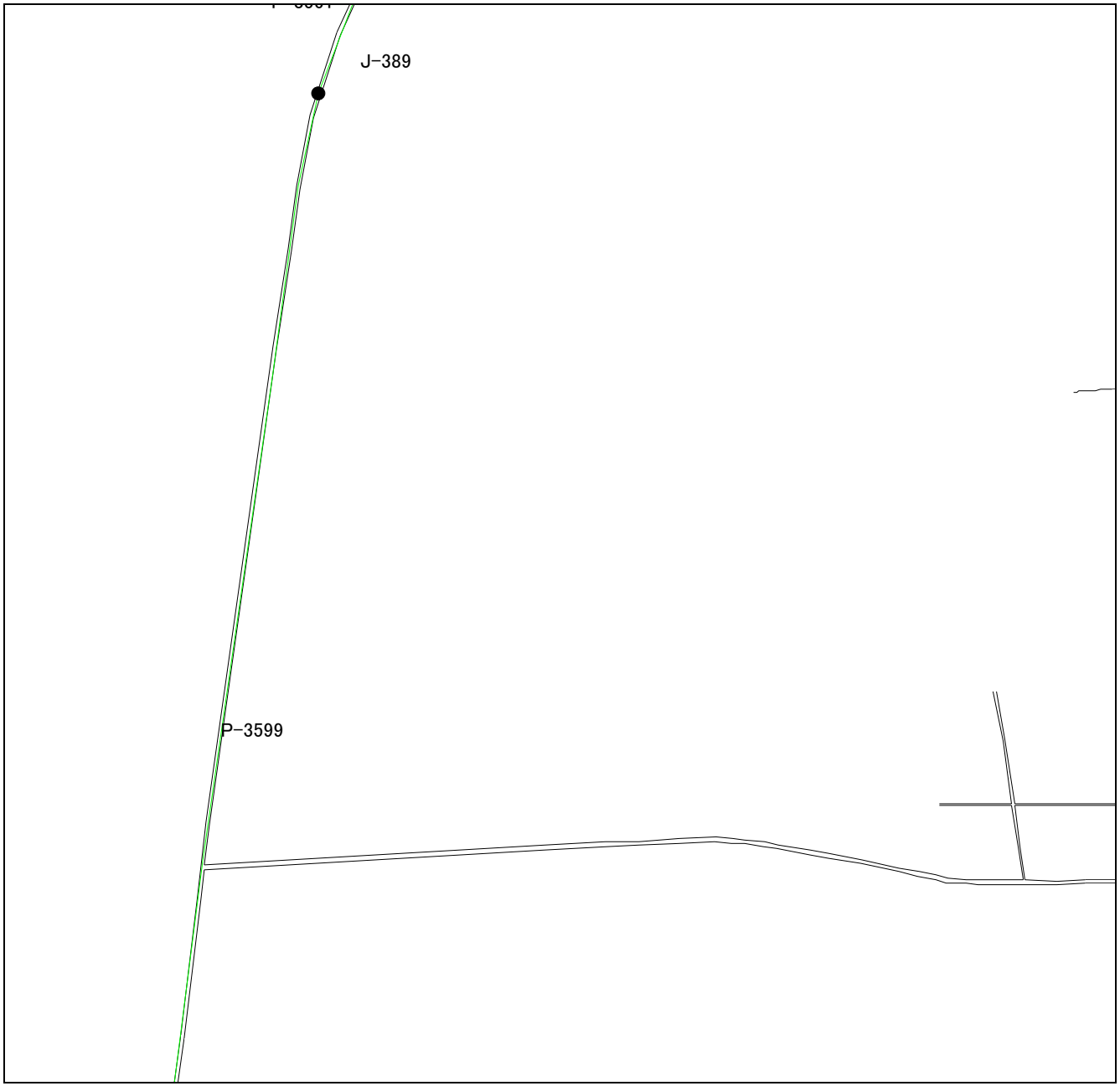

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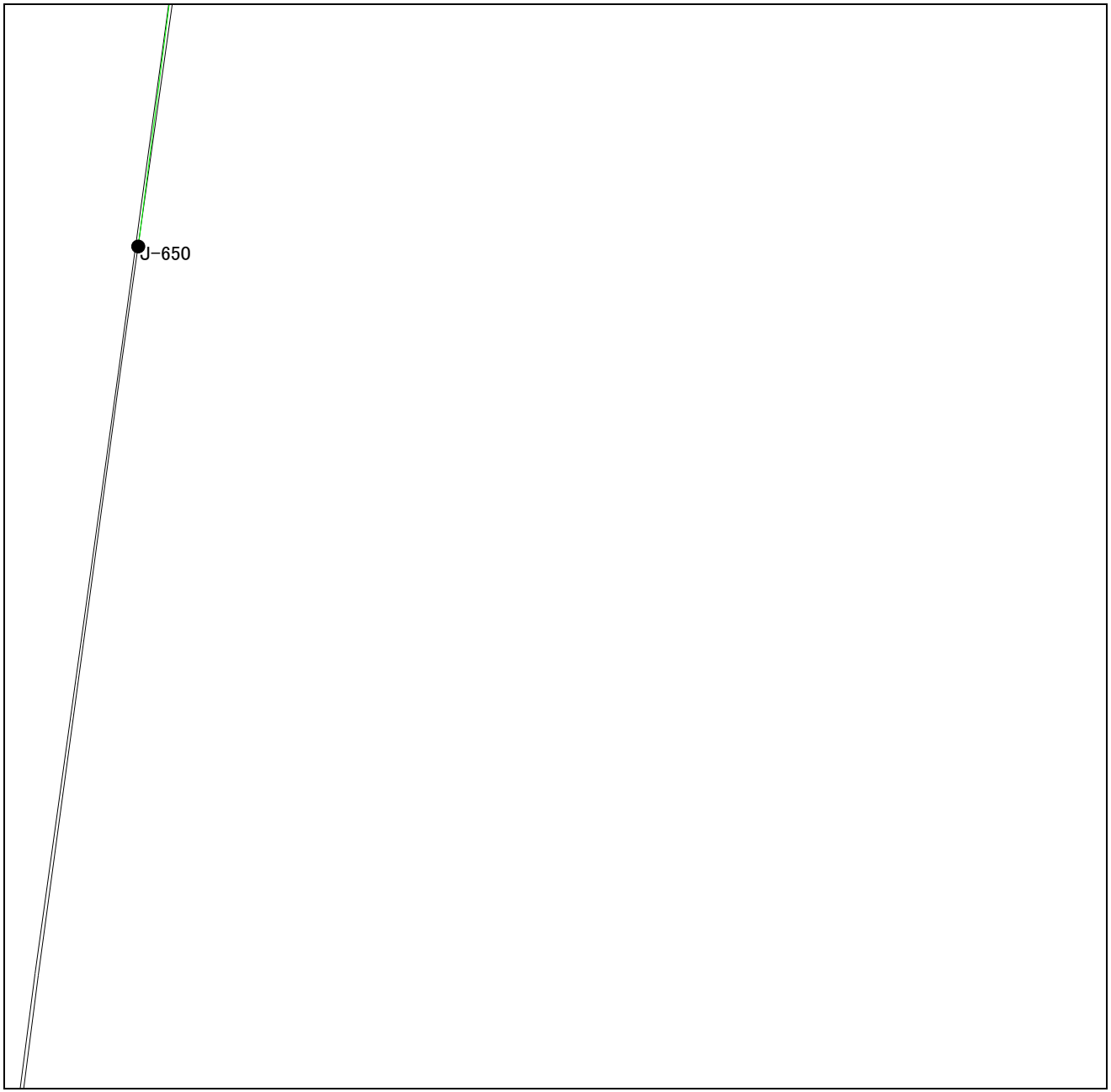

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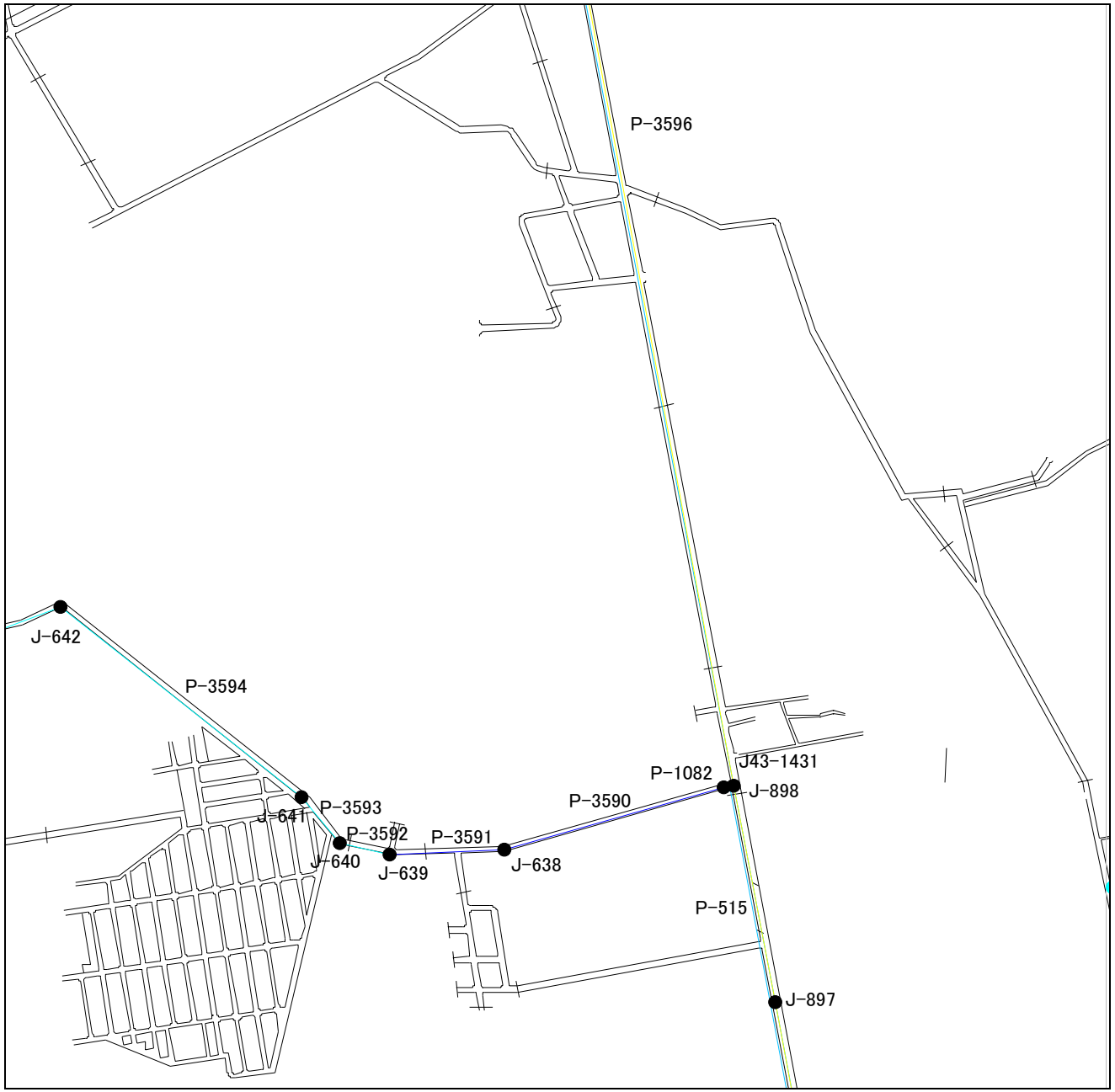
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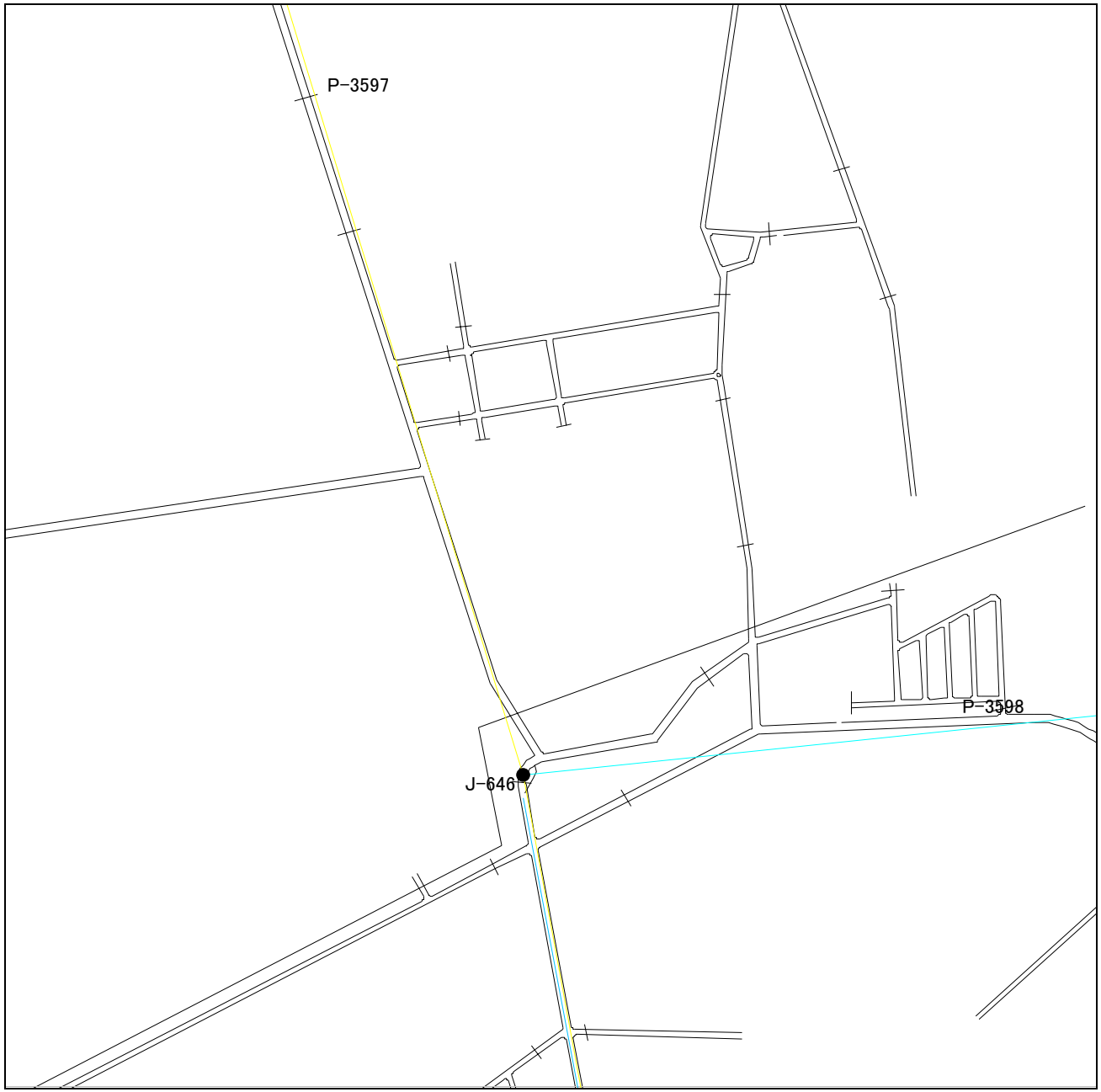

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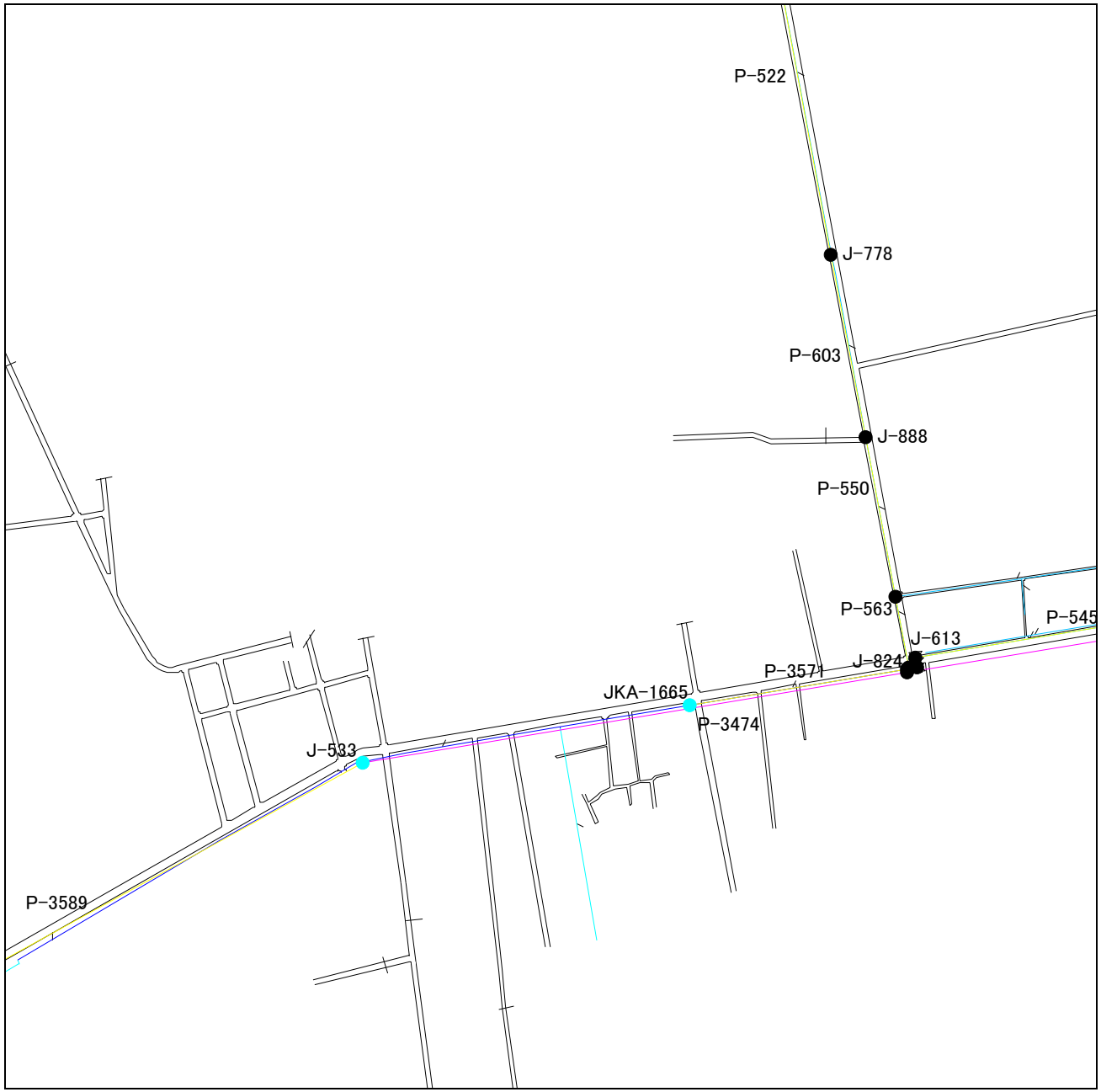
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G9

Supporting Report 5.5 Connecting Pipe to T1 : « Olympic Water Tank »

T1 : « Olympic Water Tank »

In the central area, the Olympic Water Tank is a significant landmark. Its existence goes up for nearly fifty years and was rehabilitated by the Japan co-operation at the early nineties. "T1" is directly supplied by an independent 2 km - Ø 500 mm pipe coming from Phum Prek WTP. Currently, this pipe is directly connected to the distribution network and the Water Tank is not used.

The Master Plan considers that the Water Tank function must be directed to support independents distribution blocks. They are connected to the transmission loops and supply area which corresponds to their capacities. The F/S main report, (2.2.3.3; 2.2.10) gives the following issues into the 2010 Central Distribution System: "T1 water tank start-up planned in 2006." Indeed that is early 2006 in view of that its adaptation by PPWSA is currently being finalised.

Characteristics of the Olympic Water Tank

T1 Olympic Tank has 2,500 m^3 of volume including 1900 m^3 effective capacity. The main characteristics are presented in the figure and the table below.

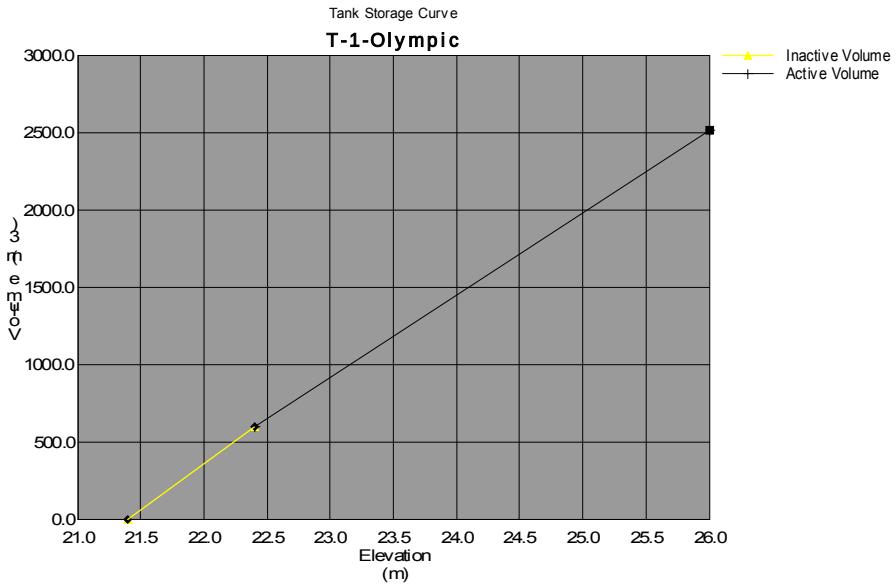

Figure SR 5.5-1 Storage Curve of the Olympic Water Tank

Table SR 5.5-1 Main Characteristics of Olympic Water Tank

Geometric Summary					
X	490,088.95	m	Elevation	7.20	m
Y	1,277,646.86	m	Zone	000	
Operating Range Summary					
Maximum Elevation	26.00	m	Maximum Level	4.60	m
Initial HGL	26.00	m	Initial Level	4.60	m
Minimum Elevation	22.40	m	Minimum Level	1.00	m
Base Elevation	21.40	m			
Storage					
Section Type	Constant Area		Circular Tank Shape?	true	
Diameter	26.00	m	Average Area	530.9	m²
Inactive Volume	600.00	m³	Total Active Volume	1,911.34	m³

Connecting Pipe to the Olympic Water Tank

As shown in Figure SR 5.5-2, the new connection to the Water Tank includes a check valve and a pressure valves regulation system. Then, the Water Tank can supply the main transmission line and/or the distribution system.

This configuration is integrated into our simulations but does not give remarkable improvement of the situation. Actually, the Tank is always full.

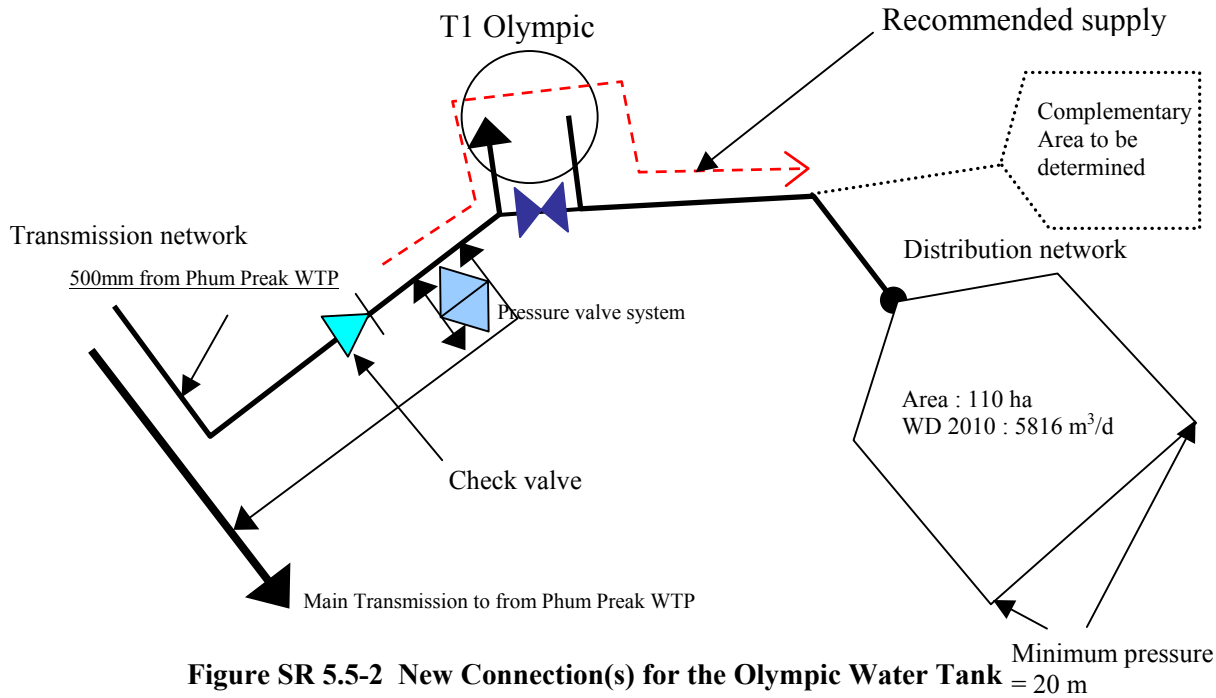

Figure SR 5.5-2 New Connection(s) for the Olympic Water Tank

The proposed service block has about 110 ha and water demand of 69 l/s in 2010. The tank capacity corresponds to 8 hours of the demand. According Master Plan design criteria, the pressure level must

be maintained over 20 meters water head. The 2010 simulation model does not show problems for supplying this service block from the tank, which is shown in Figure SR5.5-3.

Only with the current demand of 6000m^3/d, the 500mm pipe can feed larger area. Respecting Master plan design criteria, this transmission pipeline can convey additional 28,000m^3/d. The Water Tank can easily be connected to one or several other distribution zones. Then, it meets perfectly the principles developed by Master Plan.

The transmission main from Phum Prek is a 900mm pipe and represents the beginning of the South branch of the Prey Pring Choeung loop. The calculated average flow in 2010 is about 36,000m^3/d, then the subsequent low velocity (0.6 m/s) gives low head loss in these conditions. If we connect the Olympic Water Tank to this main, it will lower pressures in the transmission main from Phum Prek.

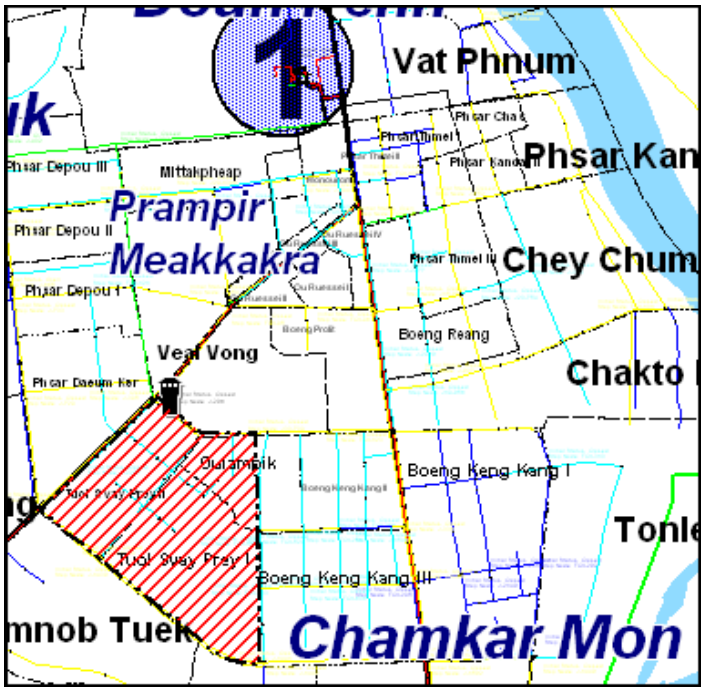

Figure SR 5.5-3 Olympic Water Tank and Its Proposed Service Block