

Annexes

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Annex 1

Member List of Study Team

Annex 1 Member List of Study Team

Explanation of Inception Report and Field Survey (From December 14, 2003 to January 7, 2004)

Position in Charge	Name	Affiliation
(1) Team Leader	Yoshiro KURASHINA	Deputy Director, Third Project Management Division, Grant Aid Management Department, JICA
(2) Chief Consultant: Drainage Plan	Masanobu SAKAMOTO	Nippon Koei Co., Ltd.
(3) Consultant: Hydraulics, Hydrology and Environmental Considerations	Masayuki OGINO	Nippon Koei Co., Ltd.
(4) Consultant: Equipment Plan	Yoshiharu INABE	Nippon Koei Co., Ltd.
(5) Consultant: Procurement Plan and Cost Estimate	Kozo YAMADA	Nippon Koei Co., Ltd.

Explanation of Draft Basic Design Study Report (From February 15 to 21, 2004)

Position in Charge	Name	Affiliation
(1) Team Leader	Yuji Otake	Deputy Resident Representative, JICA Indonesia Office
(2) Chief Consultant: Drainage Plan	Masanobu SAKAMOTO	Nippon Koei Co., Ltd.
(3) Consultant: Hydraulics, Hydrology and Environmental Considerations	Masayuki OGINO	Nippon Koei Co., Ltd.

Annex 2

Survey Itinerary

Annex 2 Survey Itinerary

Explanation of Inception Report and Field Survey

No.	Date	Travel of Team Member	Station	Activities
1	12/14 (SUN)	KURASHINA, SAKAMOTO, OGINO Travel from Tokyo to Jakarta	Jakarta	
2	15 (MON)		Jakarta	<ul style="list-style-type: none"> Meeting at JICA Office Explanation of Inception Report at KIMPRASWIL Courtesy call on Embassy of Japan
3	16 (TUE)		Jakarta	<ul style="list-style-type: none"> Explanation and Discussion on Inception Report at CILCIS Field Reconnaissance
4	17 (WED)		Jakarta	<ul style="list-style-type: none"> Explanation and Discussion on Inception Report at CILCIS Field Reconnaissance
5	18 (THU)		Jakarta	<ul style="list-style-type: none"> Discussion on M/D Field Reconnaissance
6	19 (FRI)	KURASHINA Travel from Jakarta	Jakarta/ On board	<ul style="list-style-type: none"> Signing M/D Report to JICA Office and Embassy of Japan
7	20 (SAT)	KURASHINA Arrival to Tokyo	Jakarta	<ul style="list-style-type: none"> Data Arrangement
8	21 (SUN)	INABE, YAMADA Travel from Tokyo to Jakarta	Jakarta	<ul style="list-style-type: none"> Field Reconnaissance Data Arrangement
9	22 (MON)		Jakarta	<ul style="list-style-type: none"> Data Collection
10	23 (TUE)		Jakarta	<ul style="list-style-type: none"> Data Collection
11	24 (WED)		Jakarta	<ul style="list-style-type: none"> Data Collection
12	25 (THU)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
13	26 (FRI)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
14	27 (SAT)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
15	28 (SUN)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
16	29 (MON)		Jakarta	<ul style="list-style-type: none"> Data Arrangement
17	30 (TUE)		Jakarta	<ul style="list-style-type: none"> Data Arrangement
18	31 (WED)		Jakarta	<ul style="list-style-type: none"> Data Arrangement
19	1/1 (THU)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
20	2 (FRI)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
21	3 (SAT)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
22	4 (SUN)		Jakarta	<ul style="list-style-type: none"> Field Reconnaissance, Data Arrangement and Analysis
23	5 (MON)		Jakarta	<ul style="list-style-type: none"> Preparation of Preliminary Report for Field Survey Results
24	6 (TUE)	SAKAMOTO, OGINO, INABE, YAMADA Travel from Jakarta	On board	<ul style="list-style-type: none"> Discussion on Field Survey Results at CILCIS Report of Field Survey Results to JICA Office and Embassy of Japan
25	7 (WED)	SAKAMOTO, OGINO, INABE, YAMADA Arrival to Tokyo		

Explanation of Draft Basic Design Study Report

No.	Date	Travel of Team Member	Station	Activities
1	2/15 (SUN)	SAKAMOTO, OGINO Travel from Tokyo to Jakarta	Jakarta	
2	16 (MON)	OTAKE joining Study Team	Jakarta	<ul style="list-style-type: none"> • Meeting at JICA Office • Courtesy call on Embassy of Japan • Explanation of Draft Basic Design Report at KIMPRASWIL
3	17 (TUE)		Jakarta	<ul style="list-style-type: none"> • Explanation of Draft Basic Design Report at CILCIS • Field Reconnaissance
4	18 (WED)		Jakarta	<ul style="list-style-type: none"> • Explanation of Draft Basic Design Report and Discussion on M/D at KIMPRASWIL • Field Reconnaissance
5	19 (THU)		Jakarta	<ul style="list-style-type: none"> • Signing M/D • Field Reconnaissance
6	20 (FRI)	SAKAMOTO, OGINO Travel from Jakarta	On board	<ul style="list-style-type: none"> • Report to JICA Office and Embassy of Japan • Field Reconnaissance
7	21 (SAT)	SAKAMOTO, OGINO Arrival to Tokyo		

Annex 3

List of Parties Concerned in the Recipient Country

Annex 3 List of Parties Concerned in the Recipient Country

State Ministry of National Development of Planning Agency (BAPPENAS)

Suyono Dikun Deputy Minister of Infrastructures

Ministry of Settlement and Regional Infrastructure (KIMPRASWIL)

Directorate General of Water Resources

M. Basoeki Hadimoeijo Director General

Directorate of Technical Guidance:

Sri Nurumi	Director
Tagor Pane	Chief of Monitoring Unit for Project Implementation Finance by Foreign Assistance
Gunto Nababan	Chief of River and Sabo Section
D. Parlaungan	Chief of Groundwater Section
Darwin Lubis	Chief of Planning and Strategy Section

Directorate of Water Resources for Central Region:

Warsito S.W.	Chief of Sub-directorate I
Bambang Hardiyatno	Chief of Program Section

Ciliwung-Cisadane River Basin Development Project:

Wahyu Hartomo	General Manager
Bambang Warsito	Manager of Planning
Tony S. Idris	Technical Assistant
Sunarso	Technical Assistant
Hasbi Abubakar	O&M Assistant

Ministry of Settlement and Regional Infrastructure (KIMPRASWIL)

Secretary General

Bureau of Planning and Foreign Cooperation

Adi Sarwoko	Head
Her Wiryanto	Chief of Program III and International Communication

Ministry of Settlement and Regional Infrastructure (KIMPRASWIL)

JICA Expert

Masahisa Yamaguchi	Wastewater and Sanitation Planning
Shunichi Maeda	Water Resources Policy

Public Works Department of DKI Jakarta (Dinas PU DKI Jakarta)

Wisnu S. Yusuf	Deputy Director, Drainage Management
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Embassy of Japan

Takashi Fukuwatari	First Secretary
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JICA Indonesia Office

Yuji Otake	Deputy Resident Representative
Tomoyuki Naito	Assistant Resident Representative

Annex 4

Minutes of Discussions

Annex 5

Other Relevant Data

- 5-1 78 Inundation Areas in DKI Jakarta
- 5-2 List of Pump Equipment Operated and Maintained by Ciliwung-Cisadane River Basin Development Project
- 5-3 Photos of Existing Pump Equipment
(Ciliwung-Cisadane River Basin Development Project)
- 5-4 Images for Operation of Existing Mobile Pump
- 5-5 Pump Drainage Plan
- 5-6 Installation of Handy Mobile Pump

Annex 5-1 78 Inundation Areas in DKI Jakarta

No.	Wilayah	Kecamatan	Kelurahan	Inundation Area	Major Cause		Requested at Application	Year 2002		Poverty District	Land Subsidence	Requested at B/D	Remarks
					River Flooding	Rainwater Inundation		Inundation (ha)	Depth (cm)				
1.	Jakarta Pusat	Menteng	Menteng	Matraman Dalam		●	●	45.50	70	●			
2.	Jakarta Pusat	Menteng	Gondangdia	Kalipasir, Kwitang		●	●	66.30	220	●			
3.	Jakarta Pusat	Tanah Abang	Kebon Kacang	Bunderan HI, Kb. Kacang, Tl. Betung		●	●	59.80	70	●			
4.	Jakarta Pusat	Tanah Abang	Bendungan Hilir	Pejompongngan /AL	●			36.40	120	●			
5.	Jakarta Pusat	Tanah Abang	Petamburan	Jatipinggir		●	●	24.70	200	●	●	○9	Jati Pinggir
6.	Jakarta Pusat	Sawah Besar	Mangga Dua Selatan	Mangga Dua		●	●	27.95	30	●	●		
7.	Jakarta Pusat	Sawah Besar	Karang Anyar	Karang Anyar		●	●	23.40	50	●	●	○8	Karang Anyar
8.	Jakarta Pusat	Kemayoran	Serdang	Serdang		●	●	35.75	60	●			
9.	Jakarta Pusat	Kemayoran	Gunung Sahari Utara	Gunung Sahari		●	●	24.05	30				
10.	Jakarta Pusat	Cempaka Putih	Cempaka Putih Timur	Cempaka Putih		●	●	63.05	50	●			
11.	Jakarta Utara	Penjaringan	Kamal	Kapuk Kamal		●	●	34.45	40		●		
12.	Jakarta Utara	Penjaringan	Kamal	Kapuk Kamal Sediatio		●	●	31.85	40		●		
13.	Jakarta Utara	Penjaringan	Kamal	Pantai Indah Kapuk		●	●	26.00	40		●		
14.	Jakarta Utara	Penjaringan	Pejagalan	Kapuk Muara, Teluk Gong, Muara Angke		●	●	266.50	100	●	●	○3	Teluk Gong
15.	Jakarta Utara	Penjaringan	Pluit & Penjaringan	Pluit		●	●	413.40	50	●	●	○4	Pluit
16.	Jakarta Utara	Pademangan	Pademangan Barat	Pademangan Barat		●	●	17.55	50				
17.	Jakarta Utara	Pademangan	Pademangan Timur	Pademangan Timur		●	●	35.75	30	●			
18.	Jakarta Utara	Tanjung Priok	Sunter Agung	Sunter Agung		●	●	54.60	30				
19.	Jakarta Utara	Tanjung Priok	Sunter Jaya	Sunter Jaya		●	●	93.60	35	●			
20.	Jakarta Utara	Tanjung Priok	Tanjung Priok	Lagoa Buntu		●	●	21.50	40	●	●	○1	Lagoa Buntu
21.	Jakarta Utara	Tanjung Priok	Kebon Bawang	Kebon Bawang		●	●	24.40	60	●			
22.	Jakarta Utara	Tanjung Priok	Sungai Bambu	Warakas		●	●	14.95	40	●			
23.	Jakarta Utara	Tanjung Priok	Sungai Bambu	Sungai Bambu		●	●	29.25	35				
24.	Jakarta Utara	Tanjung Priok	Papango	Papango		●	●	63.05	30				
25.	Jakarta Utara	Tanjung Priok	Sunter Jaya	Yos Sudarso		●	●	58.50	35				
26.	Jakarta Utara	Kelapa Gading	Kelapa Gading Barat	Sunter Timur, Kodamari		●	●	18.20	100	●	●		
27.	Jakarta Utara	Kelapa Gading	Kelapa Gading Timur	Perum Walkota Jakut		●	●	214.50	80	●	●		
28.	Jakarta Utara	Kelapa Gading	Kelapa Gading Timur	Kelapa Gading		●	●	124.80	80		●		
29.	Jakarta Utara	Koja	Rawa Badak	Rawa Badak, Tugu, Lagoa		●	●	234.00	100	●			
30.	Jakarta Utara	Koja	Semper Barat	Tugu Utara		●	●	45.50	50		●		
31.	Jakarta Utara	Cilincing	Semper Timur	Yon Angmor, Semper		●	●	132.60	95	●			
32.	Jakarta Utara	Cilincing	Semper Timur	Dewa Ruci, Dewa Kembang		●	●	85.80	95				
33.	Jakarta Utara	Cilincing	Rorotan	Rorotan, Babek Abri		●	●	45.50	25				
34.	Jakarta Barat	Kali Deres	Duri Kosambi	Rawa Buaya	●			22.10	150	●	●	○6	Rawa Buaya
35.	Jakarta Barat	Kali Deres	Tegal Alur	Duri Kosambi	●			96.20	80	●	●		
36.	Jakarta Barat	Kali Deres	Tegal Alur	Tegal Alur		●	●	24.70	80		●		
37.	Jakarta Barat	Cengkareng	Kedaung Kali Angke	Kapuk Kedaung, Poglari		●	●	37.70	160	●	●	○5	Kapuk Kedaung
38.	Jakarta Barat	Cengkareng	Kapuk	Cengkareng		●	●	111.80	125	●	●	○2	Cengkareng
39.	Jakarta Barat	Kembangan	Kembangan Utara	Kembangan, Green Garder		●	●	22.10	100		●		
40.	Jakarta Barat	Kembangan	Meruya Utara	Meruya		●	●	70.20	20				
41.	Jakarta Barat	Kembangan	Kedoya Utara	Pesing		●	●	37.70	100	●	●	○7	Pesing
42.	Jakarta Barat	Tambora	Duri Utara	Krendang, Duri Utara		●	●	18.20	30	●			
43.	Jakarta Barat	Tambora	Jerambar	Jerambar		●	●	58.50	30		●		
44.	Jakarta Barat	Pal Merah	Jati Pulo	Tanang Rawa Kepa		●	●	31.20	50		●		
45.	Jakarta Barat	Pal Merah	Jati Pulo	Jati Pulo		●	●	11.70	50	●			
46.	Jakarta Barat	Taman Sari	Pinangisia	Pinangisia		●	●	18.85	70	●	●		
47.	Jakarta Barat	Taman Sari	Mangga Besar	Mangga Besar		●	●	6.50	120	●	●		
48.	Jakarta Barat	Grogol Petamburan	Tanjung Duren Utara	Tanjung Duren		●	●	96.00	100		●		
49.	Jakarta Barat	Grogol Petamburan	Grogol	Grogol		●	●	9.10	100	●			
50.	Jakarta Barat	Kebon Jeruk	Sukabumi Utara	Sukabumi Utara		●	●	52.00	100				
51.	Jakarta Barat	Kebon Jeruk	Kelapa Dua	Kelapa Dua	●			35.10	150				
52.	Jakarta Barat	Kebon Jeruk	Duri Kepa	Duri Kepa		●	●	32.50	50		●		
53.	Jakarta Selatan	Pesanggrahan	Pondok Pinang	IKPN	●			55.90	170	●			
54.	Jakarta Selatan	Pesanggrahan	Pondok Pinang	Pondok Pinang	●			22.10	170				
55.	Jakarta Selatan	Cilandak	Lebak Bulus	Cireundeu Permai	●			29.90	50				
56.	Jakarta Selatan	Mampang Prapatan	Mampang	Kebalen, Mampang Prapatan	●			35.10	90	●			
57.	Jakarta Selatan	Mampang Prapatan	Mampang	Tegal Parang	●			18.20	90				
58.	Jakarta Selatan	Kebayoran Baru	Petogogan	Petogogan	●			68.25	120	●			
59.	Jakarta Selatan	Kebayoran Baru	Petogogan	Pondok Karya	●			20.80	120				
60.	Jakarta Selatan	Kebayoran Baru	Petogogan	Dama Jaya	●			10.40	120				
61.	Jakarta Selatan	Kebayoran Baru	Petogogan	Pulo Raya	●			19.50	120				
62.	Jakarta Selatan	Setia Budi	Sedia Budi	Sedia Budi Barat	●			3.00	60				
63.	Jakarta Selatan	Tebet	Kebon Baru	Bkt. Duri, Kb. Baru, Bidara Cina, Kp. Melayu	●			70.85	50				
64.	Jakarta Selatan	Pancoran	Pengadegan, Rawa Jati, Cawang	Pengadegan, Kalibata, Rawa Jati, Gang Atus	●			254.80	100	●			
65.	Jakarta Selatan	Kebayoran Rama	Cipulir	Cipulir, Ciledug Raya	●			51.35	70				
66.	Jakarta Timur	Pulo Gadung	Kayu Putih	ASMI, Perintis		●	●	64.35	150				
67.	Jakarta Timur	Pulo Gadung	Kayu Putih	Pulo Mas		●	●	65.00	150	●			
68.	Jakarta Timur	Pulo Gadung	Kayu Putih	Pulo Nangka		●	●	48.10	120	●			
69.	Jakarta Timur	Jatinegara	Rawa Bunga	Rawa Bunga		●	●	11.05	150				
70.	Jakarta Timur	Jatinegara	Cipinang Besar Selatan	Kebon Nanas		●	●	65.00	150	●			
71.	Jakarta Timur	Jatinegara	Cipinang Besar Utara	Cipinang Jaya	●			20.80	300				
72.	Jakarta Timur	Duren Sawit	Cipinang Muara	Cipinang Indah, Cipinang Muara, Cipinang Melayu	●			126.10	150				
73.	Jakarta Timur	Duren Sawit	Pondok Kelapa	Malaka Selatan, Pondok Kelapa	●			45.50	60				
74.	Jakarta Timur	Duren Sawit	Pondok Bambu	Buluh Perindu, Tegal Ambe	●			48.10	300	●			
75.	Jakarta Timur	Kampung Makasar	Halim Perdana Kusuma	Halim Perdana Kusuma	●			58.80	150				
76.	Jakarta Timur	Kramatjati	Kramatjati	Kramatjati	●			132.60	200				
77.	Jakarta Timur	Ciracas	Ciracas	Kampung Rambutan, Ciracas, Cibubur	●			124.80	300				
78.	Jakarta Timur	Cakung	Ujung Menteng	Ujung Menteng	●			29.25	75	●			

Annex 5-2

List of Pump Equipment Operated and Maintained by Ciliwung-Cisadane River Basin Development Project

Mobile Pump Unit

No.	Type	Diameter (inch)	Discharge (m3/min)	Rated Head (m)	Pump Output (kW)	Drive Method		Year Procured	Condition
						Engine (P.S.)	Generator (kVA)		
1	040	12	15	5	-	-	n/a	-	Fair
2	041	12	15	5	-	-	n/a	-	Repair Required
3	042	12	15	5	-	-	n/a	-	Repair Required
4	043	12	15	5	-	-	n/a	-	Repair Required
5	031	6	4.8	4	-	10.5	n/a	-	Repair Required
6	032	6	4.8	4	-	10.5	n/a	-	Fair
7	034	6	4.8	4	-	10.5	n/a	-	Fair
8	036	6	4.8	4	-	10.5	n/a	-	Repair Required
9	037	6	4.8	4	-	10.5	n/a	-	Repair Required
10	TR1, No.1	8	9	8	18kW/23hp	60	n/a	December 2002	Good
11	TR1, No.2	8	9	8	18kW/23hp	60	n/a	December 2002	Good
12	TR1, No.3	8	9	8	18kW/23hp	60	n/a	December 2002	Good
13	TR1, No.4	8	9	8	18kW/23hp	60	n/a	December 2002	Good
14	TR2, No.1	12	15	8	30kW/40hp	60	n/a	December 2002	Under Repair
15	TR2, No.2	12	15	8	30kW/40hp	60	n/a	December 2002	Under Repair
16	TR2, No.3	12	15	8	30kW/40hp	60	n/a	December 2002	Under Repair
17	TR2, No.4	12	15	8	30kW/40hp	60	n/a	December 2002	Under Repair
18	QR1, No.1	12	18	8	34kW/47hp	80	n/a	December 2002	Good
19	QR1, No.2	12	18	8	34kW/47hp	80	n/a	December 2002	Good
20	QR2	14	24	8.2	42kW	-	114	December 2002	Good

TR1: Trailer-type loading lateral axis pump driven by engine. Movable by double cabin pick-up truck to site. Starting operation automatically upon filling water into suction pipe by vacuum pump.

TR2: Same as above. Under repair by manufacturer due to leakage of cooling water into piston but expected to be operational by January 6, 2004.

QR1: Lateral axis pump driven by engine, loaded on 2-ton truck. Starting operation automatically upon filling water into suction pipe by

QR2: Submersible pump driven by generator, loaded on 2-ton truck with crane.

Mobile Pump Unit (Fixed Type)

No.	Type	Diameter (inch)	Discharge (m3/min)	Rated Head (m)	Pump Output (kW)	Drive Method		Year Procured	Condition
						Engine (P.S.)	Generator (kVA)		
1	Pompa P1, No.1	10	12	7.0	18kW/23hp	60hp	n/a	December 2002	Operating
2	Pompa P1, No.2	10	12	7.0	18kW/23hp	60hp	n/a	December 2002	Operating
2	Pompa P1, No.3	10	12	7.0	18kW/23hp	60hp	n/a	December 2002	Operating
3	Pompa P2, No.1	14	24	8.2	42kW/55hp	80hp	n/a	December 2002	Operating
4	Pompa P2, No.2	14	24	8.2	42kW/55hp	80hp	n/a	December 2002	Operating
5	Pompa P2, No.3	14	24	8.2	42kW/55hp	80hp	n/a	December 2002	Operating
6	Pompa P2, No.4	14	24	8.2	42kW/55hp	80hp	n/a	December 2002	Operating

P1, P2: Pump driven by engine, movable by truck to site. Starting operation automatically upon filling water into suction pipe by vacuum pump.



- : Data not available

n/a : Not applicable

**Annex 5-3 Photos of Existing Pump Equipment
(Ciliwung-Cisadane River Basin Development Project, 1/2)**

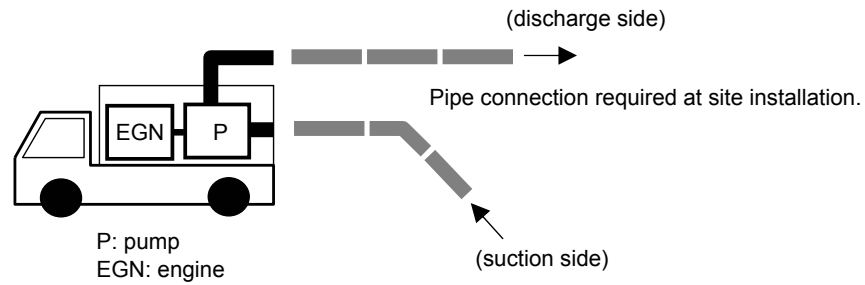
	<p>Type: P 1</p> <ul style="list-style-type: none"> • Q=200 L/s • H=7m • Pump driven by engine (18kW, 308kg) • Mobile pump (fixed type) • 3 nos. <p>Type: P 2</p> <ul style="list-style-type: none"> • Q=400 L/s • H=8.2m • Pump driven by engine (42kW, 333kg) • Mobile pump (fixed type) • 4 nos.
	<p>Type: TR 1</p> <ul style="list-style-type: none"> • Q=150 L/s • H=8m • Pump driven by engine (18kW, 254kg) • Mobile pump (trailer type) • 4 nos. <p>Type: TR 2</p> <ul style="list-style-type: none"> • Q=250 L/s • H=8m • Pump driven by engine (30kW, 358kg) • Mobile pump (trailer type) • 4 nos.
	<p>Type: QR 1</p> <ul style="list-style-type: none"> • Q=300 L/s • H=8m • Pump driven by engine (34kW, 333kg) • Mobile pump loaded on truck (100ps, 3,298cc) • 2 nos.
	<p>Type: QR 2</p> <ul style="list-style-type: none"> • Q=400 L/s • H=8.2m • Submergible pump (42kW, 1155kg) • Driven by generator (114kVA) • Crane (1 ton) • Loaded on truck (135ps, 4,214cc) • 1 no.

**Annex 5-3 Photos of Existing Pump Equipment
(Ciliwung-Cisadane River Basin Development Project, 2/2)**

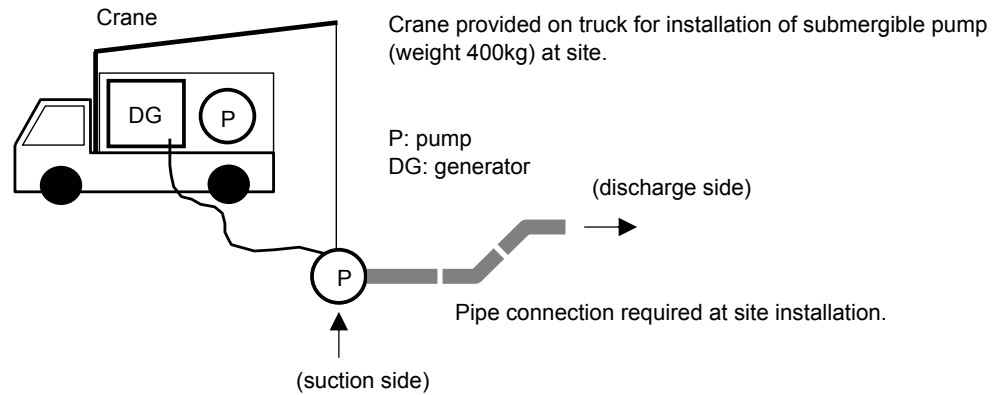
	<p>No. 031~037</p> <ul style="list-style-type: none">• Q=80 L/s• H=4m• Pump driven by engine (10.5 ps)• 6 nos.
	<p>No. 017~043</p> <ul style="list-style-type: none">• Q=250 L/s• H=5m• Pump driven by engine• 15 nos.

Annex 5-4 Images for Operation of Existing Mobile Pump (1/2)

Mobile Pump (axial flow pump,loaded on truck)

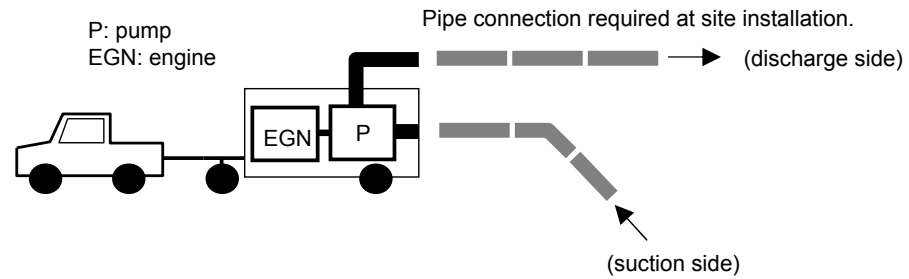


Mobile Pump (submergible pump,loaded on truck)

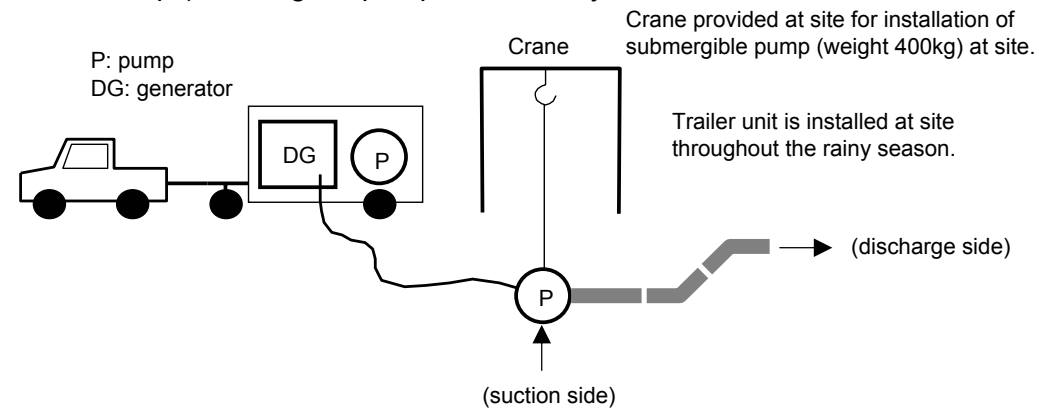


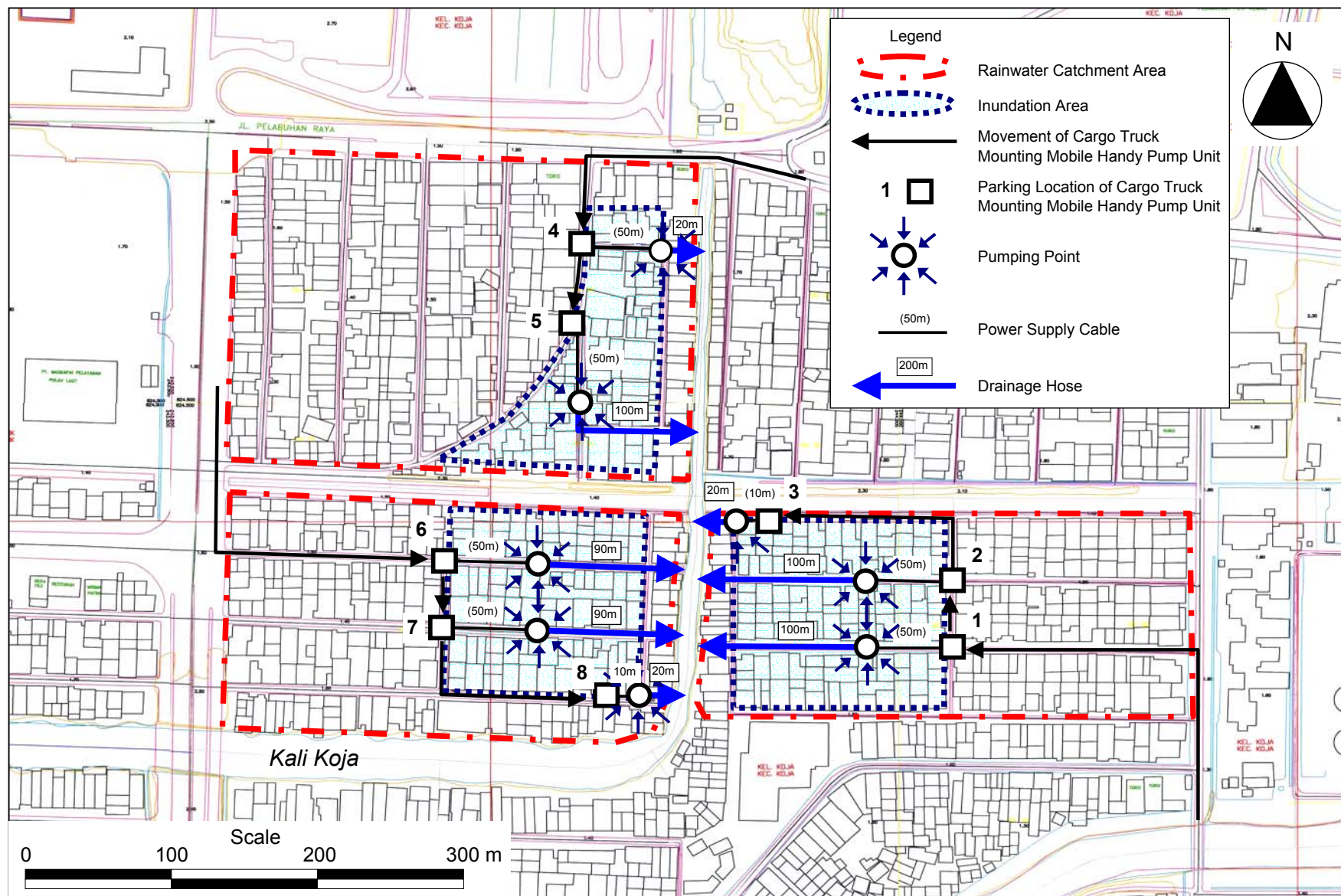
Annex 5-4 Images for Operation of Existing Mobile Pump (2/2)

Mobile Pump (axial flow pump, movable by trailer)

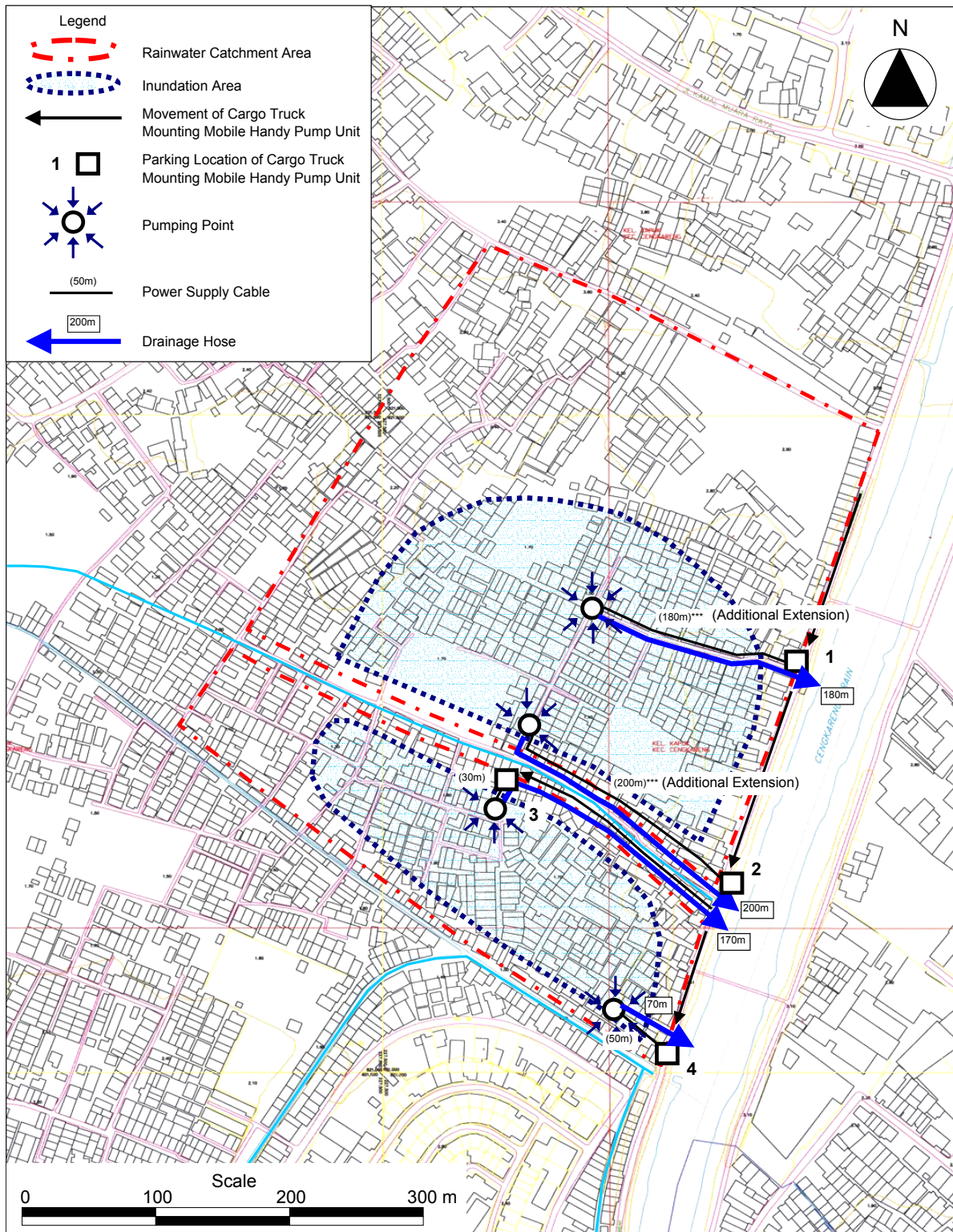


Mobile Pump (submersible pump, movable by trailer)

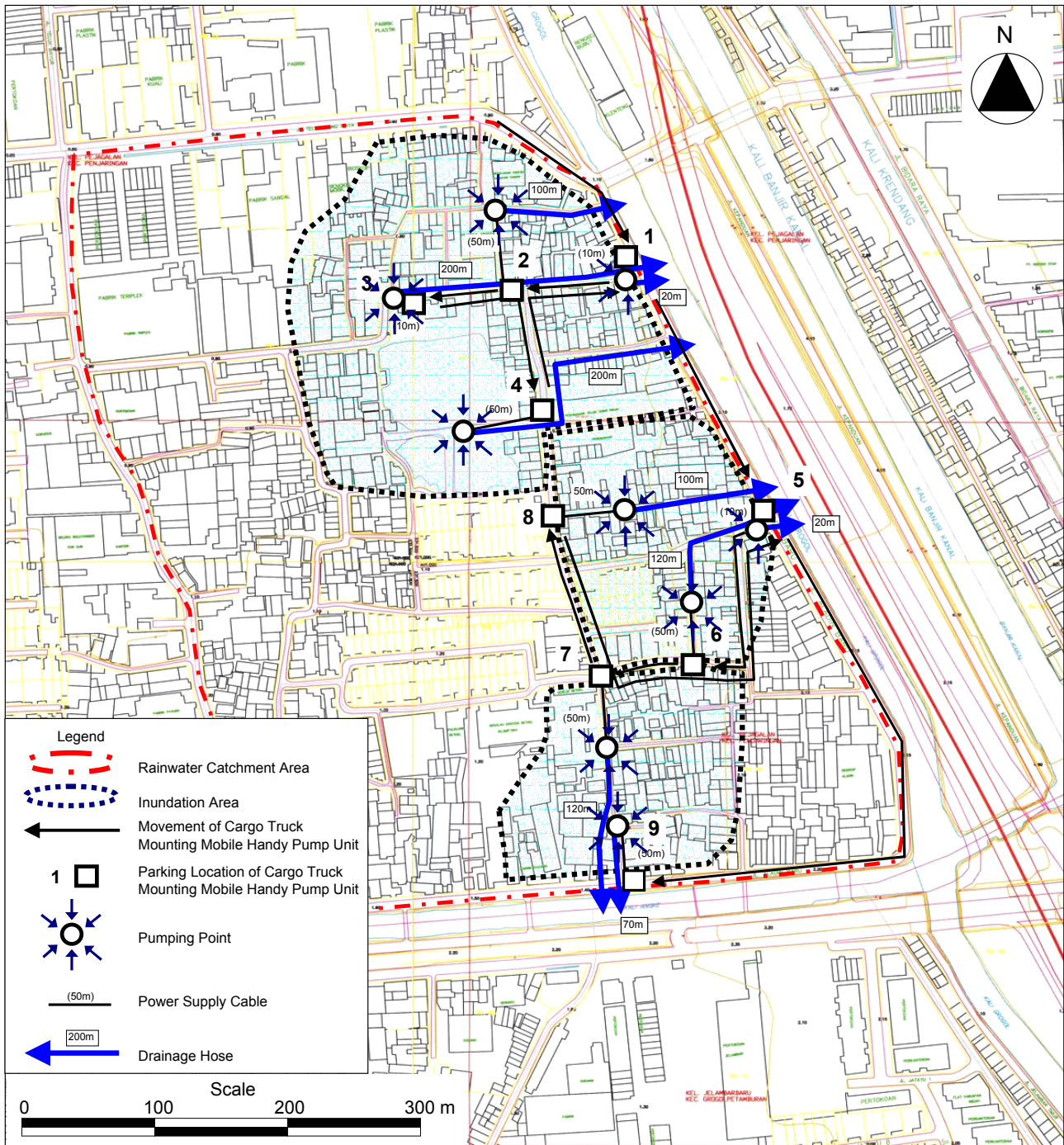




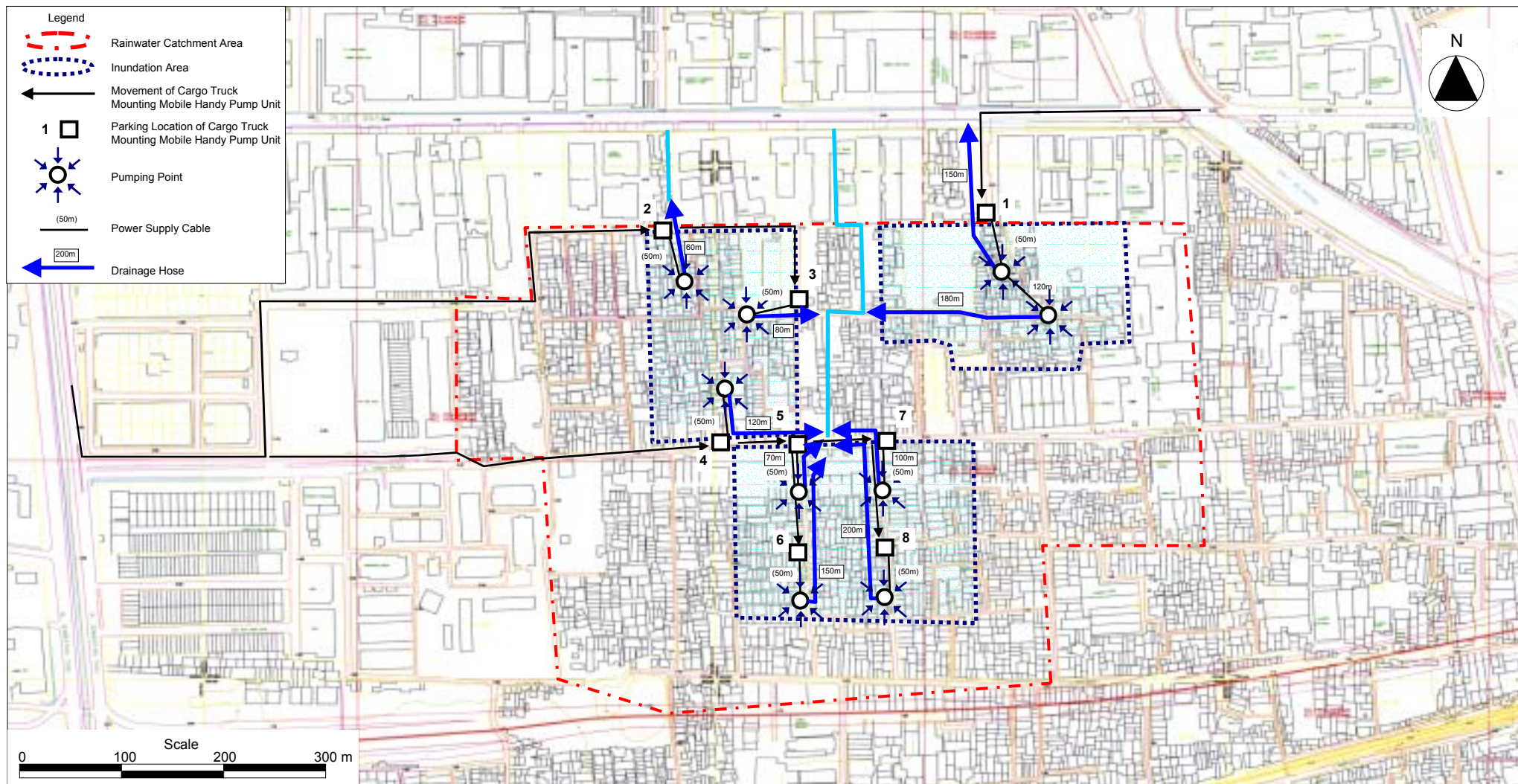
Annex 5-5-1 Pump Drainage Plan (Area 1: Lagoa Buntu)



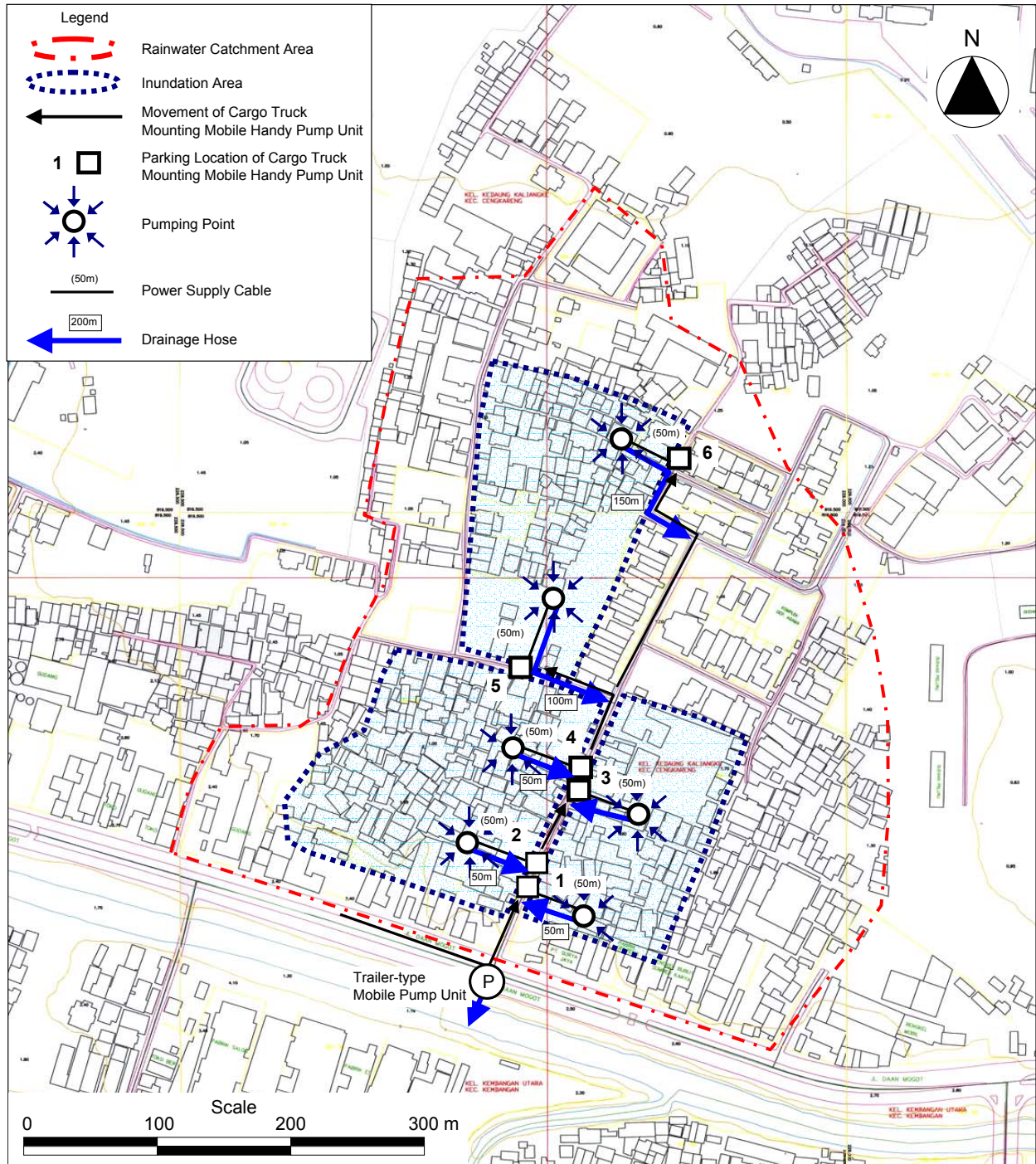
Annex 5-5-2 Pump Drainage Plan (Area 2: Cengkareng)



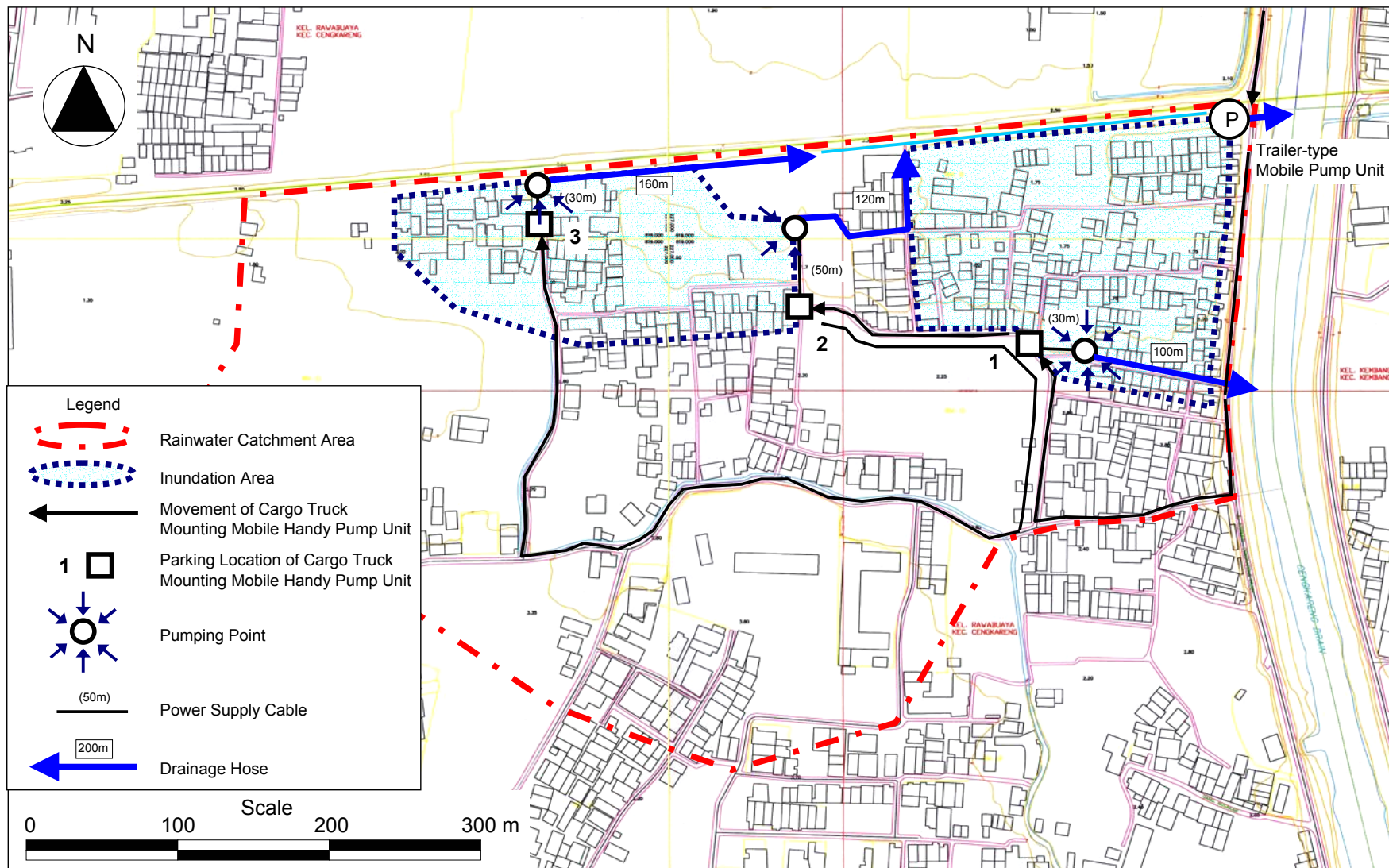
Annex 5-5-3 Pump Drainage Plan (Area 3: Teluk Gong)



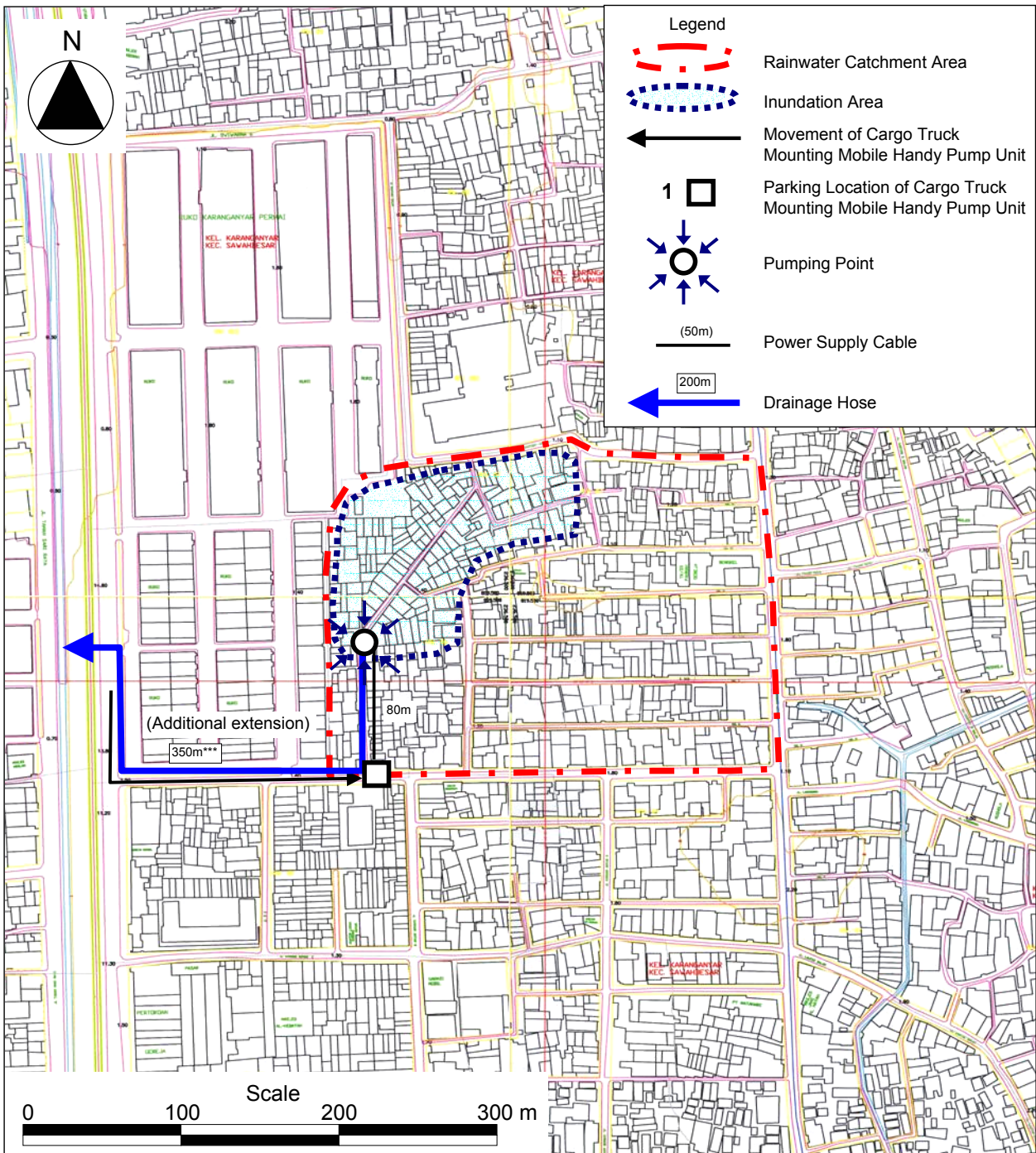
Annex 5-5-4 Pump Drainage Plan (Area 4: Pluit)



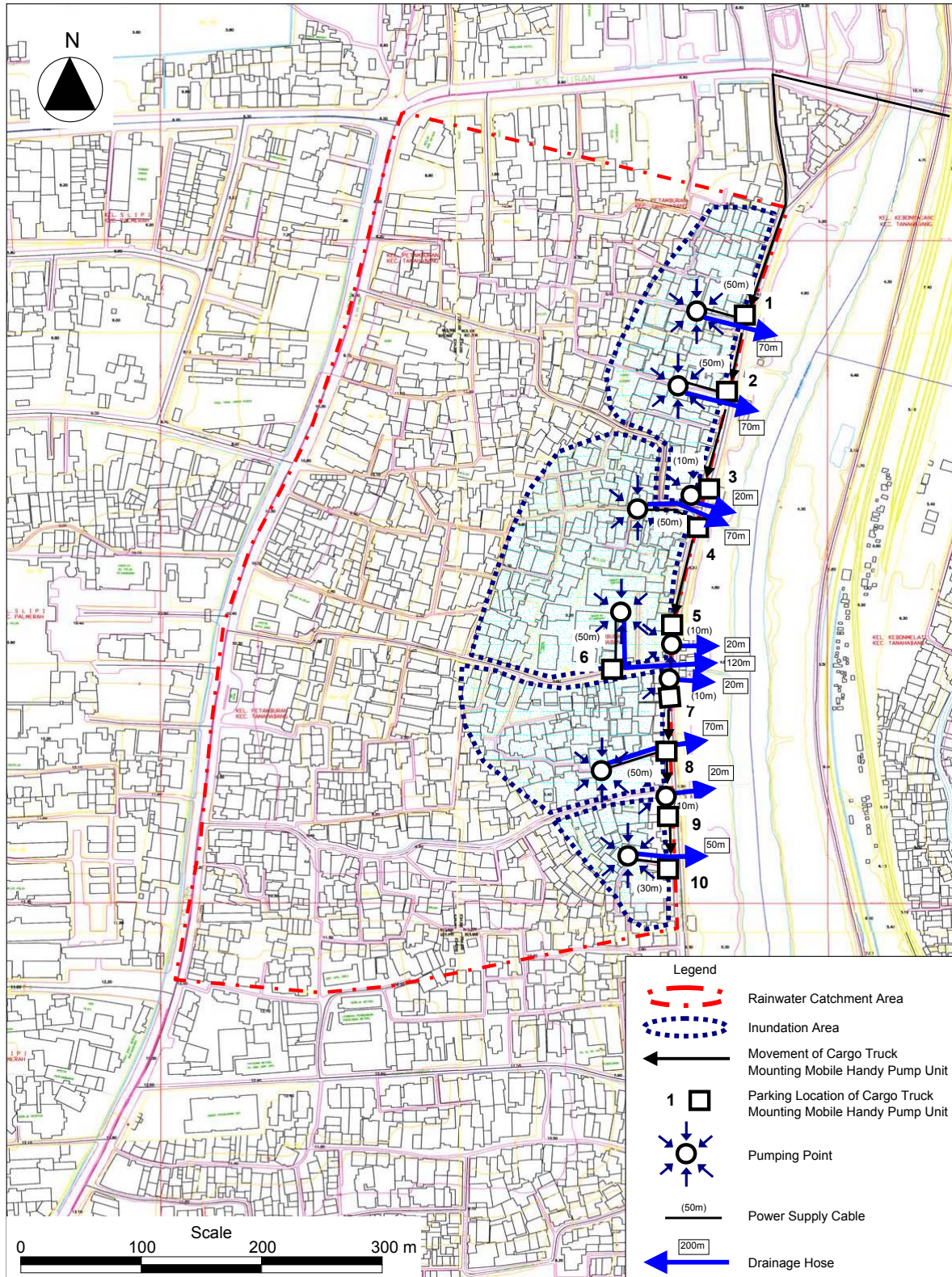
Annex 5-5-5 Pump Drainage Plan (Area 5: Kapuk Kedaung)



Annex 5-5-6 Pump Drainage Plan (Area 6: Rawa Buaya)



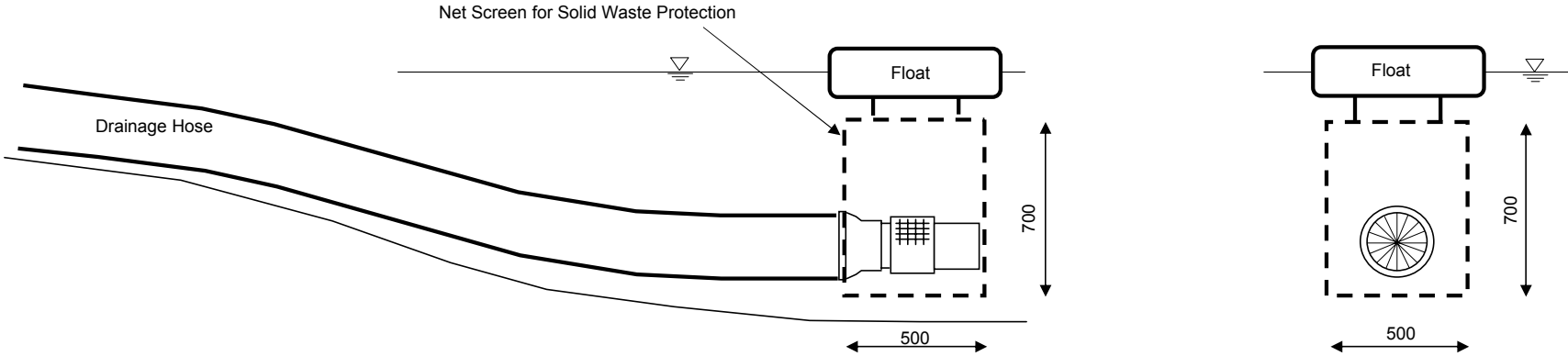
Annex 5-5-8 Pump Drainage Plan (Area No.8: Karang Anyar)



Annex 5-5-9 Pump Drainage Plan (Area No.9: Jati Pinggir)

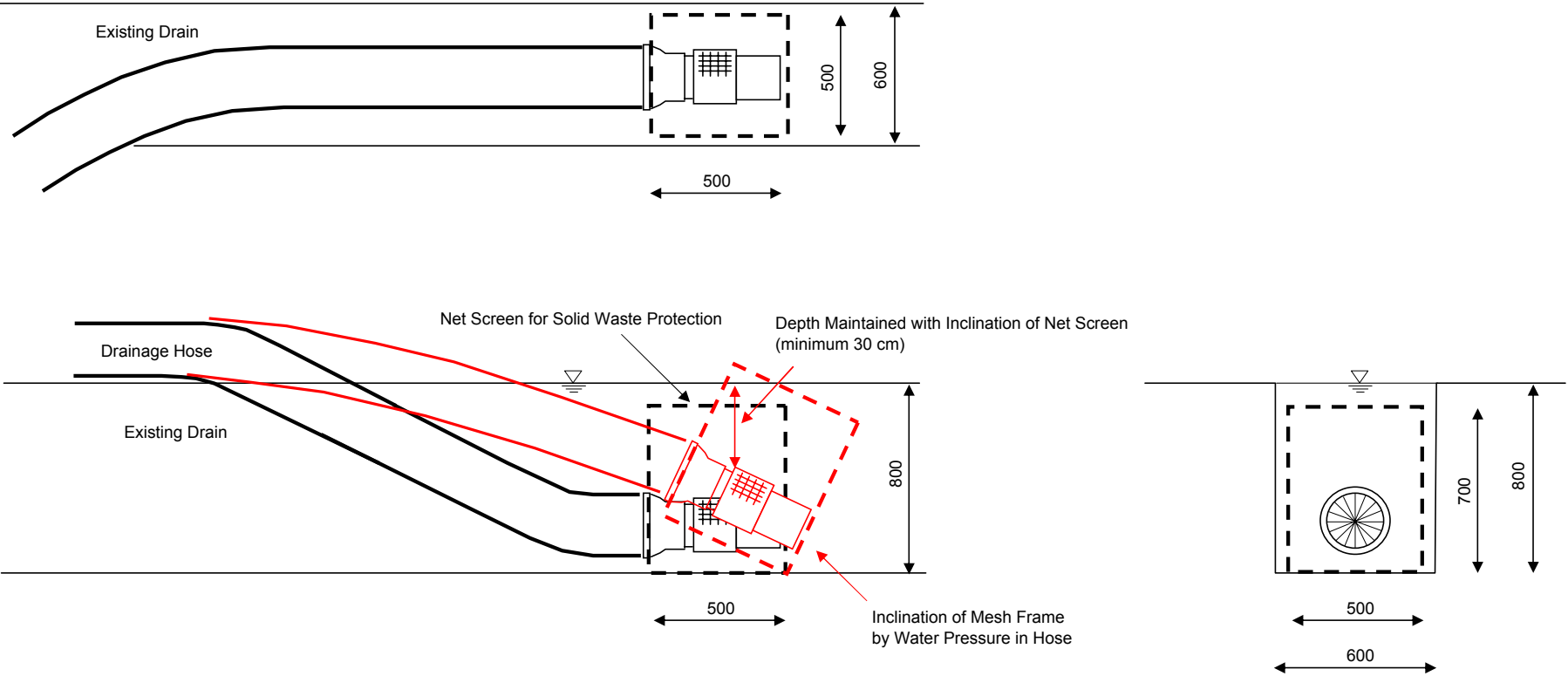
Annex 5-6 Installation of Handy Mobile Pump (1/3)

For Deep Inundation



Annex 5-6 Installation of Handy Mobile Pump (2/3)

Use of Existing Drain (for shallow inundation)



Annex 5-6 Installation of Handy Mobile Pump (3/3)

Use of Suction Pit (for shallow inundation)

