

Site data

Site Data	
Description	Values (To be provided by Employer)
Proposed Site Location	Muhoroni in the Western part of Kenya - yes
Nearest Sea Port	Mombasa, Kenya, at 850 Kms - 766km
Nearest Airport	Kisumu, at 65 Kms - yes
Distance from Sea Coast	900 Kms - 780km
Ambient Temperature	16°C minimum 32°C maximum
Wet Bulk temperature	around 20°C
Annual Average Relative Humidity	44%-60%
Average Annual Rainfall	1800mm per year
Site Altitude/ elevation	1475m above sea level
Wind Direction	From east to west
Wind Speed for Design	6km/h lows, 11km/h highs
Seismic Zone	Area does not experience destructive seismic activity

Feedstock Specs

Sr.No.	Parameters	Unit	C- Molasses Specifications
1	Feed temperature at the battery limit	Deg C	25-35
1	Fermentable Sugar	% w/w	42.00%
1	Un-fermentable Sugar	% w/w	3.5 - 5.5%
2	Total sugar	% w/w	46.00%
2	Specific Gravity		1.32 - 1.34
3	Total Solids	% w/w	74.00%
4	Ash	% w/w	7-8%
5	Volatile acids	ppm	3500
6	pH		5.5-6.0
7	Butyric acids	ppm	N/A

9	Total Bacterial Count	cfu/gm	<1000
11	Loose Sludge	v/v, max	25.00%
11	Total Settlable Sludge	% v/v	15max
12	Calcium amount	%	1- 1.5
12	Lead	ppm	N/A
13	Ash Content	% w/w	7.0-10.0
13	Lactic Acid	ppm	N/A

Makes of bought outs

Sr. No.	Item Description	Remarks from Client
A	Mechanical Bought out	
1	Centrifugal Pumps- Process	Bidder should decide and make a proposal to be compared with other bidders
2	Centrifugal Pumps- Cooling Water	Bidder should decide and make a proposal to be compared with other bidders
3	Dosing Pumps	Bidder should decide and make a proposal to be compared with other bidders
4	Molasses Pumps (Screw)	Bidder should decide and make a proposal to be compared with other bidders
5	Weigh Scale Load Cell based	Bidder should decide and make a proposal to be compared with other bidders
6	Plate heat exchangers	Bidder should decide and make a proposal to be compared with other bidders
8	Air blowers	Bidder should decide and make a proposal to be compared with other bidders
9	Agitators	Bidder should decide and make a proposal to be compared with other bidders
13	Air Compressors	Bidder should decide and make a proposal to be compared with other bidders
14	Cleaning Nozzles	Bidder should decide and make a proposal to be compared with other bidders
15	Cooling Towers	Bidder should decide and make a proposal to be compared with other bidders
16	Electrical Motors	Bidder should decide and make a proposal to be compared with other bidders
B	Manual Valves	
17	Manual butterfly valves	Bidder should decide and make a proposal to be compared with other bidders
18	Manual ball valves	Bidder should decide and make a proposal to be compared with other bidders

19	Gate/ Globe/check valves	Bidder should decide and make a proposal to be compared with other bidders
20	Non Return Valves	Bidder should decide and make a proposal to be compared with other bidders
21	Pressure safety valves	Bidder should decide and make a proposal to be compared with other bidders
22	Filter housings	Bidder should decide and make a proposal to be compared with other bidders
C	Electrical & Instrumentation	
	<u>Control System</u>	
23	PLC	Bidder should decide and make a proposal to be compared with other bidders
24	Operating & Engineering Stations	Bidder should decide and make a proposal to be compared with other bidders
25	DeskJet Printer	Bidder should decide and make a proposal to be compared with other bidders
	<u>Control Valves</u>	
26	Globe Control Valves	Bidder should decide and make a proposal to be compared with other bidders
28	Ball/Butterfly control / On-off Valve	Bidder should decide and make a proposal to be compared with other bidders
29	Segmented ball valves	Bidder should decide and make a proposal to be compared with other bidders
	<u>Flow Instruments</u>	
30	D.P. Flow Transmitter	Bidder should decide and make a proposal to be compared with other bidders
31	Magnetic Flow Meter	Bidder should decide and make a proposal to be compared with other bidders
32	Vortex Flow Meter	Bidder should decide and make a proposal to be compared with other bidders
33	Mass Flow Meter	Bidder should decide and make a proposal to be compared with other bidders
	<u>Level Instruments</u>	
34	D.P. Type Level Transmitter	Bidder should decide and make a proposal to be compared with other bidders
35	Conductivity Type Level Switch	Bidder should decide and make a proposal to be compared with other bidders
36	Level Gauge	Bidder should decide and make a proposal to be compared with other bidders
	<u>Temperature Instruments</u>	
37	RTD with Temp. Transmitter	Bidder should decide and make a proposal to be compared with other bidders
38	Temperature Gauge	Bidder should decide and make a proposal to be compared with other bidders
	<u>Pressure Instruments</u>	
39	Pressure Transmitter	Bidder should decide and make a proposal to be compared with other bidders

40	Pressure Switch	Bidder should decide and make a proposal to be compared with other bidders
41	Pressure Gauge	Bidder should decide and make a proposal to be compared with other bidders
	<u>Miscellaneous</u>	
42	Glass Tube Rota meters	Bidder should decide and make a proposal to be compared with other bidders
43	Metal Tube Rota meters	Bidder should decide and make a proposal to be compared with other bidders
44	Orifice Plates	Bidder should decide and make a proposal to be compared with other bidders
45	Electrical cables	Bidder should decide and make a proposal to be compared with other bidders
46	Instrumentation cables	Bidder should decide and make a proposal to be compared with other bidders
47	Mechanical seals	Bidder should decide and make a proposal to be compared with other bidders
48	Electrical Switchgears	Bidder should decide and make a proposal to be compared with other bidders
49	Lumeneries	Bidder should decide and make a proposal to be compared with other bidders

Scope Matrix

Preliminary Scope Matrix for Electro-mechanical Installation Works for Proposed Distillery				Remarks
Sr. No.	Scope	EMPLOYER	BIDDER/ Local Contractor Appointed by Bidder	
A	Site Infrastructure			
1	Construction power 400V–Three-phase-50Hz at single point at Site	✓	X	Agreed
2	Temporary emergency gen set power arrangement for electro-mechanical works requirement	X	✓	Agreed

3	Raw Water for construction at single point in Plant	✓	✗	Agreed
4	Drinking water for BIDDER Sub-contractor Labour & Staff	✓	✗	Agreed
5	Water (Hardness less than 25 PPM) for testing and trials	✓	✗	Agreed
6	Accommodation and food for Labour	✗	✓	This information is not necessary for this stage
7	Accommodation and food for Local Contractor's staff and expats, if any	✗	✓	This information is not necessary for this stage
8	Accommodation and food for BIDDER Supervisors and Vendors, if any	✓	✗	This information is not necessary for this stage
9	Empty space for labour camp at Max. 100 meter from Plant with free issue of power for labour camp	✓	✗	Agreed
10	Empty space for laydown area and closed store	✓	✗	Agreed
11	Site office for BIDDER Staff, BIDDER Vendor and BIDDER sub-contractor	✗	✓	Agreed
12	Site office for Local contractor	✗	✓	Agreed
13	Site Lighting/ illumination during installation works	✗	✓	Agreed
14	Temporary site store (close type) for Storage of project material	✗	✓	Agreed
15	Temporary site store for Storage of tools, machinery and construction consumable	✗	✓	Agreed

16	Crane and Lifting tools and hand tools for installation (for the respective works)	X	✓	Agreed
17	Space for disposal of waste, extra/unused material within 100 Mtr from project plot	✓	X	Agreed
18	Temporary ablution facility with septic tank (for the respective personnel)	X	✓	Agreed
B	Tools, Machinery and Consumables			
20	Supply of consumables for Installation/ construction works like gases, welding rods, welding filler wire, cutting and grinding discs etc. (for the respective works)	X	✓	Agreed
21	Hand tools and lifting tools, welding and cutting Machinery for construction works etc. (for the respective works)	X	✓	Agreed
22	Scaffoldings, ladders for construction works (for the respective works)	X	✓	Agreed
23	Personal protective equipment for staff & labour (for the respective personnel)	X	✓	Agreed
24	Any permit/ bond for import and returning of tools and machinery and critical consumables, as applicable	x	✓	Agreed
25	Supply of First fill lubricants for all rotating items supplied in project	✓	X	Bidder scope
26	Application of First fill lubricants for all rotating items in project	X	✓	Agreed
C	Installation activities at site			
27	Installation, Welding and water fill up test of Stainless Steel and carbon steel tanks	X	✓	Agreed

28	Installation and fixing of Prefabricated Structure, GI Gratings, Hand railing and roof sheeting, etc.	X	✓	Agreed
29	Fabrication and installation of Galvanized Iron chequered plates	X	✓	Agreed
30	Assembly and Installation of Static (BIDDER Shop fabricated) Equipment	X	✓	Agreed
31	Assembly and Installation of Bought out Equipment- Rotary equipment like Pump , Blower, vacuum Pump and PHE, etc.	X	✓	Agreed
32	Assembly and Installation of Bought out Package Units/Items - Water Treatment plant, Cooling tower unit, Fire Fighting, Alcohol dispensing unit, Lab, PRDS as applicable	X	✓	Agreed
33	Prefabricated Piping Installation – Carbon steel and stainless steel Piping with supporting and clamping	X	✓	Agreed
34	Any fabrication in SS and carbon steel piping at site	X	✓	Agreed
35	Fabrication, installation and supporting and clamping of UPVC Piping in WTP	X	✓	Agreed
36	Fabrication and installation of structural support for Stainless steel and Carbon steel pipe lines	X	✓	Agreed
37	Touch up surface preparation and Painting of Carbon steel tank, carbon steel parts of stainless steel tank – Intermediate and Final coat painting only. (Grit blasting and primer coat will be done in India)	X	✓	Agreed
38	Surface preparation and Painting of Mild Steel prefabricated structure-Touch up painting	X	✓	Agreed
39	Application of Hot Insulation material with all hardware & consumables for Static (Shop fabricated) equipment, Stainless steel and Carbon steel Piping.	X	✓	Agreed
40	Fabrication and installation activity – Electrical work of Plant including yard lighting but excluding building wiring	X	✓	Agreed

41	Fabrication and installation activity for Instrumentation work of plant	X	✓	Agreed
42	Unloading and De-stuffing of containers of project material	X	✓	Agreed
43	Pre-commissioning and commissioning support	X	✓	Agreed
44	Support from Employer during supervision of commissioning and trial of plant which includes operators, shift in charges, lab assistant, etc.	✓	X	Agreed
45	Any minor modification during commissioning	X	✓	Agreed
46	Management and supervision of local contractor's work	X	✓	Agreed
D	Administration			
47	BIDDER Site Administration Expenses, Site Office Furniture	X	✓	Agreed
48	Internet facility at site office and staff quarters for BIDDER staff and vendor	✓	X	Agreed
49	Internet facility at site for local contractor (staff and labours)	✓	X	Agreed
50	Internet facility at site for BIDDER labours	✓	X	Agreed
51	Critical hospitalisation expenses (for respective manpower)	X	✓	Agreed
52	Store Management–For Project Material	X	✓	Agreed
53	Site plant Security until the end of commissioning of plant	X	✓	Agreed

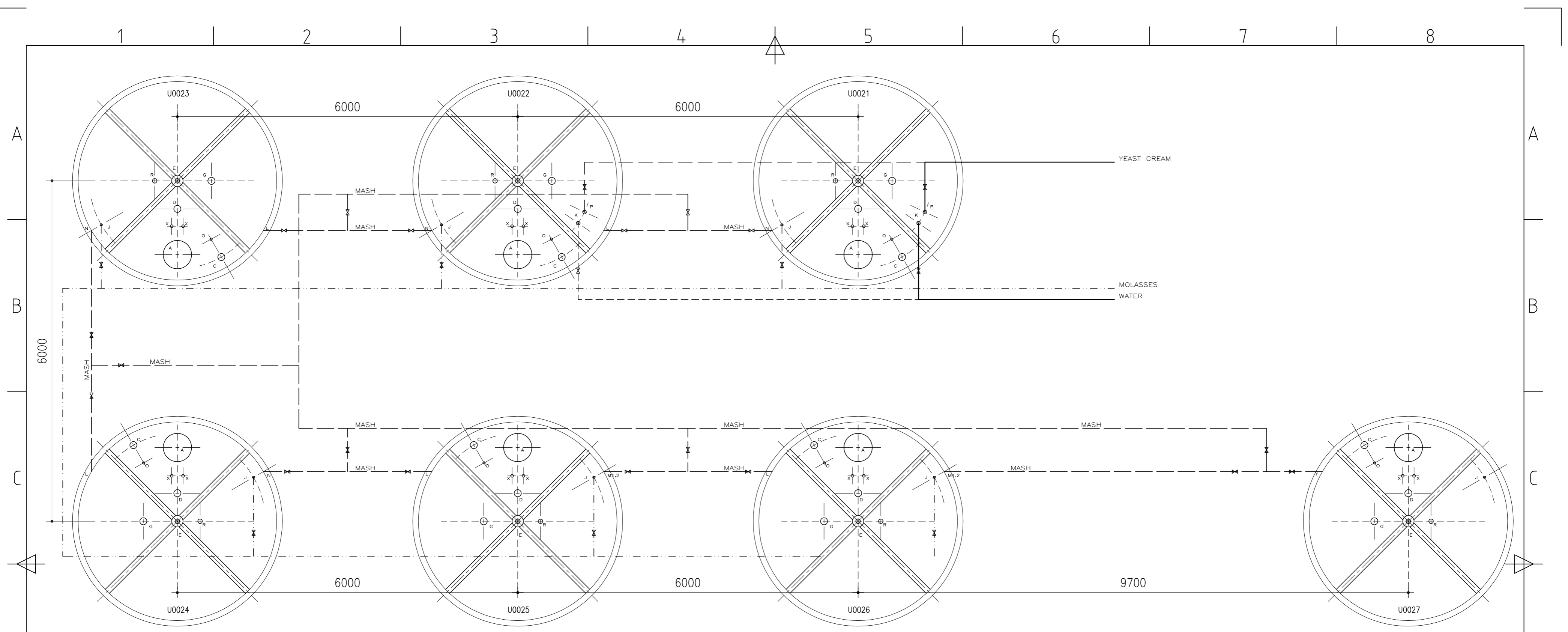
54	Implementation of HSE at site	X	✓	Agreed
55	Emergency medical service if any and within existing capacity	✓	X	Agreed
E	Travel and Conveyance			
56	Visa/ work permits for all foreign staff and	X	✓	This information is not necessary for this stage
57	labours of BIDDER, BIDDER Vendor and BIDDER sub-contractor	X	✓	This information is not necessary for this stage
58	Necessary document support for landing visa and any assistance	✓	X	This information is not necessary for this stage
59	Air Travel-Travelling cost and Insurance for BIDDER staff, Vendor and BIDDER Sub contractor staff and Labour from India to kenya	✓	X	This information is not necessary for this stage
60	To and Fro from the kenya airports for BIDDER staff, Vendor and BIDDER Sub contractor staff and Labour	✓	X	This information is not necessary for this stage
61	Local conveyance for workers from workers camp to site (for respective workers)	✓	X	This information is not necessary for this stage
62	Vehicles for local conveyance of local contractor's staff	X	✓	This information is not necessary for this stage
63	Shuttle for transport of BIDDER staff and vendors between local accommodation and site	✓	X	This information is not necessary for this stage
F	Insurance			
64	Insurance for BIDDER staff and BIDDER Sub contractor, Labour (for respective personnel)	X	✓	This information is not necessary for this stage

65	Erection all risk policy/ Construction all risk policy (BIDDER Scope of Works) for erection and commissioning period	✓	X	This information is not necessary for this stage
66	Insurance for – Tools and Machinery etc. (for respective works)	✓	X	This information is not necessary for this stage
G	Statutory Compliance & Taxes, Duties			
67	Statutory Compliances in kenya related for Ex-Patriate for BIDDER staff and Indian sub-contractor	✓	X	This information is not necessary for this stage
68	National social security commission (NSSC), if applicable	✓	X	This information is not necessary for this stage
69	Workmen compensation of labour (for respective workers), if applicable	✓	X	This information is not necessary for this stage
70	Necessary License for Installation, Permits from Government & other related compliances for installation of plant	✓	X	This information is not necessary for this stage
71	Any & all types of licenses, establishment consents/ approvals, certificates	✓	X	This information is not necessary for this stage
72	All Taxes including withholding tax, VAT/TAV etc. & Duties, customs clearance, customs processing fees, import taxes, customs duty, any other local taxes, duties or government fees applicable in kenya	✓	X	This information is not necessary for this stage

More Queries

S.NO	QUERY	CLIENT REPLY
1	Kindly provide the feasibility study report for the proposed project.	This is not necessary for this stage
2	Kindly provide the conceptual P&ID (Process & Instrumentation Diagram) for the process system.	This is part of bidders' scope
3	Kindly provide the overall site layout drawing, indicating plot boundaries and key facilities.	Kindly find the attached AutoCAD drawing
4	Kindly provide the geotechnical and topographical survey reports for the project site.	Not necessary at this stage
5	Kindly provide details and drawings of existing facilities, including but not limited to: Molasses day tanks Pre-fermenters Wash holding tanks Dosing tank	Kindly find the attached
6	Kindly provide details and drawings of the existing cooling water system, including capacity and distribution network	Kindly find the attached
7	We kindly request a time extension of two (2) weeks from 29th April for the submission of the technical proposal.	Submission deadline is fixed for all bidders
8	Kindly provide the detailed project specifications, including applicable design codes, standards, technical requirements, and performance criteria for all disciplines (civil, mechanical, electrical, and instrumentation).	These are already provided in the tender document
9	Kindly confirm whether Joint Venture (JV) participation is permitted for this project. If allowed, please specify the applicable requirements, conditions, and documentation to be submitted as part of the bid.	This is clearly addressed in the tender document
10	Under mandatory evaluation, the tender documents states that: Duly filled application submission letter . Please share the template of the application submission form if available	This is included in the tender document

Expected daily/annual production capacity	This is clearly indicated in the tender document
Feedstock characteristics (molasses grade, sugar %, impurities, etc.)	This is clearly indicated in the tender document
End product specifications	This is clearly indicated in the tender document
Utility availability (steam, power, water)	This is clearly indicated in the tender document
Expected timeline	Bidders to submit expected delivery timelines to be compared with other bids



EXISTING ALCOHOL
FERMENTATION TANKS

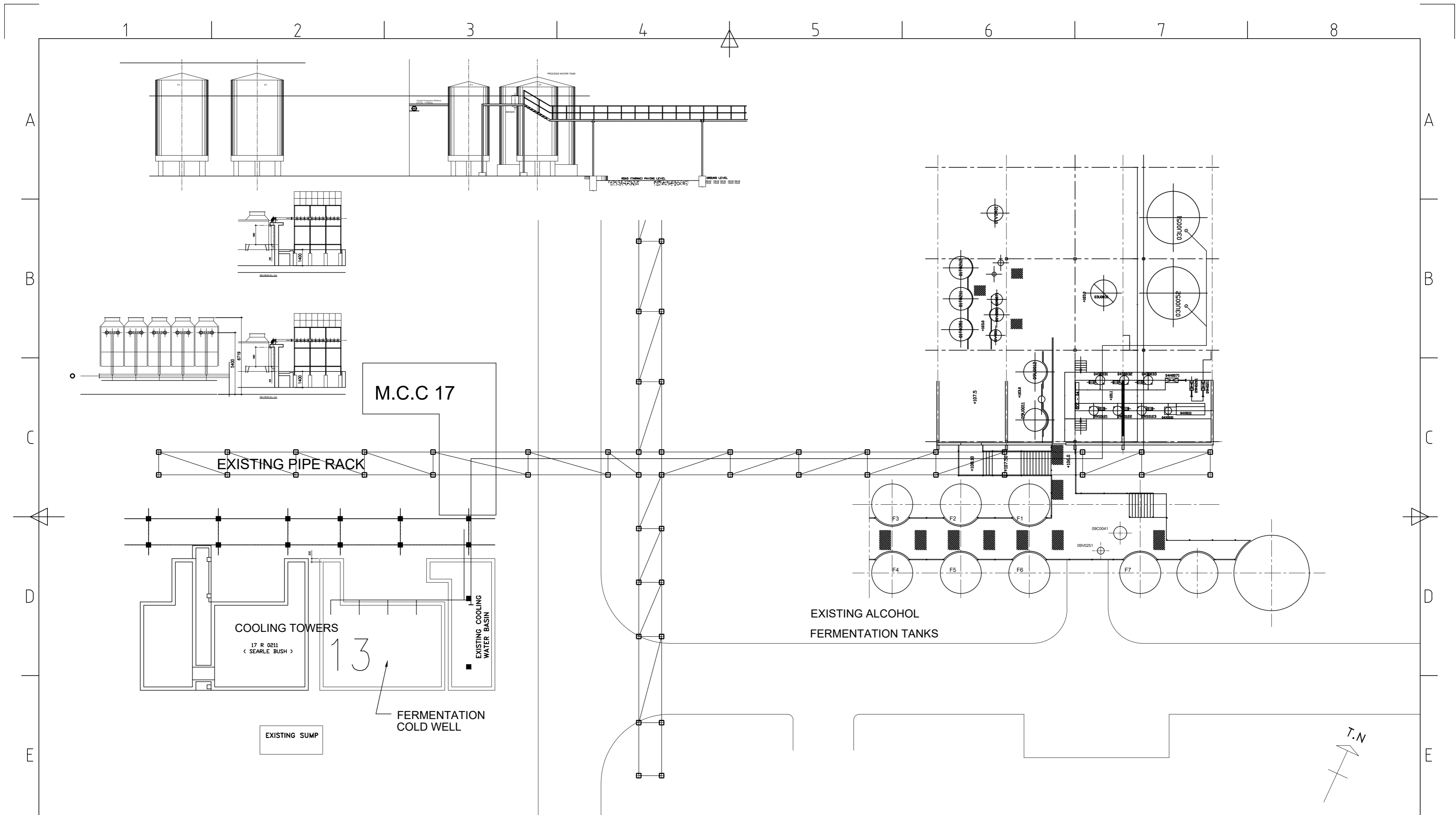
NOMENCLATURE

ITEM	U0021	U0022	U0023	U0024	U0025	U0026	U0027
A	MANHOLE 500NB (1 NO. OFF)	MANHOLE 500NB (1 NO. OFF)	MANHOLE 500NB (1 NO. OFF)	MANHOLE 500NB (1 NO. OFF)	MANHOLE 500NB (1 NO. OFF)	MANHOLE 500NB (1 NO. OFF)	MANHOLE 500NB (1 NO. OFF)
B	SIGHT GLASS 125NB (1 NO. OFF)	SIGHT GLASS 125NB (1 NO. OFF)	SIGHT GLASS 125NB (1 NO. OFF)	SIGHT GLASS 125NB (1 NO. OFF)	SIGHT GLASS 125NB (1 NO. OFF)	SIGHT GLASS 125NB (1 NO. OFF)	SIGHT GLASS 125NB (1 NO. OFF)
C	LIGHT LASS 125NB (1 NO. OFF)	LIGHT LASS 125NB (1 NO. OFF)	LIGHT LASS 125NB (1 NO. OFF)	LIGHT LASS 125NB (1 NO. OFF)	LIGHT LASS 125NB (1 NO. OFF)	LIGHT LASS 125NB (1 NO. OFF)	LIGHT LASS 125NB (1 NO. OFF)
D	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)
E	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)	AIR INLET 80NB (1 NO. OFF)
F							
G	AIR OUTLET 125NB (1 NO. OFF)	AIR OUTLET 125NB (1 NO. OFF)	AIR OUTLET 125NB (1 NO. OFF)	AIR OUTLET 125NB (1 NO. OFF)	AIR OUTLET 125NB (1 NO. OFF)	AIR OUTLET 125NB (1 NO. OFF)	AIR OUTLET 125NB (1 NO. OFF)
H							
J	MOLASSES INLET 40NB (1 NO. OFF)	MOLASSES INLET 40NB (1 NO. OFF)	MOLASSES INLET 40NB (1 NO. OFF)	MOLASSES INLET 40NB (1 NO. OFF)	MOLASSES INLET 40NB (1 NO. OFF)	MOLASSES INLET 40NB (1 NO. OFF)	MOLASSES INLET 40NB (1 NO. OFF)
K	WATER INLET 65NB (1 NO. OFF)	WATER INLET 65NB (1 NO. OFF)	MASH INLET 80NB (1 NO. OFF)	MASH INLET 80NB (1 NO. OFF)	MASH INLET 100NB (1 NO. OFF)	MASH INLET 100NB (1 NO. OFF)	MASH INLET 100NB (1 NO. OFF)
L							
M							
N	MASH OUTLET 80NB (1 NO. OFF)	MASH OUTLET 80NB (1 NO. OFF)	MASH OUTLET 80NB (1 NO. OFF)	MASH OUTLET 80NB (1 NO. OFF)	MASH OUTLET 100NB (2 NO. OFF)	MASH OUTLET 100NB (2 NO. OFF)	MASH OUTLET 100NB (2 NO. OFF)
O	FERMENT OIL INLET 43NB (1 NO. OFF)	FERMENT OIL INLET 43NB (1 NO. OFF)	FERMENT OIL INLET 43NB (1 NO. OFF)	FERMENT OIL INLET 43NB (1 NO. OFF)	FERMENT OIL INLET 43NB (1 NO. OFF)	FERMENT OIL INLET 43NB (1 NO. OFF)	FERMENT OIL INLET 43NB (1 NO. OFF)
P	YEAST CREAM INLET 65NB (1 NO. OFF)	YEAST CREAM INLET 65NB (1 NO. OFF)					
Q							
R	INSTRUMENT CONNECTION 80NB(1NO. OFF)	INSTRUMENT CONNECTION 80NB(1NO. OFF)	INSTRUMENT CONNECTION 80NB(1NO. OFF)	INSTRUMENT CONNECTION 80NB(1NO. OFF)	INSTRUMENT CONNECTION 80NB(1NO. OFF)	INSTRUMENT CONNECTION 80NB(1NO. OFF)	INSTRUMENT CONNECTION 80NB(1NO. OFF)
S							
T							
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V							
W							
X	ELECTRODE CONNECTION 50NB(2 NO. OFF)	ELECTRODE CONNECTION 50NB(2 NO. OFF)	ELECTRODE CONNECTION 50NB(2 NO. OFF)	ELECTRODE CONNECTION 50NB(2 NO. OFF)	ELECTRODE CONNECTION 50NB(2 NO. OFF)	ELECTRODE CONNECTION 50NB(2 NO. OFF)	ELECTRODE CONNECTION 50NB(2 NO. OFF)
Z							

- PROCESS WATER LINE
- MOLASSES LINE
- YEAST CREAM LINE
- MASH LINE

Itemref	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
<p>Drawn by: OPIYO O. MILTON Checked by: R. OKECH Approved by - date: G. OBURA File name: ACFC2K/Eng./Drp/Proc. Date: 5th. Sept., 2012 Scale: 1:50</p>			
<p>Agro-chemical & food company ltd post office box 18, m u h o r o n i</p>			<p>PROPOSED CLEANING SYSTEM AT ALCOHOL FERMENTATION</p>
<p>Drawing No: P 001 / 2012</p>		<p>Edition</p>	<p>Sheet 1 of 1</p>

RevNo	Revision note	Date	Signature	Checked
1				
2				
3				

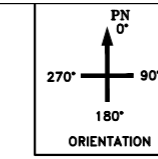


1. ALL DIMENSIONS IN MM UNLESS OTHERWISE STATED
2. DO NOT MEASURE DRAWING
3. ASK IF IN DOUBT

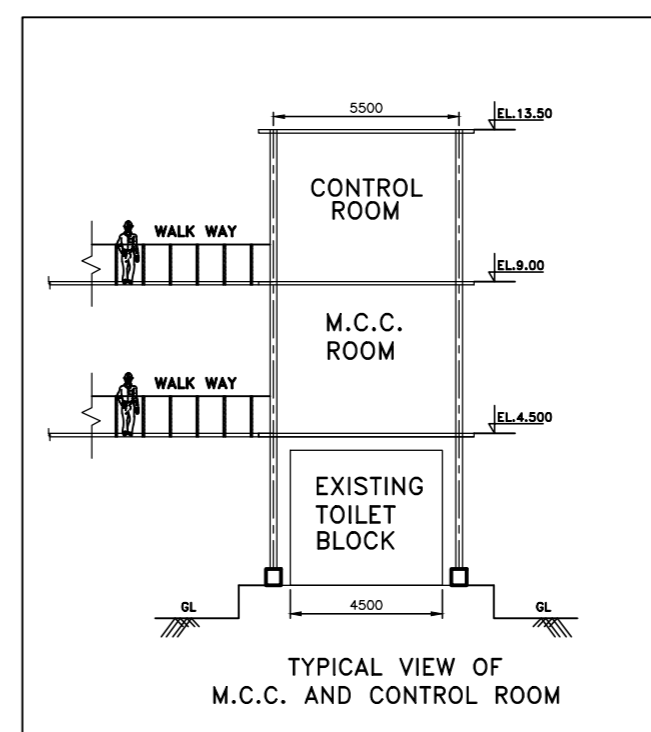
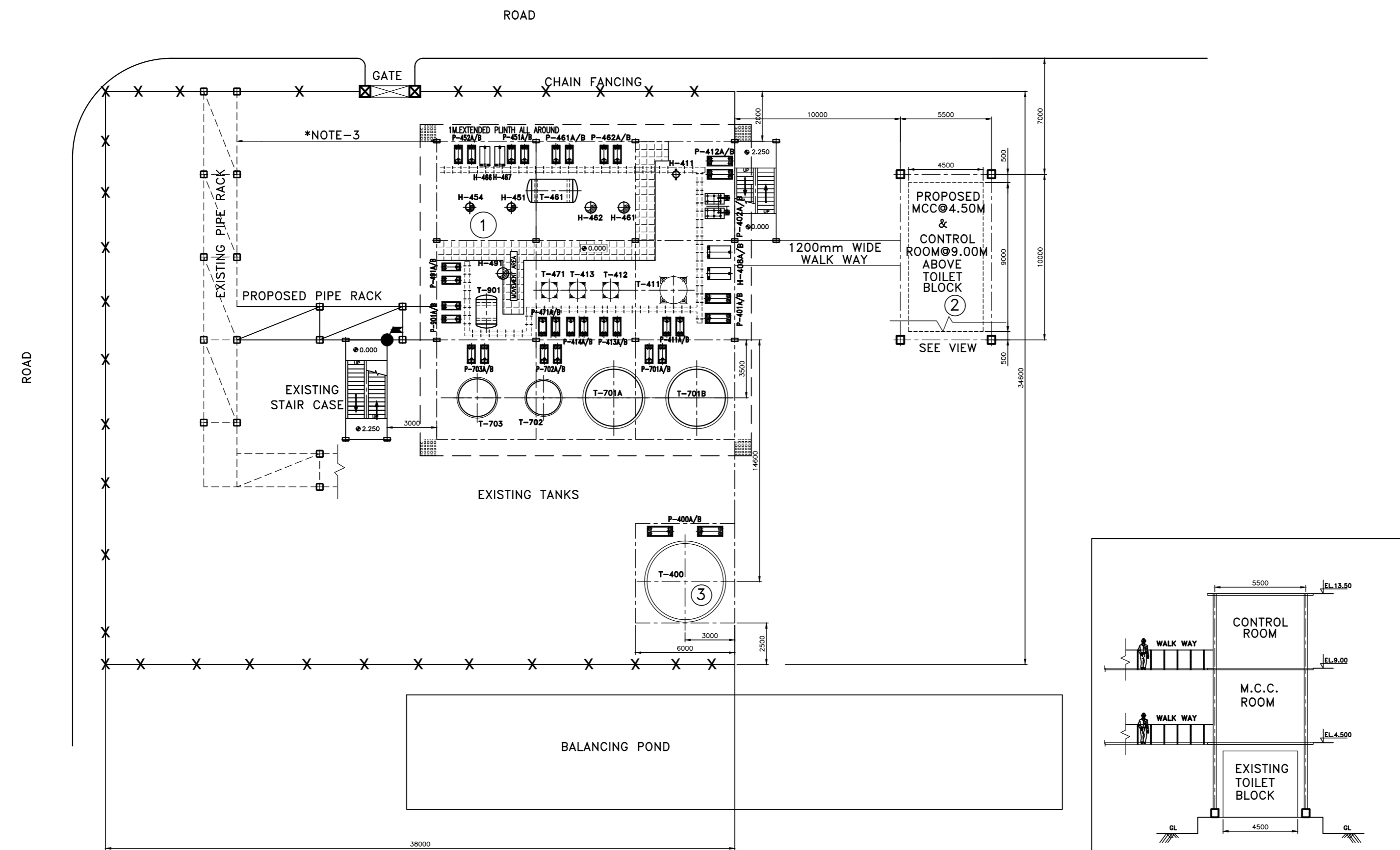
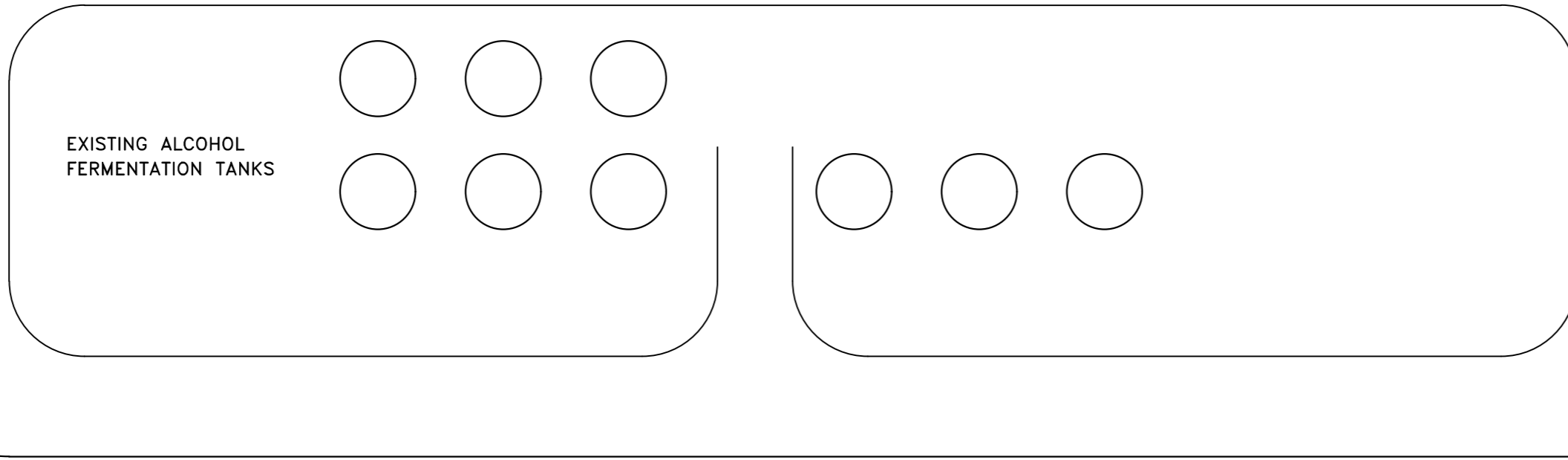
GENERAL NOTES

RevNo	Revision note	Date	Signature	Checked
1				
2				
3				

Itemref	Quantity	Title/Name, designation, material, dimension etc			Article No./Reference
Drawn by: M. OPIYO		Checked by: G. MUNIO		Approved by - date E.Z. MUMBA	File name ACFC2K/ACFC-Eng'g/Drg Office/Drgs/TS
		Agro-chemical & food company ltd post office box 18, m u h o r o n i		PROPOSED ELIMINATION OF COOLING TOWERS HOT WELL	
				Drawing No: TS 102/ 2013	Edition 1 of 2
				Date 8th.Feb., 2013	Scale 1:100



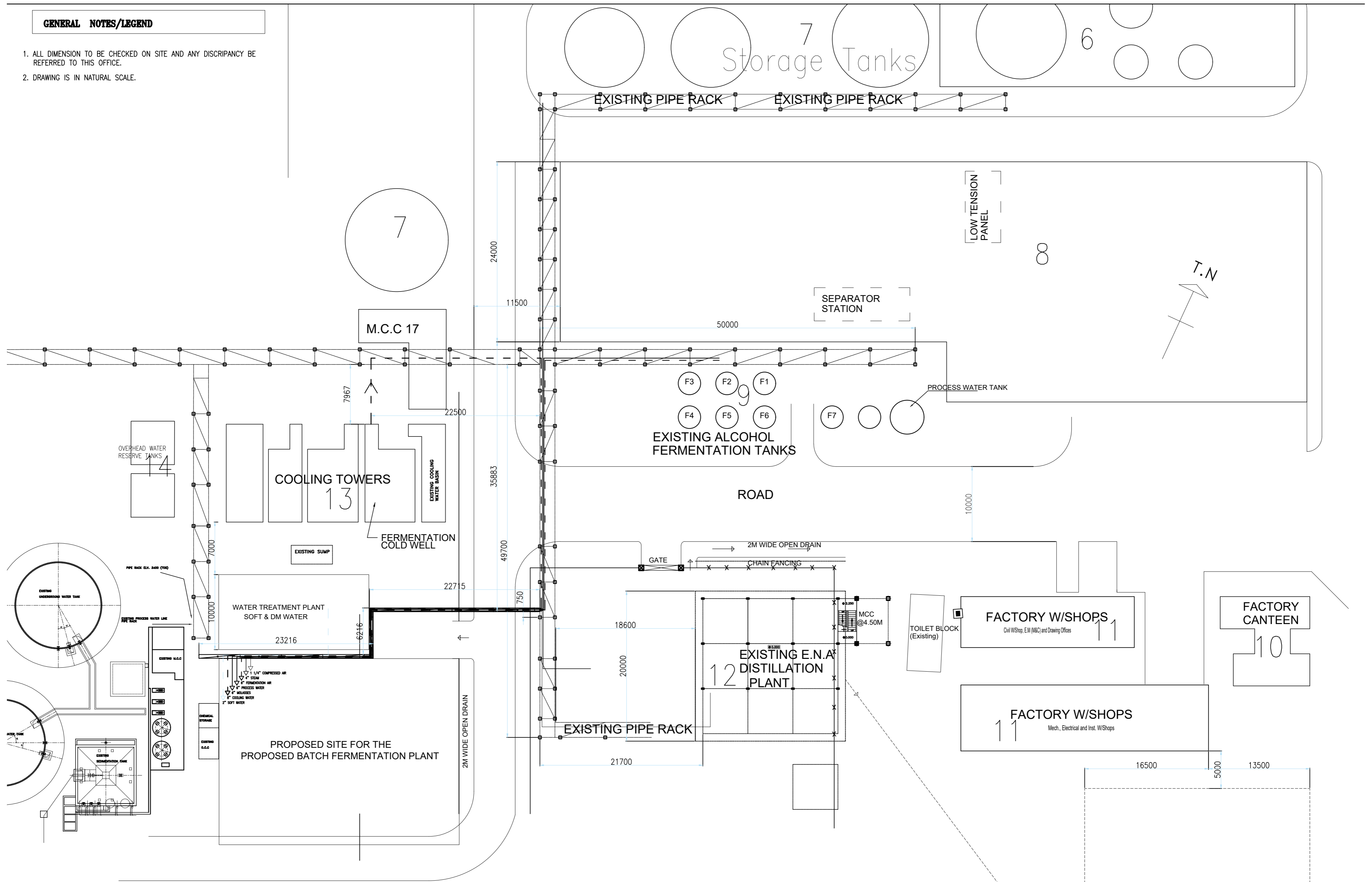
LEGEND		
SR. NO.	DESCRIPTION	AREA IN METERS
1	ENA DISTILLATION PLANT	12.0 x 18.0
2	M.C.C. AND CONTROL ROOM	5.5 x 10.0
3	MASH FEED TANK(T-400)	#4.60 X 4.375HT.
4	FERMENTED WASH FEED PUMP(P-400A/B)	-



- NOTES:-
- 1) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - 2) -X-X-X-X- INDICATES FENCING .
 - 3) H.YOUNG TO VERIFY AND CONFIRM THE ACTUAL MEASUREMENT AT WORKS IN ACFC-MUHORONI,KENYA.
 - 4) ACFC TO PREFEREBLY DECIDE FOR RELOCATION OF EXISTING TOILET BLOCK (2)

GENERAL NOTES/LEGEND

1. ALL DIMENSION TO BE CHECKED ON SITE AND ANY DISCRIPANCY BE REFERRED TO THIS OFFICE.
2. DRAWING IS IN NATURAL SCALE.



REVISIONS	
NO.	DATE

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.

PROJECT:
PROPOSED BATCH FERMENTATION PLANT & AUXILIARIES AT ACFC FACTORY, LR/PLOT NO: KISUMU / MUHORONI /

CLIENT:
AGRO-CHEMICAL & FOOD Co. LTD, BOX 18 - 40107, MUHORONI / KENYA

DRAWING TITLE:
FACTORY MASTER LAY-OUT PLAN

CLIENT SIGNATURE:

DESIGNED BY	DRAWN BY	CHECKED BY	DATE
	MO		FEB. 2025
SCALE: N.T.S			DRAWING No.: TS158B/25
A1 DWG	1:75	SHEET No.: 1 of ..	
A2 DWG	1:100		

GENERAL NOTES

1. ALL DIMENSIONS SHALL BE CHECKED ON SITE AND ANY DISCREPANCY BE REFERED TO THIS OFFICE.
2. DO NOT SCALE DRAWING.
3. AREA: a) BOTTLING PLANT = 12403 sq.foot
b) CO2 PLANT = 8036 sq.foot
4. L.R. NO: 12858 MUHORONI

FIRE FIGHTING

AREAS

FINISHES

REVISION

CLIENT

A. C. F. C
 AGRO-CHEMICAL & FOOD CO. LTD
 POST OFFICE BOX 18, MUHORONI

PROJECT

AGRO-CHEMICAL AND FOOD
 COMPANY LIMITED MASTER
 PLAN AS EXISTING FOR
 GENERAL WORKS

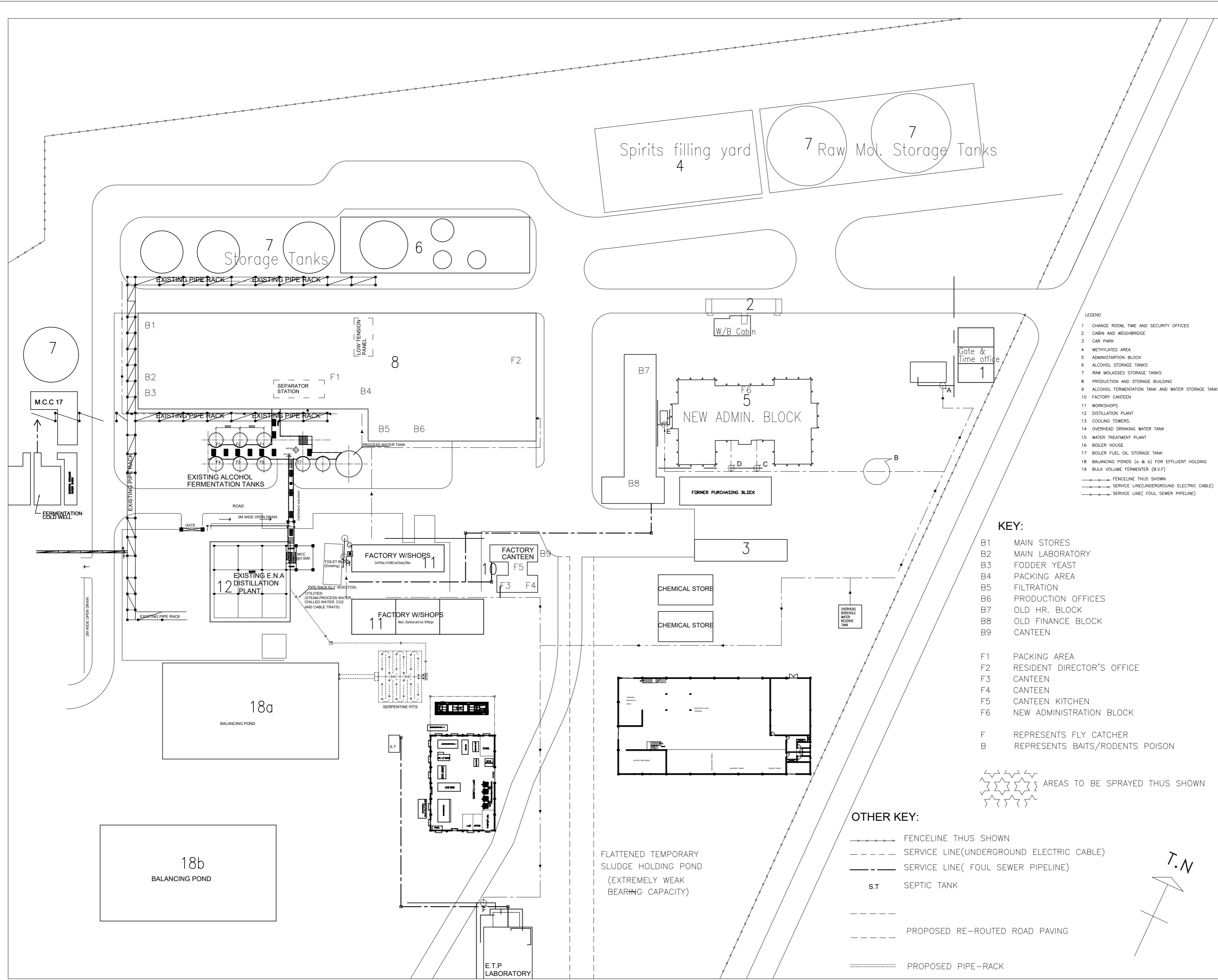
STAGE **FINAL DRAWINGS**

DRG TITLE **Block Site Lay-out Plans**

SCALE **NTS**

DATE **APR. '14** DR'N **M.O.O** CHE'K'D **W.O.**

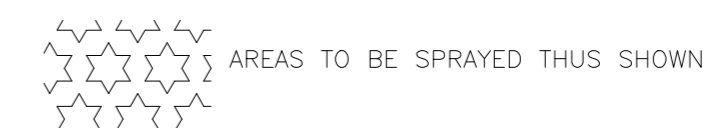
DRAWING NUMBER **E&S 001/2014** sheet no **1 of 1**



- LEGEND**
- 1 CHANGE ROOM, TIME AND SECURITY OFFICES
 - 2 CABIN AND WEIGHBRIDGE
 - 3 CAR PARK
 - 4 METHYLATED AREA
 - 5 ADMINISTRATION BLOCK
 - 6 ALCOHOL STORAGE TANKS
 - 7 RAW MOLASSES STORAGE TANKS
 - 8 PRODUCTION AND STORAGE BUILDING
 - 9 ALCOHOL FERMENTATION TANK AND WATER STORAGE TANKS
 - 10 FACTORY CANTEEN
 - 11 WORKSHOPS
 - 12 DISTILLATION PLANT
 - 13 COOLING TOWERS.
 - 14 OVERHEAD DRINKING WATER TANK
 - 15 WATER TREATMENT PLANT
 - 16 BOILER HOUSE
 - 17 BOILER FUEL OIL STORAGE TANK
 - 18 BALANCING PONDS (a & b) FOR EFFLUENT HOLDING
 - 19 BULK VOLUME FERMENTER (B.V.F)
- FENCELINE THUS SHOWN
 SERVICE LINE(UNDERGROUND ELECTRIC CABLE)
 SERVICE LINE(FOUL SEWER PIPELINE)

KEY:

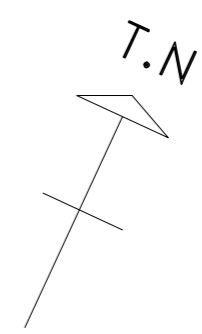
- B1 MAIN STORES
 - B2 MAIN LABORATORY
 - B3 FODDER YEAST
 - B4 PACKING AREA
 - B5 FILTRATION
 - B6 PRODUCTION OFFICES
 - B7 OLD HR. BLOCK
 - B8 OLD FINANCE BLOCK
 - B9 CANTEEN
-
- F1 PACKING AREA
 - F2 RESIDENT DIRECTOR'S OFFICE
 - F3 CANTEEN
 - F4 CANTEEN
 - F5 CANTEEN KITCHEN
 - F6 NEW ADMINISTRATION BLOCK
-
- F REPRESENTS FLY CATCHER
 - B REPRESENTS BAITS/RODENTS POISON



OTHER KEY:

- FENCELINE THUS SHOWN
- SERVICE LINE(UNDERGROUND ELECTRIC CABLE)
- SERVICE LINE(FOUL SEWER PIPELINE)
- S.T SEPTIC TANK
- PROPOSED RE-ROUTED ROAD PAVING
- PROPOSED PIPE-RACK

FLATTENED TEMPORARY
 SLUDGE HOLDING POND
 (EXTREMELY WEAK
 BEARING CAPACITY)





VEREINIGTE EDEL-
STAHLWERKE AG.

	am/date	von/from	Seite/Page
erstellt/design.	1981.02.05	Po	von from
letzte/last Rev.			
gepr./checked			
FILE NO, 202 / 6			- index : 1

equipment list :

(group 01 at 14, 16, 17, 18)

VB**Liste d'equipement – Equipment List**

PREPARATION OF MOLASSES Group 01

Projet
Project
Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
01 P 0010	2	Pump for raw molasses, Mohno type	Q=20 t/h H=80 mWC	GG/1.4301		SS 01-01
01 F 0020	1	Filter for raw molasses	F=0,8 m ²	St/1.4301		SS 01-02
01 T 0050	1	Tank for intermediate storage of raw molasses	BV=12,5 m ³ 2,2øx2,9	St		SS 01-03
01 M 0070	1	Mixing vessel for raw molasses and water	BV=1,25 m ³ 1,0øx1,8	1.4301		SS 01-04
01 V 0080	1	Vessel for preheating molasses solution	BV=2,5 m ³ 1,2øx2,5	1.4301		SS 01-05
01 P 0100	1	Circulate pump for molasses solution	Q=2,5 m ³ /h H=5 m WC	1.4301		SS 01-06
01 P 0110	2	Pump for molasses solution	Q=17 m ³ /h H=35 mWC	1.4301		SS 01-07
01 F 0120	1	Filter for molasses solution	F= 0,25 m ²	1.4301		SS 01-08
01 Z 0150	1	Cyclone for raw molasses		1.4301		
01 S 0160	2	Molasses clarifier, complete	SB 60-36-177	1.4301/GG		
01 S 0170	1	Sludge clarifier, complete (decanter)	CA 365-010	1.4301/GG		
01 T 0210	2	Tank as feeding tank to alcohol fermentat.	BV=10,0m ³ 2,0øx3,0	1.4301		SS 01-09
01 P 0220	2	Pump for molasses solution to alc.ferm.	Q=15 m ³ /h H=25 m WC	1.4301		SS 01-10
01 H 0230	2	Plate cooler for molasses solution	QÜ=800,000 kcal/h	1.4301		SS 01-11
01 H 0240	1	Sterilizing path	BV=10 1	1.4301		SS 01-12
01 V 0250	1	Expansion vessel	0,5øx1,2	1.4301		SS 01-13
01 V 0180	1	Tank for intermediate storage of sludge (Mohno)	BV=1,5 m ³ 1,4øx1,0	1.4301		SS 01-30
01 P 0190	2	Pump for sludge (Mohno)	Q= 2 m ³ /h H=40 mWC	1.4301		SS 01-29

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Datum

1980-01-29

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1/b

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
01 H 0260	1	Cooler	F=5 m ²	1.4301		SS 01-14
01 P 0270	1	Pump for molasses solution	Q=2,5 m ³ /h H=50 mWC	1.4301		SS 01-15
01 P 0280	1	Pump for steril.molasses solution	Q=2 m ³ /h H=13 mWC	1.4301		SS 01-16
01 P 0290	1	Pump for vapor condensate	Q=0,2 m ³ /h H=10 mWC	1.4301		SS 01-17
01 P 0300	1	Vacuum pump compl.with liquid sep.	Q=5 kg/h 0,5 bar abs.	GG/1.4301		SS 01-18
01 T 0350	1	Tank for molasses solution, yeast ferm.	BV=10 m ³ 2,0φx3,0	1.4301		SS 01-19
01 P 0360	2	Pump for molasses solution	Q=3,2 m ³ /h H=25 mWC	1.4301		SS 01-20
01 H 0370	2	Plate cooler for molasses solution,	Q _U =160.000 kcal./h	1.4301		SS 01-21
01 V 0400	1	Vessel for washing of molasses sludge	BV=2 m ³ 1,4φx1,4	1.4301		SS 01-22
01 P 0410	1	Pump for sludge washing	Q=5 m ³ /h H=15 mWC	1.4301		SS 01-23
01 X 0420	1	Washing trough for separator parts	2500x720	wood/1.4301		SS 01-24
01 X 0430	1	Washing device for separator discs	0,55φx0,5	1.4301		SS 01-25
01 X 0440	1	Manuel hoist for separator	Q=500 kg	St		SS 01-26
01 T 0450	1	Tank for collecting warm water	BV=12,5m ³ 2,2φx2,9	insulated		SS 01-27
01 T 0460	1	Tank for cold process water	BV=12,5 m ³ 2,2φx2,9	St		SS 01-28

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Datum

1980-01-20

Réf./Ref.
Zeichen

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No./No.
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VB**Liste d'équipement – Equipment List**

PREPARATION OF AUXILIARIES Group 02

Projet
Project
Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
02 T 0010	1	Storage tank for ammonia water (with tube)	BV=40 m ³	St		SS 02-01
02 F 0020	1	Tube filter for ammonia water	NW 25	1.4301		SS 02-02
02 P 0030	1	Pump for ammonia water	Q=1 m ³ /h	GG/1.4301		SS 02-03
02 V 0040	1	Buffer vessel for ammonia water	H=20 mWC			SS 02-04
02 V 0050	2	Vessel as feeding vessel to main fermenters	1,1φx2,5	1.4301		SS 02-05
02 V 0060	1	Vessel as feeding vessel to main fermenters	0,9φx1,4	1.4301		SS 02-06
			BV=50 l	1.4301		
02 T 0110	1	Storage tank for sulphuric acid (with tube)	BV=40 m ³	St		SS 02-08
02 P 0120	1	Pump for sulphuric acid	Q=1 m ³ /h	GG		SS 02-09
02 M 0130	1	Vessel for the dilution of sulphuric acid	H=2,5 bar			SS 02-10
02 V 0140	1	Vessel for intermediate tank f. diluted acid (with tube)	BV=1 m ³	plastic		SS 02-11
			BV=2,5 m ³	plastic		
02 V 0150	3	Vessel for intermediate tank f. dil. acid	BV=0,5 m ³	plastic		SS 02-12
02 P 0160	1+1	Pump for diluted acid	Q=2 m ³ /h			SS 02-13
02 V 0180	1	Measuring vessel for concentr. acid	BV=50 l	plastic		SS 02-14
02 P 0210	1	Pump for defoaming agent (barrel-pump)	H=8 mWC	1.4301		SS 02-15
02 V 0220	1	Vessel for defoaming agent	Q=ca.2m ³ /h	1.4301		SS 02-16
02 P 0230	2	Pump for defoaming agent (Mohno)	BV=360 l	GG/1.4301		SS 02-17
02 F 0240	2	Filter for defoaming agent	Q=300 l/h	GG/1.4301		SS 02-18
			NW 25	1.4301		

Date/Date
Datum

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Réf./Ref.
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No./No.
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3/b

VOGELBUSCH

GESELLSCHAFT mbH., MAUTNER MARKHOF-GASSE 40, A-1110 VIENNA

VB 005/10. 78.

VB**Liste d'équipement – Equipment List**

PREPARATION OF AUXILIARIES Group 02

Projet
Project
Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
02 M 0310	1	Dissolving tank for solid nutrients (agitator)	BV=2,5 m3 1,3φx1,8	1.4301		SS 02-19
02 V 0320	2	Buffer vessels for nutrients	BV=2,5 m3 1,1φx2,5	1.4301		SS 02-20
02 P 0330	1	Pump for nutrient solution	Q=5 m3/h H=22 mWC	1.4301		SS 02-21
02 F 0340	1	Tube filter for nutrient solution	NW 40	1.4301		SS 02-22
02 V 0350	4	Vessel as feeding vessel to mainferm.	BV=1 m3 0,9φx1,4	1.4301		SS 02-23
02 V 0360	1	Vessel as feeding vessel to prefermenter tank	BV=50 l 0,35φx0,5	1.4301		SS 02-24
02 P 0410	1	Pump for flushing water (warm or cold)	Q=30 m3/h H=60 mWC	GG		SS 02-25
02 P 0420	2	Pump for sprinkling (warm and cold)	Q=15 m3/h H=30 mWC	GG		SS 02-31
02 P 0450	2	Pump for water to the separation	Q=45 m3/h H=40 mWC	GG		SS 02-26
02 P 0460	2	Pump for process water	Q=45 m3/h H=25 mWC	GG		SS 02-27
02 P 0470	1	Pump for cleaning solution	Q=15 m3/h H=25 mWC	1.4301		SS 02-28
02 V 0510	1	Vessel for desinfectant solution	BV=0,1 m3 0,5φx0,6	plastic		SS 02-32
02 P 0520	1	Dosing pump for disinfectant solution (adjustable drive)	Q=0-350 l/h H=60 mWC	1.4301		SS 02-29
02 V 0530	1	Buffer vessel for cleaning solution	BV=2,5 m3 1,3φx1,8	1.4301		SS 02-30

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Datum 1980-01-29Réf./Ref.
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VB

Liste d'équipement – Equipment List

FERMENTATION SECTION-ATH Group 03

 Projet
 Project
 Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
03 U 0010	1	Carlsberg flask	BV=ca. 15 l 0,2φx0,37	1.4301		T-An 6237
03 U 0020	1	Propagation vessel	BV=1000 l 0,9φx1,5	1.4301		T-An 6593
03 U 0030	1	Prefermentation tank	BV=20 m ³ 2,3φx4,7	1.4301		78091-628
03 U 0050	2	Mainfermenter	BV=110 m ³ 4,6φx6,6	1.4301		78091-606
03 F 0060	1	Filter for propagation vessel	Q=1 Nm ³ /h SRF 0010	1.4301		SS 03-01
03 P 0100	1	Pump for prefermentation mash	Q=25 m ³ /h H=15 mWC	1.4301		SS 03-02
03 M 0110	1	Mixing equipment (cold and hot water)	0,3φx0,5	1.4301		SS 03-03

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VB**Liste d'équipement – Equipment List**

SEPARATION -ATH Group 04

 Projet
 Project
 Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
04 P 0010	2	Pump for fermented mash	Q=30 m ³ /h H=30 mWC	1.4301		SS 04-01
04 F 0020	1	Filter for fermented mash	F=0,25 m ²	1.4301		SS 04-02
04 S 0030	3	Separators - nozzle type	HDA 50-06-006	1.4301/GG		
04 J 0040	2	Washing nozzels for yeast cream	Größe III	1.4301		
04 P 0060	2	Pump for washed yeast cream (MOHNO)	Q=12 m ³ /h H=40 mWC	1.4301		SS 04-04
04 H 0070	1	Plate cooler for yeast cream	Q _U =150.000 kcal	1.4301		SS 04-05
04 X 0100	1	Washing device for separate disks	0,45x0,5	1.4301		SS 04-06
04 X 0110	1	Table for cleaning of separator parts	2,5x0,72	wood/1.4301		SS 04-07
04 X 0120	1	Hoist for separator parts (manuel)	Q=500 kg	St		SS 04-08
04 T 0130	1	Tank for yeast slops	BV=80 m ³	St		SS 04-09
04 H 0140	1	Plate cooler and heater	Q _U =391.000 kcal.			SS 04-10
04 H 0150	1	Part for hotkeeping	150 l	1.4301		SS 04-11
04 P 0160	1	Pump for yeast slops	Q=5 m ³ /h H=30 mWC	1.4301		SS 04-12

Date/Date
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Réf./Ref.
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No./No.
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6/b

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GESELLSCHAFT mbH., MAUTNER MARKHOF-GASSE 40, A-1110 VIENNA

VB**Liste d'equipement – Equipment List**

YEAST CREAM STORAGE Group 05

 Projet
 Project
 Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
05 M 0010	1	Tank for mother yeast cream	BV=10 m ³ 2øx3,2	1.4301		SS 05-01
05 M 0030	3	Tank for final yeast cream	BV=20 m ³ 2,8øx3,2	1.4301		SS 05-02
05 M 0040	1	Acidification vessel for mother yeast cream (agitator)	BV=5 m ³ 1,8øx1,8	1.4301		SS 05-03
05 P 0050	1	Pump for mother yeast cream	Q=8 m ³ /h H=30 mWC	1.4301		SS 05-04
05 P 0070	2	Pump for final yeast cream	Q=5 m ³ /h H=30 mWC	1.4301		SS 05-05
05 R 0100	3	Refrigeration machine, complete	70.000 kcal./h			911-78091
05 H 0110	1	Plate evaporator system	190.000 kcal./h			911-78091
05 M 0120	1	Vessel for ice collecting with agitator	BV=15 m ³ 3,7x2,7x1,5	St		911-78091
05 P 0130	3	Pump for ice-water	Q=25 m ³ /h H=25 mWC	St		SS 05-06
05 H 0140	1	Room refrigerator	ca. 10.000 kcal./h	St		911-78091

Date/Date
Datum

1980-01-29

Réf./Ref.
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No./No.
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7/a

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GESELLSCHAFT mbH, MAUTNER MARKHOF-GASSE 40, A-1110 VIENNA

VB

Liste d'équipement – Equipment List

FILTER STATION

Group 06

 Projet
 Project
 Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
06 F 0010	1	Vacuum rotary filter, compl. with vacuum pump	F=6m ²	1.4301		
06 M 0020	1	Vessel for the prep. of precoat mat. complete	BV=300 l	1.4301 / St		9050-111
06 M 0030	1	Vessel for salt dissolving, complete	BV=800 l	PVC / St		T-An 4157-162a
06 Y 0040	1	Slide		1.4301	according to filter	
06 Y 0050	1	Conveyor-belt	0,2 m/s	1.4301 / plastic		SS 06-01
06 Y 0060	1	Funnel pipe	L=5 m	1.4301		SS 06-02
06 P 0100	1	Pump for flushing water	Q=3m ³ /h	G.G.		SS 06-03
06 M 0150	1	Vessel for yeast cream complete	BV=100 l	1.4301		T-An 4152-54

Date/Date
Datum

1980-01-29

Réf./Ref.
Zeichen

Po/sa

No./No.
Nr.

B/b

VOGELBUSCH

GESELLSCHAFT mbH., MAUTNER MARKHOF-GASSE 40, A-1110 VIENNA

VB 005/10. 78.

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
07 X 0010	2	Granulator for filtered yeast	RAN 70	1.4301		SS 07-03
07 D 0020	3	Dryer complete	Q=1334 kg ATH/day	1.4301		
07 L 0030	1	Pneumatic conveyor system for dry yeast	Q=500 kg/h	GG		
07 Y 0040	2	Container for ATH		1.4301	according to dryers	
07 V 0050	4	Hopper for dry yeast	BV=3 m3 1,4φx1,4	1.4301		SS 07-02
07 X 0070	1	sieve machine		1.4301		
07 Y 0080	1	Container tilting device compl.		St		
07 R 0100	2	Cooling machines, complete	Q _{ij} =190.000 kcal./h			78091-914
07 T 0110	1	Intermediate tank for EG-Solution	BV=3 m3 1,4φx2,0	St		SS 07-04
07 T 0120	1	Tank for condensate	BV=12,5 m3 2,2φx2,9	St		SS 07-05
07 P 0130	1	Pump for condensate	Q=15 m3/h H=35 mWC	GG		SS 07-06
07 P 0140	2	Pump for EG-Solution	Q=100 m3/h H=20 mWC	GG		SS 07-07
07 X 0210	1	Packing machine for dry yeast into plastic bags	for bags 500 g or 125 g			
07 X 0220	1	Tin sealing machine	for 5 kg tins			
07 X 0230	1	Balance for the filling of this by hand	0 - 10 kg	St		
07 X 0240	1	Inert gas equipment complete for nitrogen	2x6	St		

Date/Date
Datum

1980-01-29

Réf./Ref.
Zeichen

Po/sa

No./No.
Nr.

9/c

VB**Liste d'equipement – Equipment List**

BLOWER STATION

Group 08

 Projet
 Project
 Projekt 78091 KEP

ACFC Kenya

Pos. Item. Pos.	pcs. pcs. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
06 F 0010	1	Pre-Filter for fermenting air	Q=8000 m ³ /h	St		SS 08 - 01
08 F 0020	1	Mainfilter for fermenting air	Q=8000 m ³ /h	St		— " —
08 B 0050	2	Blower for fermenting air complete	Q=3600 Nm ³ /h H=5,5 mWC	GG/St		SS 08 - 02
08 H 0060	2	Cooler for fermenting air	Q=4000 Nm ³ /h Luft	St		SS 08 - 03
08 B 0070	1	Blower	Q=500 Nm ³ /h H=6 mWC	GG/St		SS 08 - 04
08 B 0080	2	Blower for alcohol	Q=500 Nm ³ /h H=6 mWC	GG/St		— " —
08 H 0090	1	Cooler for fermenting air	Q _{ij} =500 Nm ³ /h Luft	St		SS 08 - 05

 Date/Date
 Datum

1980-01-29

 Réf./Ref.
 Zeichen

Po/sa

 No./No.
 Nr.

10/a

VOGELBUSCH

GESELLSCHAFT mbH., MAUTNER MARKHOF-GASSE 40, A-1110 VIENNA

V B

ALCOHOL FERMENTATION Group 09

Projekt 78091 KEP.
ACFC Kenya

Pos. Item Pos.	pcs. pos. Stk.	Nomination Description Benennung	Dates techniques Technical Data Techn. Daten	Matériel Material Werkstoff	Poids Weight Gewicht	Remarque Remarks Bemerkung
09 U 0010	2	Tank for yeast cream-washing an storage	BV=10 m3 2φx3,0	1.4301		78091-633
09 U 0020	7	Mainfermenter	BV=50 m3 3,5φx5,3	1.4301		78091-623
09 H 0030	5	Coolers for mainfermenters	Q _{max} =182.000 kcal/h	1.4301	✓	SS 09-01
09 C 0040	1	Waste air washer, 12 bubble plates	1,23φx4,0	1.4301		SS 09-02
09 P 0050	5+1	Pump for mash circulation	Q=50/68 m3/h H=10 mWC 4 kw, 1450 rpm	1.4310		SS 09-03
09 P 0100	2	Pump for fermented mash	Q=35 m3/h H=30 mWC	1.4301		SS 09-04
09 F 0110	2	Filter for fermented mash	F=0,25 m2 NW 65	1.4301		SS 09-05
09 S 0120	3	Separator complete	HDA50-06-006	1.4301		
09 V 0130	1	Trough for yeast cream (for 3 Separators)	BV=600 l	1.4301		SS 09-16
09 P 0150	2	Pump for diluted yeast cream	Q=15 m3/h H=15 mWC	1.4301		SS 09-06
09 P 0160	2	Pump for yeast cream to acidification	Q=4 m3/h H=20 mWC	1.4301		SS 09-09
09 H 0210	1	Plate cooler for process water	Q _U =90.000 kcal/h	1.4301		SS 09-10
09 V 0220	1	Supply vessel for acidification	BV=250 l 0,6φx0,9	1.4301		SS 09-11
09 Y 0230	1	Measuring equipment for thermolysis	BV=1,5 l	1.4301/glass		SS 09-12
09 P 0240	2	Pump for yeast cream to mainfermenter	Q=15 m3/h H=20 mWC	1.4301		SS 09-13
09 V 0250	1	Intermediate vessel for waste water	BV=250 l 0,6φx0,9	1.4301		SS 09-14
09 V 0260	1	Plate cooler for cooling water	Q _U =40.000 kcal/h	1.4301		SS 09-15

Date/Date
Datum

1980-01-29

Réf./Ref.
Zeichen

Po/sa

No./No.
Nr.

11/c