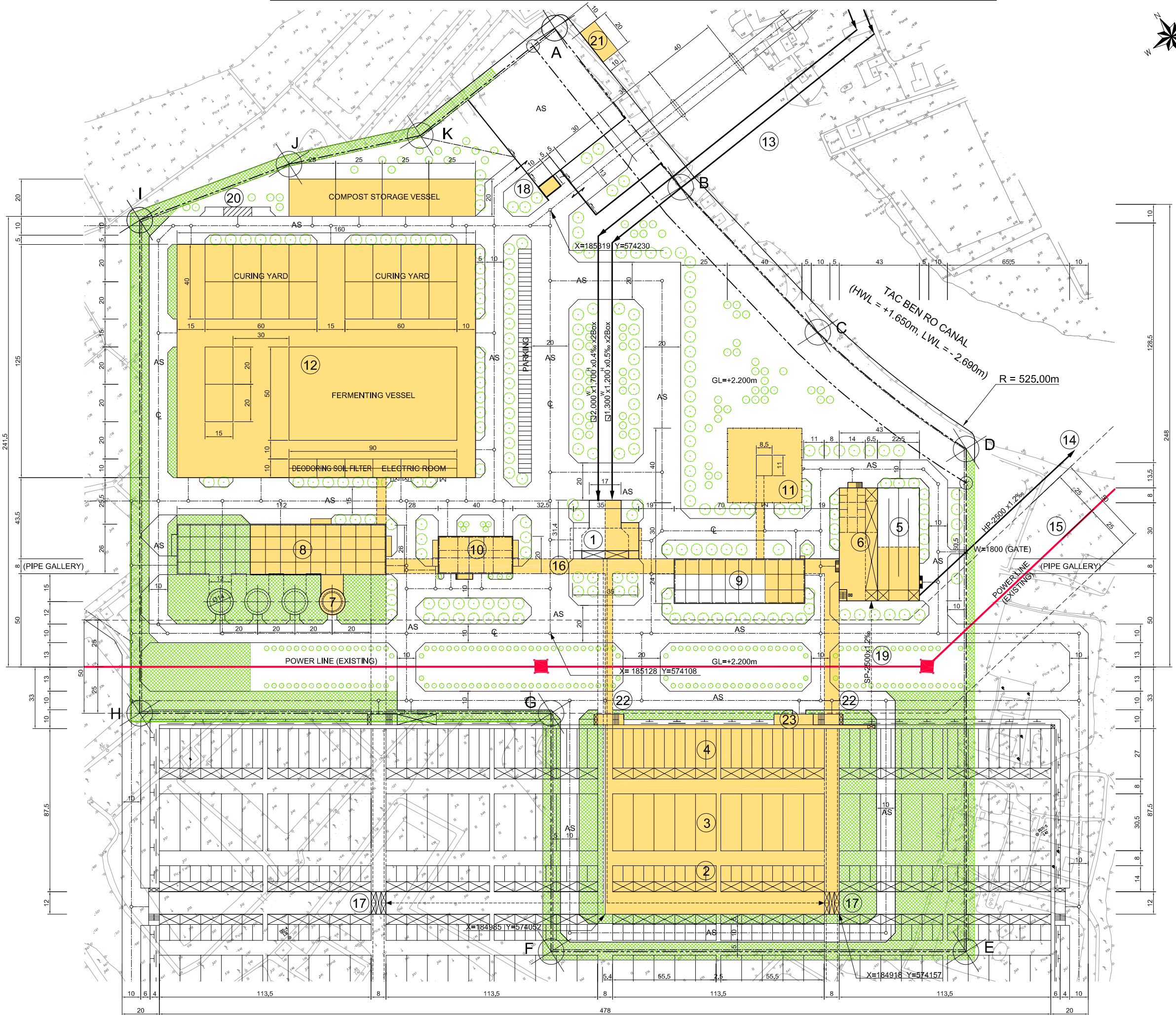


GENERAL LAYOUT OF THBNDT WASTEWATER TREATMENT PLANT (Phase I) : Scale: 1/1000



- LEGEND**
- ① LIFT PUMPING STATION
 - ② PRIMARY SEDIMENTATION TANK (5.0m x 13.0m x 3.0m x 160 waterway 80 tank)
 - ③ AERATION TANK (10.5m x 28.0m x 5.5m x 80 tank)
 - ④ FINAL SEDIMENTATION TANK (5.0m x 26.0m x 3.5m x 160 waterway 80 tank)
 - ⑤ DISINFECTION TANK (5.0m x 54.0m x 5.0m x 3 bend 4 waterway 1 tank)
 - ⑥ CHLORINE STORAGE BUILDING
 - ⑦ SAND FILTRATION EFFLUENT TANK, SECONDARY TREATMENT TANK
 - ⑧ GRAVITY THICKENER (14.0m x 3.5m x 4 tank)
 - ⑨ DEWATERING & CENTRIFUGAL THICKENER BUILDING
 - ⑩ BLOWER BUILDING
 - ⑪ MAIN BUILDING (Control Room, Electrical Room, etc.)
 - ⑫ MAIN SUBSTATION
 - ⑬ COMPOST PLANT FACILITY
 - ⑭ INLET PIPE (Ø1,300 x 1,200 x 0.5% x 2Box, Ø2,000 x 1,700 x 0.4% x 2Box)
 - ⑮ EFFLUENT PIPE (Ø2,500mm x 1.2%, HP)
 - ⑯ POWER LINE (EXISTING)
 - ⑰ PIPE GALLERY
 - ⑱ DISTRIBUTION TANK
 - ⑲ GUARD ROOM
 - ⑳ CONNECTION PIPE (Ø2,500mm x 1.2%, SP)
 - ㉑ TRUCK SCALE
 - ㉒ JETTY
 - ㉓ STAIRCASE
 - ㉔ WWTP ELECTRICAL ROOM
 - AS : ASPHALT CONCRETE

NO.	DATE	DESCRIPTIONS	BY	APRO.
REVISIONS				

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN STUDY ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE E
WASTEWATER TREATMENT PLANT
GENERAL LAYOUT OF THBNDT
WASTEWATER TREATMENT PLANT
(PHASE I)

SCALE: 1 / 1000

JICA JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)

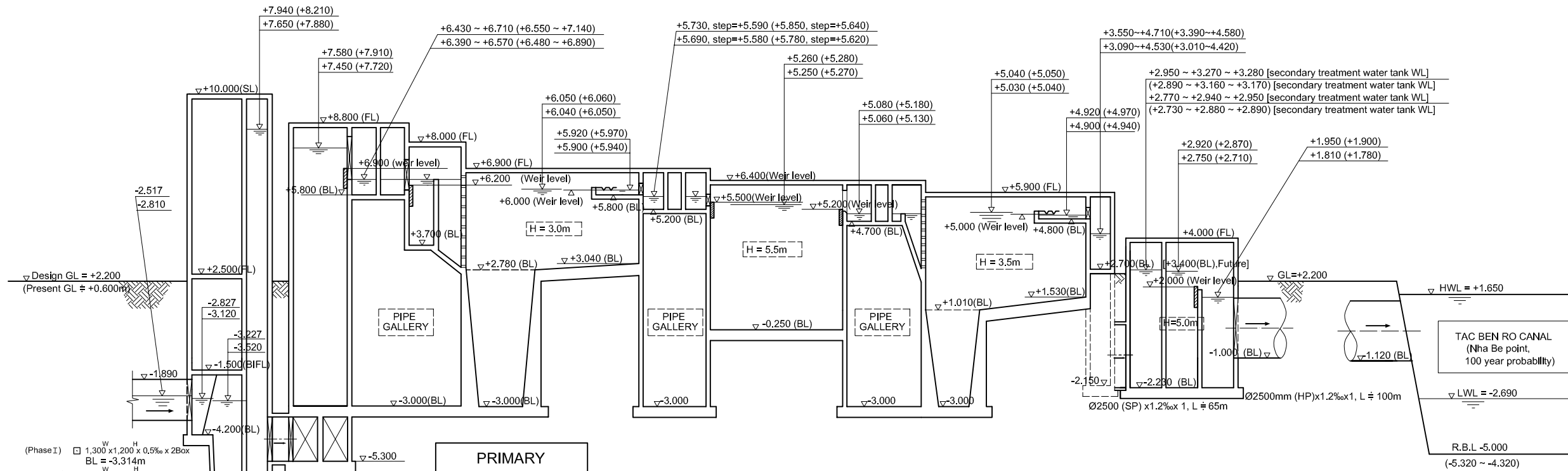
PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED KIMURA TORU	CHECKED KONDO MASAMI
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DATE : JUNE 2001 DWG. No. PE - WWTP - 201 - 03

HYDRAULIC PROFILE OF THBNDT WASTEWATER TREATMENT PLANT

- 1 FORMULA
Manning's formula $n = 0.010 \sim 0.013$
- 2 WATER LEVEL OF OUTLET
" Tac Ben Ro Canal "
HWL = +1.650 m
LWL = -2.690 m
RBL = -5.000 m (-5.320 ~ -4.320)
* Tidal river
* 100 year probability
* Nha Be point Water Level



- (Phase I) □ 1,300 x 1,200 x 0.5% x 2Box
BL = -3.314m
- (Phase II) □ 2,000 x 1,700 x 0.4% x 2Box
BL = -3.890m
- INLET PIPE**
- LIFT PUMPING STATION**
- Inflow Gate = 1,500mm □
 - Coarse Screen = 3.5m x 100mm x 60° x FB-9
 - Grit Chamber = 3.5m x 3.0m x 4
 - Pump Well

- PRIMARY SEDIMENTATION TANK**
- 5.0m^W x 13.0m^L x 3.0m^H
10 tank 20 waterway x 8 train
- Outflow Trough, B=0.5m
 $i=0$, L=13.0m/waterway
 - Triangular Notch,
Notch Degree = 7pitch/m
 - Inflow Movable Weir, B=0.5m

- AERATION TANK**
- 10.5m^W x 28.0m^L x 5.5m^H
10 tank x 8 train
- (Phase II) = Step Inflow System Only
(Phase I/Final phase) = Conventional and Step Inflow System Possible
- Suppressed Rectangle Weir, B=8.25m (Fixed Weir)
 - Inflow Movable Weir, B=0.5m
 - Step Movable Weir, B=0.5m,
(4 Step Point System)
 - Division of Tank = Divided Into 4
(1:1.5 : 1.5 : 2.25)
 - O/O and A/O and Step System.
 - Phase I /II = Modified Aeration Process
 - Final Phase = Conventional Activated Sludge Process

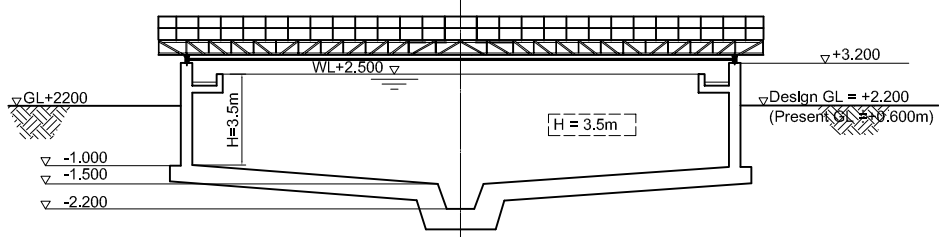
- FINAL SEDIMENTATION TANK**
- 5.0m^W x 26.0m^L x 3.5m^H
10 tank 20 waterway x 8 train
- Outflow Trough, B = 0.5m,
 $i = 0$, L = 27.0m/waterway
 - Triangular Notch,
Notch Degree = 7pitch/m
 - Inflow Gate = 500mm □
 - Return Sludge Ratio =
• 50% (Ordinary)-100% (Max) Conventional Process
• 5%-10% Modified Process

- DISINFECTION TANK**
- 5.0m^W x 54.0m^L x 5.0m^H x 3 bend x 4 waterway x 1 tank
- Suppressed Rectangle Weir, B = 5.0m (Fixed Weir)
 - Inflow Gate = 2,000mm □
 - Bypass Gate = 2,000mm □
 - Secondary Treatment Tank, Sand Filtration Effluent Tank, Backwash Wastewater Tank Establish.

LEGEND

HmaxWL = RHmaxWL (Phase II)
DmaxWL = DaveWL (Phase II)

QmaxH = 699,000 m³/day (Phase II = 640,000 m³/day)
QmaxD = 512,000 m³/day (Phase II = 469,000 m³/day)



- GRAVITY THICKENER**
- Ø14.0m x 3.5m^H x 4

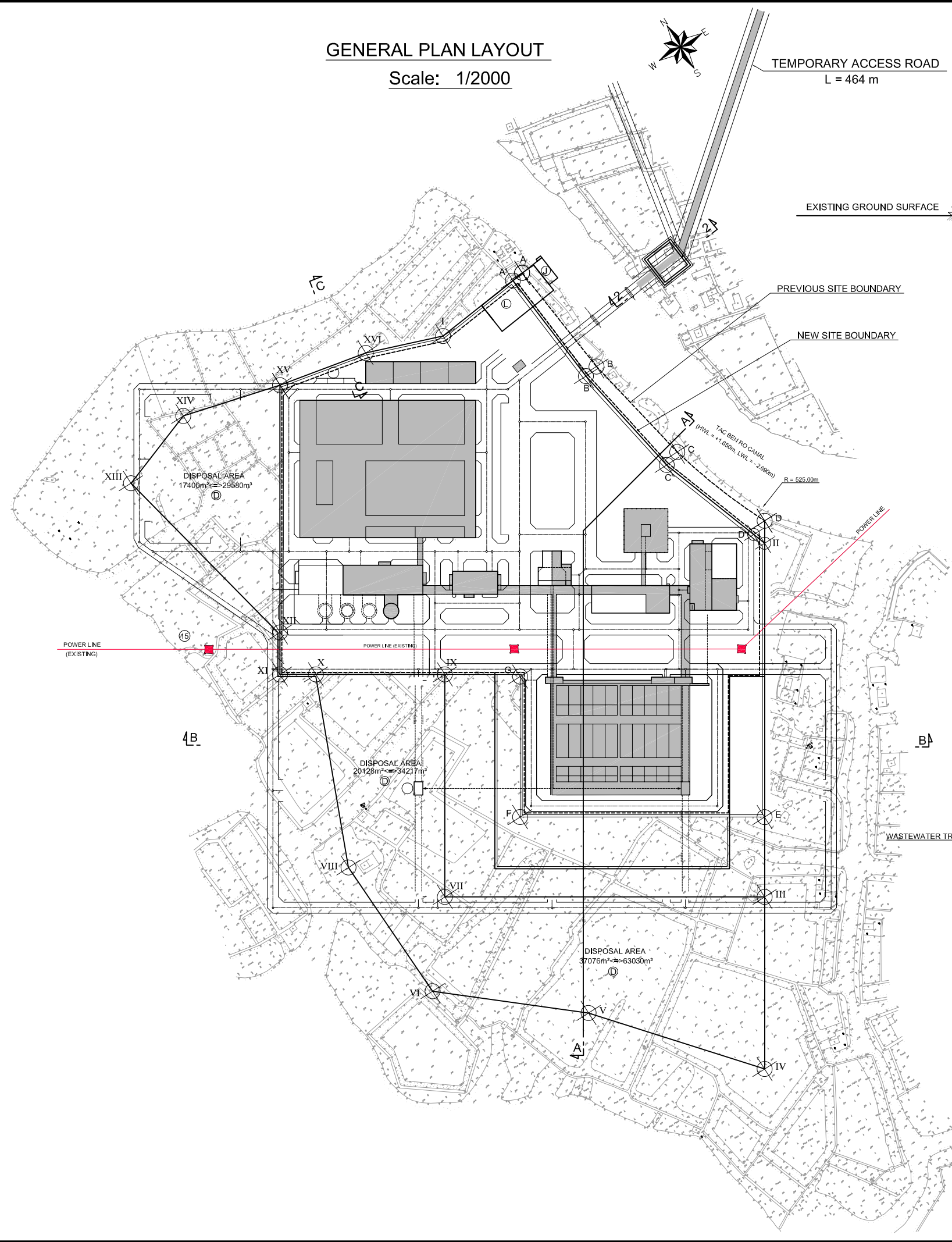
* Bypass Waterway Establish. (B = 1.5m, Open Waterway)

NO.	DATE	DESCRIPTIONS	BY	APRO.

REVISIONS				
PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT				
THE DETAILED DESIGN STUDY ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM				
PACKAGE E WASTEWATER TREATMENT PLANT HYDRAULIC PROFILE OF THBNDT WASTEWATER TREATMENT PLANT (FINAL PHASE AND PHASE II)				
SCALE: N.T.S				
JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)				
PACIFIC CONSULTANTS INTERNATIONAL				
DESIGNED KIMURA TORU		CHECKED KONDO MASAMI		
DATE : JUNE 2001		DWG. No. PE - WWTP - 201 - 04		

GENERAL PLAN LAYOUT

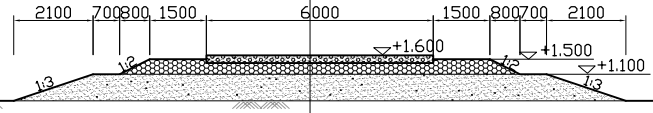
Scale: 1/2000



TEMPORARY ACCESS ROAD
L = 464 m

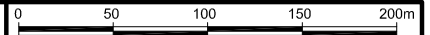
EXISTING GROUND SURFACE +0.500

- CRUSHED STONE 50x70 - 200mm MIXED WITH CLAY
- LATERITE 400mm THICK
- BLOCKSAND WELL COMPACTED - 600mm THICK
- NATURAL SOIL



TEMPORARY ACCESS ROAD DETAIL

Scale: 1/100



- Notes:
- (L) - Loading Bay 23000W x 60000L
 - (J) - Jetty 23400L x 9900W
 - (D) - Disposal Area.
 - (A) - Temporary Access Road.
 - Soft Soil Excavation Limitation

POINT	X COORD	Y COORD
I	185390	574192
II	185074	574338
III	184803	574165
IV	184671	574081
V	184800	573973
VI	184893	573864
VII	184959	573920
VIII	185029	573860
IX	185130	574028
X	185193	573929
XI	185210	573902
XII	185243	573922
XIII	185430	573881
XIV	185456	573954
XV	185432	574043
XV	185415	574125
A	185400	574284
A'	185398.6	574273
B	185291.8	574295.2
B'	185289.6	574282.4
C	185186.7	574315.4
C'	185182	574301
D	185091	574348.8
D'	185086.1	574333.7

A-A' : 11.00m
 B-B' : 13.00m
 C-C' : 15.20m
 D-D' : 16.00m
 Softsoil Excavation Area : 137182m²
 Site Boundary : 1631m
 Filling Area : 141804m²



ACCESS ROAD LOCATION

Scale: 1/8000

NO.	DATE	DESCRIPTIONS	BY	APRO.
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PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT				
THE DETAILED DESIGN STUDY ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM				
PACKAGE E WASTEWATER TREATMENT PLANT LAYOUT OF SITE PREPARATION (PHASE I)				
SCALE : AS SHOWN				
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)				
PACIFIC CONSULTANTS INTERNATIONAL				
DESIGNED KIMURA TORU		CHECKED KONDO MASAMI		
DATE : JUNE 2001		DWG. No. PE - WWTP - 201 - 05		