REPUBLIC OF KENYA

ATHI WATER WORKS DEVELOPMENT AGENCY

CKE 1135

NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

CONTRACT No: AWWDA/AFD/NWSP/W-03/2023

ISSUED ON: 28TH MAY 2024

BIDDING DOCUMENT VOLUME IV - ENGINEERING DRAWINGS

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CKE 1135 NAIROBI WATER AND SANITATION PROJECT
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT
SCHEDULE OF ENGINEERING DRAWINGS

DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL		DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL
		General Layout Plans				**Layout Plans & Pipe Fittings**		
6000023-HH-GL-DR-W-001		Proposed Construction Methodology - General Layout Sheet 1			6000023-HH-LP-DR-W-019	Eastleigh	Pipelines Layout Plan - Sheet 19	Priority 3
6000023-HH-GL-DR-W-002		Proposed Pipeline Sizes - General Layout Sheet 1			6000023-HH-FT-DR-W-019A	Eastleigh	Pipelines Fittings - Sheet 19A	Priority 3
6000023-HH-GL-DR-W-003		Sheet Index Map - General Layout Sheet 1			6000023-HH-LP-DR-W-020	Eastleigh	Pipelines Layout Plan - Sheet 20	Priority 3
6000023-HH-GL-DR-W-004		Rehabilitation Pipeline Material - General Layout Sheet 1			6000023-HH-FT-DR-W-020A	Eastleigh	Pipelines Fittings - Sheet 20A	Priority 3
					6000023-HH-LP-DR-W-021	Eastleigh	Pipelines Layout Plan - Sheet 21	Priority 3
		Layout Plans & Pipe Fittings			6000023-HH-FT-DR-W-021A	Eastleigh	Pipelines Fittings - Sheet 21A	Priority 3
6000023-HH-LP-DR-W-001	Pangani	Pipelines Layout Plan - Sheet 1	Priority 3		6000023-HH-LP-DR-W-022	Eastleigh	Pipelines Layout Plan - Sheet 22	Priority 3
6000023-HH-FT-DR-W-001A	Pangani	Pipeline Fittings - Sheet 1A	Priority 3		6000023-HH-FT-DR-W-022A	Eastleigh	Pipelines Fittings - Sheet 22A	Priority 3
6000023-HH-LP-DR-W-002	Pangani	Pipelines Layout Plan - Sheet 2	Priority 3		6000023-HH-LP-DR-W-023	Eastleigh	Pipelines Layout Plan - Sheet 23	Priority 3
6000023-HH-FT-DR-W-002A	Pangani	Pipeline Fittings - Sheet 2A	Priority 3		6000023-HH-FT-DR-W-023A	Eastleigh	Pipelines Fittings - Sheet 23A	Priority 3
6000023-HH-LP-DR-W-003	Pangani	Pipelines Layout Plan - Sheet 3	Priority 3		6000023-HH-LP-DR-W-024	Eastleigh	Pipelines Layout Plan - Sheet 24	Priority 3
6000023-HH-FT-DR-W-003A	Pangani	Pipeline Fittings - Sheet 3A	Priority 3		6000023-HH-FT-DR-W-024A	Eastleigh	Pipelines Fittings - Sheet 24A	Priority 3
6000023-HH-LP-DR-W-004	Pangani	Pipelines Layout Plan - Sheet 4	Priority 3		6000023-HH-LP-DR-W-025	Ngara E/W	Pipelines Layout Plan - Sheet 25	Priority 2
6000023-HH-FT-DR-W-004A	Pangani	Pipelines Fittings - Sheet 4A	Priority 3		6000023-HH-FT-DR-W-025A	Ngara E/W	Pipelines Fittings - Sheet 25A	Priority 2
6000023-HH-LP-DR-W-005	Pangani	Pipelines Layout Plan - Sheet 5	Priority 3		6000023-HH-LP-DR-W-026	Ngara E/W,Pangani	Pipelines Layout Plan - Sheet 26	Priority 3
6000023-HH-LP-DR-W-006	Pangani	Pipelines Layout Plan - Sheet 6	Priority 3		6000023-HH-FT-DR-W-026A	Ngara E/W,Pangani	Pipelines Fittings - Sheet 26A	Priority 3
6000023-HH-FT-DR-W-006A	Pangani	Pipelines Fittings - Sheet 6A	Priority 3		6000023-HH-FT-DR-W-026B	Ngara E/W,Pangani	Pipelines Fittings - Sheet 26B	Priority 3
6000023-HH-LP-DR-W-007	Pangani	Pipelines Layout Plan - Sheet 7	Priority 3		6000023-HH-LP-DR-W-027	Ngara E/W,Eastleigh	Pipelines Layout Plan - Sheet 27	Priority 2
6000023-HH-FT-DR-W-007A	Pangani	Pipelines Fittings - Sheet 7A	Priority 3		6000023-HH-FT-DR-W-027A	Ngara E/W,Eastleigh	Pipelines Fittings - Sheet 27A	Priority 2
6000023-HH-LP-DR-W-008	Pangani	Pipelines Layout Plan - Sheet 8	Priority 3		6000023-HH-LP-DR-W-028	Pangani	Pipelines Layout Plan - Sheet 28	Priority 3
6000023-HH-FT-DR-W-008A	Pangani	Pipelines Fittings - Sheet 8A	Priority 3		6000023-HH-FT-DR-W-028A	Pangani	Pipelines Fittings - Sheet 28A	Priority 3
6000023-HH-LP-DR-W-009	Pangani	PPipelines Layout Plan - Sheet 9	Priority 3		6000023-HH-FT-DR-W-028B	Pangani	Pipelines Fittings - Sheet 28B	Priority 3
6000023-HH-FT-DR-W-009A	Pangani	Pipelines Fittings - Sheet 9A	Priority 3		6000023-HH-FT-DR-W-028C	Pangani	Pipelines Fittings - Sheet 28C	Priority 3
6000023-HH-LP-DR-W-010	Pangani	Pipelines Layout Plan - Sheet 10	Priority 3		6000023-HH-LP-DR-W-029	Eastleigh, Pangani	Pipelines Layout Plan - Sheet 29	Priority 2
6000023-HH-FT-DR-W-010A	Pangani	Pipelines Fittings - Sheet 10A	Priority 3		6000023-HH-FT-DR-W-029A	Eastleigh, Pangani	Pipelines Fittings - Sheet 29A	Priority 2
6000023-HH-LP-DR-W-011	Pangani	Pipelines Layout Plan - Sheet 11	Priority 3		6000023-HH-FT-DR-W-029B	Eastleigh, Pangani	Pipelines Fittings - Sheet 29B	Priority 2
6000023-HH-FT-DR-W-011A	Pangani	Pipelines Fittings - Sheet 11A	Priority 3		6000023-HH-FT-DR-W-029C	Eastleigh, Pangani	Pipelines Fittings - Sheet 29C	Priority 2
6000023-HH-LP-DR-W-012	Pangani	Pipelines Layout Plan - Sheet 12	Priority 3		6000023-HH-LP-DR-W-030	Eastleigh	Pipelines Layout Plan - Sheet 30	Priority 2
6000023-HH-LP-DR-W-013	Pangani	Pipelines Layout Plan - Sheet 13	Priority 3		6000023-HH-FT-DR-W-030A	Eastleigh	Pipelines Fittings - Sheet 30A	Priority 2
6000023-HH-LP-DR-W-014	Pangani	Pipelines Layout Plan - Sheet 14	Priority 3		6000023-HH-LP-DR-W-031	Ngara E/W	Pipelines Layout Plan - Sheet 31	Priority 2
6000023-HH-LP-DR-W-015	Pangani	Pipelines Layout Plan - Sheet 15	Priority 3		6000023-HH-FT-DR-W-031A	Ngara E/W	Pipelines Fittings - Sheet 31A	Priority 2
6000023-HH-FT-DR-W-015A	Pangani	Pipelines Fittings - Sheet 15A	Priority 3		6000023-HH-LP-DR-W-032	Pangani	Pipelines Layout Plan - Sheet 32	Priority 3
6000023-HH-LP-DR-W-016	Eastleigh/ Pangani /Ngara E/W	Pipelines Layout Plan - Sheet 16	Priority 3		6000023-HH-FT-DR-W-032A	Pangani	Pipelines Fittings - Sheet 32A	Priority 3
6000023-HH-FT-DR-W-016A	Eastleigh/ Pangani /Ngara E/W	Pipelines Fittings - Sheet 16A	Priority 3		6000023-HH-LP-DR-W-033	Pangani	Pipelines Layout Plan - Sheet 33	Priority 3
6000023-HH-FT-DR-W-016B	Eastleigh/ Pangani /Ngara E/W	Pipelines Fittings - Sheet 16B	Priority 3		6000023-HH-FT-DR-W-033A	Pangani	Pipelines Fittings - Sheet 33A	Priority 3
6000023-HH-FT-DR-W-016C	Eastleigh/ Pangani /Ngara E/W	Pipelines Fittings - Sheet 16C	Priority 3		6000023-HH-LP-DR-W-034	Eastleigh, Pangani	Pipelines Layout Plan - Sheet 34	Priority 2
6000023-HH-LP-DR-W-017	Eastleigh/ Pangani	Pipelines Layout Plan - Sheet 17	Priority 3		6000023-HH-FT-DR-W-034A	Eastleigh, Pangani	Pipelines Fittings - Sheet 34A	Priority 2
6000023-HH-FT-DR-W-017A	Eastleigh/ Pangani	Pipelines Fittings - Sheet 17A	Priority 3		6000023-HH-FT-DR-W-034B	Eastleigh, Pangani	Pipelines Fittings - Sheet 34B	Priority 2
6000023-HH-FT-DR-W-017B	Eastleigh/ Pangani	Pipelines Fittings - Sheet 17B	Priority 3		6000023-HH-LP-DR-W-035	Eastleigh	Pipelines Layout Plan - Sheet 35	Priority 2
6000023-HH-FT-DR-W-017C	Eastleigh/ Pangani	Pipelines Fittings - Sheet 17C	Priority 3		6000023-HH-FT-DR-W-035A	Eastleigh	Pipelines Fittings - Sheet 35A	Priority 2
6000023-HH-LP-DR-W-018	Eastleigh	Pipelines Layout Plan - Sheet 18	Priority 2		6000023-HH-LP-DR-W-036	Ngara E/W	Pipelines Layout Plan - Sheet 36	Priority 2
6000023-HH-FT-DR-W-018A	Eastleigh	Pipelines Fittings - Sheet 18A	Priority 2		6000023-HH-FT-DR-W-036A	Ngara E/W	Pipelines Fittings - Sheet 36A	Priority 2
6000023-HH-FT-DR-W-018B	Eastleigh	Pipelines Fittings - Sheet 18B	Priority 2					

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SCHEDULE OF ENGINEERING DRAWINGS

DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL		DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL
		Layout Plans & Pipe Fittings					Layout Plans & Pipe Fittings	
6000023-HH-LP-DR-W-037	Ngara E/W	Pipelines Layout Plan - Sheet 37	Priority 2		6000023-HH-LP-DR-W-053	Eastleigh, Jogoo Rd	Pipelines Layout Plan - Sheet 53	Priority 2
6000023-HH-FT-DR-W-037A	Ngara E/W	Pipelines Fittings - Sheet 37A	Priority 2		6000023-HH-FT-DR-W-053A	Eastleigh, Jogoo Rd	Pipelines - Pipe Fittings - Sheet 53A	Priority 2
6000023-HH-FT-DR-W-037B	Ngara E/W	Pipelines Fittings - Sheet 37B	Priority 2		6000023-HH-LP-DR-W-054	Jogoo Rd	Pipelines Layout Plan - Sheet 54	Priority 2
6000023-HH-LP-DR-W-038	Ngara E/W	Pipelines Layout Plan - Sheet 38	Priority 2		6000023-HH-FT-DR-W-054A	Jogoo Rd	Pipelines Fittings - Sheet 54A	Priority 2
6000023-HH-FT-DR-W-038A	Ngara E/W	Pipelines Fittings - Sheet 38A	Priority 2		6000023-HH-LP-DR-W-055	Jogoo Rd	Pipelines Layout Plan - Sheet 55	Priority 2
6000023-HH-LP-DR-W-039	Ngara E/W	Pipelines Layout Plan - Sheet 39	Priority 2		6000023-HH-FT-DR-W-055A	Jogoo Rd	Pipelines Fittings - Sheet 55A	Priority 2
6000023-HH-FT-DR-W-039A	Ngara E/W	Pipelines Fittings - Sheet 39A	Priority 2		6000023-HH-LP-DR-W-056	CBD	Pipelines Layout Plan - Sheet 56	Priority 1
6000023-HH-LP-DR-W-040	Ngara E/W	Pipelines Layout Plan - Sheet 40	Priority 2		6000023-HH-FT-DR-W-056A	CBD	Pipelines Fittings - Sheet 56A	Priority 1
6000023-HH-FT-DR-W-040A	Ngara E/W	Pipelines Fittings - Sheet 40A	Priority 2		6000023-HH-LP-DR-W-057	CBD	Pipelines Layout Plan - Sheet 57	Priority 1
6000023-HH-LP-DR-W-041	CBD	Pipelines Layout Plan - Sheet 41	Priority 1		6000023-HH-FT-DR-W-057A	CBD	Pipelines Fittings - Sheet 57A	Priority 1
6000023-HH-FT-DR-W-041A	CBD	Pipelines Fittings - Sheet 41A	Priority 1		6000023-HH-LP-DR-W-058	CBD	Pipelines Layout Plan - Sheet 58	Priority 1
6000023-HH-FT-DR-W-041B	CBD	Pipelines Fittings - Sheet 41B	Priority 1		6000023-HH-LP-DR-W-059	Central Industrial Area	Pipelines Layout Plan - Sheet 59	Priority 1
6000023-HH-LP-DR-W-042	CBD	Pipelines Layout Plan - Sheet 42	Priority 1		6000023-HH-FT-DR-W-059A	Central Industrial Area	Pipelines Fittings - Sheet 59A	Priority 1
6000023-HH-FT-DR-W-042A	CBD	Pipelines Fittings - Sheet 42A	Priority 1		6000023-HH-LP-DR-W-060	Central Industrial Area, Jogoo Rd	Pipelines Layout Plan - Sheet 60	Priority 1
6000023-HH-FT-DR-W-042B	CBD	Pipelines Fittings - Sheet 42B	Priority 1		6000023-HH-FT-DR-W-060A	Central Industrial Area, Jogoo Rd	Pipelines Fittings - Sheet 60A	Priority 1
6000023-HH-FT-DR-W-042C	CBD	Pipelines Fittings - Sheet 42C	Priority 1		6000023-HH-FT-DR-W-060B	Central Industrial Area, Jogoo Rd	Pipelines Fittings - Sheet 60B	Priority 1
6000023-HH-LP-DR-W-043	CBD	Pipelines Layout Plan - Sheet 43	Priority 1		6000023-HH-LP-DR-W-061	Central Industrial Area, Jogoo Rd	Pipelines Layout Plan - Sheet 61	Priority 2
6000023-HH-FT-DR-W-043A	CBD	Pipelines Fittings - Sheet 43A	Priority 1		6000023-HH-FT-DR-W-061A	Central Industrial Area, Jogoo Rd	Pipelines Fittings - Sheet 61A	Priority 2
6000023-HH-LP-DR-W-044	Eastleigh	Pipelines Layout Plan - Sheet 44	Priority 2		6000023-HH-LP-DR-W-062	Eastleigh, Jogoo Rd	Pipelines Layout Plan - Sheet 62	Priority 2
6000023-HH-FT-DR-W-044A	Eastleigh	Pipelines Fittings - Sheet 44A	Priority 2		6000023-HH-FT-DR-W-062A	Eastleigh, Jogoo Rd	Pipelines Fittings - Sheet 62A	Priority 2
6000023-HH-LP-DR-W-045	Eastleigh, Pangani	Pipelines Layout Plan - Sheet 45	Priority 2		6000023-HH-LP-DR-W-063	Jogoo Rd	Pipelines Layout Plan - Sheet 63	Priority 2
6000023-HH-FT-DR-W-045A	Eastleigh, Pangani	Pipelines Fittings - Sheet 45A	Priority 2		6000023-HH-FT-DR-W-063A	Jogoo Rd	Pipelines Fittings - Sheet 63A	Priority 2
6000023-HH-FT-DR-W-045B	Eastleigh, Pangani	Pipelines Fittings - Sheet 45B	Priority 2		6000023-HH-LP-DR-W-064	Jogoo Rd	Pipelines Layout Plan - Sheet 64	Priority 2
6000023-HH-FT-DR-W-045C	Eastleigh, Pangani	Pipelines Fittings - Sheet 45C	Priority 2		6000023-HH-FT-DR-W-064A	Jogoo Rd	Pipelines Fittings - Sheet 64A	Priority 2
6000023-HH-LP-DR-W-046	Eastleigh	Pipelines Layout Plan - Sheet 46	Priority 2		6000023-HH-LP-DR-W-065	Central Industrial Area	Pipelines Layout Plan - Sheet 65	Priority 1
6000023-HH-FT-DR-W-046A	Eastleigh	Pipelines Fittings - Sheet 46A	Priority 2		6000023-HH-FT-DR-W-065A	Central Industrial Area	Pipelines Fittings - Sheet 65A	Priority 1
6000023-HH-FT-DR-W-046B	Eastleigh	Pipelines Fittings - Sheet 46B	Priority 2		6000023-HH-LP-DR-W-066	Central Industrial Area	Pipelines Layout Plan - Sheet 66	Priority 1
6000023-HH-LP-DR-W-047	CBD	Pipelines Layout Plan - Sheet 47	Priority 1		6000023-HH-FT-DR-W-066A	Central Industrial Area	Pipelines Fittings - Sheet 66A	Priority 1
6000023-HH-FT-DR-W-047A	CBD	Pipelines Fittings - Sheet 47A	Priority 1		6000023-HH-LP-DR-W-067	Central Industrial Area	Pipelines Layout Plan - Sheet 67	Priority 1
6000023-HH-LP-DR-W-048	CBD	Pipelines Layout Plan - Sheet 48	Priority 1		6000023-HH-FT-DR-W-067A	Central Industrial Area	Pipelines Fittings - Sheet 67A	Priority 1
6000023-HH-FT-DR-W-048A	CBD	Pipelines Fittings - Sheet 48A	Priority 1		6000023-HH-FT-DR-W-067B	Central Industrial Area	Pipelines Fittings - Sheet 67B	Priority 1
6000023-HH-FT-DR-W-048B	CBD	Pipelines Fittings - Sheet 48B	Priority 1		6000023-HH-LP-DR-W-068	Central Industrial Area	Pipelines Layout Plan - Sheet 68	Priority 1
6000023-HH-FT-DR-W-048C	CBD	Pipelines Fittings - Sheet 48C	Priority 1		6000023-HH-FT-DR-W-068A	Central Industrial Area	Pipelines Fittings - Sheet 68A	Priority 1
6000023-HH-LP-DR-W-049	CBD, Eastleigh	Pipelines Layout Plan - Sheet 49	Priority 1		6000023-HH-LP-DR-W-069	Eastern Industrial Area	Pipelines Layout Plan - Sheet 69	Priority 3
6000023-HH-FT-DR-W-049A	CBD, Eastleigh	Pipelines Fittings - Sheet 49A	Priority 1		6000023-HH-FT-DR-W-069A	Eastern Industrial Area	Pipelines Fittings - Sheet 69A	Priority 3
6000023-HH-FT-DR-W-049B	CBD, Eastleigh	Pipelines Fittings - Sheet 49B	Priority 1		6000023-HH-LP-DR-W-070	Eastern Industrial Area, Jogoo Rd	Pipelines Layout Plan - Sheet 70	Priority 2
6000023-HH-LP-DR-W-050	CBD	Pipelines Layout Plan - Sheet 50	Priority 1		6000023-HH-FT-DR-W-070A	Eastern Industrial Area, Jogoo Rd	Pipelines Fittings - Sheet 70A	Priority 2
6000023-HH-FT-DR-W-050A	CBD	Pipelines Fittings - Sheet 50A	Priority 1		6000023-HH-LP-DR-W-071	Eastern Industrial Area, Jogoo Rd	Pipelines Layout Plan - Sheet 71	Priority 2
6000023-HH-LP-DR-W-051	Eastleigh	Pipelines Layout Plan - Sheet 51	Priority 2		6000023-HH-FT-DR-W-071A	Eastern Industrial Area, Jogoo Rd	Pipelines Fittings - Sheet 71A	Priority 2
6000023-HH-FT-DR-W-051A	Eastleigh	Pipelines Fittings - Sheet 51A	Priority 2		6000023-HH-LP-DR-W-072	Jogoo Rd	Pipelines Layout Plan - Sheet 72	Priority 2
6000023-HH-LP-DR-W-052	Eastleigh	Pipelines Layout Plan - Sheet 52	Priority 2		6000023-HH-FT-DR-W-072A	Jogoo Rd	Pipelines Fittings - Sheet 72A	Priority 2
6000023-HH-FT-DR-W-052A	Eastleigh	Pipelines Fittings - Sheet 52A	Priority 2					

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DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL		DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL
		Layout Plans & Pipe Fittings					**Layout Plans & Pipe Fittings**	
6000023-HH-LP-DR-W-073	Jogoo Rd	Pipelines Layout Plan - Sheet 73	Priority 2		6000023-HH-LP-DR-W-092	Eastern Industrial Area	Pipelines Layout Plan - Sheet 92	Priority 3
6000023-HH-FT-DR-W-073A	Jogoo Rd	Pipelines Fittings - Sheet 73A	Priority 2		6000023-HH-FT-DR-W-092A	Eastern Industrial Area	Pipelines Fittings - Sheet 92A	Priority 3
6000023-HH-LP-DR-W-074	Central Industrial Area	Pipelines Layout Plan - Sheet 74	Priority 1		6000023-HH-LP-DR-W-093	South C	Pipelines Layout Plan - Sheet 93	Priority 3
6000023-HH-FT-DR-W-074A	Central Industrial Area	Pipelines Fittings - Sheet 74A	Priority 1		6000023-HH-FT-DR-W-093A	South C	Pipelines Fittings - Sheet 93A	Priority 3
6000023-HH-LP-DR-W-075	Central Industrial Area	Pipelines Layout Plan - Sheet 75	Priority 1		6000023-HH-LP-DR-W-094	South C	Pipelines Layout Plan - Sheet 94	Priority 3
6000023-HH-FT-DR-W-075A	Central Industrial Area	Pipelines Fittings - Sheet 75A	Priority 1		6000023-HH-FT-DR-W-094A	South C	Pipelines Fittings - Sheet 94A	Priority 3
6000023-HH-FT-DR-W-075B	Central Industrial Area	Pipelines Fittings - Sheet 75B	Priority 1		6000023-HH-LP-DR-W-095	Central Industrial Area, South C	Pipelines Layout Plan - Sheet 95	Priority 1
6000023-HH-LP-DR-W-076	Central Industrial Area	Pipelines Layout Plan - Sheet 76	Priority 1		6000023-HH-FT-DR-W-095A	Central Industrial Area, South C	Pipelines Fittings - Sheet 95A	Priority 1
6000023-HH-FT-DR-W-076A	Central Industrial Area	Pipelines Fittings - Sheet 76A	Priority 1		6000023-HH-FT-DR-W-095B	Central Industrial Area, South C	Pipelines Fittings - Sheet 95B	Priority 1
6000023-HH-FT-DR-W-076B	Central Industrial Area	Pipelines Fittings - Sheet 76B	Priority 1		6000023-HH-LP-DR-W-096	Central Industrial Area	Pipelines Layout Plan - Sheet 96	Priority 1
6000023-HH-LP-DR-W-077	Central Industrial Area	Pipelines Layout Plan - Sheet 77	Priority 1		6000023-HH-FT-DR-W-096A	Central Industrial Area	Pipelines Fittings - Sheet 96A	Priority 1
6000023-HH-FT-DR-W-077A	Central Industrial Area	Pipelines Fittings - Sheet 77A	Priority 1		6000023-HH-FT-DR-W-096B	Central Industrial Area	Pipelines Fittings - Sheet 96B	Priority 1
6000023-HH-LP-DR-W-078	Central Industrial Area	Pipelines Layout Plan - Sheet 78	Priority 1		6000023-HH-LP-DR-W-097	Central Industrial Area	Pipelines Layout Plan - Sheet 97	Priority 1
6000023-HH-FT-DR-W-078A	Central Industrial Area	Pipelines Fittings - Sheet 78A	Priority 1		6000023-HH-FT-DR-W-097A	Central Industrial Area	Pipelines Fittings - Sheet 97A	Priority 1
6000023-HH-LP-DR-W-079	Central Industrial Area	Pipelines Layout Plan - Sheet 79	Priority 1		6000023-HH-LP-DR-W-098	Central Industrial Area	Pipelines Layout Plan - Sheet 98	Priority 1
6000023-HH-FT-DR-W-079A	Central Industrial Area	Pipelines Fittings - Sheet 79A	Priority 1		6000023-HH-FT-DR-W-098A	Central Industrial Area	Pipelines Fittings - Sheet 98A	Priority 1
6000023-HH-LP-DR-W-080	South C	Pipelines Layout Plan - Sheet 80	Priority 3		6000023-HH-LP-DR-W-099	Central Industrial Area	Pipelines Layout Plan - Sheet 99	Priority 1
6000023-HH-FT-DR-W-080A	South C	Pipelines Fittings - Sheet 80A	Priority 3		6000023-HH-FT-DR-W-099A	Central Industrial Area	Pipelines Fittings - Sheet 99A	Priority 1
6000023-HH-LP-DR-W-081	Central Industrial Area, South C	Pipelines Layout Plan - Sheet 81	Priority 3		6000023-HH-LP-DR-W-100	Central Industrial Area, Eastern Industrial Area	Pipelines Layout Plan - Sheet 100	Priority 3
6000023-HH-FT-DR-W-081A	Central Industrial Area, South C	Pipelines - Pipe Fittings - Sheet 81A	Priority 3		6000023-HH-FT-DR-W-100A	Central Industrial Area, Eastern Industrial Area	Pipelines Fittings - Sheet 100A	Priority 3
6000023-HH-FT-DR-W-081B	Central Industrial Area, South C	Pipelines - Pipe Fittings - Sheet 81A	Priority 3		6000023-HH-LP-DR-W-101	Eastern Industrial Area	Pipelines Layout Plan - Sheet 101	Priority 3
6000023-HH-LP-DR-W-082	Central Industrial Area, South C	Pipelines Layout Plan - Sheet 82	Priority 3		6000023-HH-FT-DR-W-101A	Eastern Industrial Area	Pipelines Fittings - Sheet 101A	Priority 3
6000023-HH-FT-DR-W-082A	Central Industrial Area, South C	Pipelines Fittings - Sheet 82A	Priority 3		6000023-HH-LP-DR-W-102	South C	Pipelines Layout Plan - Sheet 102	Priority 3
6000023-HH-LP-DR-W-083	Central Industrial Area	Pipelines Layout Plan - Sheet 83	Priority 1		6000023-HH-FT-DR-W-102A	South C	Pipelines Fittings - Sheet 102A	Priority 3
6000023-HH-FT-DR-W-083A	Central Industrial Area	Pipelines Fittings - Sheet 83A	Priority 1		6000023-HH-LP-DR-W-103	South C	Pipelines Layout Plan - Sheet 103	Priority 3
6000023-HH-LP-DR-W-084	Central Industrial Area	Pipelines Layout Plan - Sheet 84	Priority 1		6000023-HH-FT-DR-W-103A	South C	Pipelines Fittings - Sheet 103A	Priority 3
6000023-HH-FT-DR-W-084A	Central Industrial Area	Pipelines Fittings - Sheet 84A	Priority 1		6000023-HH-FT-DR-W-103B	South C	Pipelines Fittings - Sheet 103B	Priority 3
6000023-HH-LP-DR-W-085	Central Industrial Area	Pipelines Layout Plan - Sheet 85	Priority 1		6000023-HH-LP-DR-W-104	South C	Pipelines Layout Plan - Sheet 104	Priority 3
6000023-HH-FT-DR-W-085A	Central Industrial Area	Pipelines Fittings - Sheet 85A	Priority 1		6000023-HH-FT-DR-W-104A	South C	Pipelines Fittings - Sheet 104A	Priority 3
6000023-HH-LP-DR-W-086	Central Industrial Area	Pipelines Layout Plan - Sheet 86	Priority 1		6000023-HH-FT-DR-W-104B	South C	Pipelines Fittings - Sheet 104A	Priority 3
6000023-HH-FT-DR-W-086A	Central Industrial Area	Pipelines Fittings - Sheet 86A	Priority 1		6000023-HH-LP-DR-W-105	Central Industrial Area	Pipelines Layout Plan - Sheet 105	Priority 1
6000023-HH-LP-DR-W-087	Central Industrial Area	Pipelines Layout Plan - Sheet 87	Priority 1		6000023-HH-FT-DR-W-105A	Central Industrial Area	Pipelines Fittings - Sheet 105A	Priority 1
6000023-HH-FT-DR-W-087A	Central Industrial Area	Pipelines Fittings - Sheet 87A	Priority 1		6000023-HH-LP-DR-W-106	South C	Pipelines Layout Plan - Sheet 106	Priority 3
6000023-HH-LP-DR-W-088	Eastern Industrial Area	Pipelines Layout Plan - Sheet 88	Priority 3		6000023-HH-FT-DR-W-106A	South C	Pipelines Fittings - Sheet 106A	Priority 3
6000023-HH-FT-DR-W-088A	Eastern Industrial Area	Pipelines Fittings - Sheet 88A	Priority 3		6000023-HH-LP-DR-W-107	South C	Pipelines Layout Plan - Sheet 107	Priority 3
6000023-HH-LP-DR-W-089	Eastern Industrial Area	Pipelines Layout Plan - Sheet 89	Priority 3		6000023-HH-FT-DR-W-107A	South C	Pipelines Fittings - Sheet 107A	Priority 3
6000023-HH-FT-DR-W-089A	Eastern Industrial Area	Pipelines Fittings - Sheet 89A	Priority 3		6000023-HH-LP-DR-W-108	South C	Pipelines Layout Plan - Sheet 108	Priority 3
6000023-HH-LP-DR-W-090	Eastern Industrial Area	Pipelines Layout Plan - Sheet 90	Priority 3		6000023-HH-FT-DR-W-108A	South C	Pipelines Fittings - Sheet 108A	Priority 3
6000023-HH-FT-DR-W-090A	Eastern Industrial Area	Pipelines Fittings - Sheet 90A	Priority 3		6000023-HH-LP-DR-W-109	South C	Pipelines Layout Plan - Sheet 109	Priority 3
6000023-HH-LP-DR-W-091	Eastern Industrial Area	Pipelines Layout Plan - Sheet 91	Priority 3		6000023-HH-FT-DR-W-109A	South C	Pipelines Fittings - Sheet 109A	Priority 3
6000023-HH-FT-DR-W-091A	Eastern Industrial Area	Pipelines Fittings - Sheet 91A	Priority 3		6000023-HH-LP-DR-W-110	South C	Pipelines Layout Plan - Sheet 110	Priority 3
					6000023-HH-FT-DR-W-110A	South C	Pipelines Fittings - Sheet 110A	Priority 3
								Priority 3

CKE 1135 NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

SCHEDULE OF ENGINEERING DRAWINGS

DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL		DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL
		Layout Plans & Pipe Fittings					**Layout Plans & Pipe Fittings**	
6000023-HH-LP-DR-W-111	South C	Pipelines Layout Plan - Sheet 111	Priority 3		6000023-HH-LP-DR-W-131	Ridgeways	Pipelines Layout Plan - Sheet 131	Priority 3
6000023-HH-FT-DR-W-111A	South C	Pipelines Fittings - Sheet 111A	Priority 3		6000023-HH-FT-DR-W-131A	Ridgeways	Pipelines Fittings - Sheet 131A	Priority 3
6000023-HH-LP-DR-W-112	South C	Pipelines Layout Plan - Sheet 112	Priority 3		6000023-HH-LP-DR-W-132	Ridgeways	Pipelines Layout Plan - Sheet 132	Priority 3
6000023-HH-FT-DR-W-112A	South C	Pipelines Fittings - Sheet 112A	Priority 3		6000023-HH-FT-DR-W-132A	Ridgeways	Pipelines Fittings - Sheet 132A	Priority 3
6000023-HH-LP-DR-W-113	Embakasi	Pipelines Layout Plan - Sheet 113	Priority 3		6000023-HH-LP-DR-W-133	Ridgeways	Pipelines Layout Plan - Sheet 133	Priority 3
6000023-HH-FT-DR-W-113A	Embakasi	Pipelines Fittings - Sheet 113A	Priority 3		6000023-HH-FT-DR-W-133A	Ridgeways	Pipelines Fittings - Sheet 133A	Priority 3
6000023-HH-LP-DR-W-114	Embakasi	Pipelines Layout Plan - Sheet 114	Priority 3		6000023-HH-LP-DR-W-134	Ridgeways	Pipelines Layout Plan - Sheet 134	Priority 3
6000023-HH-FT-DR-W-114A	Embakasi	Pipelines Fittings - Sheet 114A	Priority 3		6000023-HH-FT-DR-W-134A	Ridgeways	Pipelines Fittings - Sheet 134A	Priority 3
6000023-HH-LP-DR-W-115	Embakasi	Pipelines Layout Plan - Sheet 115	Priority 3				**Plan & Profile Drawings**	
6000023-HH-FT-DR-W-115A	Embakasi	Pipelines Fittings - Sheet 115A	Priority 3		6000023-HH-PP-DR-W-001	Eastleigh	Juja Road - Sheet 1 of 4	Priority 2
6000023-HH-LP-DR-W-116	Embakasi	Pipelines Layout Plan - Sheet 116	Priority 3		6000023-HH-PP-DR-W-002	Eastleigh	Juja Road - Sheet 2 of 4	Priority 2
6000023-HH-FT-DR-W-116A	Embakasi	Pipelines Fittings - Sheet 116A	Priority 3		6000023-HH-PP-DR-W-003	Eastleigh	Juja Road - Sheet 3 of 4	Priority 2
6000023-HH-FT-DR-W-116B	Embakasi	Pipelines Fittings - Sheet 116B	Priority 3		6000023-HH-PP-DR-W-004	Eastleigh	Juja Road - Sheet 4 of 4	Priority 2
6000023-HH-FT-DR-W-116C	Embakasi	Pipelines Fittings - Sheet 116C	Priority 3		6000023-HH-PP-DR-W-005	Eastleigh	2nd Avenue - Sheet 1 of 2	Priority 2
6000023-HH-LP-DR-W-117	Embakasi	Pipelines Layout Plan - Sheet 117	Priority 3		6000023-HH-PP-DR-W-006	Eastleigh	2nd Avenue - Sheet 2 of 2	Priority 2
6000023-HH-FT-DR-W-117A	Embakasi	Pipelines Fittings - Sheet 117A	Priority 3		6000023-HH-PP-DR-W-007	Eastleigh	1st Avenue - Sheet 1 of 3	Priority 2
6000023-HH-LP-DR-W-118	Embakasi	Pipelines Layout Plan - Sheet 118	Priority 3		6000023-HH-PP-DR-W-008	Eastleigh	1st Avenue - Sheet 2 of 3	Priority 2
6000023-HH-FT-DR-W-118A	Embakasi	Pipelines Fittings - Sheet 118A	Priority 3		6000023-HH-PP-DR-W-009	Eastleigh	1st Avenue - Sheet 3 of 3	Priority 2
6000023-HH-LP-DR-W-119	Embakasi	Pipelines Layout Plan - Sheet 119	Priority 3		6000023-HH-PP-DR-W-010	Eastleigh	Mlango Roundabout Line 1 - Sheet 1 of 2	Priority 2
6000023-HH-FT-DR-W-119A	Embakasi	Pipelines Fittings - Sheet 119A	Priority 3		6000023-HH-PP-DR-W-011	Eastleigh	Mlango Roundabout Line 1 - Sheet 2 of 2	Priority 2
6000023-HH-LP-DR-W-120	Embakasi	Pipelines Layout Plan - Sheet 120	Priority 3		6000023-HH-PP-DR-W-012	Eastleigh	Mlango Roundabout Line 2 - Sheet 1 of 2	Priority 2
6000023-HH-FT-DR-W-120A	Embakasi	Pipelines Fittings - Sheet 120A	Priority 3		6000023-HH-PP-DR-W-013	Eastleigh	Mlango Roundabout Line 2 - Sheet 2 of 2	Priority 2
6000023-HH-LP-DR-W-121	Embakasi	Pipelines Layout Plan - Sheet 121	Priority 3		6000023-HH-PP-DR-W-014	CBD	Haile Selassie Avenue - Sheet 1 of 2	Priority 1
6000023-HH-FT-DR-W-121A	Embakasi	Pipelines Fittings - Sheet 121A	Priority 3		6000023-HH-PP-DR-W-015	CBD	Haile Selassie Avenue - Sheet 2 of 2	Priority 1
6000023-HH-LP-DR-W-122	Ridgeways	Pipelines Layout Plan - Sheet 122	Priority 3		6000023-HH-PP-DR-W-016	CBD	Kenyatta Avenue - Sheet 1 of 1	Priority 1
6000023-HH-FT-DR-W-122A	Ridgeways	Pipelines Fittings - Sheet 122A	Priority 3		6000023-HH-PP-DR-W-017	CBD	Moi Avenue - Sheet 1 of 2	Priority 1
6000023-HH-LP-DR-W-123	Ridgeways	Pipelines Layout Plan - Sheet 123	Priority 3		6000023-HH-PP-DR-W-018	CBD	Moi Avenue - Sheet 2 of 2	Priority 1
6000023-HH-FT-DR-W-123A	Ridgeways	Pipelines Fittings - Sheet 123A	Priority 3		6000023-HH-PP-DR-W-019	Embakasi	Plan and Profile - Sheet 1 of 2	Priority 3
6000023-HH-LP-DR-W-124	Ridgeways	Pipelines Layout Plan - Sheet 124	Priority 3		6000023-HH-PP-DR-W-020	Embakasi	Plan and Profile - Sheet 2 of 2	Priority 3
6000023-HH-FT-DR-W-124A	Ridgeways	Pipelines Fittings - Sheet 124A	Priority 3		6000023-HH-PP-DR-W-021	Central Industrial Area	Enterprise Road - Sheet 1 of 3	Priority 1
6000023-HH-LP-DR-W-125	Ridgeways	Pipelines Layout Plan - Sheet 125	Priority 3		6000023-HH-PP-DR-W-022	Central Industrial Area	Enterprise Road - Sheet 2 of 3	Priority 1
6000023-HH-FT-DR-W-125A	Ridgeways	Pipelines Fittings - Sheet 125A	Priority 3		6000023-HH-PP-DR-W-023	Central Industrial Area	Enterprise Road - Sheet 3 of 3	Priority 1
6000023-HH-LP-DR-W-126	Ridgeways	Pipelines Layout Plan - Sheet 126	Priority 3		6000023-HH-PP-DR-W-024	Central Industrial Area	Lusaka Road - Sheet 1 of 2	Priority 1
6000023-HH-FT-DR-W-126A	Ridgeways	Pipelines Fittings - Sheet 126A	Priority 3		6000023-HH-PP-DR-W-025	Central Industrial Area	Lusaka Road - Sheet 1 of 3	Priority 1
6000023-HH-LP-DR-W-127	Ridgeways	Pipelines Layout Plan - Sheet 127	Priority 3		6000023-HH-PP-DR-W-026	Central Industrial Area	Dunga - Mukenia Road - Sheet of 2	Priority 1
6000023-HH-FT-DR-W-127A	Ridgeways	Pipelines Fittings - Sheet 127A	Priority 3		6000023-HH-PP-DR-W-027	Central Industrial Area	Dunga - Mukenia Road - Sheet of 2	Priority 1
6000023-HH-LP-DR-W-128	Ridgeways	Pipelines Layout Plan - Sheet 128	Priority 3		6000023-HH-PP-DR-W-028	Muthaiga Road	Muthaiga Road - Sheet 1 of 4	Priority 3
6000023-HH-FT-DR-W-128A	Ridgeways	Pipelines Fittings - Sheet 128A	Priority 3		6000023-HH-PP-DR-W-029	Muthaiga Road	Muthaiga Road - Sheet 2 of 4	Priority 3
6000023-HH-LP-DR-W-129	Ridgeways	Pipelines Layout Plan - Sheet 129	Priority 3		6000023-HH-PP-DR-W-030	Muthaiga Road	Muthaiga Road - Sheet 3 of 4	Priority 3
6000023-HH-LP-DR-W-130	Ridgeways	Pipelines Layout Plan - Sheet 130	Priority 3		6000023-HH-PP-DR-W-031	Muthaiga Road	Muthaiga Road - Sheet 4 of 4	Priority 3
6000023-HH-FT-DR-W-130A	Ridgeways	Pipelines Fittings - Sheet 130A	Priority 3		6000023-HH-PP-DR-W-032	Muthaiga Road	Thika Road - Sheet 1 of 3	Priority 3
					6000023-HH-PP-DR-W-033	Muthaiga Road	Thika Road - Sheet 2 of 3	Priority 3

CKE 1135 NAIROBI WATER AND SANITATION PROJECT

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

SCHEDULE OF ENGINEERING DRAWINGS

DRG NO.	AREA	DESCRIPTION	PRIORITY LEVEL
		Plan & Profile Drawings	
6000023-HH-PP-DR-W-034	Muthaiga Road	Thika Road - Sheet 3 of 3	Priority 3
6000023-HH-PP-DR-W-035	South C	Muhoho Avenue - Sheet 1 of 2	Priority 3
6000023-HH-PP-DR-W-036	South C	Muhoho Avenue - Sheet 2 of 2	Priority 3
6000023-HH-PP-DR-W-037	South C	Ole Shapara Avenue - Sheet 1 of 1	Priority 3
6000023-HH-PP-DR-W-038	South C	Plan and Profile - Sheet 1 of 1	Priority 3
6000023-HH-PP-DR-W-039	South C	Plan and Profile - Sheet 1 of 2	Priority 3
6000023-HH-PP-DR-W-040	South C	Plan and Profile - Sheet 2 of 2	Priority 3
6000023-HH-PP-DR-W-041	Jogoo Road	Jogoo Road Zone- Sheet 1 of 1	Priority 2
6000023-HH-PP-DR-W-042	Jogoo Road	Jogoo Road Zone- Sheet 1 of 1	Priority 2
6000023-HH-PP-DR-W-043	Jogoo Road	Jogoo Road Zone- Sheet 1 of 1	Priority 2
6000023-HH-PP-DR-W-044	Jogoo Road	Jogoo Road Zone- Sheet 1 of 1	Priority 2
6000023-HH-PP-DR-W-045	Central Industrial Area	Lusaka Road - Sheet 1 of 2	Priority 1
6000023-HH-PP-DR-W-046	Central Industrial Area	Lusaka Road - Sheet 2 of 2	Priority 1
6000023-HH-PP-DR-W-047	Central Industrial Area	Off Lusaka Road - Sheet 1 of 1	Priority 1
6000023-HH-PP-DR-W-048	Eastleigh	Juja Road - Sheet 1 of 2	Priority 2
6000023-HH-PP-DR-W-049	Eastleigh	Juja Road - Sheet 2 of 2	Priority 2
		Standard Drawings	
6000023-HH-SD-DR-W-001		Project Sign board Details	
6000023-HH-SD-DR-W-002		Consumer Water Connection Details	
6000023-HH-SD-DR-W-003		Fire Hydrant, Gate Valve & Washout Details	
6000023-HH-SD-DR-W-004		Marker Post & Trench Details	
6000023-HH-SD-DR-W-005		AirValve Chamber	
6000023-HH-SD-DR-W-006		Gate Valve and Flow Meter Chamber	
6000023-HH-SD-DR-W-007		Road Kerb, Channel and Drainage Details	
6000023-HH-SD-DR-W-008		Pipe Ancor Suport & Thrust Block Details	
6000023-HH-SD-DR-W-009		Reinstatement Cross-section Details	

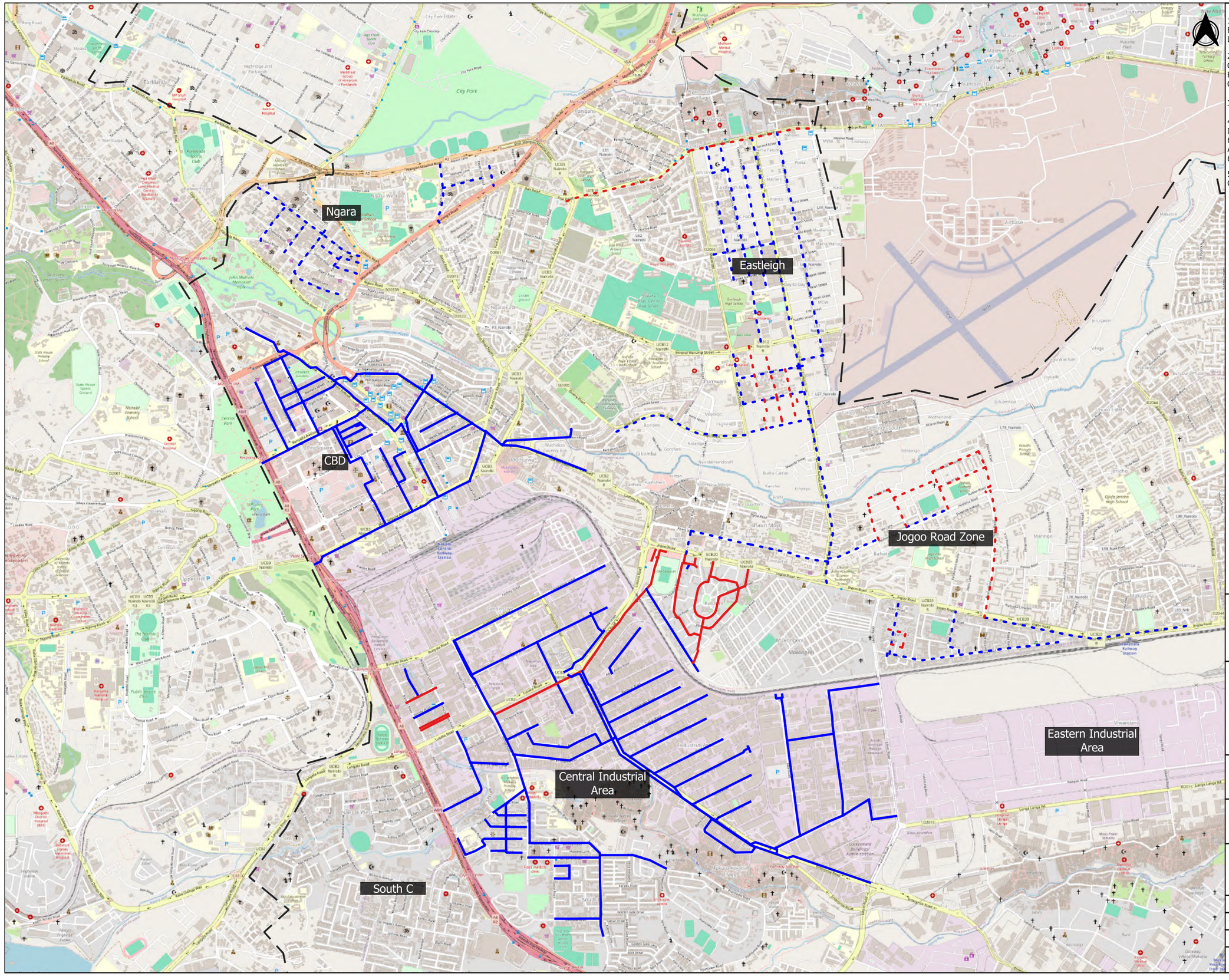
LEGEND

Priority 1 - Current contract

Priority 2 - Provisional

Priority 3 - Future scope, not included in this contract

GENERAL LAYOUTS PLANS



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE

2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS

3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS

4. PIPE LAYOUTS, TYPES OF FITTINGS AND INTERCONNECTIONS ARE GIVEN IN DRAWINGS 6000023-HH-LP-DR-W-001 TO 6000023-HH-LP-DR-W-134 AND 6000023-HH-FT-DR-W-001 TO 6000023-HH-FT-DR-W-134 RESPECTIVELY

5. PRIORITY 1 LINES ARE TO BE CONSTRUCTED IN THIS CONTRACT WHILE PRIORITY 2 LINES ARE PROVISIONAL

LEGEND

- Zone 8 Border

Pipeline Installation Method (See note 5)

- Trenchless Technology (Priority 1)
- Open Cut (Priority 1)
- Trenchless Technology (Priority 2)
- Open Cut (Priority 2)

Client

THE CHIEF EXECUTIVE OFFICER
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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

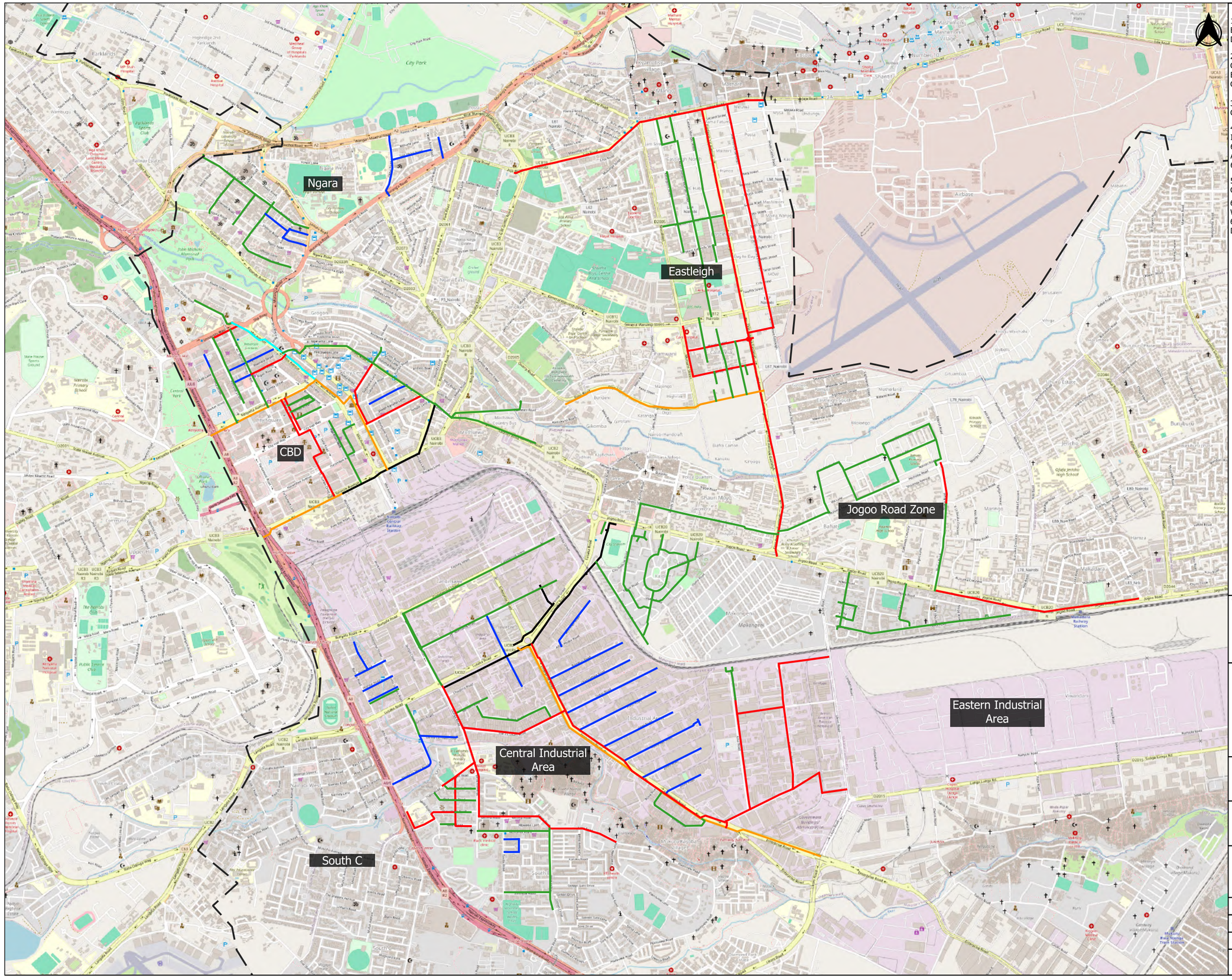
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

GENERAL LAYOUT
PROPOSED CONSTRUCTION METHODOLOGY
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:25,000	Date: JUNE, 23

Drawing Number: 6000023-HH-GL-DR-W-001
Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE

2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS

3. PROPOSED PIPE CONSTRUCTION METHODOLOGY IS GIVEN ON DRAWING 6000023-HH-GL-DR-W-002

4. PIPE LAYOUTS, TYPES OF FITTINGS AND INTERCONNECTIONS ARE GIVEN IN DRAWINGS 6000023-HH-LP-DR-W-001 TO 6000023-HH-LP-DR-W-134 AND 6000023-HH-FT-DR-W-001 TO 6000023-HH-FT-DR-W-134 RESPECTIVELY

5. PRIORITY 1 LINES ARE TO BE CONSTRUCTED IN THIS CONTRACT WHILE PRIORITY 2 LINES ARE PROVISIONAL

6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWINGS 6000023-HH-GL-DR-W-001, 6000023-HH-GL-DR-W-003 AND ALL OTHER RELEVANT DRAWINGS

LEGEND

- Zone 8 Border
- OD110 Proposed Diameter
- OD160 Proposed Diameter
- OD200 Proposed Diameter
- OD250 Proposed Diameter
- OD315 Proposed Diameter
- OD400 Proposed Diameter

Client

ATHI WATER WORKS

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Project Name

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NAIROBI WATER AND SANITATION PROJECT

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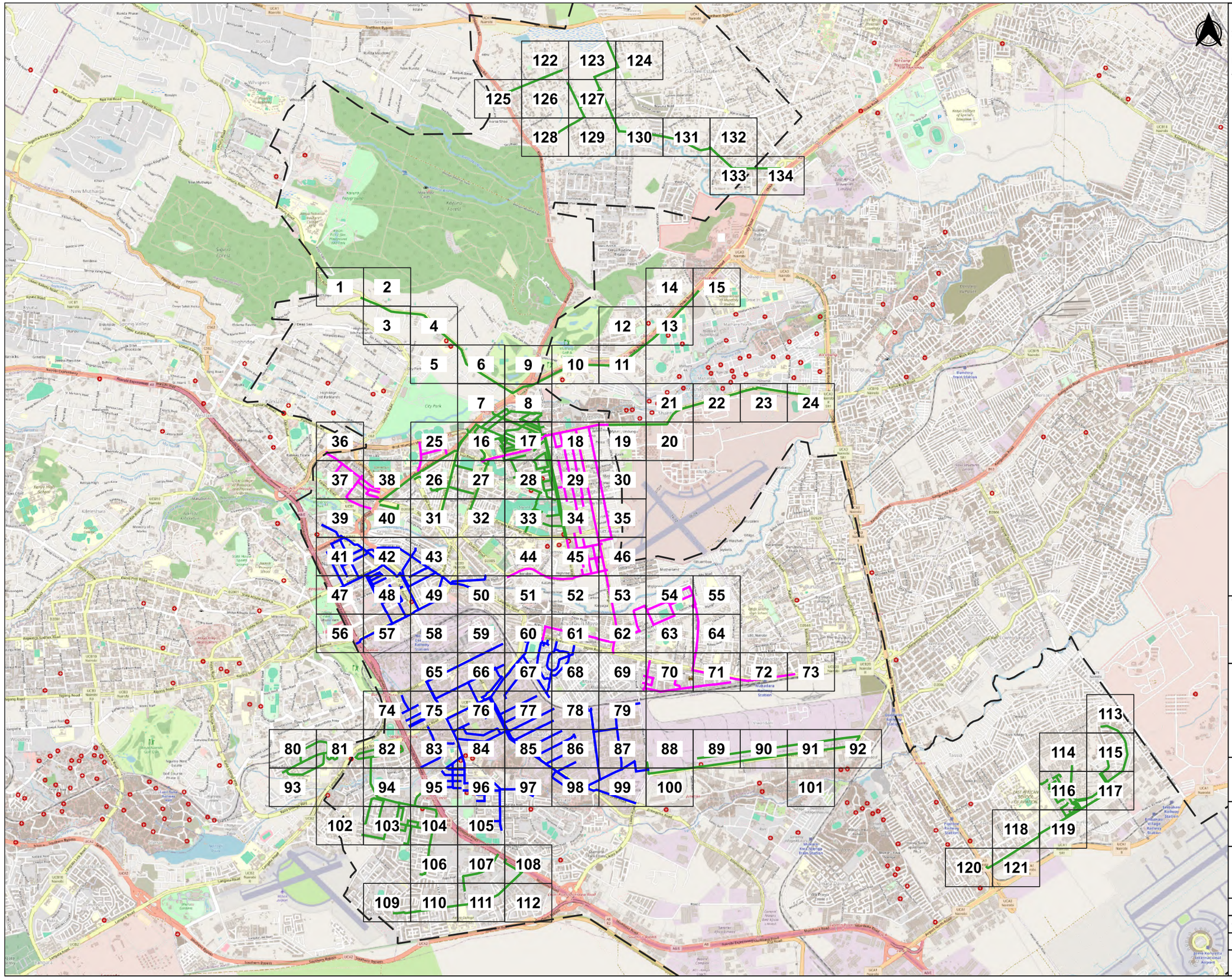
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

GENERAL LAYOUT
PROPOSED REHABILITATION PIPELINE SIZES
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:25,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-002	T0



NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS
2. PRIORITY 1 LINES ARE TO BE CONSTRUCTED IN THIS CONTRACT WHILE PRIORITY 2 LINES ARE PROVISIONAL

LEGEND

- 134 — Sheet number reference for pipeline details
- Zone 8 Border

Priority Level (See note 2)

- Priority 1
- Priority 2
- Future Scope, Not included in this contract

Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

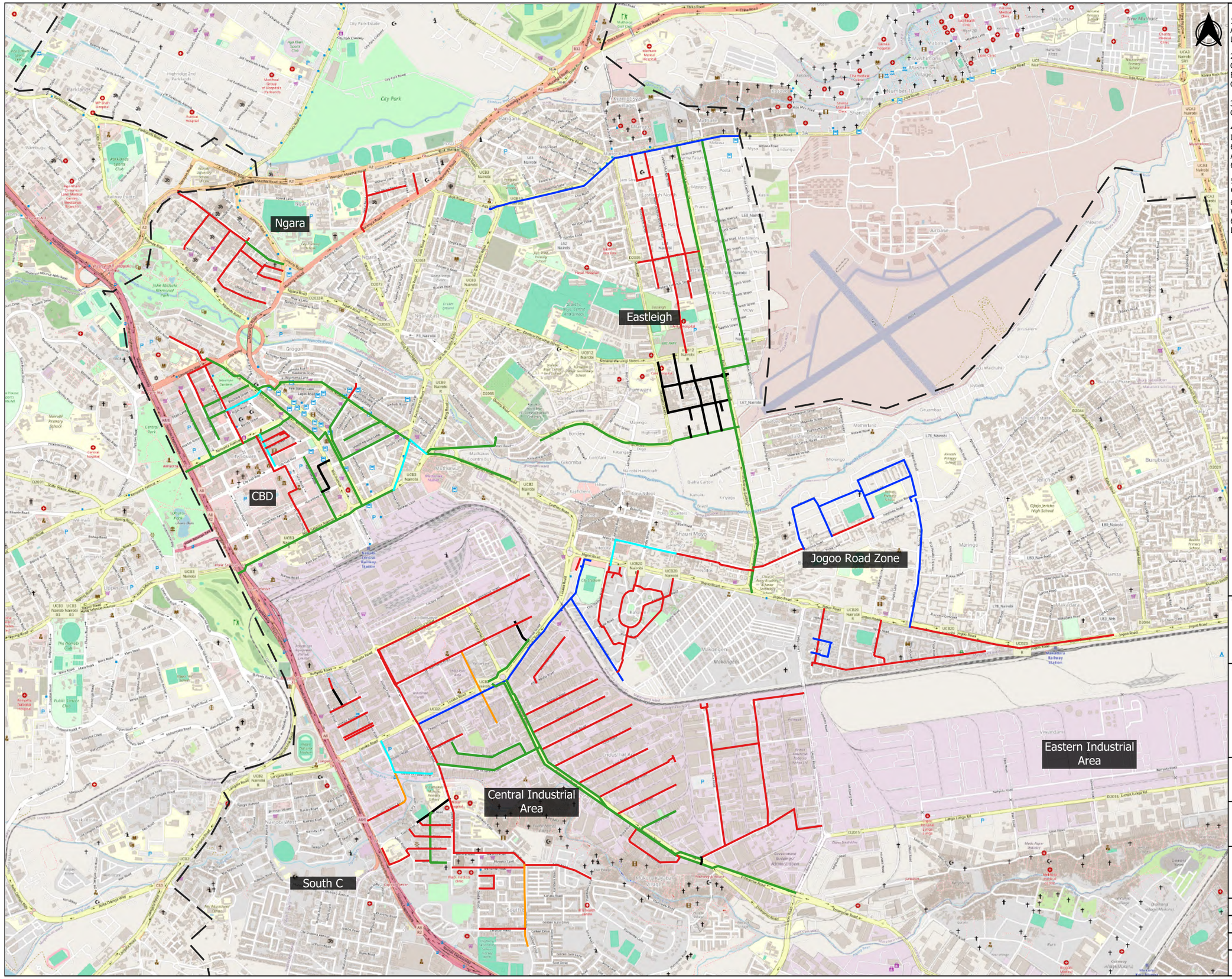
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

GENERAL LAYOUT
SHEET INDEX MAP
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:50,000	Date: JUNE, 23

Drawing Number: 6000023-HH-GL-DR-W-003
Revision: TO



NOTES

1. POSITIONS AND MATERIAL OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS AND MATERIAL TO BE DETERMINED ON SITE

2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS

3. PROPOSED PIPE CONSTRUCTION METHODOLOGY IS GIVEN ON DRAWING 6000023-HH-GL-DR-W-002

4. PIPE LAYOUTS, TYPES OF FITTINGS AND INTERCONNECTIONS ARE GIVEN IN DRAWINGS 6000023-HH-LP-DR-W-001 TO 6000023-HH-LP-DR-W-134 AND 6000023-HH-FT-DR-W-001 TO 6000023-HH-FT-DR-W-134 RESPECTIVELY

5. PRIORITY 1 LINES ARE TO BE CONSTRUCTED IN THIS CONTRACT WHILE PRIORITY 2 LINES ARE PROVISIONAL

6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH DRAWINGS 6000023-HH-GL-DR-W-001, 6000023-HH-GL-DR-W-003 AND ALL OTHER RELEVANT DRAWINGS

LEGEND

- Zone 8 Border

Pipe Material

- AC
- Bitumen Lined Steel
- Cast Iron/ Galvanised Iron
- HDPE/ uPVC
- Steel
- Unknown

Client

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Project Name

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NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

GENERAL LAYOUT
REHABILITATION PIPELINE MATERIAL
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:25,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-004	T0

LAYOUT PLANS & PIPE FITTINGS

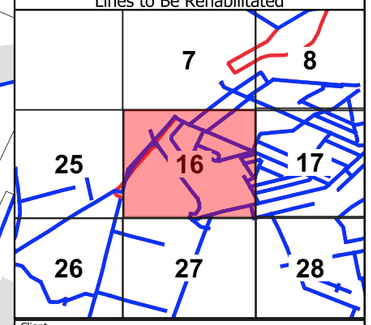
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-016
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

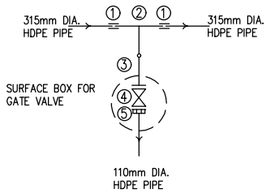
Drawing Title

EASTLEIGH, PANGANI, NGARA EAST-WEST REHABILITATION PIPELINES - LAYOUT
Sheet 16

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

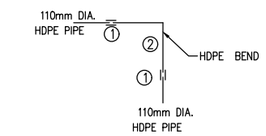
Drawing Number: 6000023-HH-GL-DR-W-016
Revision: T0

DETAIL - TEE (300X110)
JUNCTIONS: 16A



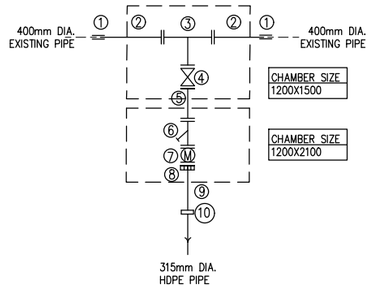
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H.BEND
JUNCTIONS: 16B,16D



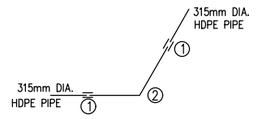
ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (400X300)
JUNCTIONS: 16C



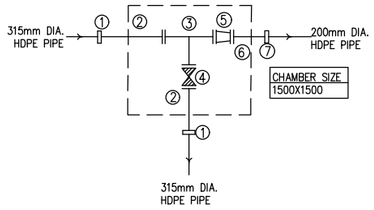
ITEM	DESCRIPTION	NO.
1	DN400mm DIA. COUPLING	2
2	DN400mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN400x300mm DIA. FERROUS ALL FLANGED TEE	1
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.0m LONG	1
6	DN300mm DIA. FLANGED Y-STRAINER	1
7	DN300mm DIA. WATER METER	1
8	DN300mm DIA. FLANGE ADAPTOR	1
9	DN300mm DIA. FERROUS PLAIN ENDED SPIGOT PIPE 1.2m LONG	1
10	DN300/300 DIA STEPPED COUPLING	1

DETAIL - 60° H.BEND
JUNCTIONS: 16E



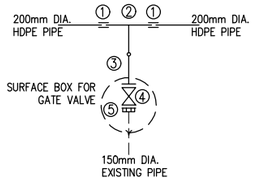
ITEM	DESCRIPTION	NO.
1	DN300mm DIA COUPLING	2
2	OD315mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - TEE (300X300)
JUNCTIONS: 16F



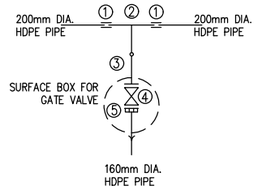
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x300mm DIA. FERROUS ALL FLANGED TEE	1
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
7	DN300x200mm FERROUS ALL FLANGED REDUCER	1
8	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
9	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (200X160)
JUNCTIONS: 16H,16K



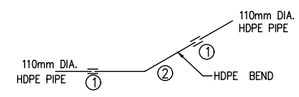
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 16J



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 16L



ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 30° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-016

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

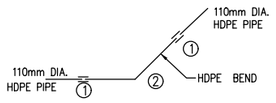
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh/ Pangani /Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 16A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

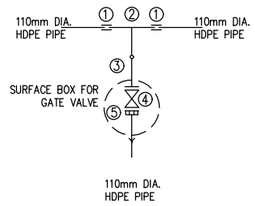
Drawing Number: 6000023-HH-FT-DR-W-016A
Revision: T0

DETAIL - 45° H.BEND
JUNCTIONS: 16M,16AB,16AC,16AG



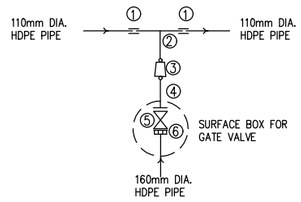
ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 16N,16P,16AF,16AP, 16AQ,16AR



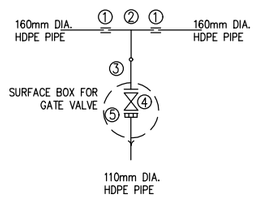
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 16Q,16R,16AE



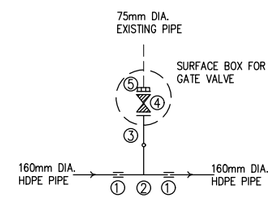
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 16S,16W



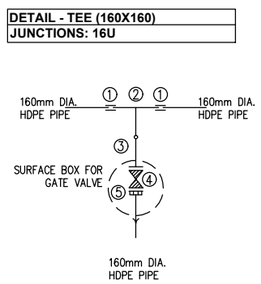
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 16T,16X



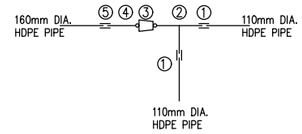
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 16U



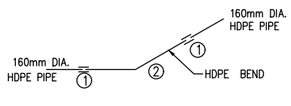
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 16Z



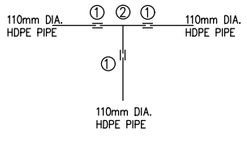
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	1
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE PLAIN ENDED PIPE 1.2m LONG	1
5	DN150mm DIA. COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS:16V,16Y



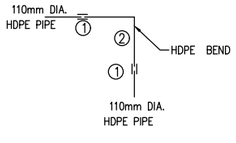
ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 16AD,16AK,16AL



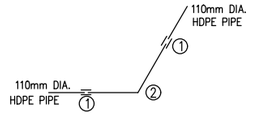
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	3
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - 90° H.BEND
JUNCTIONS: 16AA



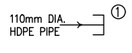
ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 16AH,16AJ,16AM



ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 110mm END CAP
JUNCTIONS: 16AN



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-016

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

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Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

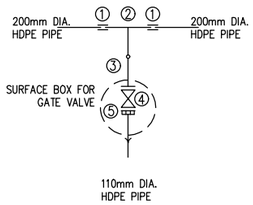
Eastleigh/ Pangani /Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 16B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-016B

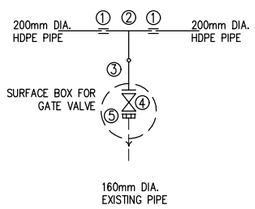
Revision: T0

DETAIL - TEE (200X110)
JUNCTIONS: 16AS



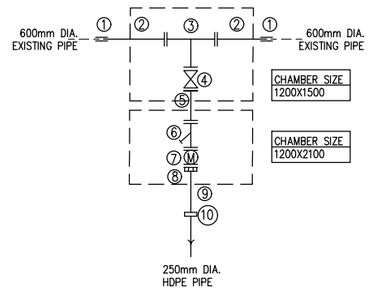
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 16AT



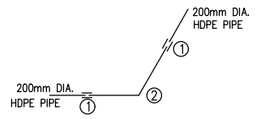
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (600X200)
JUNCTIONS: 16AU



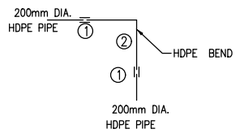
ITEM	DESCRIPTION	NO.
1	DN600mm DIA. COUPLING	2
2	DN600mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN600x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.0m LONG	1
6	DN200mm DIA. FLANGED Y-STRAINER	1
7	DN200mm DIA. WATER METER	1
8	DN200mm DIA. FLANGE ADAPTOR	1
9	DN200mm DIA. FERROUS SPIGOT PIPE 1.2m LONG	1
10	DN200/200 DIA STEPPED COUPLING	1

DETAIL - 60° H.BEND
JUNCTIONS: 16AV,16AX



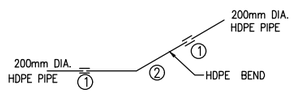
ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 90° H.BEND
JUNCTIONS: 16AW



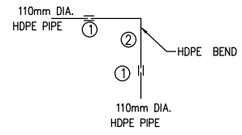
ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS:16AY



ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 90° H.BEND
JUNCTIONS: 16AZ



ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-016

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
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The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

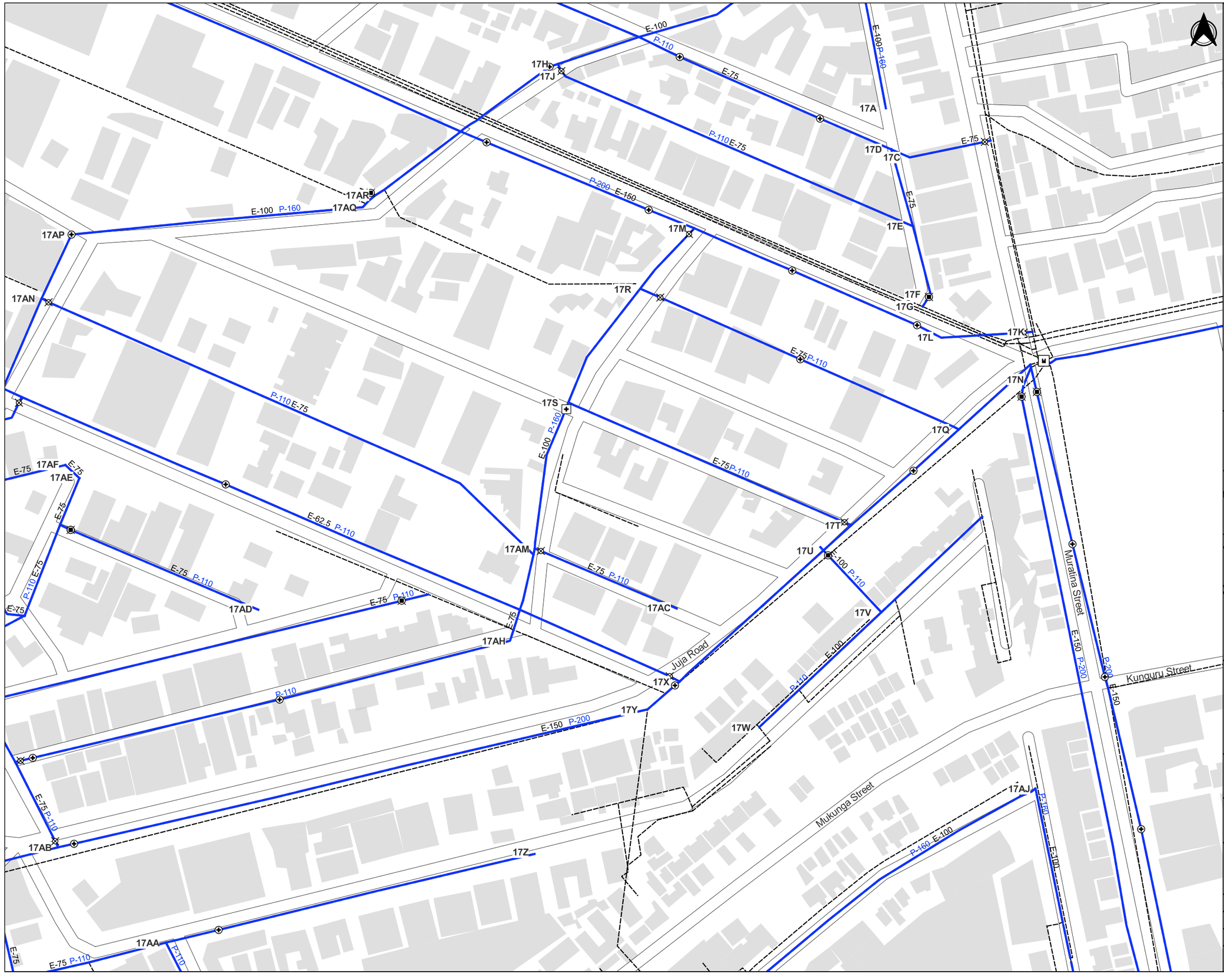
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh/ Pangani /Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 16C

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-016C
Revision: T0



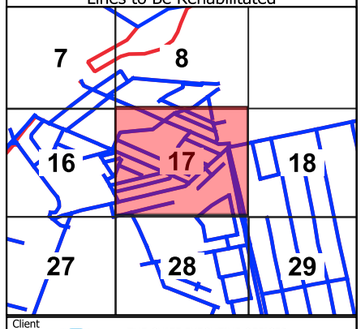
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-017
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP Inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

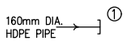
Drawing Title

EASTLEIGH, PANGANI
REHABILITATION PIPELINES - LAYOUT
Sheet 17

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

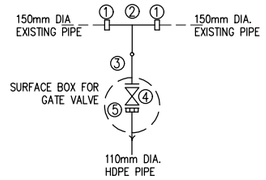
Drawing Number	Revision
6000023-HH-GL-DR-W-017	T0

DETAIL - 160mm END CAP
JUNCTIONS: 17A



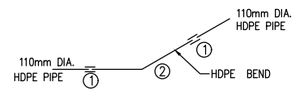
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - SPECIAL TEE (160X110)
JUNCTIONS: 17B



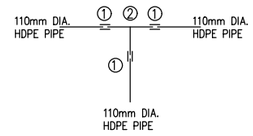
ITEM	DESCRIPTION	NO.
1	OD125/150mm DIA. STEPPED COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 17C,17F,17J



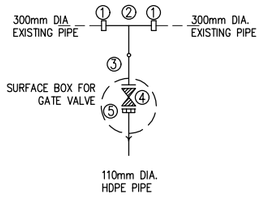
ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 17D,17E



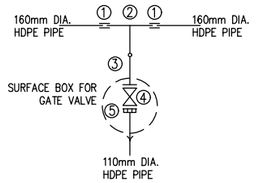
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	3
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - SPECIAL TEE (315X110)
JUNCTIONS: 17G



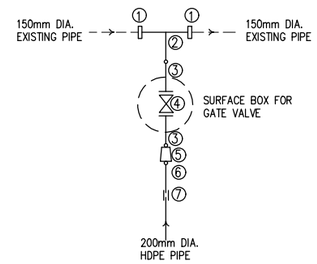
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 17H



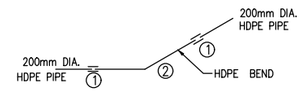
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (400X200)
JUNCTIONS:17K



ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA. STEPPED COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. STUB END WITH FLANGE	2
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	OD200x160mm DIA. PLAIN ENDED HDPE REDUCER	1
6	OD200mm DIA. HDPE PLAIN ENDED PIPE 1.2m LONG	1
7	DN200mm DIA. COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS: 17L,17Y



ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 30° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-017

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

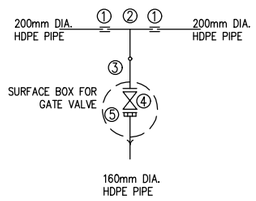
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh/ Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 17A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

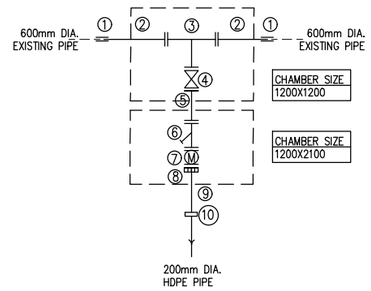
Drawing Number: 6000023-HH-FT-DR-W-017A
Revision: T0

DETAIL - TEE (200X160)
JUNCTIONS: 17M



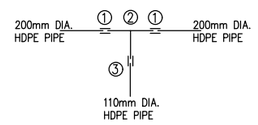
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (600X200)
JUNCTIONS: 17N,17P



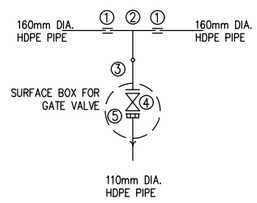
ITEM	DESCRIPTION	NO.
1	DN600mm DIA. COUPLING	2
2	DN600mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN600x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FERROUS ALL FLANGED PIPE 1.2m LONG	1
6	DN200mm DIA. FLANGED Y-STRAINER	1
7	DN200mm DIA. WATER METER	1
8	DN200mm DIA. FLANGE ADAPTOR	1
9	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
10	DN200/200 DIA STEPPED COUPLING	1

DETAIL - TEE (200X110)
JUNCTIONS: 17Q



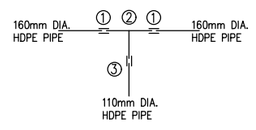
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN100mm DIA. COUPLING	1

DETAIL - TEE (160X110)
JUNCTIONS: 17R,17AM,17AN



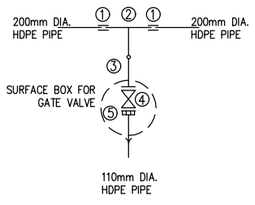
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 17S,17AL



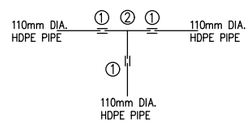
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN100mm DIA. COUPLING	1

DETAIL - TEE (200X110)
JUNCTIONS: 17T,17U,17X,17AB



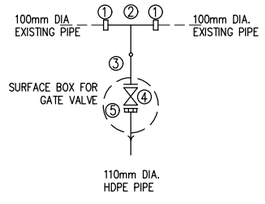
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 17V,17AA



ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	3
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - SPECIAL TEE (110X110)
JUNCTIONS: 17W



ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-017

Client:

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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inventing for tomorrow

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Howard Humphreys
Consulting Engineers

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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

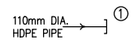
Eastleigh/ Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 17B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-017B

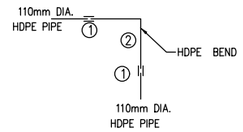
Revision: T0

DETAIL - 110mm END CAP
JUNCTIONS: 17Z,17AC,17AD



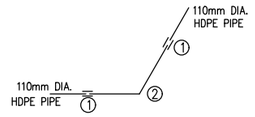
ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

DETAIL - 90° H.BEND
JUNCTIONS: 17AE



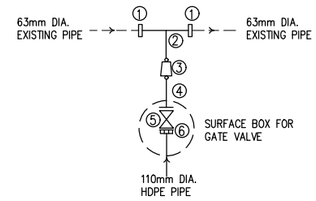
ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 17AF,17AH



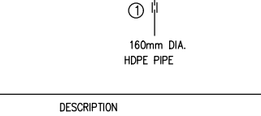
ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	2
2	OD110mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - TEE (63X63)
JUNCTIONS: 17AG



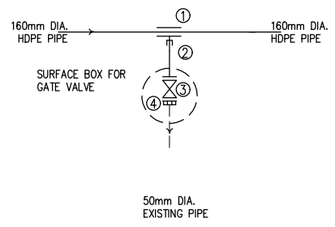
ITEM	DESCRIPTION	NO.
1	DN65mm DIA. COUPLING	2
2	OD63x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110x63mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD110mm DIA. HDPE STUB END WITH FLANGE	1
5	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H.BEND
JUNCTIONS: 17AJ



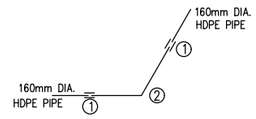
ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - PE SADDLE CLAMP (160X50)
JUNCTIONS:17AK



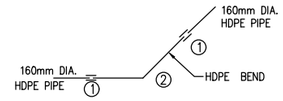
ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - 60° H.BEND
JUNCTIONS: 17AP



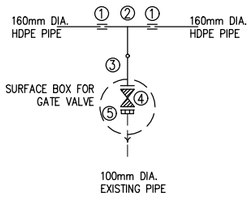
ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 45° H.BEND
JUNCTIONS: 17AQ



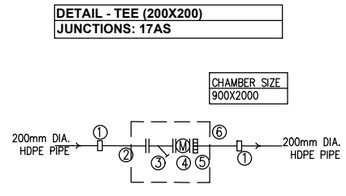
ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (160X110)
JUNCTIONS:17AR



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 17AS



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA STEPPED COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN200mm DIA. FLANGED Y-STRAINER	1
4	DN200mm DIA. WATER METER	1
5	DN200mm DIA. FLANGE ADAPTOR	1
6	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-017

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

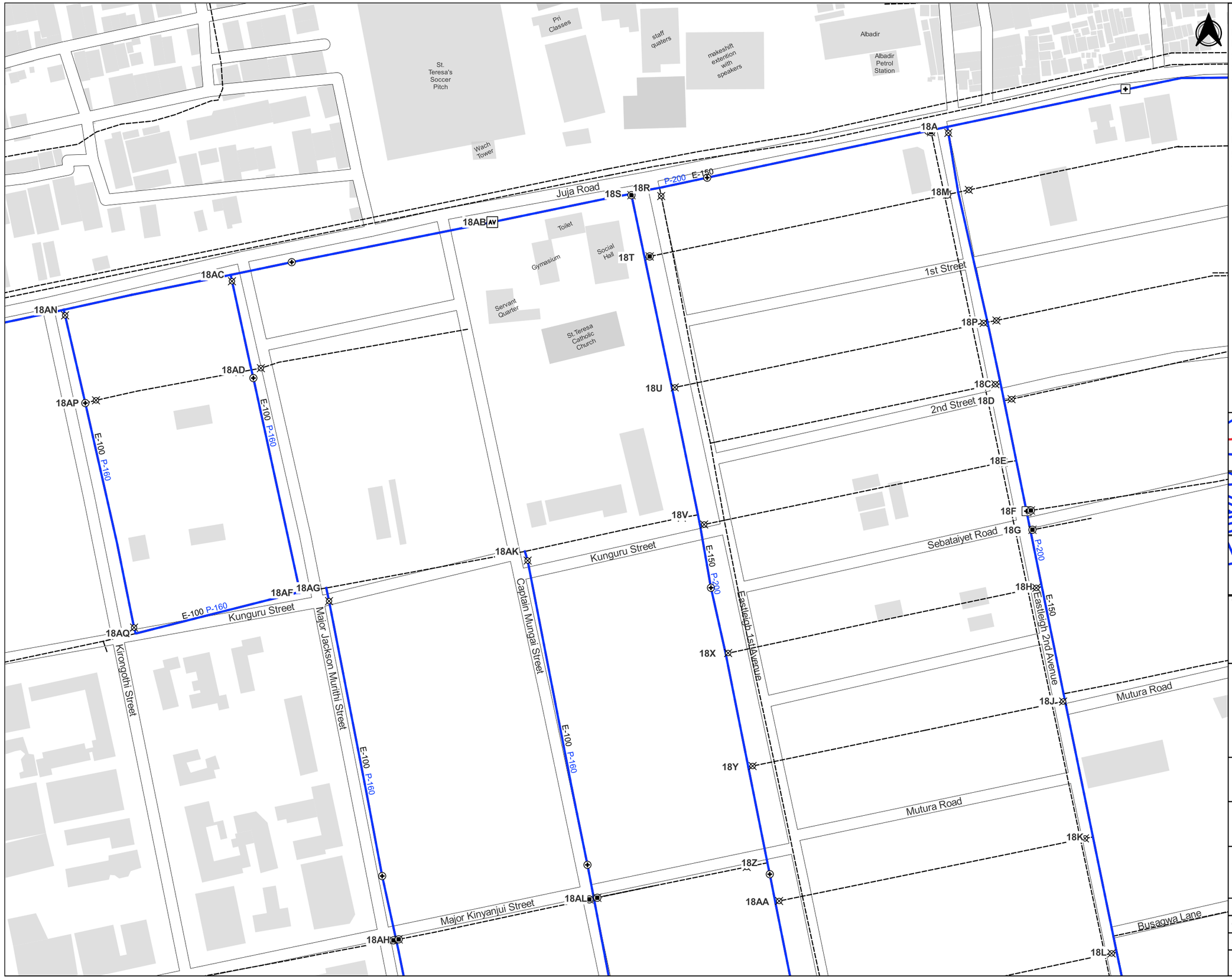
Drawing Title

Eastleigh/ Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 17C

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-017C

Revision: T0



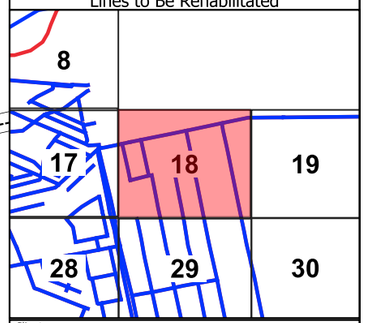
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-018
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

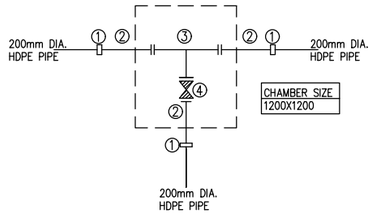
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 18

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

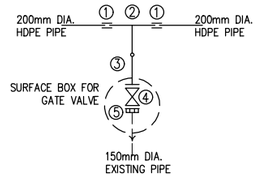
Drawing Number: 6000023-HH-GL-DR-W-018
Revision: T0

DETAIL - TEE (200X200)
JUNCTIONS: 18A, 18S



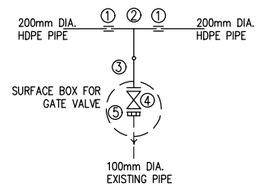
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - TEE (200X160)
JUNCTIONS: 18R



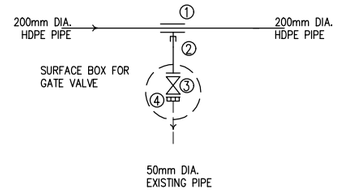
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 18C,18F,18V



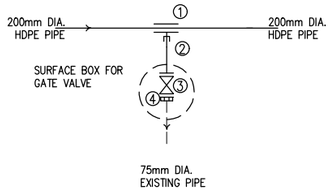
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X50)
JUNCTIONS: 18G



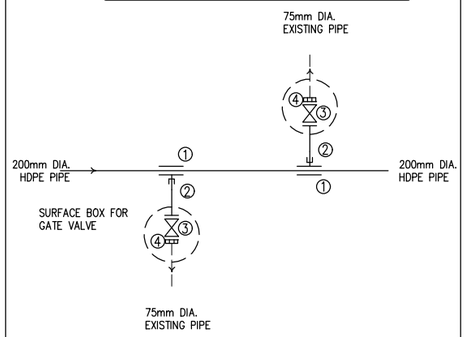
ITEM	DESCRIPTION	NO.
1	DN200/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 18E,18T,18H,18J,18K,18L, 18P,18Q,18D,18U,18W,18X,18Y,18Z,18AA



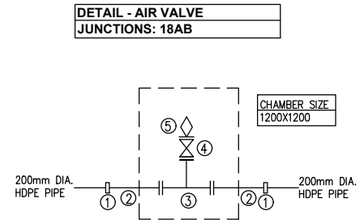
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 18M,18P



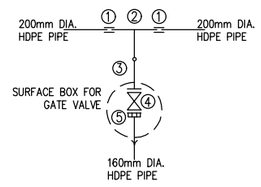
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

DETAIL - AIR VALVE
JUNCTIONS: 18AB



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	1
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200X50mm DIA. FERROUS ALL FLANGED TEE	1
4	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

DETAIL - TEE (200X160)
JUNCTIONS: 18AC,18AN,



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-018

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Howard Humphreys
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

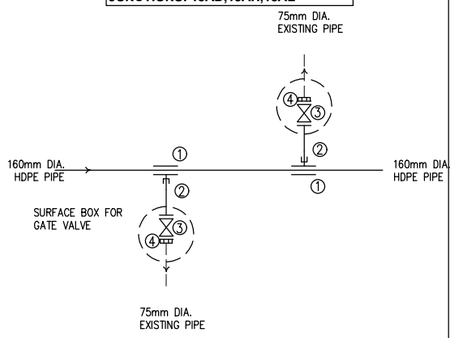
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 18A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

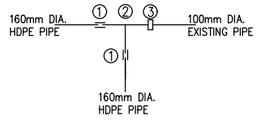
Drawing Number: 6000023-HH-FT-DR-W-018A
Revision: T0

DETAIL - PE SADDLE CLAMP (160X90)
JUNCTIONS: 18AD,18AH,18AL



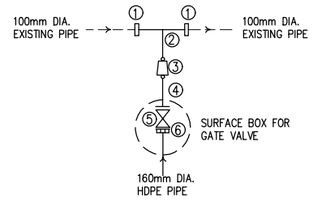
ITEM	DESCRIPTION	NO.
1	DN150/80mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

DETAIL - SPECIAL TEE (160X110)
JUNCTIONS:18AF,18AQ



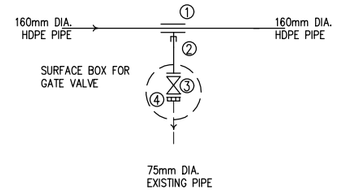
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	DN100/125mm DIA. STEPPED COUPLING	1

DETAIL - TEE (110X110)
JUNCTIONS: 18AG,18AK



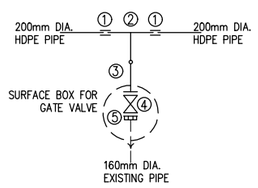
ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X90)
JUNCTIONS: 18AP



ITEM	DESCRIPTION	NO.
1	DN150/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 18AB



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-018

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

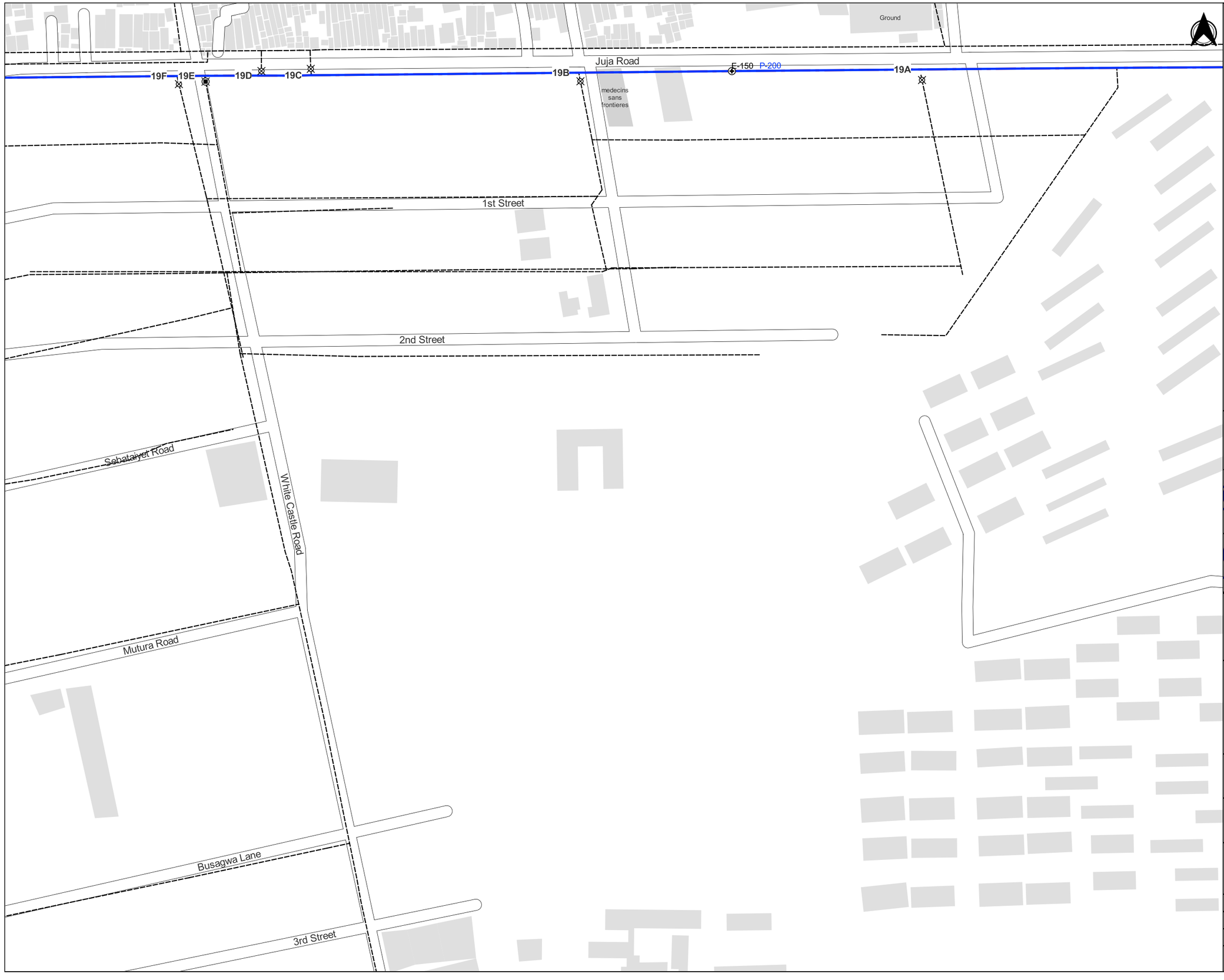
Drawing Title

Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 18B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-018B

Revision: T0



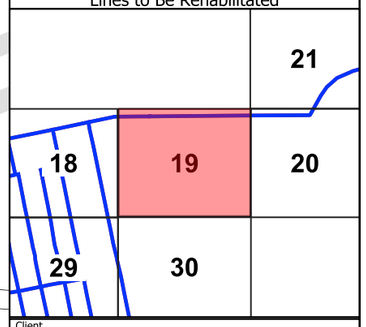
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-019
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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P.O Box 2758 - 00606 Nairobi.

The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

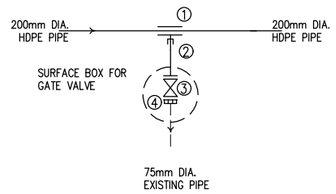
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 19

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

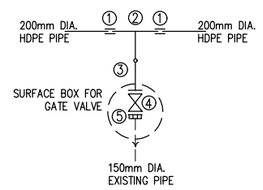
Drawing Number	Revision
6000023-HH-GL-DR-W-019	T0

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 19A,19B, 19F



ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 19C,19D,19E



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-019

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 19A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-019A
Revision: T0

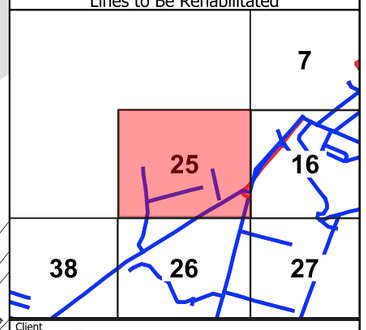
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-025
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

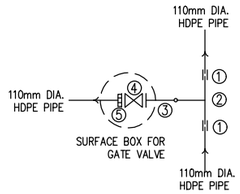
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 25

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

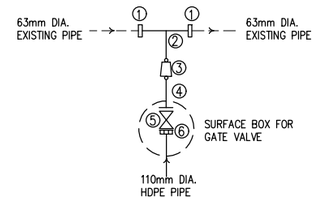
Drawing Number	Revision
6000023-HH-GL-DR-W-025	T0

DETAIL - TEE (110X110)
JUNCTIONS: 25A



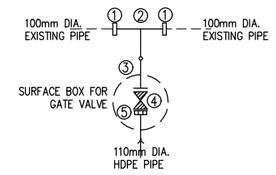
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 23B,23C



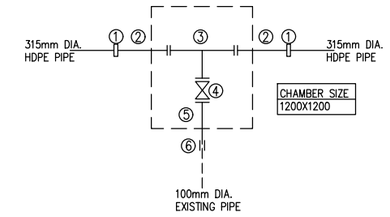
ITEM	DESCRIPTION	NO.
1	DN65mm DIA. COUPLING	2
2	OD63x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110x63mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD110mm DIA. HDPE STUB END WITH FLANGE	1
5	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - SPECIAL TEE (110X110)
JUNCTIONS: 25D



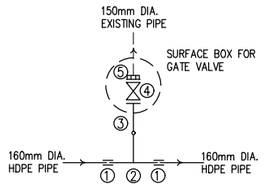
ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (300X100)
JUNCTIONS: 25E



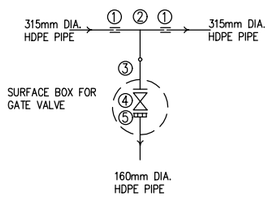
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x100mm DIA. FERROUS FLANGED TEE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN100mm DIA. COUPLING	1

DETAIL - TEE (160x160)
JUNCTIONS: 25H



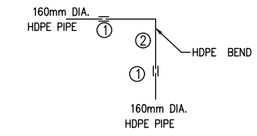
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X160)
JUNCTIONS: 25G



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H.BEND
JUNCTIONS: 25F



ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-025

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

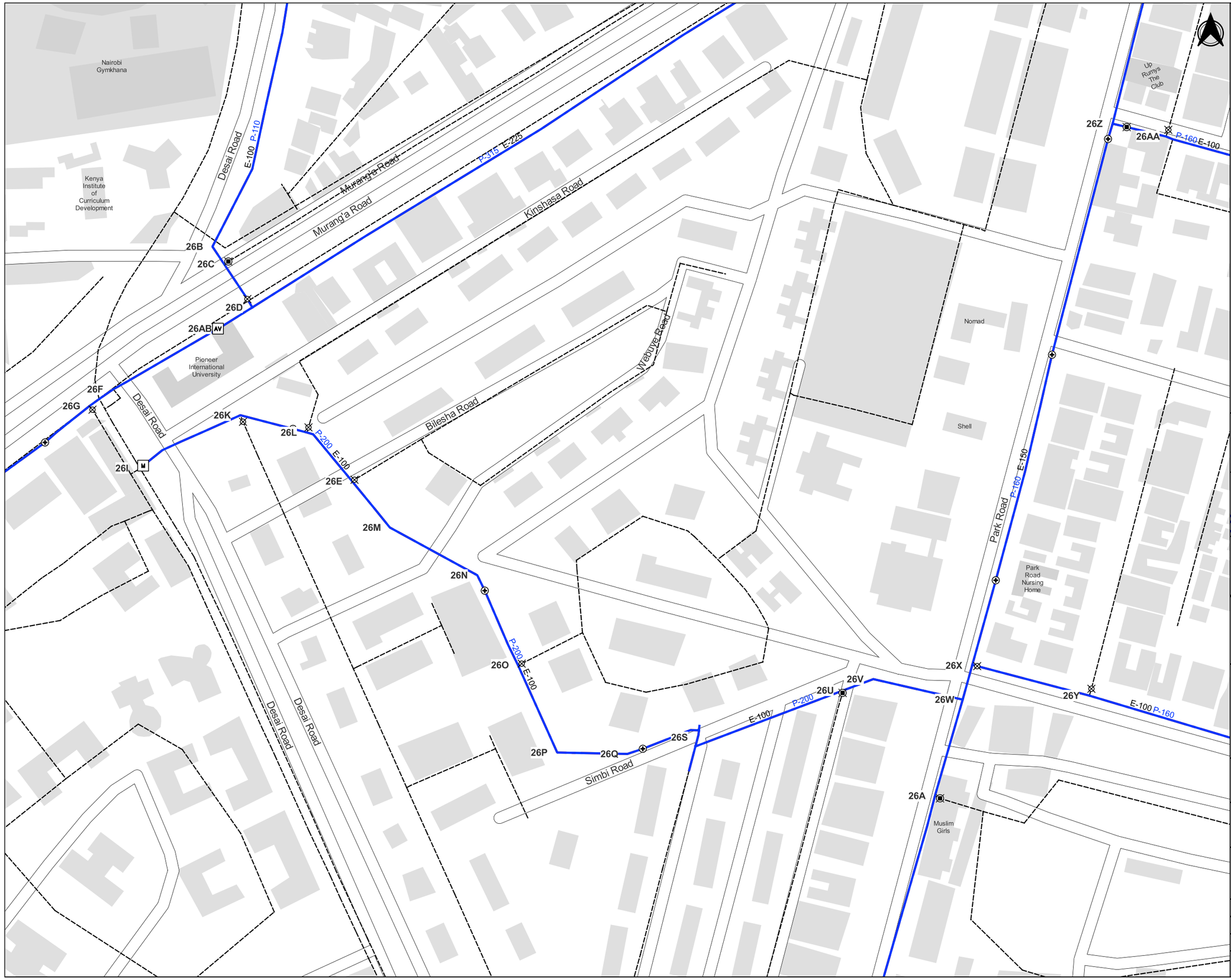
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title
Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 25A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-025A
Revision: T0



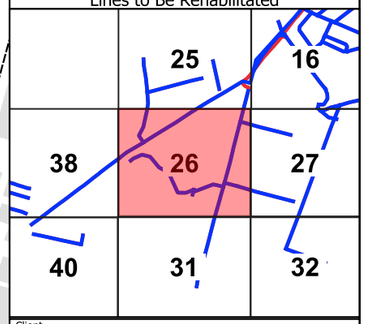
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-026
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
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Westlands.
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

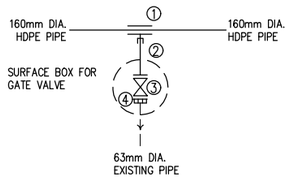
Drawing Title

NGARA EAST-WEST, PANGANI
REHABILITATION PIPELINES - LAYOUT
Sheet 26

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

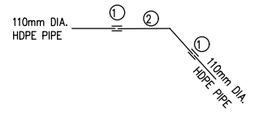
Drawing Number: 6000023-HH-GL-DR-W-026
Revision: T0

DETAIL - PE SADDLE CLAMP (160X63)
JUNCTIONS:26A



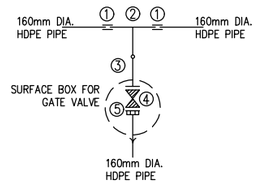
ITEM	DESCRIPTION	NO.
1	DN150/65mm DIA. SADDLE CLAMP	1
2	OD65mm DIA. HDPE SPIGOT PIPE 1.2m LONG	1
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - 60° H.BEND
JUNCTIONS: 26B



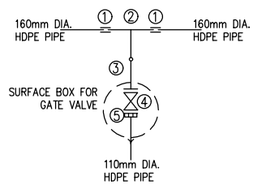
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110mm HDPE PLAIN ENDED 60° LONG BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 26C



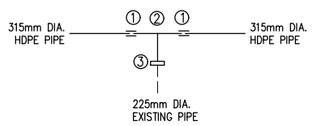
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 26D



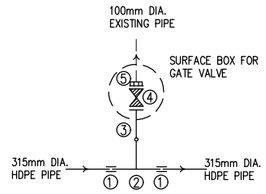
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 26F



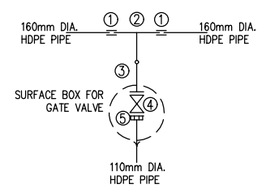
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x200mm DIA. PLAIN ENDED HDPE TEE	1
3	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (315X110)
JUNCTIONS: 26G



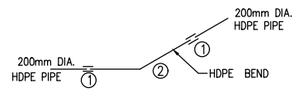
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 26D



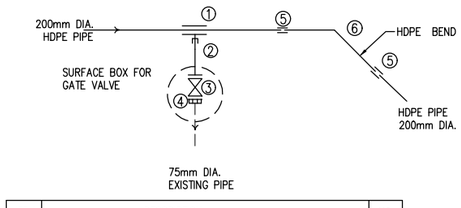
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 26M,26N,26Q,26R,26V



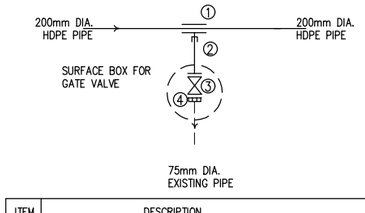
ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - PE SADDLE CLAMP (200X75)
JUNCTIONS: 26K,26L



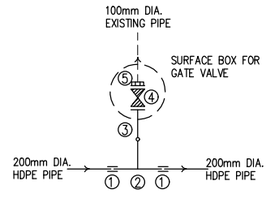
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1
5	DN200mm DIA COUPLING	2
6	OD200mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - PE SADDLE CLAMP (200X75)
JUNCTIONS: 26E,26W,26U



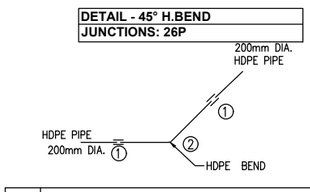
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 26O



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 45° H.BEND
JUNCTIONS: 26P



ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 45° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-026

Client:
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P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

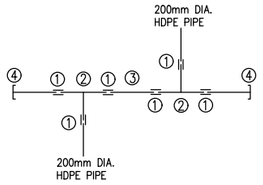
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Ngara E/W,Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 26A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

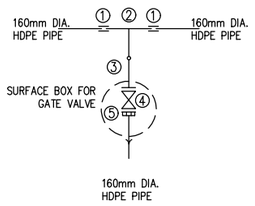
Drawing Number: 6000023-HH-FT-DR-W-026A
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 26S



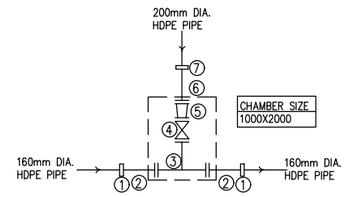
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x200mm DIA. PLAIN ENDED HDPE TEE	1
3	OD200mm DIA. HDPE PLAIN ENDED PIPE 10m LONG	1
4	OD200mm DIA. END CAP	1

DETAIL - TEE (160X160)
JUNCTIONS: 26X



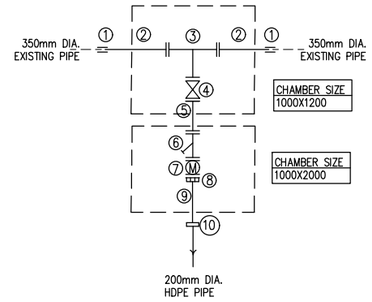
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (150X150)
JUNCTIONS: 26W



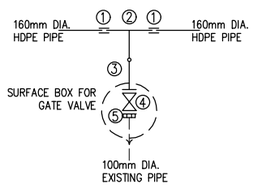
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA STEPPED COUPLING	2
2	DN150mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. ALL FLANGED GATE VALVE	1
5	DN200x150mm FERROUS ALL FLANGED REDUCER	1
6	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (350X200)
JUNCTIONS: 26I



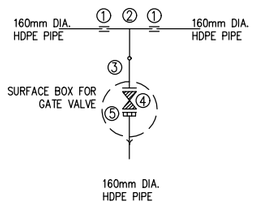
ITEM	DESCRIPTION	NO.
1	DN350mm DIA. COUPLING	2
2	DN350mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN350x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.0m LONG	1
6	DN200mm DIA. FLANGED Y-STRAINER	1
7	DN200mm DIA. WATER METER	1
8	DN200mm DIA. FLANGE ADAPTOR	1
9	DN200mm DIA. FERROUS SPIGOT PIPE 1.2m LONG	1
10	DN200/200 DIA STEPPED COUPLING	1

DETAIL - TEE (160X110)
JUNCTIONS: 26Y



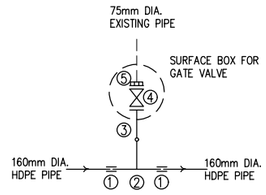
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 26Z



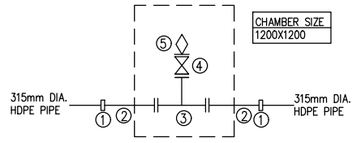
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 26AA



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - AIR VALVE
JUNCTIONS: 26AB



ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	1
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300X50mm DIA. FERROUS ALL FLANGED TEE	1
4	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-026

Client:
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Nairobi.

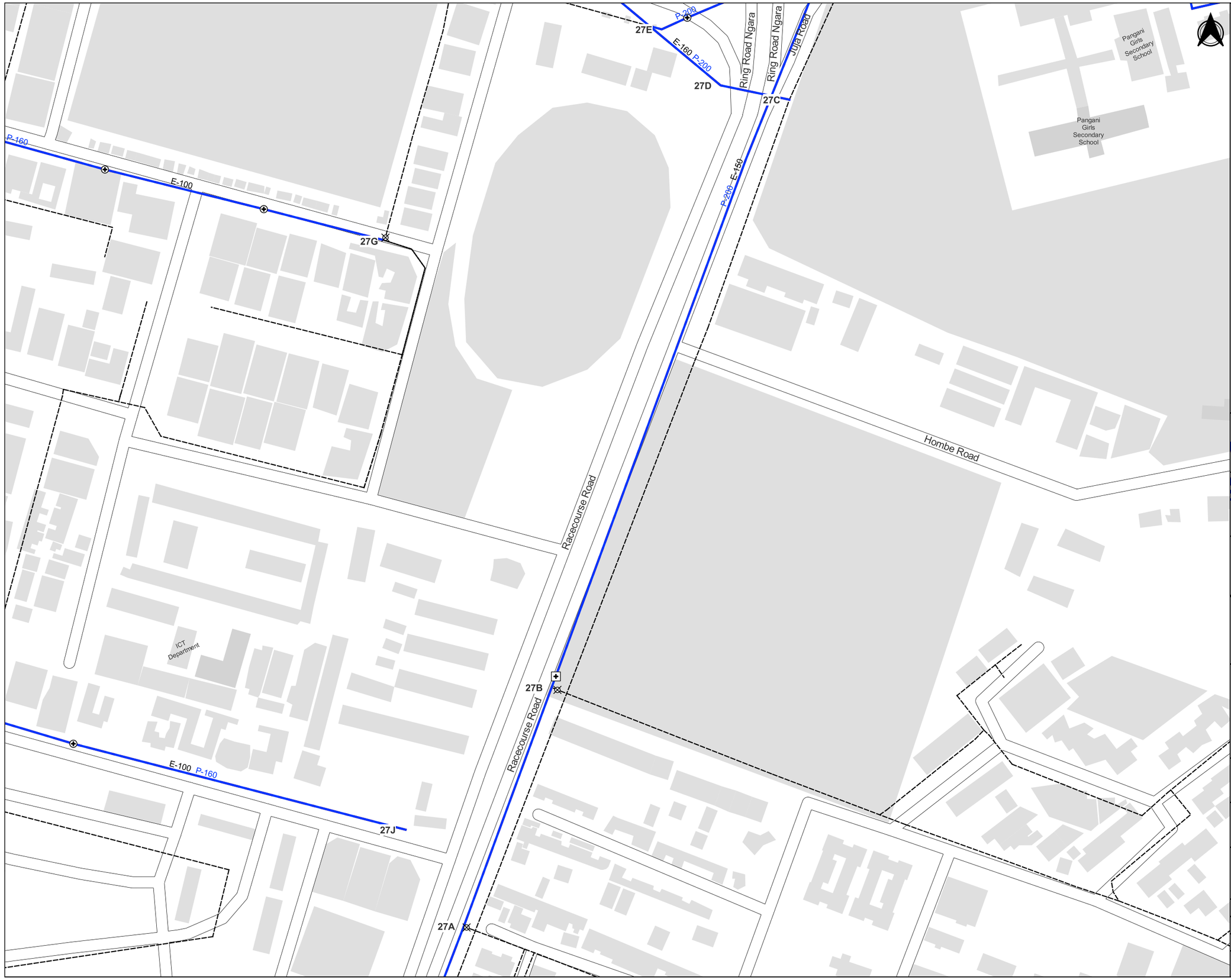
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Ngara E/W,Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 26B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-026B
Revision: T0



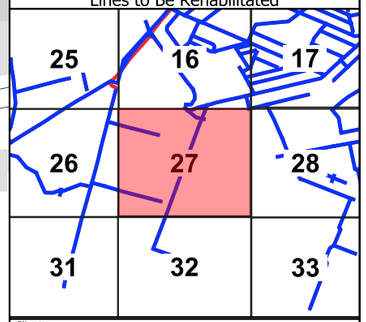
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-027
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Athi Water Plaza, Muthaiga North Road
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Nairobi - Kenya.

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P.O Box 2758 - 00606 Nairobi.

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

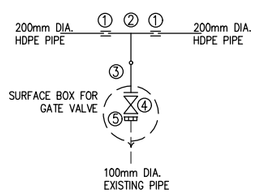
Drawing Title

NGARA EAST-WEST, EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 27

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

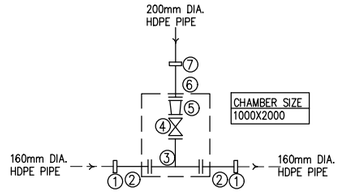
Drawing Number	Revision
6000023-HH-GL-DR-W-027	T0

DETAIL - TEE (200X110)
JUNCTIONS: 27A,27B



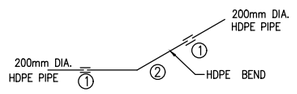
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (150X150)
JUNCTIONS: 27C



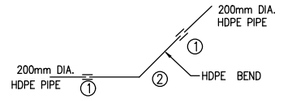
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA STEPPED COUPLING	2
2	DN150mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. ALL FLANGED GATE VALVE	1
5	DN200x150mm FERROUS ALL FLANGED REDUCER	1
6	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS: 27D



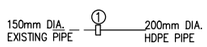
ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 45° H.BEND
JUNCTIONS: 27E



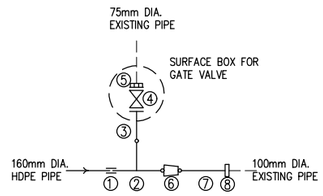
ITEM	DESCRIPTION	NO.
1	DN200mm DIA COUPLING	2
2	OD200mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - COUPLING
JUNCTIONS: 27F



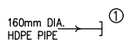
ITEM	DESCRIPTION	NO.
1	DN150/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X75)
JUNCTIONS: 27G



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1
6	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
7	OD110mm DIA. HDPE PLAIN ENDED PIPE 1.2m LONG	1
8	DN100/100mm DIA. STEPPED COUPLING	1

DETAIL - 160mm END CAP
JUNCTIONS: 27J



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-027

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Ngara E/W,Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 27A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-027A

Revision: T0



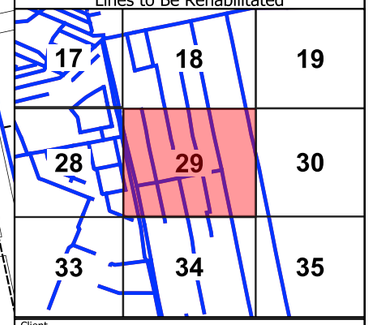
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-029
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

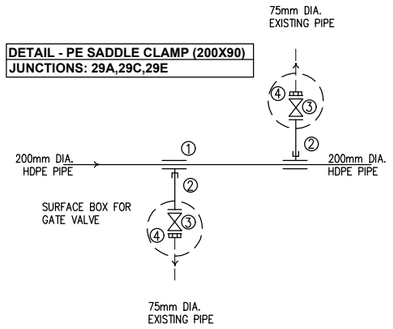
Drawing Title

EASTLEIGH, PANGANI
REHABILITATION PIPELINES - LAYOUT
Sheet 29

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

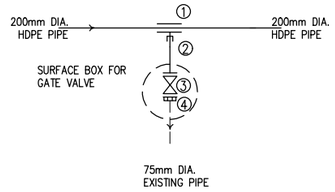
Drawing Number	Revision
6000023-HH-GL-DR-W-029	T0

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 29A,29C,29E



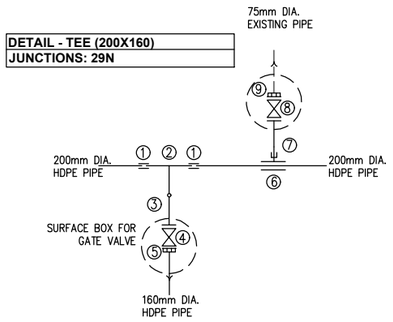
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 29H,29J,29K,29L,29M, 29Q,29R



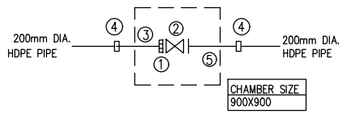
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 29N



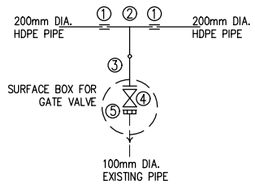
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1
6	DN200/80mm DIA. SADDLE CLAMP	1
7	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
8	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - DN200mm GATE VALVE
JUNCTIONS: 29G,29T



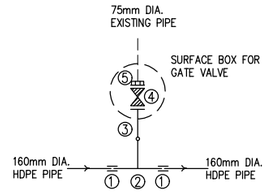
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. FLANGE ADAPTOR	1
2	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
4	DN200/200mm DIA STEPPED COUPLING	2
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1

DETAIL - TEE (200X110)
JUNCTIONS: 29S



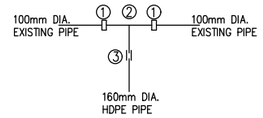
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 29U



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - SPECIAL TEE (110X160)
JUNCTIONS: ,29X



ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN150mm DIA COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-029

Client:

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Nairobi.

Howard Humphreys
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

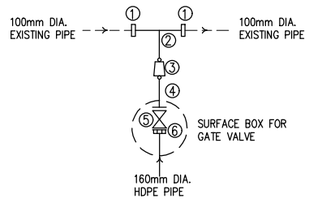
Drawing Title

Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 29A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

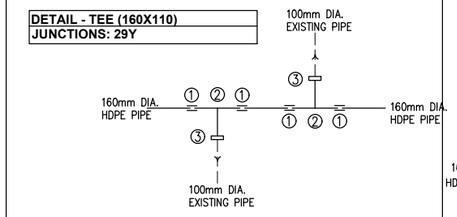
Drawing Number: 6000023-HH-FT-DR-W-029A
Revision: T0

DETAIL - TEE (110X110)
JUNCTIONS: 29W



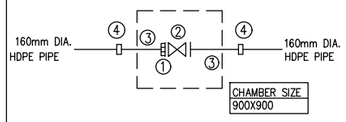
ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 29Y



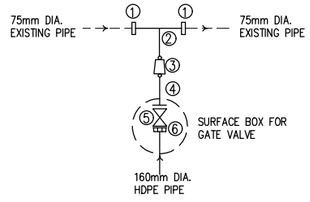
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	4
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	2
3	DN100/100 DIA STEPPED COUPLING	2
4	OD160mm DIA. HDPE PLAIN ENDED PIPE 1m LONG.	1

DETAIL - DN150mm GATE VALVE
JUNCTIONS: 29AA



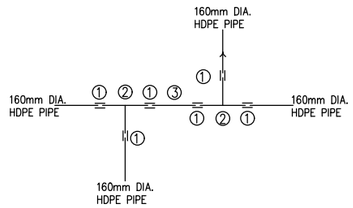
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	DN150mm DIA. FERROUS SPIGOT PIPE 1.2m LONG	2
4	DN125/150mm DIA STEPPED COUPLING	2

DETAIL - TEE (75X75)
JUNCTIONS: 29AB



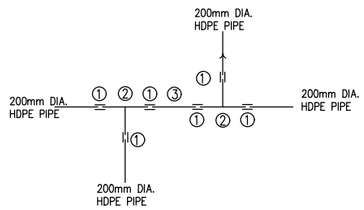
ITEM	DESCRIPTION	NO.
1	DN65/80mm DIA. STEPPED COUPLING	2
2	OD75x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x75mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 29AC



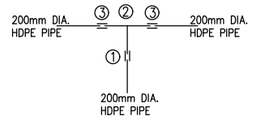
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	6
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	2
3	OD160mm DIA. HDPE PLAIN ENDED PIPE 1m LONG.	1

DETAIL - TEE (200X200)
JUNCTIONS: 29V



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	6
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	2
3	OD200mm DIA. HDPE PLAIN ENDED PIPE 1m LONG.	1

DETAIL - TEE (200X200)
JUNCTIONS:29AD



ITEM	DESCRIPTION	NO.
1	DN100mm DIA COUPLING	1
2	OD200x200mm DIA. PLAIN ENDED HDPE CROSS TEE	1
3	DN100mm DIA COUPLING	2

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-029

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

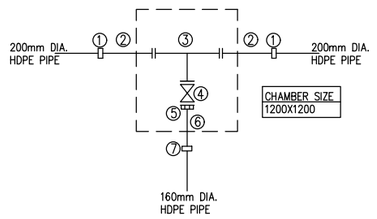
Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 29B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-029B

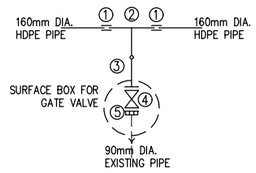
Revision: T0

DETAIL - TEE (200X150)
JUNCTIONS: 29AE



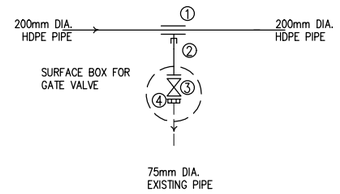
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x150mm DIA. FERROUS FLANGED TEE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1
6	DN150mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
7	DN125/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X90)
JUNCTIONS:29AF



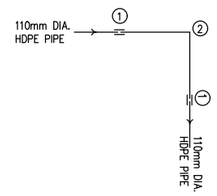
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x90mm DIA. PLAIN ENDED HDPE TEE	1
3	OD90mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 29AG



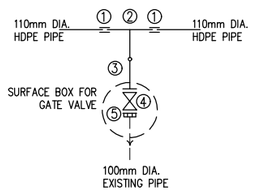
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H-BEND
H-BEND : 29AH



ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (100X110)
JUNCTIONS: 29AJ



ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-029

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 29C

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-029C
Revision: T0



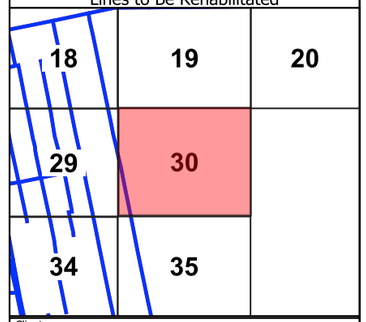
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-030
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

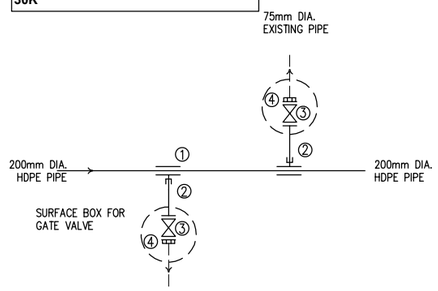
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 30

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-030	T0

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 30A,30C,30E,
30K



ITEM	DESCRIPTION	NO.
1	DN200/90mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-030

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

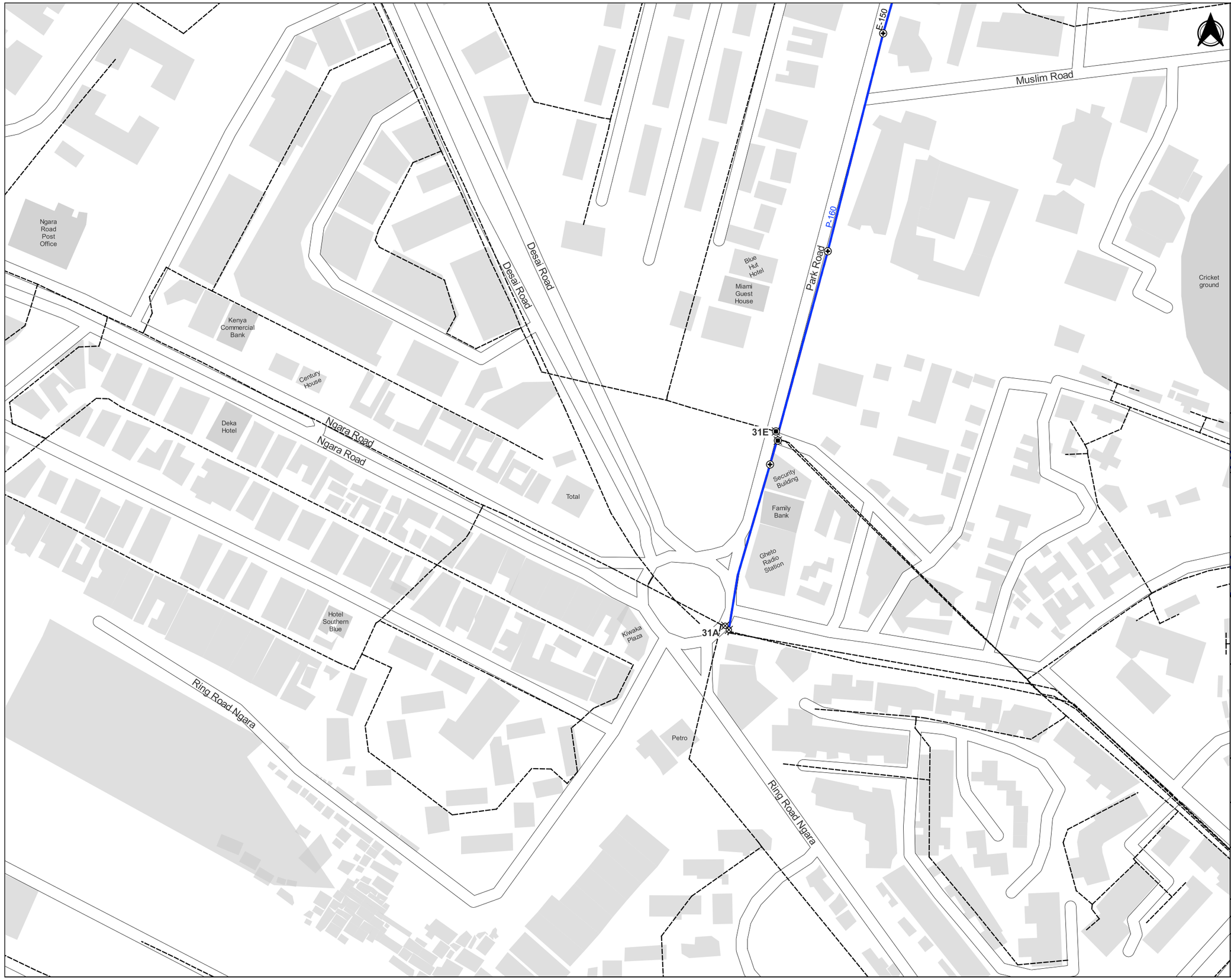
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 30A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-030A
Revision: T0



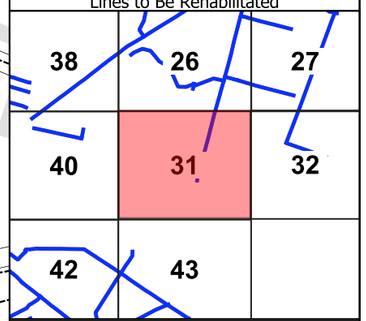
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-031
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

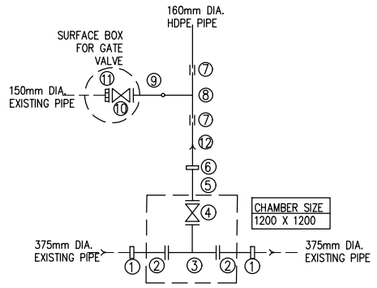
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 31

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

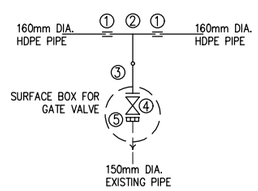
Drawing Number: 6000023-HH-GL-DR-W-031
Revision: T0

DETAIL - TEE (400X150)
JUNCTIONS: 31A



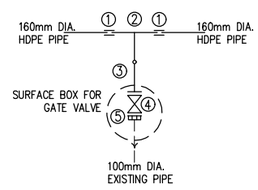
ITEM	DESCRIPTION	NO.
1	DN400mm DIA. COUPLING	2
2	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN400x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN125/150mm DIA. STEPPED COUPLING	1
7	DN150mm DIA. COUPLING	2
8	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
9	OD160mm DIA. HDPE STUB END WITH FLANGE	1
10	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
11	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 31C



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 31D,31E



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-031

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

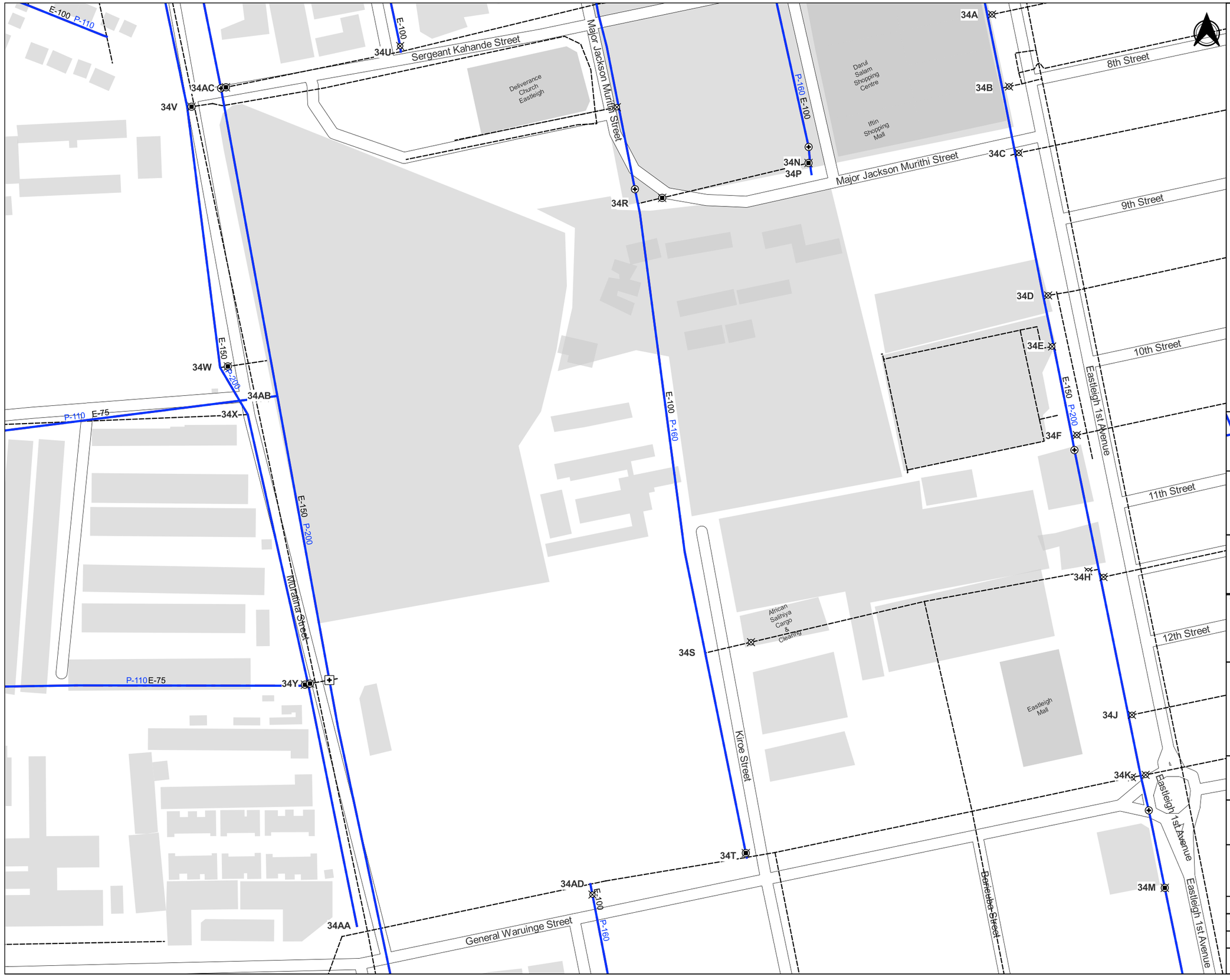
Drawing Title

Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 31A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-031A

Revision: T0



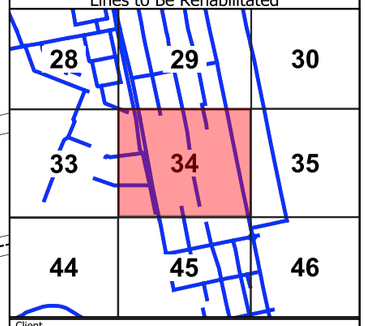
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-034
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP Inventing for tomorrow

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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers

The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

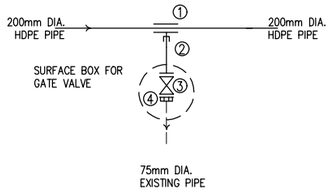
Drawing Title

EASTLEIGH, PANGANI
REHABILITATION PIPELINES - LAYOUT
Sheet 34

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

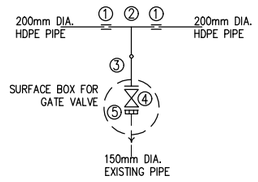
Drawing Number: 6000023-HH-GL-DR-W-034
Revision: T0

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 34A,34C,34D,34F,34G,34H



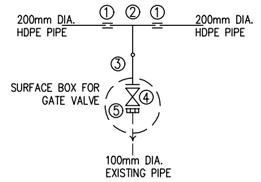
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 34B



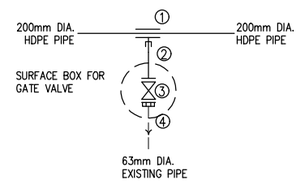
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 34E



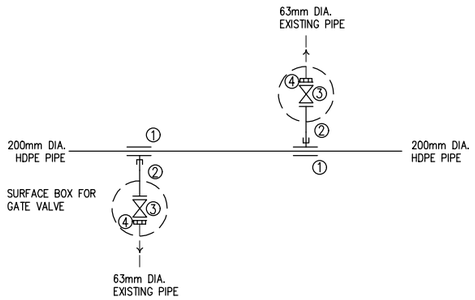
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X65)
JUNCTIONS:34J



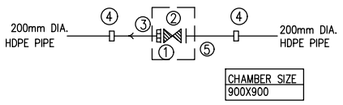
ITEM	DESCRIPTION	NO.
1	DN200/65mm DIA. SADDLE CLAMP	1
2	DN65mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X65)
JUNCTIONS:34K



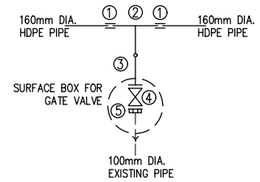
ITEM	DESCRIPTION	NO.
1	DN200/65mm DIA. SADDLE CLAMP	2
2	DN65mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN65mm DIA. FLANGE ADAPTOR	2

DETAIL - DN200mm GATE VALVE
JUNCTIONS:34M



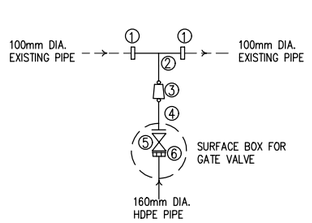
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. FLANGE ADAPTOR	1
2	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
4	DN200/200mm DIA STEPPED COUPLING	2
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1

DETAIL - TEE (160X110)
JUNCTIONS: 34N



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS:34U



ITEM	DESCRIPTION	NO.
1	DN110/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-034

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

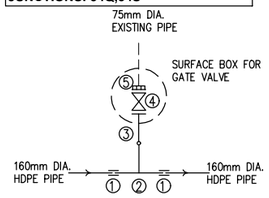
Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 34A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-034A

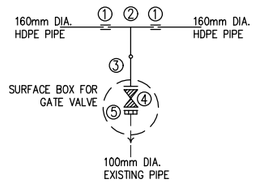
Revision: T0

DETAIL - TEE (160X75)
JUNCTIONS: 34Q,34S



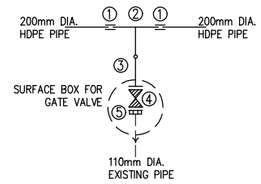
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 34R



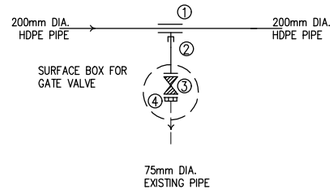
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 34X



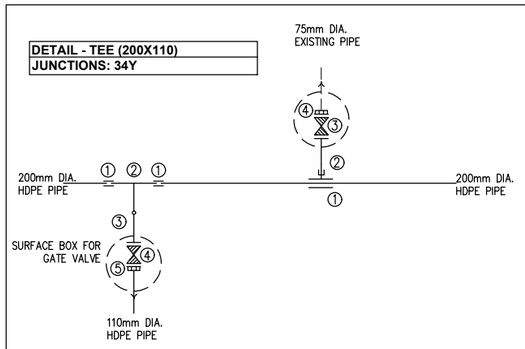
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 34V,34W,34Z



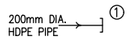
ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 34Y



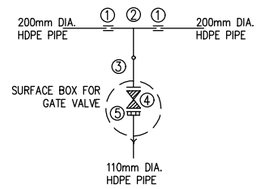
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1
6	DN200/80mm DIA. SADDLE CLAMP	1
7	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
8	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - 200mm END CAP
JUNCTIONS: 34AA,34P



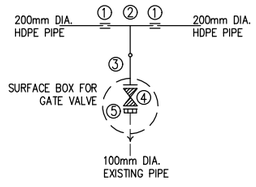
ITEM	DESCRIPTION	NO.
1	OD200mm DIA. END CAP	1

DETAIL - TEE (200X110)
JUNCTIONS:34AB



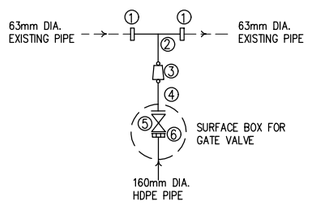
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 34AC



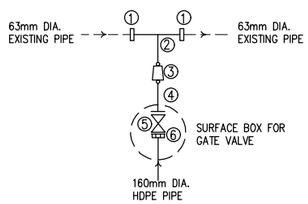
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 34AD



ITEM	DESCRIPTION	NO.
1	DN65mm DIA. COUPLING	2
2	OD63x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x63mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 34T



ITEM	DESCRIPTION	NO.
1	DN65mm DIA. COUPLING	2
2	OD63x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x63mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-034

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 34B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-034B

Revision: T0



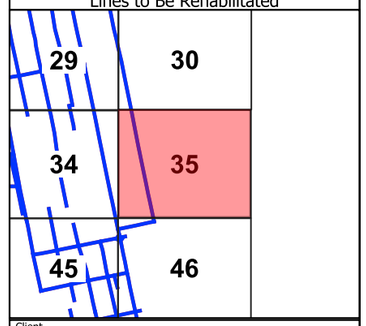
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-035
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Design and Supervision Consultant

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P.O Box 2758 - 00606 Nairobi.

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

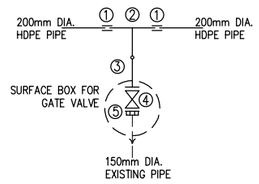
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 35

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

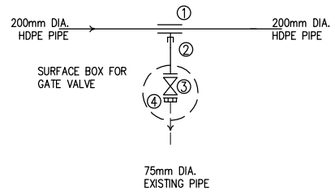
Drawing Number: 6000023-HH-GL-DR-W-035
Revision: T0

DETAIL - TEE (200X160)
JUNCTIONS: 35A



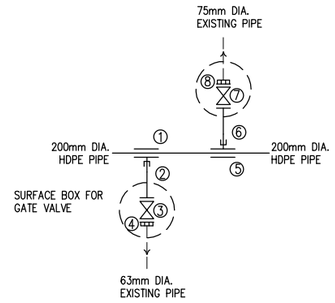
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 35B,



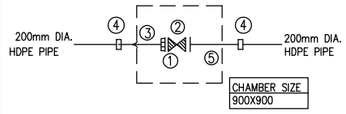
ITEM	DESCRIPTION	NO.
1	DN200/90mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X65)
JUNCTIONS: 35C



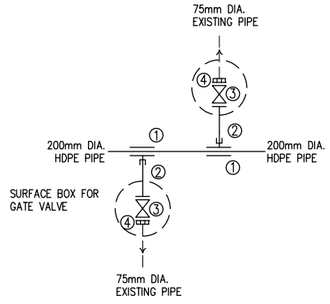
ITEM	DESCRIPTION	NO.
1	DN200/65mm DIA. SADDLE CLAMP	1
2	DN65mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN65mm DIA. FLANGE ADAPTOR	1
5	DN200/90mm DIA. SADDLE CLAMP	1
6	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
8	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - DN200mm GATE VALVE
JUNCTIONS: 35Q



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. FLANGE ADAPTOR	1
2	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
4	DN200/200mm DIA STEPPED COUPLING	2
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS: 35G,35J,35L,35N



ITEM	DESCRIPTION	NO.
1	DN200/90mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-035

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:

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The Address, Muthangari Drive
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

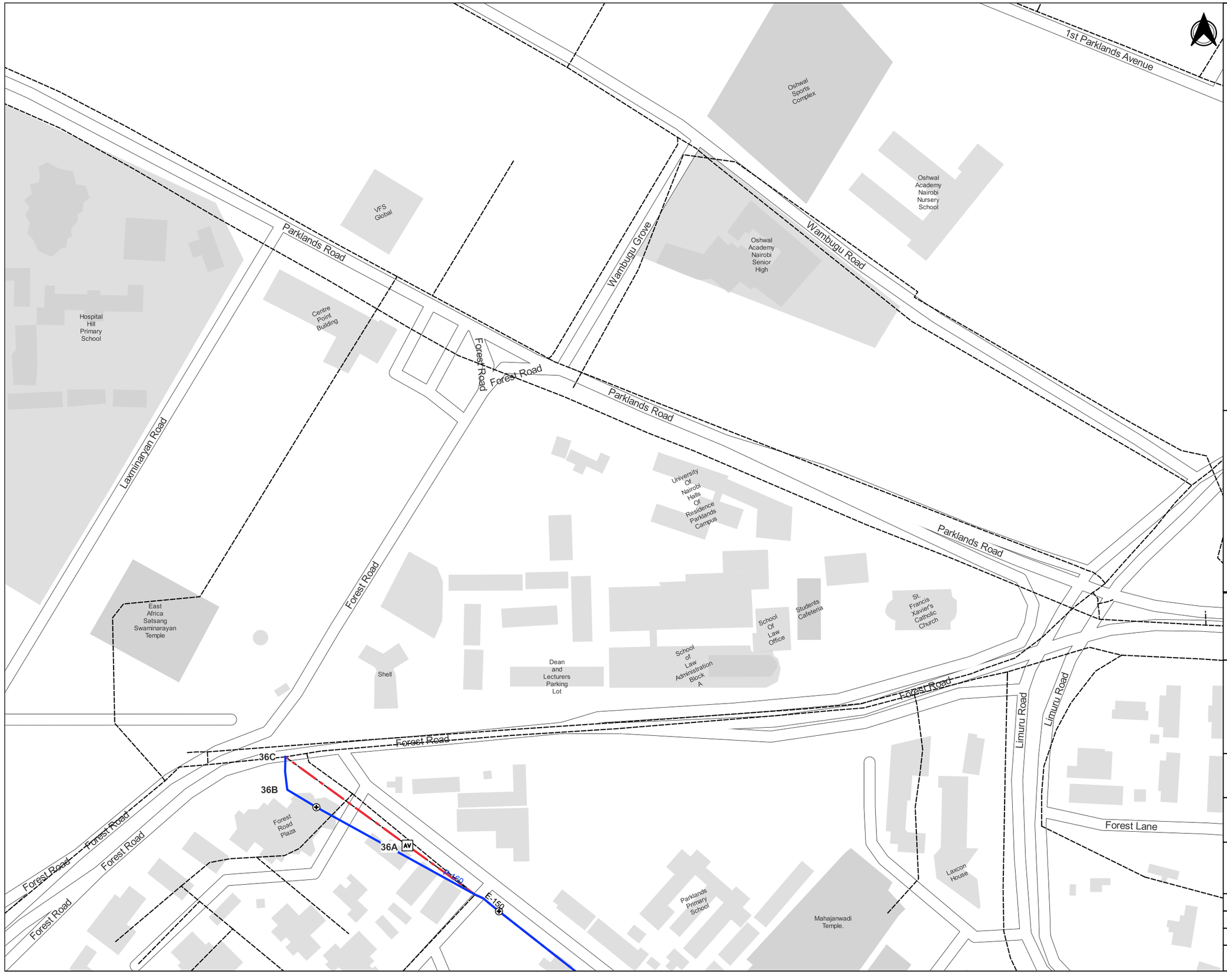
Drawing Title

Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 35A

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-035A

Revision: T0



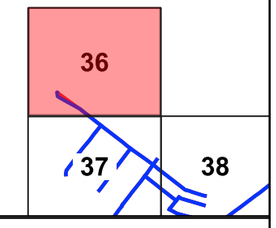
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-036
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

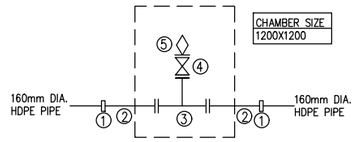
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 36

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

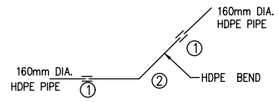
Drawing Number: 6000023-HH-GL-DR-W-036
Revision: T0

DETAIL - AIR VALVE
JUNCTIONS: 36A



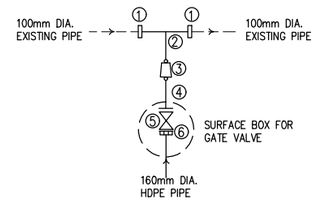
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA. STEPPED COUPLING	1
2	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150X50mm DIA. FERROUS ALL FLANGED TEE	1
4	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

DETAIL - 45° H.BEND
JUNCTIONS: 36B



ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 36C



ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-036

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Design and Supervision Consultant:
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 36A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-036A
Revision: T0

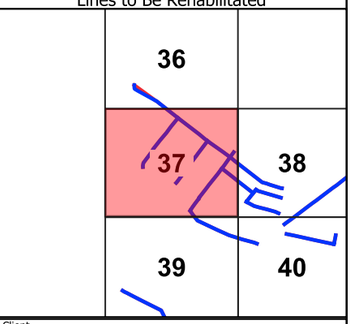
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-037
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
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Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

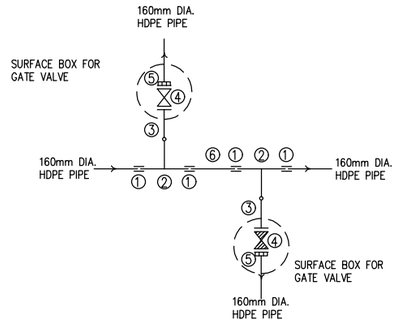
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 37

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

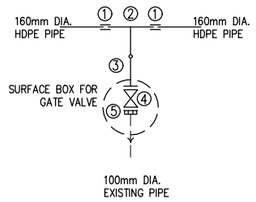
Drawing Number	Revision
6000023-HH-GL-DR-W-037	T0

DETAIL - TEE (160X160)
JUNCTIONS: 37A



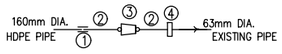
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	4
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	2
3	OD160mm DIA. HDPE STUB END WITH FLANGE	2
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	2
5	DN150mm DIA. FLANGE ADAPTOR	2
6	OD160mm DIA. HDPE PLAIN ENDED PIPE 1.2m LONG	1

DETAIL - TEE (160X110)
JUNCTIONS: 37B



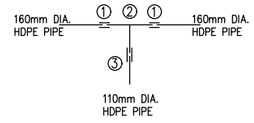
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - DN160x63mm REDUCER
JUNCTIONS: 37C



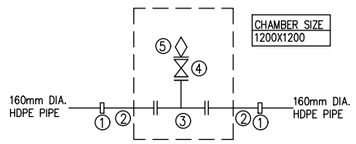
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	1
2	OD160mm DIA. PLAIN ENDED HDPE PIPE 1.2m LONG	2
3	OD160x63mm DIA. HDPE REDUCER	1
4	DN65/65mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X110)
JUNCTIONS: 37D



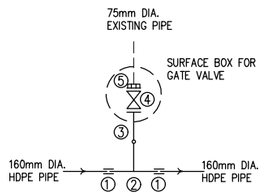
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN100mm DIA. COUPLING	1

DETAIL - AIR VALVE
JUNCTIONS: 37E



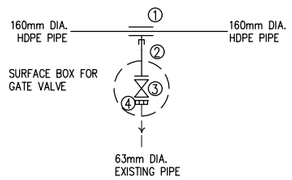
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA. STEPPED COUPLING	1
2	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150X50mm DIA. FERROUS ALL FLANGED TEE	1
4	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

DETAIL - TEE (160X75)
JUNCTIONS: 37F



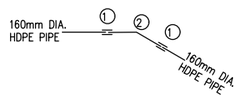
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X63)
JUNCTIONS: 37G



ITEM	DESCRIPTION	NO.
1	DN150/65mm DIA. SADDLE CLAMP	1
2	DN65mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - 45° H.BEND
JUNCTIONS: 37H



ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-037

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Design and Supervision Consultant:
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Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

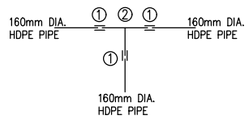
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 37A

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

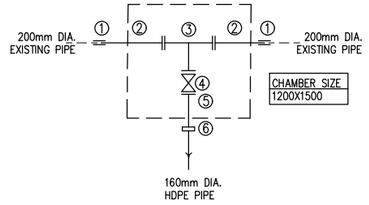
Drawing Number: 6000023-HH-FT-DR-W-037A
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 37J,37Q



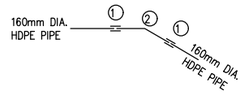
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	3
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - TEE (200X150)
JUNCTIONS: 37U,37T



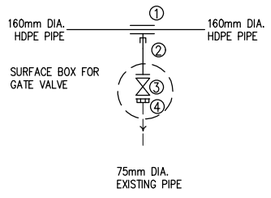
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN125/150mm DIA. STEPPED COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS: 37M



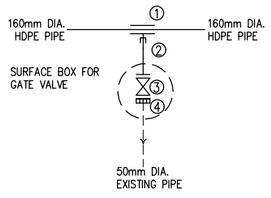
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 30° LONG BEND	1

DETAIL - PE SADDLE CLAMP (160X75)
JUNCTIONS: 37N,37P



ITEM	DESCRIPTION	NO.
1	DN150/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X50)
JUNCTIONS: 37I



ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-037

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 37B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-037B

Revision: T0



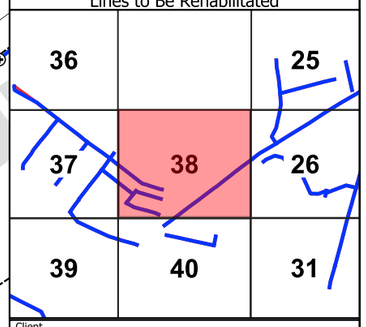
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-038
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

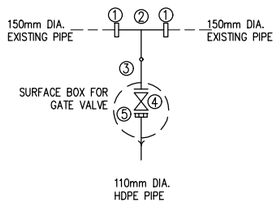
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 38

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

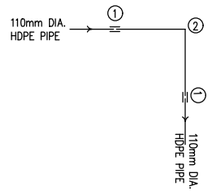
Drawing Number	Revision
6000023-HH-GL-DR-W-038	T0

DETAIL - TEE (160X110)
JUNCTIONS: 38A



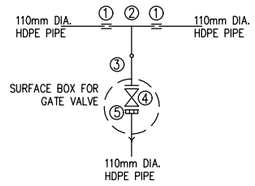
ITEM	DESCRIPTION	NO.
1	OD125/150mm DIA. STEPPED COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - 90° H-BEND
H-BEND : 38B,38D



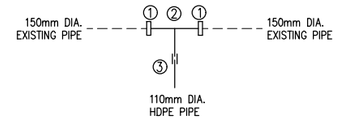
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 38C



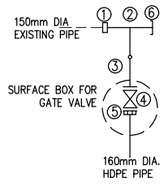
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 38E



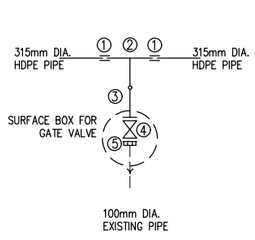
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA. STEPPED COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN100mm COUPLING	1

DETAIL -TEE (160X160)
JUNCTIONS: 38F



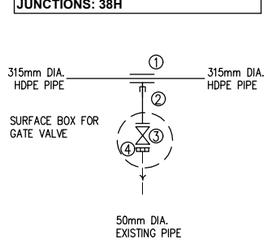
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA. COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1
6	OD160m DIA. END CAP	1

DETAIL - TEE (315X110)
JUNCTIONS: 38I,38J



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (315X50)
JUNCTIONS: 38H



ITEM	DESCRIPTION	NO.
1	DN300/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - 150 SLUICE VALVE
JUNCTIONS: 39F



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGED ADAPTOR	2
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-038

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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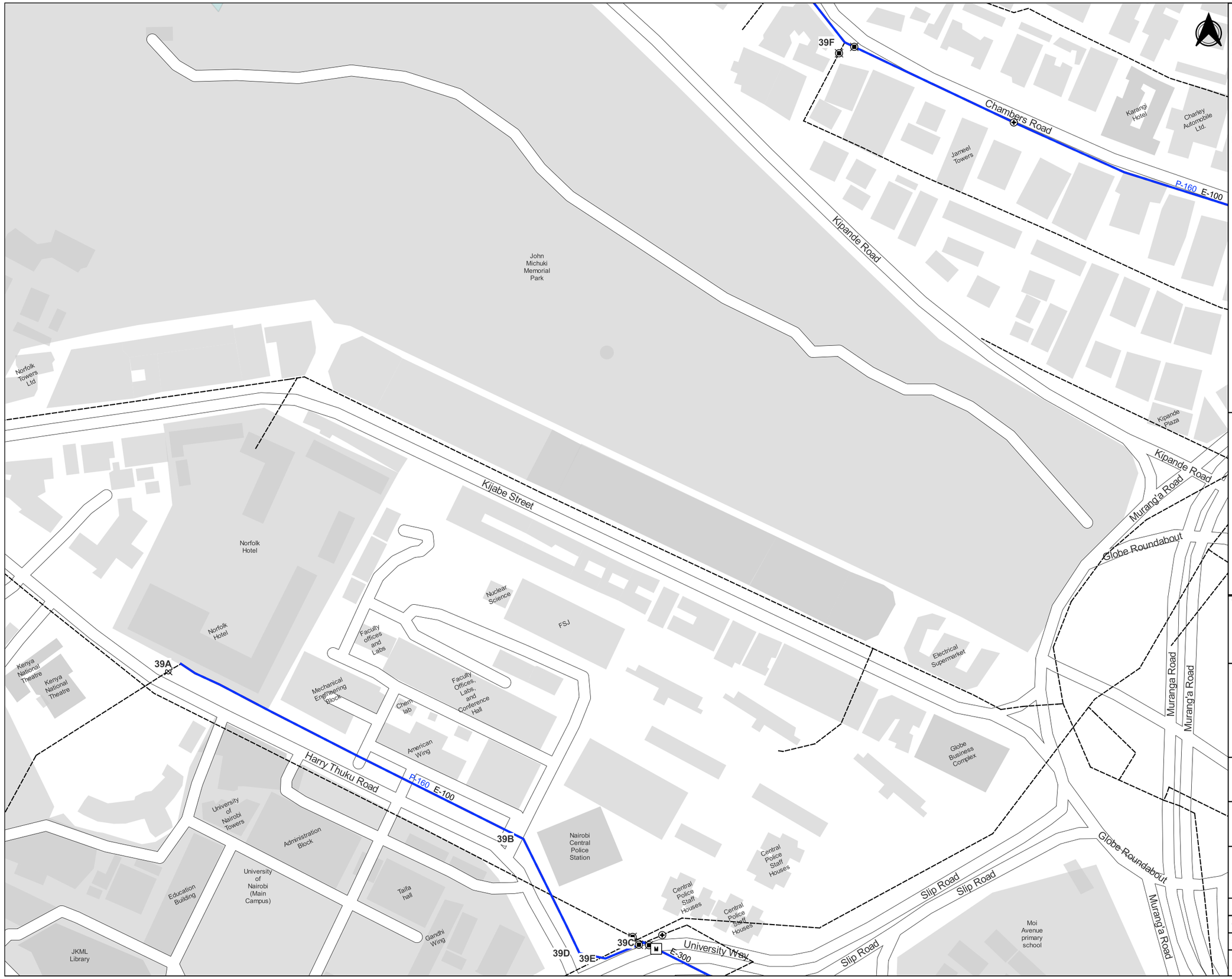
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 38A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-038A
Revision: T0



NOTES

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2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
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5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
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- Existing Sluice Valve to be Replaced
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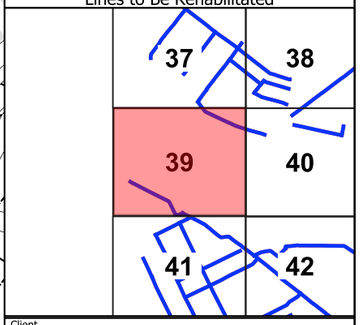
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

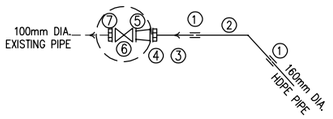
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 39

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

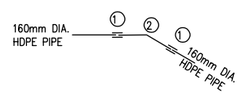
Drawing Number	Revision
6000023-HH-GL-DR-W-039	T0

DETAIL - 60° H.BEND
JUNCTIONS: 39A



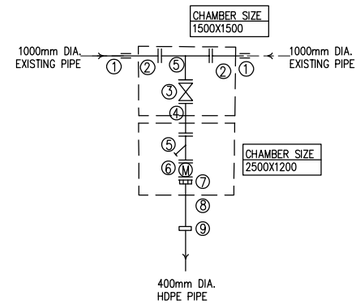
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° BEND	1
3	OD160mm DIA. PLAIN ENDED HDPE PIPE 1.2m LONG	1
4	DN150mm DIA. FLANGE ADAPTOR	1
5	DN150x100mm DIA. FERROUS ALL FLANGED REDUCER	1
6	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
7	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 45° H.BEND
JUNCTIONS: 39B,39D,39E



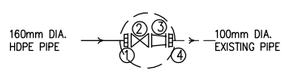
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (1000X400)
JUNCTIONS: 39C



ITEM	DESCRIPTION	NO.
1	DN1000mm DIA. COUPLING	2
2	DN1000mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN1000x400 DIA. FERROUS ALL FLANGED TEE	1
4	DN400mm DIA. FERROUS ALL FLANGED PIPE 1.2m LONG	1
5	DN400mm DIA. FLANGED Y-STRAINER	1
6	DN400mm DIA. WATER METER	1
7	DN400mm DIA. FLANGE ADAPTOR	1
8	DN400mm DIA. FERROUS SPIGOT PIPE 1.2m LONG	1
9	DN400/400mm DIA. STEPPED COUPLING	1

DETAIL - SLUICE VALVE (DN150)
JUNCTIONS: 39C2



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
2	DN150x100mm DIA. FERROUS ALL FLANGED REDUCER	1
4	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-039

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:

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Westlands.
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Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

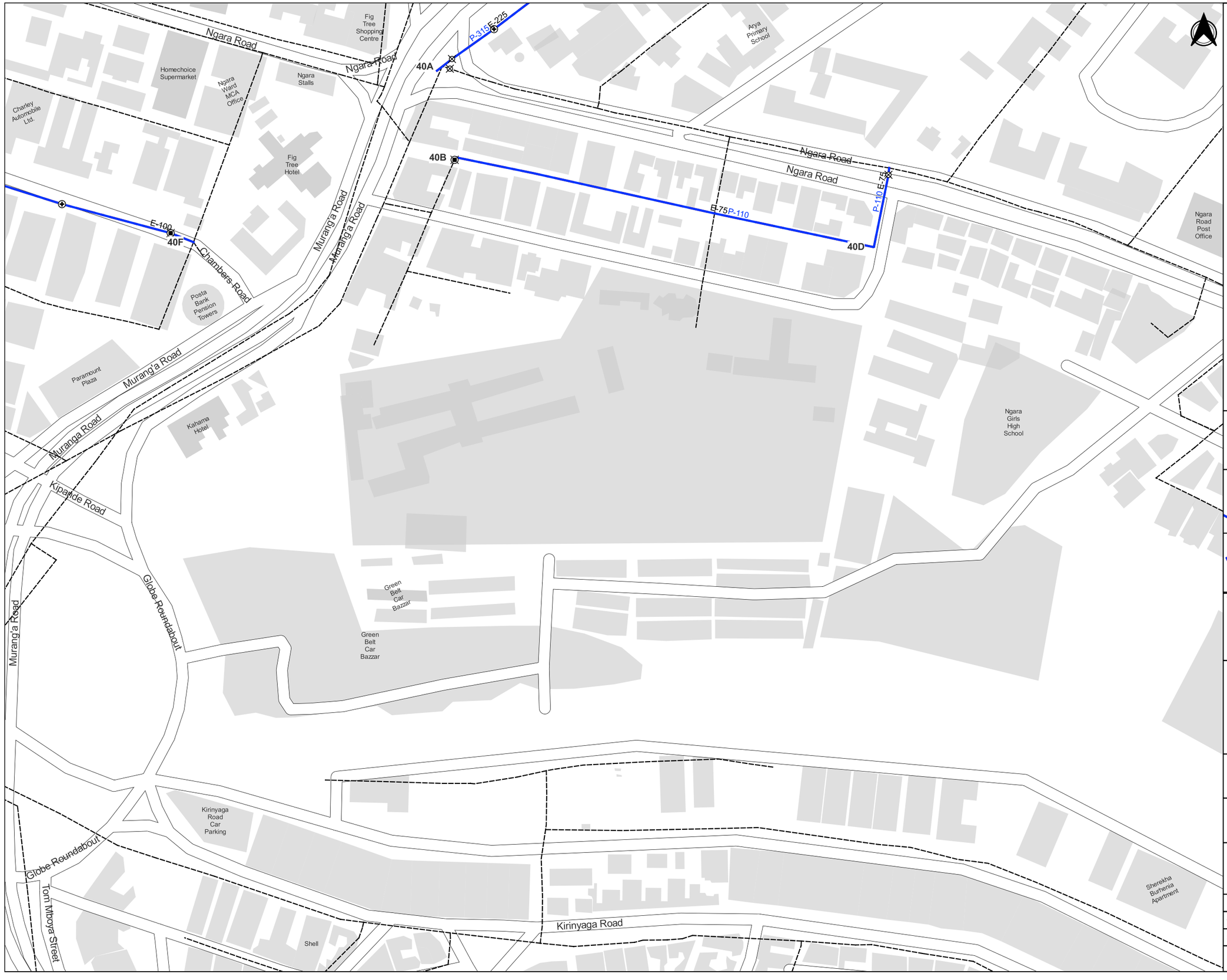
Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-039A

Revision: T0



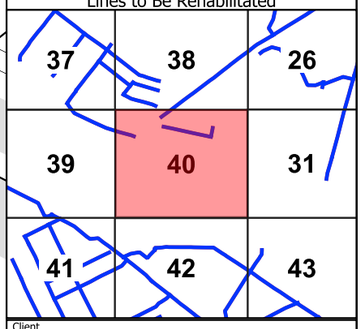
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-040
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

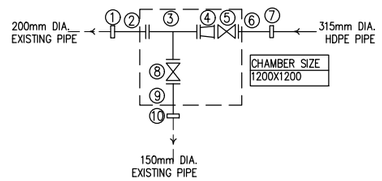
Drawing Title

NGARA EAST-WEST
REHABILITATION PIPELINES - LAYOUT
Sheet 40

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

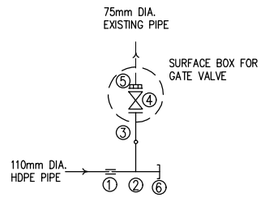
Drawing Number: 6000023-HH-GL-DR-W-040
Revision: T0

DETAIL - TEE (315X160)
JUNCTIONS: 40A



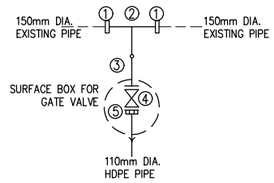
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	1
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN200x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN300x200mm DIA. FERROUS ALL FLANGED REDUCER	1
5	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN300/300mm DIA. STEPPED COUPLING	1
8	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
10	DN150mm DIA. COUPLING	1

DETAIL - TEE (110x75)
JUNCTIONS: 40B



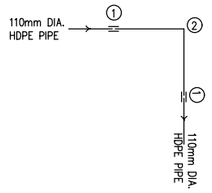
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	1
2	OD110x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1
6	OD110mm DIA. END CAP	1

DETAIL - TEE (160X110)
JUNCTIONS: 40E



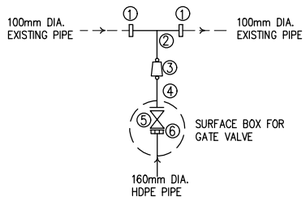
ITEM	DESCRIPTION	NO.
1	DN125/150mm DIA STEPPED COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - 90° H-BEND
H-BEND : 40D



ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	2
2	OD110mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 40F



ITEM	DESCRIPTION	NO.
1	DN100/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-040

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

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Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Ngara E/W
REHABILITATION PIPELINES - FITTINGS
Sheet 40A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-040A

Revision: T0

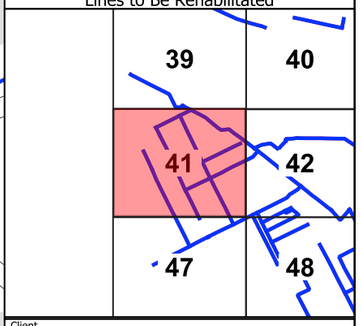
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-041
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- Proposed Washout
- Proposed Water Meters
- Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

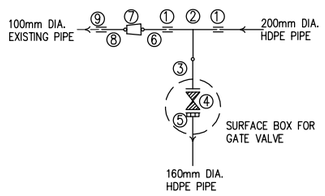
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 41

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

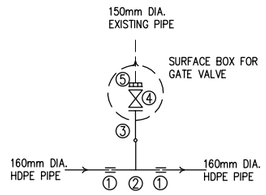
Drawing Number	Revision
6000023-HH-GL-DR-W-041	T0

DETAIL - TEE (200X160)
JUNCTIONS: 41A



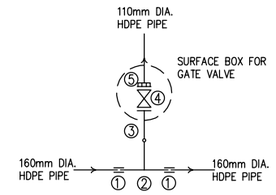
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	OD200mm DIA. HDPE PLAIN ENDED PIPE, 1.2m CUT TO SUIT	1
7	OD200x110mm DIA. HDPE REDUCER	1

DETAIL - TEE (160X160)
JUNCTIONS: 41B



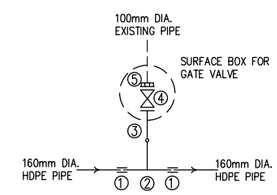
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 41C



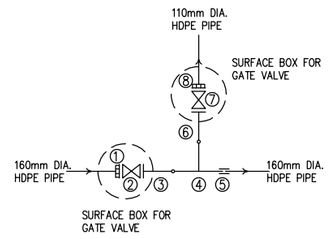
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160x110)
JUNCTIONS: 41D,41E, 41Q, 41V



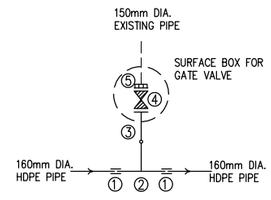
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 41F



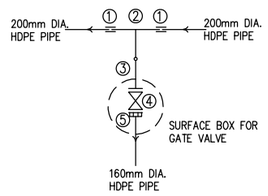
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
5	DN150mm DIA COUPLING	1
6	OD110mm DIA. HDPE STUB END WITH FLANGE	1
7	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
8	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 41G



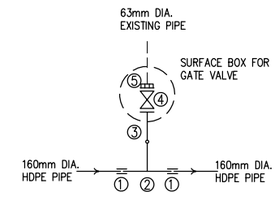
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 41H



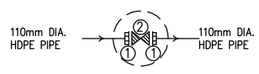
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X63)
JUNCTIONS: 41I



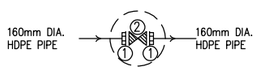
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - SLUICE VALVE (DN100)
JUNCTIONS: 41J



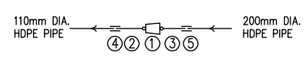
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	2
2	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - SLUICE VALVE (DN150)
JUNCTIONS: 41K



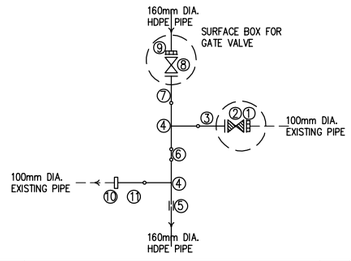
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	2
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - 200x110 REDUCER
Junctions: 41K2



ITEM	DESCRIPTION	NO.
1	OD200x110mm DIA. PLAIN ENDED HDPE REDUCER	1
2	OD110mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
3	OD200mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
4	DN100mm DIA COUPLING	1
5	DN200mm DIA COUPLING	1

DETAIL - STAGGERED TEES (160x110)
JUNCTIONS: 41L



ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	1
2	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x110mm DIA. PLAIN ENDED HDPE TEE	2
5	DN150mm DIA COUPLING	1
6	OD160mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
7	OD160mm DIA. HDPE STUB END WITH FLANGE	1
8	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN150mm DIA. FLANGE ADAPTOR	1
10	DN100/100mm DIA STEPPED COUPLING	1
11	OD110mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-041

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

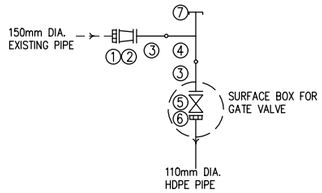
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1 of 2

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-041A

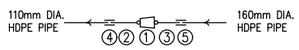
Revision: T0

DETAIL - TEE (110x110)
JUNCTIONS:41N



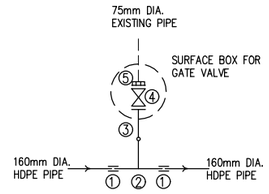
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150x100mm FERROUS ALL FLANGED REDUCER	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	2
4	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
5	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN100mm DIA. FLANGE ADAPTOR	1
7	OD110mm DIA. END CAP	1

DETAIL - 160x110 REDUCER
Junctions: 41O



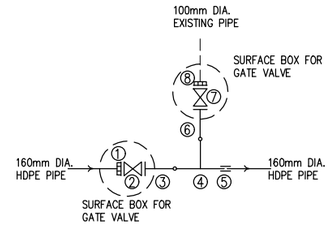
ITEM	DESCRIPTION	NO.
1	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
2	OD110mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
3	OD160mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
4	DN100mm DIA COUPLING	1
5	DN150mm DIA COUPLING	1

DETAIL - TEE (160X75)
JUNCTIONS: 41P



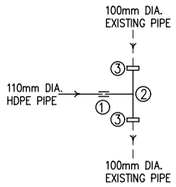
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 41R



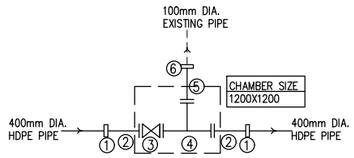
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
5	DN150mm DIA COUPLING	1
6	OD110mm DIA. HDPE STUB END WITH FLANGE	1
7	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
8	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTION: 41S



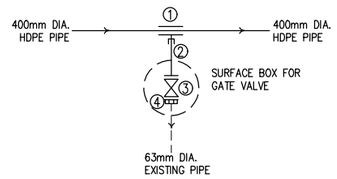
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. COUPLING	1
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN100/100mm DIA. STEPPED COUPLING	2

DETAIL - TEE (400X100)
JUNCTIONS: 41T



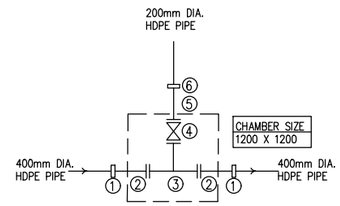
ITEM	DESCRIPTION	NO.
1	DN400mm DIA. STEPPED COUPLING	2
2	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN400mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN400x100mm DIA. FERROUS ALL FLANGED TEE	1
5	DN100mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN100/100mm DIA. STEPPED COUPLING	1

DETAIL - SADDLE CLAMP (400/63)
JUNCTIONS: 41U



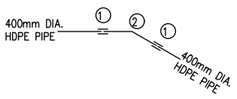
ITEM	DESCRIPTION	NO.
1	DN400/65mm DIA. SADDLE CLAMP	1
2	DN65mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m CUT TO SUIT	1
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (400X250)
JUNCTIONS: 41W



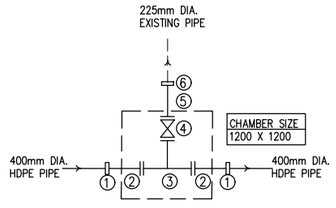
ITEM	DESCRIPTION	NO.
1	DN400mm DIA. STEPPED COUPLING	2
2	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN400x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - 45° H.BEND
JUNCTIONS: 41X, 41Y



ITEM	DESCRIPTION	NO.
1	DN400mm DIA. COUPLING	2
2	OD400mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (400X200)
JUNCTIONS: 41Z



ITEM	DESCRIPTION	NO.
1	DN400mm DIA. STEPPED COUPLING	2
2	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN400x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-041

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 2758 – 00606
Nairobi.

Howard Humphreys
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 2 of 2

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-041B

Revision: T0

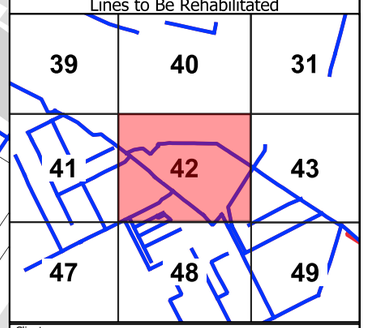
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-042
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

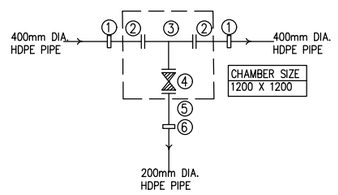
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 42

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

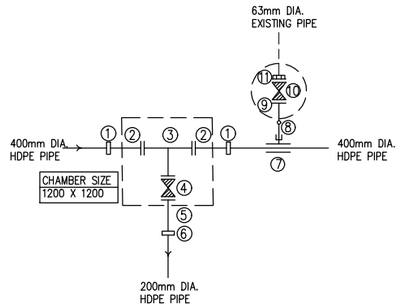
Drawing Number: 6000023-HH-GL-DR-W-042
Revision: T0

DETAIL - TEE (300X200)
JUNCTIONS: 42A



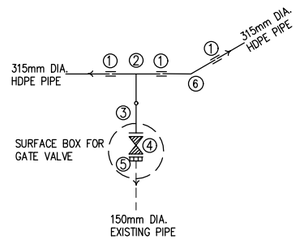
ITEM	DESCRIPTION	NO.
1	DN400/400mm DIA. STEPPED COUPLING	2
2	DN400mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN400x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (300X200)
JUNCTIONS: 42B



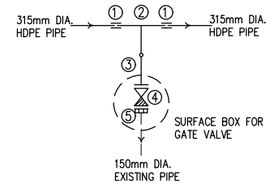
ITEM	DESCRIPTION	NO.
1	DN400/400mm DIA. STEPPED COUPLING	2
2	DN400mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN400x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1
7	DN400/65mm DIA. SADDLE CLAMP	1
8	OD63mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
9	OD63mm DIA. HDPE STUB END WITH FLANGE	1
10	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
11	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X160)
JUNCTIONS: 42C



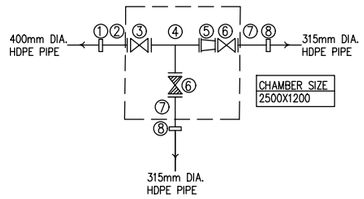
ITEM	DESCRIPTION	NO.
1	DN300mm DIA COUPLING	3
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	OD315mm HDPE PLAIN ENDED 45° LONG BEND	1

DETAIL - TEE (315X160)
JUNCTIONS: 42D,42P



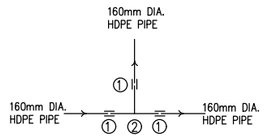
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (400X300)
JUNCTIONS: 42E



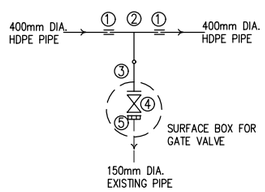
ITEM	DESCRIPTION	NO.
1	DN400/400mm DIA. STEPPED COUPLING	1
2	DN400mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN400mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN400x300mm DIA. FERROUS ALL FLANGED TEE	1
5	DN400x300mm FERROUS ALL FLANGED REDUCER	1
6	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	2
7	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
8	DN300/300mm DIA. STEPPED COUPLING	2

DETAIL - TEE (160X160)
JUNCTIONS: 42F



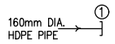
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	3
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - TEE (400X160)
JUNCTIONS: 42L



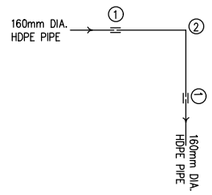
ITEM	DESCRIPTION	NO.
1	DN400mm DIA. COUPLING	2
2	OD400x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 160mm END CAP
JUNCTIONS: 42G



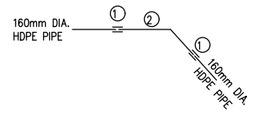
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - 90° BEND
JUNCTIONS:42H,42I,42Z



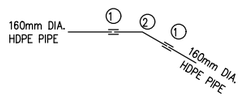
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 42J,42AB



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 42K,42Y



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 30° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-042

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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The Address, Muthangari Drive
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

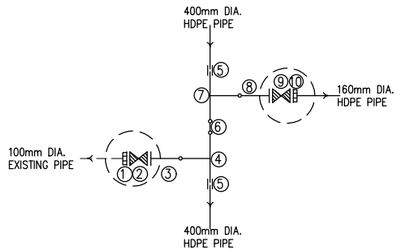
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1 of 3

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-042A

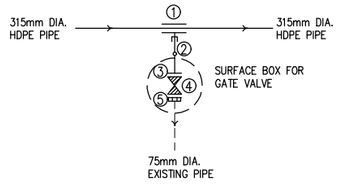
Revision: T0

DETAIL - STAGGERED TEES
JUNCTIONS: 42M



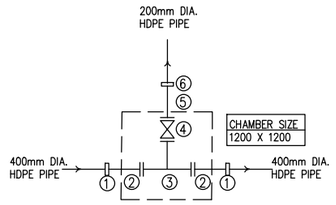
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	1
2	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	OD400x110mm DIA. PLAIN ENDED HDPE TEE	1
5	DN400mm DIA COUPLING	2
6	OD400mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
7	OD400x160mm DIA. PLAIN ENDED HDPE TEE	1
8	OD160mm DIA. HDPE STUB END WITH FLANGE	1
9	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
10	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (315X75)
JUNCTIONS: 42R



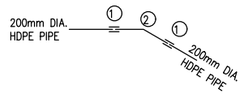
ITEM	DESCRIPTION	NO.
1	DN300/80mm DIA. SADDLE CLAMP	1
2	OD75mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (400X200)
JUNCTIONS: 42N



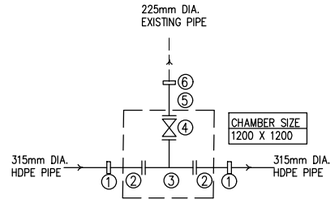
ITEM	DESCRIPTION	NO.
1	DN400/400mm DIA. STEPPED COUPLING	2
2	DN400mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN400x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS: 42U



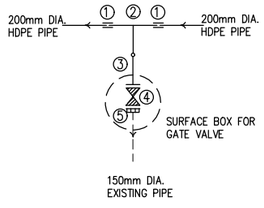
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (300X200)
JUNCTIONS: 42O



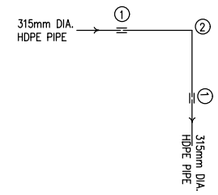
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN300x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (200X160)
JUNCTIONS: 42V



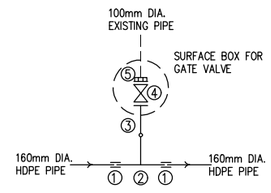
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
JUNCTIONS:42S



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X110)
JUNCTIONS: 42AA, 42AF



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-042

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:
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Nairobi.

Howard Humphreys
Consulting Engineers
The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

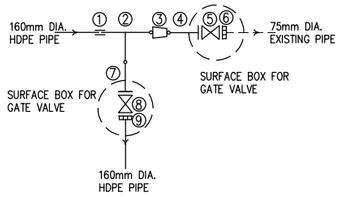
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 42B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: APRIL,2023

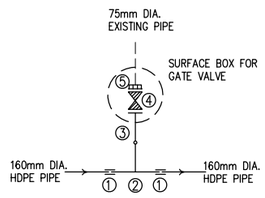
Drawing Number: 6000023-HH-FT-DR-W-042B
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 42AC



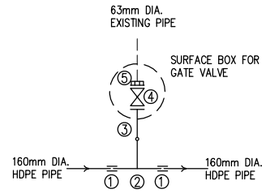
ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	DN160x75mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD75mm DIA. HDPE STUB END WITH FLANGE	1
5	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN65mm DIA. FLANGE ADAPTOR	1
7	OD160mm DIA. HDPE STUB END WITH FLANGE	1
8	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 42AI,42AJ,42AK,



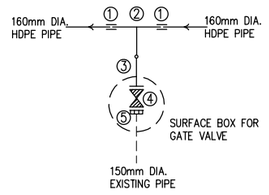
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X63)
JUNCTIONS: 42AD



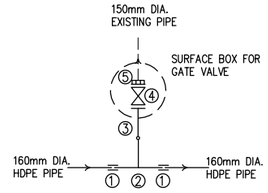
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 42AL



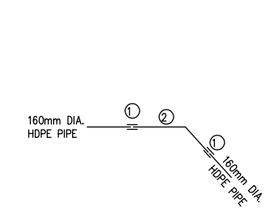
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 42AE,42AH



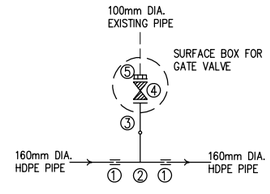
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 60° H.BEND
JUNCTIONS: 42AM



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 60° LONG BEND	1

DETAIL - TEE (160X110)
JUNCTIONS: 42AG



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-042

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP
Devan Plaza, Crossway Road,
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Nairobi.

Howard Humphreys
The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

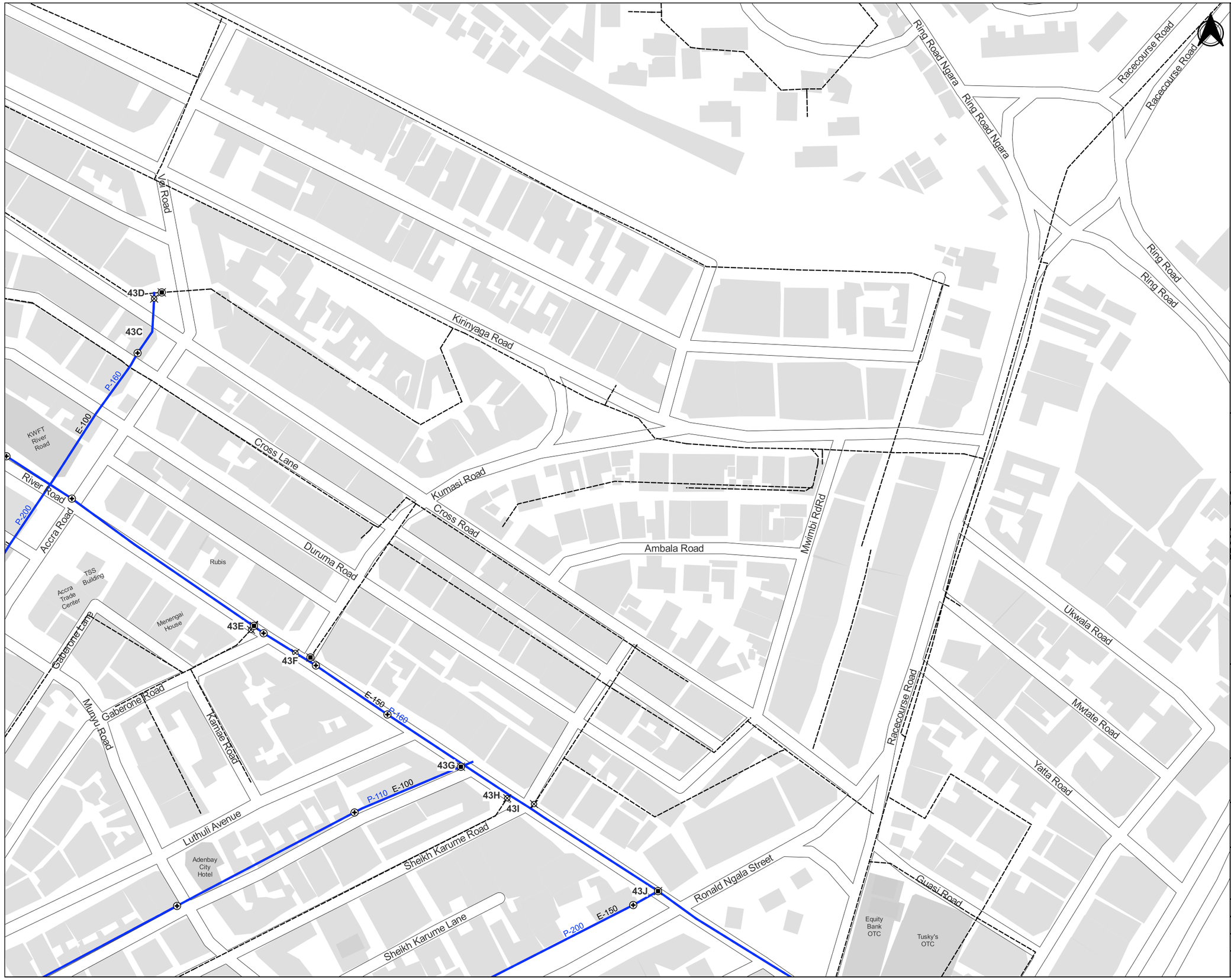
Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 3 of 3

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-042C

Revision: T0



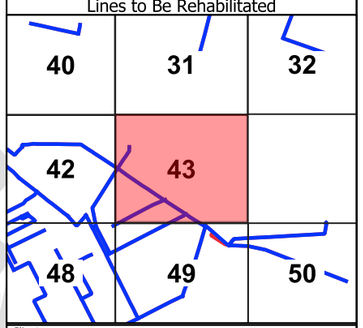
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-043
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

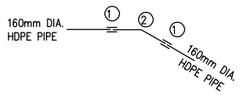
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 43

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

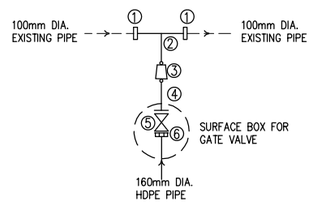
Drawing Number	Revision
6000023-HH-GL-DR-W-043	T0

DETAIL - 30° H.BEND
JUNCTIONS: 43C



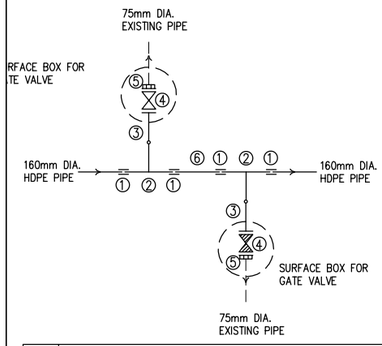
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 30° LONG BEND	1

DETAIL - TEE (110X110)
JUNCTIONS: 43D



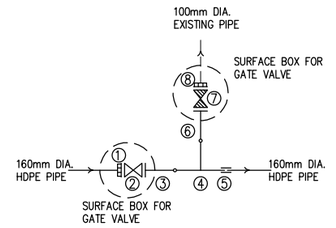
ITEM	DESCRIPTION	NO.
1	DN110/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 43E



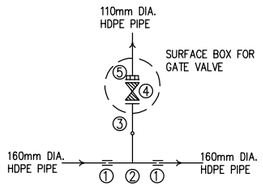
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	4
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	2
3	OD75mm DIA. HDPE STUB END WITH FLANGE	2
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	2
5	DN65mm DIA. FLANGE ADAPTOR	2
6	OD160mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1

DETAIL - TEE (160X110)
JUNCTIONS: 43F



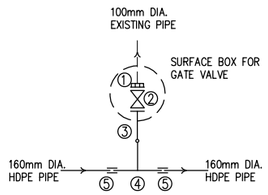
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
5	OD160mm DIA COUPLING	1
6	OD110mm DIA. HDPE STUB END WITH FLANGE	1
7	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
8	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 43G



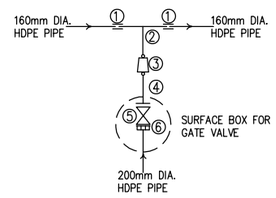
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 43H, 43I



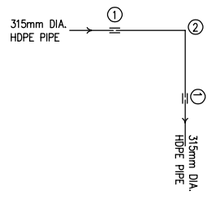
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	1
2	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
5	OD160mm DIA COUPLING	2

DETAIL - TEE (160X160)
JUNCTIONS: 43J



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD200x160mm DIA. PLAIN ENDED HDPE REDUCER	1
4	OD200mm DIA. HDPE STUB END WITH FLANGE	1
5	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN200mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
JUNCTIONS:43K



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	DN315mm HDPE PLAIN ENDED 90° LONG BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-043

Client:

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Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-043A
Revision: T0



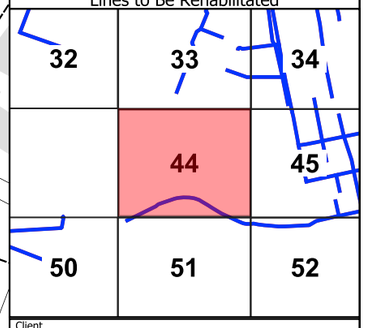
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-044
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

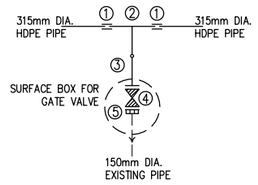
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 44

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

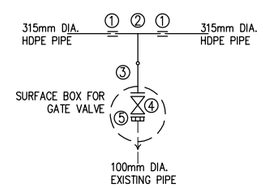
Drawing Number: 6000023-HH-GL-DR-W-044
Revision: T0

DETAIL - TEE (315X160)
JUNCTIONS: 44A



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (315X110)
JUNCTIONS: 44B



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-044

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 44A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-044A
Revision: T0

NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-045
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- Proposed Washout (WO)
- Proposed Water Meters (M)
- Proposed Air Valves (AV)
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

33	34	35
44	45	46
51	52	53

Client

THE CHIEF EXECUTIVE OFFICER
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

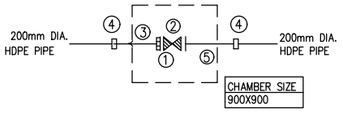
Drawing Title

EASTLEIGH, PANGANI
REHABILITATION PIPELINES - LAYOUT
Sheet 45

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

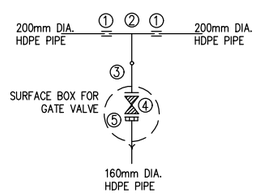
Drawing Number	Revision
6000023-HH-GL-DR-W-045	T0

DETAIL - DN200mm GATE VALVE
JUNCTIONS: 45A



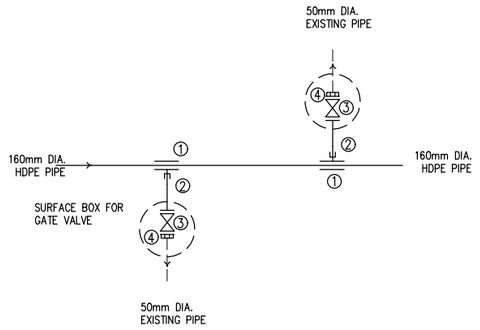
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. FLANGE ADAPTOR	1
2	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
4	DN200/200mm DIA STEPPED COUPLING	2
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1

DETAIL - TEE (200X160)
JUNCTIONS: 45B



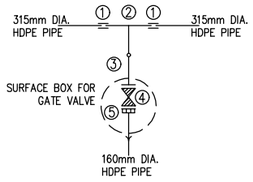
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X50)
JUNCTIONS:45C,45AD,45AF



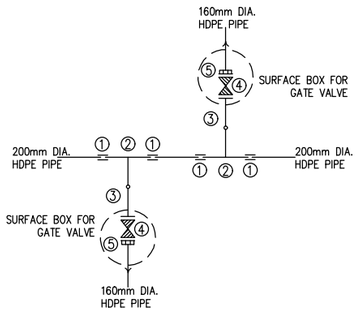
ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	2
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN50mm DIA. FLANGE ADAPTOR	2

DETAIL - TEE (315X160)
JUNCTIONS: 45G,45Z,45AH



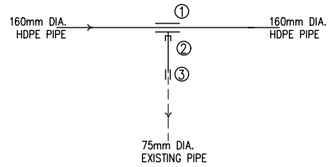
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 45J,45BC



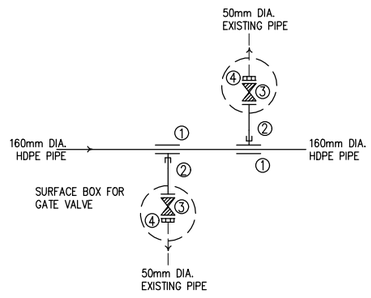
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	2
3	OD160mm DIA. HDPE STUB END WITH FLANGE	2
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	2
5	DN150mm DIA FLANGE ADAPTOR	2

DETAIL - PE SADDLE CLAMP (160X90)
JUNCTIONS:45L



ITEM	DESCRIPTION	NO.
1	DN150/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
3	DN80mm DIA. COUPLING	1

DETAIL - PE SADDLE CLAMP (160X50)
JUNCTIONS:45M



ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	2
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN50mm DIA. FLANGE ADAPTOR	2

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-045

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

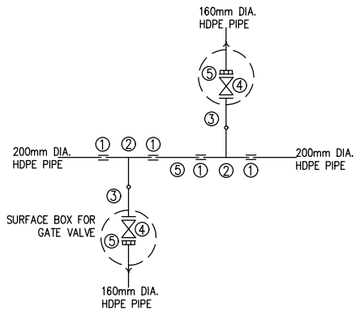
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 45A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

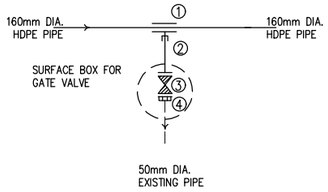
Drawing Number: 6000023-HH-FT-DR-W-045A
Revision: T0

DETAIL - TEE (200X160)
JUNCTIONS: 45P



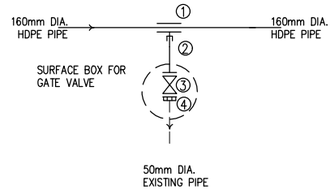
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	2
3	OD160mm DIA. HDPE STUB END WITH FLANGE	2
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	2
5	DN150mm DIA FLANGE ADAPTOR	2
6	DN200mm DIA. HDPE PLAIN ENDED PIPE 1.2m LONG	1

DETAIL - PE SADDLE CLAMP (160X50)
JUNCTIONS:45R,45V,45W,45X



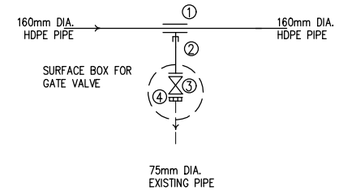
ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X50)
JUNCTIONS:45S,45U,45AU



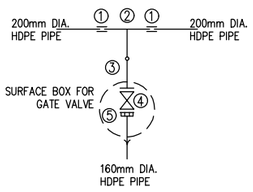
ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X90)
JUNCTIONS:45T



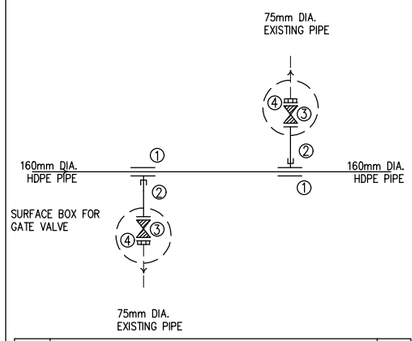
ITEM	DESCRIPTION	NO.
1	DN150/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 45AA



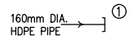
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (160X90)
JUNCTIONS:45AB



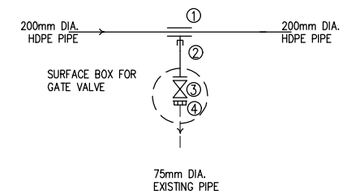
ITEM	DESCRIPTION	NO.
1	DN150/80mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

DETAIL - 200mm END CAP
JUNCTIONS: 45AK



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS:45AL,45AM,45AP,45AQ,45BN, 45BP,45BR



ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-045

Client:

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

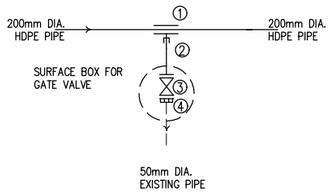
Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 45B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-045B

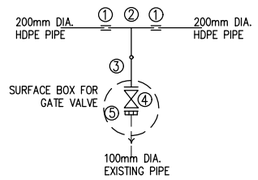
Revision: T0

DETAIL - PE SADDLE CLAMP (200X50)
JUNCTIONS:45AN,45BB,45BK,45BQ



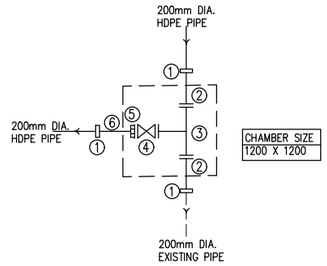
ITEM	DESCRIPTION	NO.
1	DN200/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 45AR,45BH



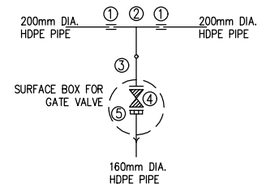
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTION: 45AS



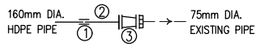
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGE ADAPTOR	1
6	DN200mm DIA FERROUS PLAIN ENDED SPIGOT PIPE 1.2m LONG	1

DETAIL - TEE (200X160)
JUNCTIONS: 45AT



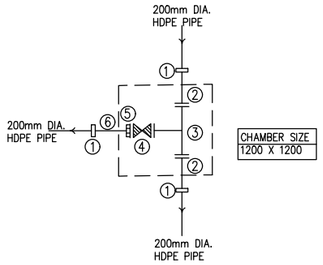
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA FLANGE ADAPTOR	1

DETAIL - REDUCER
JUNCTIONS: 45AV,45BE



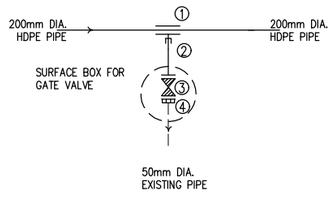
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	1
2	OD160mm DIA. HDPE STUB END WITH FLANGE	1
3	DN150x80mm DIA. FERROUS ALL FLANGED REDUCER	1
4	DN80mm DIA FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTION: 45BF



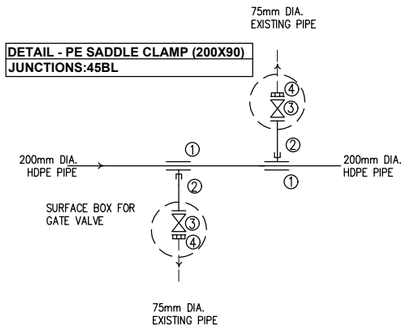
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGE ADAPTOR	1
6	DN200mm DIA FERROUS PLAIN ENDED SPIGOT PIPE 1.2m LONG	1

DETAIL - PE SADDLE CLAMP (200X50)
JUNCTIONS:45BG



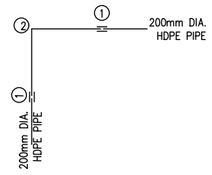
ITEM	DESCRIPTION	NO.
1	DN200/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X90)
JUNCTIONS:45BL



ITEM	DESCRIPTION	NO.
1	DN200/80mm DIA. SADDLE CLAMP	2
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN80mm DIA. FLANGE ADAPTOR	2

DETAIL - 90° BEND
BENDS: 45BS,45BT,45BV,45BW



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200mm DIA. HDPE PLAIN ENDED 90° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-045

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Howard Humphreys
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

Eastleigh, Pangani
REHABILITATION PIPELINES - FITTINGS
Sheet 45C

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-045C

Revision: T0



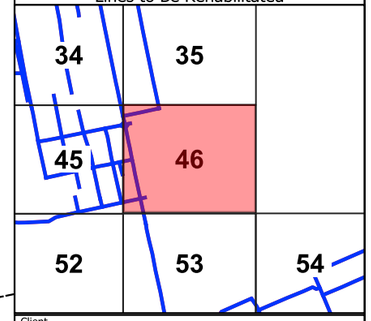
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-046
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

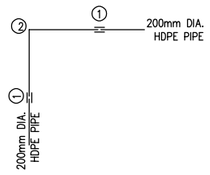
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 46

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

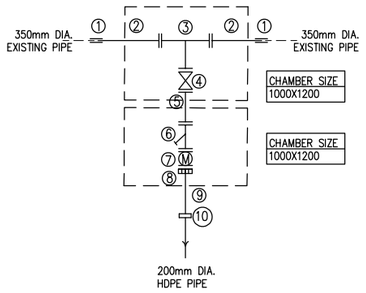
Drawing Number: 6000023-HH-GL-DR-W-046
Revision: T0

DETAIL - 90° BEND
BENDS: 46A,46D,46E,46F



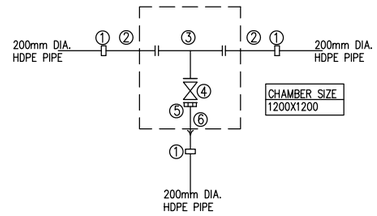
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200mm DIA. HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (350X200)
JUNCTIONS: 46B



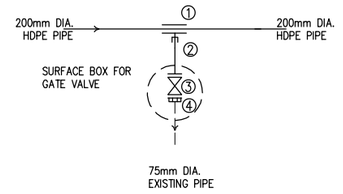
ITEM	DESCRIPTION	NO.
1	DN350mm DIA. COUPLING	2
2	DN350mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN350x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FERROUS ALL FLANGED PIPE 1.2m LONG	1
6	DN200mm DIA. FLANGED Y-STRAINER	1
7	DN200mm DIA. WATER METER	1
8	DN200mm DIA. FLANGE ADAPTOR	1
9	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1
10	DN200/200 DIA STEPPED COUPLING	1

DETAIL - TEE (200X200)
JUNCTIONS: 46C, 46T, 46U



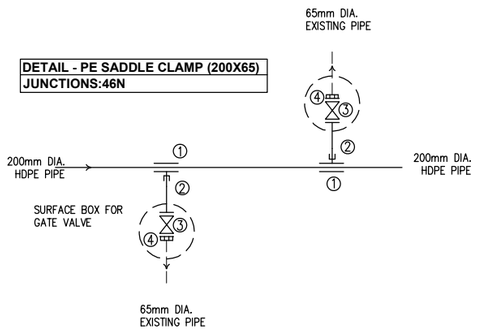
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. FERROUS FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FLANGE ADAPTOR	1
6	DN200mm DIA. FERROUS PLAIN ENDED PIPE 1.2m LONG	1

DETAIL - PE SADDLE CLAMP (200X75)
JUNCTIONS: 46K,46L



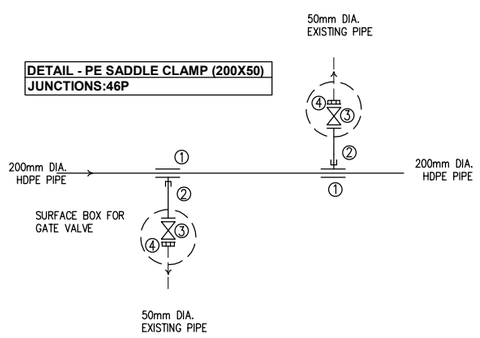
ITEM	DESCRIPTION	NO.
1	DN200/90mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (200X65)
JUNCTIONS:46N



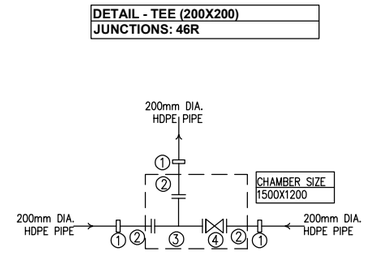
ITEM	DESCRIPTION	NO.
1	DN200/65mm DIA. SADDLE CLAMP	2
2	DN65mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN65mm DIA. FLANGE ADAPTOR	2

DETAIL - PE SADDLE CLAMP (200X50)
JUNCTIONS:46P



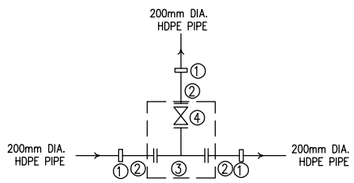
ITEM	DESCRIPTION	NO.
1	DN200/50mm DIA. SADDLE CLAMP	2
2	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	2
4	DN50mm DIA. FLANGE ADAPTOR	2

DETAIL - TEE (200X200)
JUNCTIONS: 46R



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - TEE (200X200)
JUNCTIONS: 46G



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-046

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

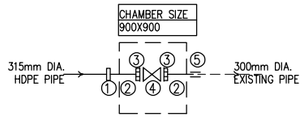
Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 46A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-046A

Revision: T0

DETAIL - SLUICE VALVE
JUNCTIONS: 46H



ITEM	DESCRIPTION	NO.
1	DN300/315mm DIA. STEPPED COUPLING	1
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300mm DIA. FLANGE ADAPTOR	2
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN300mm DIA. COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-046

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Consulting Engineers
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

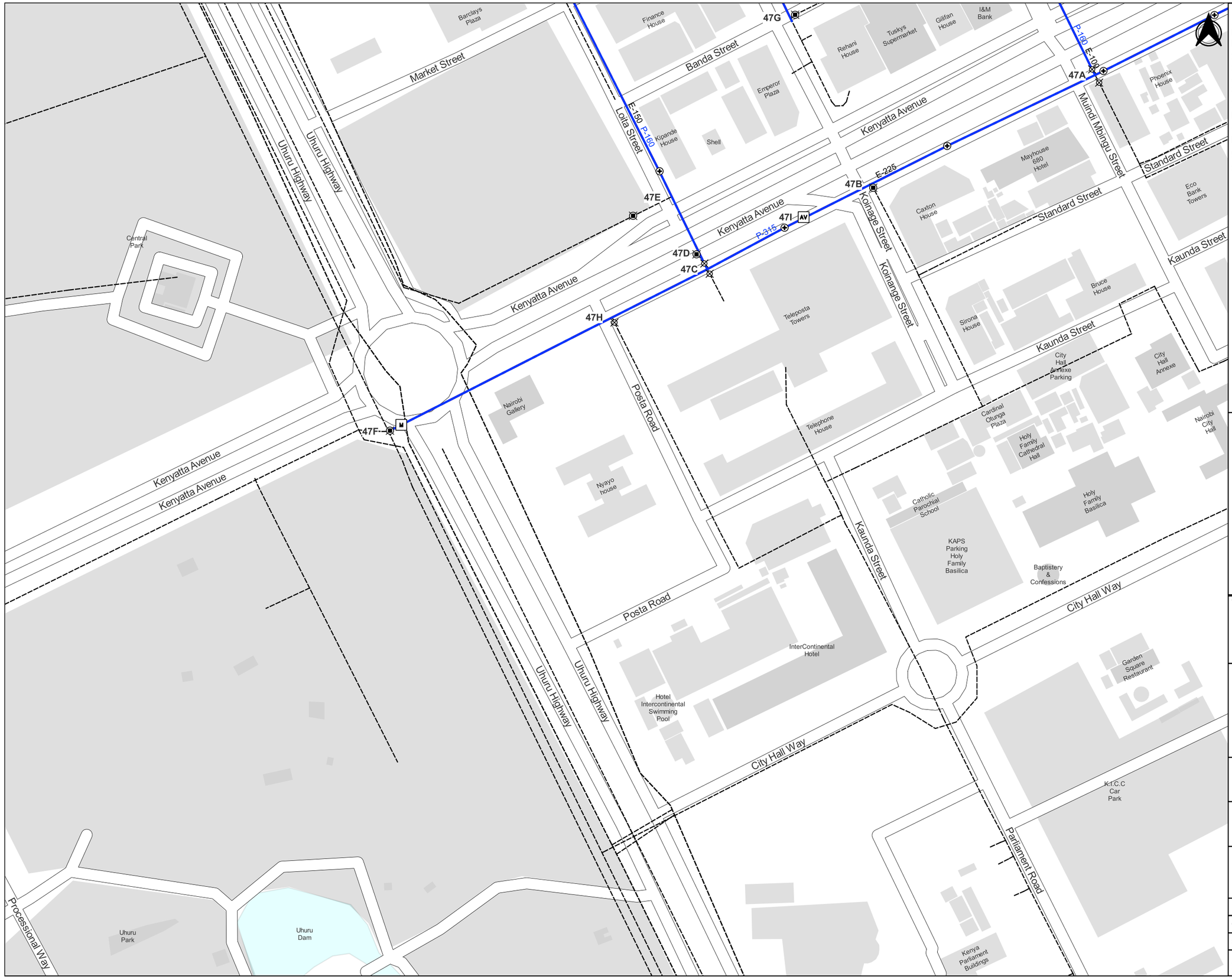
Drawing Title

Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 46B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-046B

Revision: T0



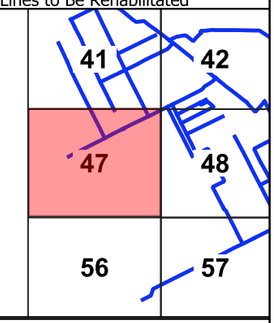
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-047
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

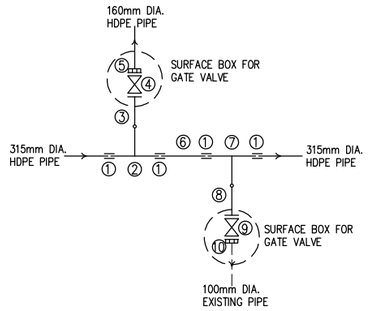
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 47

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

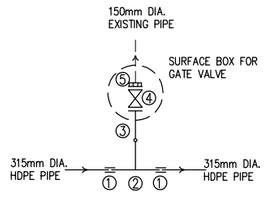
Drawing Number	Revision
6000023-HH-GL-DR-W-047	T0

DETAIL - TEE (315X160),(315X110)
JUNCTIONS: 47A, 47C



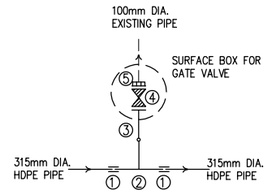
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	4
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	OD315mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
7	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
8	OD110mm DIA. HDPE STUB END WITH FLANGE	1
9	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
10	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X160)
JUNCTIONS: 47H



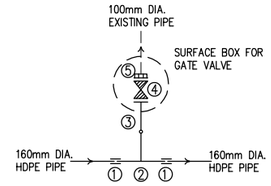
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X110)
JUNCTIONS: 47B



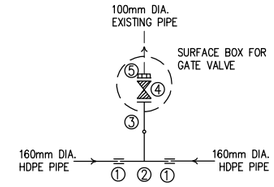
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160x110)
JUNCTIONS: 47D, 47E



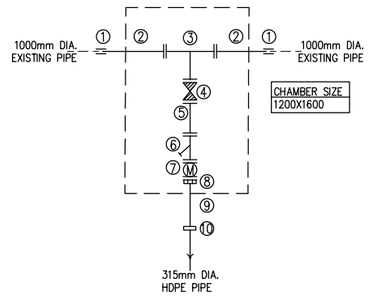
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160x110)
JUNCTIONS: 47G



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (1000X300)
JUNCTIONS: 47F



ITEM	DESCRIPTION	NO.
1	DN1000mm DIA. COUPLING	2
2	DN1000mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN1000x300mm DIA. FERROUS ALL FLANGED TEE	1
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN300mm DIA. FERROUS ALL FLANGED SPIGOT PIPE 0.5m LONG	1
6	DN300mm DIA. FLANGED Y-STRAINER	1
7	DN300mm DIA. WATER METER	1
8	DN300mm DIA. FLANGE ADAPTOR	1
9	DN300mm DIA. PLAIN ENDED FERROUS SPIGOT PIPE 1.2m LONG	1
10	DN300/315mm DIA. STEPPED COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-047

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-047A
Revision: T0

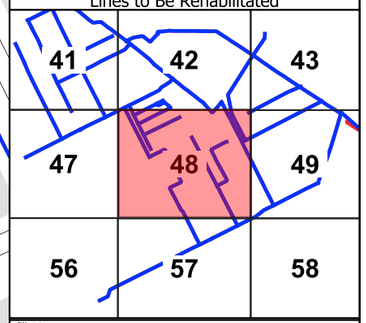
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-048
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
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Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

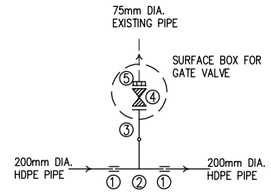
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 48

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

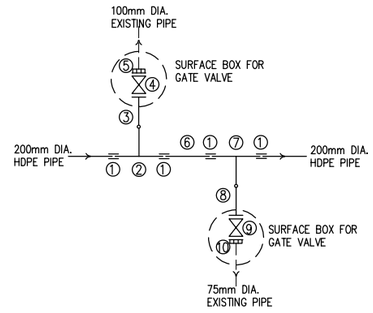
Drawing Number: 6000023-HH-GL-DR-W-048
Revision: T0

DETAIL - TEE (200X75)
JUNCTIONS: 48A,48B



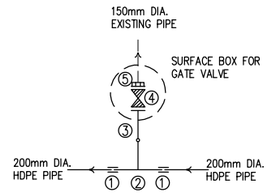
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110),(200X75)
JUNCTIONS: 48C



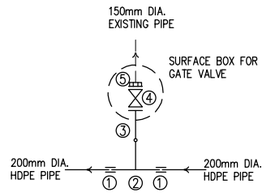
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1
6	OD200mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
7	OD200x75mm DIA. PLAIN ENDED HDPE TEE	1
8	OD75mm DIA. HDPE STUB END WITH FLANGE	1
9	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
10	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 48D



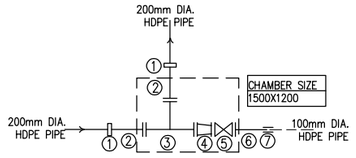
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 48E,48F



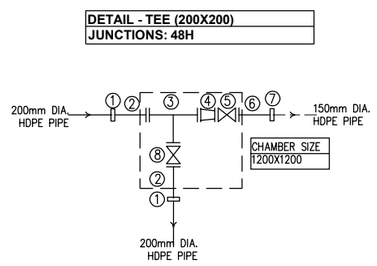
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 48G



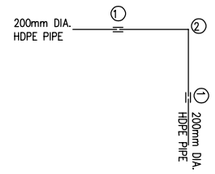
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200x100mm DIA. FERROUS ALL FLANGED REDUCER	1
5	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN100mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN100mm DIA. COUPLING	1

DETAIL - TEE (200X200)
JUNCTIONS: 48H



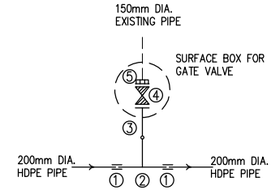
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200x150mm DIA. FERROUS ALL FLANGED REDUCER	1
5	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
6	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN150mm DIA. STEPPED COUPLING	1
8	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - 90° H.BEND
JUNCTIONS: 48I, 48J, 48M, 48N



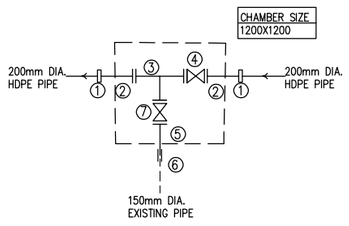
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 90° LONG BEND	1

DETAIL - TEE (200X160)
JUNCTIONS: 48K, 48W



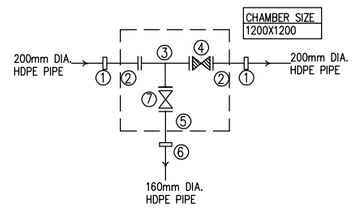
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X150)
JUNCTIONS: 48L



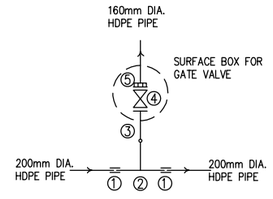
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x150 DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN150 DIA. COUPLING	1
7	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - TEE (200X150)
JUNCTIONS: 48O



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x150 DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN125/150 DIA. STEPPED COUPLING	1
7	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - TEE (200X160)
JUNCTIONS: 48P



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-048

Client:

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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

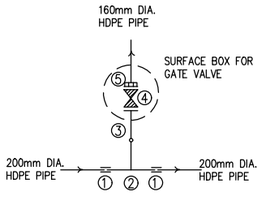
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1 of 3

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-048A

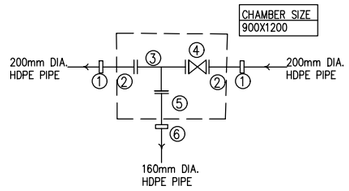
Revision: T0

DETAIL - TEE (200X160)
JUNCTIONS: 48R



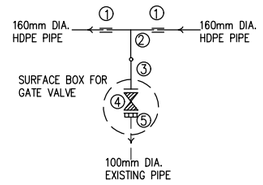
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X150)
JUNCTIONS: 48X



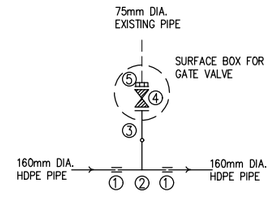
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x150 DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN125/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X110)
JUNCTIONS: 48Q



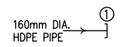
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 48S, 48T, 48U



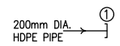
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - 160mm END CAP
JUNCTIONS: 48V



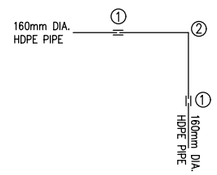
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. HDPE END CAP	1

DETAIL - 200mm END CAP
JUNCTIONS: 48Y



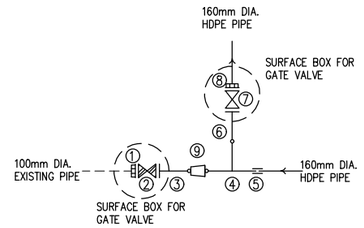
ITEM	DESCRIPTION	NO.
1	OD200mm DIA. END CAP	1

DETAIL - 90° H.BEND
JUNCTIONS: 48Z



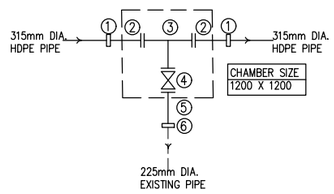
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 48AB



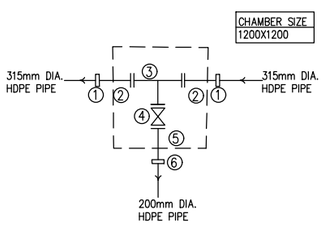
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	1
2	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	DN150mm DIA COUPLING	1
6	OD160mm DIA. HDPE STUB END WITH FLANGE	1
7	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
8	DN150mm DIA. FLANGE ADAPTOR	1
9	OD160x110mm DIA. PLAIN ENDED HDPE REDUCER	1

DETAIL - TEE (300X200)
JUNCTIONS: 48AC,48AD



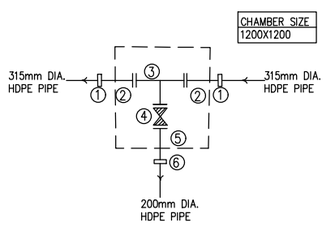
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (300X200)
JUNCTIONS: 48AG



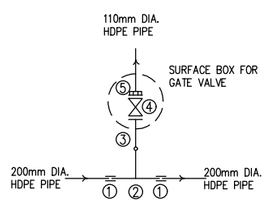
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN300x200 DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (300X200)
JUNCTIONS: 48AH



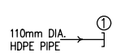
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN300x200 DIA. FERROUS ALL FLANGED CROSS TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (200X110)
JUNCTIONS: 48AI



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 110mm END CAP
JUNCTIONS: 48AJ



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-048

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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off Kiambu Road
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Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

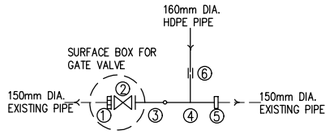
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 2 of 3

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

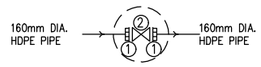
Drawing Number: 6000023-HH-FT-DR-W-048B
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 48AK



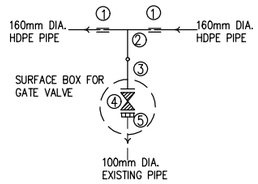
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	DN125/150mm DIA. STEPPED COUPLING	1
6	DN150mm DIA. COUPLING	1

DETAIL - SLUICE VALVE (DN150)
JUNCTIONS: 48AL



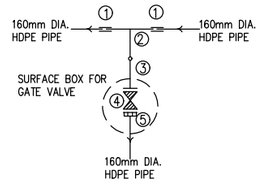
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	2
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - TEE (160X110)
JUNCTIONS: 48AM,48AO



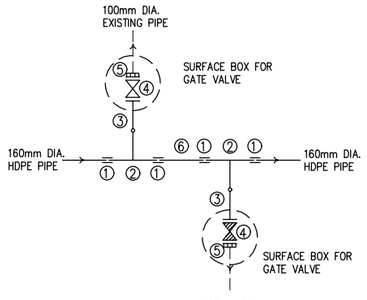
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 48AP



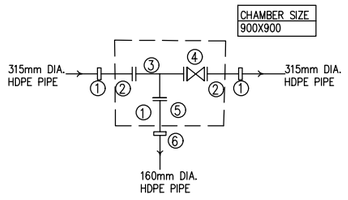
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 48AN



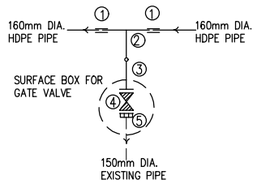
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	4
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	2
3	OD110mm DIA. HDPE STUB END WITH FLANGE	2
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	2
5	DN100mm DIA. FLANGE ADAPTOR	2
6	OD160mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1

DETAIL - TEE (300X150)
JUNCTIONS: 48AQ



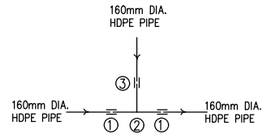
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x150 DIA. FERROUS ALL FLANGED TEE	1
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN150/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X160)
JUNCTIONS: 48AB2



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 42AR



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	DN150mm DIA. COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-048

Client:
THE CHIEF EXECUTIVE OFFICER
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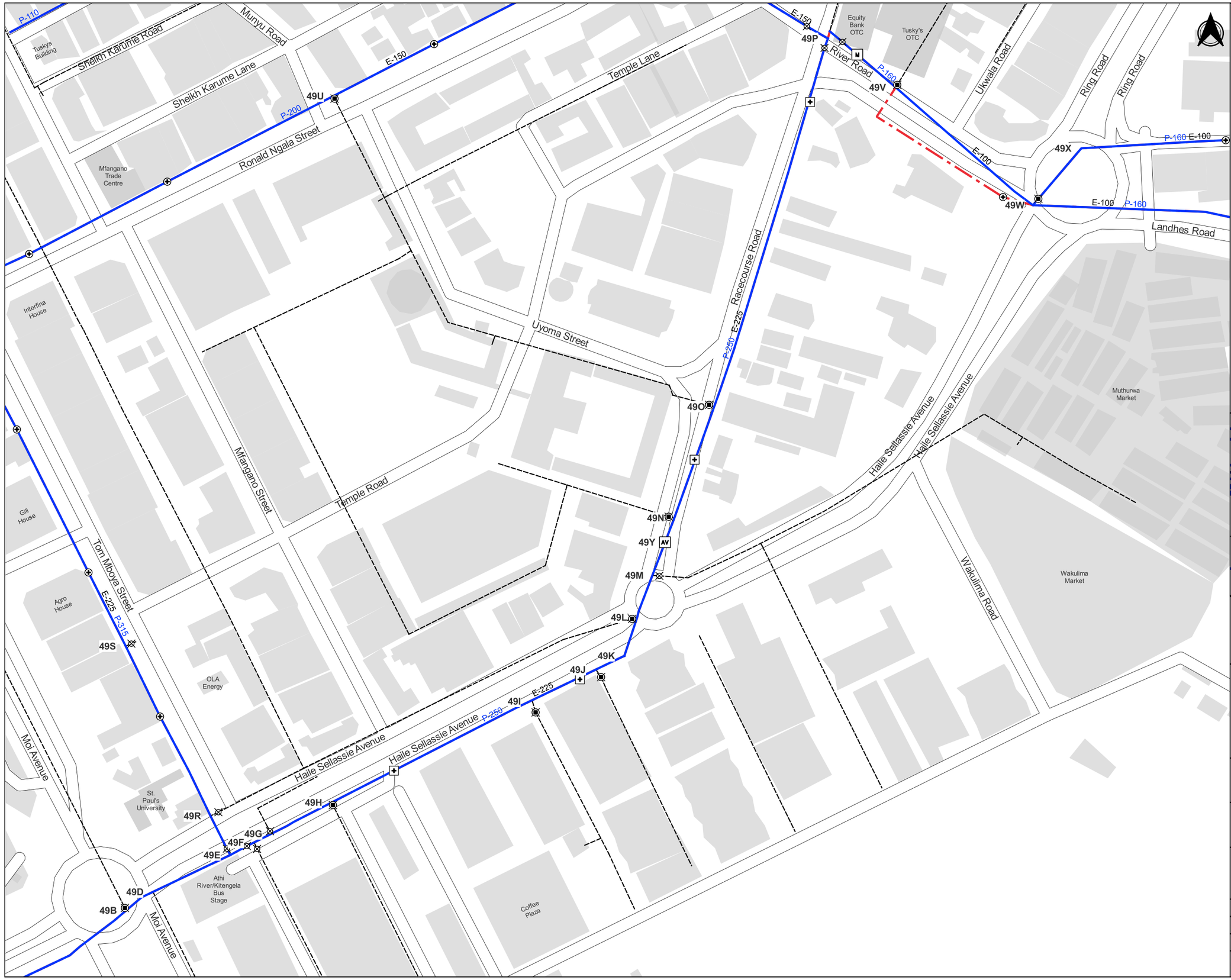
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 3 of 3

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-048C
Revision: T0



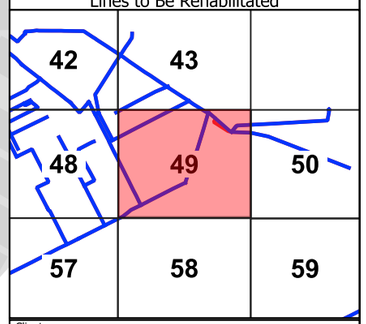
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-049
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

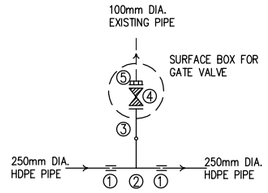
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT, EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 49

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

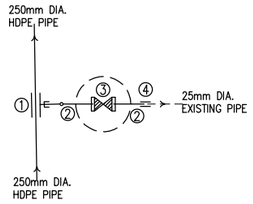
Drawing Number	Revision
6000023-HH-GL-DR-W-049	T0

DETAIL - TEE (250X110)
JUNCTIONS: 49B,49L,49N,49O



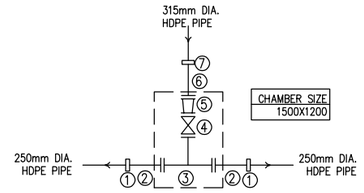
ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	OD250x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - SADDLE CLAMP (250X25)
JUNCTIONS: 49D



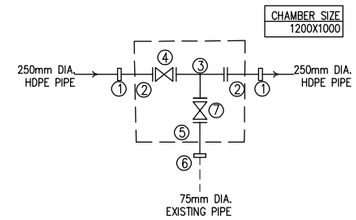
ITEM	DESCRIPTION	NO.
1	DN250/25mm DIA. SADDLE CLAMP	1
2	OD25mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	2
3	DN25mm DIA. THREADED GATE VALVE	1
4	DN25mm DIA. COUPLING	1

DETAIL - TEE (250X250)
JUNCTIONS: 49E



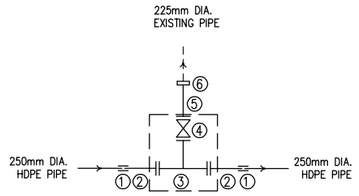
ITEM	DESCRIPTION	NO.
1	DN250/250mm DIA STEPPED COUPLING	2
2	OD250mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN250x250mm DIA. FERROUS ALL FLANGED TEE	1
4	DN250mm DIA. ALL FLANGED GATE VALVE	1
5	DN300x250mm DIA. FERROUS ALL FLANGED REDUCER	1
6	DN300mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
7	DN300/315mm DIA STEPPED COUPLING	1

DETAIL - TEE (250X80)
JUNCTIONS: 49F



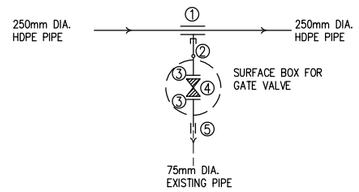
ITEM	DESCRIPTION	NO.
1	DN250/250mm DIA. STEPPED COUPLING	2
2	DN250mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN250x80 DIA. FERROUS ALL FLANGED TEE	1
4	DN250mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN75/80 DIA. STEPPED COUPLING	1
7	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1

DETAIL - TEE (250X200)
JUNCTIONS: 49G



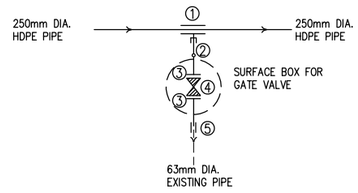
ITEM	DESCRIPTION	NO.
1	DN250mm DIA COUPLING	2
2	OD250mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN250x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/225mm DIA. STEPPED COUPLING	1

DETAIL - PE SADDLE CLAMP (250X90)
JUNCTIONS: 49H,49J



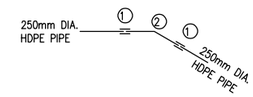
ITEM	DESCRIPTION	NO.
1	DN250/75mm DIA. SADDLE CLAMP	1
2	OD75mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	2
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN75mm DIA. COUPLING	1

DETAIL - PE SADDLE CLAMP (250X63)
JUNCTIONS: 49I



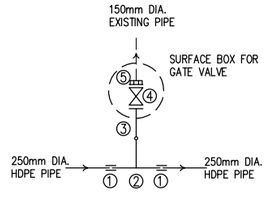
ITEM	DESCRIPTION	NO.
1	DN250/63mm DIA. SADDLE CLAMP	1
2	OD63mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	2
4	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN65mm DIA. COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS: 49K



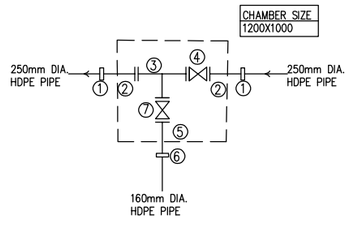
ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	DN250mm HDPE PLAIN ENDED 30° LONG BEND	1

DETAIL - TEE (250X160)
JUNCTIONS: 49M



ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	OD250x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X150)
JUNCTIONS: 49P



ITEM	DESCRIPTION	NO.
1	DN250/250mm DIA. STEPPED COUPLING	2
2	DN250mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN250x150 DIA. FERROUS ALL FLANGED CROSS TEE	1
4	DN250mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN150/160mm DIA. STEPPED COUPLING	1
7	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-049

Client:

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Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

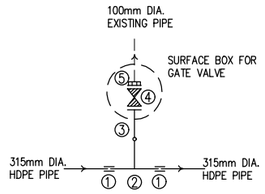
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1 of 2

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-049A

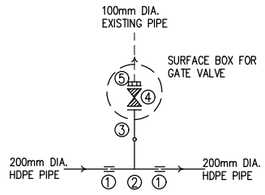
Revision: T0

DETAIL - TEE (315X110)
JUNCTIONS: 49R



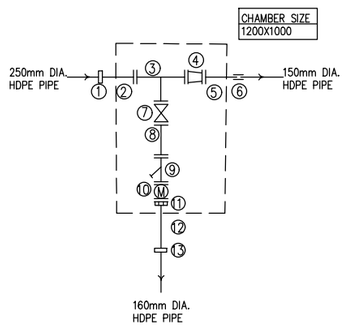
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 49U



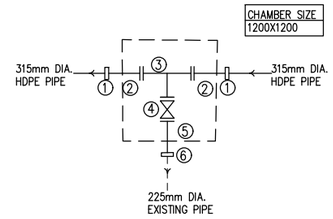
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (250X150) & METER
JUNCTIONS: 49Q



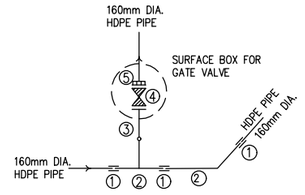
ITEM	DESCRIPTION	NO.
1	DN250/250mm DIA. STEPPED COUPLING	1
2	DN250mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
3	DN250x150 DIA. FERROUS ALL FLANGED CROSS TEE	1
4	DN250x150mm FERROUS ALL FLANGED REDUCER	1
5	DN150mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN150mm DIA. COUPLING	1
7	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
8	DN150mm DIA. FERROUS ALL FLANGED SPIGOT PIPE 0.5m LONG	1
9	DN150mm DIA. FLANGED Y-STRAINER	1
10	DN150mm DIA. WATER METER	1
11	DN150mm DIA. FLANGE ADAPTOR	1
12	DN150mm DIA. FERROUS SPIGOT PIPE 1.2m LONG	1
13	DN125/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (300X200)
JUNCTIONS: 49S



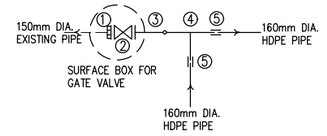
ITEM	DESCRIPTION	NO.
1	DN300/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN300x200 DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X160)
JUNCTIONS: 49W



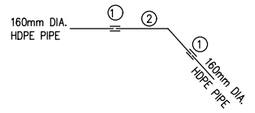
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	3
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	OD160mm HDPE PLAIN ENDED 60° LONG BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 49V



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	DN150mm DIA. COUPLING	2

DETAIL - 60° H.BEND
JUNCTIONS: 49X



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° LONG BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-049

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi – Kenya.

Design and Supervision Consultant:
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

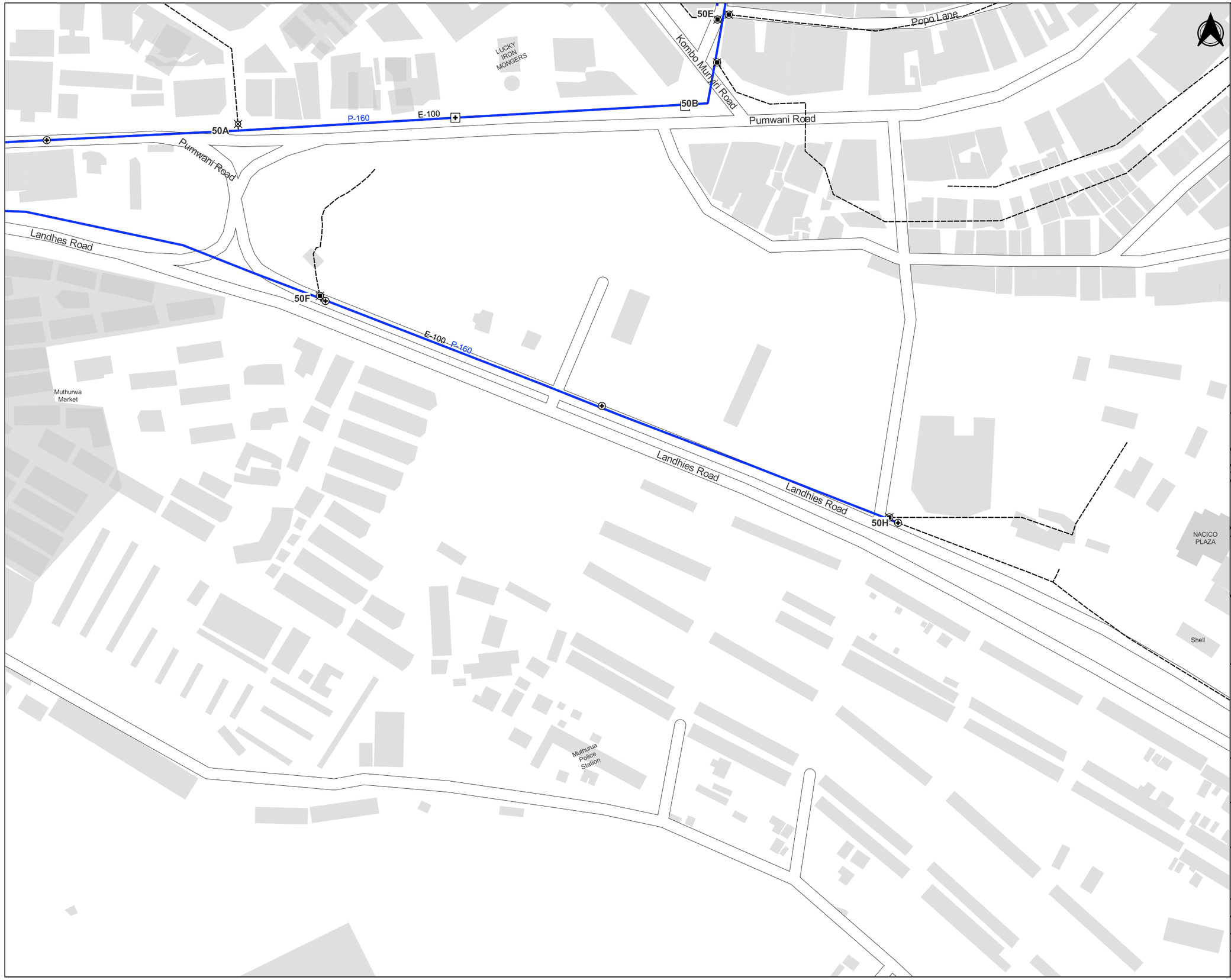
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title
CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 2 of 2

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-049B
Revision: T0



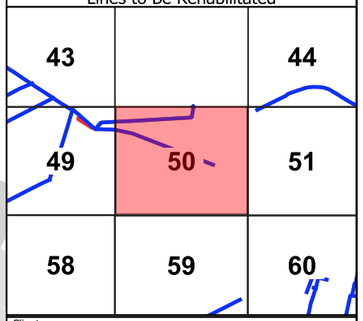
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-050
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi - Kenya.

Design and Supervision Consultant

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Devan Plaza, Crossway Road,
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Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

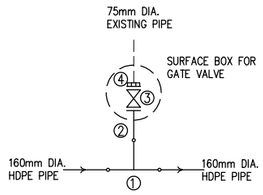
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 50

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

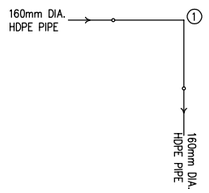
Drawing Number: 6000023-HH-GL-DR-W-050
Revision: T0

DETAIL - TEE (160X75)
JUNCTIONS: 50A



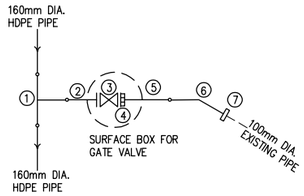
ITEM	DESCRIPTION	NO.
1	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
2	OD75mm DIA. HDPE STUB END WITH FLANGE	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H-BEND
H-BEND : 50B



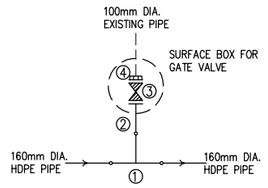
ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 90° LONG BEND	1

DETAIL - TEE (160x110)
JUNCTIONS: 50C



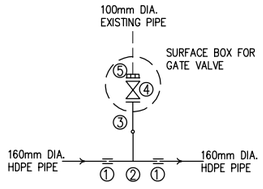
ITEM	DESCRIPTION	NO.
1	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
2	OD110mm DIA. HDPE STUB END WITH FLANGE	1
3	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN100mm DIA. FLANGE ADAPTOR	1
5	OD110mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
6	OD110mm HDPE PLAIN ENDED 45° LONG BEND	1
7	DN100/110mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160x110)
JUNCTIONS: 50D,50E



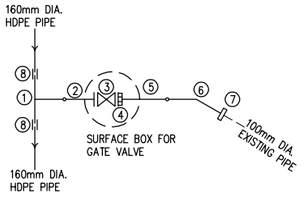
ITEM	DESCRIPTION	NO.
1	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
2	OD110mm DIA. HDPE STUB END WITH FLANGE	1
3	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160x110)
JUNCTIONS: 50F



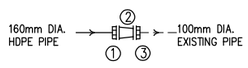
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160x63)
JUNCTIONS: 50G



ITEM	DESCRIPTION	NO.
1	OD160x63mm DIA. PLAIN ENDED HDPE TEE	1
2	OD63mm DIA. HDPE STUB END WITH FLANGE	1
3	DN65mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN65mm DIA. FLANGE ADAPTOR	1
5	OD63mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
6	OD63mm HDPE PLAIN ENDED 45° LONG BEND	1
7	DN63/63mm DIA. STEPPED COUPLING	1
8	DN150mm DIA. COUPLING	2

DETAIL - REDUCER (150X100)
JUNCTIONS: 50H



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150x100mm DIA. FERROUS ALL FLANGED REDUCER	1
3	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-050

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 2758 – 00606
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1 of 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-050A

Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-051
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

	44	45
50	51	52
59	60	61

Client

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

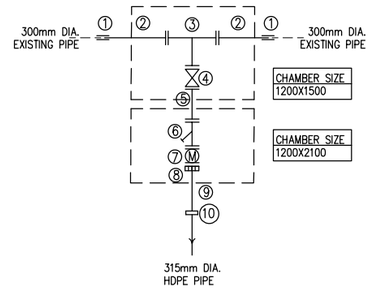
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 51

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-051	T0

DETAIL - TEE (300X300)
JUNCTIONS: 51A



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x300mm DIA. FERROUS ALL FLANGED TEE	1
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.0m LONG	1
6	DN300mm DIA. FLANGED Y-STRAINER	1
7	DN300mm DIA. WATER METER	1
8	DN300mm DIA. FLANGE ADAPTOR	1
9	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
10	DN300/300 DIA STEPPED COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-051

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 51A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-051A

Revision: T0



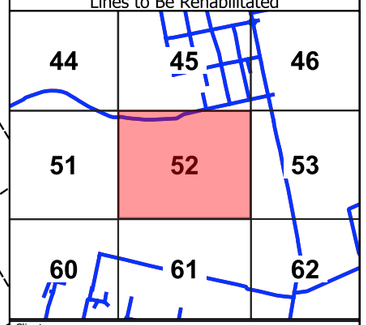
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-052
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

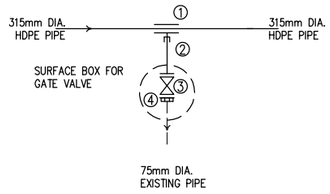
Drawing Title

EASTLEIGH
REHABILITATION PIPELINES - LAYOUT
Sheet 52

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

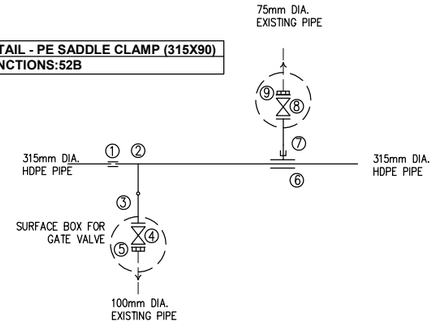
Drawing Number	Revision
6000023-HH-GL-DR-W-052	T0

DETAIL - PE SADDLE CLAMP (315X90)
JUNCTIONS:52A,52E



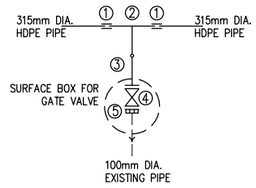
ITEM	DESCRIPTION	NO.
1	OD315/90mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (315X90)
JUNCTIONS:52B



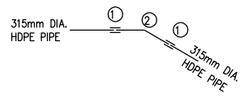
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1
6	OD315/90mm DIA. SADDLE CLAMP	1
7	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
8	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X110)
JUNCTIONS: 52D



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 52F



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	DN315mm HDPE PLAIN ENDED 30° LONG BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-052

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

The Address, Muthangari Drive
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

Eastleigh
REHABILITATION PIPELINES - FITTINGS
Sheet 52A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-052A

Revision: T0



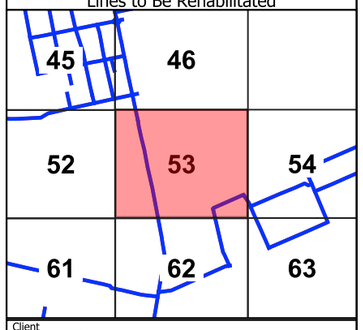
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-053
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

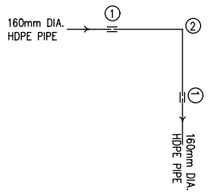
Drawing Title

EASTLEIGH, JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 53

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

Drawing Number: 6000023-HH-GL-DR-W-053
Revision: T0

DETAIL - 90° H-BEND
H-BEND : 53F,53G



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-053

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi – Kenya.

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Westlands.
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Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 53A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-053A
Revision: T0

Ole Sinoni Street

19th Street

Eldoret Road

Chebuyusi Crescent

Ruvuma Road

Natron Road

Bahati Crescent

Kahawa Lane

Mbali Road

Kajiado Lane

Yakuli Road

Bahati Primary School

Bahati Primary Playground

Mbakasi Crescent

Heshima Avenue

Shinyanga Avenue

54A 54B 54C 54D 54E 54F 54G 54H 54J 55B

E-100 P-160

P-160 E-100

P-160 E-75

NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-054
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

	46	
53	54	55
62	63	64

Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
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Nairobi - Kenya.

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Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

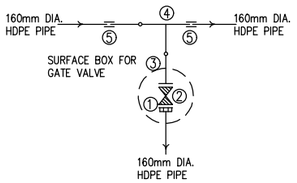
Drawing Title

JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 54

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

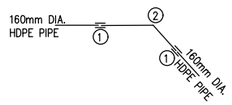
Drawing Number: 6000023-HH-GL-DR-W-054
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 54A



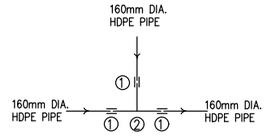
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	DN150mm DIA COUPLING	2

DETAIL - 60° H.BEND
JUNCTIONS: 54B,54C



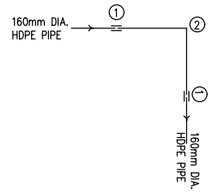
ITEM	DESCRIPTION	NO.
1	DN150mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 54D,54G,54H



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	3
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - 90° BEND
JUNCTIONS:54E,54F,54J



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-054

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

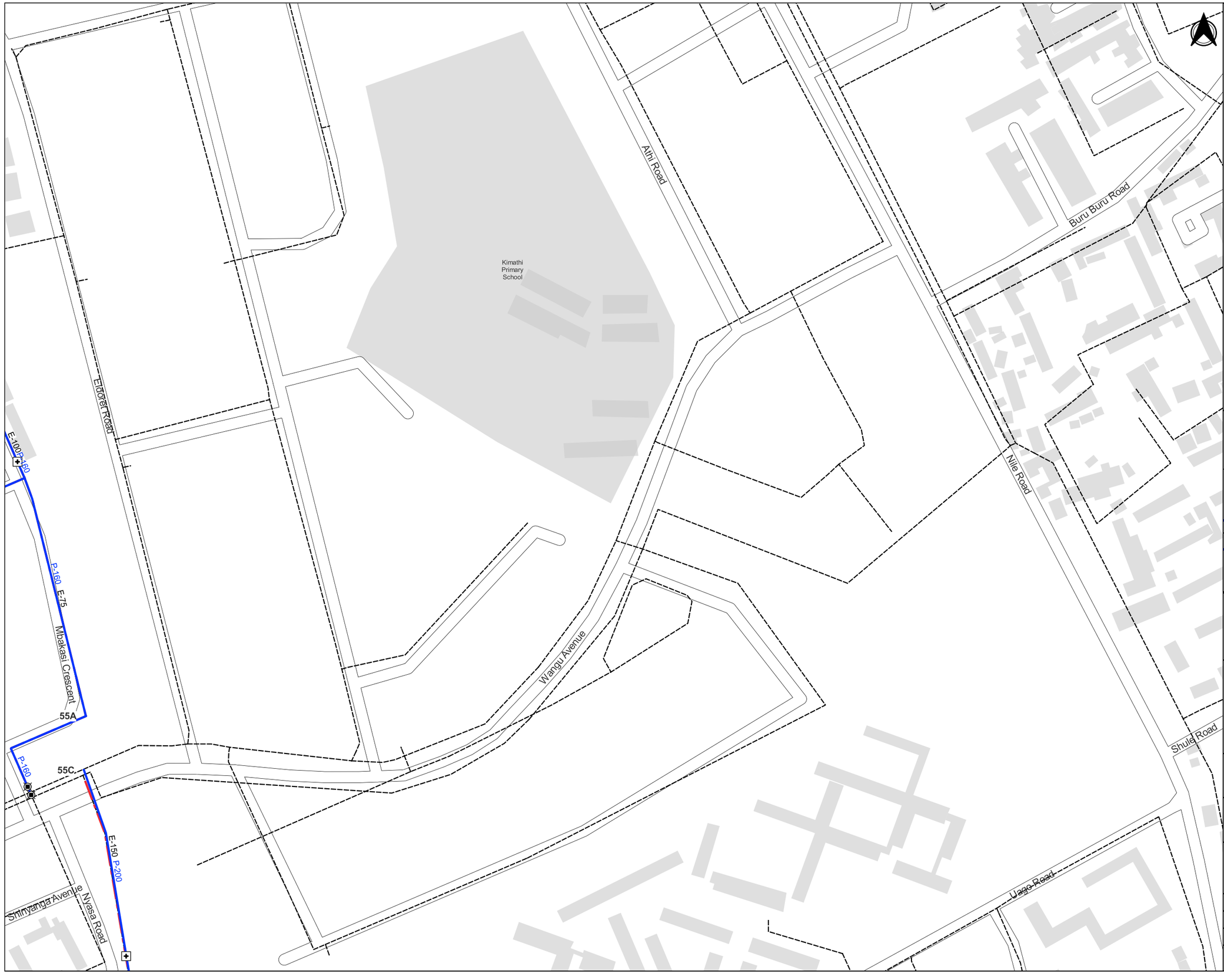
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 54A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-054A
Revision: T0



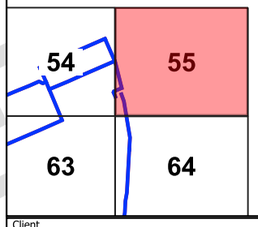
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-055
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

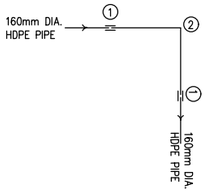
Drawing Title

JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 55

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

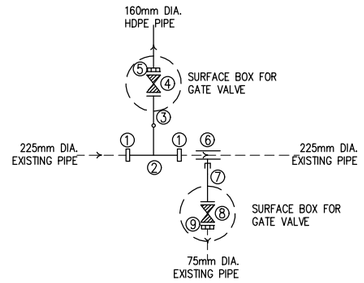
Drawing Number: 6000023-HH-GL-DR-W-055
Revision: T0

DETAIL - 90° BEND
JUNCTIONS:55A



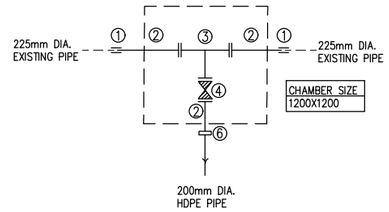
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (225X160)
JUNCTIONS: 55B



ITEM	DESCRIPTION	NO.
1	DN200/225mm DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	DN200/80mm DIA. TAPPING SADDLE CLAMP	1
7	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m CUT TO SUIT	1
8	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
9	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 55C



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. FERROUS FLANGED TEE	1
4	DN200mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200/200mm DIA. STEPPED COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-055

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi – Kenya.

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The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 55A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-055A

Revision: T0



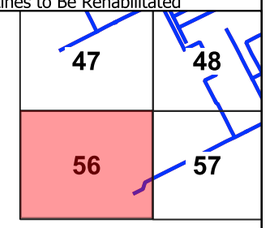
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-056
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

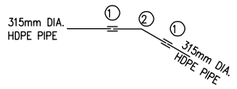
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 56

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

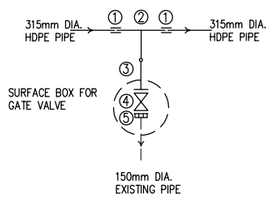
Drawing Number	Revision
6000023-HH-GL-DR-W-056	T0

DETAIL - 45° H.BEND
JUNCTIONS: 56B,56C



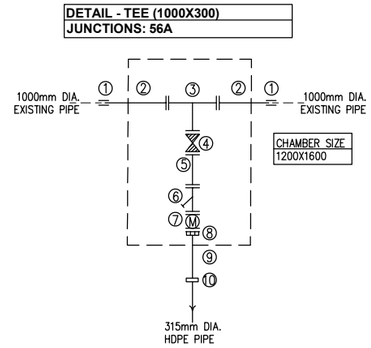
ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	2
2	OD315mm HDPE PLAIN ENDED 45° LONG BEND	1

DETAIL - TEE (315X160)
JUNCTIONS: 56D



ITEM	DESCRIPTION	NO.
1	DN300mm DIA COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (1000X300)
JUNCTIONS: 56A



ITEM	DESCRIPTION	NO.
1	DN1000mm DIA. COUPLING	2
2	DN1000mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN1000x300mm DIA. FERROUS ALL FLANGED TEE	1
4	DN300mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN300mm DIA. FERROUS ALL FLANGED SPIGOT PIPE 0.5m LONG	1
6	DN300mm DIA. FLANGED Y-STRAINER	1
7	DN300mm DIA. WATER METER	1
8	DN300mm DIA. FLANGE ADAPTOR	1
9	DN300mm DIA. PLAIN ENDED FERROUS SPIGOT PIPE 1.2m LONG	1
10	DN300/315mm DIA. STEPPED COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-056

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 1 of 1

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-056A
Revision: T0



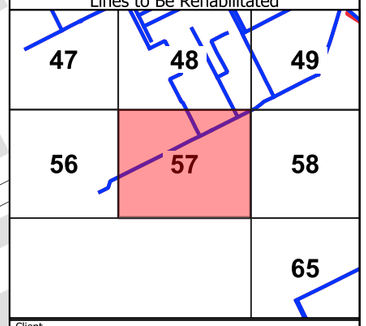
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-057
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi - Kenya.

Design and Supervision Consultant

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P.O Box 2758 - 00606 Nairobi.

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

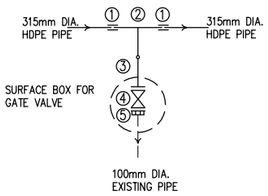
Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 57

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

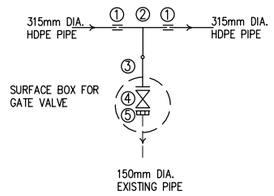
Drawing Number: 6000023-HH-GL-DR-W-057
Revision: T0

DETAIL - TEE (315X110)
JUNCTIONS: 57A,57E



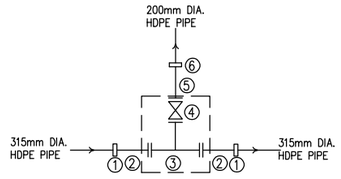
ITEM	DESCRIPTION	NO.
1	DN300mm DIA COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X160)
JUNCTIONS: 57C,57F



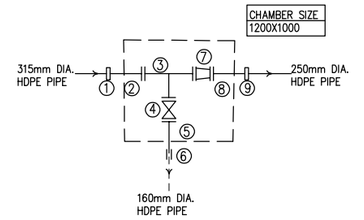
ITEM	DESCRIPTION	NO.
1	DN300mm DIA COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (300X200)
JUNCTIONS: 57D



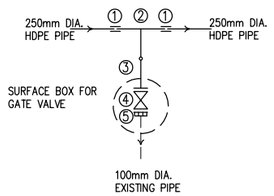
ITEM	DESCRIPTION	NO.
1	DN300/315mm DIA STEPPED COUPLING	2
2	DN300mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x200mm DIA. FERROUS ALL FLANGED TEE	1
4	DN200mm DIA. ALL FLANGED GATE VALVE	1
5	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (300X150)
JUNCTIONS: 57G



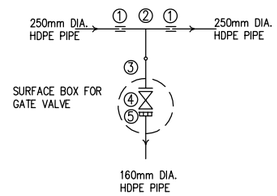
ITEM	DESCRIPTION	NO.
1	DN300/315mm DIA. STEPPED COUPLING	1
2	DN300mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
3	DN300x150 DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN150mm DIA. COUPLING	1
7	DN300x250mm FERROUS ALL FLANGED REDUCER	1
8	DN250mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
9	DN250/250mm DIA. STEPPED COUPLING	1

DETAIL - TEE (250X110)
JUNCTIONS: 57H



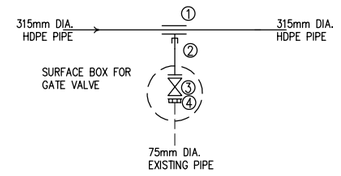
ITEM	DESCRIPTION	NO.
1	DN250mm DIA COUPLING	2
2	OD250x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (250X160)
JUNCTIONS: 57I



ITEM	DESCRIPTION	NO.
1	DN250mm DIA COUPLING	2
2	OD250x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - PE SADDLE CLAMP (315X75)
JUNCTIONS: 57B



ITEM	DESCRIPTION	NO.
1	DN315/75mm DIA. SADDLE CLAMP	1
2	DN80mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
3	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-057

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

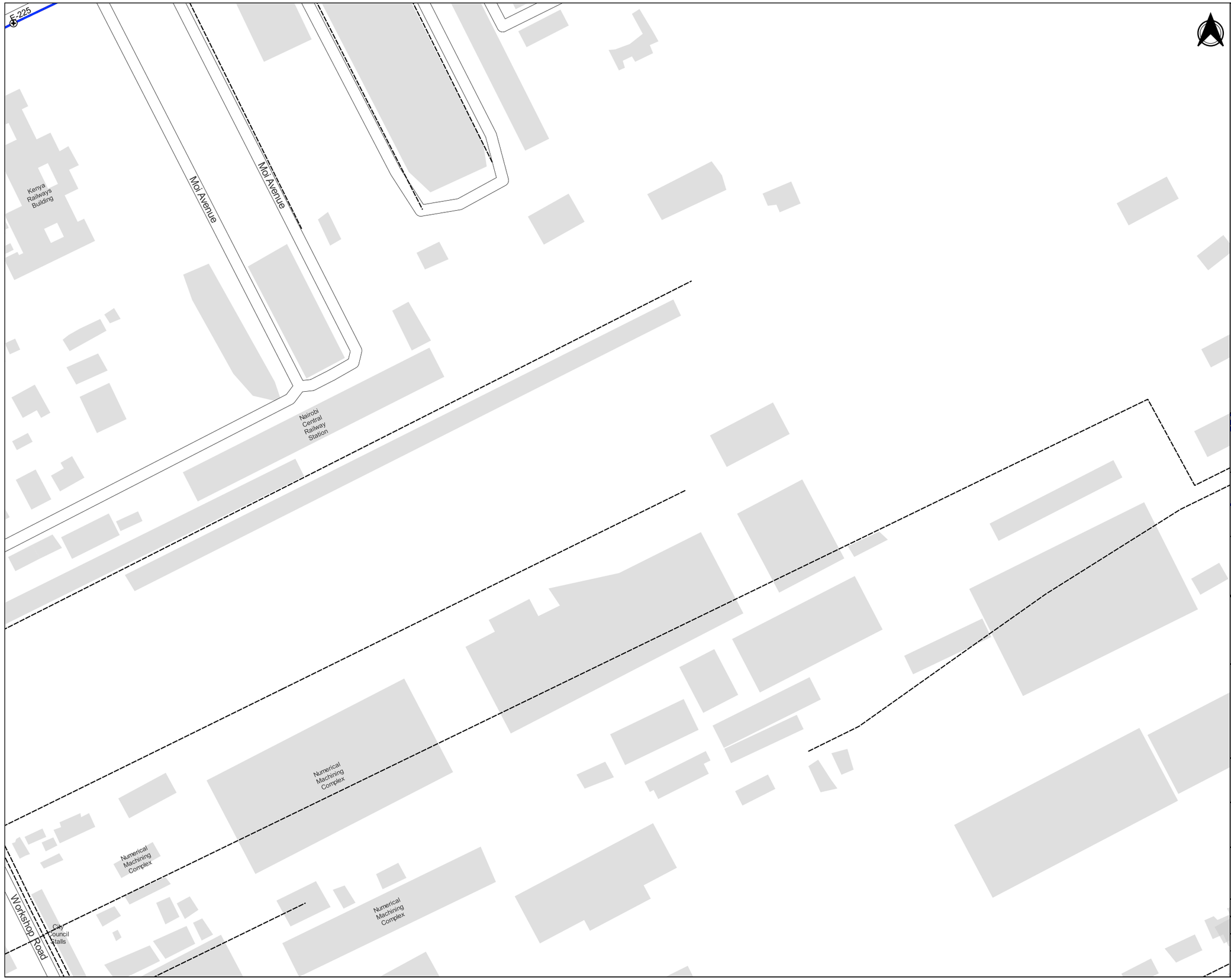
Drawing Title

CBD
REHABILITATION PIPELINES - FITTINGS
Sheet 57A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE,2023

Drawing Number: 6000023-HH-FT-DR-W-057A

Revision: T0



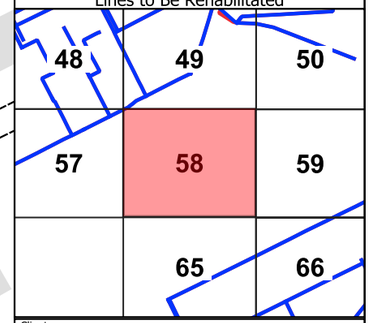
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-058
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Howard Humphreys Consulting Engineers
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

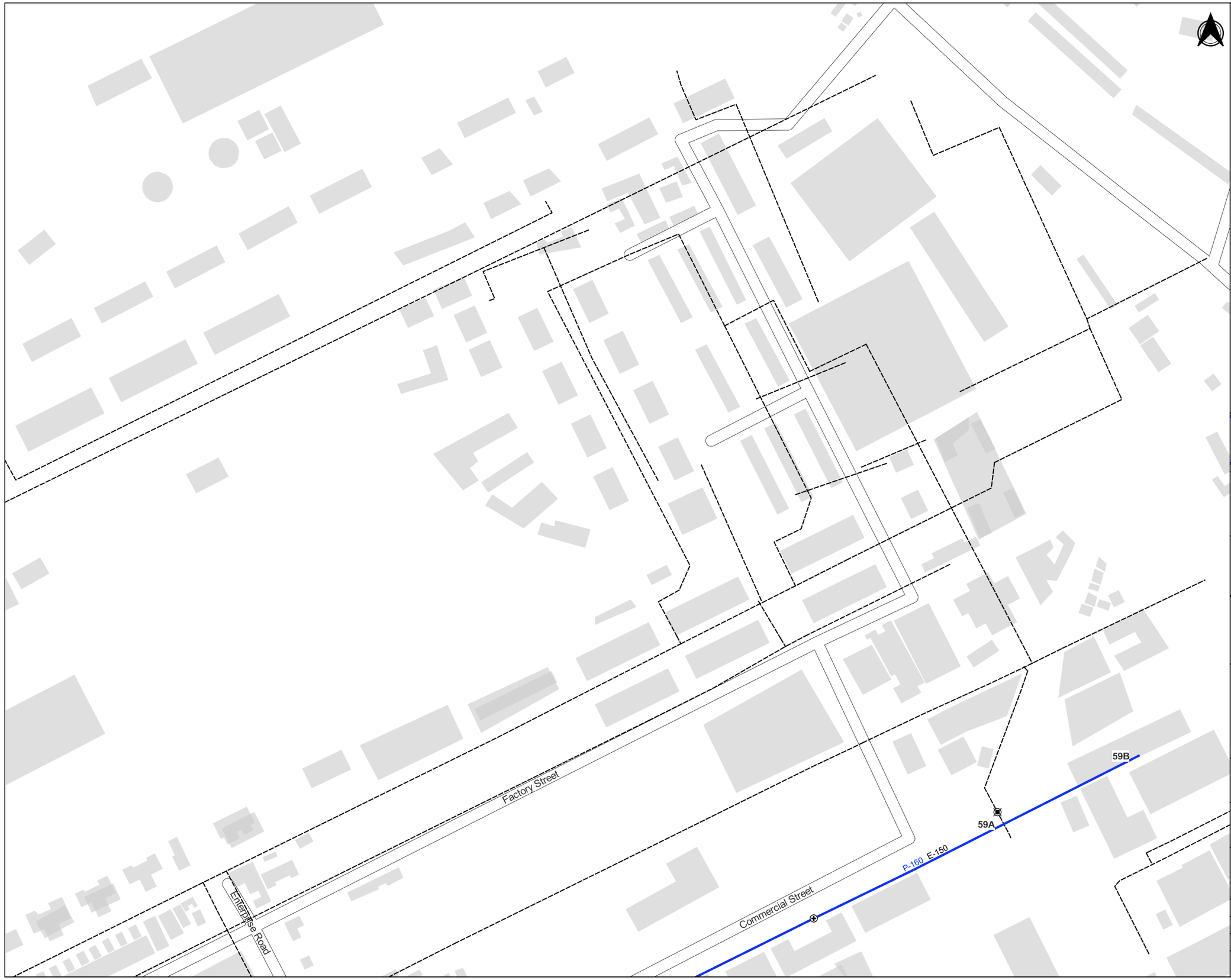
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - LAYOUT
Sheet 58

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-058	T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-059
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

49	50	51
58	59	60
65	66	67

Client

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

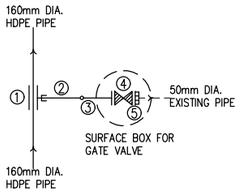
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 59

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-059	T0

DETAIL - SADDLE CLAMP (160X50)
JUNCTIONS: 59A



ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. TAPPING SADDLE	1
2	OD50mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
3	OD50mm DIA. HDPE STUB END WITH FLANGE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-059

Client:
THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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Nairobi.

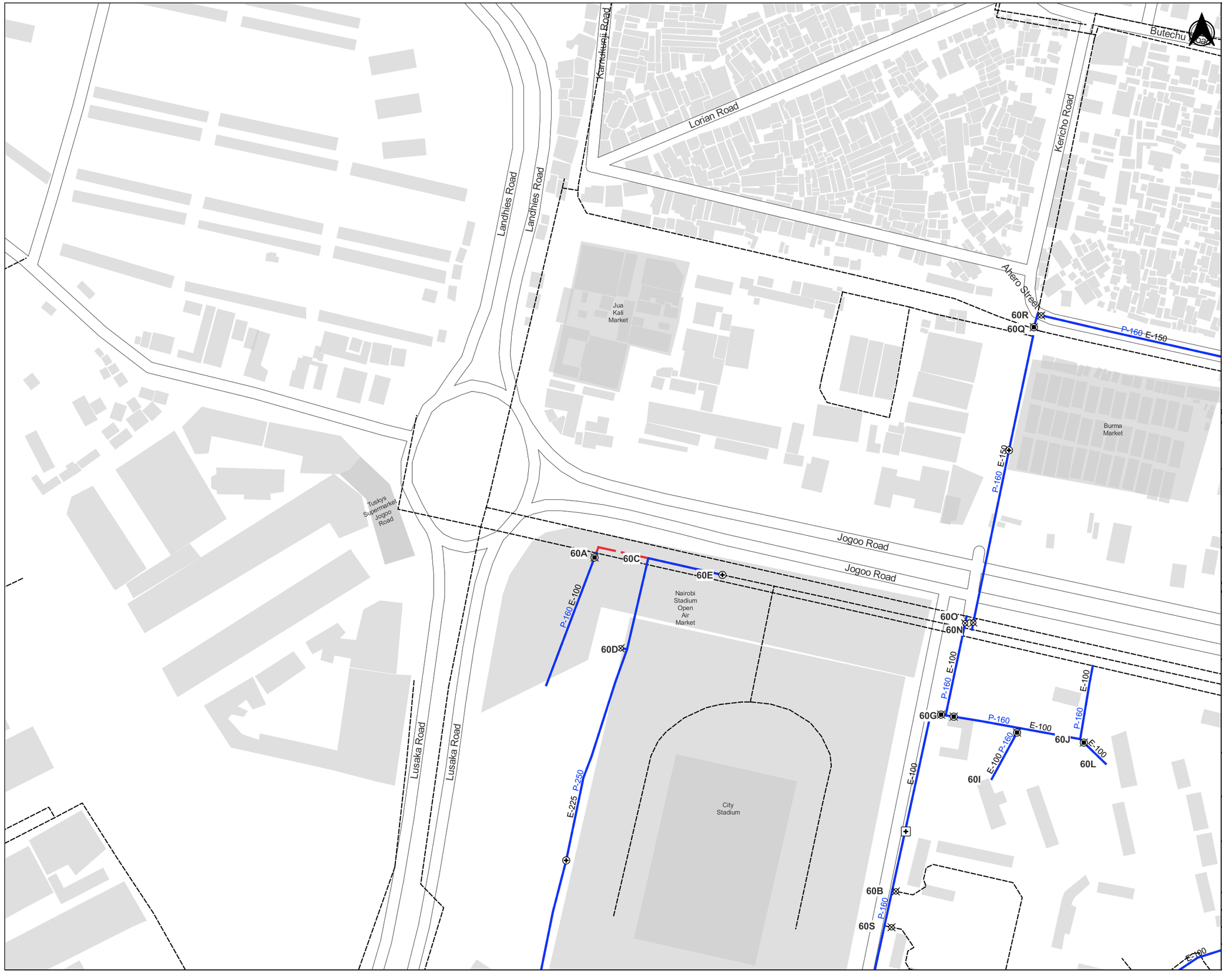
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 59A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-059A
Revision: T0



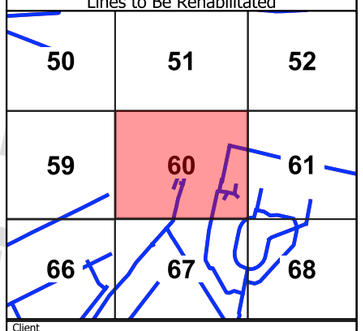
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-060
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

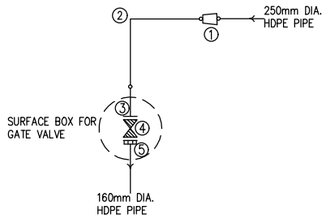
Drawing Title

CENTRAL INDUSTRIAL AREA, JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 60

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

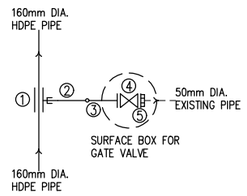
Drawing Number	Revision
6000023-HH-GL-DR-W-060	T0

DETAIL - 90° BEND
JUNCTIONS: 60A



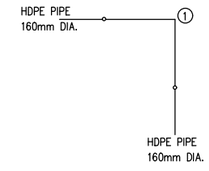
ITEM	DESCRIPTION	NO.
1	OD250X160mm DIA. PLAIN ENDED HDPE REDUCER	1
2	OD160mm HDPE PLAIN ENDED 90° BEND	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - SADDLE CLAMP (160X50)
JUNCTIONS: 60B,60S



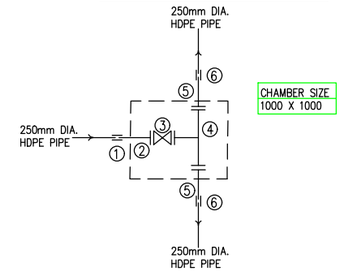
ITEM	DESCRIPTION	NO.
1	DN160/50mm DIA. TAPPING SADDLE	1
2	OD50mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
3	OD50mm DIA. HDPE STUB END WITH FLANGE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
BENDS: 60C, 60F



ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (250X250)
JUNCTIONS: 60D

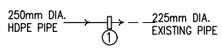


ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	1
2	DN250mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN250mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN250x250mm DIA. ALL FLANGED FERROUS TEE	1
5	DN250mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
6	DN250mm DIA. COUPLING	2

NOTES:

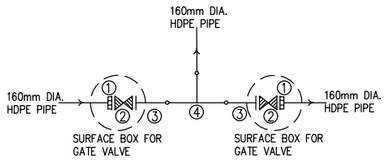
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-060

DETAIL - 250x225 STEPPED COUPLING
Junctions: 60E



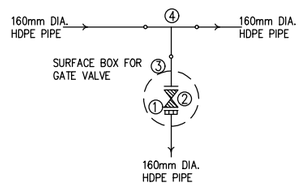
ITEM	DESCRIPTION	NO.
1	DN250x225mm DIA. STEPPED COUPLING	1

DETAIL - TEE (160X160)
JUNCTIONS: 60G



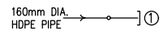
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	2
2	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	2
3	OD160mm DIA. HDPE STUB END WITH FLANGE	2
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - TEE (160X160)
JUNCTIONS: 60H



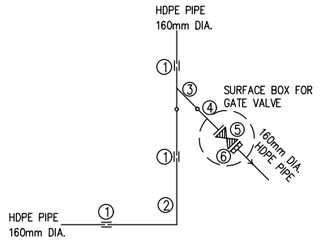
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - END CAP
JUNCTIONS: 60I, 60L



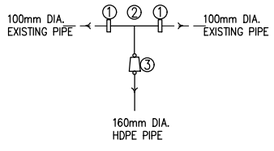
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - 90° BEND & 45° TEE (160x160)
BENDS: 60J



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	3
2	OD160mm HDPE PLAIN ENDED 90° BEND	1
3	OD160x160mm DIA. PLAIN ENDED 45° HDPE TEE	1
4	OD160mm DIA. HDPE STUB END WITH FLANGE	1
5	DN150mm DIA. ALL FLANGED GATE VALVE	1
6	DN150mm DIA. FLANGE ADAPTOR	1
7	OD160mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1

DETAIL - TEE (160X110)
JUNCTIONS: 60K



ITEM	DESCRIPTION	NO.
1	DN100/110mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160X110mm DIA. PLAIN ENDED HDPE REDUCER	1

Client:
THE CHIEF EXECUTIVE OFFICER
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

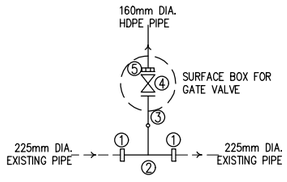
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 60A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

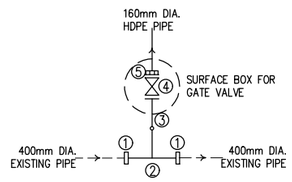
Drawing Number: 6000023-HH-FT-DR-W-060A
Revision: T0

DETAIL - TEE (225X160)
JUNCTIONS: 60N



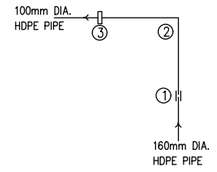
ITEM	DESCRIPTION	NO.
1	DN225/225 DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (400X160)
JUNCTIONS: 60O



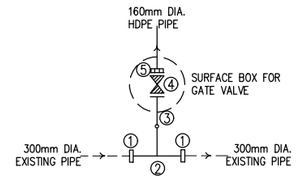
ITEM	DESCRIPTION	NO.
1	DN400/400mm DIA. STEPPED COUPLING	2
2	OD400x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
BENDS: 60P



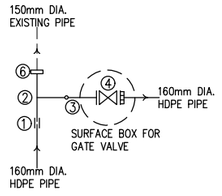
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	1
2	DN160mm HDPE PLAIN ENDED 90° BEND	1
3	DN150/100mm DIA STEPPED COUPLING	1

DETAIL - TEE (315X160)
JUNCTIONS: 60Q



ITEM	DESCRIPTION	NO.
1	DN300/315 DIA. STEPPED COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 60R



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	DN160/150mm DIA. STEPPED COUPLING	

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-060

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

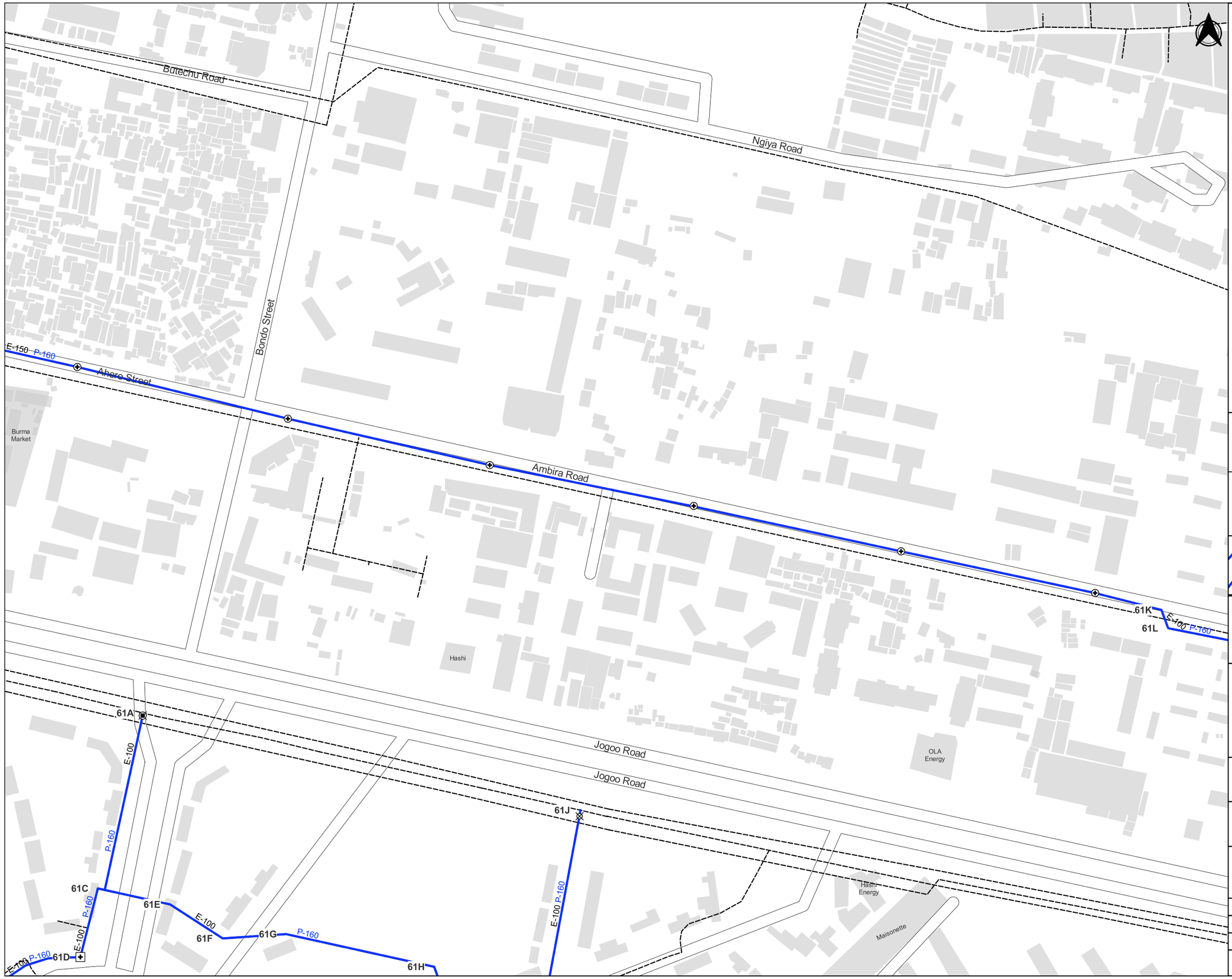
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 60B

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-060B

Revision: T0



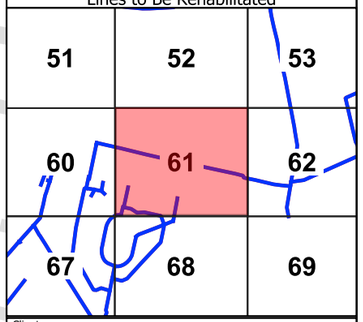
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-061
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

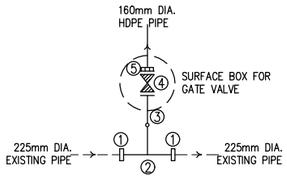
Drawing Title

CENTRAL INDUSTRIAL AREA, JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 61

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

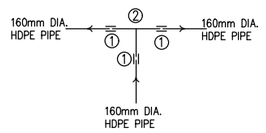
Drawing Number	Revision
6000023-HH-GL-DR-W-061	T0

DETAIL - TEE (225X160)
JUNCTIONS: 61A



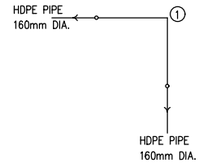
ITEM	DESCRIPTION	NO.
1	DN225/225mm DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 61B



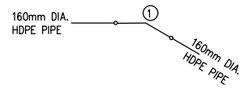
ITEM	DESCRIPTION	NO.
1	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - 90° BEND
JUNCTIONS:61C,61D



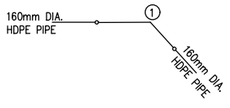
ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 61E,61F,61G



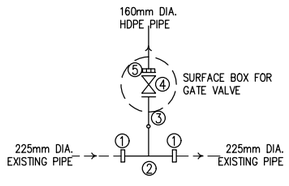
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 61H



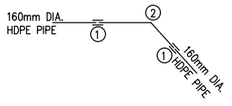
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - TEE (225X160)
JUNCTIONS: 61J



ITEM	DESCRIPTION	NO.
1	DN225/225mm DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 60° H.BEND
JUNCTIONS: 61K,61L



ITEM	DESCRIPTION	NO.
1	DN160mm DIA COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-061

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
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Design and Supervision Consultant:

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Devan Plaza, Crossway Road,
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P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 61

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-061A

Revision: T0



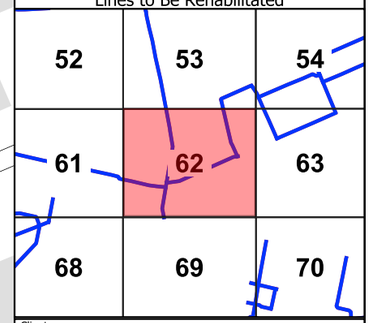
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-062
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

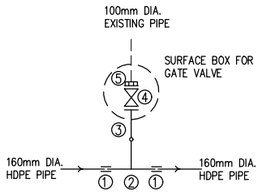
Drawing Title

EASTLEIGH, JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 62

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

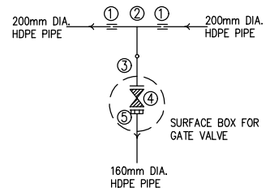
Drawing Number: 6000023-HH-GL-DR-W-062
Revision: T0

DETAIL - TEE (160X110)
JUNCTIONS: 62A



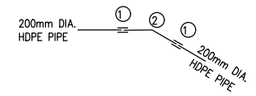
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 62B,62C



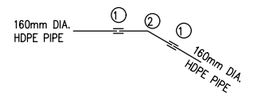
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 62D



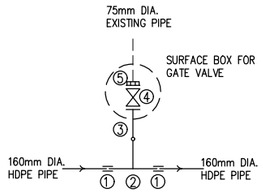
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 62E,62F



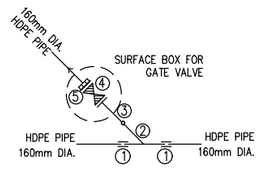
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (160X75)
JUNCTIONS: 62H



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - 45° TEE (160x160)
BENDS: 62G



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED 45° HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-062

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:
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Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

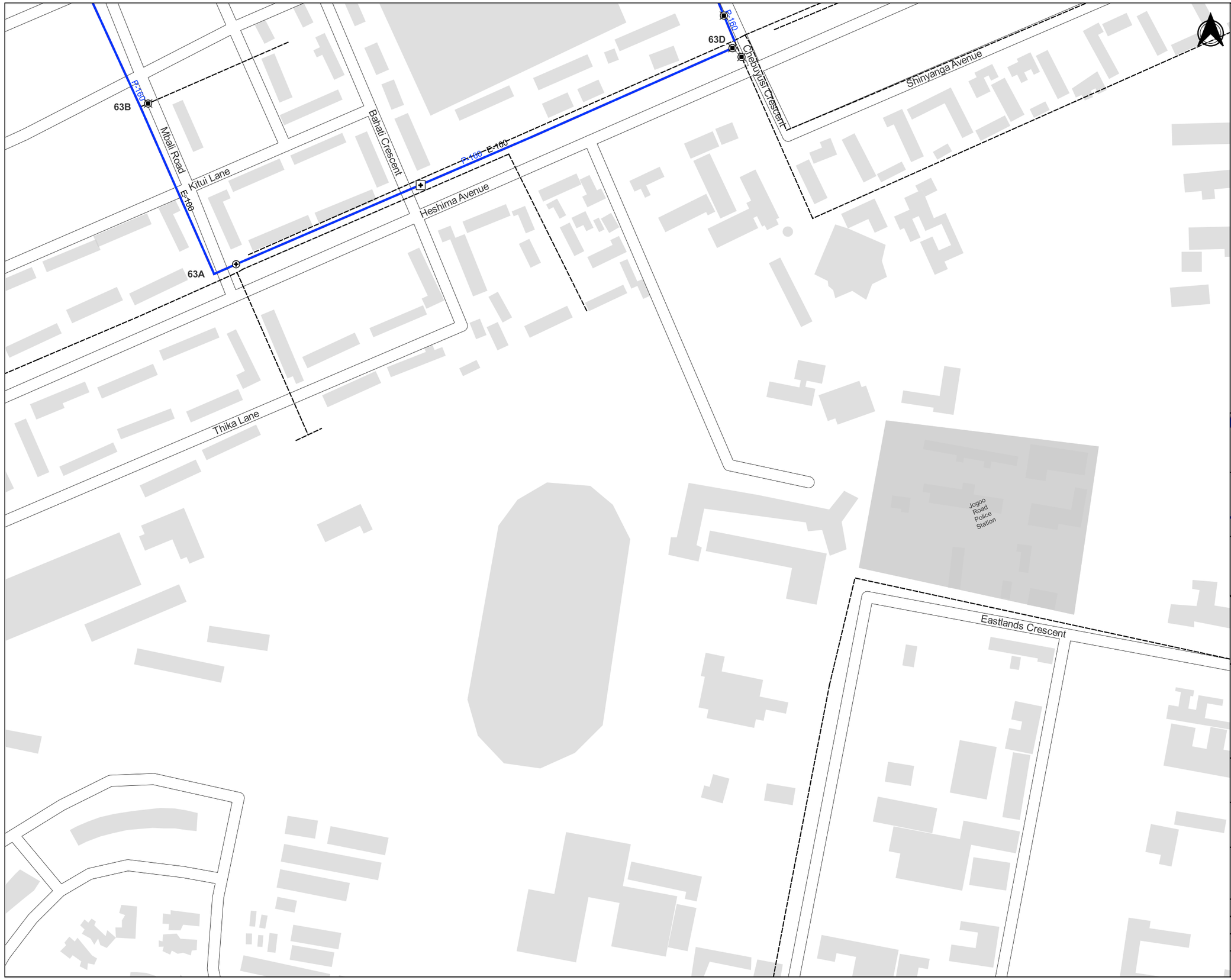
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 62A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-062A
Revision: T0



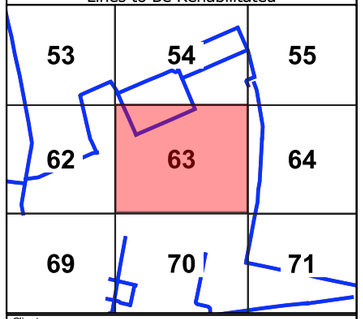
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-063
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

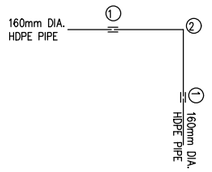
Drawing Title

JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 63

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

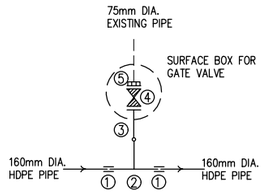
Drawing Number	Revision
6000023-HH-GL-DR-W-063	T0

DETAIL - 90° H.BEND
JUNCTIONS: 63A



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (160X75)
JUNCTIONS: 63B



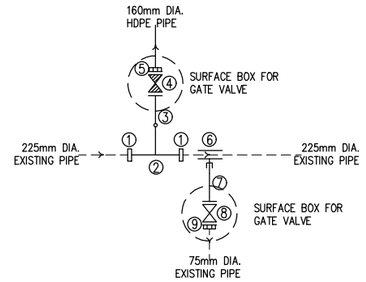
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - END CAP (160)
JUNCTIONS: 63C



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - TEE (225X160)
JUNCTIONS: 63D



ITEM	DESCRIPTION	NO.
1	DN200/225mm DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	DN200/80mm DIA. TAPPING SADDLE CLAMP	1
7	DN80mm DIA. FERROUS FLANGED SPIGOT PIPE, 1.2m CUT TO SUIT	1
8	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
9	DN80mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-063

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
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Design and Supervision Consultant:
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 63A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-063A
Revision: T0



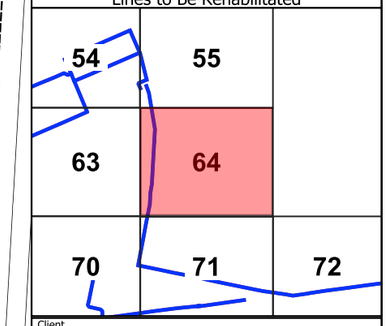
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-064
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

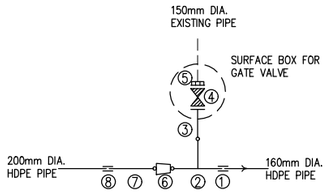
Drawing Title

JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 64

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

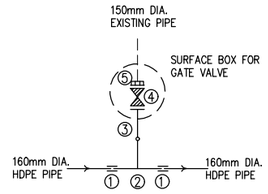
Drawing Number: 6000023-HH-GL-DR-W-064
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 64A



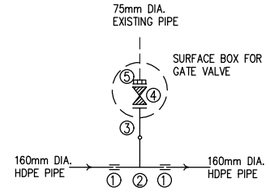
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	OD200x160mm DIA. HDPE PLAIN ENDED REDUCER	1
7	OD200mm DIA. HDPE PLAIN ENDED PIPE 1.2m CUT TO SUIT	1
8	DN200mm DIA. COUPLING	1

DETAIL - TEE (160X75)
JUNCTIONS: 64B



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 64C,64D,64E



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-064

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

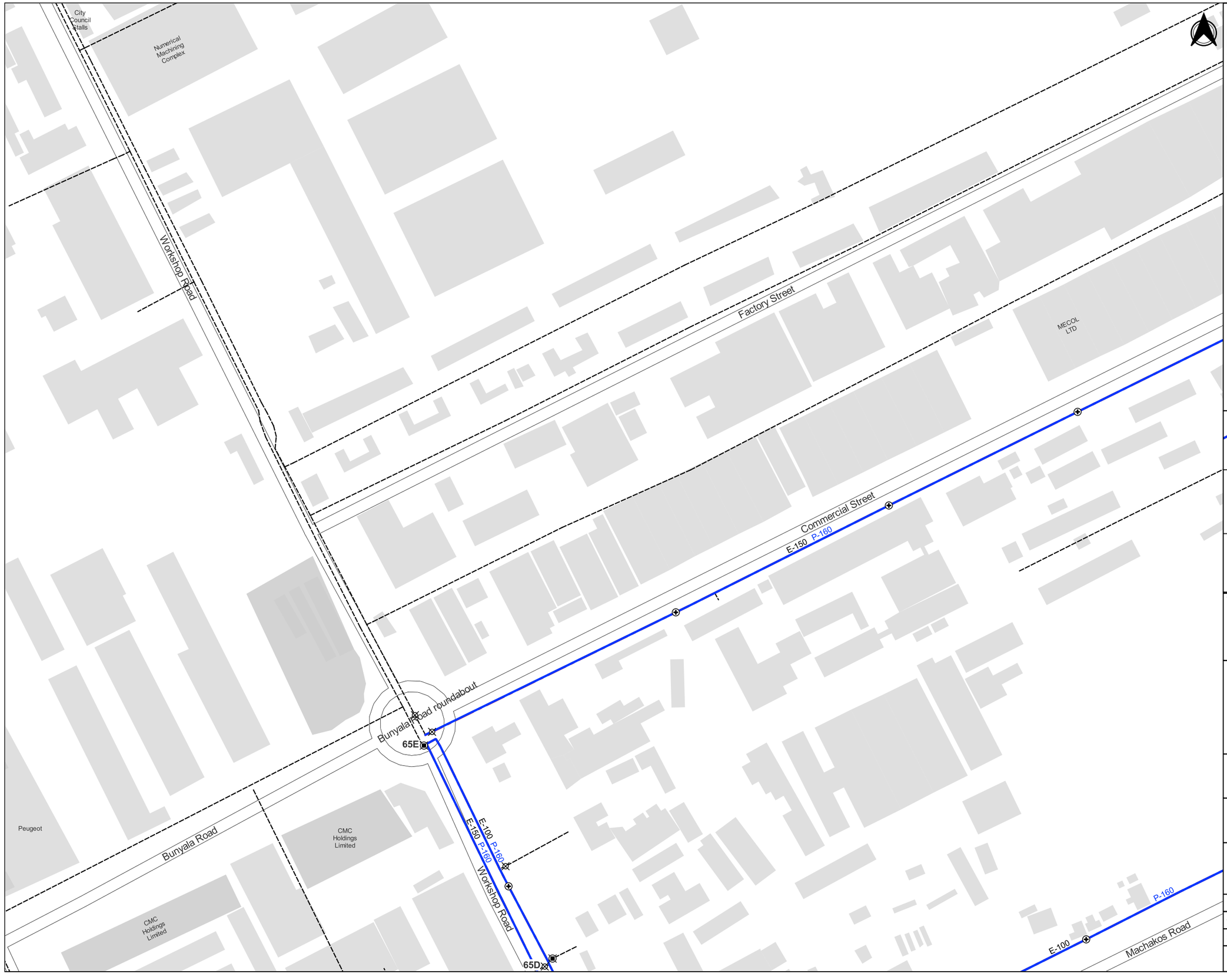
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 64A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-064A
Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-065
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

57	58	59
	65	66
74	75	76

Client

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

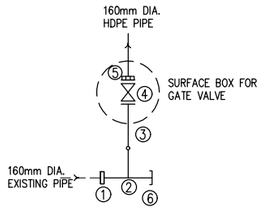
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 65

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

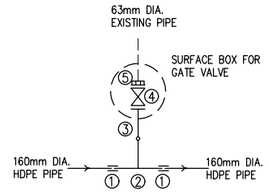
Drawing Number	Revision
6000023-HH-GL-DR-W-065	T0

DETAIL - TEE (160X160)
JUNCTION: 65A



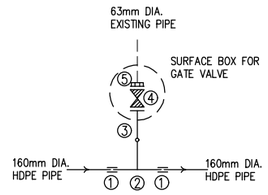
ITEM	DESCRIPTION	NO.
1	DN160/150mm DIA. STEPPED COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	DN160mm DIA. END CAP	1

DETAIL - TEE (160X63)
JUNCTIONS: 65B



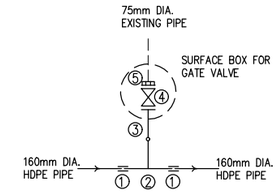
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X63)
JUNCTIONS: 65C



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x63mm DIA. PLAIN ENDED HDPE TEE	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 65D

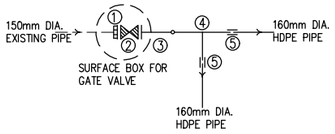


ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

NOTES:

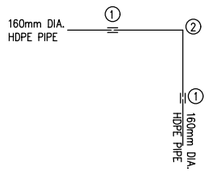
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-065

DETAIL - TEE (160X160)
JUNCTIONS: 65E



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	OD160mm DIA COUPLING	2

DETAIL - 90° BEND
JUNCTIONS: 65F



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 90° BEND	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 65

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-065A

Revision: T0

Factory Street
Enterprise Road
Commercial Street
E-150
P-160
66A
66B
66E
66G
66I
66J
66K
66L
E-300
P-250
E-100
P-110
E-225
Machakos Road
Lusaka Road
Enterprise Road
National GeoData Center (NGDC)
Mines and Geological Department
DT Dobie
DT Dobie Company
Dt Dobie Parking
OLA Energy
Oilibya

NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-066
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

58	59	60
65	66	67
75	76	77

Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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Nairobi - Kenya.

Design and Supervision Consultant

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Howard Humphreys Consulting Engineers
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off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

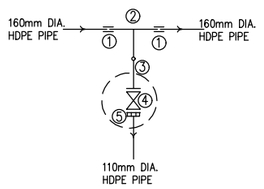
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 66

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

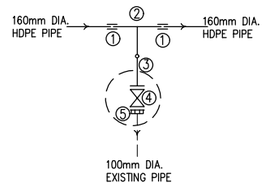
Drawing Number: 6000023-HH-GL-DR-W-066
Revision: T0

DETAIL - TEE (160X100)
JUNCTIONS: 66A



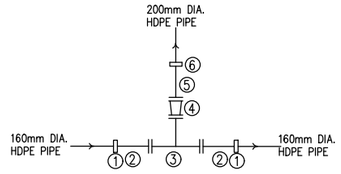
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X100)
JUNCTIONS: 66B



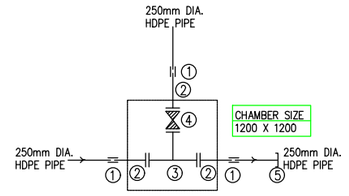
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (150X150)
JUNCTIONS: 66E



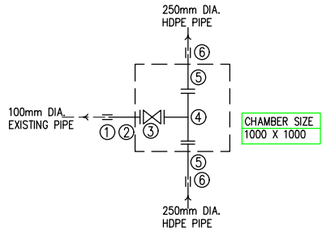
ITEM	DESCRIPTION	NO.
1	DN150/160mm DIA STEPPED COUPLING	2
2	DN150mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150x150mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200X150mm DIA. ALL FLANGED FERROUS REDUCER	1
5	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (250X250)
JUNCTION: 66G



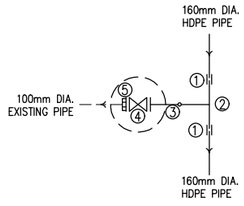
ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	3
2	OD250mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN250x250mm DIA. ALL FLANGED FERROUS TEE	1
4	DN250mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN250mm DIA. END CAP	1

DETAIL - TEE (250X100)
JUNCTIONS: 66I



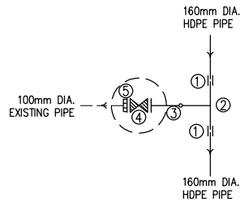
ITEM	DESCRIPTION	NO.
1	OD100mm DIA. COUPLING	1
2	DN100mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN250x100 DIA ALL FLANGED FERROUS TEE	1
5	OD250mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
6	OD250mm DIA. COUPLING	2

DETAIL - TEE (160X100)
JUNCTIONS: 66J



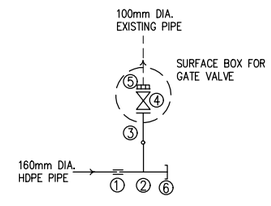
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN110mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X100)
JUNCTIONS: 66K



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN110mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 66L



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	1
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1
6	OD160mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-066

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:
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Devan Plaza, Crossway Road,
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P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 66

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-066A
Revision: T0



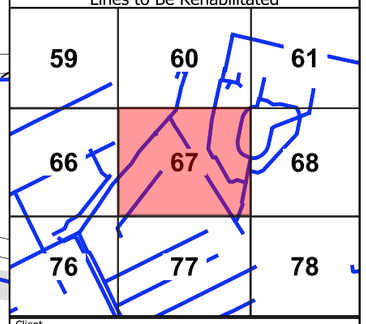
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-067
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

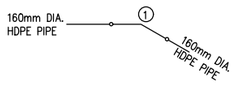
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 67

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

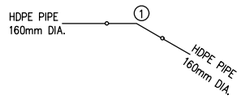
Drawing Number: 6000023-HH-GL-DR-W-067
Revision: T0

DETAIL - 45° H.BEND
JUNCTIONS: 67A,67D



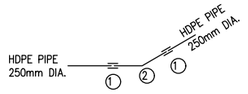
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 67B,67E,67O



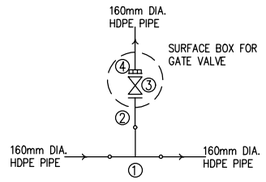
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS:67AA



ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	OD250mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 67C,67V,67W

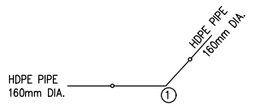


ITEM	DESCRIPTION	NO.
1	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
2	OD160mm DIA. HDPE STUB END WITH FLANGE	1
3	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

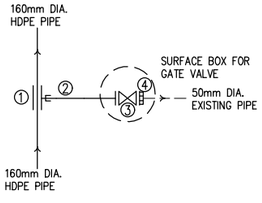
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-067

DETAIL - 60° H.BEND
JUNCTIONS: 67F



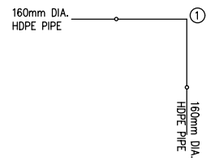
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - SADDLE CLAMP (160X50)
JUNCTIONS: 67G,67H,67I,67L,67M,67N,67S,67AC



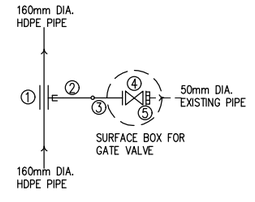
ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. SADDLE CLAMP	1
2	DN50mm DIA. HDPE PLAIN ENDED PIPE 2m CUT TO SUIT	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
BENDS: 67J,67K



ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - SADDLE CLAMP (160X50)
JUNCTIONS: 67AC



ITEM	DESCRIPTION	NO.
1	DN150/50mm DIA. TAPPING SADDLE	1
2	OD50mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
3	OD50mm DIA. HDPE STUB END WITH FLANGE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

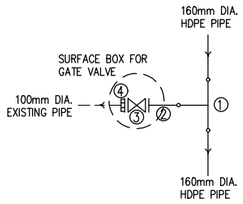
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 67A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-067A

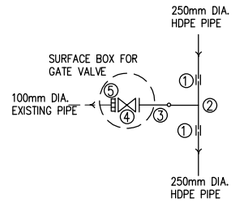
Revision: T0

DETAIL - TEE (160X110)
JUNCTIONS: 67P,67Q,67R,67U,67T



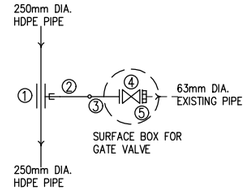
ITEM	DESCRIPTION	NO.
1	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
2	OD110mm DIA. HDPE STUB END WITH FLANGE	1
3	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (250X100)
JUNCTIONS:67X



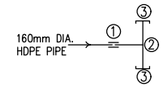
ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	OD250x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - SADDLE CLAMP (250X63)
JUNCTIONS:67Y



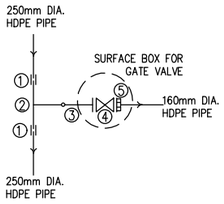
ITEM	DESCRIPTION	NO.
1	DN250/65mm DIA. TAPPING SADDLE	1
2	OD63mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 67AB



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. END CAP	2

DETAIL - TEE (250X160)
JUNCTIONS:67Z



ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	OD250x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-067

Client:
THE CHIEF EXECUTIVE OFFICER
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P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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Nairobi.

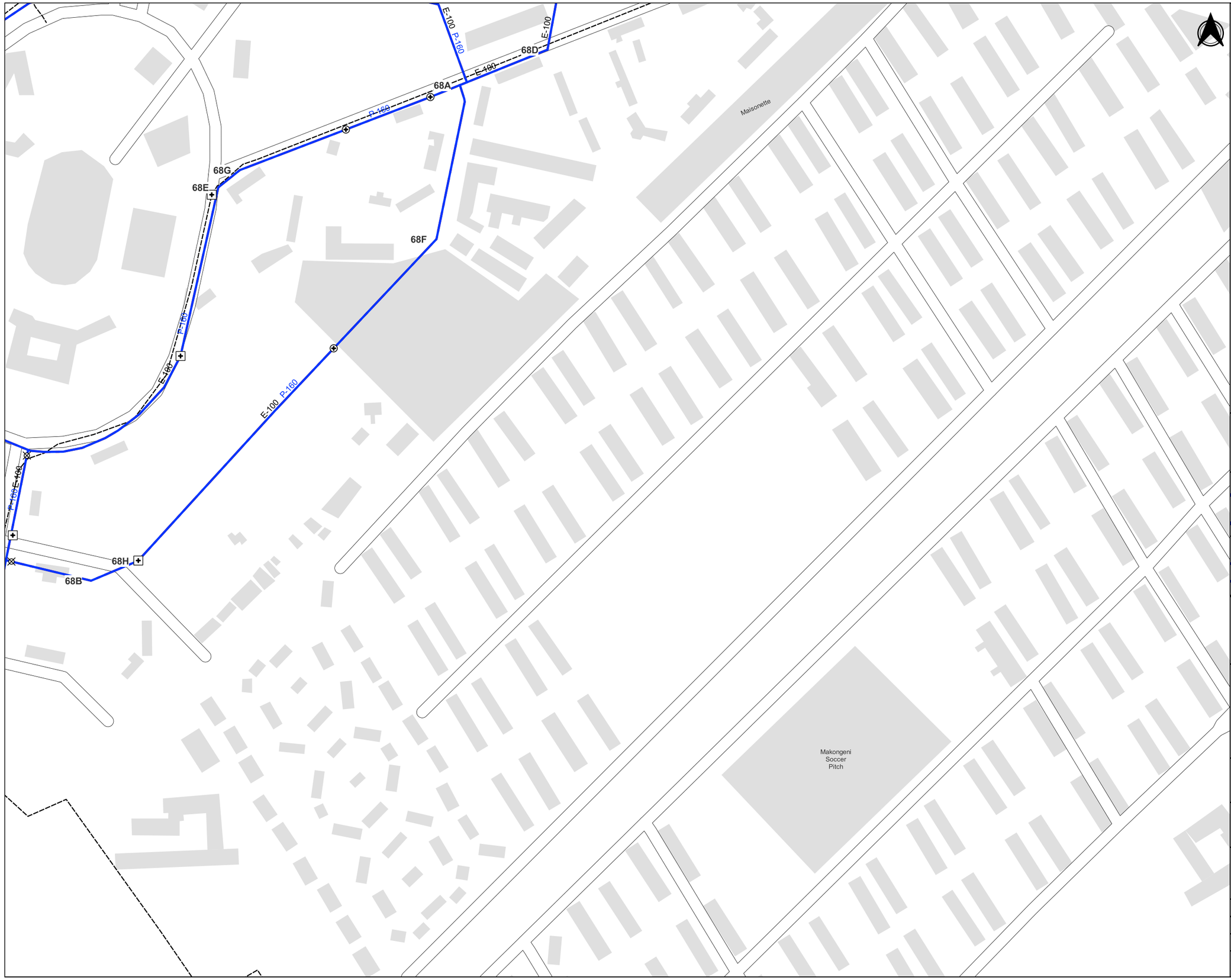
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 67B

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-067B
Revision: T0



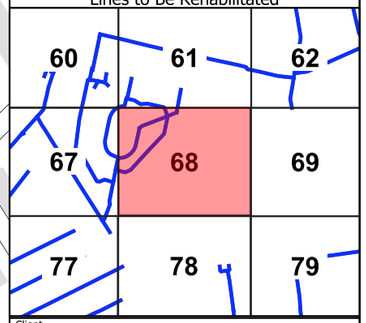
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-068
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

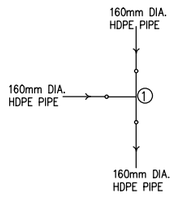
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 68

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

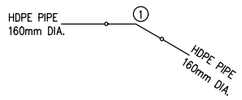
Drawing Number	Revision
6000023-HH-GL-DR-W-068	T0

DETAIL - STAGGERED TEES (160x160)
JUNCTIONS: 68A,68C



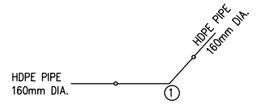
ITEM	DESCRIPTION	NO.
1	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - 30° H.BEND
JUNCTIONS: 68B,68F,68G,68H



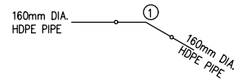
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 68D



ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 45° H.BEND
JUNCTIONS: 68E



ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 45° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-068

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

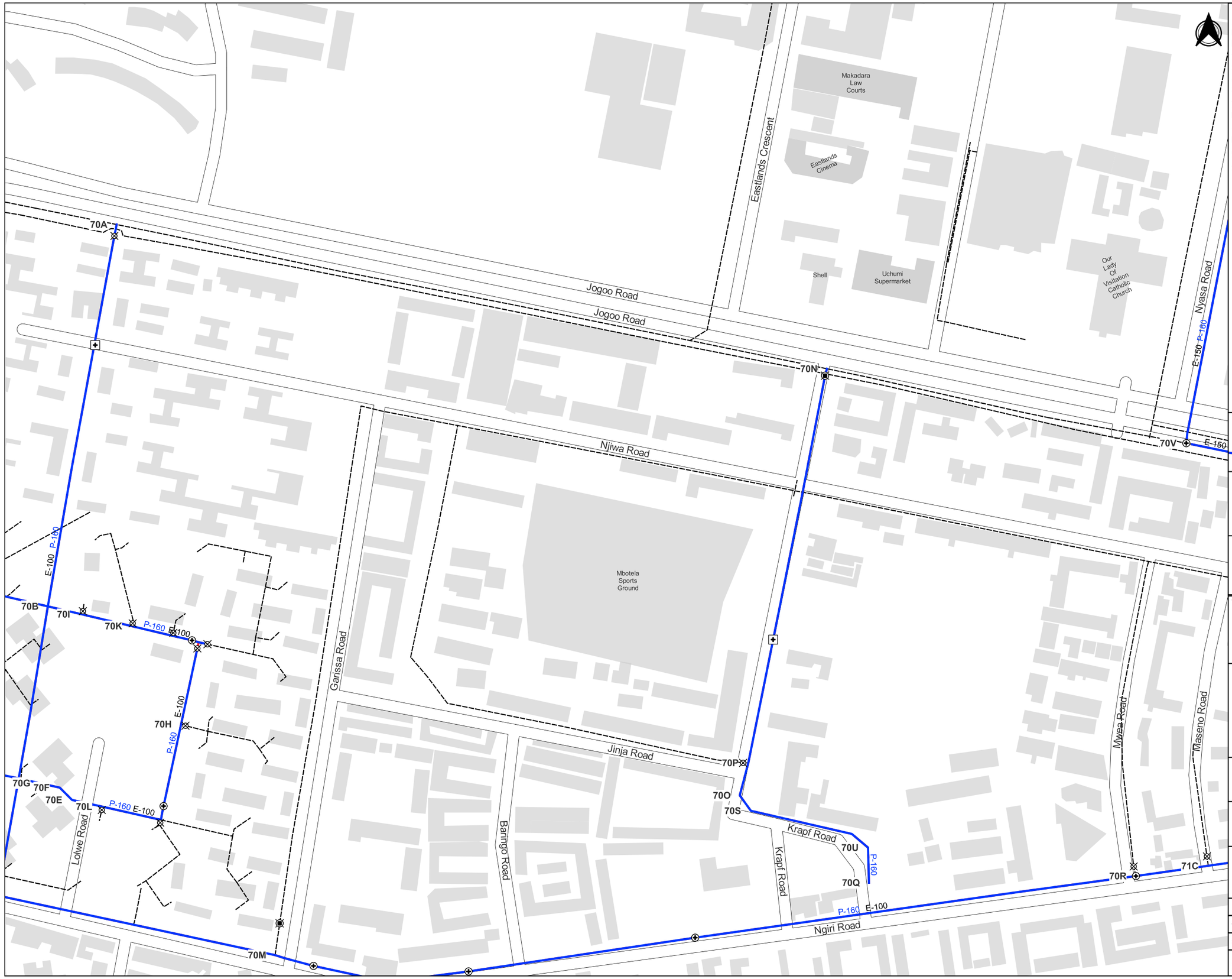
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 68A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-068A
Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-070
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

62	63	64
69	70	71
79		

Client

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

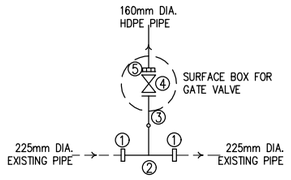
Drawing Title

EASTERN INDUSTRIAL AREA, JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 70

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

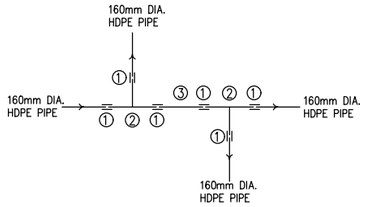
Drawing Number	Revision
6000023-HH-GL-DR-W-070	T0

DETAIL - TEE (225X160)
JUNCTIONS: 70A



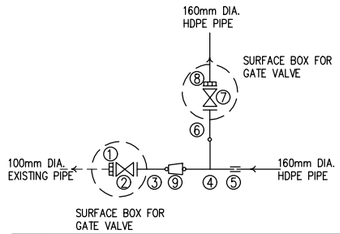
ITEM	DESCRIPTION	NO.
1	DN225/225mm DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 70B



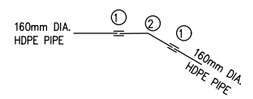
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	6
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	2
3	OD160mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1

DETAIL - TEE (160X160)
JUNCTIONS: 70C



ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	1
2	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
5	OD160mm DIA COUPLING	1
6	OD160mm DIA. HDPE STUB END WITH FLANGE	1
7	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
8	DN150mm DIA. FLANGE ADAPTOR	1
9	DN160x110mm DIA. PLAIN ENDED REDUCER	1

DETAIL - 30° H.BEND
JUNCTIONS: 70E,70F



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 30° BEND	1

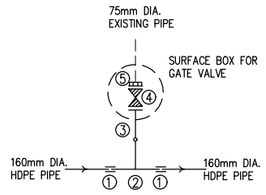
NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-070

DETAIL - SADDLE CLAMP (160X50)
JUNCTIONS: 70G,70H,70I,70K,70L

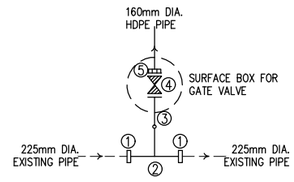
ITEM	DESCRIPTION	NO.
1	DN160/50mm DIA. TAPPING SADDLE	1
2	OD50mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
3	OD50mm DIA. HDPE STUB END WITH FLANGE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 70M



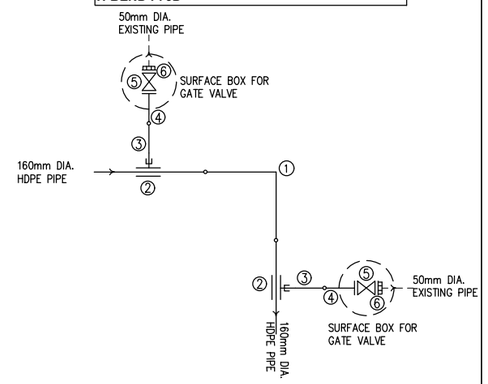
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN60/65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (225X160)
JUNCTIONS: 70N



ITEM	DESCRIPTION	NO.
1	DN225/225mm DIA. STEPPED COUPLING	2
2	OD225x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H-BEND & SADDLE CLAMP (160X50)
H-BEND : 70D



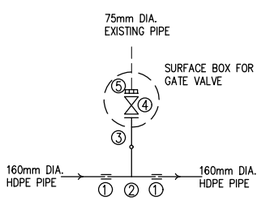
ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 90° BEND	1
2	DN160/50mm DIA. TAPPING SADDLE	2
3	OD50mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	2
4	OD50mm DIA. HDPE STUB END WITH FLANGE	2
5	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	2
6	DN50mm DIA. FLANGE ADAPTOR	2

DETAIL - END CAP (160)
JUNCTIONS: 70Q



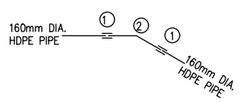
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - TEE (160X75)
JUNCTIONS: 70P,70R



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN60/65mm DIA. FLANGE ADAPTOR	1

DETAIL - 45° H.BEND
JUNCTIONS: 70O,70S,70T,70U



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 45° BEND	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

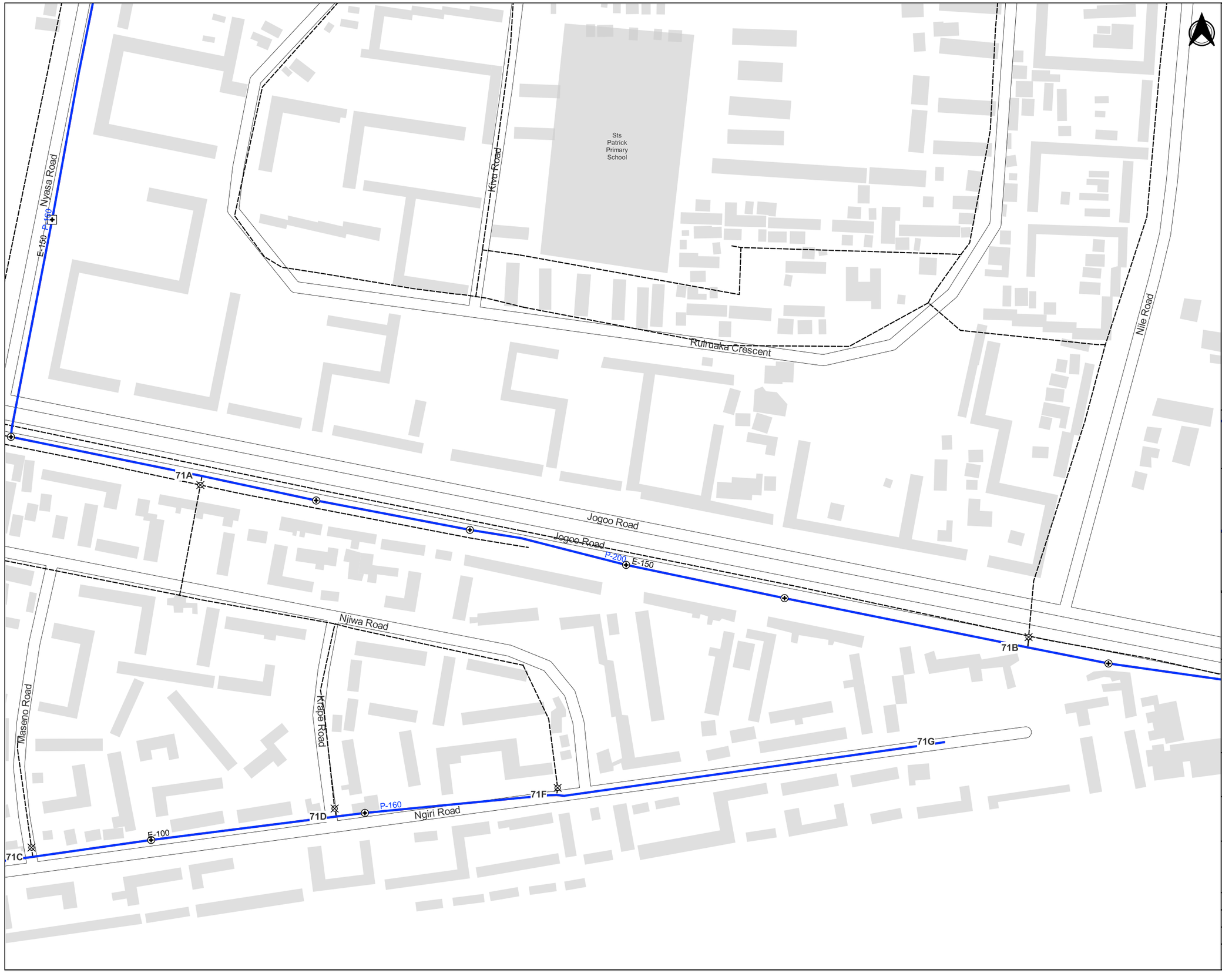
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 70

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-070A

Revision: T0



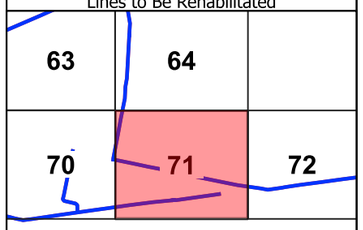
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-071
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

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Howard Humphreys Consulting Engineers
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

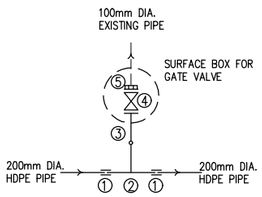
Drawing Title

EASTERN INDUSTRIAL AREA, JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 71

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

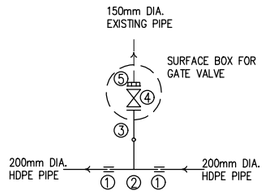
Drawing Number	Revision
6000023-HH-GL-DR-W-071	T0

DETAIL - TEE (200X110)
JUNCTIONS: 71A



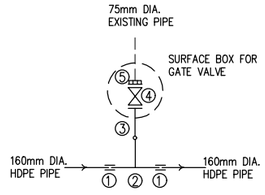
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 71B



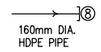
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS: 71C,71D,71F



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN60/65mm DIA. FLANGE ADAPTOR	1

DETAIL - END CAP (160)
JUNCTIONS: 71G



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-071

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

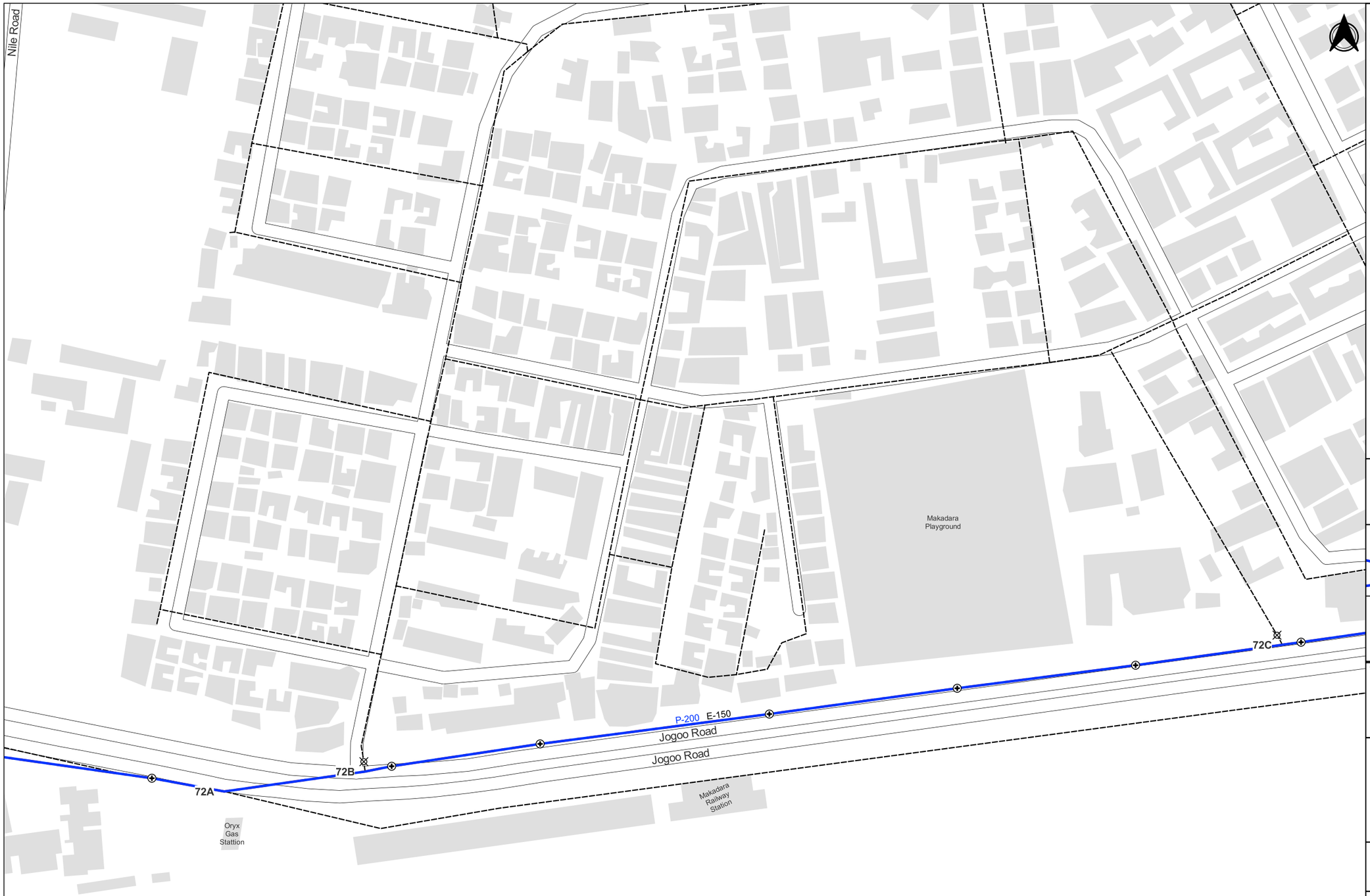
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 71

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-071A
Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-072
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

64		
71	72	73

Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

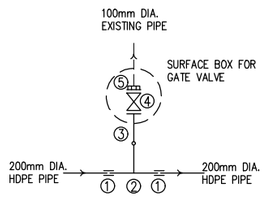
Drawing Title

JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 72

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

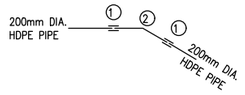
Drawing Number: 6000023-HH-GL-DR-W-072
Revision: T0

DETAIL - TEE (200X110)
JUNCTIONS: 72B,72C



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 72A



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 30° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-072

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

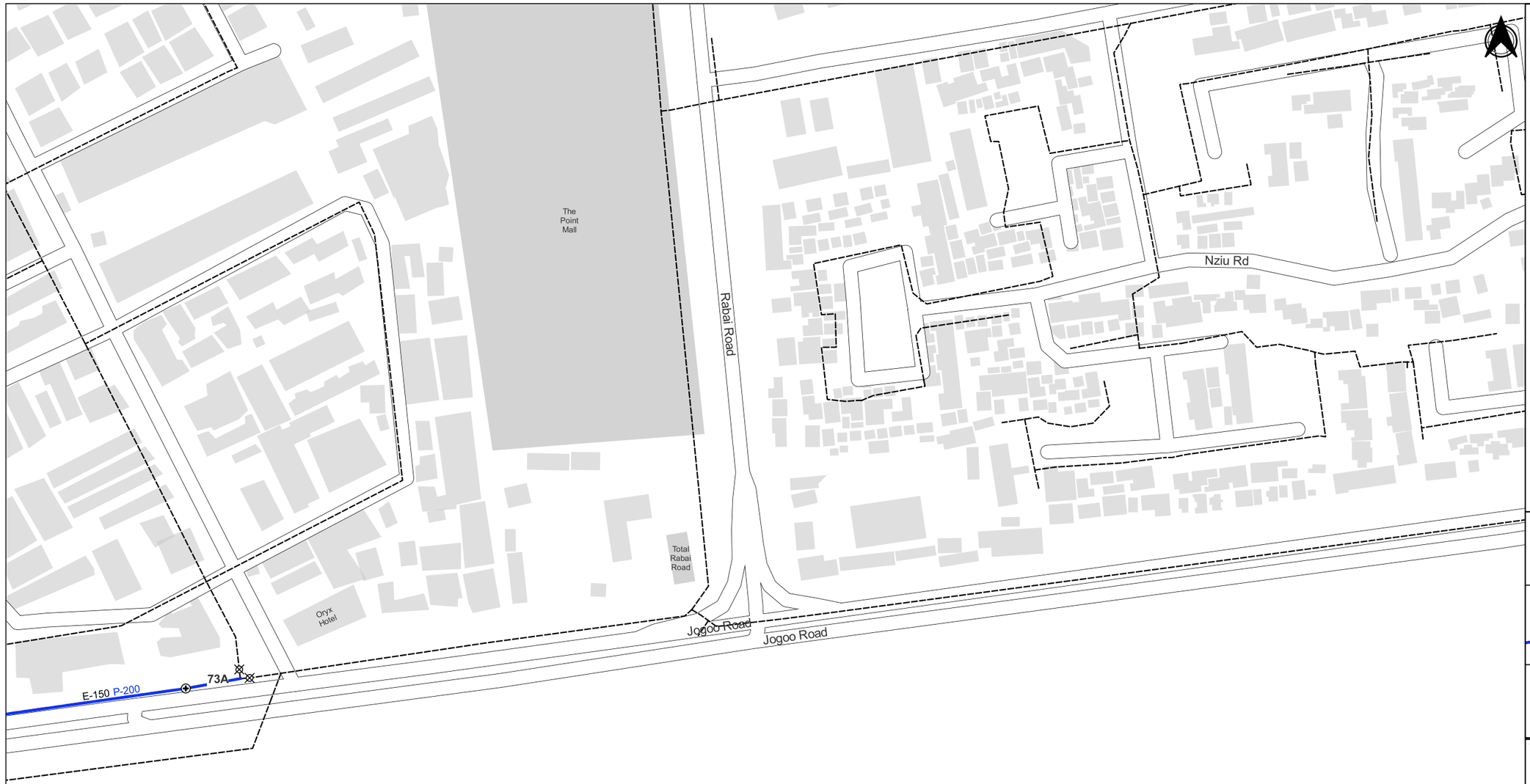
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 72

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-072A
Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-073
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

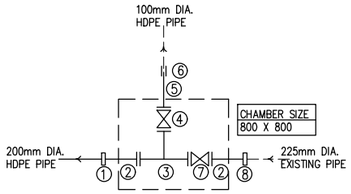
Drawing Title

JOGOO ROAD
REHABILITATION PIPELINES - LAYOUT
Sheet 73

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

Drawing Number	Revision
6000023-HH-GL-DR-W-073	T0

DETAIL - TEE (200X100)
JUNCTION: 73A



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	1
2	OD200mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x100mm DIA. ALL FLANGED FERROUS TEE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	OD100mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN100mm DIA. COUPLING	1
7	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
8	DN200/225mm DIA. STEPPED COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-073

Client:

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP
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Devan Plaza, Crossway Road,
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Howard Humphreys
Consulting Engineers

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 73

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-073A

Revision: T0

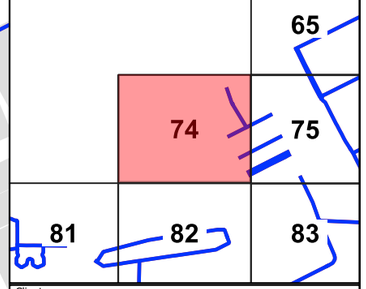
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-074
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

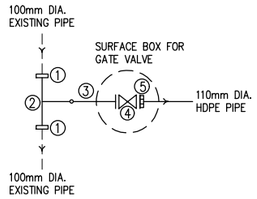
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 74

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

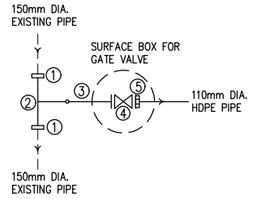
Drawing Number: 6000023-HH-GL-DR-W-074
Revision: T0

DETAIL - TEE (110X100)
JUNCTION: 74A



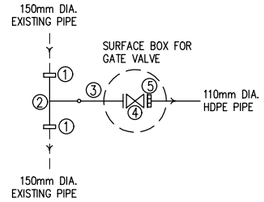
ITEM	DESCRIPTION	NO.
1	DN110/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTION: 74B, 74C



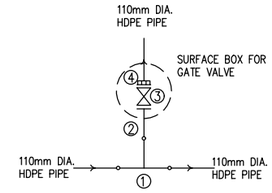
ITEM	DESCRIPTION	NO.
1	DN150/160mm DIA. STEPPED COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTION: 74D



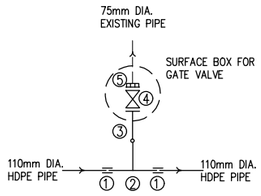
ITEM	DESCRIPTION	NO.
1	DN160/150mm DIA. STEPPED COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (110X110)
JUNCTIONS: 74E



ITEM	DESCRIPTION	NO.
1	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
2	OD110mm DIA. HDPE STUB END WITH FLANGE	1
3	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (110x75)
JUNCTIONS: 74F,74H



ITEM	DESCRIPTION	NO.
1	DN110mm DIA. COUPLING	2
2	OD110x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - END CAP (110)
JUNCTIONS: 74I



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-074

Client:
THE CHIEF EXECUTIVE OFFICER
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Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 74

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-074A
Revision: T0

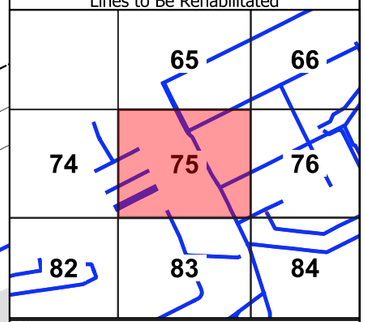
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-075
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- Proposed Washout
- Proposed Water Meters
- Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

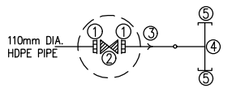
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 75

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

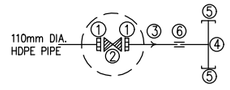
Drawing Number: 6000023-HH-GL-DR-W-075
Revision: T0

DETAIL - TEE (110X110)
JUNCTIONS: 75E,75G



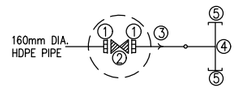
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	2
2	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD110mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
4	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
5	OD110mm DIA. END CAP	2

DETAIL - TEE (110X110)
JUNCTIONS: 75F



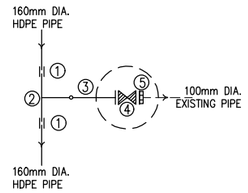
ITEM	DESCRIPTION	NO.
1	DN100mm DIA. FLANGE ADAPTOR	2
2	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD110mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
4	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
5	OD110mm DIA. END CAP	2
6	DN110mm DIA. COUPLING	1

DETAIL - TEE (160X160)
JUNCTIONS: 75H



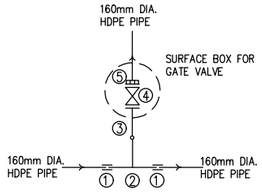
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	2
2	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD160mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	OD160mm DIA. END CAP	2

DETAIL - TEE (160X110)
JUNCTION: 75J,75O,75P



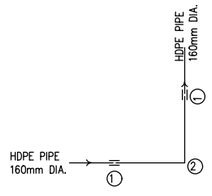
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 75K



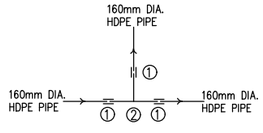
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
BENDS: 75L, 75M



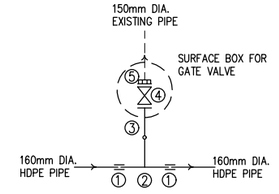
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 75N



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	3
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - TEE (160X160)
JUNCTIONS: 75Q



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-075

Client:
THE CHIEF EXECUTIVE OFFICER
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

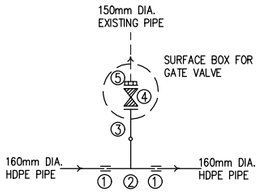
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 75A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

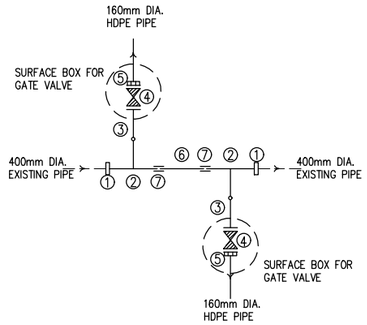
Drawing Number: 6000023-HH-FT-DR-W-075A
Revision: T0

DETAIL - TEE (160X160)
JUNCTIONS: 75R



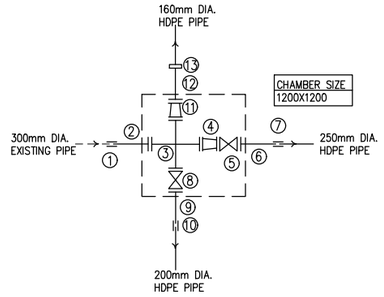
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (400X160)
JUNCTIONS: 75S



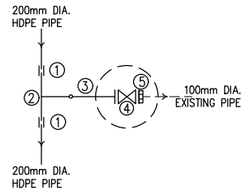
ITEM	DESCRIPTION	NO.
1	DN400/400mm DIA. STEPPED COUPLING	2
2	OD400x160mm DIA. PLAIN ENDED HDPE TEE	2
3	OD160mm DIA. HDPE STUB END WITH FLANGE	2
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	2
5	DN150mm DIA. FLANGE ADAPTOR	2
6	OD400mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
7	DN400mm DIA. COUPLING	2

DETAIL - CROSS TEE (300X200)
JUNCTIONS: 75T



ITEM	DESCRIPTION	NO.
1	DN300mm DIA. COUPLING	1
2	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
3	DN300x200 DIA. ALL FLANGED FERROUS CROSS TEE	1
4	DN300x250mm DIA. FLANGED REDUCER	1
5	DN250mm DIA. ALL FLANGED FERROUS GATE VALVE	1
6	DN250mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN250mm DIA COUPLING	1
8	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
9	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
10	DN200mm DIA COUPLING	1
11	DN200x150mm DIA. FLANGED REDUCER	1
12	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
13	DN160/150mm DIA STEPPED COUPLING	1

DETAIL - TEE (200X110)
JUNCTION: 75U,75V

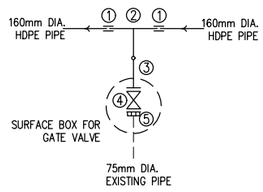


ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

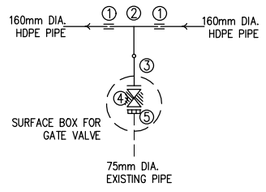
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-075

DETAIL - TEE (160X75)
JUNCTIONS: 75W



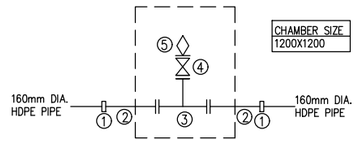
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN75mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS:75X



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN75mm DIA. FLANGE ADAPTOR	1

DETAIL - AIR VALVE
JUNCTIONS: 75Y



ITEM	DESCRIPTION	NO.
1	DN160/160mm DIA. STEPPED COUPLING	1
2	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150X50mm DIA. ALLL FLANGED FERROUS TEE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

Client:

ATHI WATER WORKS

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Design and Supervision Consultant:

INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys
Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 75B

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-075B

Revision: T0

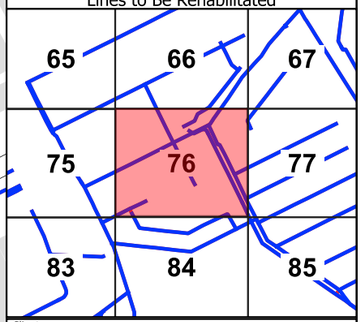
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-076
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- Proposed Washout
- Proposed Water Meters
- Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

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P.O Box 2758 - 00606 Nairobi.

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

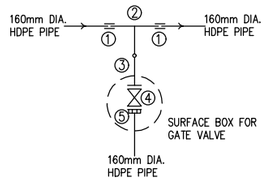
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 76

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

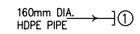
Drawing Number	Revision
6000023-HH-GL-DR-W-076	T0

DETAIL - TEE (160X160)
JUNCTIONS: 76A



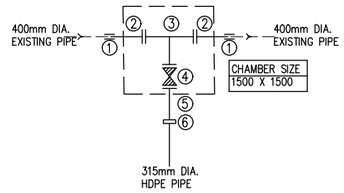
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - END CAP (160)
JUNCTIONS: 76B



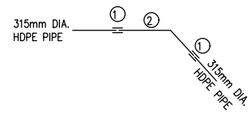
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - TEE (400X300)
JUNCTIONS: 76C



ITEM	DESCRIPTION	NO.
1	DN400mm DIA. COUPLING	2
2	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN400x300mm DIA. ALL FLANGED FERROUS TEE	1
4	DN300mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN300/315mm DIA. STEPPED COUPLING	1

DETAIL - 60° H.BEND
JUNCTIONS: 76D,76E

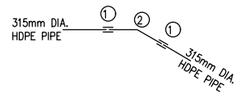


ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	DN315mm HDPE PLAIN ENDED 60° BEND	1

NOTES:

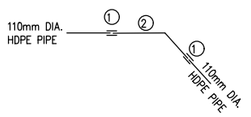
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-076

DETAIL - 30° H.BEND
JUNCTIONS: 76L



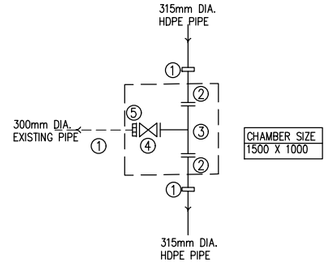
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	DN315mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 76M



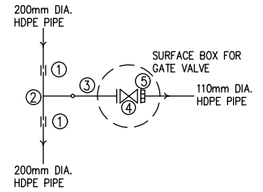
ITEM	DESCRIPTION	NO.
1	DN110mm DIA. COUPLING	2
2	DN110mm HDPE PLAIN ENDED 60° LONG BEND	1

DETAIL - TEE (300X300)
JUNCTIONS: 76F



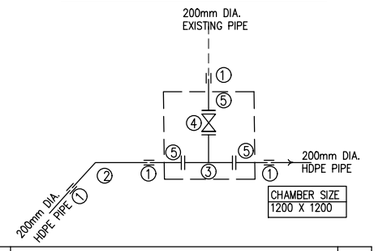
ITEM	DESCRIPTION	NO.
1	DN315/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x300mm DIA. ALL FLANGED FERROUS TEE	1
4	DN300mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN300mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTION: 76G,76H



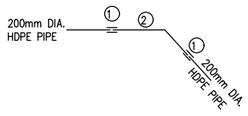
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTION: 76I



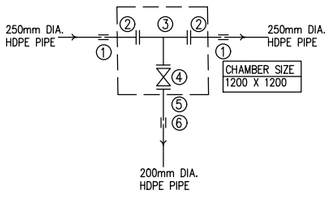
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200mm HDPE PLAIN ENDED 60° BEND	1
3	OD200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	3

DETAIL - 60° H.BEND
JUNCTIONS: 76J



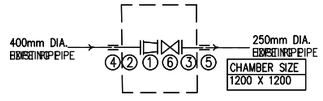
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - TEE (250X200)
JUNCTIONS: 76K



ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	DN250mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN250x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN200mm DIA. COUPLING	1

DETAIL - 400X250 REDUCER
Junctions: 76S



ITEM	DESCRIPTION	NO.
1	DN400x250mm DIA. ALL FLANGED FERROUS REDUCER	1
2	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
3	DN250mm DIA FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
4	DN400mm DIA. COUPLING	1
5	DN250mm DIA. COUPLING	1
6	DN250mm DIA. ALL FLANGED FERROUS GATE VALVE	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

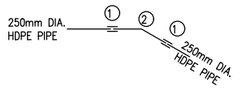
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 76A

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-076A

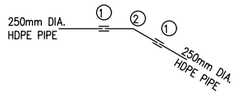
Revision: T0

DETAIL - 45° H.BEND
JUNCTIONS: 76N



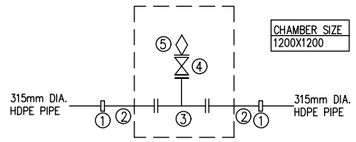
ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	OD250mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 76O



ITEM	DESCRIPTION	NO.
1	DN250mm DIA. COUPLING	2
2	DN250mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - AIR VALVE
JUNCTIONS: 76R



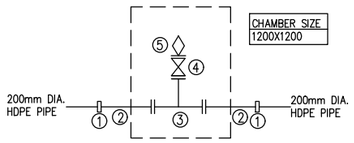
ITEM	DESCRIPTION	NO.
1	DN300/315mm DIA. STEPPED COUPLING	1
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300X50mm DIA. ALLL FLANGED FERROUS TEE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

DETAIL - END CAP (110)
JUNCTIONS: 76P



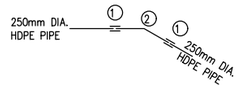
ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

DETAIL - AIR VALVE
JUNCTIONS: 76Q



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	1
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200X50mm DIA. ALLL FLANGED FERROUS TEE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

DETAIL - 45° H.BEND
JUNCTIONS: 76T, 75U



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° LONG BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-076

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

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Westlands.
P.O Box 2758 – 00606
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The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 76

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-076B

Revision: T0



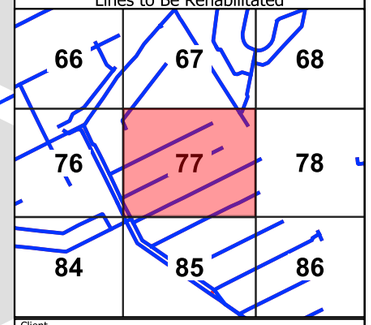
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-077
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

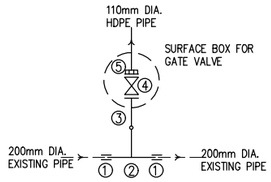
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 77

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

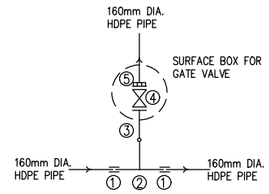
Drawing Number	Revision
6000023-HH-GL-DR-W-077	T0

DETAIL - TEE (200X110)
JUNCTIONS: 77A



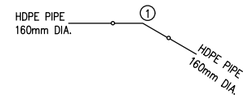
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 77B



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 77D



ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - END CAP (110)
JUNCTIONS: 77E,77F



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

DETAIL - END CAP (160)
JUNCTIONS: 77C



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-077

Client:

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

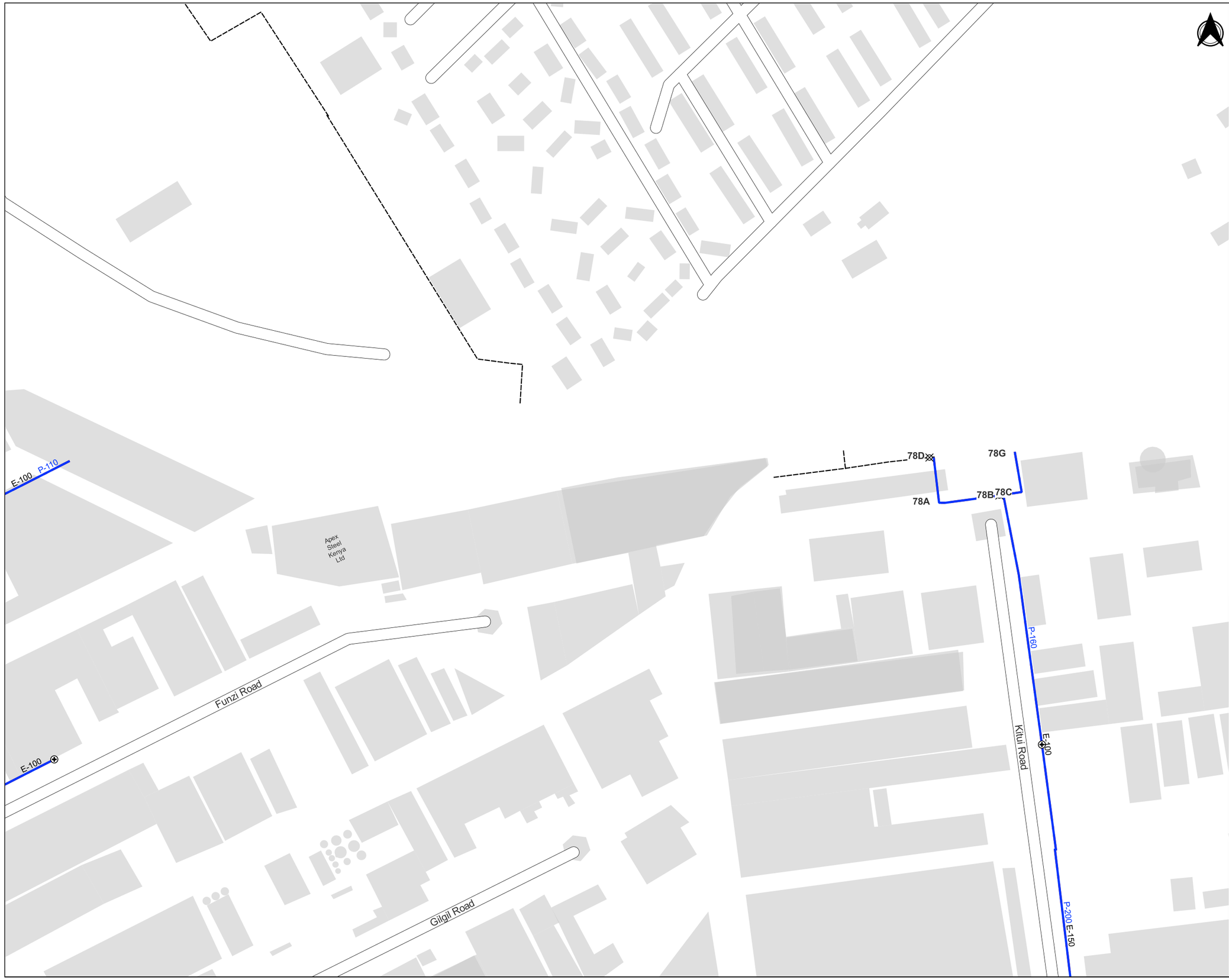
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 077

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-077A

Revision: T0



NOTES

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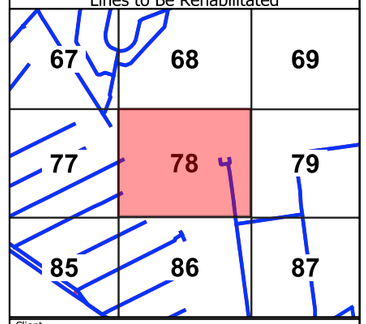
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-078
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
off Waiyaki Way.
P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

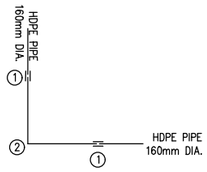
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 78

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

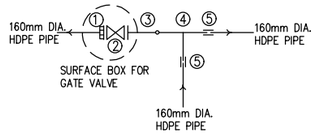
Drawing Number	Revision
6000023-HH-GL-DR-W-078	T0

DETAIL - 90° BEND
BENDS: 78A,78C



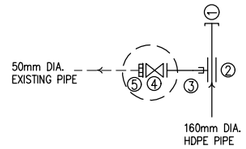
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 78B



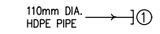
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	1
2	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	DN160mm DIA. COUPLING	2

DETAIL - SADDLE CLAMP (160X50) & END CAP (160)
JUNCTIONS: 78D



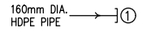
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1
2	OD160/50mm DIA. TAPPING SADDLE	1
3	DN50mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
4	DN50mm DIA. ALL FERROUS FLANGED GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - END CAP (110)
JUNCTIONS: 78E,78F



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

DETAIL - END CAP (160)
JUNCTIONS: 78G



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-078

Client:

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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Howard Humphreys Consulting Engineers
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 078

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-078A

Revision: T0



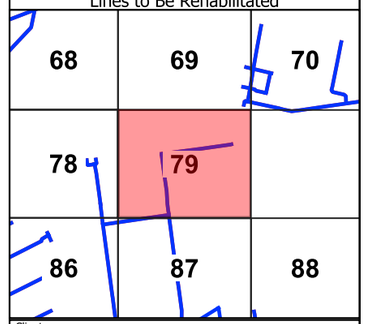
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-079
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

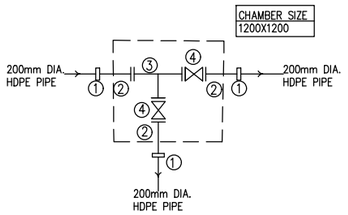
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 79

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

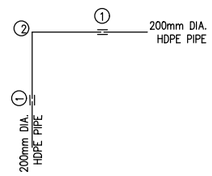
Drawing Number	Revision
6000023-HH-GL-DR-W-079	T0

DETAIL - TEE (200X200)
JUNCTION: 79A



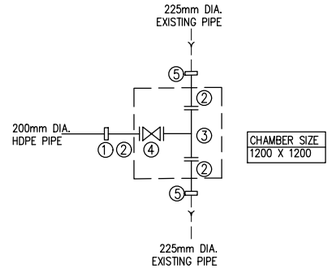
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA. FLANGED FERROUS SPIGOT PIPE 1.2m LONG	3
3	DN200x200 DIA. ALL FLANGED FERROUS CROSS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1

DETAIL - 90° BEND
BENDS: 79B



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200mm DIA. HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (225X200)
JUNCTIONS: 79C



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	1
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN225/200mm DIA STEPPED COUPLING	2

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-079

Client:

THE CHIEF EXECUTIVE OFFICER
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

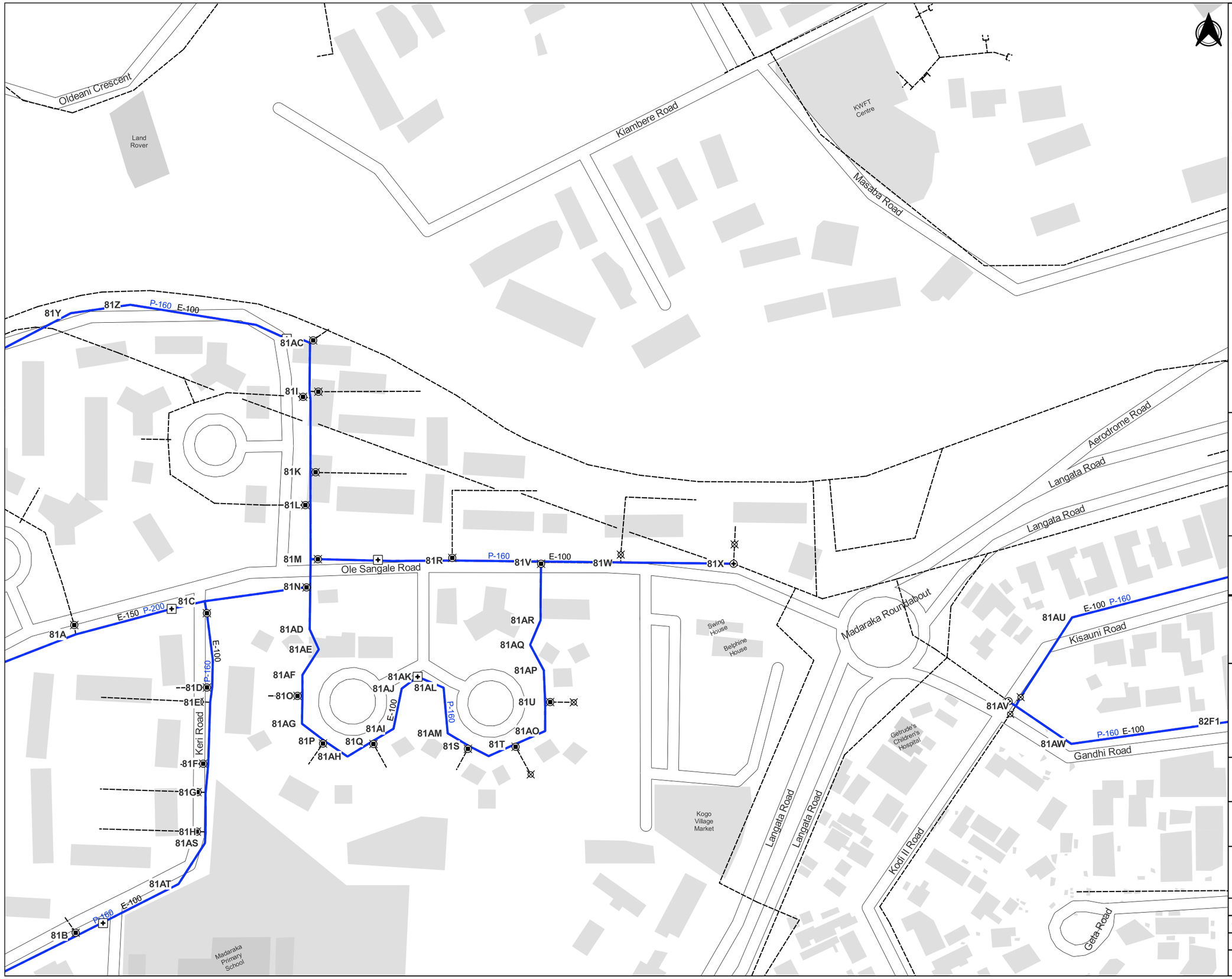
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 079

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-079A

Revision: T0



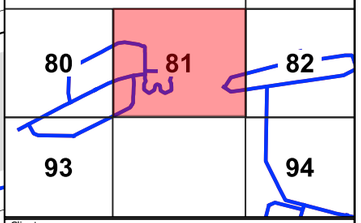
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-081
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

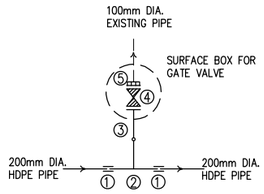
Drawing Title

CENTRAL INDUSTRIAL AREA, SOUTH C
REHABILITATION PIPELINES - LAYOUT
Sheet 81

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

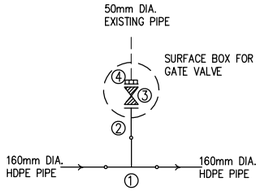
Drawing Number	Revision
6000023-HH-GL-DR-W-081	T0

DETAIL - TEE (200X110)
JUNCTIONS: 81A



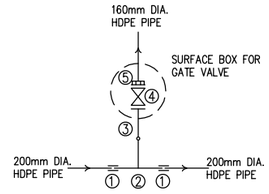
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X50)
JUNCTIONS: 81B, 81D, 81E, 81F, 81G, 81H, 81K, 81O, 81P, 81Q, 81S, 81T, 81U



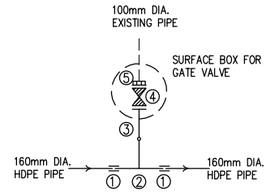
ITEM	DESCRIPTION	NO.
1	OD160x50mm DIA. PLAIN ENDED HDPE TEE	1
2	OD50mm DIA. HDPE STUB END WITH FLANGE	1
3	DN50mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 81C



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 81I, 81J, 81L, 81R, 81W

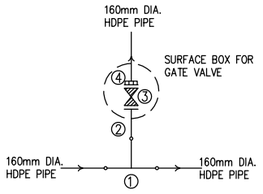


ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

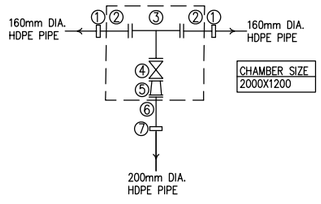
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-081

DETAIL - TEE (160X160)
JUNCTIONS: 81M, 81V



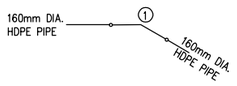
ITEM	DESCRIPTION	NO.
1	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
2	OD160mm DIA. HDPE STUB END WITH FLANGE	1
3	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (150X150)
JUNCTIONS: 81N



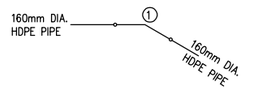
ITEM	DESCRIPTION	NO.
1	DN160/150mm DIA. STEPPED COUPLING	2
2	DN150mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN150x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200x150mm FERROUS ALL FLANGED REDUCER	1
6	DN200mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
7	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - 45° H.BEND
JUNCTIONS: 81AJ



ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - 30° H-BEND
H-BEND:81Y,81Z,81AA,81AB,81AD, 81AF,81AP,81AR,81AS,81AT



ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 30° BEND	1

Client:
THE CHIEF EXECUTIVE OFFICER
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Nairobi.

The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

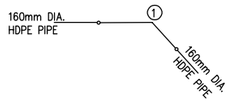
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
Central Industrial Area, South C
REHABILITATION PIPELINES - FITTINGS
Sheet 81A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE,2023

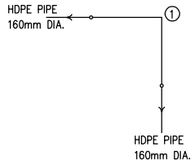
Drawing Number: 6000023-HH-FT-DR-W-081A
Revision: T0

DETAIL - 60° H-BEND
H-BEND:81AE,81AG,81AI,81AK,81AL, 81AM,81AN,81AO,81AQ,81AU,81AW



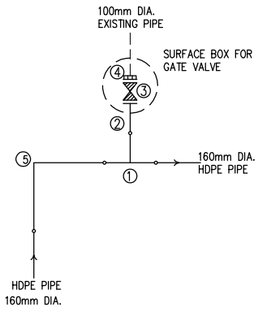
ITEM	DESCRIPTION	NO.
1	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 90° BEND
JUNCTIONS:81AH



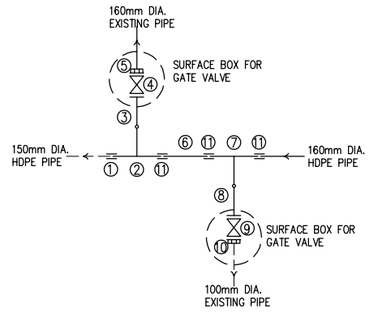
ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X110)
JUNCTIONS: 81AC



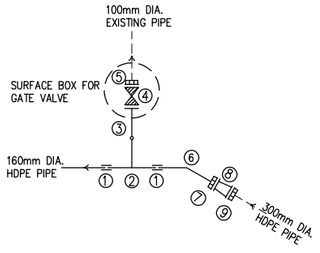
ITEM	DESCRIPTION	NO.
1	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
2	OD110mm DIA. HDPE STUB END WITH FLANGE	1
3	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
4	DN100mm DIA. FLANGE ADAPTOR	1
5	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X160),(200X75)
JUNCTIONS: 81AV



ITEM	DESCRIPTION	NO.
1	DN150/160mm DIA. STEPPED COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	OD160mm DIA. HDPE PLAIN ENDED PIPE 1m LONG	1
7	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
8	OD110mm DIA. HDPE STUB END WITH FLANGE	1
9	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
10	DN100mm DIA. FLANGE ADAPTOR	1
11	DN150mm DIA. COUPLING	3

DETAIL - TEE (160X110)
JUNCTIONS: 81X



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1
6	OD160mm HDPE PLAIN ENDED 45° BEND	1
7	DN150mm DIA. FLANGE ADAPTOR	1
8	DN300x150mm DIA. FERROUS ALL FLANGED REDUCER	1
9	DN300mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-081

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP
Devan Plaza, Crossway Road,
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Nairobi.

Howard Humphreys
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

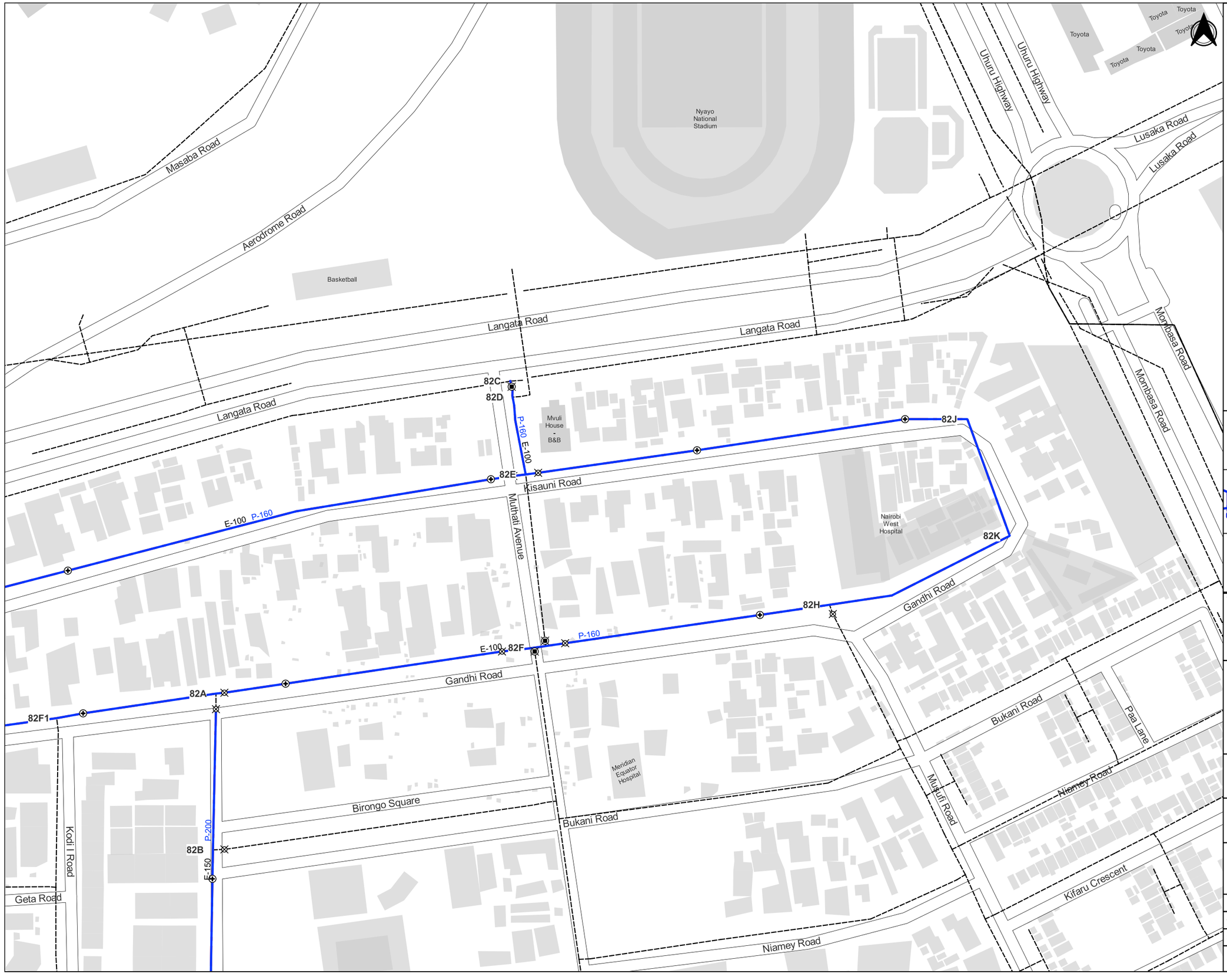
Drawing Title

Central Industrial Area, South C
REHABILITATION PIPELINES - FITTINGS
Sheet 81B

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE,2023

Drawing Number: 6000023-HH-FT-DR-W-081B

Revision: T0



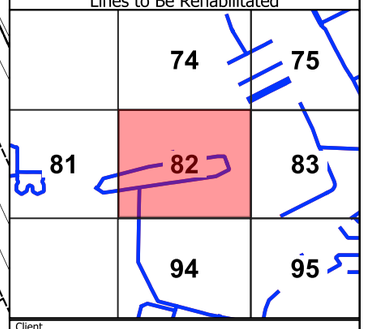
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-082
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

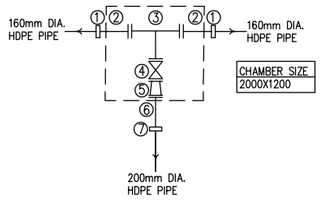
Drawing Title

CENTRAL INDUSTRIAL AREA, SOUTH C
REHABILITATION PIPELINES - LAYOUT
Sheet 82

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

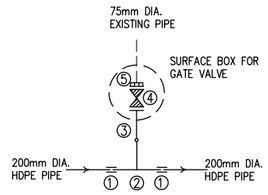
Drawing Number	Revision
6000023-HH-GL-DR-W-082	T0

DETAIL - TEE (200X150)
JUNCTIONS: 82A



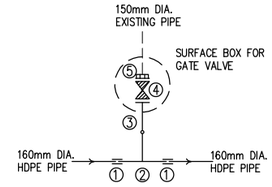
ITEM	DESCRIPTION	NO.
1	DN160/150mm DIA. STEPPED COUPLING	1
2	DN150mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
3	DN150x150mm DIA. FERROUS ALL FLANGED TEE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN200x150mm FERROUS ALL FLANGED REDUCER	1
6	DN200mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
7	DN200/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (200X75)
JUNCTIONS: 82B



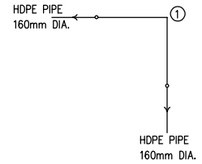
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN75mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X150)
JUNCTIONS: 82H



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED EQUAL HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° H-BEND
H-BEND : 82K, 82J

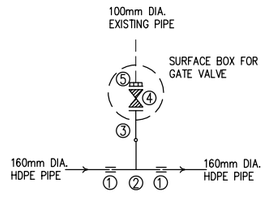


ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 90° BEND	1

NOTES:

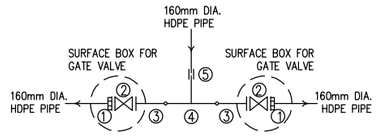
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-LP-DR-W-082

DETAIL - TEE (160X110)
JUNCTIONS: 82D, 82F, 82G, 82F1



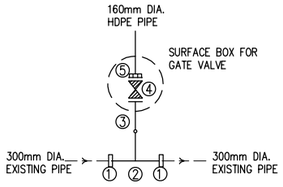
ITEM	DESCRIPTION	NO.
1	DN150mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X160)
JUNCTIONS: 82E



ITEM	DESCRIPTION	NO.
1	DN150mm DIA. FLANGE ADAPTOR	2
2	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	2
3	OD160mm DIA. HDPE STUB END WITH FLANGE	2
4	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
5	DN150mm DIA. COUPLING	1

DETAIL - TEE (300X160)
JUNCTIONS: 82C



ITEM	DESCRIPTION	NO.
1	DN315/300mm DIA. STEPPED COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. FERROUS ALL FLANGED GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Devan Plaza, Crossway Road,
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

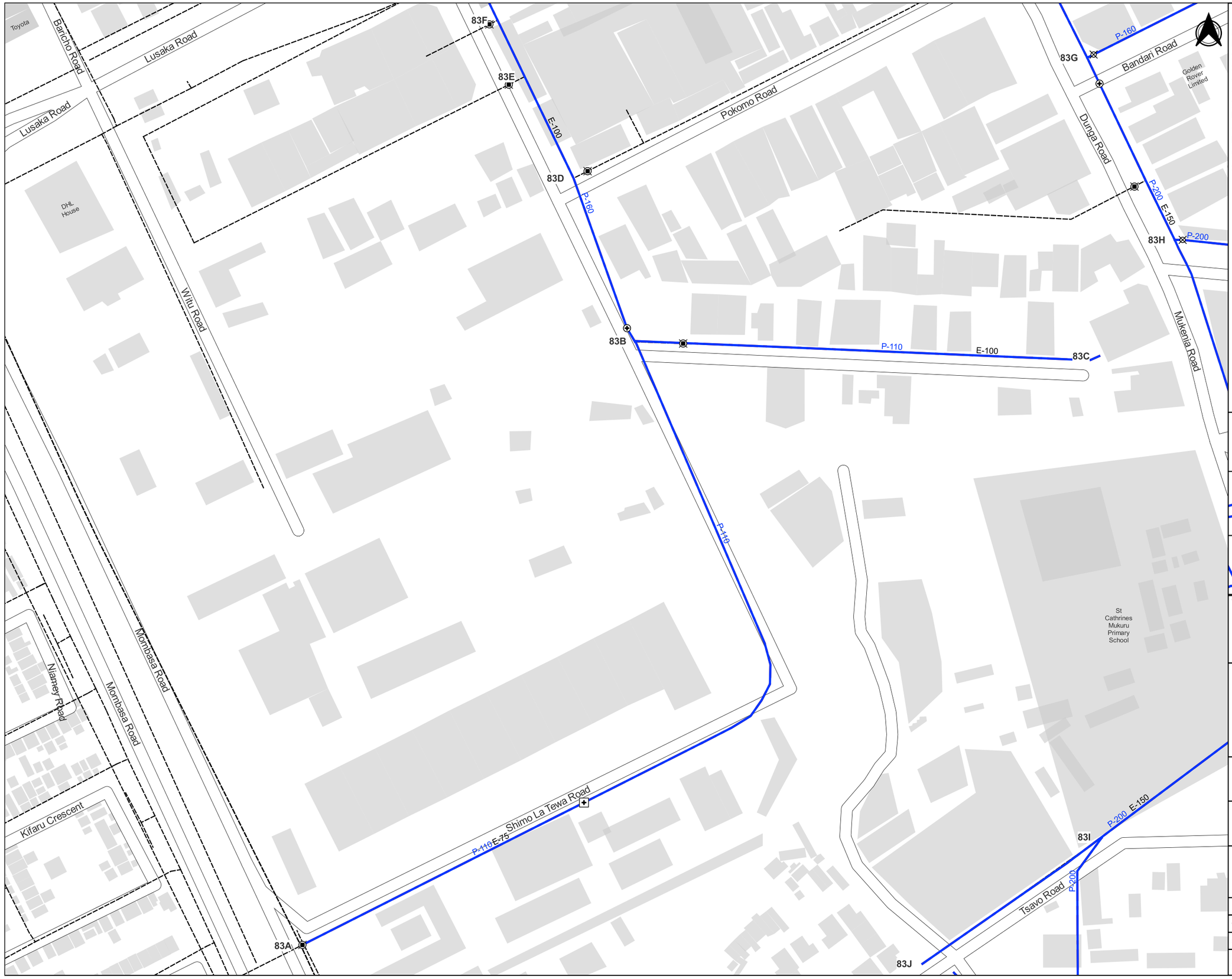
Drawing Title

Central Industrial Area, South C
REHABILITATION PIPELINES - FITTINGS
Sheet 82A

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE,2023

Drawing Number: 6000023-HH-FT-DR-W-082A

Revision: T0



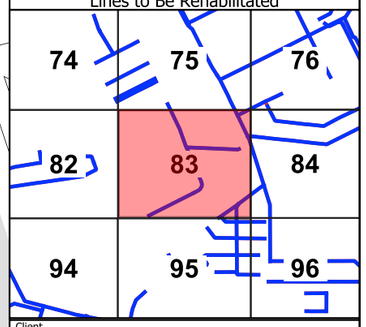
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-083
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

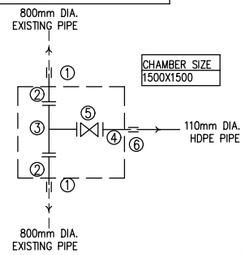
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 83

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

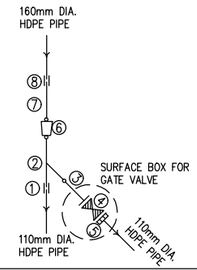
Drawing Number: 6000023-HH-GL-DR-W-083
Revision: T0

DETAIL - TEE (800X100)
JUNCTIONS: 83A



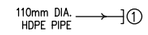
ITEM	DESCRIPTION	NO.
1	DN800mm DIA. COUPLING	2
2	DN800mm DIA. FERROUS FLANGED SPIGOT PIPE	2
3	DN800x100mm DIA. ALL FLANGED FERROUS REDUCING TEE	1
4	DN100mm DIA. FERROUS FLANGED SPIGOT PIPE	1
5	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
6	DN100mm DIA. COUPLING	1

DETAIL - 45°TEE (160X160)
JUNCTIONS:83B



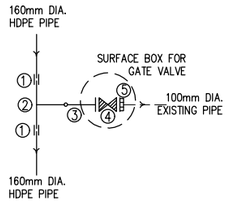
ITEM	DESCRIPTION	NO.
1	DN110mm DIA. COUPLING	1
2	OD110x110mm DIA. PLAIN ENDED 45o HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1
6	OD160X110mm DIA. PLAIN ENDED HDPE REDUCER	1
7	OD160mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
8	DN160mm DIA. COUPLING	1

DETAIL - END CAP (110)
JUNCTIONS: 83C



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

DETAIL - TEE (160X110)
JUNCTIONS:83D,83F

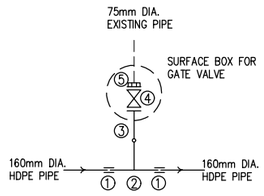


ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

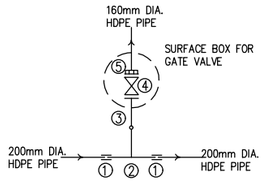
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-083

DETAIL - TEE (160X75)
JUNCTIONS: 83E



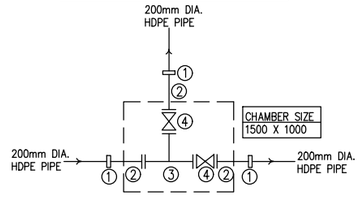
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X160)
JUNCTIONS: 83G



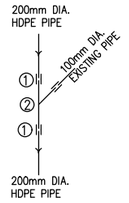
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 83H



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	OD200mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	2

DETAIL - 45° TEE (200X200)
JUNCTIONS: 83I



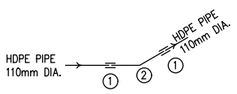
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	OD200x200mm DIA. PLAIN ENDED 45o HDPE TEE	1

DETAIL - END CAP (200)
JUNCTIONS: 83J



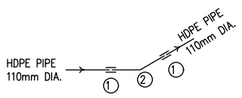
ITEM	DESCRIPTION	NO.
1	OD200mm DIA. END CAP	1

DETAIL - 45° H.BEND
JUNCTIONS: 83B.1



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. COUPLING	2
2	OD110mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 83A.1



ITEM	DESCRIPTION	NO.
1	OD110mm DIA. COUPLING	2
2	OD110mm HDPE PLAIN ENDED 30° BEND	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
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Howard Humphreys
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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 83

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-083A

Revision: T0



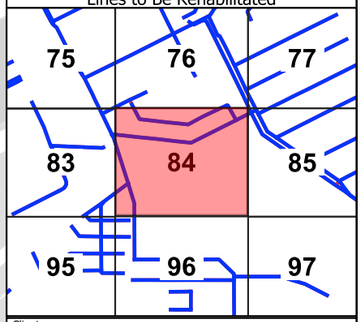
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-084
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 - 00100
Nairobi - Kenya.

Design and Supervision Consultant

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

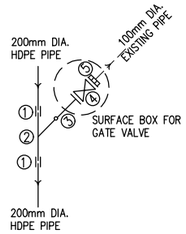
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 84

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

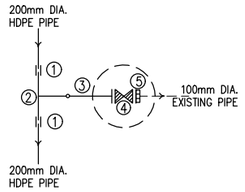
Drawing Number	Revision
6000023-HH-GL-DR-W-084	T0

DETAIL - TEE (200X110)
JUNCTIONS:84A



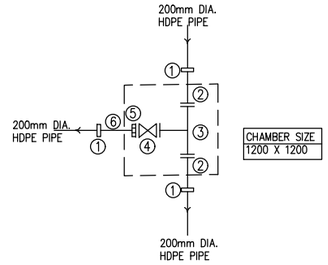
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED 45o HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTION: 84B,84E



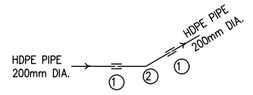
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTION: 84C



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA. FLANGE ADAPTOR	1
6	DN200mm DIA FERROUS PLAIN ENDED SPIGOT PIPE 1.2m LONG	1

DETAIL - 30° H.BEND
JUNCTIONS: 84D

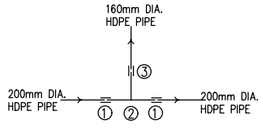


ITEM	DESCRIPTION	NO.
1	OD200mm DIA. COUPLING	2
2	OD200mm HDPE PLAIN ENDED 30° BEND	1

NOTES:

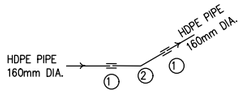
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-084

DETAIL - TEE (200X160)
JUNCTIONS: 84F



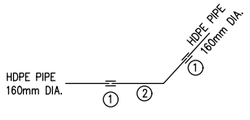
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	DN160mm DIA. COUPLING	1

DETAIL - 30° H.BEND
JUNCTIONS: 84G



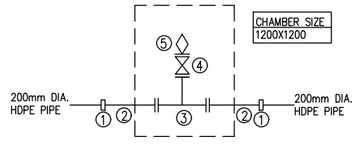
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 84H



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - AIR VALVE
JUNCTIONS: 84I



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	1
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200X50mm DIA. ALLL FLANGED FERROUS TEE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. SINGLE ORIFICE AIR VALVE	1

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

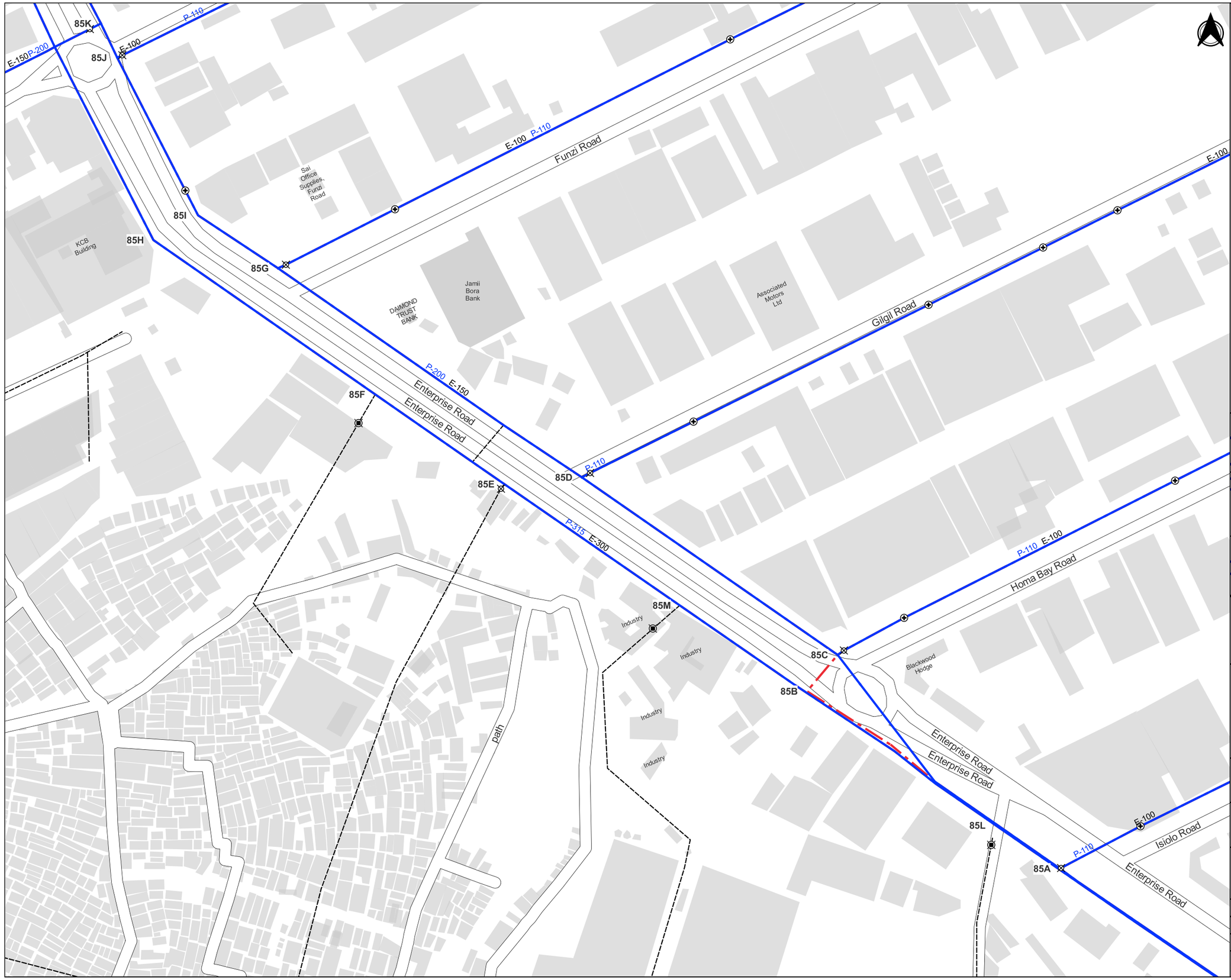
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 84

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-084A

Revision: T0



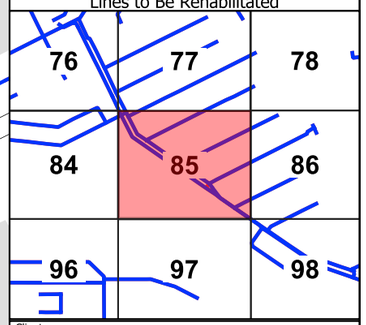
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-085
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

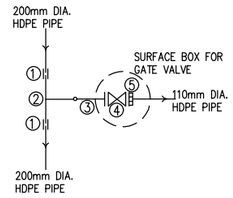
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 85

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

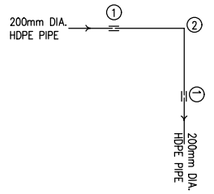
Drawing Number	Revision
6000023-HH-GL-DR-W-085	T0

DETAIL - TEE (200X110)
JUNCTIONS: 85A,85D,85G,85J



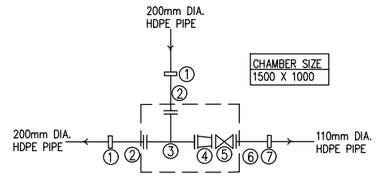
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
BENDS: 85B



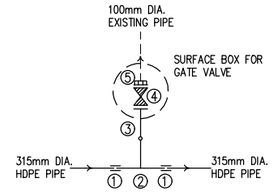
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (200X200)
JUNCTIONS: 85C



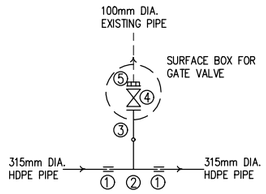
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200x100mm DIA. ALL FLANGED FERROUS REDUCER	1
5	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
6	DN100mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN100/110mm DIA. STEPPED COUPLING	1

DETAIL - TEE (315X110)
JUNCTIONS: 85L,85M



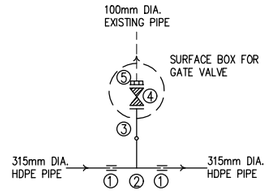
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X110)
JUNCTIONS: 85E



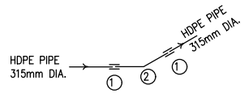
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X110)
JUNCTIONS: 85F



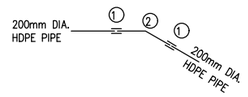
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 85H



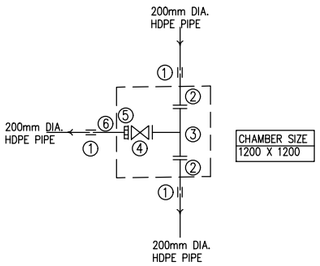
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - 30° H.BEND
JUNCTIONS: 85I



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (200X200)
JUNCTION: 85K



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA. FLANGE ADAPTOR	1
6	DN200mm DIA FERROUS PLAIN ENDED SPIGOT PIPE 1.2m LONG	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-085

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

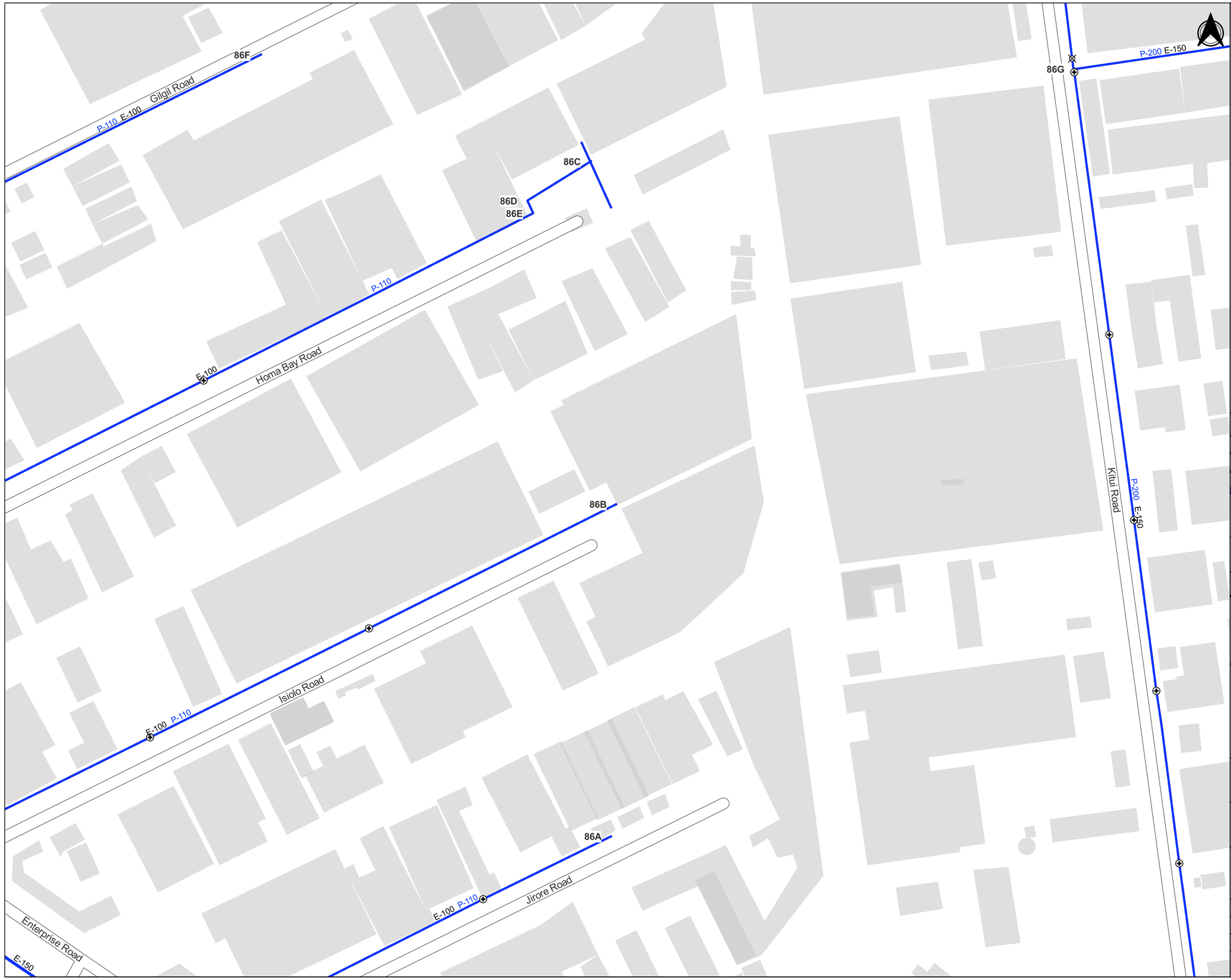
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 85

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-085A

Revision: T0



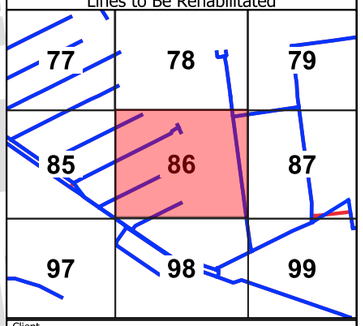
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-086
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

ATHI WATER WORKS

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Design and Supervision Consultant

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

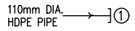
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 86

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

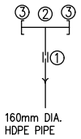
Drawing Number	Revision
6000023-HH-GL-DR-W-086	T0

DETAIL - END CAP (110)
JUNCTIONS: 86A,86B,86F



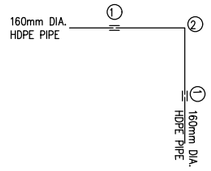
ITEM	DESCRIPTION	NO.
1	OD110mm DIA. END CAP	1

DETAIL - TEE (160X160)
JUNCTIONS: 86C



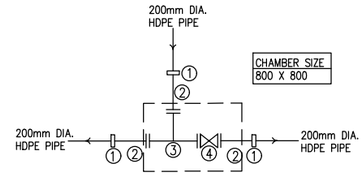
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	1
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. END CAP	2

DETAIL - 90° BEND
BENDS: 86D,86E



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (200X200)
JUNCTIONS: 86G



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	3
2	DN200mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-086

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
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Design and Supervision Consultant:

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Nairobi.

Howard Humphreys
Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

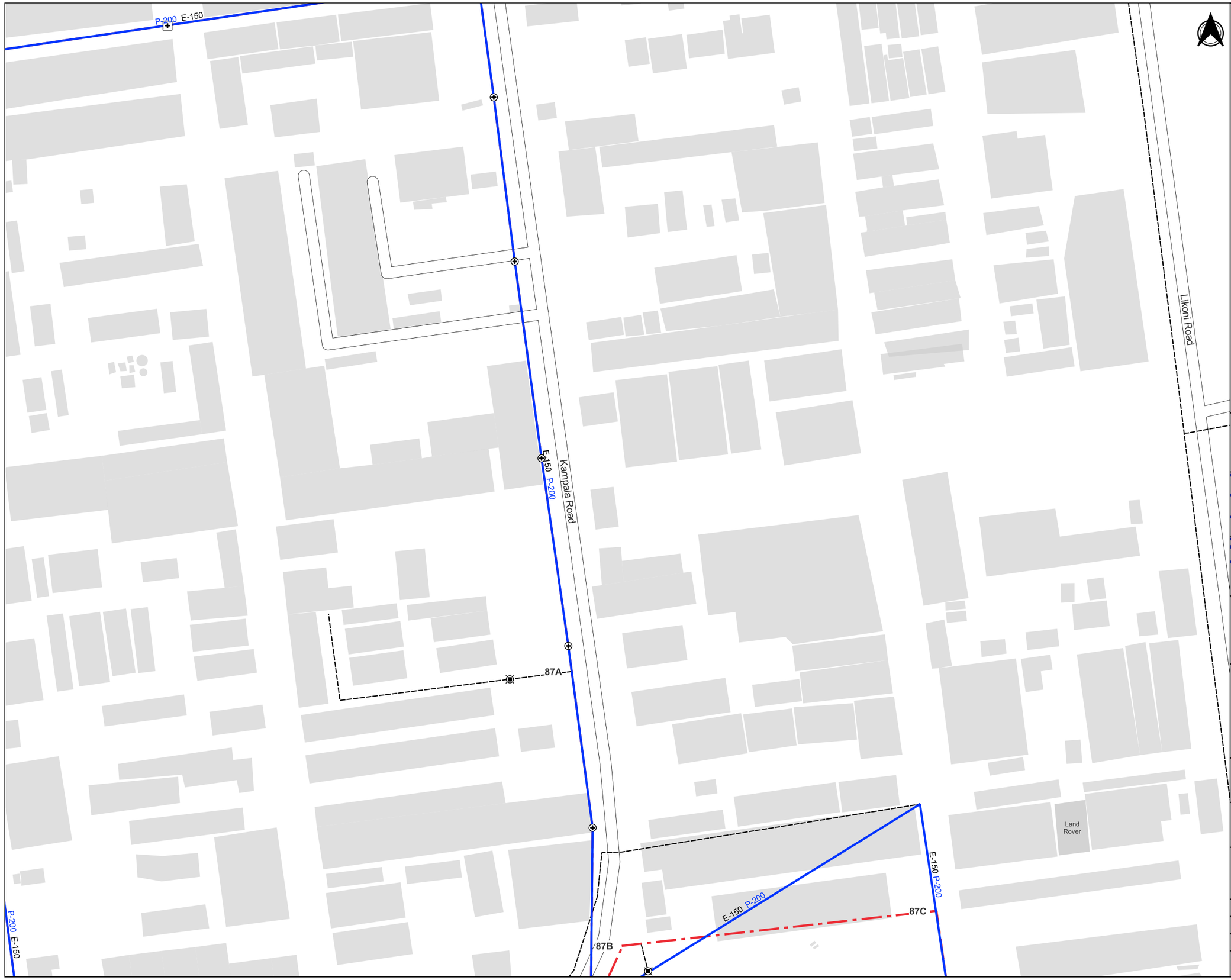
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 086

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-086A

Revision: T0



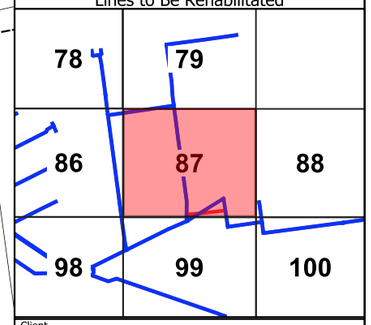
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-087
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Nairobi - Kenya.

Design and Supervision Consultant

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Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 - 00606 Nairobi.

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

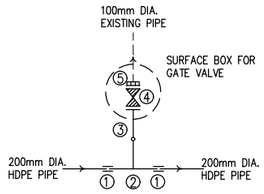
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 87

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

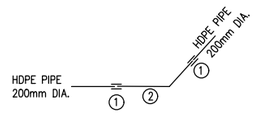
Drawing Number: 6000023-HH-GL-DR-W-087
Revision: T0

DETAIL - TEE (200X110)
JUNCTIONS: 87A



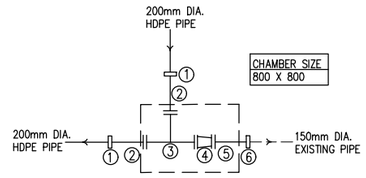
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 60° H.BEND
JUNCTIONS: 87B



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - TEE (200X200)
JUNCTIONS: 87C



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200x150mm DIA. ALL FLANGED FERROUS REDUCER	1
5	DN150mm DIA. FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN150mm DIA. COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-087

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

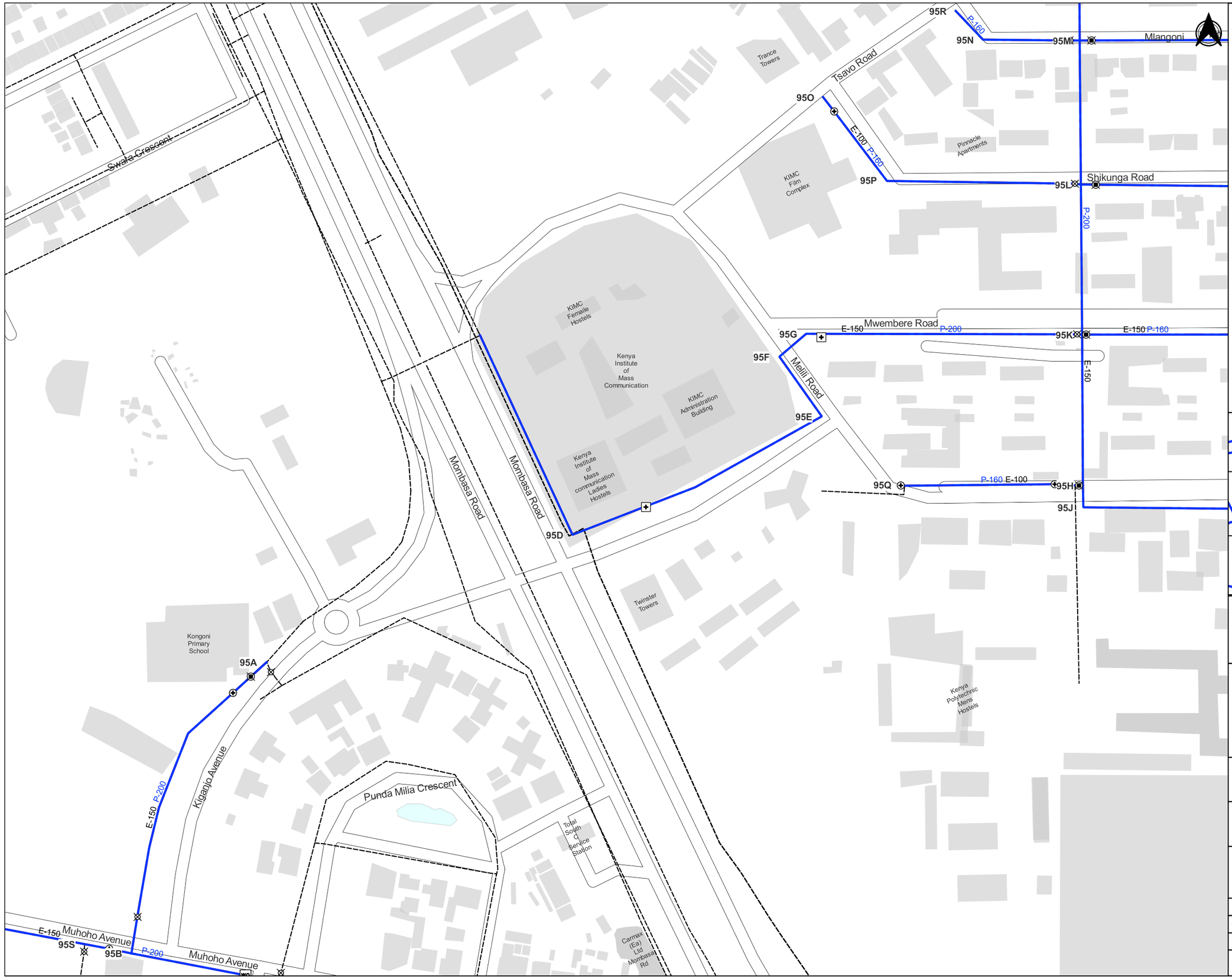
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 087

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-087A

Revision: T0



NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-095
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated

82	83	84
94	95	96
103	104	105

Client

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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

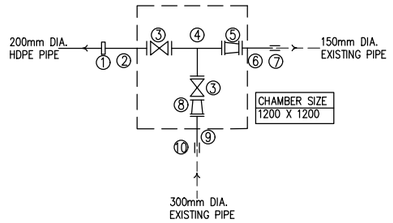
Drawing Title

CENTRAL INDUSTRIAL AREA, SOUTH C
REHABILITATION PIPELINES - LAYOUT
Sheet 95

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

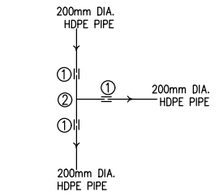
Drawing Number	Revision
6000023-HH-GL-DR-W-095	T0

DETAIL - TEE (200X200)
JUNCTIONS: 95A



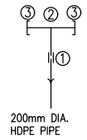
ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	1
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
3	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
5	DN200x150mm DIA. ALL FLANGED FERROUS REDUCER	1
6	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
7	DN150mm DIA. COUPLING	1
8	DN300x200mm DIA. ALL FLANGED FERROUS REDUCER	1
9	DN300mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
10	DN300mm DIA. COUPLING	1

DETAIL - TEE (200X200)
JUNCTIONS: 95B



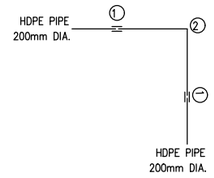
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	OD200x200mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - TEE (200X200)
JUNCTIONS: 95D



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	1
2	OD200x200mm DIA. PLAIN ENDED HDPE TEE	1
3	OD200mm DIA. END CAP	2

DETAIL - 90° BEND
BENDS: 95E,95F,95J

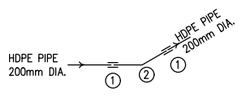


ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 90° BEND	1

NOTES:

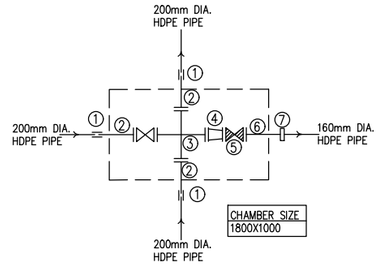
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-095

DETAIL - 45° H.BEND
JUNCTIONS: 95G



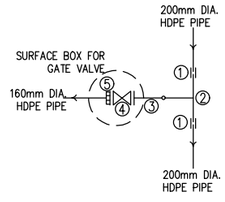
ITEM	DESCRIPTION	NO.
1	OD200mm DIA. COUPLING	2
2	OD200mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - CROSS TEE (200X160)
JUNCTIONS: 95K



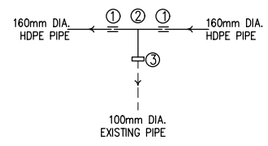
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	3
3	DN200 DIA. ALL FLANGED FERROUS CROSS TEE	1
4	DN200x150mm DIA. ALL FLANGED FERROUS REDUCER	1
5	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
6	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
7	DN160/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (200X160)
JUNCTIONS: 95H



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS: 95I



ITEM	DESCRIPTION	NO.
1	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
2	DN110/100mm DIA. STEPPED COUPLING	1

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

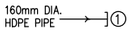
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 095A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

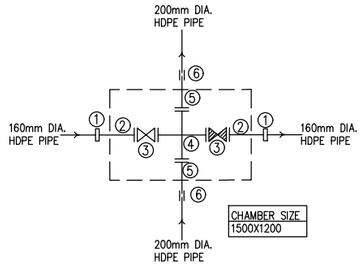
Drawing Number: 6000023-HH-FT-DR-W-095A
Revision: T0

DETAIL - END CAP (160)
JUNCTIONS: 95Q,95O,95R



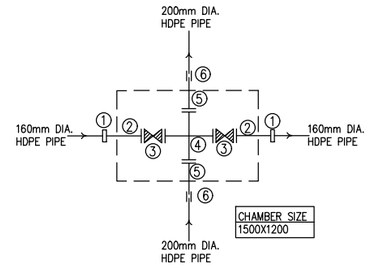
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - CROSS TEE (200X150)
JUNCTIONS: 95L



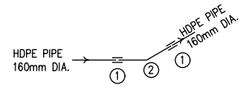
ITEM	DESCRIPTION	NO.
1	DN160/150mm DIA. STEPPED COUPLING	2
2	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	2
4	DN200X150mm DIA. ALL FLANGED FERROUS CROSS TEE	1
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
6	DN200mm DIA. COUPLING	2

DETAIL - CROSS TEE (200X160)
JUNCTIONS: 95M



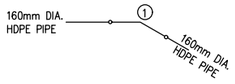
ITEM	DESCRIPTION	NO.
1	DN160/150mm DIA. STEPPED COUPLING	2
2	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	2
4	DN200X150mm DIA. ALL FLANGED FERROUS CROSS TEE	1
5	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
6	DN200mm DIA. COUPLING	2

DETAIL - 45° H.BEND
JUNCTIONS: 95N



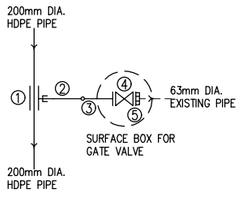
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - 45° H.BEND
JUNCTIONS: 95P



ITEM	DESCRIPTION	NO.
1	DN160mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (200X63)
JUNCTIONS: 95S



ITEM	DESCRIPTION	NO.
1	DN200/63mm DIA. TAPPING SADDLE	1
2	OD63mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
3	OD63mm DIA. HDPE STUB END WITH FLANGE	1
4	DN65mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN65mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-095

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Design and Supervision Consultant:

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P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

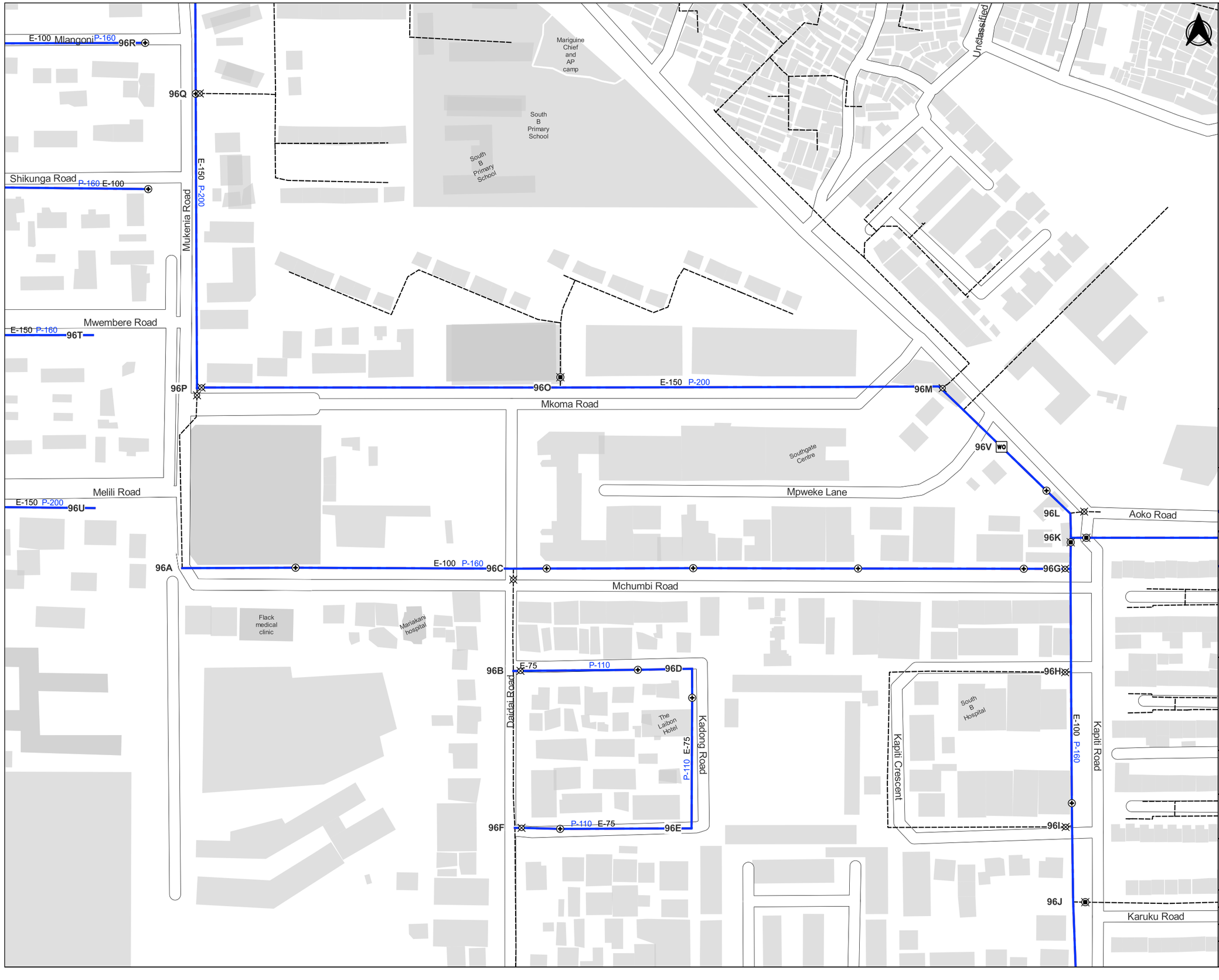
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 095B

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-095B

Revision: T0



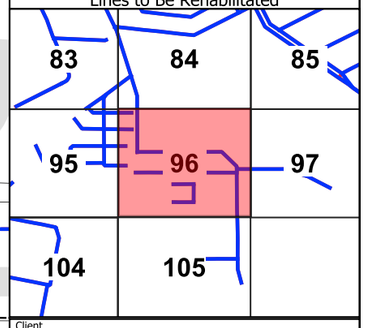
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-096
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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Athi Water Plaza, Muthaiga North Road
off Kiambu Road
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Design and Supervision Consultant

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P.O Box 2758 - 00606 Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive,
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

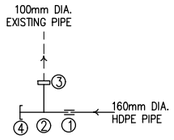
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 96

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

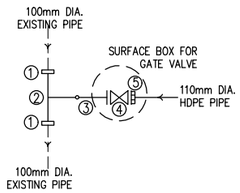
Drawing Number: 6000023-HH-GL-DR-W-096
Revision: T0

DETAIL - TEE (160X110)
JUNCTIONS: 96A



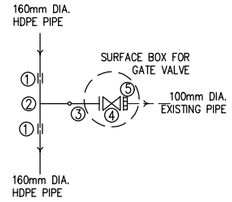
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	1
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	DN110/100mm DIA. STEPPED COUPLING	1
4	OD160mm DIA. END CAP	1

DETAIL - TEE (110X110)
JUNCTIONS:96B,96F



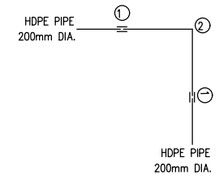
ITEM	DESCRIPTION	NO.
1	DN110/100mm DIA. STEPPED COUPLING	2
2	OD110x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X110)
JUNCTIONS:96C,96J



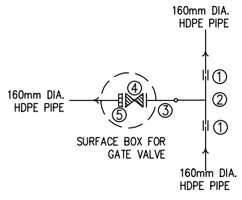
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 90° BEND
BENDS: 96D,96E



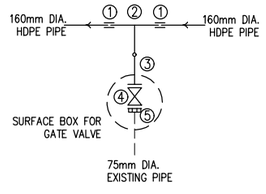
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - TEE (160X160)
JUNCTIONS: 96G



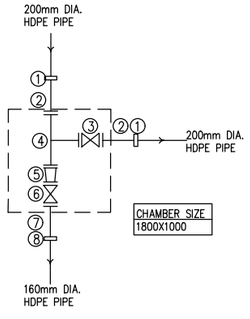
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (160X75)
JUNCTIONS:96H,96I



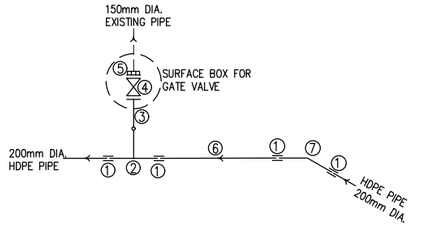
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN75mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 96K



ITEM	DESCRIPTION	NO.
1	DN200/200mm DIA. STEPPED COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	2
3	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
5	DN200x150mm DIA. ALL FLANGED FERROUS REDUCER	1
6	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
7	DN150mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
8	DN160/150mm DIA. STEPPED COUPLING	1

DETAIL - TEE (200X160) AND 45° BEND
JUNCTIONS: 96L



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1
6	DN200mm DIA. PLAIN ENDED HDPE PIPE 12m CUT TO SUIT	1
7	OD200mm HDPE PLAIN ENDED 45° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-096

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

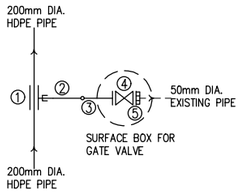
SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 096A

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-096A

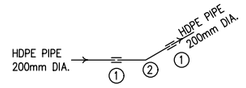
Revision: T0

DETAIL - SADDLE CLAMP (200X50)
JUNCTIONS: 96M



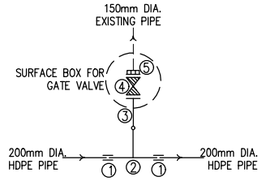
ITEM	DESCRIPTION	NO.
1	DN200/50mm DIA. TAPPING SADDLE	1
2	OD50mm DIA. HDPE PLAIN ENDED PIPE 12m CUT TO SUIT	1
3	OD50mm DIA. HDPE STUB END WITH FLANGE	1
4	DN50mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN50mm DIA. FLANGE ADAPTOR	1

DETAIL - 45° H.BEND
JUNCTIONS: 96N



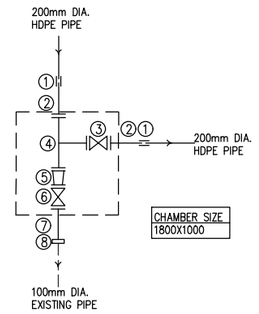
ITEM	DESCRIPTION	NO.
1	OD200mm DIA. COUPLING	2
2	OD200mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (200X160)
JUNCTIONS: 96O



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 96P

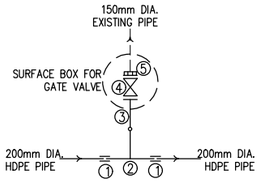


ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	2
3	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
4	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
5	DN200x100mm DIA. ALL FLANGED FERROUS REDUCER	1
6	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
7	DN100mm DIA. FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
8	DN100mm DIA. COUPLING	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-096

DETAIL - TEE (200X160)
JUNCTIONS: 96Q



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	OD200x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - END CAP (160)
JUNCTIONS: 96T,96S,96R



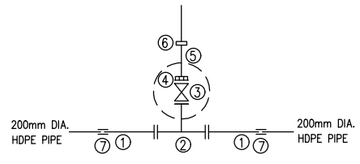
ITEM	DESCRIPTION	NO.
1	OD160mm DIA. END CAP	1

DETAIL - END CAP (200)
JUNCTIONS: 96U



ITEM	DESCRIPTION	NO.
1	OD200mm DIA. END CAP	1

DETAIL - WASHOUT
JUNCTIONS: 96V



ITEM	DESCRIPTION	NO.
1	OD200mm DIA. HDPE STUB END AND FLANGE	2
2	DN200x100mm DIA. ALL FLANGED FERROUS TEE	1
3	DN100mm DIA. ALL FLANGED GATE VALVE	1
4	DN100mm DIA. FLANGE ADAPTOR	1
5	DN100mm DIA. PLAIN ENDED FERROUS PIPE 1.2m LONG	1
6	DN100/110mm DIA. STEPPED COUPLING	1
7	DN200mm DIA. COUPLING	2

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

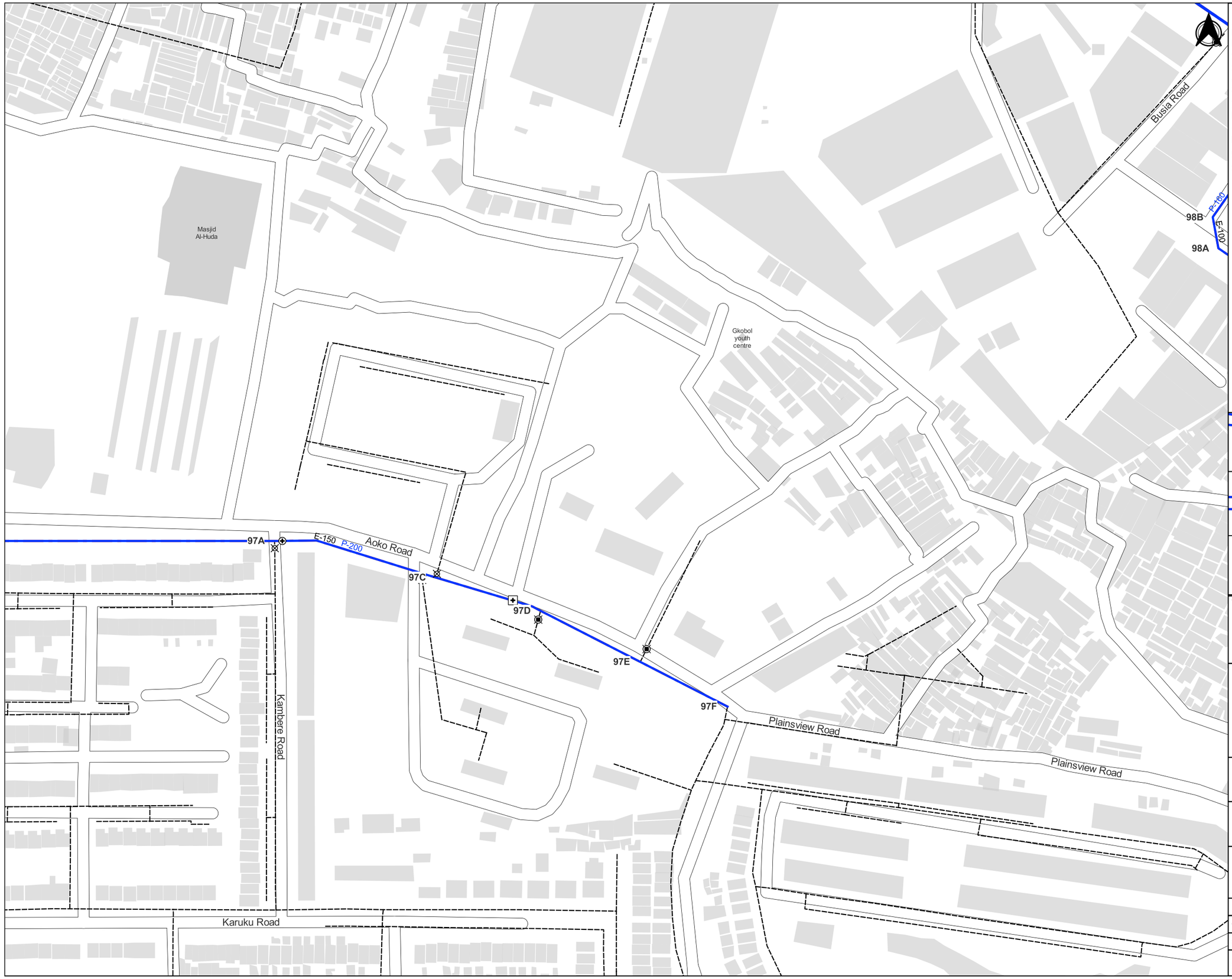
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 096B

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-096B

Revision: T0



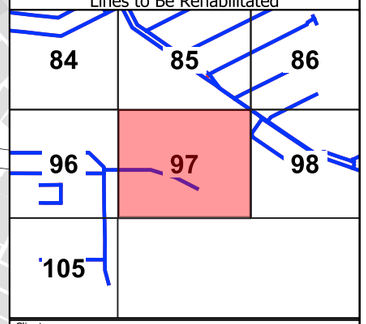
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-097
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

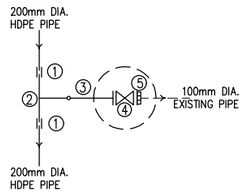
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 97

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

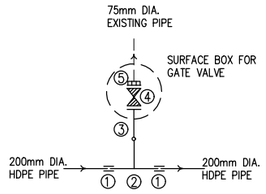
Drawing Number	Revision
6000023-HH-GL-DR-W-097	T0

DETAIL - TEE (200X110)
JUNCTION: 97A,97C



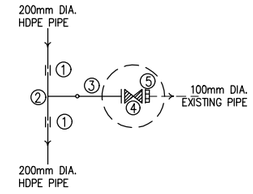
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X75)
JUNCTIONS: 97B



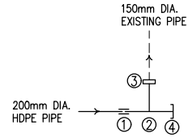
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X100)
JUNCTION: 97D,97E



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTIONS: 97F



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	1
2	OD200x200mm DIA. PLAIN ENDED HDPE TEE	1
3	DN200/150mm DIA. STEPPED COUPLING	1
4	OD200mm DIA. END CAP	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-097

Client:

THE CHIEF EXECUTIVE OFFICER
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Athi Water Plaza, Muthaiga North Road
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

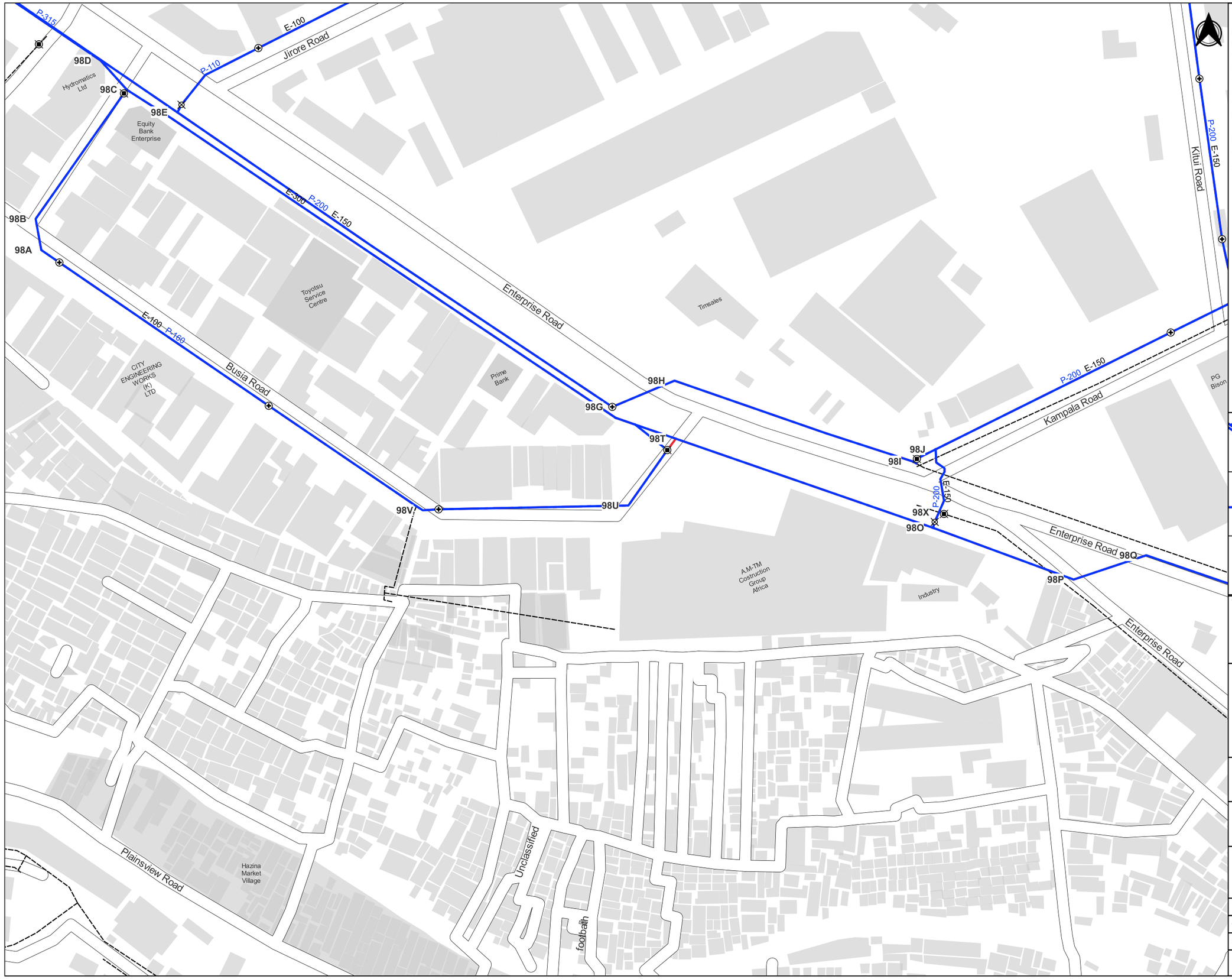
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 097

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-097A

Revision: T0



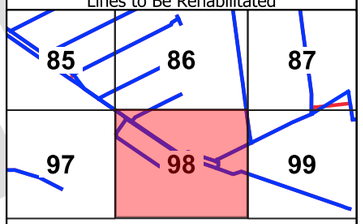
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-098
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

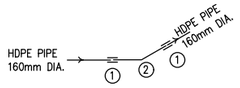
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 98

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

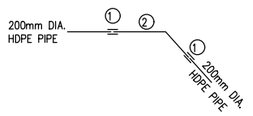
Drawing Number	Revision
6000023-HH-GL-DR-W-098	T0

DETAIL - 45° BEND
BENDS: 98A,98B



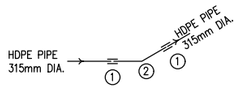
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	DN160mm HDPE PLAIN ENDED 45° LONG BEND	1

DETAIL - 60° H.BEND
JUNCTIONS: 98G,98H



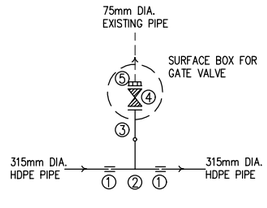
ITEM	DESCRIPTION	NO.
1	OD200mm DIA. COUPLING	2
2	OD200mm HDPE PLAIN ENDED 60° BEND	1

DETAIL - 45° H.BEND
JUNCTIONS: 98P,98Q



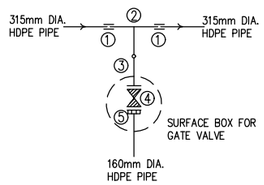
ITEM	DESCRIPTION	NO.
1	OD315mm DIA. COUPLING	2
2	OD315mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (315X110)
JUNCTIONS: 98D.1



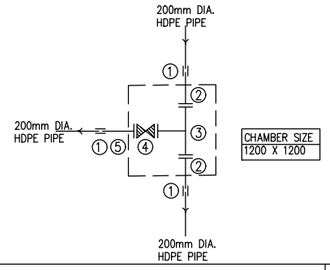
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X160)
JUNCTIONS: 98C,98T



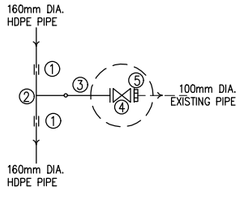
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315x160mm DIA. PLAIN ENDED HDPE TEE	1
3	OD160mm DIA. HDPE STUB END WITH FLANGE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN150mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTION: 98I



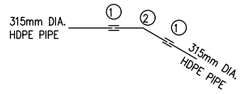
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1

DETAIL - TEE (160X110)
JUNCTION: 98W



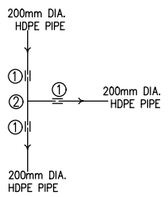
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - 30° H.BEND
JUNCTIONS: 98D



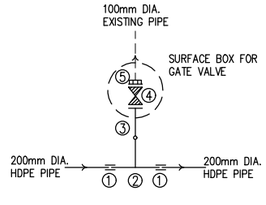
ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315mm HDPE PLAIN ENDED 30° BEND	1

DETAIL - TEE (200X200)
JUNCTIONS: 98J



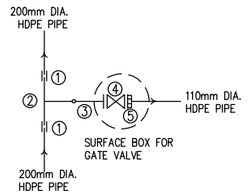
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	OD200x200mm DIA. PLAIN ENDED HDPE TEE	1

DETAIL - TEE (200X110)
JUNCTIONS: 98X



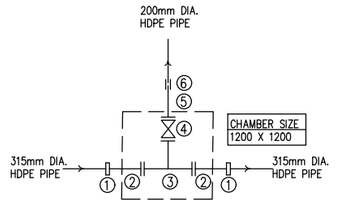
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X110)
JUNCTIONS: 98E



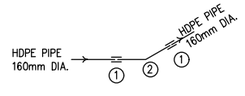
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (315X200)
JUNCTIONS: 98O



ITEM	DESCRIPTION	NO.
1	DN315/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN300x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
6	DN200mm DIA. COUPLING	1

DETAIL - 45° H.BEND
JUNCTIONS: 98U,98V



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. COUPLING	2
2	OD160mm HDPE PLAIN ENDED 45° BEND	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-098

Client:

ATHI WATER WORKS

THE CHIEF EXECUTIVE OFFICER
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Design and Supervision Consultant:

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Nairobi.

Howard Humphreys
Consulting Engineers

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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 98

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-098A

Revision: T0



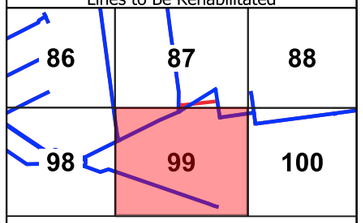
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-099
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

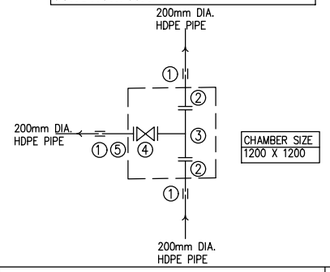
Drawing Title

CENTRAL INDUSTRIAL AREA
REHABILITATION PIPELINES - LAYOUT
Sheet 99

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

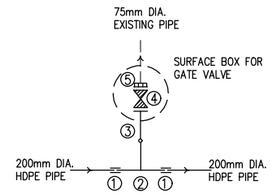
Drawing Number	Revision
6000023-HH-GL-DR-W-099	T0

DETAIL - TEE (200X200)
JUNCTION: 99A



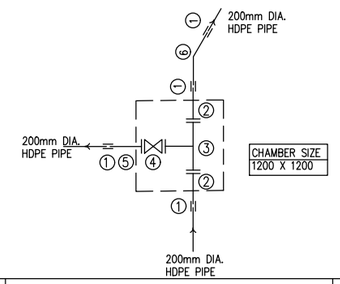
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	3
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1

DETAIL - TEE (200X75)
JUNCTIONS: 99B



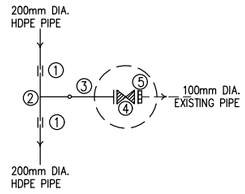
ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN80mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (200X200)
JUNCTION: 99C



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	4
2	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN200x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	OD200mm HDPE PLAIN ENDED 45° BEND	1

DETAIL - TEE (200X100)
JUNCTION: 99I

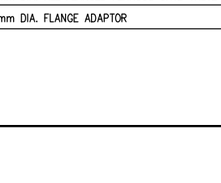


ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	OD200x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-099

DETAIL - 90° BEND
BENDS: 99D



ITEM	DESCRIPTION	NO.
1	DN200mm DIA. COUPLING	2
2	DN200mm HDPE PLAIN ENDED 90° BEND	1

DETAIL - REDUCER (300x200)
JUNCTIONS: 99E

ITEM	DESCRIPTION	NO.
1	DN300/315mm DIA. STEPPED COUPLING	1
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2M LONG	1
3	DN300X200mm DIA. ALL FLANGED FERROUS REDUCER	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA. FERROUS ALL FLANGED SPIGOT PIPE 0.5m LONG	1
6	DN200mm DIA. FLANGED Y-STRAINER	1
7	DN200mm DIA. WATER METER	1
8	DN200mm DIA. FLANGE ADAPTOR	1
9	DN200mm DIA. PLAIN ENDED FERROUS SPIGOT PIPE 1.2m LONG	1
10	DN200/225mm DIA. STEPPED COUPLING	1

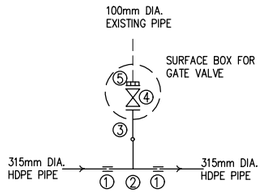
DETAIL - TEE (315X225)
JUNCTIONS: 99F

ITEM	DESCRIPTION	NO.
1	DN315/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x200mm DIA. ALL FLANGED FERROUS TEE	1
4	DN200mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN225/200mm DIA. STEPPED COUPLING	1

DETAIL - TEE (400X315)
JUNCTION: 99G

ITEM	DESCRIPTION	NO.
1	DN315/300mm DIA. STEPPED COUPLING	2
2	DN300mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN300x300mm DIA. ALL FLANGED FERROUS TEE	1
4	DN300mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN400mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN400mm DIA. COUPLING	1
7	DN400X300mm DIA. ALL FLANGED FERROUS REDUCER	1

DETAIL - TEE (315X110)
JUNCTIONS: 99H



ITEM	DESCRIPTION	NO.
1	DN315mm DIA. COUPLING	2
2	OD315x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

Client:

THE CHIEF EXECUTIVE OFFICER
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

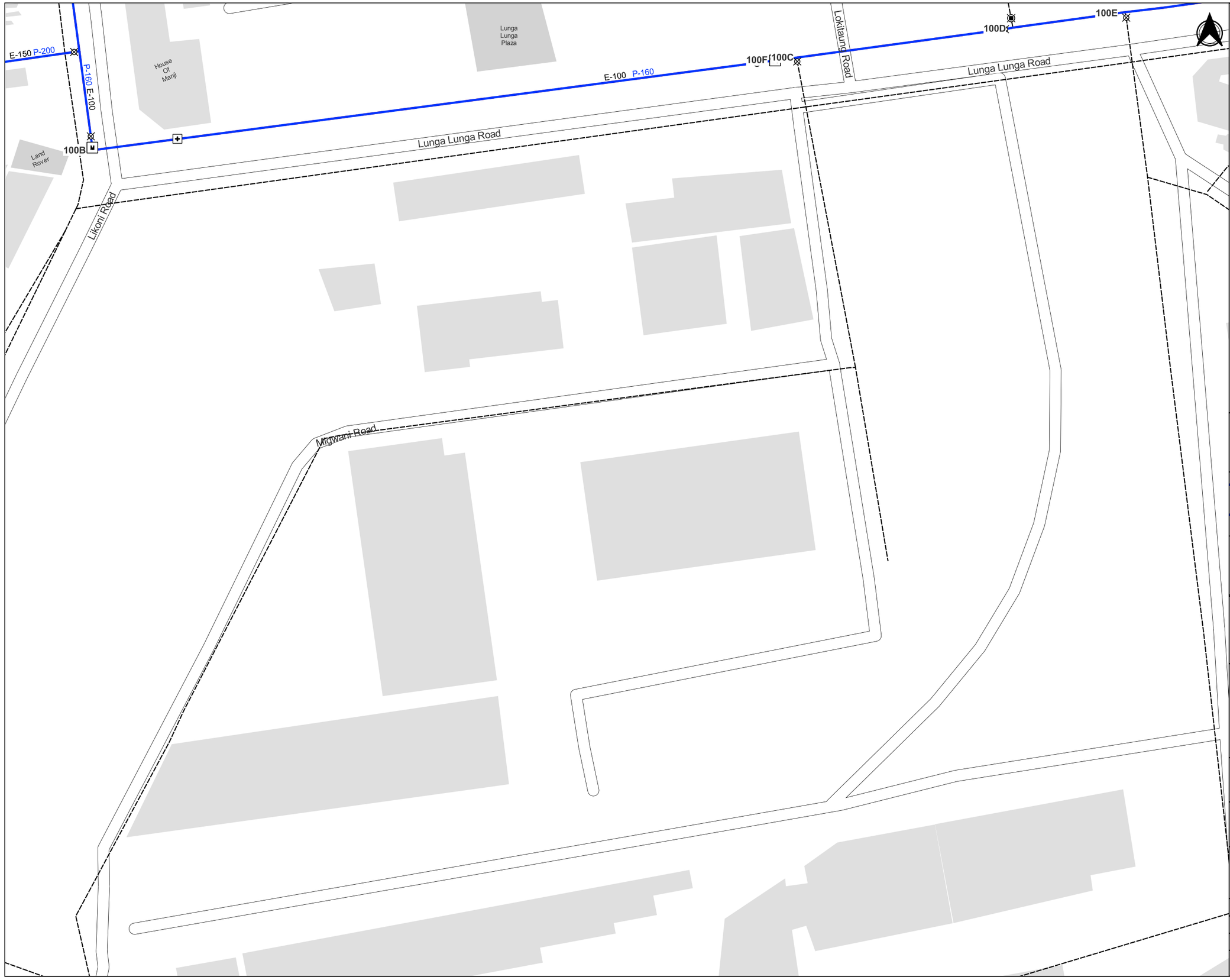
Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 99

Designed by: LMN	Drawn by: HG
Checked by: PN	Approved by: PN
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-FT-DR-W-099A

Revision: T0



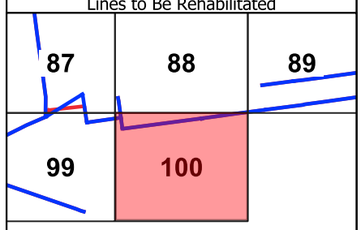
NOTES

1. POSITIONS OF EXISTING PIPELINES ARE AS PROVIDED BY NCWSC RECORDS. PRECISE LOCATIONS TO BE DETERMINED ON SITE.
2. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS
3. PIPELINE DIAMETERS ARE SHOWN IN MILLIMETERS
4. PIPE FITTINGS DETAILS ARE GIVEN ON DRAWING NUMBER 6000023-HH-FT-DR-W-100
5. P-200 PROPOSED PIPE DIAMETER
6. E-200 EXISTING PIPE DIAMETER

LEGEND

- Pipelines to be Rehabilitated
- Proposed Realignment of Pipelines
- Existing NCWSC Network
- Existing Sluice Valve to be Replaced
- Proposed Sluice Valve
- WO Proposed Washout
- M Proposed Water Meters
- AV Proposed Air Valves
- Existing Hydrant to be Replaced
- Proposed Hydrant

Sheet Index Showing Adjacent Sheets and Lines to Be Rehabilitated



Client

THE CHIEF EXECUTIVE OFFICER
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P.O Box 30156 - 00100 Nairobi.

Project Name

CKE1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

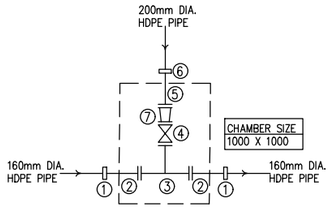
Drawing Title

CENTRAL INDUSTRIAL AREA, EASTERN INDUSTRIAL AREA REHABILITATION PIPELINES - LAYOUT
Sheet 100

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: 1:2,000	Date: JUNE, 23

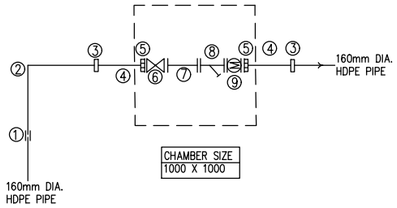
Drawing Number	Revision
6000023-HH-LP-DR-W-100	T0

DETAIL - TEE (150X150)
JUNCTION: 100A



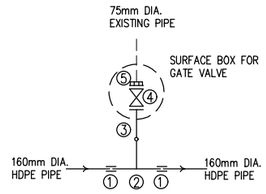
ITEM	DESCRIPTION	NO.
1	DN150/160mm DIA. STEPPED COUPLING	2
2	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
3	DN150x150mm DIA. ALL FLANGED FERROUS TEE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN200mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	1
6	DN200/200mm DIA. STEPPED COUPLING	1
7	DN200X150mm DIA. ALL FLANGED FERROUS REDUCER	1

DETAIL - 90° BEND & WATER METER
JUNCTIONS: 100B



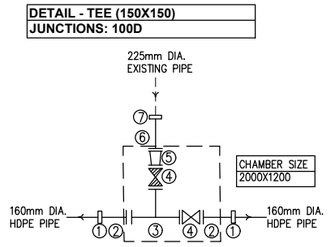
ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	1
2	DN160mm HDPE PLAIN ENDED 90° BEND	1
3	DN150/160mm DIA. STEPPED COUPLING	1
4	DN150mm DIA FERROUS FLANGED SPIGOT PIPE 1.2m LONG	2
5	DN150mm DIA. FLANGE ADAPTOR	1
6	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	1
7	DN150mm DIA. FERROUS ALL FLANGED SPIGOT PIPE 0.5m LONG	1
8	DN150mm DIA. FLANGED Y-STRAINER	1
9	DN150mm DIA. WATER METER	1

DETAIL - TEE (160X75)
JUNCTIONS: 100C



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x75mm DIA. PLAIN ENDED HDPE TEE	1
3	OD75mm DIA. HDPE STUB END WITH FLANGE	1
4	DN80mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN75mm DIA. FLANGE ADAPTOR	1

DETAIL - TEE (150X150)
JUNCTIONS: 100D

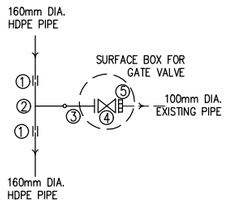


ITEM	DESCRIPTION	NO.
1	DN150/160mm DIA. STEPPED COUPLING	2
2	DN150mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	2
3	DN150x150mm DIA. ALL FLANGED FERROUS TEE	1
4	DN150mm DIA. ALL FLANGED FERROUS GATE VALVE	2
5	DN200x150mm ALL FLANGED FERROUS REDUCER	1
6	DN200mm DIA. SINGLE FLANGED FERROUS SPIGOT PIPE 1.2m LONG	1
7	DN200/225mm DIA. STEPPED COUPLING	1

NOTES:

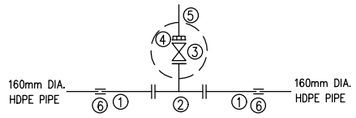
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING 6000023-HH-GL-DR-W-100

DETAIL - TEE (160X110)
JUNCTIONS:100E



ITEM	DESCRIPTION	NO.
1	DN160mm DIA. COUPLING	2
2	OD160x110mm DIA. PLAIN ENDED HDPE TEE	1
3	OD110mm DIA. HDPE STUB END WITH FLANGE	1
4	DN100mm DIA. ALL FLANGED FERROUS GATE VALVE	1
5	DN100mm DIA. FLANGE ADAPTOR	1

DETAIL - WASHOUT
JUNCTIONS: 100F



ITEM	DESCRIPTION	NO.
1	OD160mm DIA. HDPE STUB END AND FLANGE	2
2	DN150x80mm DIA. FERROUS ALL FLANGED LEVEL INVERT TEE	1
3	DN80mm DIA. ALL FLANGED GATE VALVE	1
4	DN80mm DIA. FLANGE ADAPTOR	1
5	DN80mm DIA. FLANGED FERROUS PIPE 1.2m LONG	1
6	DN160mm DIA. COUPLING	2

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR
REHABILITATION OF CENTRAL NAIROBI
AREA WATER NETWORK PROJECT

Drawing Title

SOUTH B, INDUSTRIAL AREA & JOGOO RD
REHABILITATION PIPELINES - FITTINGS
Sheet 100

Designed by:	LMN	Drawn by:	HG
Checked by:	PN	Approved by:	PN
Scale:	AS SHOWN	Date:	JUNE, 2023

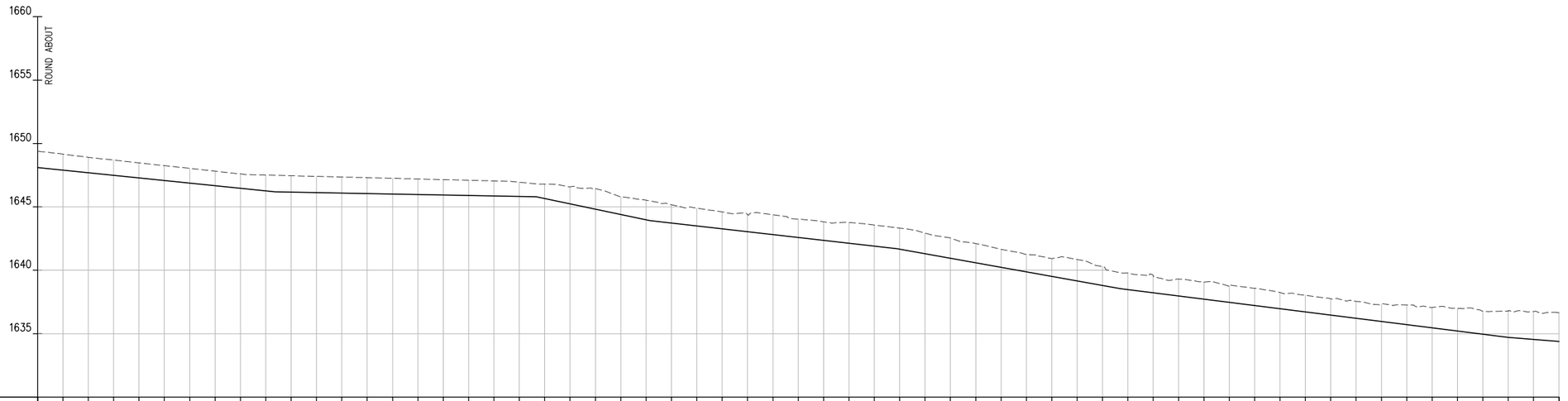
Drawing Number: 6000023-HH-FT-DR-W-100A

Revision: T0

PLAN AND PROFILE DRAWINGS



PLAN
SCALE 1:2000

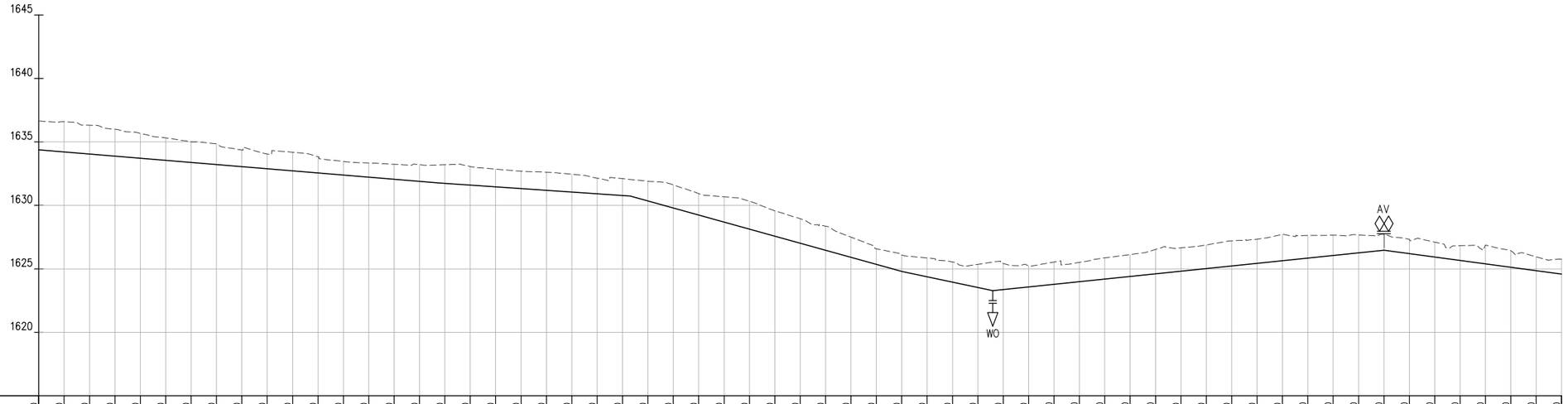


DATUM 1630.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200
GROUND LEVELS (Masl)	1649.40	1649.16	1648.91	1648.69	1648.47	1648.25	1648.03	1647.82	1647.60	1647.51	1647.46	1647.41	1647.36	1647.30	1647.25	1647.20	1647.15	1647.10	1647.04	1646.94	1646.79	1646.58	1646.45	1645.81	1645.52	1645.18	1644.90	1644.60	1644.40	1644.38	1644.03	1643.82	1643.77	1643.57	1643.32	1642.94	1642.55	1642.10	1641.65	1641.26	1640.92	1640.85	1640.30	1639.78	1639.58	1639.30	1639.07	1638.79	1638.58	1638.24	1638.02	1637.75	1637.54	1637.31	1637.27	1637.07	1636.99	1636.76	1636.78	1636.75	1636.65
INVERT LEVELS (Masl)	1648.10	1647.90	1647.69	1647.49	1647.29	1647.08	1646.88	1646.67	1646.47	1646.27	1646.17	1646.13	1646.09	1646.05	1646.02	1645.98	1645.94	1645.90	1645.87	1645.83	1645.66	1645.24	1644.82	1644.40	1643.98	1643.72	1643.50	1643.27	1643.04	1642.82	1642.59	1642.36	1642.13	1641.91	1641.67	1641.31	1640.95	1640.59	1640.23	1639.88	1639.52	1639.16	1638.80	1638.48	1638.23	1637.98	1637.72	1637.47	1637.22	1636.97	1636.72	1636.47	1636.22	1635.96	1635.71	1635.46	1635.21	1634.96	1634.71	1634.54	1634.38
TRENCH DEPTH (M)	1.30	1.26	1.22	1.20	1.18	1.17	1.16	1.14	1.13	1.24	1.29	1.28	1.26	1.25	1.24	1.22	1.21	1.19	1.17	1.12	1.13	1.34	1.62	1.41	1.54	1.45	1.40	1.33	1.36	1.56	1.44	1.46	1.64	1.66	1.66	1.63	1.60	1.51	1.42	1.38	1.40	1.69	1.50	1.30	1.35	1.33	1.34	1.32	1.36	1.27	1.30	1.28	1.33	1.34	1.55	1.61	1.78	1.81	2.07	2.21	2.28
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE		



PLAN
SCALE 1:2000

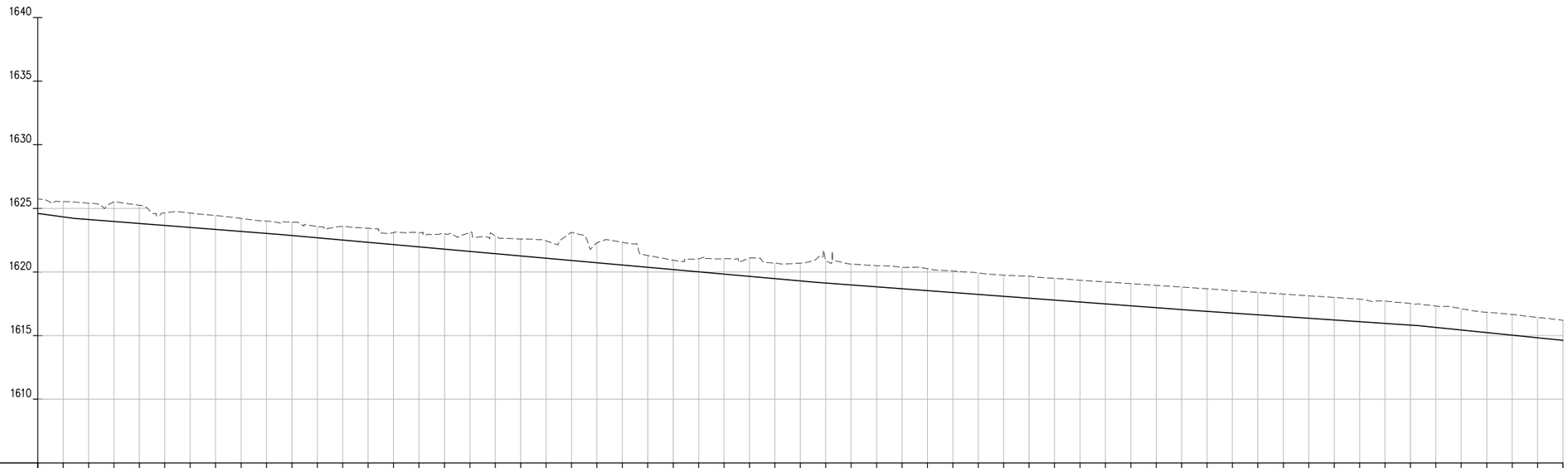


DATUM 1615.00 (Masl)

CHAINAGES (M)	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540	1+560	1+580	1+600	1+620	1+640	1+660	1+680	1+700	1+720	1+740	1+760	1+780	1+800	1+820	1+840	1+860	1+880	1+900	1+920	1+940	1+960	1+980	2+000	2+020	2+040	2+060	2+080	2+100	2+120	2+140	2+160	2+180	2+200	2+220	2+240	2+260	2+280	2+300	2+320	2+340	2+360	2+380	2+400
GROUND LEVELS (Masl)	1636.65	1636.60	1636.31	1635.99	1635.68	1635.32	1635.02	1634.83	1634.36	1634.05	1634.18	1633.84	1633.46	1633.34	1633.24	1633.21	1633.20	1633.06	1632.86	1632.69	1632.62	1632.46	1632.13	1632.11	1631.90	1631.61	1630.93	1630.68	1630.33	1629.58	1628.94	1628.37	1627.50	1626.58	1626.09	1625.86	1625.55	1625.36	1625.42	1625.25	1625.54	1625.51	1625.87	1626.13	1626.53	1626.66	1626.89	1627.21	1627.34	1627.72	1627.64	1627.65	1627.68	1627.71	1627.30	1627.11	1626.82	1626.87	1626.42	1625.95	1625.75
INVERT LEVELS (Masl)	1634.38	1634.21	1634.05	1633.88	1633.72	1633.55	1633.39	1633.22	1633.06	1632.89	1632.73	1632.56	1632.39	1632.23	1632.06	1631.90	1631.74	1631.60	1631.47	1631.33	1631.20	1631.06	1630.92	1630.79	1630.36	1629.80	1629.25	1628.69	1628.14	1627.58	1627.02	1626.47	1625.91	1625.36	1624.80	1624.37	1623.95	1623.53	1623.37	1623.57	1623.78	1623.99	1624.19	1624.40	1624.61	1624.82	1625.02	1625.23	1625.44	1625.64	1625.85	1626.06	1626.27	1626.47	1626.20	1625.94	1625.67	1625.40	1625.13	1624.86	1624.60
TRENCH DEPTH (M)	2.28	2.39	2.27	2.11	1.96	1.77	1.63	1.61	1.30	1.16	1.46	1.28	1.07	1.11	1.17	1.31	1.46	1.46	1.39	1.36	1.42	1.40	1.21	1.32	1.54	1.81	1.68	1.99	2.19	2.00	1.92	1.90	1.59	1.23	1.29	1.48	1.60	1.83	2.06	1.67	1.76	1.52	1.67	1.73	1.92	1.84	1.86	1.98	1.90	2.07	1.78	1.59	1.41	1.24	1.10	1.17	1.15	1.47	1.29	1.09	1.15
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE		



PLAN
SCALE 1:2000

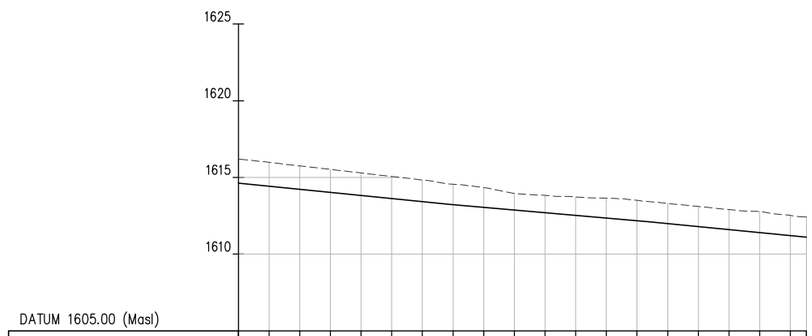


DATUM 1605.00 (Masl)

| | | |



PLAN
SCALE 1:2000



DATUM 1605.00 (Masl)

CHAINAGES (M)	3+600	3+620	3+640	3+660	3+680	3+700	3+720	3+740	3+760	3+780	3+800	3+820	3+840	3+860	3+880	3+900	3+920	3+940	3+960	3+970
GROUND LEVELS (Masl)	1616.21	1615.98	1615.75	1615.52	1615.29	1615.06	1614.83	1614.55	1614.34	1613.96	1613.83	1613.73	1613.65	1613.50	1613.30	1613.11	1612.90	1612.79	1612.52	1612.42
INVERT LEVELS (Masl)	1614.64	1614.43	1614.23	1614.03	1613.83	1613.63	1613.43	1613.23	1613.05	1612.88	1612.71	1612.53	1612.36	1612.18	1612.00	1611.80	1611.60	1611.41	1611.21	1611.11
TRENCH DEPTH (M)	1.57	1.55	1.52	1.49	1.46	1.43	1.41	1.33	1.28	1.08	1.12	1.19	1.29	1.32	1.31	1.31	1.30	1.38	1.31	1.31
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE																			
PIPE FITTINGS																				
SLOPE (%)	-1.01%										-0.87%							-0.98%		

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

N

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
3. THIS DRAWING SHOWS THE INDICATIVE ALIGNMENTS AND INVERT LEVELS OF EXISTING PIPELINES. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-FT-DR-W-017, 017A, 018, 018A, 019, 019A, 020, 020A, 021, 021A, 022, 022A, 023, 023A, 024 AND 024A.

LEGEND:

- – – – – – – – – – EXISTING GROUND PROFILE
- ■ ■ ■ ■ ■ ■ ■ ■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■ ■ ■ ■ ■ ■ ■ ■ BRANCH WATER LINE
- AV — AIR VALVE
- WO — WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
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Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

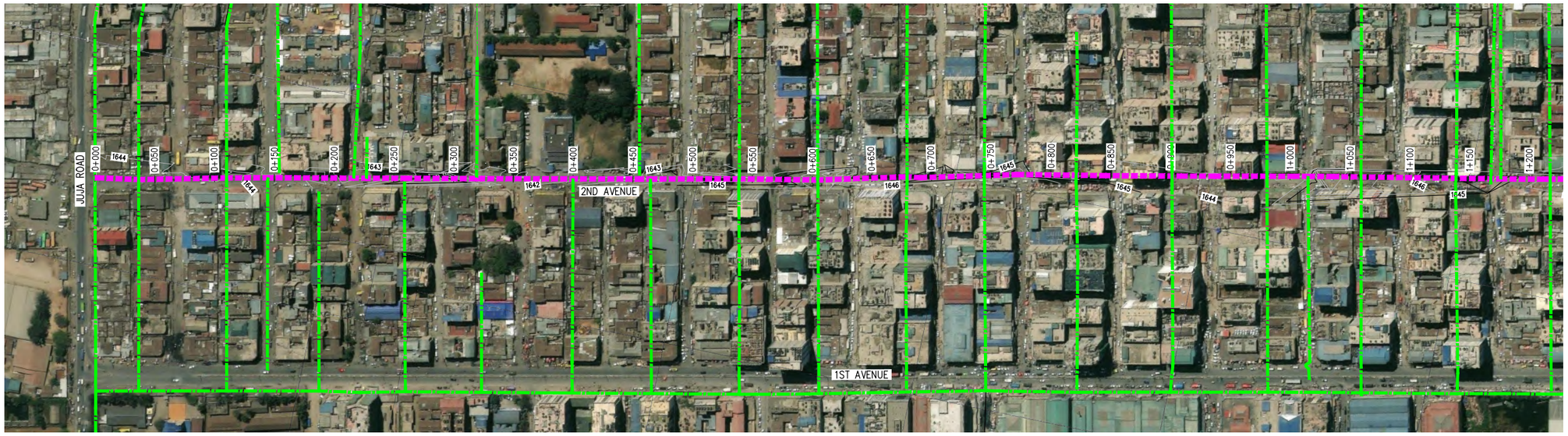
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

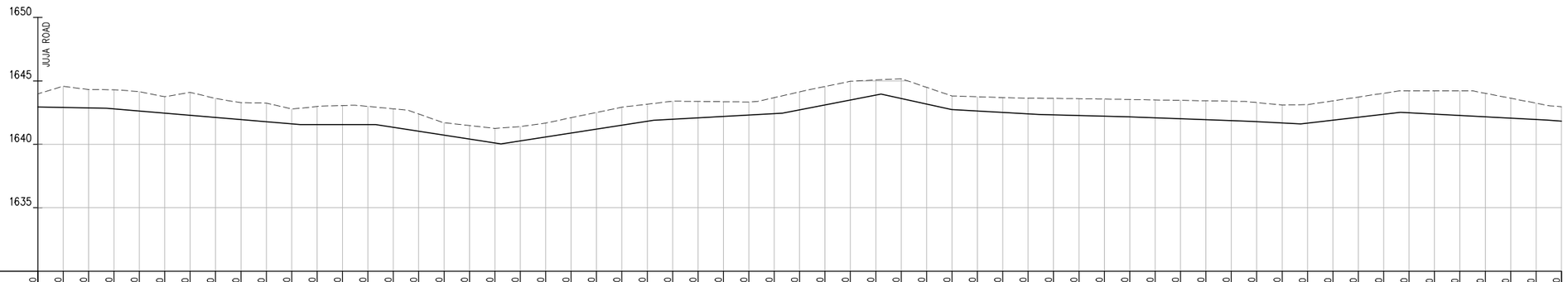
Drawing Title
EASTLEIGH
REHABILITATION PIPELINES - PLAN AND PROFILE
JUJA ROAD - Sheet 4 Of 4

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-004
Revision: T0

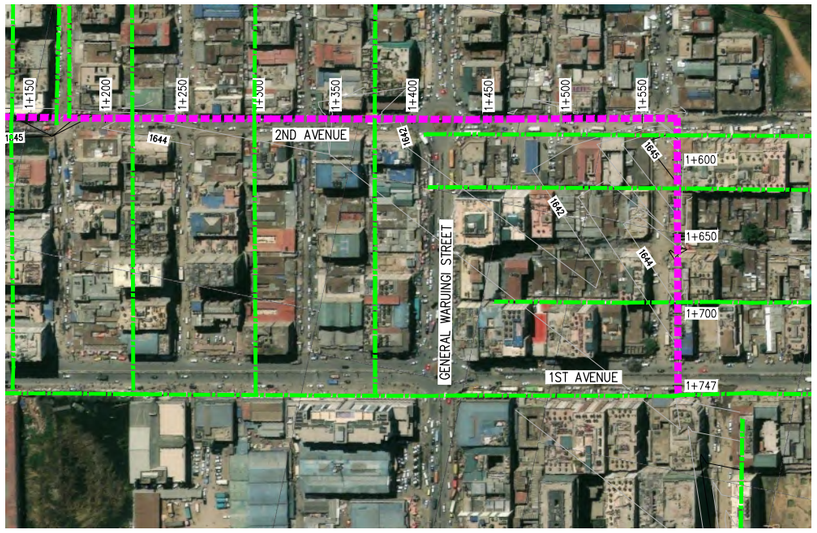


PLAN
SCALE 1:2000

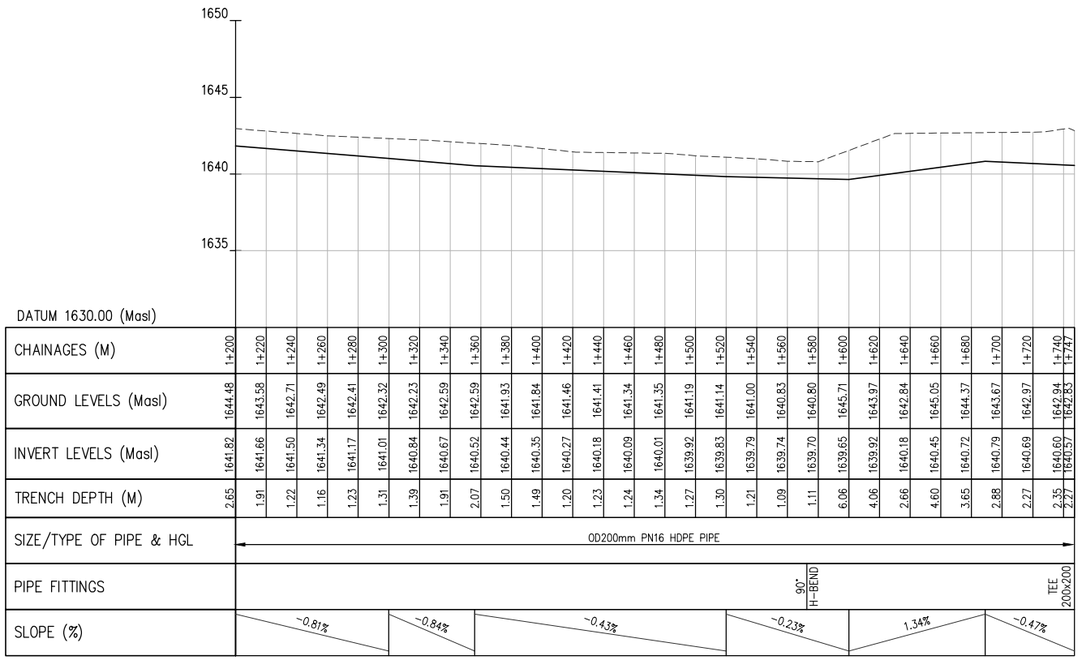


DATUM 1630.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200
GROUND LEVELS (Masl)	1643.97	1644.57	1644.32	1644.30	1644.16	1643.75	1644.10	1643.61	1643.28	1643.26	1642.78	1642.98	1643.06	1642.99	1642.80	1642.39	1641.71	1641.48	1641.25	1641.39	1641.68	1642.10	1642.51	1642.93	1643.16	1643.40	1643.38	1643.36	1643.34	1643.68	1644.13	1644.56	1644.97	1645.07	1645.17	1644.49	1643.81	1643.75	1643.68	1643.64	1643.62	1643.60	1643.57	1643.53	1643.50	1643.47	1643.43	1643.40	1643.29	1643.10	1643.13	1643.43	1643.73	1644.03	1644.21	1644.21	1644.21	1644.02	1643.63	1643.25	1642.96
INVERT LEVELS (Masl)	1642.95	1642.91	1642.87	1642.79	1642.63	1642.46	1642.29	1642.12	1641.95	1641.78	1641.61	1641.55	1641.55	1641.55	1641.34	1641.03	1640.73	1640.42	1640.11	1640.27	1640.58	1640.89	1641.20	1641.51	1641.82	1641.98	1642.09	1642.20	1642.31	1642.41	1642.71	1643.10	1643.49	1643.88	1643.62	1643.18	1642.74	1642.63	1642.51	1642.40	1642.32	1642.27	1642.22	1642.17	1642.09	1642.02	1641.95	1641.87	1641.79	1641.69	1641.67	1641.90	1642.13	1642.37	1642.49	1642.38	1642.28	1642.17	1642.07	1641.96	1641.82
TRENCH DEPTH (M)	1.02	1.66	1.45	1.51	1.53	1.30	1.82	1.50	1.33	1.47	1.17	1.43	1.50	1.44	1.46	1.36	0.98	1.06	1.14	1.12	1.10	1.20	1.31	1.41	1.34	1.42	1.29	1.16	1.03	1.26	1.42	1.46	1.48	1.19	1.55	1.32	1.07	1.12	1.17	1.24	1.29	1.32	1.35	1.37	1.41	1.44	1.48	1.52	1.50	1.41	1.46	1.53	1.59	1.66	1.72	1.83	1.93	1.85	1.57	1.28	1.14
SIZE/TYPE OF PIPE & HGL	0D200mm PN16 HDPE PIPE		



PLAN
SCALE 1:2000



CHAINAGES (M)	GROUND LEVELS (Masl)	INVERT LEVELS (Masl)	TRENCH DEPTH (M)
1+200	1644.48	1641.82	2.65
1+220	1643.58	1641.66	1.91
1+240	1642.71	1641.50	1.22
1+260	1642.49	1641.34	1.16
1+280	1642.41	1641.17	1.23
1+300	1642.32	1641.01	1.31
1+320	1642.23	1640.84	1.39
1+340	1642.59	1640.67	1.91
1+360	1642.59	1640.52	2.07
1+380	1641.93	1640.44	1.50
1+400	1641.84	1640.35	1.49
1+420	1641.46	1640.27	1.20
1+440	1641.41	1640.18	1.23
1+460	1641.34	1640.09	1.24
1+480	1641.35	1640.01	1.34
1+500	1641.19	1639.92	1.27
1+520	1641.14	1639.83	1.30
1+540	1641.00	1639.79	1.21
1+560	1640.83	1639.74	1.09
1+580	1640.80	1639.70	1.11
1+600	1645.71	1639.65	6.06
1+620	1643.97	1639.92	4.06
1+640	1642.84	1640.18	2.66
1+660	1645.05	1640.45	4.60
1+680	1644.37	1640.72	3.65
1+700	1643.67	1640.79	2.88
1+720	1642.97	1640.69	2.27
1+740	1642.94	1640.60	2.35
1+747	1642.83	1640.57	2.27

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
3. THIS DRAWING SHOWS THE INDICATIVE ALIGNMENTS AND INVERT LEVELS OF EXISTING PIPELINES. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-FT-DR-W-018, 018A, 029, 029A, 034, 034A, 045 AND 045A.

LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

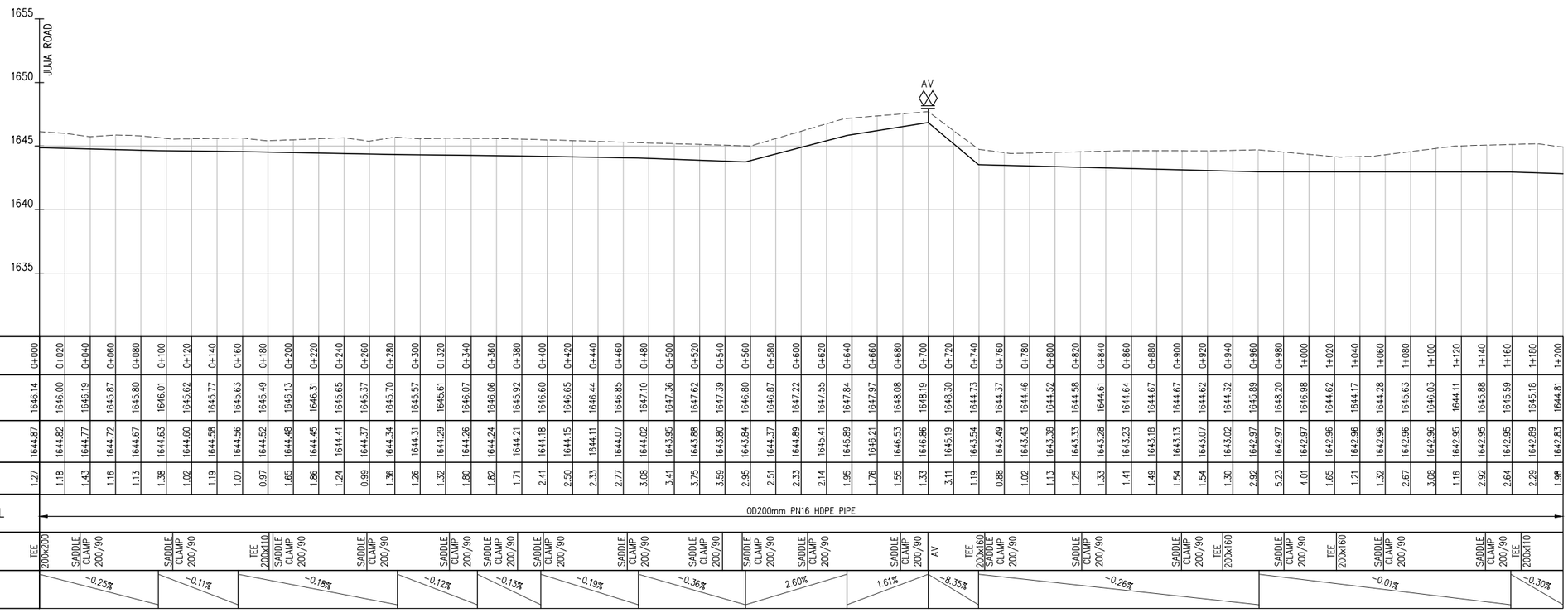
Drawing Title
EASTLEIGH
REHABILITATION LINES - PLAN AND PROFILE
2nd AVENUE - Sheet 2 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-006
Revision: T0



PLAN
SCALE 1: 2000

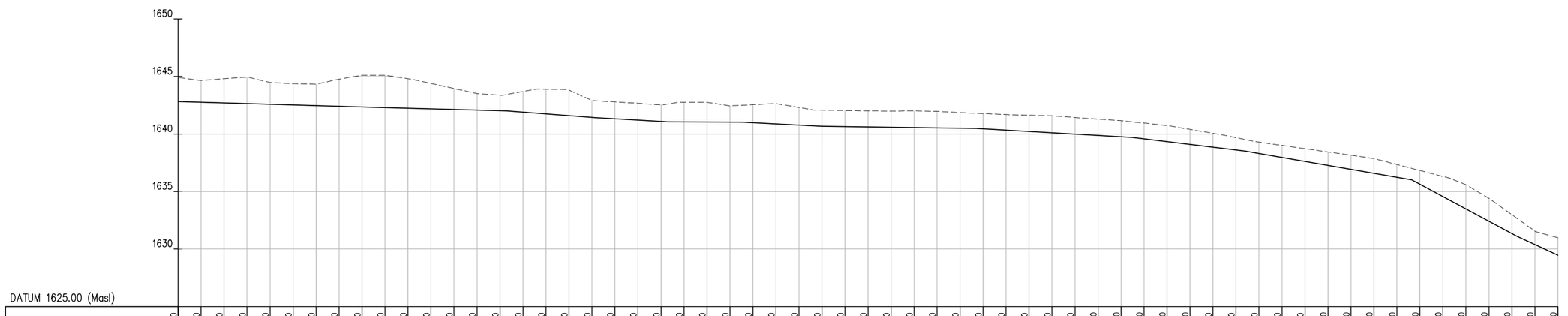


DATUM 1630.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200
GROUND LEVELS (Masl)	1646.14	1646.00	1646.19	1645.87	1645.80	1646.01	1645.62	1645.77	1645.63	1645.49	1646.13	1646.31	1645.65	1645.37	1645.70	1645.57	1645.61	1646.07	1646.06	1645.92	1646.60	1646.65	1646.44	1646.85	1647.10	1647.36	1647.62	1647.39	1646.80	1646.87	1647.22	1647.55	1647.84	1647.97	1648.08	1648.19	1648.30	1644.73	1644.37	1644.46	1644.52	1644.58	1644.61	1644.64	1644.67	1644.67	1644.62	1644.32	1645.89	1648.20	1646.98	1644.62	1644.17	1644.28	1645.63	1646.03	1644.11	1645.88	1645.59	1645.18	1644.81
INVERT LEVELS (Masl)	1644.87	1644.82	1644.77	1644.72	1644.67	1644.63	1644.60	1644.58	1644.56	1644.52	1644.48	1644.45	1644.41	1644.37	1644.34	1644.31	1644.29	1644.26	1644.24	1644.21	1644.18	1644.15	1644.11	1644.07	1644.02	1643.95	1643.88	1643.80	1643.84	1644.37	1644.89	1645.41	1645.89	1646.21	1646.53	1646.86	1645.19	1643.54	1643.49	1643.43	1643.38	1643.33	1643.28	1643.23	1643.18	1643.13	1643.07	1643.02	1642.97	1642.97	1642.97	1642.96	1642.96	1642.96	1642.96	1642.96	1642.96	1642.95	1642.95	1642.95	1642.89	1642.83
TRENCH DEPTH (M)	1.27	1.18	1.43	1.16	1.13	1.38	1.02	1.19	1.07	0.97	1.65	1.86	1.24	0.99	1.36	1.26	1.32	1.80	1.82	1.71	2.41	2.50	2.33	2.77	3.08	3.41	3.75	3.59	2.95	2.51	2.33	2.14	1.95	1.76	1.55	1.33	3.11	1.19	0.88	1.02	1.13	1.25	1.33	1.41	1.49	1.54	1.54	1.30	2.92	5.23	4.01	1.65	1.21	1.32	2.67	3.08	1.16	2.92	2.64	2.29	1.98
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE		



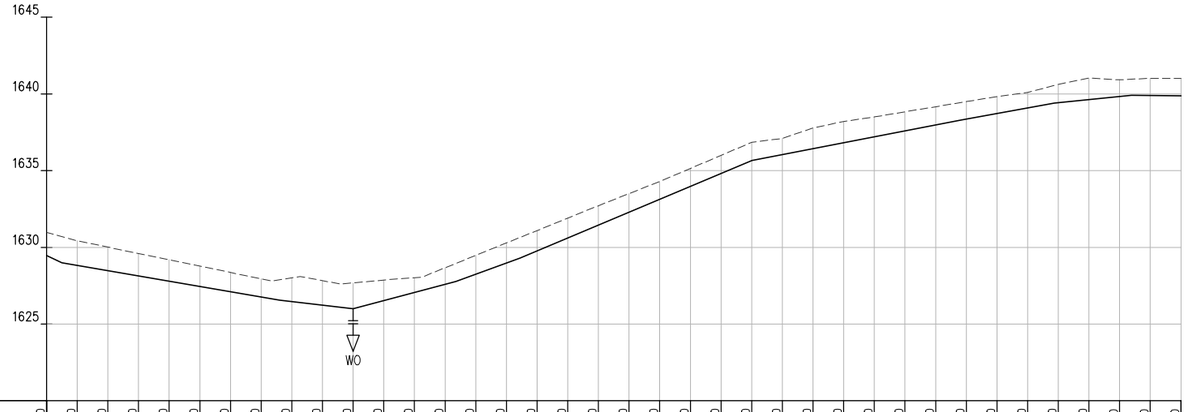
PLAN
SCALE 1:2000



| | | |



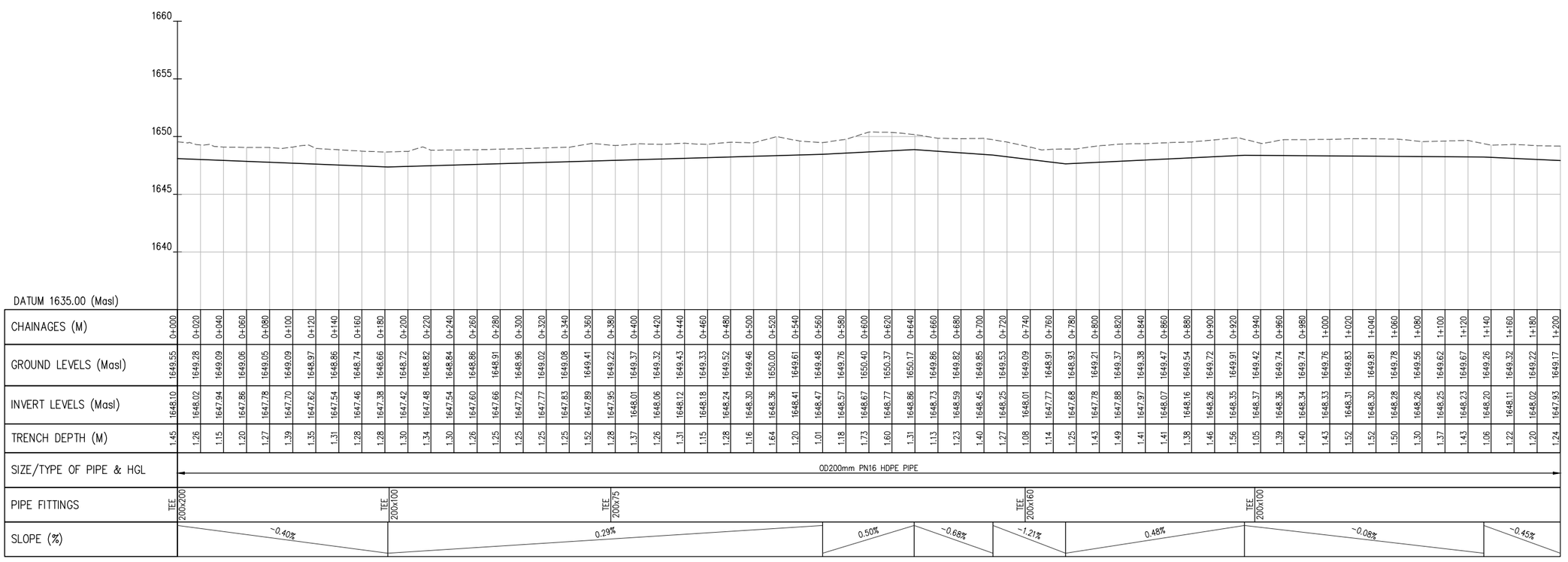
PLAN
SCALE 1:2000



| DATUM 1620.00 (Masl) | | |



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
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LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

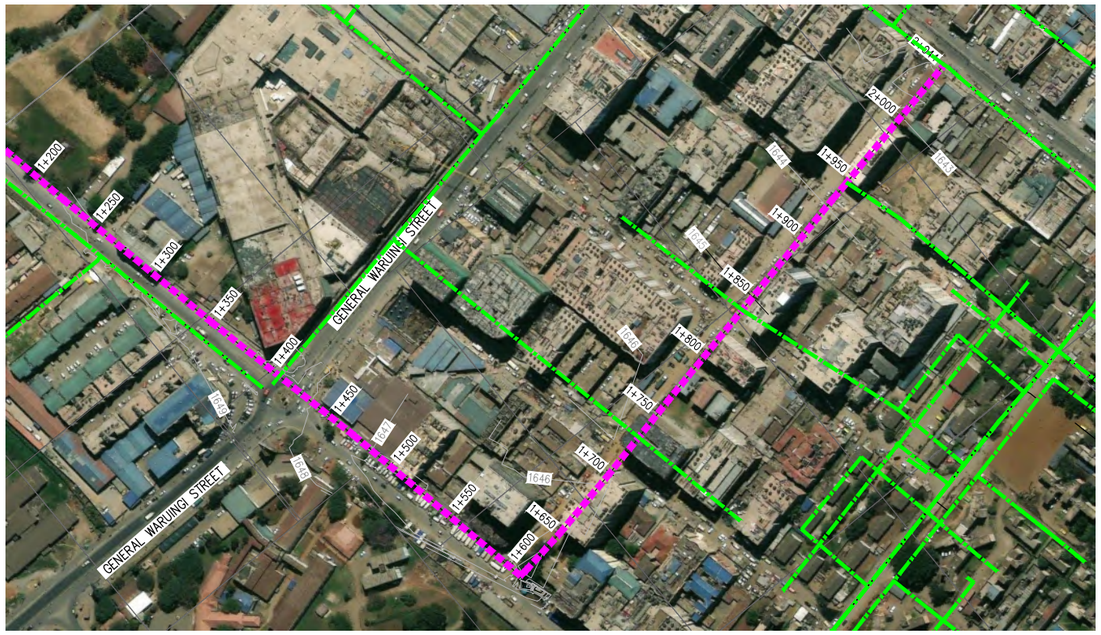
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

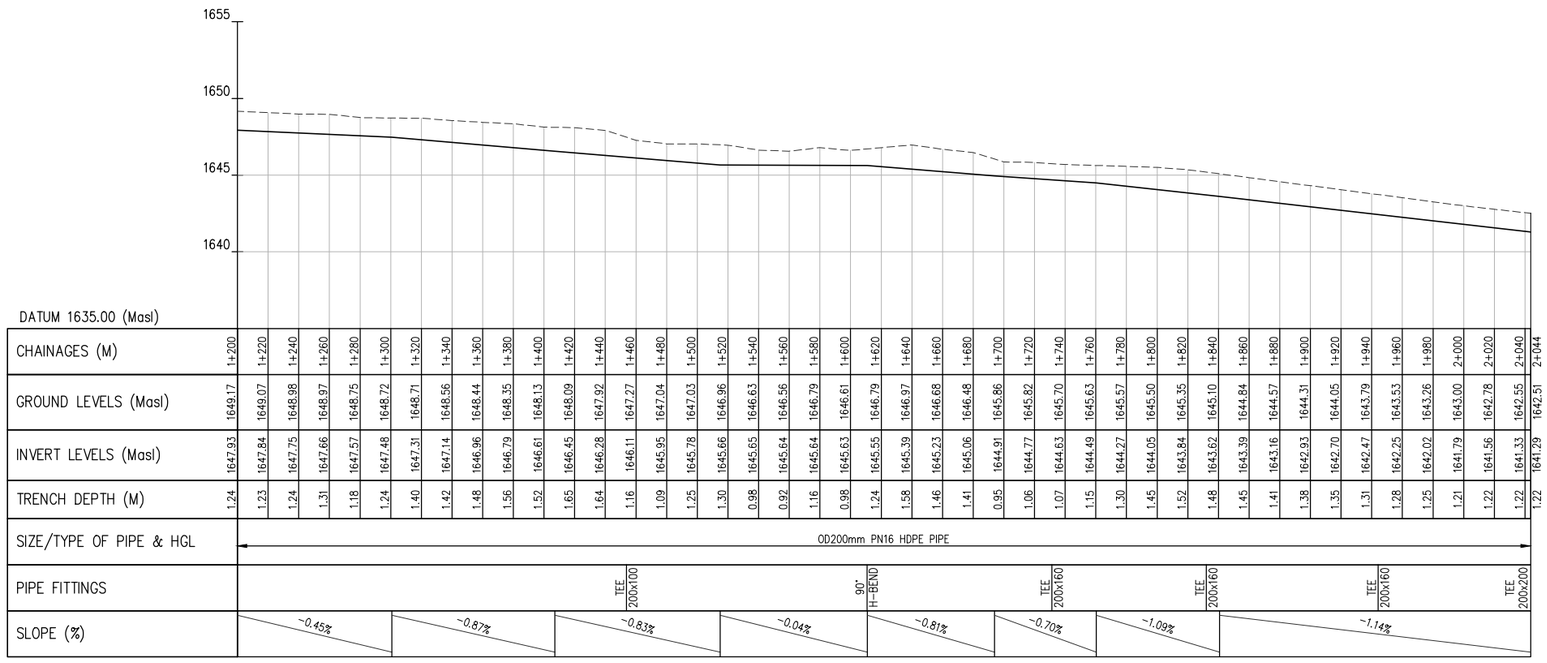
Drawing Title
EASTLEIGH
REHABILITATION LINES - PLAN AND PROFILE
MLANGO ROUNDABOUT LINE 1 - Sheet 1 Of 2

Designed by:	BAO	Drawn by:	BAO
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-010
Revision: T0



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
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LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

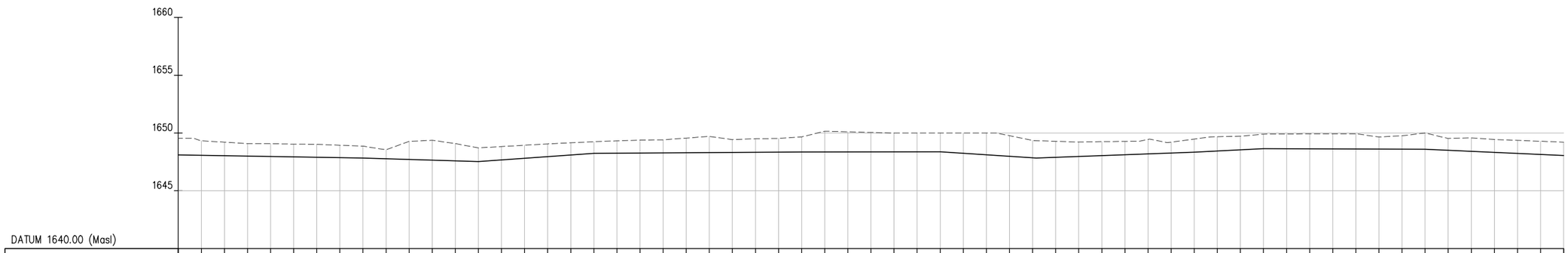
Drawing Title
EASTLEIGH
REHABILITATION LINES - PLAN AND PROFILE
MLANGO ROUNDABOUT LINE 1 - Sheet 2 Of 2

Designed by:	BAO	Drawn by:	BAO
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-011
Revision: T0

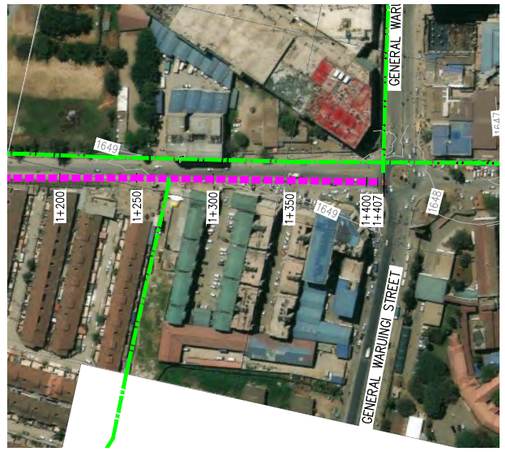


PLAN
SCALE 1:2000

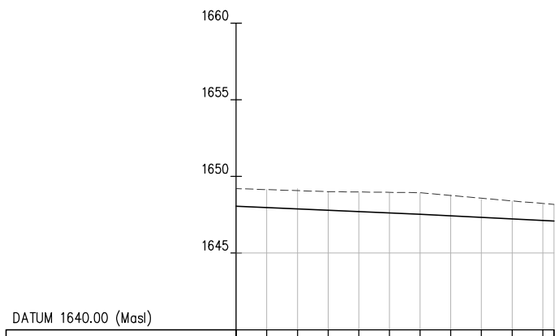


DATUM 1640.00 (Masl)

| CHAINAGES (M) | 0+000 | 0+020 | 0+040 | 0+060 | 0+080 | 0+100 | 0+120 | 0+140 | 0+160 | 0+180 | 0+200 | 0+220 | 0+240 | 0+260 | 0+280 | 0+300 | 0+320 | 0+340 | 0+360 | 0+380 | 0+400 | 0+420 | 0+440 | 0+460 | 0+480 | 0+500 | 0+520 | 0+540 | 0+560 | 0+580 | 0+600 | 0+620 | 0+640 | 0+660 | 0+680 | 0+700 | 0+720 | 0+740 | 0+760 | 0+780 | 0+800 | 0+820 | 0+840 | 0+860 | 0+880 | 0+900 | 0+920 | 0+940 | 0+960 | 0+980 | 1+000 | 1+020 | 1+040 | 1+060 | 1+080 | 1+100 | 1+120 | 1+140 | 1+160 | 1+180 | 1+200 |
|---|---|---



PLAN
SCALE 1:2000



DATUM 1640.00 (Masl)

CHAINAGES (M)	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+407
GROUND LEVELS (Masl)	1649.21	1649.14	1649.21	1649.01	1646.94	1648.92	1648.94	1648.81	1648.50	1648.40	1648.17	1648.18
INVERT LEVELS (Masl)	1648.06	1647.97	1647.88	1647.80	1647.71	1647.62	1647.53	1647.43	1647.33	1647.23	1647.13	1647.10
TRENCH DEPTH (M)	1.15	1.17	1.32	1.21	1.24	1.31	1.41	1.38	1.16	1.17	1.04	1.08
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE											
PIPE FITTINGS	TEE 200x110											
SLOPE (%)	-0.44%								-0.50%			

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
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LEGEND:

- – EXISTING GROUND PROFILE
- – PROPOSED PIPELINE
- – PIPE INVERT PROFILE
- – BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

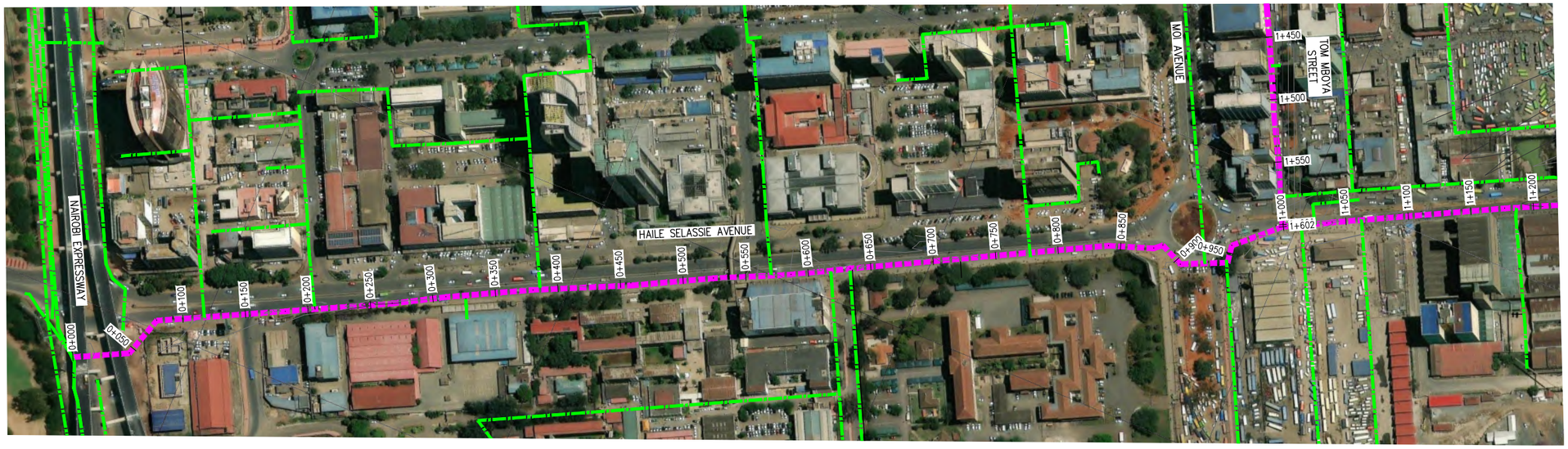
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

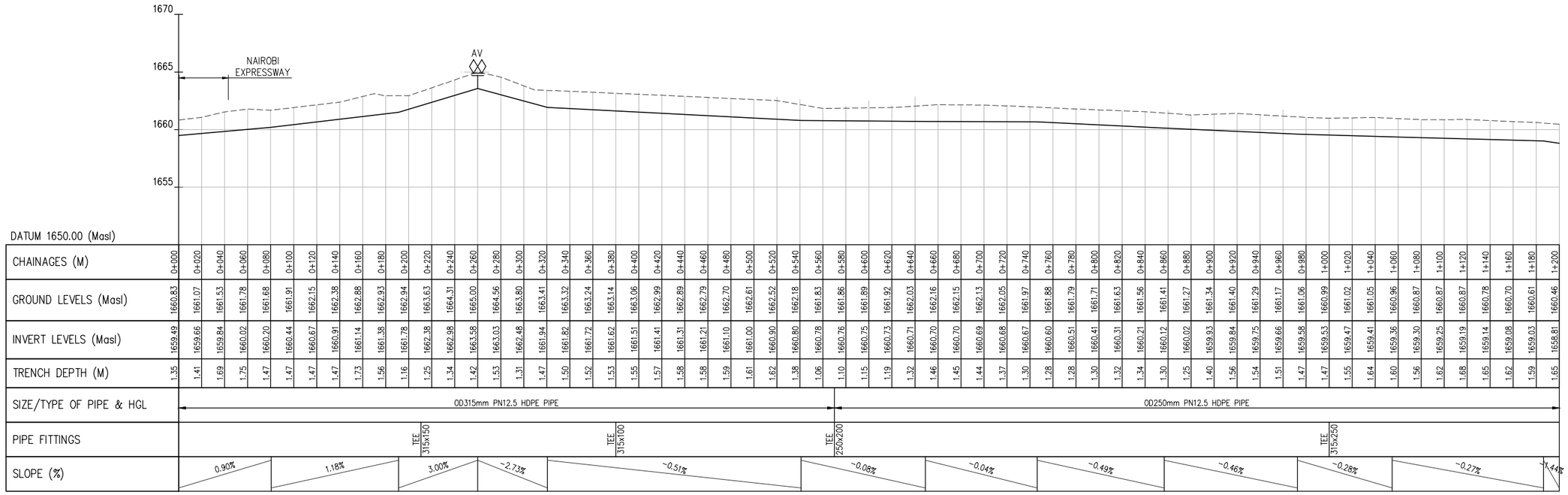
Drawing Title
EASTLEIGH
REHABILITATION LINES - PLAN AND PROFILE
MLANGO ROUNDABOUT LINE 2 - Sheet 2 Of 2

Designed by:	BAO	Drawn by:	BAO
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-013
Revision: T0



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
3. THIS DRAWING SHOWS THE INDICATIVE ALIGNMENTS AND INVERT LEVELS OF EXISTING PIPELINES. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-PP-DR-W-049, 049A, 056, 056A, 057 AND 057A FOR HAILE SELLASIE AVENUE.
6000023-HH-PP-DR-W-042, 042A, 047 AND 047A FOR KENYATTAE AVENUE.
6000023-HH-PP-DR-W-039, 039A, 042, 042A, 048, 048A, 049 AND 049A FOR MOI AVENUE.

LEGEND:

- – – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ·——·——· BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
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The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

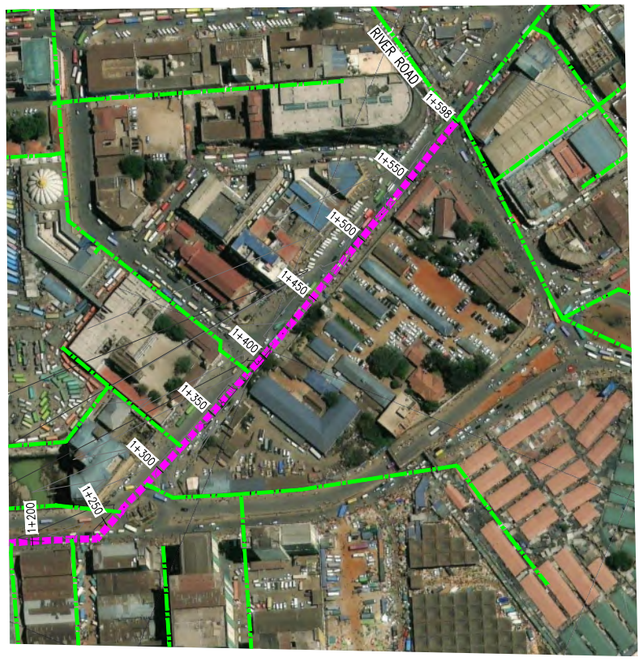
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

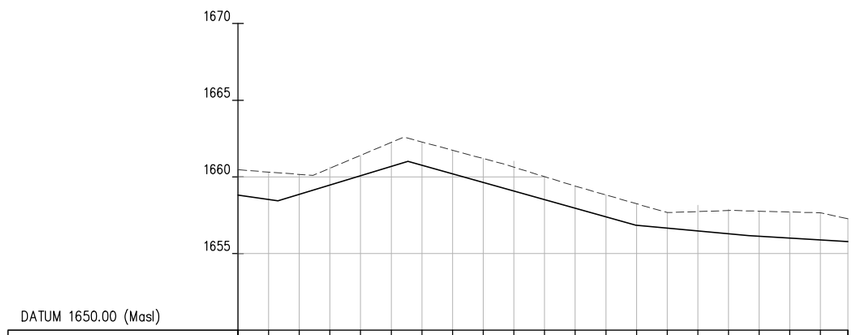
Drawing Title
NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION LINES - PLAN AND PROFILE
HAILE SELASSIE AVENUE - Sheet 1 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-014
Revision: T0



PLAN
SCALE 1:2000



DATUM 1650.00 (Masl)

CHAINAGES (M)	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540	1+560	1+580	1+598
GROUND LEVELS (Masl)	1660.46	1660.32	1660.17	1660.56	1661.41	1662.25	1662.28	1661.74	1661.20	1660.63	1660.02	1659.40	1658.83	1658.25	1657.67	1657.74	1657.81	1657.77	1657.71	1657.66	1657.27
INVERT LEVELS (Masl)	1658.81	1658.53	1658.86	1659.47	1660.07	1660.68	1660.75	1660.19	1659.63	1659.07	1658.51	1657.95	1657.39	1656.84	1656.65	1656.47	1656.29	1656.12	1656.01	1655.89	1655.78
TRENCH DEPTH (M)	1.65	1.79	1.31	1.10	1.33	1.57	1.52	1.55	1.57	1.56	1.51	1.45	1.44	1.41	1.02	1.27	1.52	1.64	1.71	1.77	1.49
SIZE/TYPE OF PIPE & HGL	Ø250mm PN12.5 HDPE PIPE																				
PIPE FITTINGS			90° H-BEND					TEE 250x100				TEE 250x100									
SLOPE (%)	-1.44%		3.04%				-2.80%								-0.92%			-0.59%			

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
3. THIS DRAWING SHOWS THE INDICATIVE ALIGNMENTS AND INVERT LEVELS OF EXISTING PIPELINES. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-PP-DR-W-049, 049A, 056, 056A, 057 AND 057A FOR HAILE SELLASIE AVENUE.
   6000023-HH-PP-DR-W-042, 042A, 047 AND 047A FOR KENYATTAE AVENUE.
   6000023-HH-PP-DR-W-039, 039A, 042, 042A, 048, 048A, 049 AND 049A FOR MOI AVENUE.

LEGEND:

- – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■■■■■■■■ BRANCH WATER LINE
- AV — AIR VALVE
- WO — WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

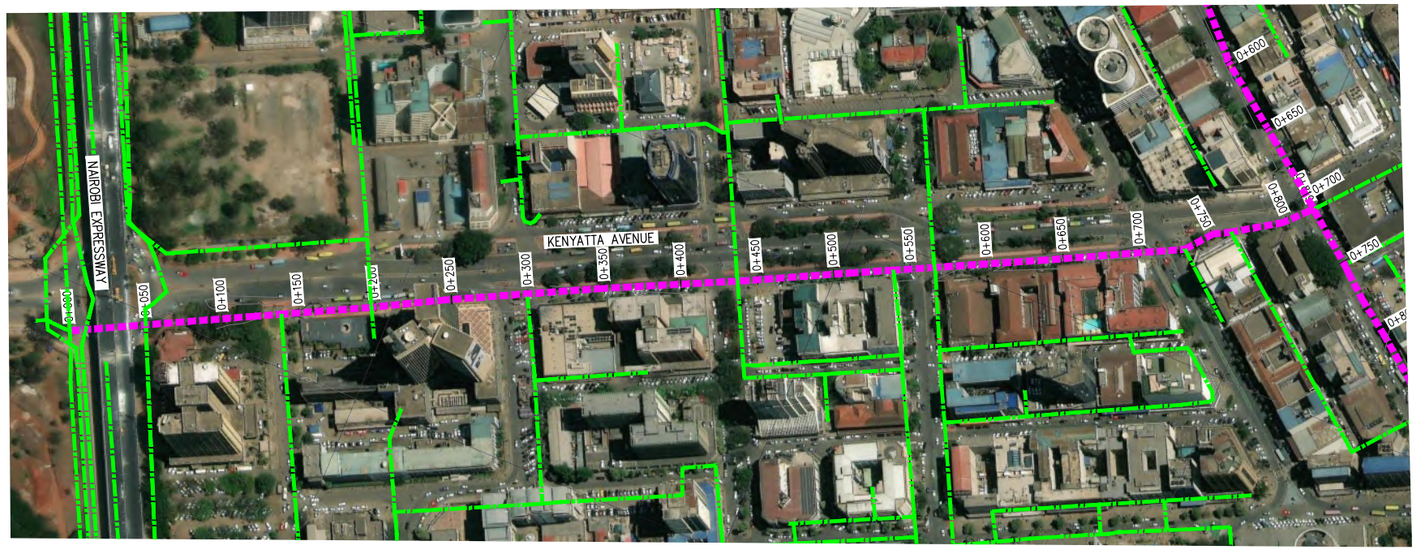
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

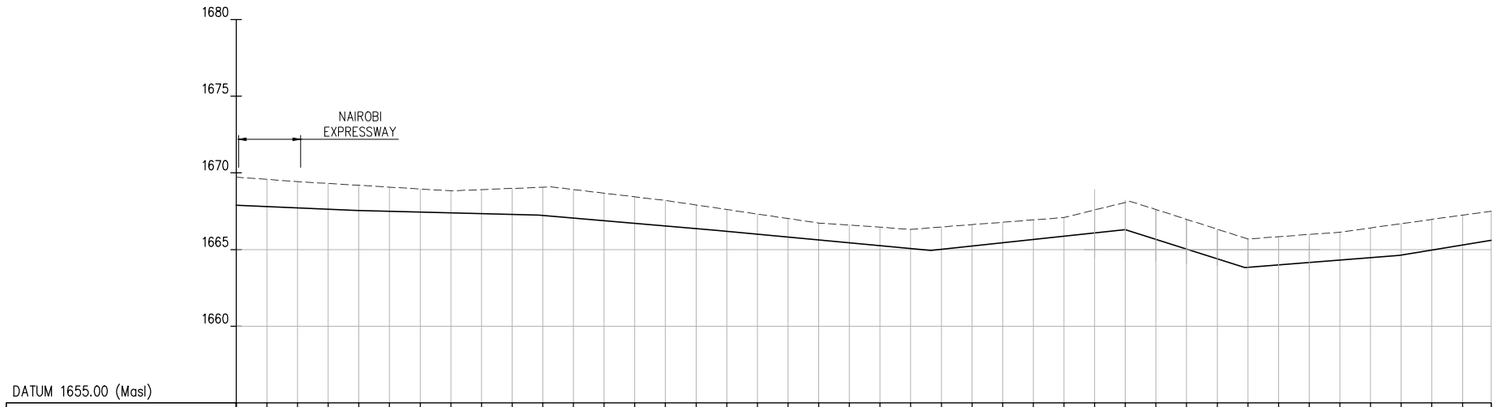
Drawing Title
NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION LINES - PLAN AND PROFILE
HAILE SELASSIE AVENUE - Sheet 2 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-015
Revision: T0



PLAN
SCALE 1:2000



DATUM 1655.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+819
GROUND LEVELS (Masl)	1669.73	1669.58	1669.43	1669.31	1669.19	1669.07	1668.95	1668.83	1668.91	1668.99	1669.07	1668.91	1668.68	1668.44	1668.20	1667.91	1667.61	1667.32	1667.02	1666.73	1666.59	1666.45	1666.32	1666.47	1666.63	1666.78	1666.93	1667.09	1667.58	1668.08	1667.61	1666.97	1666.33	1665.69	1665.84	1665.99	1666.13	1666.41	1666.69	1666.97	1667.24	1667.50
INVERT LEVELS (Masl)	1667.89	1667.80	1667.72	1667.63	1667.55	1667.50	1667.45	1667.39	1667.34	1667.29	1667.22	1667.05	1666.88	1666.71	1666.54	1666.36	1666.19	1666.00	1665.81	1665.63	1665.44	1665.25	1665.07	1665.02	1665.23	1665.45	1665.66	1665.88	1666.09	1666.31	1665.67	1665.03	1664.40	1663.84	1664.00	1664.15	1664.31	1664.47	1664.63	1664.96	1665.29	1665.60
TRENCH DEPTH (M)	1.84	1.74	1.71	1.74	1.82	1.73	1.65	1.44	2.02	1.71	1.86	1.70	1.78	1.63	2.11	2.91	2.07	1.00	0.41	1.92	2.17	2.23	1.25	1.93	1.91	1.73	1.65	2.28	2.83	1.95	1.92	1.89	1.87	1.85	1.53	1.21	1.82	1.91	2.03	1.95	1.89	1.90
SIZE/TYPE OF PIPE & HGL	OD315mm PN12.5 HDPE PIPE																																									
PIPE FITTINGS	TEE 315x160																			TEE 315x160								TEE 315x200	TEE 315x200										
SLOPE (%)	-0.43%					-0.26%							-0.86%							-0.93%				1.07%							-3.18%				0.78%					1.65%	

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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6000023-HH-PP-DR-W-039, 039A, 042, 042A, 048, 048A, 049 AND 049A FOR MOI AVENUE.

LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
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Nairobi – Kenya.

Design and Supervision Consultant:
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

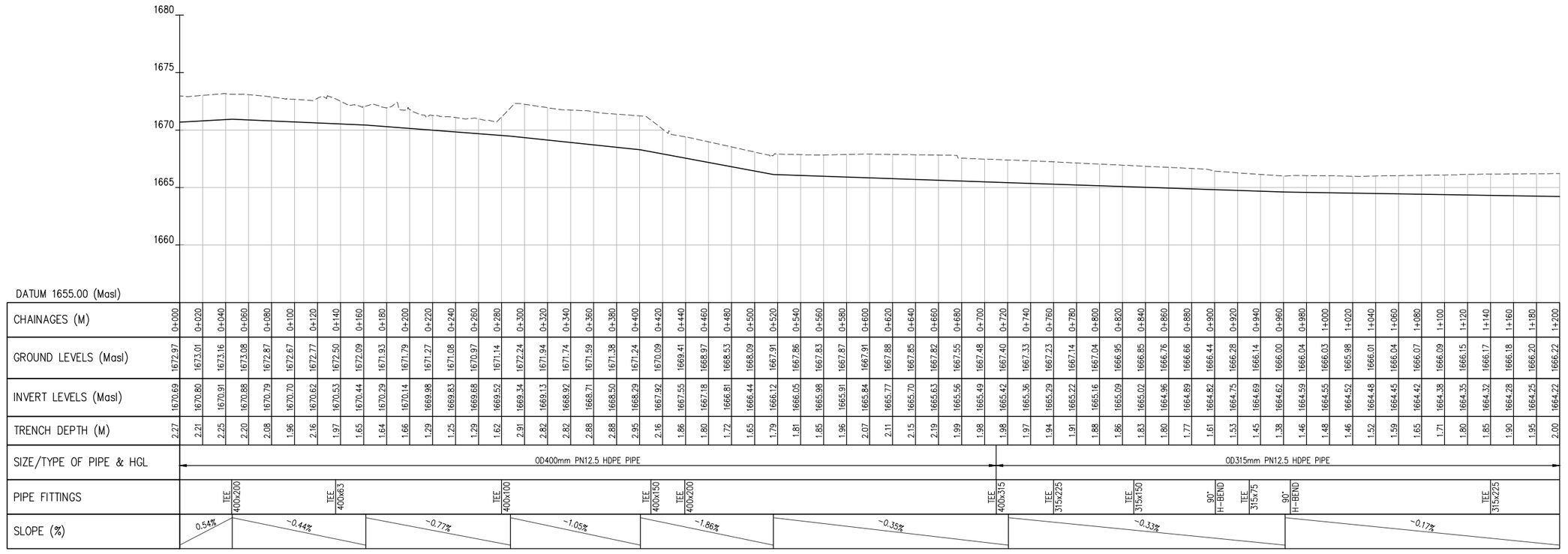
Drawing Title
NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - PLAN AND PROFILE
KENYATTA AVENUE - Sheet 1 Of 1

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

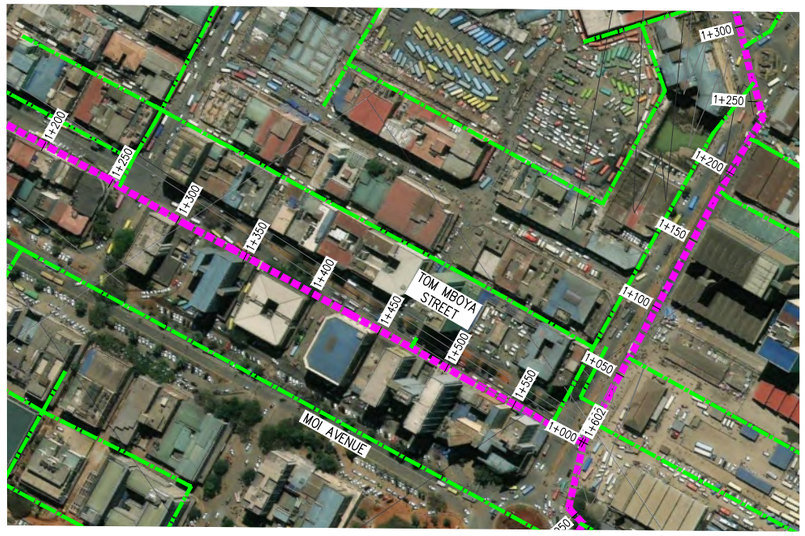
Drawing Number: 6000023-HH-PP-DR-W-016
Revision: T0



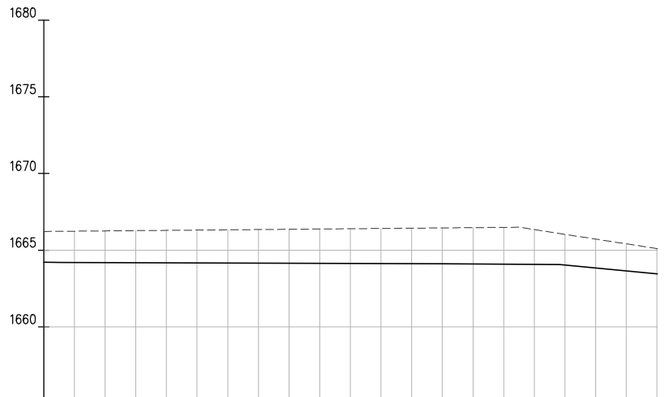
PLAN
SCALE 1:2000



| CHAINAGES (M) | 0+000 | 0+020 | 0+040 | 0+060 | 0+080 | 0+100 | 0+120 | 0+140 | 0+160 | 0+180 | 0+200 | 0+220 | 0+240 | 0+260 | 0+280 | 0+300 | 0+320 | 0+340 | 0+360 | 0+380 | 0+400 | 0+420 | 0+440 | 0+460 | 0+480 | 0+500 | 0+520 | 0+540 | 0+560 | 0+580 | 0+600 | 0+620 | 0+640 | 0+660 | 0+680 | 0+700 | 0+720 | 0+740 | 0+760 | 0+780 | 0+800 | 0+820 | 0+840 | 0+860 | 0+880 | 0+900 | 0+920 | 0+940 | 0+960 | 0+980 | 1+000 | 1+020 | 1+040 | 1+060 | 1+080 | 1+100 | 1+120 | 1+140 | 1+160 | 1+180 | 1+200 |
|---|---|---



PLAN
SCALE 1:2000



DATUM 1655.00 (Masl)

CHAINAGES (M)	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540	1+560	1+580	1+600	1+602
GROUND LEVELS (Masl)	1666.22	1666.24	1666.26	1666.27	1666.29	1666.31	1666.33	1666.34	1666.36	1666.38	1666.40	1666.42	1666.43	1666.45	1666.47	1666.49	1666.34	1666.03	1665.72	1665.41	1665.10	
INVERT LEVELS (Masl)	1664.22	1664.19	1664.19	1664.18	1664.18	1664.17	1664.16	1664.16	1664.15	1664.15	1664.14	1664.13	1664.13	1664.12	1664.11	1664.09	1664.08	1664.04	1663.84	1663.65	1663.45	
TRENCH DEPTH (M)	2.00	2.04	2.07	2.09	2.12	2.14	2.16	2.19	2.21	2.23	2.26	2.28	2.31	2.33	2.36	2.39	2.26	2.00	1.88	1.77	1.65	
SIZE/TYPE OF PIPE & HGL	OD315mm PN12.5 HDPE PIPE																					
PIPE FITTINGS		TEE 315x160		TEE 315x200																TEE 315x100		
SLOPE (%)	-0.17%		-0.03%											-0.07%						-0.97%		

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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   6000023-HH-PP-DR-W-042, 042A, 047 AND 047A FOR KENYATTAE AVENUE.
   6000023-HH-PP-DR-W-039, 039A, 042, 042A, 048, 048A, 049 AND 049A FOR MOI AVENUE.

LEGEND:

- – – – – – – – – – EXISTING GROUND PROFILE
- ■ ■ ■ ■ ■ ■ ■ ■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■ ■ ■ ■ ■ ■ ■ ■ BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
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Nairobi.

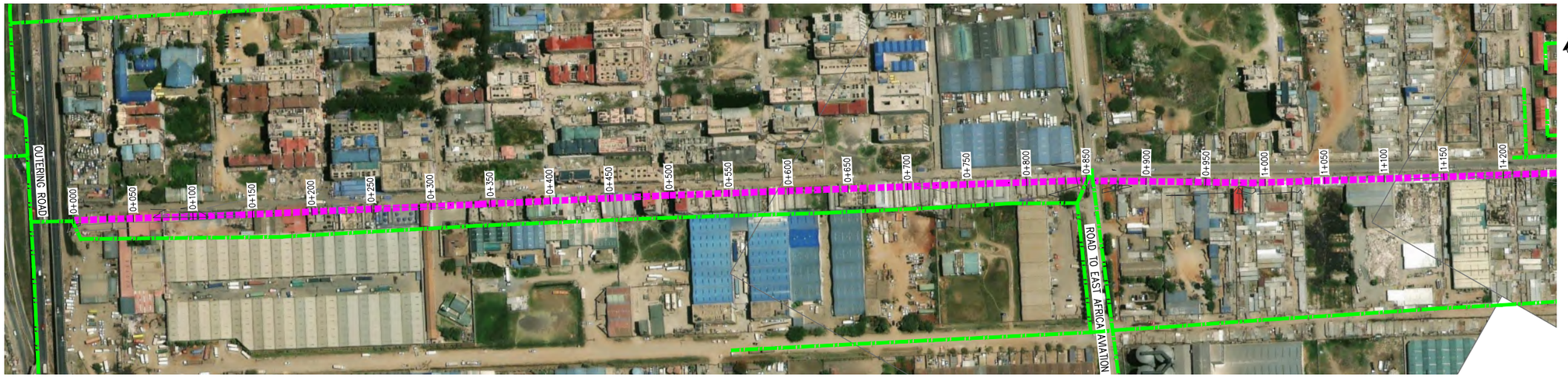
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

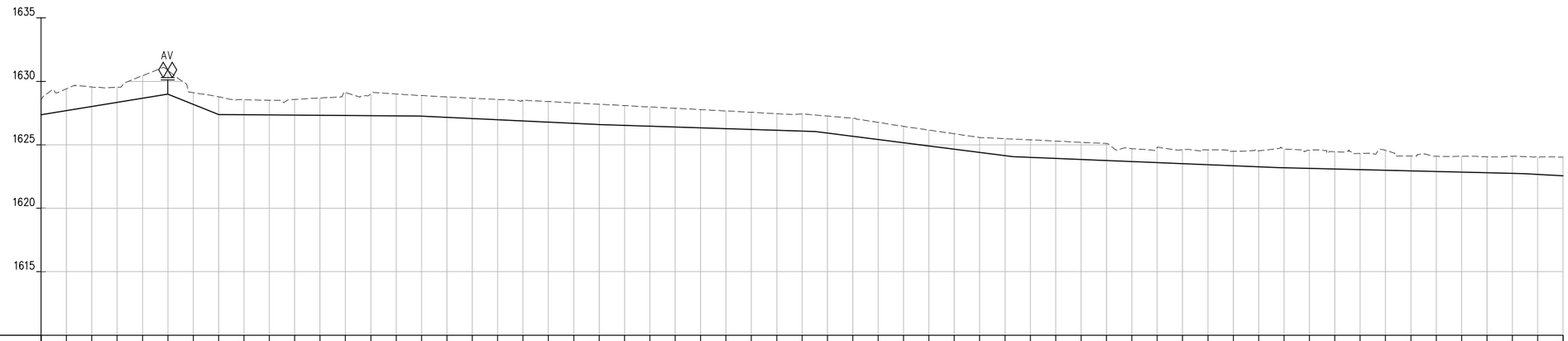
Drawing Title
NAIROBI CENTRAL BUSINESS DISTRICT
REHABILITATION PIPELINES - PLAN AND PROFILE
MOI AVENUE - Sheet 2 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-018
Revision: T0



PLAN
SCALE 1:2000

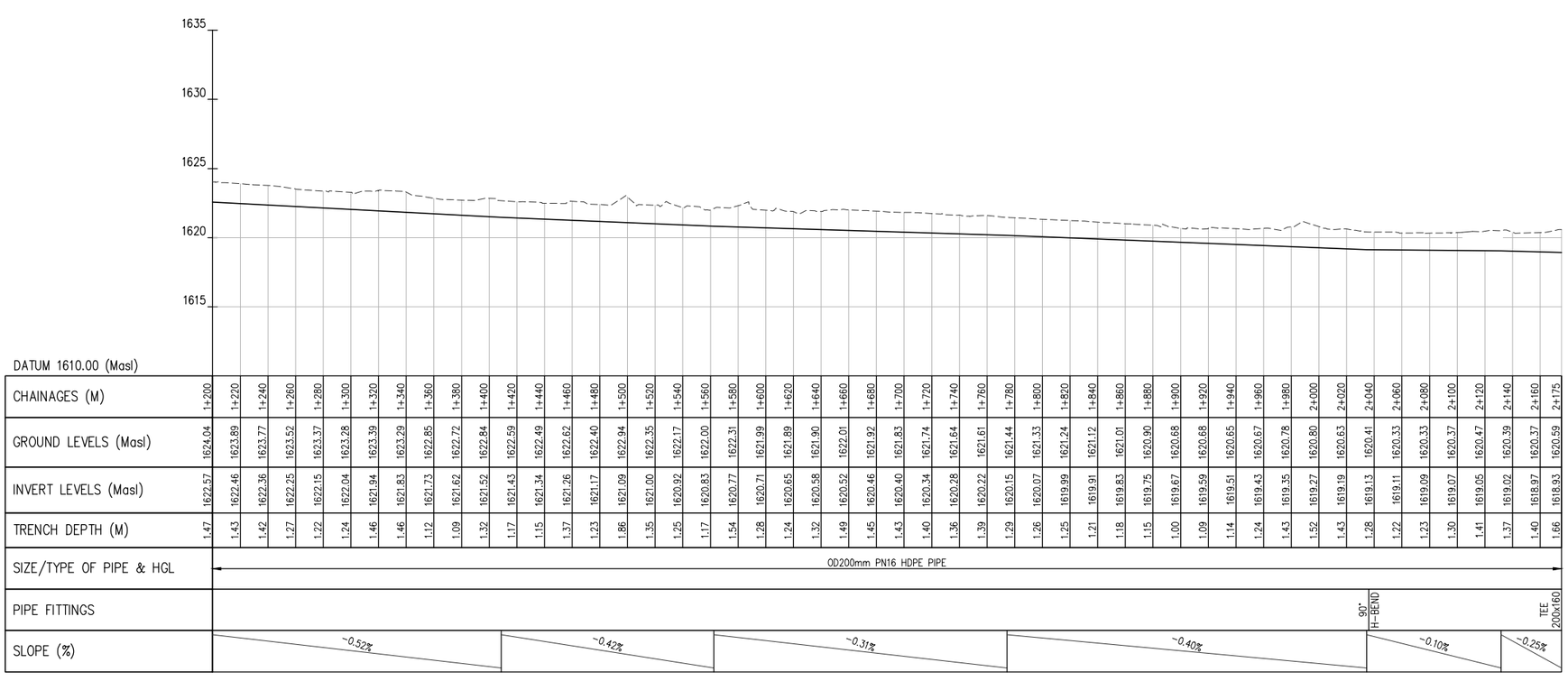


DATUM 1610.00 (Masl)

| | | |



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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LEGEND:

- – – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■■■■■■■■ BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
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Nairobi – Kenya.

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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

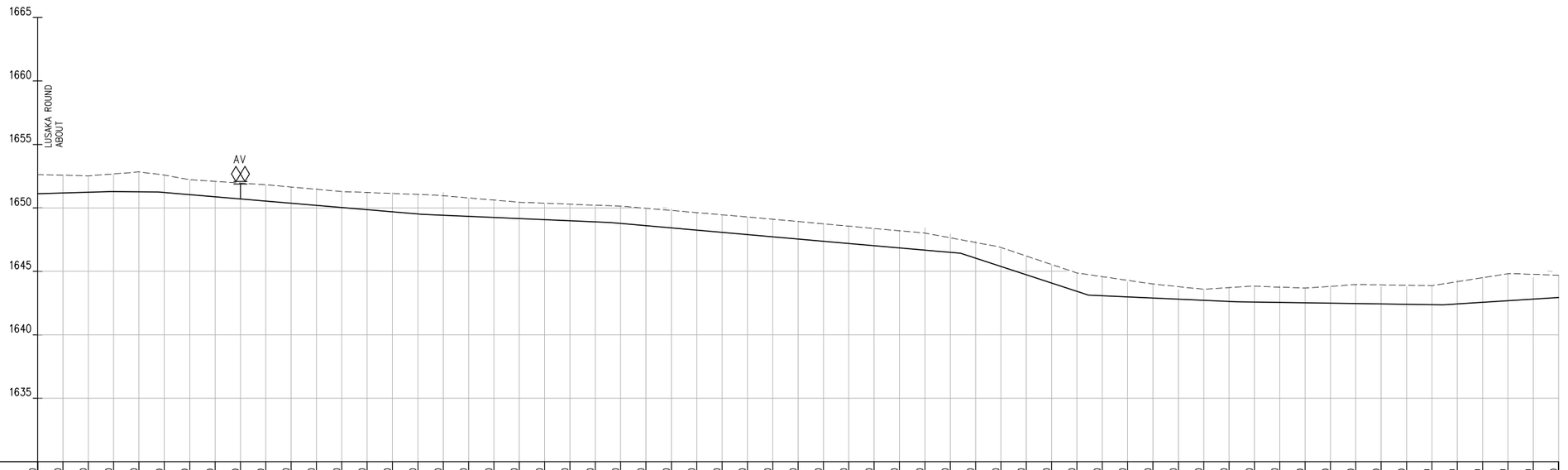
Drawing Title
EMBAKASI
REHABILITATION LINES - PLAN AND PROFILE
Sheet 2 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-020
Revision: T0



PLAN
SCALE 1:2000



DATUM 1630.00 (Masl)

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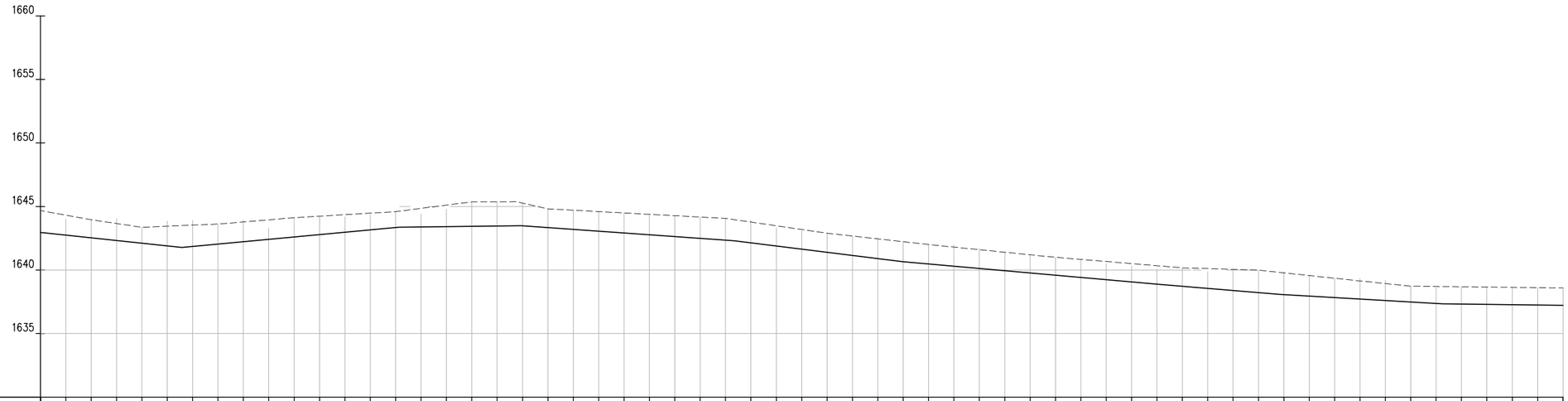
GROUND LEVELS (Masl)	1652.63	1652.58	1652.53	1652.68	1652.84	1652.59	1652.22	1652.09	1651.95	1651.82	1651.64	1651.47	1651.29	1651.21	1651.14	1651.06	1650.96	1650.79	1650.62	1650.45	1650.37	1650.30	1650.22	1650.14	1649.97	1649.80	1649.63	1649.46	1649.29	1649.11	1648.93	1648.74	1648.56	1648.38	1648.20	1648.02	1647.65	1647.28	1646.88	1646.21	1645.54	1644.87	1644.58	1644.29	1644.00	1643.80	1643.59	1643.72	1643.83	1643.76	1643.68	1643.82	1643.96	1643.93	1643.90	1643.88	1644.19	1644.50	1644.81	1644.76	1644.68
INVERT LEVELS (Masl)	1651.12	1651.18	1651.23	1651.28	1651.27	1651.21	1651.05	1650.88	1650.71	1650.54	1650.37	1650.20	1650.03	1649.86	1649.69	1649.53	1649.42	1649.34	1649.25	1649.17	1649.08	1648.99	1648.91	1648.78	1648.61	1648.43	1648.25	1648.08	1647.90	1647.72	1647.55	1647.37	1647.20	1647.02	1646.84	1646.67	1646.49	1646.04	1645.39	1644.73	1644.08	1643.43	1643.08	1642.99	1642.90	1642.81	1642.72	1642.63	1642.58	1642.55	1642.52	1642.49	1642.47	1642.44	1642.41	1642.38	1642.44	1642.56	1642.69	1642.82	1642.94
TRENCH DEPTH (M)	1.51	1.40	1.29	1.40	1.57	1.37	1.17	1.21	1.25	1.28	1.27	1.26	1.25	1.35	1.44	1.54	1.53	1.45	1.37	1.28	1.29	1.30	1.31	1.36	1.36	1.37	1.38	1.38	1.39	1.38	1.38	1.37	1.37	1.36	1.35	1.35	1.15	1.24	1.50	1.48	1.46	1.45	1.50	1.30	1.10	0.99	0.87	1.09	1.26	1.21	1.16	1.33	1.49	1.50	1.50	1.50	1.75	1.94	2.12	1.95	1.74
SIZE/TYPE OF PIPE & HGL	OD315mm PN16 HDPE PIPE		

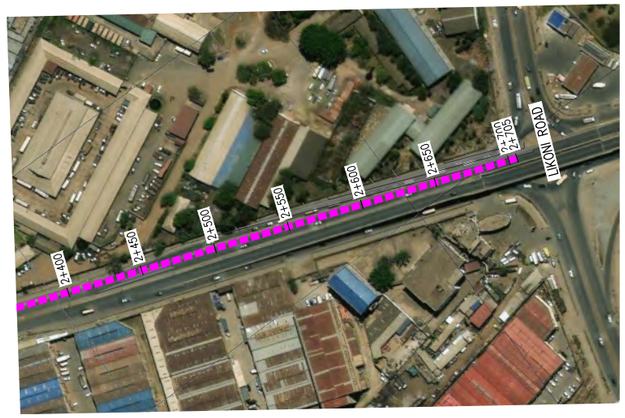


PLAN
SCALE 1:2000

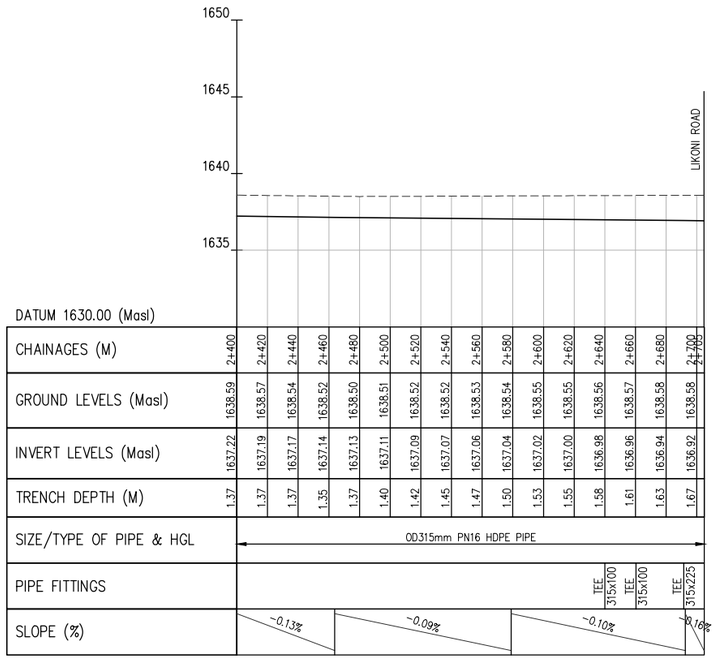


DATUM 1630.00 (Masl)

| | | |



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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LEGEND:

- – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV — AIR VALVE
- WO — WASHOUT

Client:
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INGEROP
Devan Plaza, Crossway Road,
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P.O Box 2758 – 00606
Nairobi.

Howard Humphreys
Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

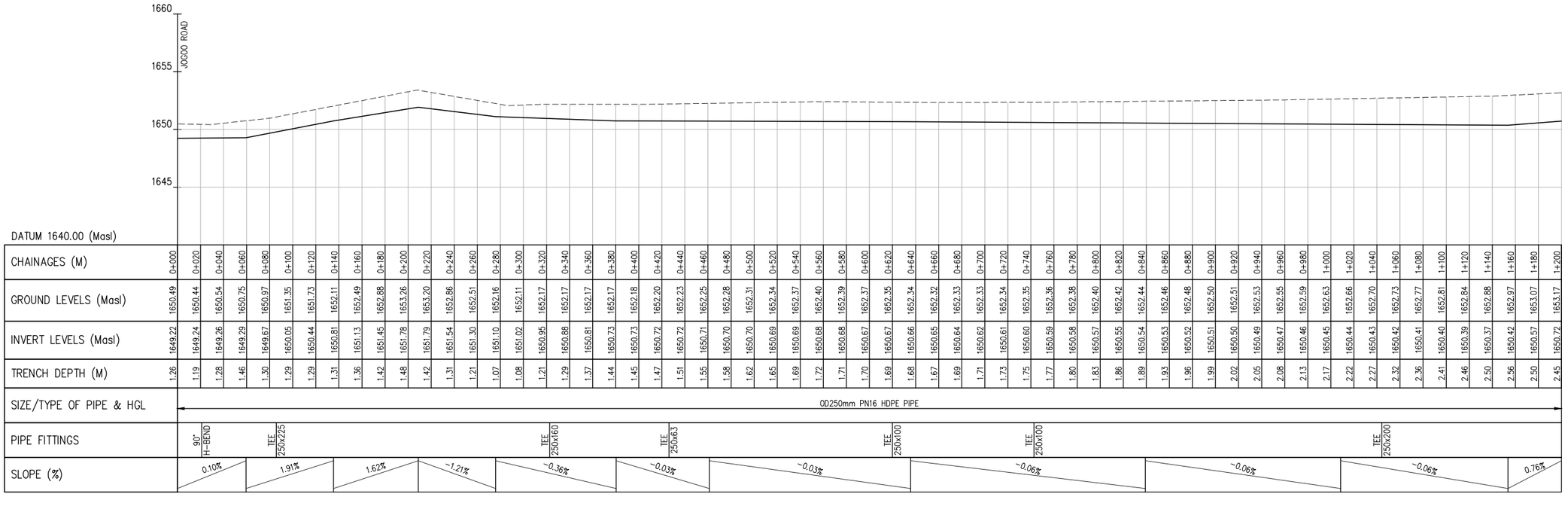
Drawing Title
INDUSTRIAL AREA
REHABILITATION LINES - PLAN AND PROFILE
ENTERPRISE ROAD - Sheet 3 Of 3

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-023
Revision: T0



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
3. THIS DRAWING SHOWS THE INDICATIVE ALIGNMENTS AND INVERT LEVELS OF EXISTING PIPELINES. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-PP-DR-W-75, 75A, 83, 83A, 84, 84A, 96, 96A.

LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
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off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

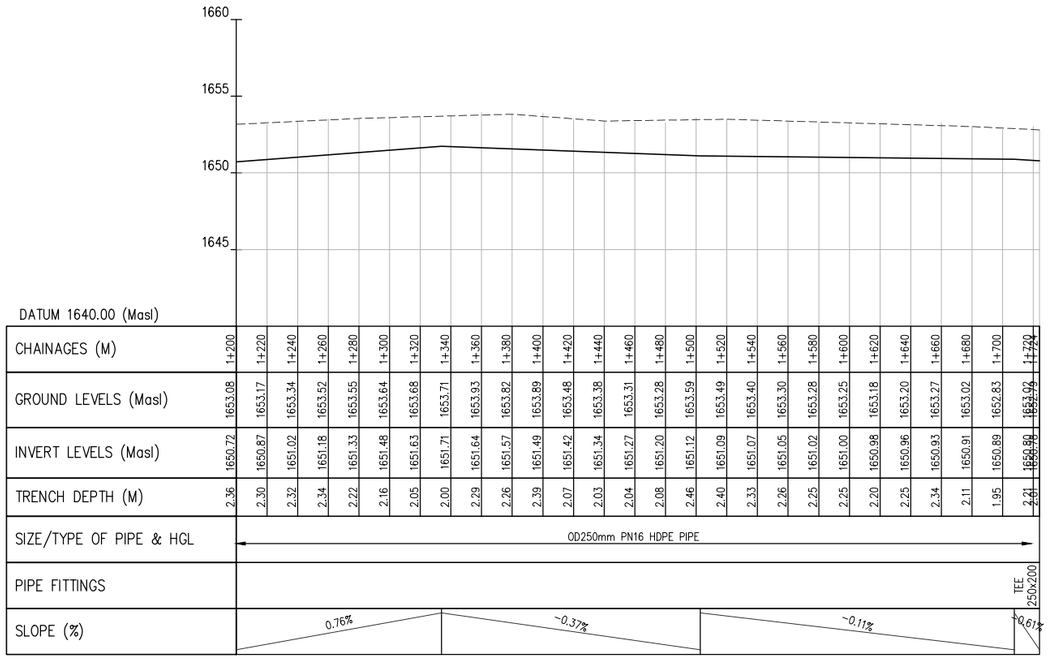
INDUSTRIAL AREA
REHABILITATION LINES - PLAN AND PROFILE
LUSAKA ROAD - Sheet 1 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-024
Revision: T0



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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LEGEND:

- – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■■■■■■■■ BRANCH WATER LINE
- AV — AIR VALVE
- WO — WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Design and Supervision Consultant:
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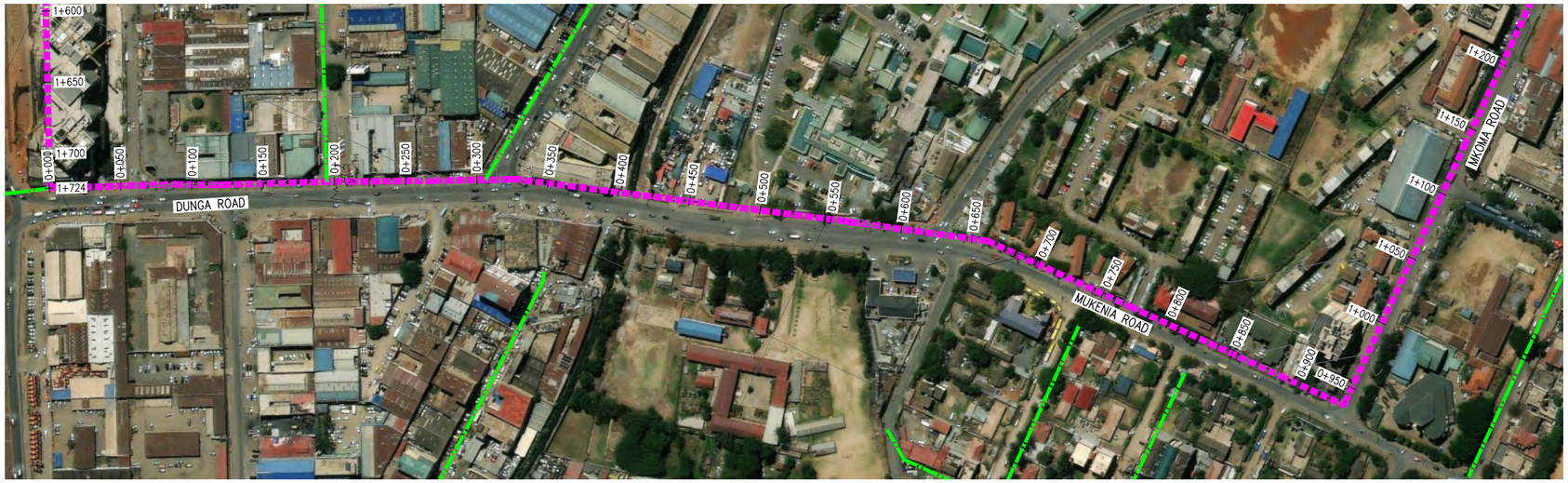
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

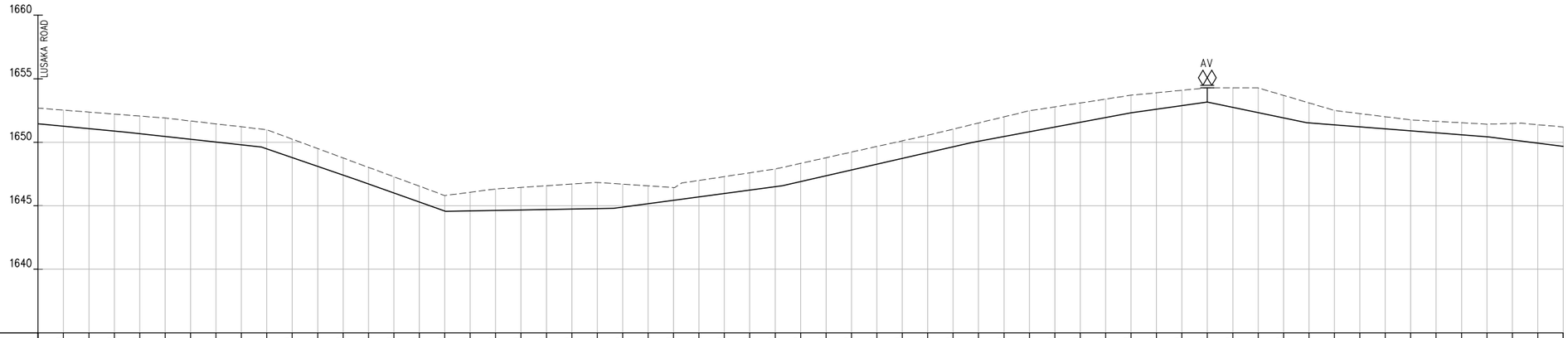
Drawing Title
INDUSTRIAL AREA
REHABILITATION LINES - PLAN AND PROFILE
LUSAKA ROAD - Sheet 2 Of 2

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-025
Revision: T0



PLAN
SCALE 1:2000

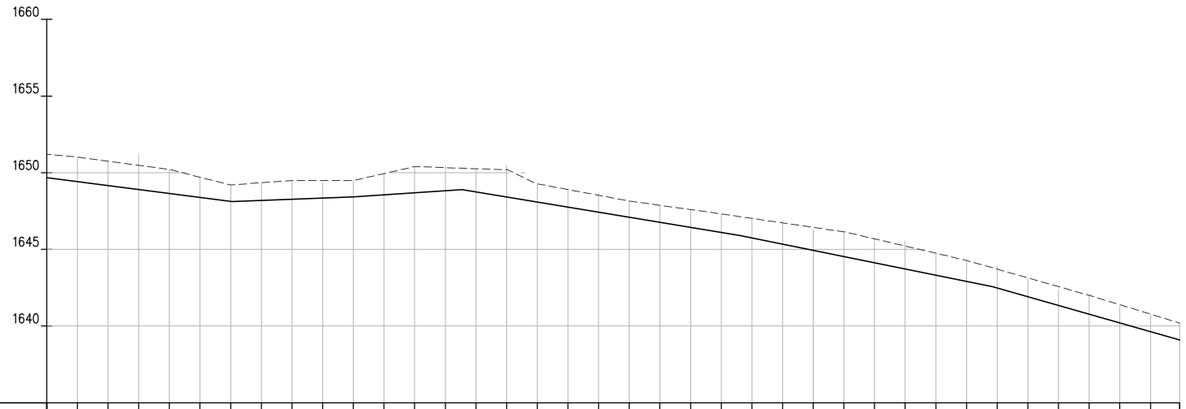


DATUM 1635.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200
GROUND LEVELS (Masl)	1652.69	1652.53	1652.37	1652.22	1652.06	1651.90	1651.67	1651.44	1651.21	1650.98	1650.24	1649.50	1648.76	1648.02	1647.28	1646.54	1645.81	1646.06	1646.32	1646.45	1646.58	1646.71	1646.83	1646.70	1646.56	1646.43	1646.99	1647.29	1647.59	1647.89	1648.34	1648.78	1649.22	1649.67	1650.11	1650.55	1651.03	1651.51	1651.99	1652.48	1652.78	1653.09	1653.39	1653.70	1653.89	1654.09	1654.28	1654.28	1654.28	1653.69	1653.09	1652.50	1652.25	1652.00	1651.76	1651.65	1651.53	1651.42	1651.48	1651.38	1651.20
INVERT LEVELS (Masl)	1651.45	1651.26	1651.07	1650.88	1650.68	1650.46	1650.23	1650.01	1649.79	1649.47	1648.79	1648.10	1647.42	1646.72	1646.01	1645.30	1644.59	1644.60	1644.64	1644.68	1644.71	1644.75	1644.78	1644.90	1645.17	1645.43	1645.70	1645.97	1646.23	1646.50	1646.90	1647.36	1647.82	1648.27	1648.73	1649.19	1649.65	1650.08	1650.46	1650.83	1651.20	1651.58	1651.95	1652.32	1652.61	1652.89	1653.17	1652.75	1652.33	1651.91	1651.52	1651.36	1651.21	1651.05	1650.90	1650.75	1650.59	1650.44	1650.18	1649.93	1649.67
TRENCH DEPTH (M)	1.24	1.27	1.30	1.33	1.38	1.45	1.44	1.43	1.42	1.51	1.46	1.40	1.34	1.30	1.27	1.24	1.21	1.46	1.68	1.77	1.87	1.96	2.04	1.79	1.39	0.99	1.29	1.33	1.36	1.40	1.44	1.42	1.41	1.39	1.38	1.36	1.39	1.43	1.54	1.65	1.58	1.51	1.44	1.38	1.29	1.20	1.11	1.53	1.95	1.77	1.58	1.14	1.04	0.95	0.86	0.90	0.94	0.98	1.29	1.45	1.53
SIZE/TYPE OF PIPE & HGL		OD200mm PN16 HDPE PIPE		



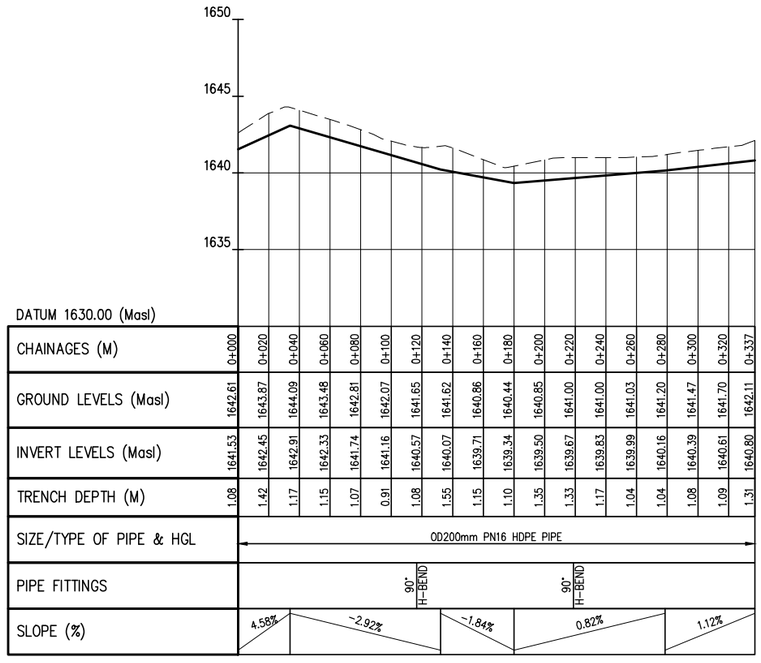
PLAN
SCALE 1:2000



| DATUM 1635.00 (Masl) | | |



PLAN
SCALE 1:1000



CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+337
GROUND LEVELS (Masl)	1642.61	1643.87	1644.09	1643.48	1642.81	1642.07	1641.65	1641.62	1640.86	1640.44	1640.85	1641.00	1641.00	1641.03	1641.20	1641.47	1641.70	1642.11
INVERT LEVELS (Masl)	1641.53	1642.45	1642.91	1642.33	1641.74	1641.16	1640.57	1640.07	1639.71	1639.34	1639.50	1639.67	1639.83	1639.99	1640.16	1640.39	1640.61	1640.80
TRENCH DEPTH (M)	1.08	1.42	1.17	1.15	1.07	0.91	1.08	1.55	1.15	1.10	1.35	1.33	1.17	1.04	1.04	1.08	1.09	1.31
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE																	
PIPE FITTINGS										90° H-BEND							90° H-BEND	
SLOPE (%)	4.58%			-2.92%				-1.84%				0.82%					1.12%	

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
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4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-PP-DR-W-017, 017A, 028, 028A, 029, 029A, 034, 034A, 045 AND 045A

LEGEND:

- – – – – – – – – EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP
Devan Plaza, Crossway Road,
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P.O Box 2758 – 00606
Nairobi.

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The Address, Muthangari Drive
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

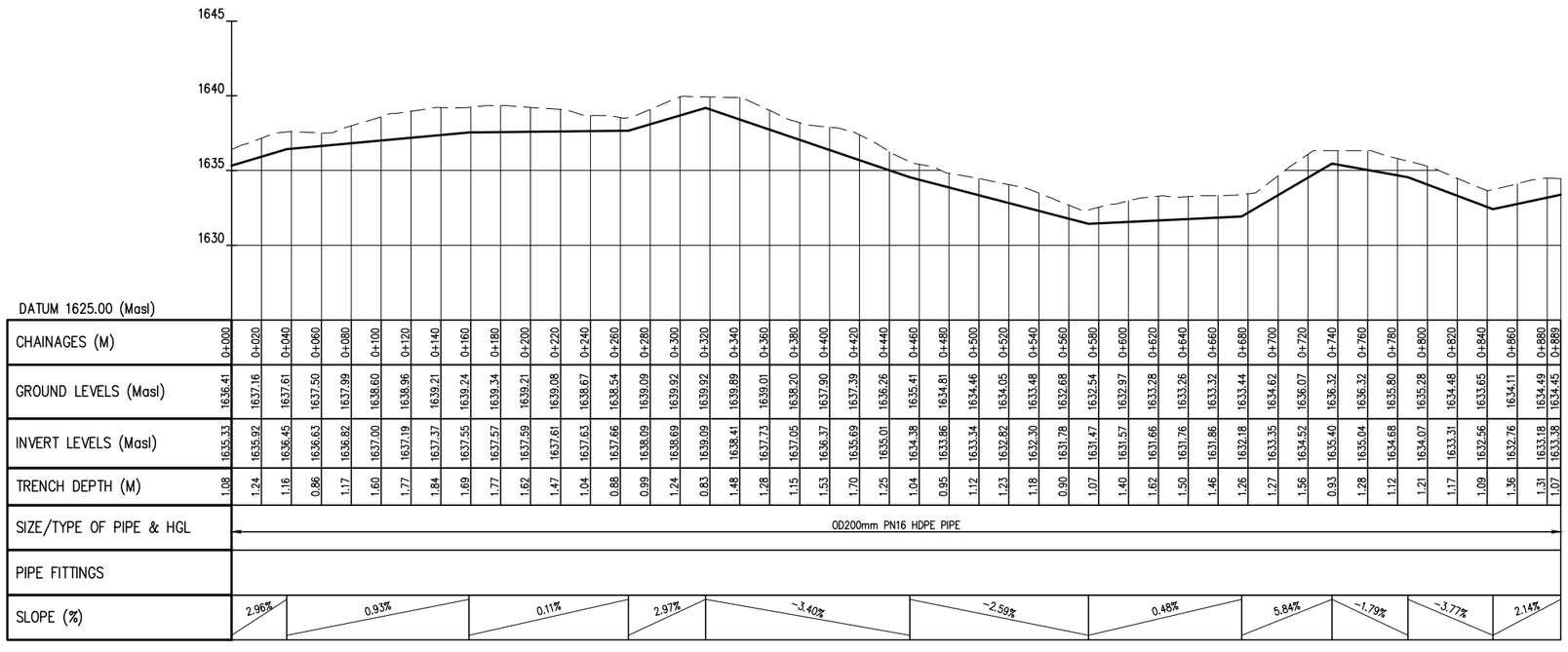
Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title
JOGOO ROAD ZONE
REHABILITATION LINES - PLAN AND PROFILE
J1 - Sheet 1 Of 1

Designed by: BAO		Drawn by: BAO	
Checked by: PN		Approved by: OBO	
Scale: AS SHOWN		Date: JUNE, 2023	
Drawing Number: 6000023-HH-PP-DR-W-041			Revision T0



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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LEGEND:

- – – – – – – – – – EXISTING GROUND PROFILE
- ■ ■ ■ ■ ■ ■ ■ ■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■ ■ ■ ■ ■ ■ ■ ■ BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP – Inventing for tomorrow
Devan Plaza, Crossway Road,
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P.O Box 2758 – 00606
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P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

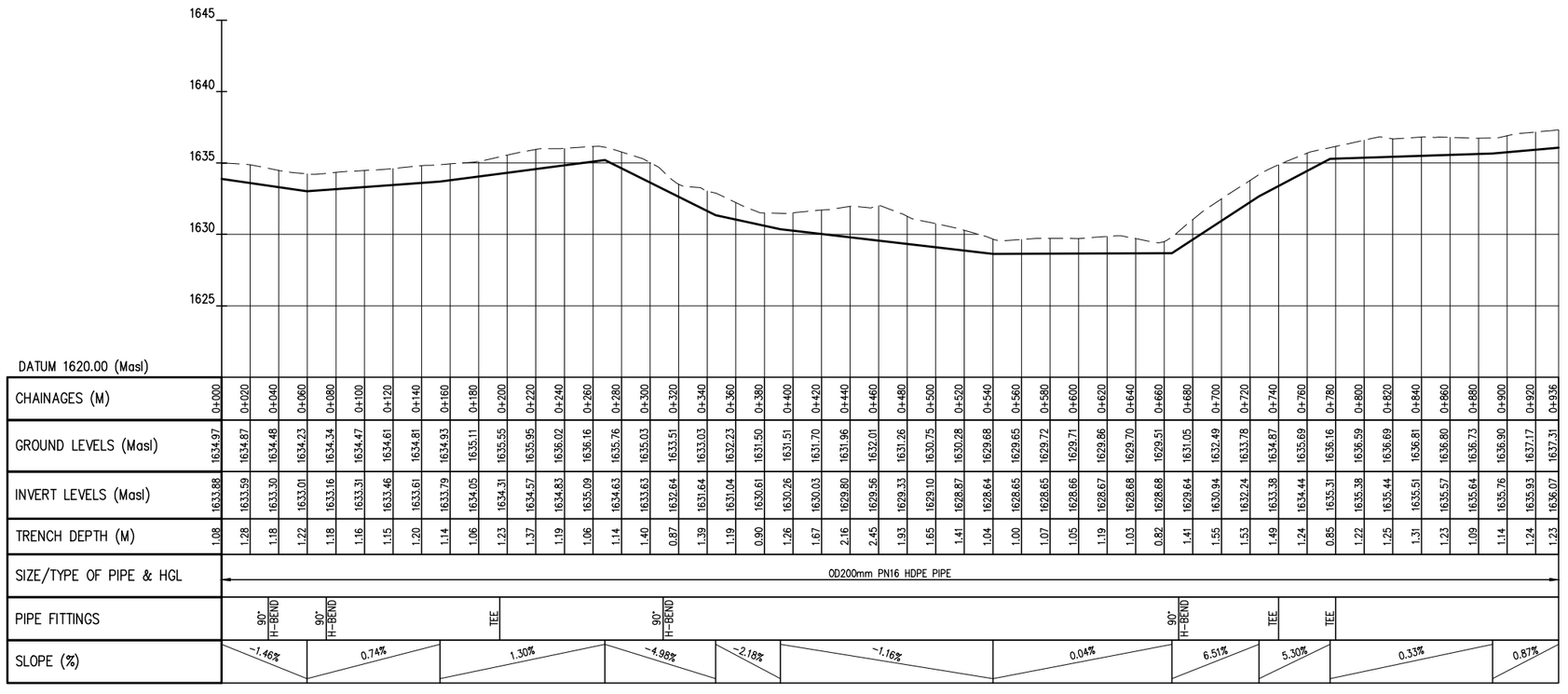
Drawing Title
JOGOO ROAD ZONE
REHABILITATION LINES - PLAN AND PROFILE
J2 - Sheet 1 Of 1

Designed by:	BAO	Drawn by:	BAO
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-042
Revision: T0



PLAN
SCALE 1:2000



PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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LEGEND:

- – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ■■■■■■■■ BRANCH WATER LINE
- AV — AIR VALVE
- WO — WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
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Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

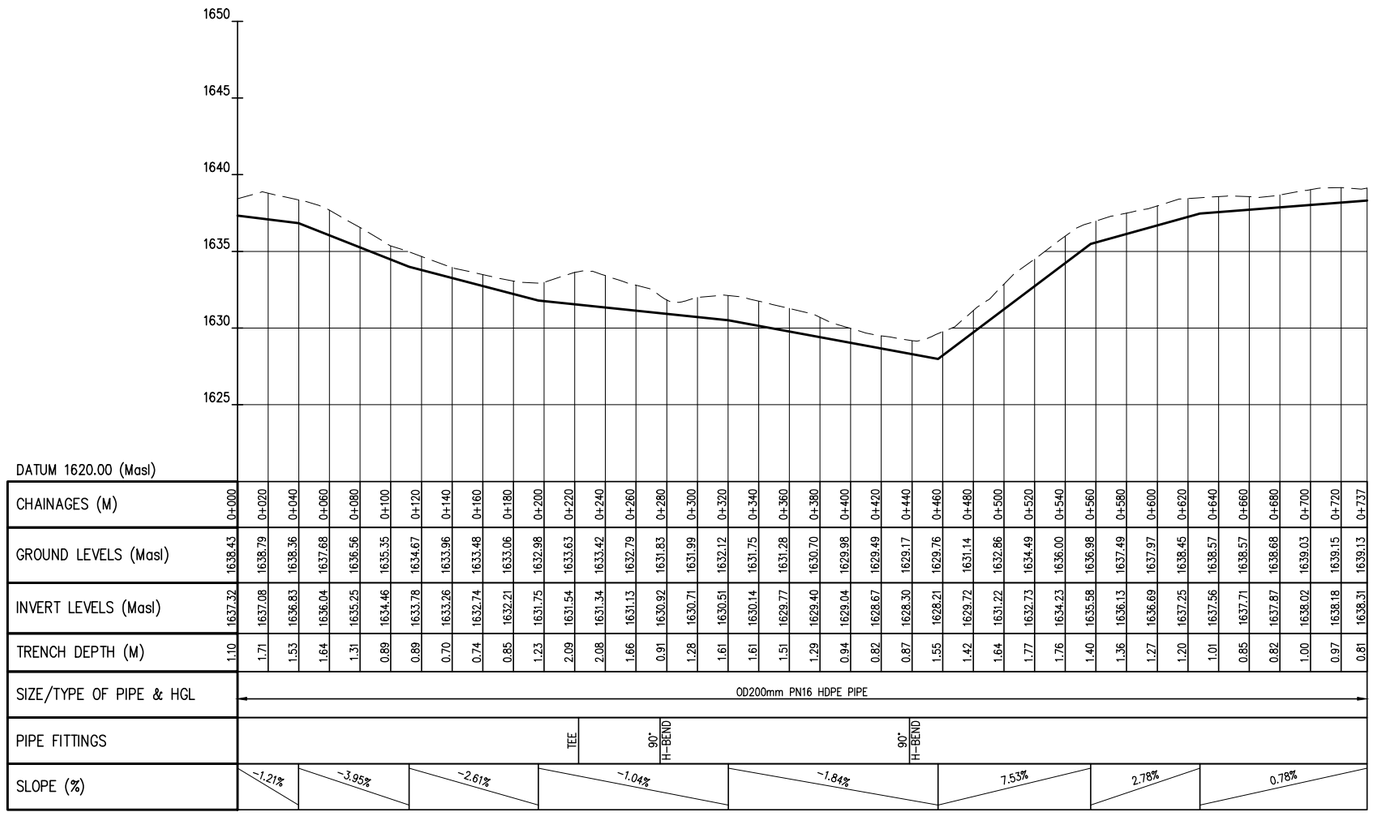
Drawing Title
JOGOO ROAD ZONE
REHABILITATION LINES - PLAN AND PROFILE
J3 - Sheet 1 Of 1

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-043
Revision: T0



PLAN
SCALE 1:2000



DATUM 1620.00 (Masl)

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GROUND LEVELS (Masl)	1638.43	1638.79	1638.36	1637.68	1636.56	1635.35	1634.67	1633.96	1633.48	1633.06	1632.98	1633.63	1633.42	1632.79	1631.83	1631.99	1632.12	1631.75	1631.28	1630.70	1629.98	1629.49	1629.17	1629.76	1631.14	1632.86	1634.49	1636.00	1636.98	1637.49	1637.97	1638.45	1638.57	1638.57	1638.68	1639.03	1639.15	1639.13
INVERT LEVELS (Masl)	1637.32	1637.08	1636.83	1636.04	1635.25	1634.46	1633.78	1633.26	1632.74	1632.21	1631.75	1631.54	1631.34	1631.13	1630.92	1630.71	1630.51	1630.14	1629.77	1629.40	1629.04	1628.67	1628.30	1628.21	1629.72	1631.22	1632.73	1634.23	1635.58	1636.13	1636.69	1637.25	1637.56	1637.71	1637.87	1638.02	1638.18	1638.31
TRENCH DEPTH (M)	1.10	1.71	1.53	1.64	1.31	0.89	0.89	0.70	0.74	0.85	1.23	2.09	2.08	1.66	0.91	1.28	1.61	1.61	1.51	1.29	0.94	0.82	0.87	1.55	1.42	1.64	1.77	1.76	1.40	1.36	1.27	1.20	1.01	0.85	0.82	1.00	0.97	0.81
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE																																					
PIPE FITTINGS																																						
SLOPE (%)	-1.21%				-3.95%				-2.61%					-1.04%											-1.84%											7.53%			2.78%			0.78%	

TEE
90° H-BEND
90° H-BEND

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

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LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
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Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

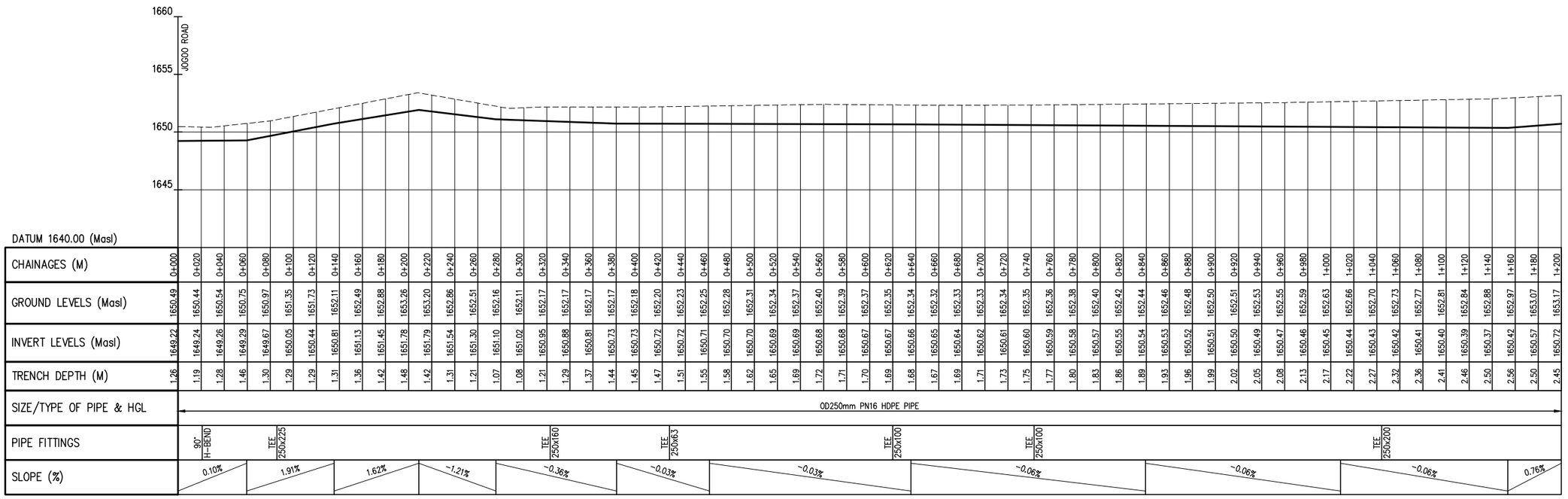
Drawing Title
JOGOO ROAD ZONE
REHABILITATION LINES - PLAN AND PROFILE
J4 - Sheet 1 Of 1

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-PP-DR-W-044
Revision: T0



PLAN
SCALE 1:2000

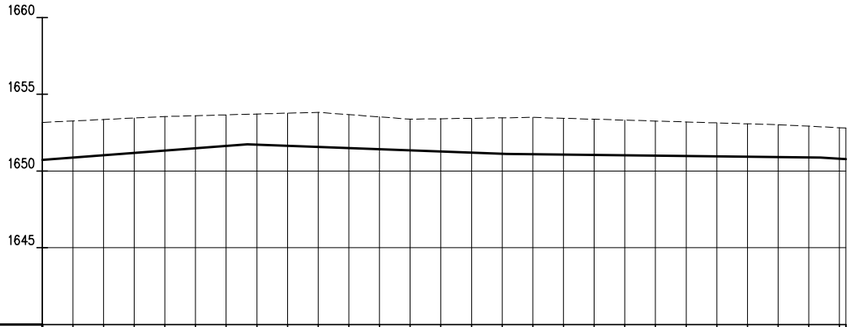


DATUM 1640.00 (Masl)

| | | |



PLAN
SCALE 1:2000



DATUM 1640.00 (Masl)

CHAINAGES (M)	GROUND LEVELS (Masl)	INVERT LEVELS (Masl)	TRENCH DEPTH (M)
1+200	1653.17	1650.72	2.45
1+220	1653.26	1650.87	2.39
1+240	1653.36	1651.02	2.33
1+260	1653.45	1651.18	2.28
1+280	1653.55	1651.33	2.22
1+300	1653.60	1651.48	2.12
1+320	1653.66	1651.63	2.03
1+340	1653.71	1651.71	2.00
1+360	1653.77	1651.64	2.13
1+380	1653.82	1651.57	2.26
1+400	1653.67	1651.49	2.18
1+420	1653.53	1651.42	2.11
1+440	1653.38	1651.34	2.03
1+460	1653.41	1651.27	2.14
1+480	1653.44	1651.20	2.24
1+500	1653.47	1651.12	2.34
1+520	1653.49	1651.09	2.40
1+540	1653.43	1651.07	2.37
1+560	1653.38	1651.05	2.33
1+580	1653.32	1651.02	2.29
1+600	1653.26	1651.00	2.26
1+620	1653.20	1650.98	2.22
1+640	1653.14	1650.96	2.18
1+660	1653.08	1650.93	2.14
1+680	1653.02	1650.91	2.11
1+700	1652.92	1650.89	2.03
1+720	1652.82	1650.80	2.02
1+724	1652.80	1650.78	2.03

SIZE/TYPE OF PIPE & HGL: OD250mm PN16 HDPE PIPE

PIPE FITTINGS: TEE 250x200

SLOPE (%): 0.76% | -0.37% | -0.11% | -0.61%

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE GENERAL LAYOUT AND PLAN – FITTING DETAILS DRAWINGS.
3. THIS DRAWING SHOWS THE INDICATIVE ALIGNMENTS AND INVERT LEVELS OF EXISTING PIPELINES. FINAL LOCATIONS TO BE DETERMINED BY THE CONTRACTOR ON SITE. ALL SETTING OUT OF PIPELINES, FITTINGS, CHAMBERS AND FINAL INVERT LEVELS TO BE APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.
4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-PP-DR-W-75, 75A, 83, 83A, 84, 84A, 96, 96A.

LEGEND:

- EXISTING GROUND PROFILE
- PROPOSED PIPELINE
- PIPE INVERT PROFILE
- BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP Inventing for tomorrow
Devan Plaza, Crossway Road, Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

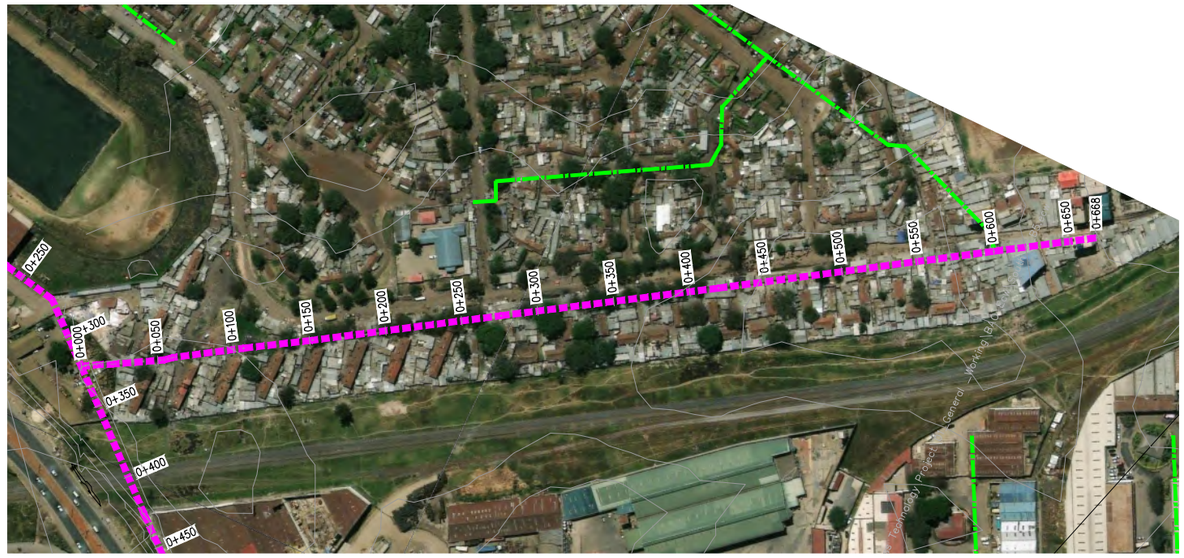
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

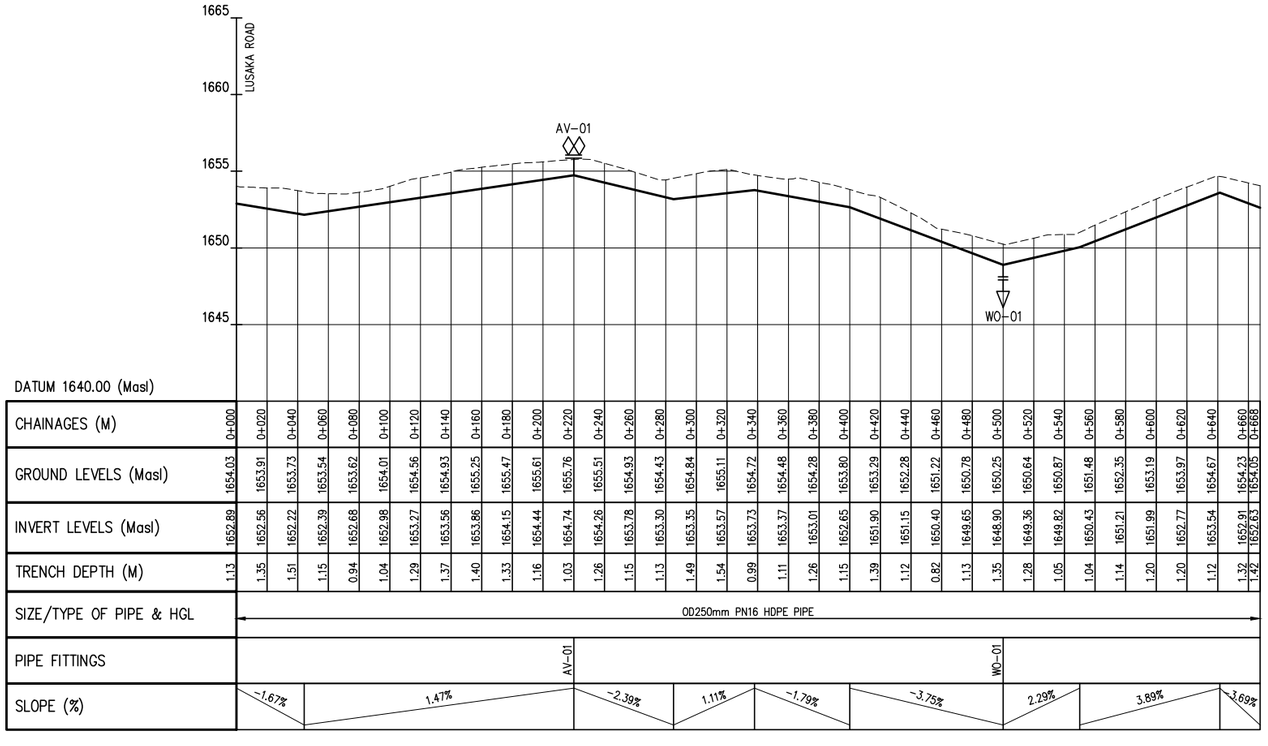
Drawing Title
INDUSTRIAL AREA
REHABILITATION LINES - PLAN AND PROFILE
LUSAKA ROAD - Sheet 2 Of 2

Designed by:	BAO	Drawn by:	BAO
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	APRIL, 23

Drawing Number: 6000023-HH-PP-DR-W-046
Revision: T0



PLAN
SCALE 1:2000



DATUM 1640.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+668
GROUND LEVELS (Masl)	1654.03	1653.91	1653.73	1653.54	1653.62	1654.01	1654.56	1654.93	1655.25	1655.47	1655.61	1655.76	1655.51	1654.93	1654.43	1654.84	1655.11	1654.72	1654.48	1654.28	1653.80	1653.29	1652.28	1651.22	1650.78	1650.25	1650.64	1650.87	1651.48	1652.35	1653.19	1653.97	1654.67	1654.23	1654.05
INVERT LEVELS (Masl)	1652.89	1652.56	1652.22	1652.39	1652.68	1652.98	1653.27	1653.56	1653.86	1654.15	1654.44	1654.74	1654.26	1653.78	1653.30	1653.35	1653.57	1653.73	1653.37	1653.01	1652.65	1651.90	1651.15	1650.40	1649.65	1648.90	1649.36	1649.82	1650.43	1651.21	1651.99	1652.77	1653.54	1652.91	1652.63
TRENCH DEPTH (M)	1.13	1.35	1.51	1.15	0.94	1.04	1.29	1.37	1.40	1.33	1.16	1.03	1.26	1.15	1.13	1.49	1.54	0.99	1.11	1.26	1.15	1.39	1.12	0.82	1.13	1.35	1.28	1.05	1.04	1.14	1.20	1.20	1.12	1.32	1.42
SIZE/TYPE OF PIPE & HGL	OD250mm PN16 HDPE PIPE																																		
PIPE FITTINGS	AV-01																									WO-01									
SLOPE (%)	-1.67%					1.47%							-2.39%		1.11%			-1.79%				-3.75%					2.29%				3.89%				3.69%

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
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4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-PP-DR-W-75, 75A, 83, 83A, 84, 84A, 96, 96A.

LEGEND:

- – – – – – – – – EXISTING GROUND PROFILE
- ■■■■■■■■ PROPOSED PIPELINE
- ——————— PIPE INVERT PROFILE
- ——— BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:
THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:
INGEROP inventing for tomorrow
Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

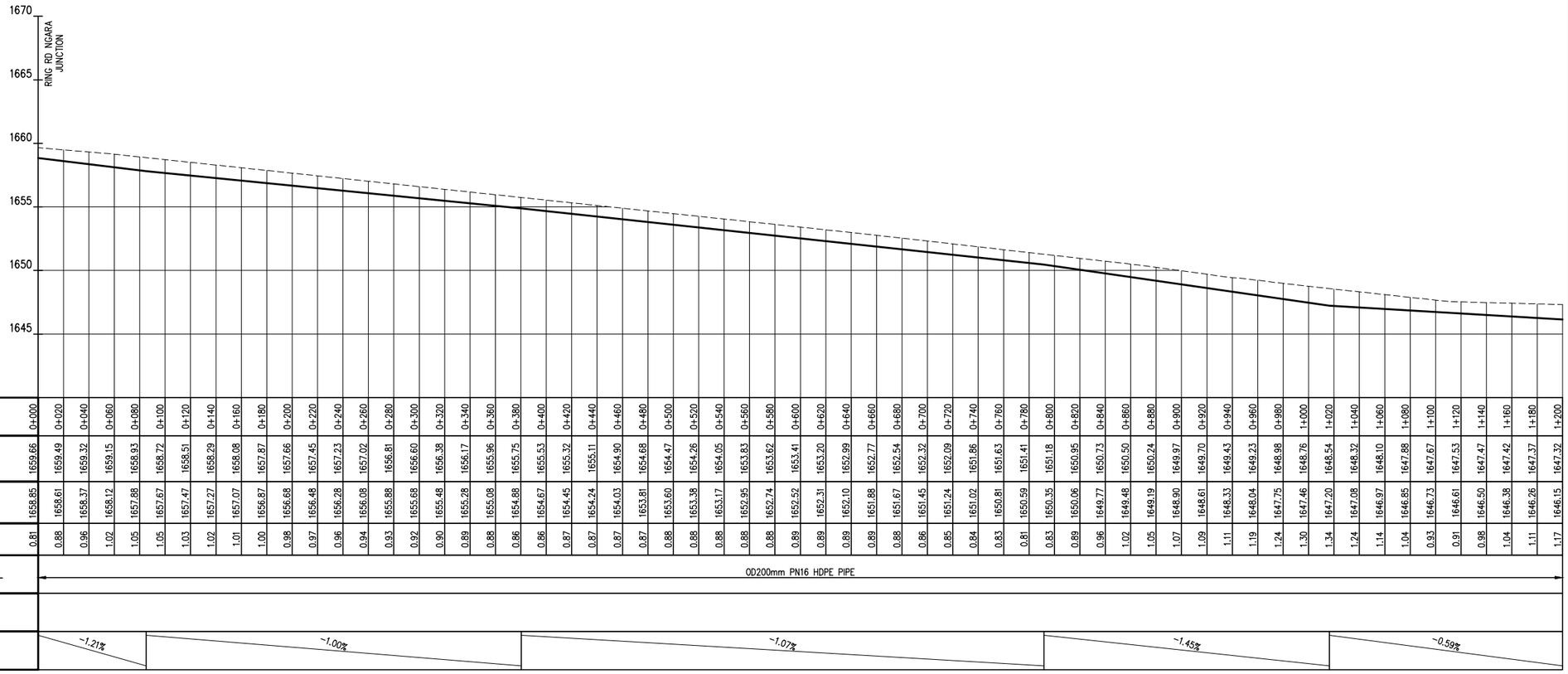
Drawing Title
INDUSTRIAL AREA
REHABILITATION LINES - PLAN AND PROFILE
OFF LUSAKA ROAD - Sheet 1 Of 1

Designed by: BAO	Drawn by: BAO
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: APRIL, 23

Drawing Number: 6000023-HH-PP-DR-W-047
Revision: T0

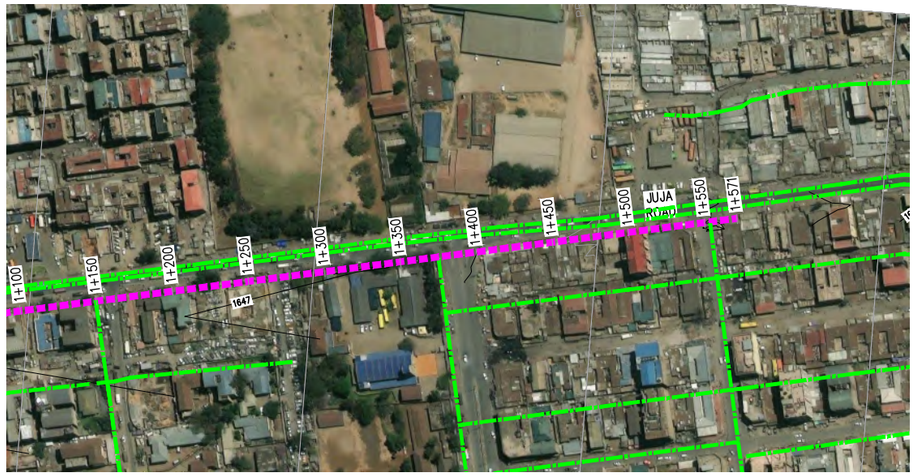


PLAN
SCALE 1:2000

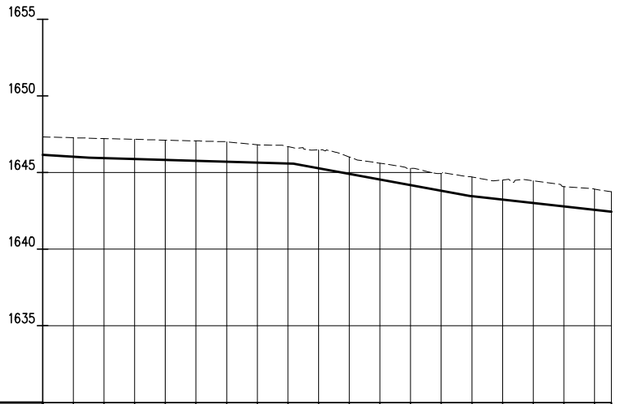


DATUM 1640.00 (Masl)

CHAINAGES (M)	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200
GROUND LEVELS (Masl)	1659.66	1659.49	1659.32	1659.15	1658.93	1658.72	1658.51	1658.29	1658.08	1657.87	1657.66	1657.45	1657.23	1657.02	1656.81	1656.60	1656.38	1656.17	1655.96	1655.75	1655.53	1655.32	1655.11	1654.90	1654.68	1654.47	1654.26	1654.05	1653.83	1653.62	1653.41	1653.20	1652.99	1652.77	1652.54	1652.32	1652.09	1651.86	1651.63	1651.41	1651.18	1650.95	1650.73	1650.50	1650.24	1649.97	1649.70	1649.43	1649.23	1648.98	1648.76	1648.54	1648.32	1648.10	1647.88	1647.67	1647.53	1647.47	1647.42	1647.37	1647.32
INVERT LEVELS (Masl)	1658.85	1658.61	1658.37	1658.12	1657.88	1657.67	1657.47	1657.27	1657.07	1656.87	1656.68	1656.48	1656.28	1656.08	1655.88	1655.68	1655.48	1655.28	1655.08	1654.88	1654.67	1654.45	1654.24	1654.03	1653.81	1653.60	1653.38	1653.17	1652.95	1652.74	1652.52	1652.31	1652.10	1651.88	1651.67	1651.45	1651.24	1651.02	1650.81	1650.59	1650.35	1650.06	1649.77	1649.48	1649.19	1648.90	1648.61	1648.33	1648.04	1647.75	1647.46	1647.20	1647.08	1646.97	1646.85	1646.73	1646.61	1646.50	1646.38	1646.26	1646.15
TRENCH DEPTH (M)	0.81	0.88	0.96	1.02	1.05	1.05	1.03	1.02	1.01	1.00	0.98	0.97	0.96	0.94	0.93	0.92	0.90	0.89	0.88	0.86	0.86	0.87	0.87	0.87	0.87	0.88	0.88	0.88	0.88	0.88	0.89	0.89	0.89	0.89	0.88	0.86	0.85	0.84	0.83	0.81	0.83	0.89	0.96	1.02	1.05	1.07	1.09	1.11	1.19	1.24	1.30	1.34	1.24	1.14	1.04	0.93	0.91	0.98	1.04	1.11	1.17
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE		



PLAN
SCALE 1:2000



DATUM 1630.00 (Masl)																						
CHAINAGES (M)	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540	1+560	1+571
GROUND LEVELS (Masl)	1647.32	1647.27	1647.22	1647.16	1647.11	1647.07	1647.00	1646.81	1646.68	1646.47	1646.01	1645.61	1645.26	1644.93	1644.71	1644.51	1644.46	1644.08	1643.91	1643.75
INVERT LEVELS (Masl)	1646.15	1646.03	1645.94	1645.88	1645.83	1645.77	1645.71	1645.65	1645.59	1645.28	1644.92	1644.55	1644.18	1643.81	1643.46	1643.24	1643.01	1642.79	1642.57	1642.45
TRENCH DEPTH (M)	1.17	1.24	1.28	1.28	1.29	1.30	1.29	1.16	1.09	1.19	1.09	1.06	1.08	1.12	1.25	1.28	1.44	1.29	1.34	1.30
SIZE/TYPE OF PIPE & HGL	OD200mm PN16 HDPE PIPE																			
PIPE FITTINGS																				
SLOPE (%)	-0.59%			-0.29%							-1.84%							-1.11%		

PROFILE
SCALES HOR 1:2000 AND VERT 1:200

NOTES

1. ALL LEVELS ARE IN METERS ABOVE ORDINARY DATUM.
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4. THIS DRAWING PROVIDES PLAN AND PROFILE DETAILS OF THE PIPELINE. ADDITIONAL DETAILS OF FIRE HYDRANTS, BRANCH PIPELINES AND DETAILED FITTINGS ARE GIVEN IN DRAWING No. 6000023-HH-FT-DR-W-017, 017A, 018, 018A, 019, 019A, 020, 020A, 021, 021A, 022, 022A, 023, 023A, 024 AND 024A.

LEGEND:

- – EXISTING GROUND PROFILE
- – PROPOSED PIPELINE
- – PIPE INVERT PROFILE
- – BRANCH WATER LINE
- AV – AIR VALVE
- WO – WASHOUT

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

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Howard Humphreys
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

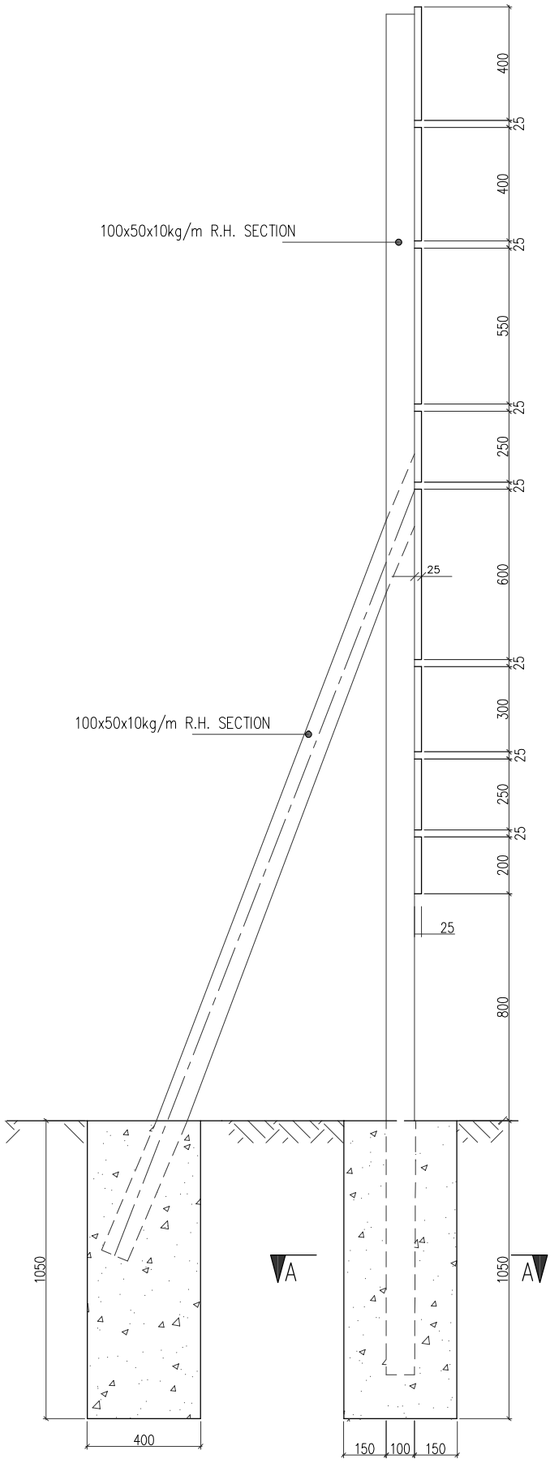
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK

Drawing Title

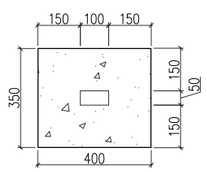
EASTLEIGH
REHABILITATION PIPELINES - PLAN AND PROFILE
JUJA ROAD - Sheet 2 Of 2

Designed by: BAO		Drawn by: BAO	
Checked by: PN		Approved by: OBO	
Scale: AS SHOWN		Date: JUNE, 2023	
Drawing Number: 6000023-HH-PP-DR-W-049			Revision T0

STANDARD DRAWINGS



SIDE ELEVATION



SECTION A – A

FRONT ELEVATION

NOTES

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED
2. FINAL WORDING ON THE SIGNBOARD AS APPROVED BY THE EMPLOYER
3. THE EXACT LOCATION OF THE SIGNBOARD ERECTION TO BE APPROVED BY THE ENGINEER ON SITE

LEGEND

R.H – RECTANGULAR HOLLOW

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

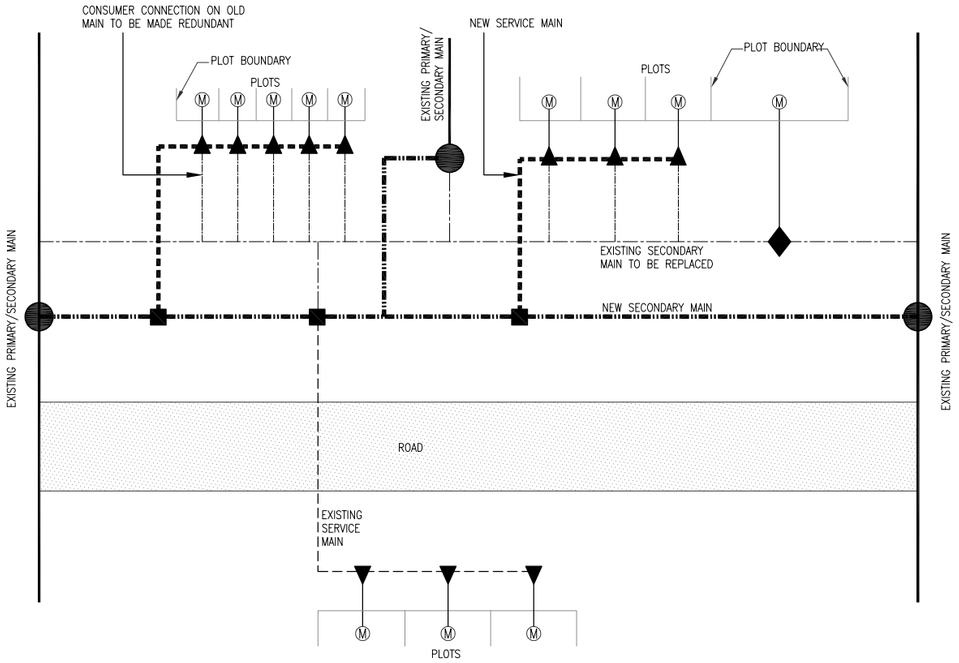
Drawing Title

STANDARD DRAWINGS
PROJECT SIGNBOARD DETAILS

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: APRIL, 23

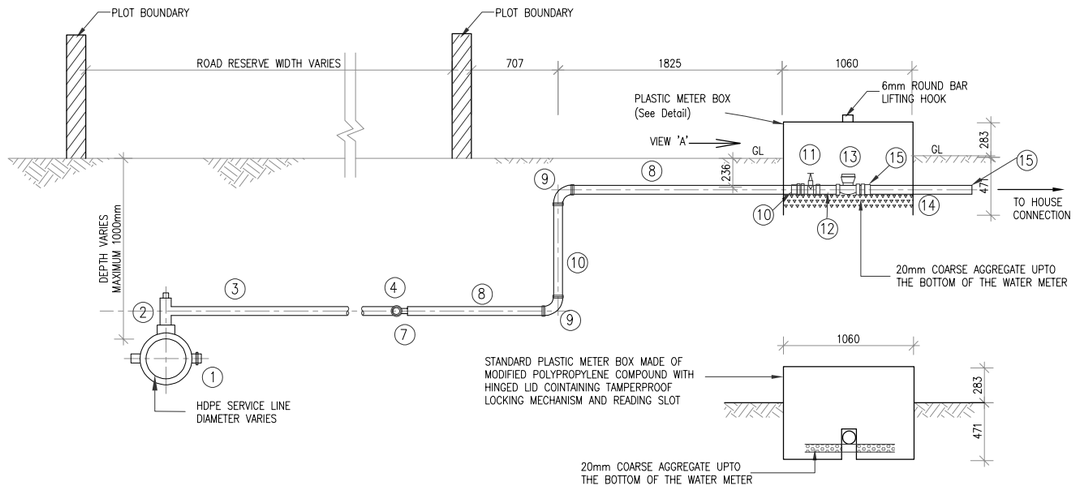
Drawing Number: 6000023-HH-SD-DR-W-001

Revision: P0



REINSTATING EXISTING CONSUMER CONNECTION

SCALE 1:



SCHEMATIC CONSUMER CONNECTION

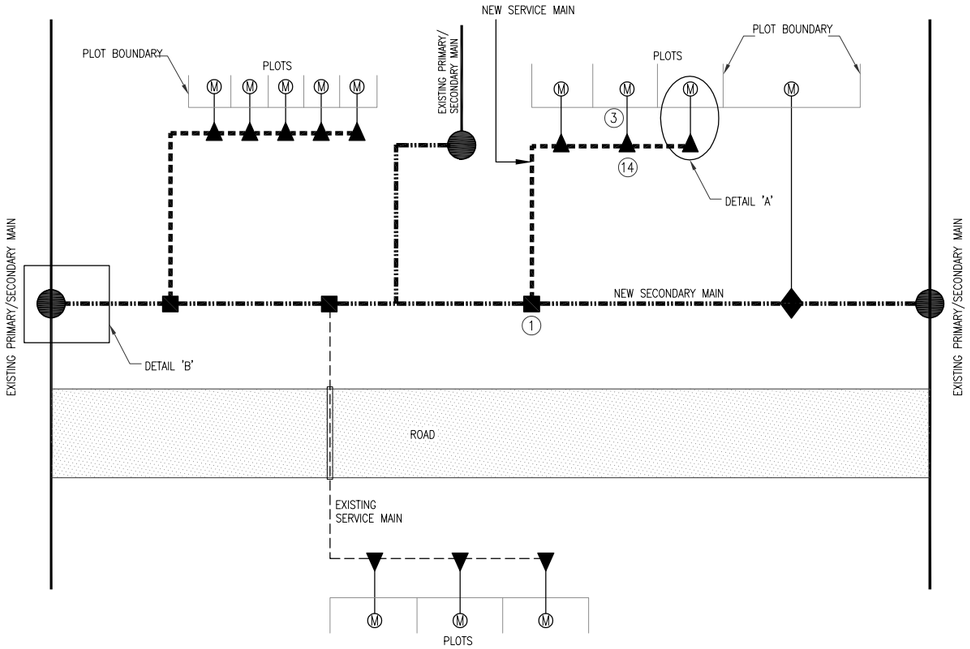
SCALE 1:25

FITTINGS SCHEDULE FOR TYPICAL HOUSE CONNECTION

ITEM No.	DESCRIPTION	QUANTITY
1	HDPE SADDLE CLAMP	1
2	D_2 DIA. BRASS FERRULE	1
3	D_2 DIA. HDPE PIPE LENGTH 1m (CUT TO SUIT ON SITE)	1
4	32x32mm DIA. TEE	1
5	D_1 DIA. HDPE PIPE LENGTH 20m (CUT TO SUIT ON SITE)	1
6	D_2 DIA. HDPE 90° ELBOW	2
7	D_2xD_1 DIA. REDUCING COUPLER	1
8	D_1 DIA. HDPE PIPE LENGTH 20m (CUT TO SUIT ON SITE)	1
9	D_1 DIA. HDPE 90° ELBOW	2
10	D_1 DIA. FLANGE ADAPTOR (STUB END) COMPLETE WITH METAL BACK UP RING	2
11	D_1 DIA. STOCK COCK	1
12	D_1 DIA. METER LINER	1
13	D_1 DIA. PLASTIC WATER METER INCLUDING STANDARD METER BOX (ELSTER KENT OR APPROVED EQUIVALENT)	1
14	D_1 DIA. HDPE PIPE 1000mm LONG (CUT TO SUIT ON SITE)	1
15	D_1 DIA. HDPE END CAP	1

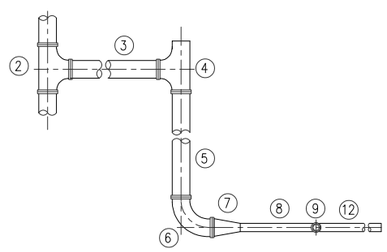
FITTINGS SCHEDULE FOR DETAIL 'B'

ITEM No.	DESCRIPTION	QUANTITY
A	HDPE TEE Dxd	1
B	SHORT LENGTH HDPE PIPE	1
C	COUPLING	1
D	STEEL SF PIPE PIECE	1
E	SLUICE VALVE	1
F	FLANGE ADAPTOR	2
G	PE PIPE	1
H	COUPLING	1



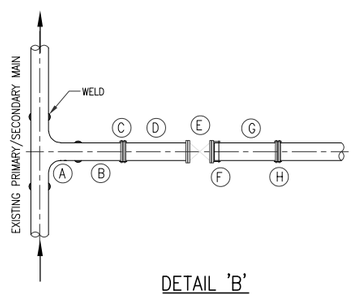
NEW CONSUMER CONNECTION

SCALE 1:



DETAIL 'A'

SCALE 1:



DETAIL 'B'

SCALE 1:

NOTES

1. ALL DIMENSIONS/LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
2. FINAL LOCATION TO BE DETERMINED ON SITE AND APPROVED BY THE ENGINEER.
3. ALL EXPOSED CONCRETE EDGES HAVE A 25mm X 25mm CHAMFER.
4. ALL REINFORCED CONCRETE SHALL BE CLASS '30/20' FOR WATER RETAINING STRUCTURES AND OTHER REINFORCED CONCRETE. BLINDING CONCRETE SHALL BE CLASS '15/20' UNLESS OTHERWISE STATED.
5. ALL PIPES AND FITTINGS TO BE SIZED TO BS4772.
6. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH OTHER RELATED DRAWINGS.
7. FLANGED INSERTS SHALL BE CAST WITH FLANGES CLEAR OF THE CONCRETE SURFACE TO ENABLE FASTENING OF BOLTS.

LEGEND

- NEW SECONDARY MAIN
- NEW TERTIARY/SERVICE MAIN
- EXISTING PRIMARY/SECONDARY MAINS
- INDIVIDUAL CONSUMER CONNECTIONS
- EXISTING SECONDARY MAIN TO BE REPLACED BY MAIN CONTRACTOR
- CONSUMER CONNECTIONS TO OLD MAIN
- EXISTING TERTIARY/SERVICE MAINS
- CONSUMER CONNECTION OFF TERTIARY/SERVICE MAIN
- CONSUMER CONNECTION OFF SECONDARY MAIN
- CONNECTION OF NEW SECONDARY MAIN TO EXISTING NETWORK
- SECONDARY MAIN TO TERTIARY/ SERVICE MAIN CONNECTION

ABBREVIATIONS:

E.G.L	EXISTING GROUND LEVEL
F.G.L	FINISHED GROUND LEVEL
R.C	REINFORCED CONCRETE
SV	SLUICE VALVE
PF	PUDDLE FLANGE
DN	NOMINAL DIAMETER
MS	MILD STEEL
GMS	GALVANISED MILD STEEL
TWL	TOP WATER LEVEL

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

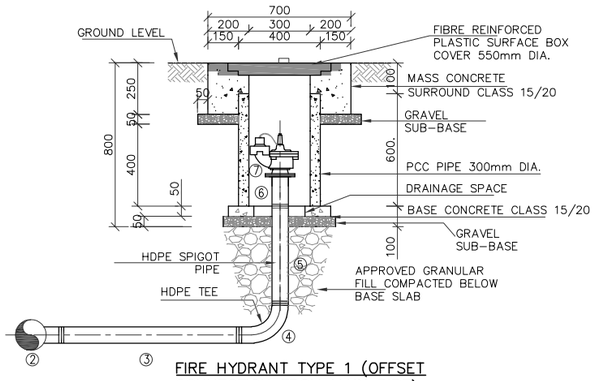
Drawing Title

STANDARD DETAILS
CONSUMER WATER CONNECTION DETAILS

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE,2023

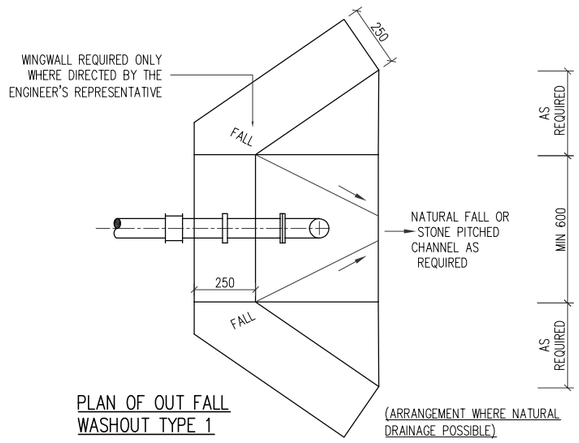
Drawing Number: 6000023-HH-SD-DR-W-002

Revision: T0



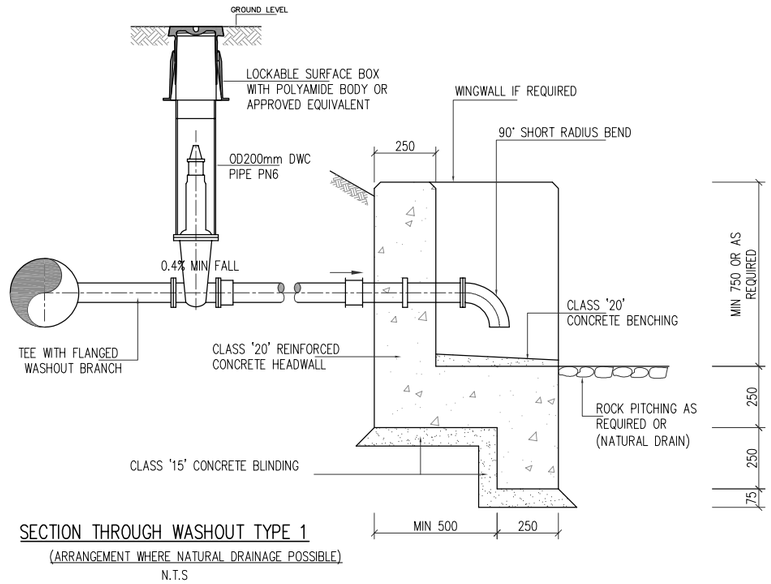
FIRE HYDRANT TYPE 1 (OFFSET CONNECTION FROM MAIN PIPE) TYPICAL NARROW CONCRETE CHAMBER

SCALE 1:10



PLAN OF OUT FALL WASHOUT TYPE 1

(ARRANGEMENT WHERE NATURAL DRAINAGE POSSIBLE)

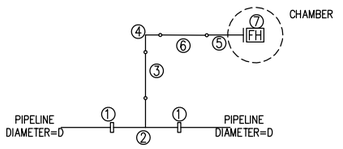


SECTION THROUGH WASHOUT TYPE 1

(ARRANGEMENT WHERE NATURAL DRAINAGE POSSIBLE)

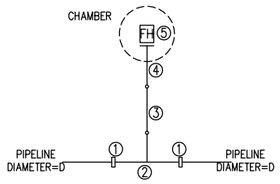
N.T.S

FIRE HYDRANT CONNECTION TYPE 1

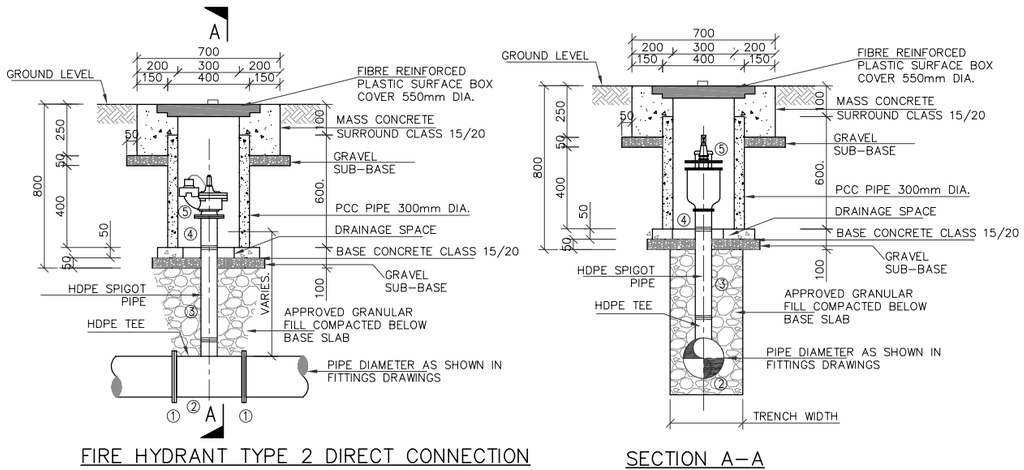


ITEM	DESCRIPTION	NO.
1	STEPPED COUPLING	2
2	OD Dx75mm DIA. HDPE PLAIN ENDED TEE	1
3	OD75mm DIA. HDPE PIPE, 1.2m LONG, CUT TO SUIT	1
4	OD75mm DIA. HDPE PLAIN ENDED 90° BEND	1
5	OD75mm DIA. HDPE STUB END WITH FLANGE	1
6	OD75mm DIA. HDPE PIPE, 1.2m LONG, CUT TO SUIT	1
7	DN80mm DIA. FIRE HYDRANT	1

FIRE HYDRANT CONNECTION TYPE 2



ITEM	DESCRIPTION	NO.
1	STEPPED COUPLING	2
2	OD Dx75mm DIA. HDPE PLAIN ENDED TEE	1
3	OD75mm DIA. HDPE PIPE, 1.2m LONG, CUT TO SUIT	1
4	OD75mm DIA. HDPE STUB END WITH FLANGE	1
5	DN80mm DIA. FIRE HYDRANT	1



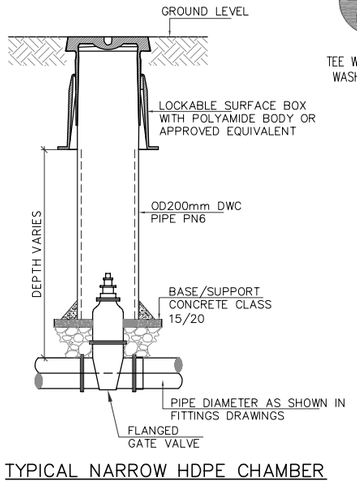
FIRE HYDRANT TYPE 2 DIRECT CONNECTION

SCALE 1:15

SECTION A–A

SCALE 1:15

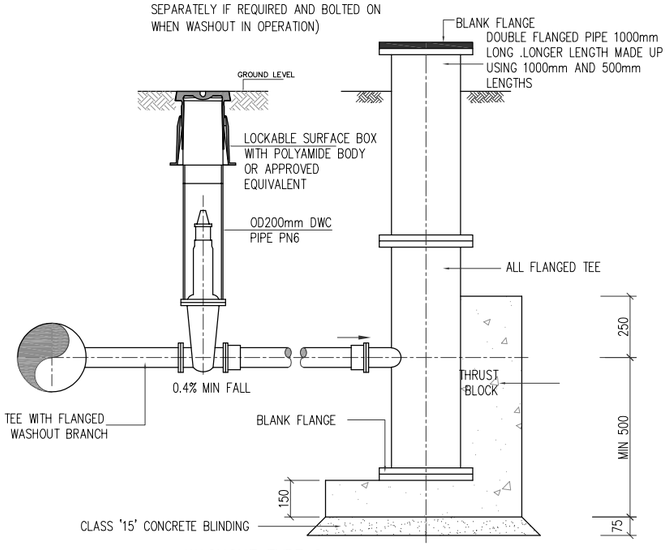
TYPICAL NARROW CONCRETE CHAMBER



TYPICAL NARROW HDPE CHAMBER FOR GATE VALVE <150mm DIA

SCALE 1:10

(ADDITIONAL BLANK FLANGE FITTED WITH HOSE ADAPTOR AND HOSE SUPPLIED SEPARATELY IF REQUIRED AND BOLTED ON WHEN WASHOUT IN OPERATION)



WASHOUT TYPE 2

(ARRANGEMENT WHERE NATURAL DRAINAGE IS NOT POSSIBLE) N.T.S

TABLE OF WASHOUT BRANCH SIZES

MAIN DIAMETER	WASHOUT BRANCH
100 – 400	80
450 – 600	100
650 – 800	150

NOTES

1. ALL DIMENSION ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. ALL FABRIC REINFORCEMENT SHOULD CONFIRM TO BS 4483
3. SURFACE BOXES TO CHAMBERS TO BE OF CAST IRON
4. ADDITIONAL RISER PIECES AND TAPERS ON WASHUOT BRANCHES TO BE USED AS REQUIRED BY THE ENGINEER REPRESENTATIVE
5. ALL EXTERNAL EDGES TO BE CHAMFERED (25x25mm)
6. ALL PRECAST CONCRETE IS CLASS '30'

LEGEND:

F.G.L – FINISHED GROUND LEVEL

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

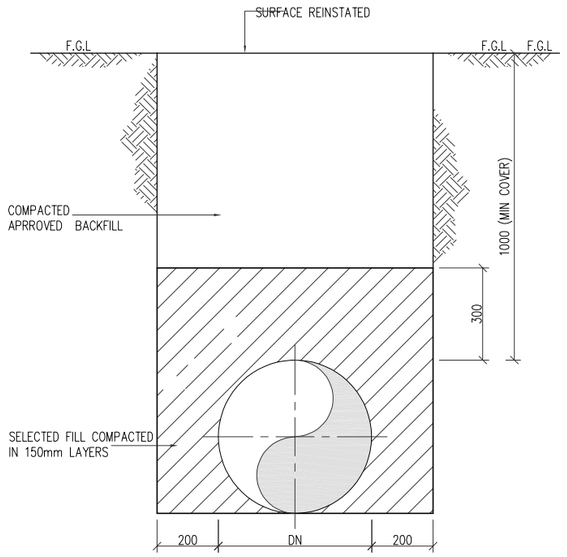
Drawing Title

STANDARD DRAWINGS
FIRE HYDRANT,GATE VALVE AND WASHOUT DETAILS

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

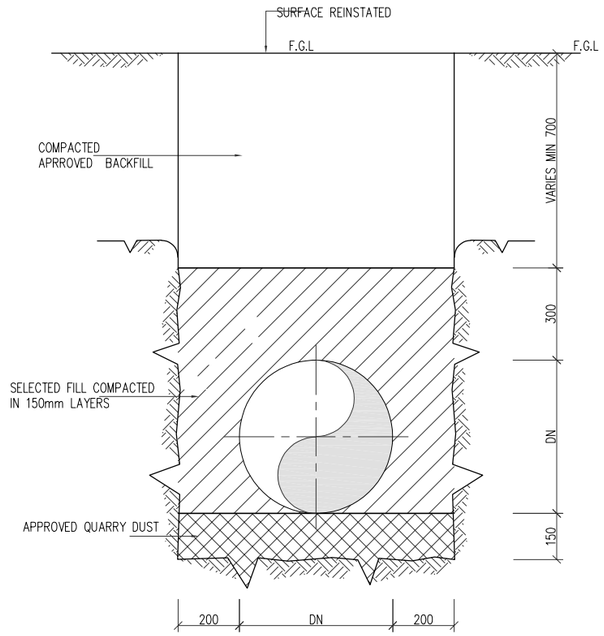
Drawing Number: 6000023-HH-SD-DR-W-003

Revision: T0



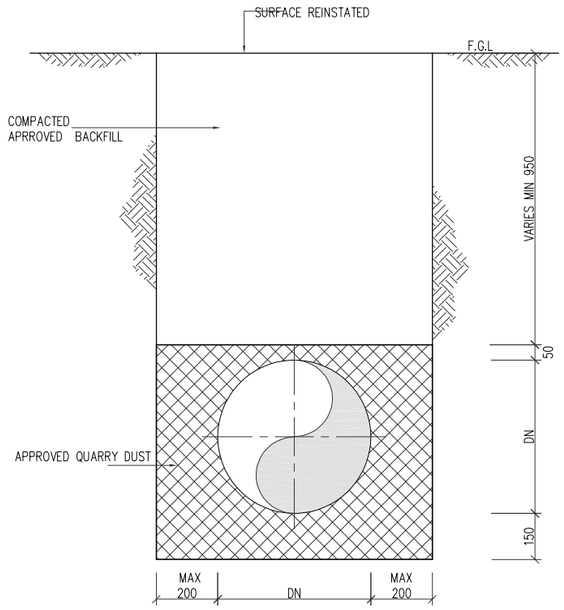
TYPICAL TRENCH

SCALE 1:10



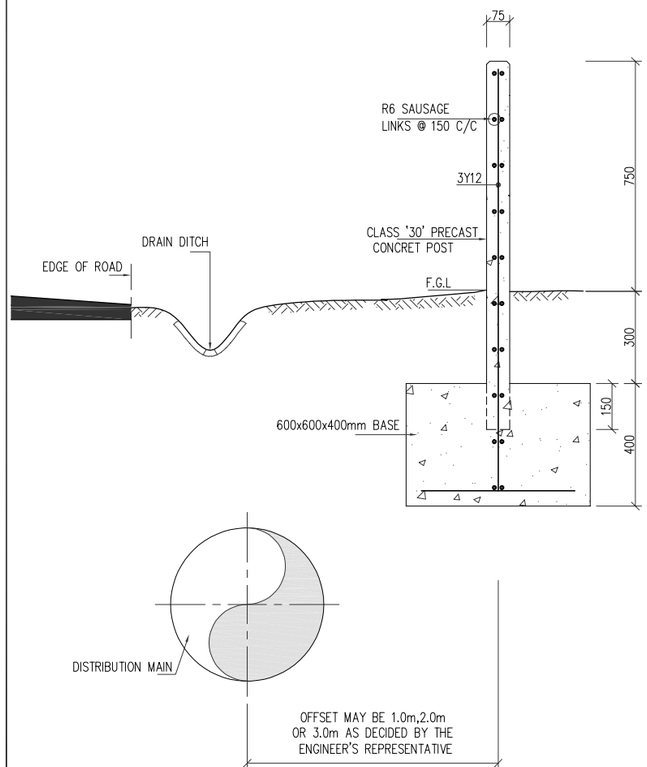
TRENCH IN ROCK

SCALE 1:10



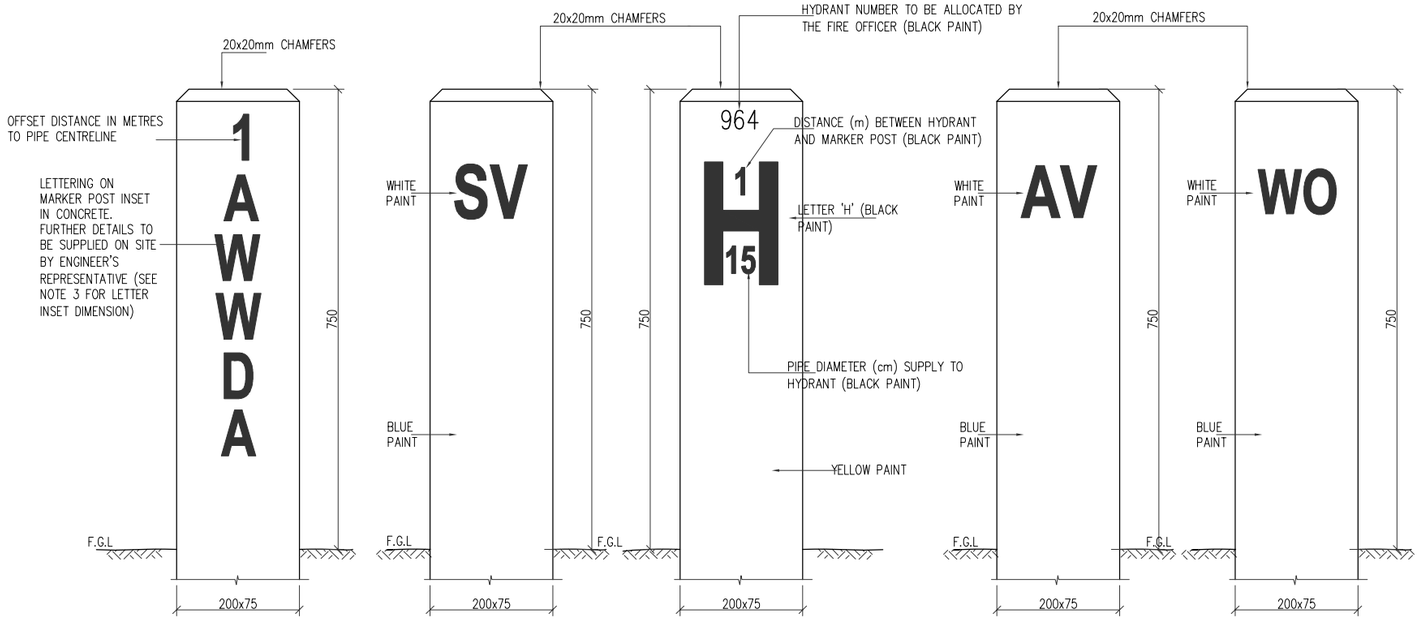
PIPE BEDDING DETAIL IN BLACK COTTON SOIL

SCALE 1:10



MARKER POST (FOR PIPELINE)
TYPICAL SECTION

N.T.S



PIPELINE MARKER POST LETTERING

N.T.S

SLUICE VALVE MARKER POST LETTERING

N.T.S

FIRE HYDRANT MARKER POST LETTERING

N.T.S

AIR VALVE MARKER POST LETTERING

N.T.S

WASHOUT MARKER POST LETTERING

N.T.S

MARKER POST ELEVATIONS

(SECTION SIMILAR TO MARKER POST FOR PIPELINE)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. ALL CORNERS OF PRECAST UNITS TO HAVE A CHAMFER OF 20mm
3. LETTERING ON MARKER POSTS TO BE ENGRAVED ABOUT 8mm IN CONCRETE
4. MARKER POSTS TO BE POSITIONED IN SAFE LOCATIONS WHERE POSSIBLE AGAINST BOUNDARY OF ROAD RESERVE
5. QUARRY DUST SHALL NOT HAVE ANY GRAINS OF DIAMETER GREATER THAN 5mm AND FINES OF DIAMETER LESS THAN 0.05mm SHALL NOT EXCEED 15%

LEGEND:

F.G.L	–FINISHED GROUND LEVEL
DN	–NOMINAL DIAMETER
SV	–SLUICE VALVE
AV	–AIR VALVE
WO	–WASHOUT
H	–FIRE HYDRANT
AWWDA	–ATHI WATER WORKS DEVELOPMENT AGENCY

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
off Kiambu Road
P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

Devan Plaza, Crossway Road,
Westlands.
P.O Box 2758 – 00606
Nairobi.

The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

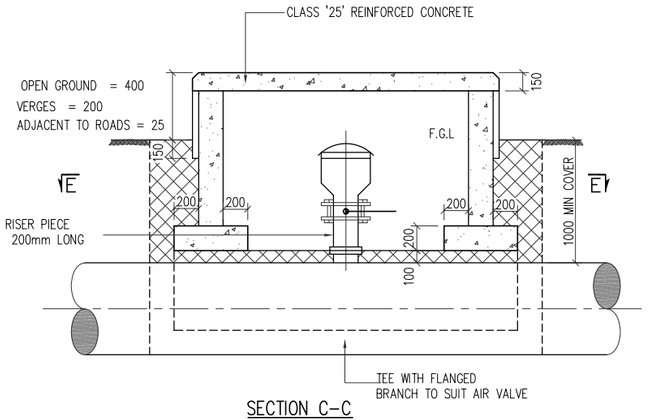
Drawing Title

STANDARD DRAWINGS
MARKER POSTS AND TRENCH DETAILS

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE,2023

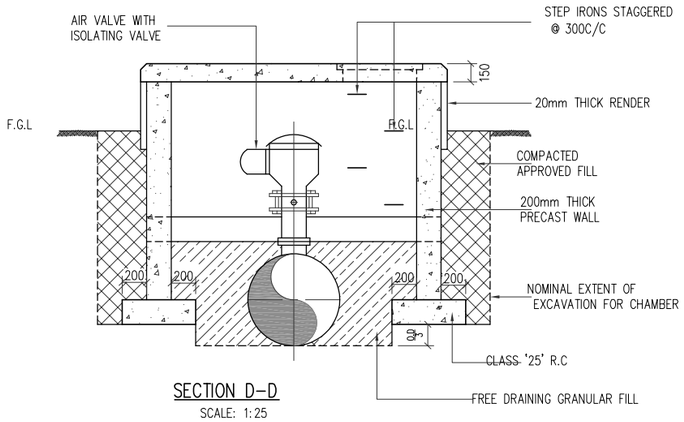
Drawing Number: 6000023-HH-SD-DR-W-004

Revision: T0



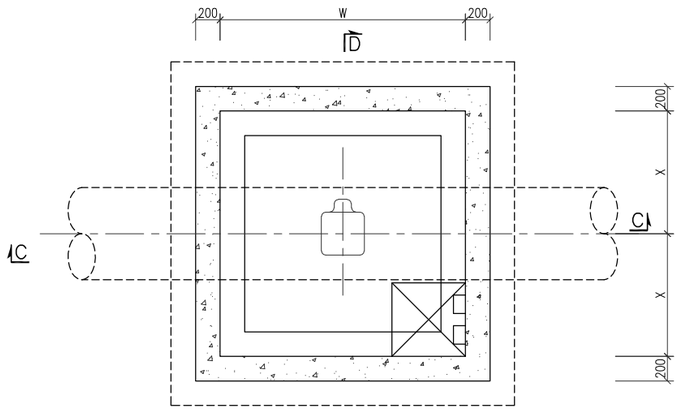
SECTION C–C

SCALE: 1:25



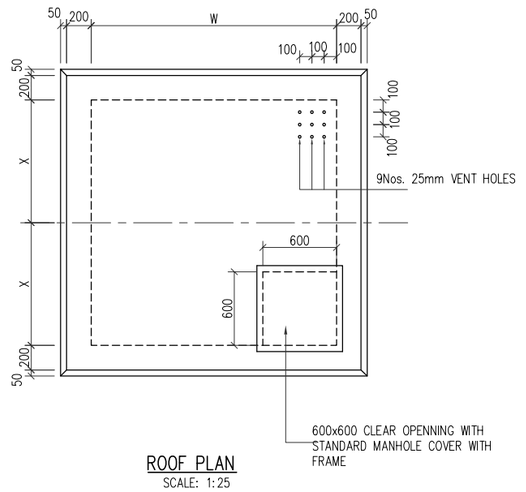
SECTION D–D

SCALE: 1:25



SECTIONAL PLAN E–E
AIR VALVE CHAMBER

SCALE: 1:25



ROOF PLAN

SCALE: 1:25

SCHEDULE FOR AIR VALVE CHAMBER

MAIN DIAMETER	AIR VALVE BRANCH	TYPE	W	X
UP TO 400	DN 80	A	850	850
450 TO 600	DN 100	A	850	850

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED
2. ALL CONCRETE TO BE CLASS '25' UNLESS OTHERWISE STATED
3. ALL EXPOSED CONCRETE MEMBERS TO HAVE A CHAMFER OF 25mm UNLESS STATED OTHERWISE
4. ALL STEEL MANHOLE COVERS TO BE PAINTED AFTER FABRICATION WITH TWO COATS OF ZINC BASED PRIMER
5. STEP IRONS ARE ONLY REQUIRED WHERE CHAMBER IS GREATER THAN 1000mm. DEEP
6. MINIMUM COVER TO ALL REINFORCEMENT TO BE 40mm
7. ADDITIONAL RISER PIECES TO BE USED AS DIRECTED BY THE ENGINEER'S REPRESENTATIVES
8. THE CONTRACTOR MAY SUPPLY UNITS IN CLASS '30' PRECAST CONCRETE

LEGEND:

F.G.L – FINISHED GROUND LEVEL
R.C – REINFORCED CONCRETE
O.D – OUTSIDE DIAMETER
C/C – CENTRE TO CENTRE

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

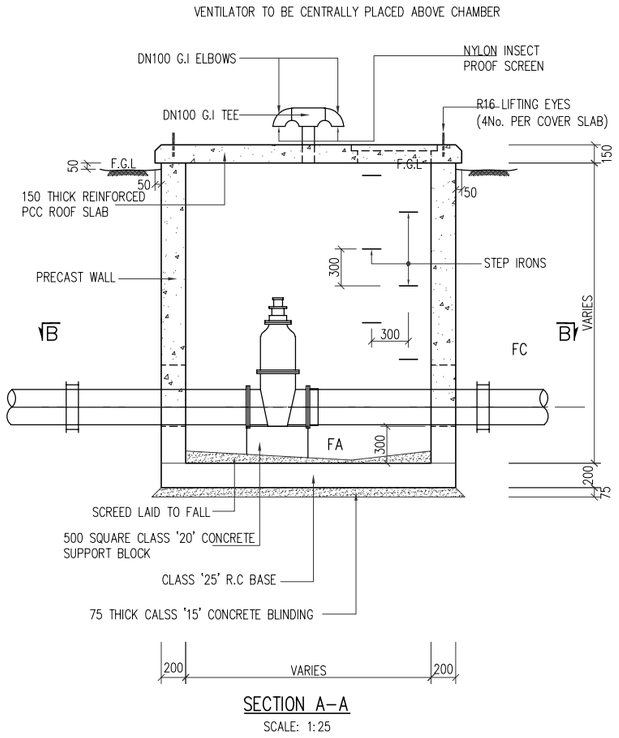
Drawing Title

STANDARD DRAWINGS
AIR VALVE CHAMBER

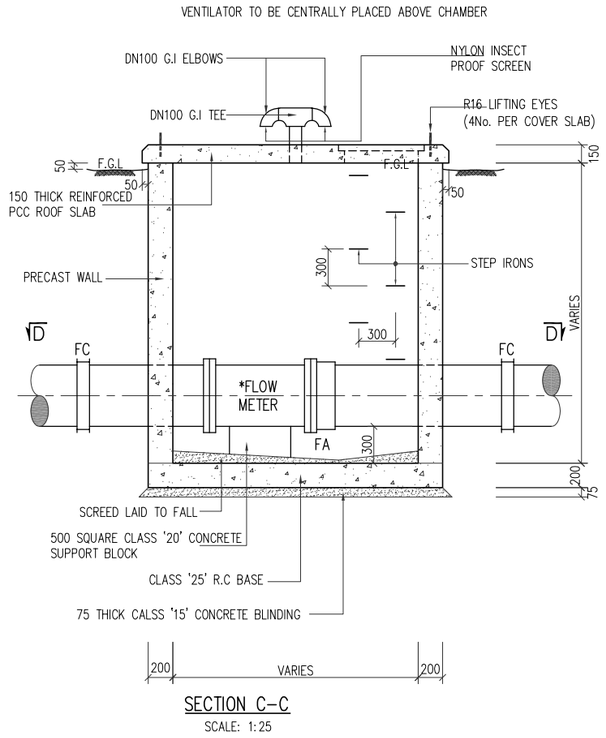
Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-SD-DR-W-005

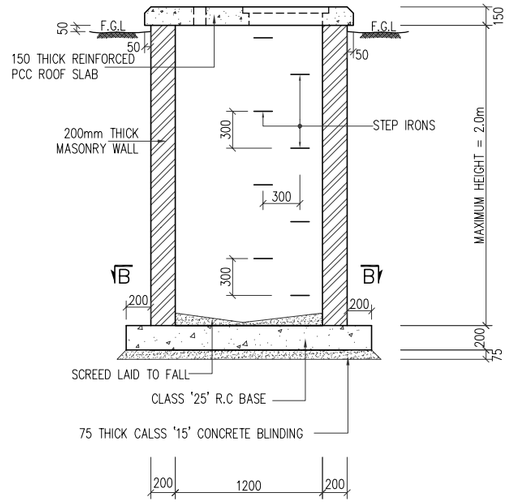
Revision: T0



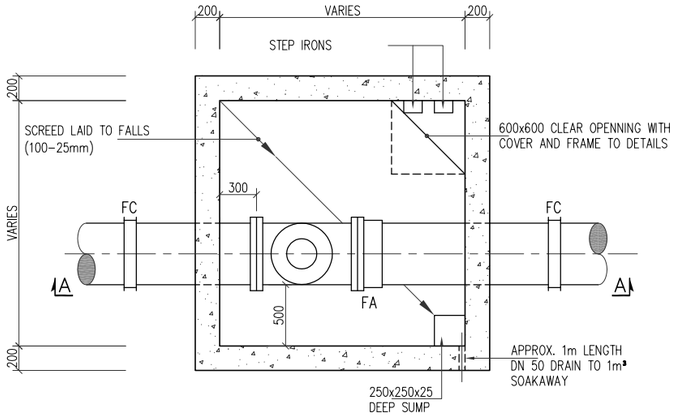
SECTION A–A
SCALE: 1:25



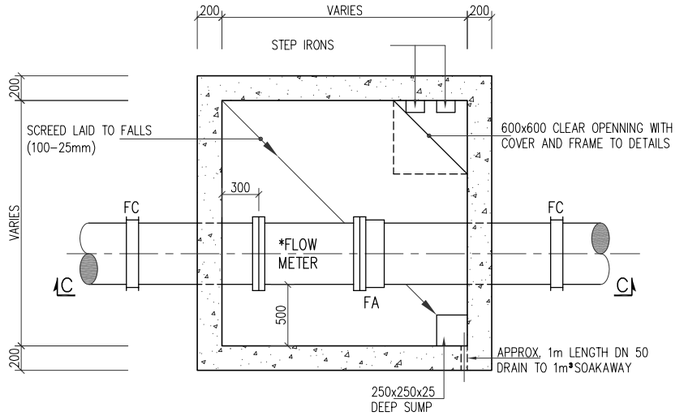
SECTION C–C
SCALE: 1:25



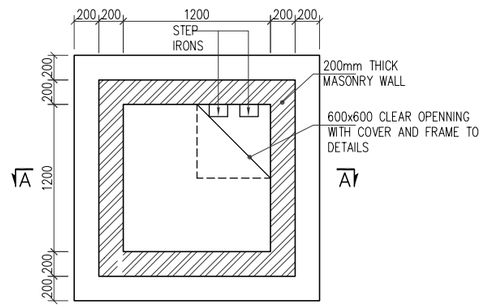
SECTION A–A
SCALE: 1:25



SECTIONAL PLAN B–B
GATE VALVE CHAMBER
SCALE: 1:25



SECTIONAL PLAN D–D
FLOWMETER CHAMBER
SCALE: 1:25



SECTIONAL PLAN B–B
TYPICAL MASONRY CHAMBER
SCALE: 1:25

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED
2. ALL CONCRETE TO BE CLASS '25' UNLESS OTHERWISE STATED
3. ALL EXPOSED CONCRETE MEMBERS TO HAVE A CHAMFER OF 25mm UNLESS STATED OTHERWISE
4. ALL STEEL MANHOLE COVERS TO BE PAINTED AFTER FABRICATION WITH TWO COATS OF ZINC BASED PRIMER
5. STEP IRONS ARE ONLY REQUIRED WHERE CHAMBER IS GREATER THAN 1000mm. DEEP
6. MINIMUM COVER TO ALL REINFORCEMENT TO BE 40mm
7. ADDITIONAL RISER PIECES TO BE USED AS DIRECTED BY THE ENGINEER'S REPRESENTATIVES
8. THE CONTRACTOR MAY SUPPLY UNITS IN CLASS '30' PRECAST CONCRETE

LEGEND:

F.G.L – FINISHED GROUND LEVEL
R.C – REINFORCED CONCRETE
O.D – OUTSIDE DIAMETER
C/C – CENTRE TO CENTRE

Client:

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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

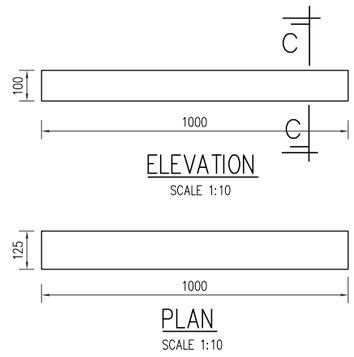
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

STANDARD DRAWINGS
GATE VALVE & FLOW METER CHAMBER

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE, 2023

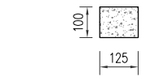
Drawing Number: 6000023-HH-SD-DR-W-006
Revision: T0



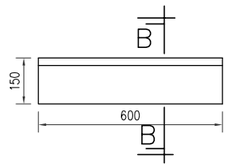
ELEVATION
SCALE 1:10

PLAN
SCALE 1:10

PRECAST CONCRETE CHANNEL



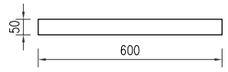
SECTION C – C
SCALE 1:10



ELEVATION
SCALE 1:10

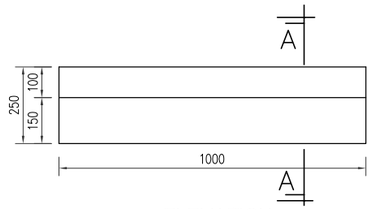


SECTION B – B
SCALE 1:10

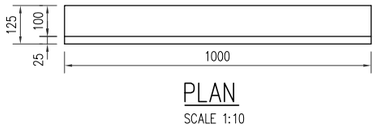


PLAN
SCALE 1:10

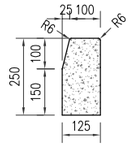
PRECAST CONCRETE EDGING



ELEVATION
SCALE 1:10

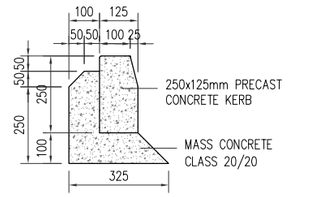


PLAN
SCALE 1:10

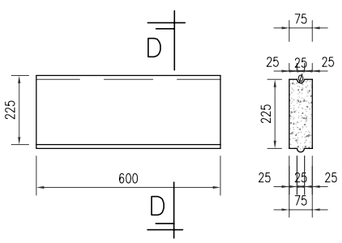


SECTION A – A
SCALE 1:10

125x250 HALF BATTERED KERB



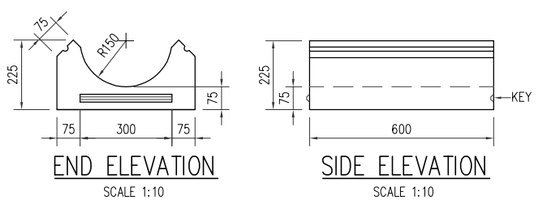
250x125 PRECAST CONCRETE KERB
–WITH CONCRETE BEDDING AND HAUNCHING
SCALE 1:10



PLAN
SCALE 1:5

SECTION D – D
SCALE 1:5

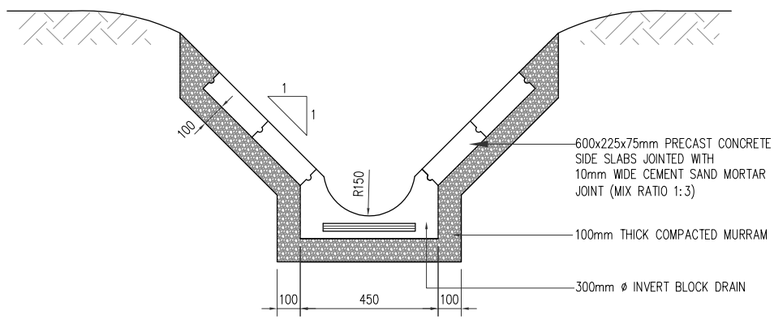
SIDE SLAB FOR INVERT BLOCK DRAIN



END ELEVATION
SCALE 1:10

SIDE ELEVATION
SCALE 1:10

PRECAST CONCRETE INVERT BLOCK DRAIN



INVERT BLOCK DRAIN ASSEMBLY DETAIL

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE STATED

Client:
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Westlands.
P.O Box 2758 – 00606
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The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

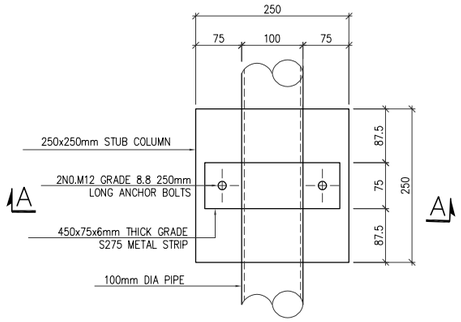
Project Name
CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title
CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title
STANDARD DRAWINGS
ROAD KERB, CHANNEL AND DRAINAGE DETAILS

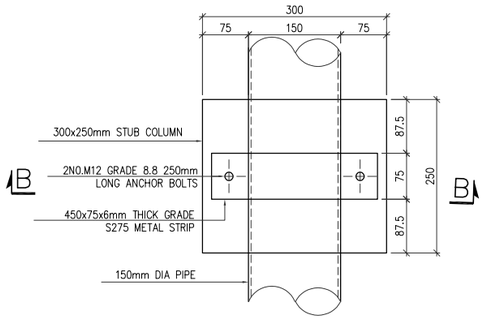
Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE,2023

Drawing Number: 6000023-HH-SD-DR-W-007
Revision: T0



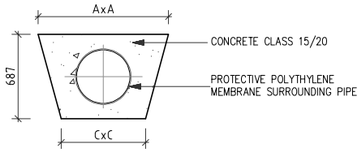
100mm DIA PIPE ANCHORAGE DETAIL

SCALE 1:5



150mm DIA PIPE ANCHORAGE DETAIL

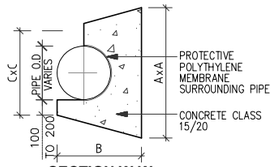
SCALE 1:5



SECTION V-V

SCALE 1:25

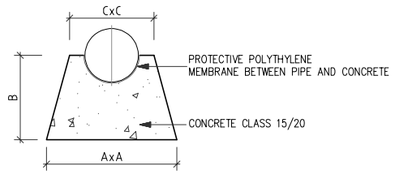
THRUST BLOCKS FOR UP-THRUST ON FITTINGS



SECTION W-W

SCALE 1:25

THRUST BLOCK ON HORIZONTAL BENDS AND TEES



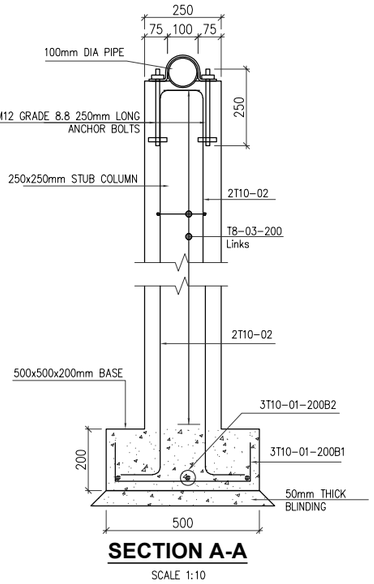
SECTION U-U

SCALE 1:25

THRUST BLOCKS ON VERTICAL BENDS (DOWN-THRUST)

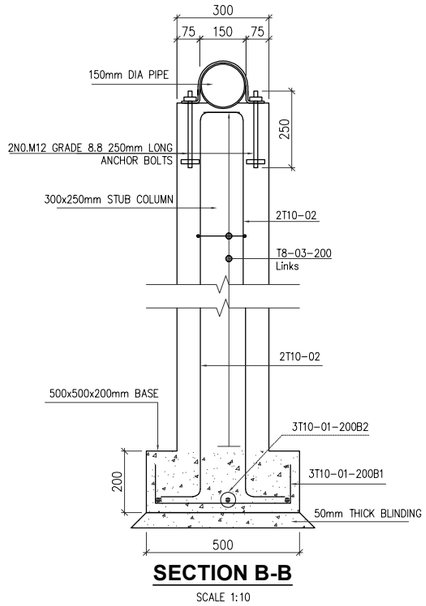
(ND) NOMINAL DIAMETER (mm)	THRUST BLOCK DIMENSIONS AxBxC(m), CONCRETE VOLUME (m^3)	
	CAPPED ENDS & 90°TEES	90°BENDS
80	0.35x0.2x0.2 **(0.02m^3)**	0.4x0.2x0.2 **(0.02m^3)**
100	0.45x0.25x0.25 **(0.04m^3)**	0.55x0.3x0.3 **(0.06m^3)**
150	0.65x0.35x0.35 **(0.10m^3)**	0.8x0.4x0.35 **(0.16m^3)**
200	0.85x0.45x0.4 **(0.20m^3)**	1.0x0.5x0.4 **(0.29m^3)**
250	1.1x0.55x0.45 **(0.39m^3)**	1.2x0.6x0.45 **(0.50m^3)**
300	1.25x0.65x0.5 **(0.59m^3)**	1.5x0.75x0.5 **(0.94m^3)**
350	1.4x0.7x0.55 **(0.80m^3)**	1.6x0.8x0.55 **(1.20m^3)**
400	1.6x0.8x0.6 **(1.20m^3)**	1.8x0.9x0.6 **(1.60m^3)**
450	1.8x0.9x0.65 **(1.7m^3)**	2.0x1.0x0.65 **(2.2m^3)**
500	2.0x1.0x0.7 **(2.3m^3)**	2.3x1.2x0.7 **(3.5m^3)**
600	2.3x1.2x0.8 **(3.6m^3)**	2.7x1.4x0.8 **(5.6m^3)**

NOTE:– THE ABOVE VALUES APPLY FOR HDPE AND FLANGED OR COUPLED LINED STEEL PIPES SUBJECT TO A WORKING PRESSURE HEAD OF 12 BAR



SECTION A-A

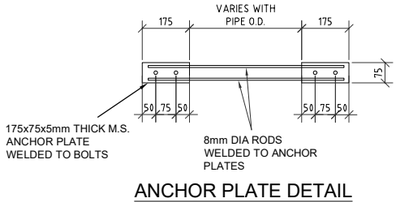
SCALE 1:10



SECTION B-B

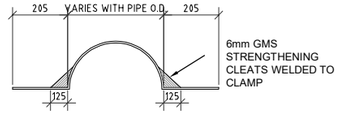
SCALE 1:10

ANCHOR PLATES & GMS CLAMP DETAILS



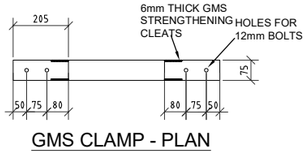
ANCHOR PLATE DETAIL

SCALE 1:25



GMS CLAMP - ELEVATION

SCALE 1:25



GMS CLAMP - PLAN

SCALE 1:25

NOTE:
SUITABLE FOR ANCHORAGE ON COLUMN AND BRIDGE DECK

NOTES

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED
2. ANCHOR BLOCKS TO BE INSTALLED FOR PIPES LAID AT SLOPES EXCEEDING 1:6 SLOPE
3. THRUST BLOCKS TO BE INSTALLED AT ALL HORIZONTAL AND VERTICAL BENDS, CAPPED ENDS, TEES, TAPERS AND GATE VALVES
4. PROGRAMME, METHOD OF CONSTRUCTION AND SETTING OUT OF WORK TO BE APPROVED BY THE ENGINEER BEFORE COMMENCEMENT OF WORK
5. DESIGN CRITERIA:
   (a) DESIGN CODES B.S. 8007 & B.S. 8110
   (b) UNIFORM NON-COMPRESSIBLE FOUNDATION WITH BEARING CAPACITY 80kN/m^2
6. CONCRETE:
   (a) CEMENT TO BE ORDINARY PORTLAND CEMENT TO B.S. 12
   (b) CONCRETE AGGREGATE TO COMPLY WITH B.S. 882
   (c) WATER IN CONCRETE MIXES TO B.S. 3148
   (d) CONCRETE CLASSES TO BE AS FOLLOWS:-
   MASS CONCRETE FILL AND BLINDING MIX, CLASS 15/20
   REINFORCED CONCRETE, CLASS 25/20
   (e) MINIMUM COVER TO ALL REINFORCEMENT TO BE 40mm UNLESS AS SPECIFIED BELOW FOR BUILDINGS:
   - COLUMNS - 40 mm
   - FOUNDATIONS & FOOTINGS - 50 mm

Client:

THE CHIEF EXECUTIVE OFFICER
ATHI WATER WORKS DEVELOPMENT AGENCY
Athi Water Plaza, Muthaiga North Road
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P.O Box 45283 – 00100
Nairobi – Kenya.

Design and Supervision Consultant:

INGEROP inventing for tomorrow
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Westlands.
P.O Box 2758 – 00606
Nairobi.

Howard Humphreys Consulting Engineers
The Address, Muthangari Drive
off Waiyaki Way.
P.O Box 30156 – 00100
Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

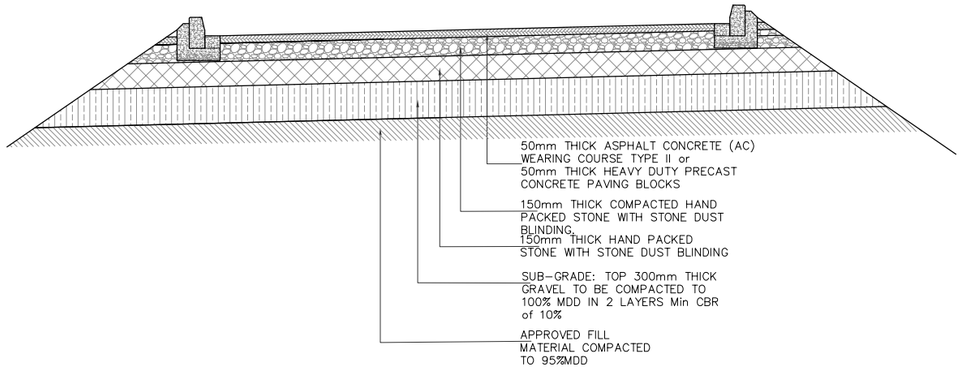
Drawing Title

STANDARD DRAWINGS
PIPE ANCHOR SUPPORT & THRUST BLOCK DETAILS

Designed by:	LMN	Drawn by:	LMN
Checked by:	PN	Approved by:	OBO
Scale:	AS SHOWN	Date:	JUNE,2023

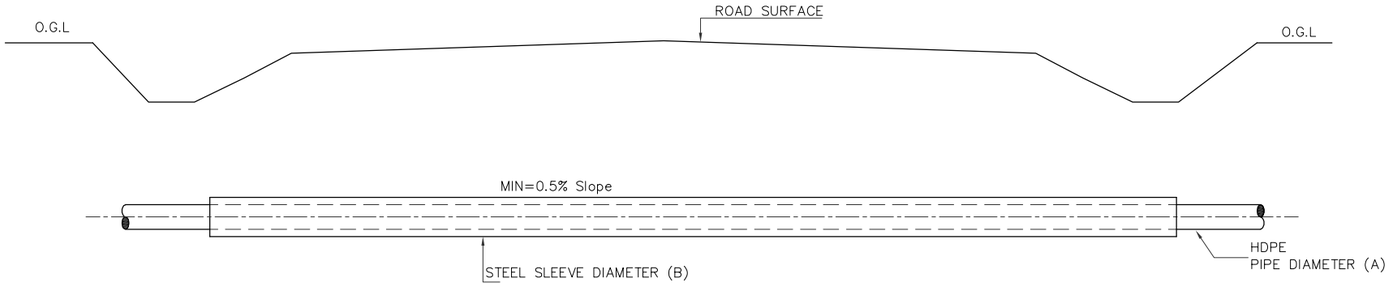
Drawing Number: 6000023-HH-SD-DR-W-008

Revision: T0



TYPICAL ROAD CROSS SECTION

(SCALE 1:25)

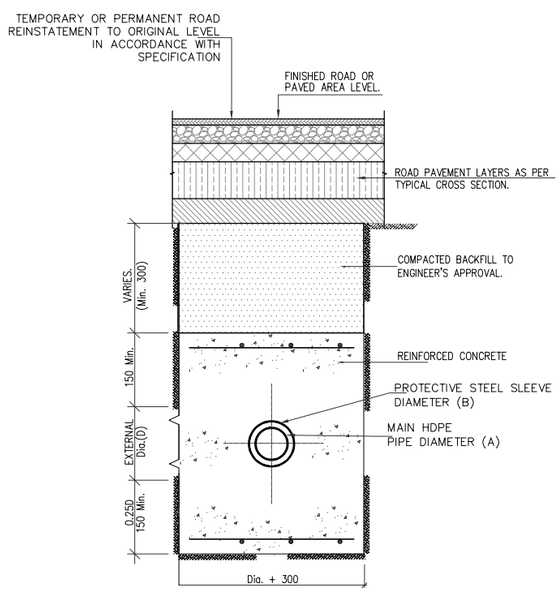


TYPICAL ROAD CROSSING LONGITUDINAL SECTION

N.T.S

SCHEDULE FOR SLEEVE DIAMETER

MAIN PIPE DIAMETER (A)	SLEEVE DIAMETER (B)
OD160 – OD200	DN 250
OD250	DN 300
OD315	DN 400
OD400	DN 450



TRENCH DETAIL AT ROAD CROSSINGS AND CULVERTS

SCALE 1:25

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
2. PIPE PROTECTION REINFORCED CONCETE CLASS 25/20 TO HAVE REINFORCEMENT OF T16-200 B1,T12-200 B2 & T12-200T1/T2
3. ASPHALT CONCRETE (AC)/PRECAST CONCRETE PAVING BLOCKS TO MATCH EXISTING ROAD WITH SPECIFICATIONS AS PER KENYA ROAD DESIGN MANUAL PART III

LEGEND:

O.G.L –ORIGINAL GROUND LEVEL
O.D –OUTSIDE DIAMETER
DN –NOMINAL DIAMETER

Client:

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Nairobi.

Project Name

CKE 1135
NAIROBI WATER AND SANITATION PROJECT

Project Title

CONSTRUCTION WORKS FOR REHABILITATION OF CENTRAL NAIROBI AREA WATER NETWORK PROJECT

Drawing Title

TYPICAL ROAD
REINSTATEMENT CROSS-SECTION DETAILS

Designed by: LMN	Drawn by: LMN
Checked by: PN	Approved by: OBO
Scale: AS SHOWN	Date: JUNE, 2023

Drawing Number: 6000023-HH-SD-DR-W-009

Revision: T0