9.8 Drawings

FEASIBILITY STUDY FOR EXPANSION OF

VICTORIA HYDROPOWER STATION

SRI LANKA

FEASIBILITY STUDY FOR EXPANSION OF VICTORIA HYDROPOWER STATION SRI LANKA

INDEX	DRAWING TITLE	DRAWING No.	SHT. NO.	ISSUING STAGE
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2	PLAN OF PROJECT AREA	002	1	– DITTO –
3	GEOLOGY WATERWAY PLAN & HORIZONTAL SECTION	003	1	– DITTO –
4	GEOLOGY WATERWAY PROFILE OF EXISTING TUNNEL	004	1	– DITTO –
5	GEOLOGY WATERWAY PROFILE OF NEW TUNNEL	005	1	– DITTO –
6	GEOLOGY POWERHOUSE & PENSTOCK PLAN & SECTION	006	1	– DITTO –
7	WATERWAY PLAN AND PROFILE	007	1	– DITTO –
8	HEADRACE TYPICAL SECTION	008	1	– DITTO –
9	PENSTOCK (TUNNEL) TYPICAL SECTION	009	1	– DITTO –
10	PENSTOCK (OPEN–AIR) PLAN AND SECTION	010	1	– DITTO –
11	PENSTOCK (OPEN–AIR) PLOFILE	011	1	– DITTO –
12	SURGETANK VERTICAL AND CROSS SECTION	012	1	– DITTO –
13	ACCESS ADIT PLUG CONCRETE PLAN AND SECTION	013	1	– DITTO –
14	POWERHOUSE OVERALL PLAN	014	1	– DITTO –
15	POWERHOUSE LONGITUDINAL SECTION C–C	015	1	– DITTO –
16	POWERHOUSE CROSS SECTION (A–A, B–B)	016	1	– DITTO –
17	POWERHOUSE PLAN at ELEVATION 218.00	017	1	– DITTO –
18	POWERHOUSE PLAN at ELEVATION 224.00	018	1	– DITTO –
19	POWERHOUSE PLAN at ELEVATION 226.00	019	1	– DITTO –
20	POWERHOUSE PLAN at ELEVATION 230.25	020	1	– DITTO –
21	POWERHOUSE PLAN at ELEVATION 238.00	021	1	– DITTO –
22	POWERHOUSE PLAN at ELEVATION 242.00	022	1	– DITTO –
23	POWERHOUSE PLAN at ELEVATION 249.00	023	1	– DITTO –
24	GENERATOR CIRCUIT SINGLE LINE DIAGRAM	024	1	– DITTO –
25	400 VOLT SYSTEM SINGLE LINE DIAGRAM	025	1	– DITTO –
26	SWITCHYARD PLAN OF 220kV SWITCHYARD	026	1	– DITTO –
27	POWERHOUSE COMPARISON OF SECTION	027	1	– DITTO –
28	POWERHOUSE COMPARISON OF PLAN at ELEVATION 242.00	028	1	– DITTO –

Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

LIST OF DRAWINGS

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

KURUNEGALA
PUTTALAM AND
COLOMBO

KATUGASTOTA
BRIDGE

POLGOLLA
BARRAGE

MADAWELA

MENIKHINNA

HULU GANGA

HULU GANGA BRIDGE

KARALLIYADDA BRIDGE

KARALLIYADDA

RAJAWELLA

DIGANA

GURUOYA BRIDGE

KANDY

TENNEKUMBURA
BRIDGE

RATMAL OYA
BRIDGE

KUNDASALE

MORAGAHAMULLA

KITULAGAMUWA
OYA BRIDGE

BALAGALLA OYA
BRIDGE

GURUDENIYA
BRIDGE

GURUDENIYA

MAHAWELI GANGA

PERADENIYA

TALATHU OYA

KAPULIYADDA
BRIDGE

GAU ELA BRIDGE

VICTORIA
DAM

VALIKADATENNA

MAHA OYA

ADHIKARIGAMA

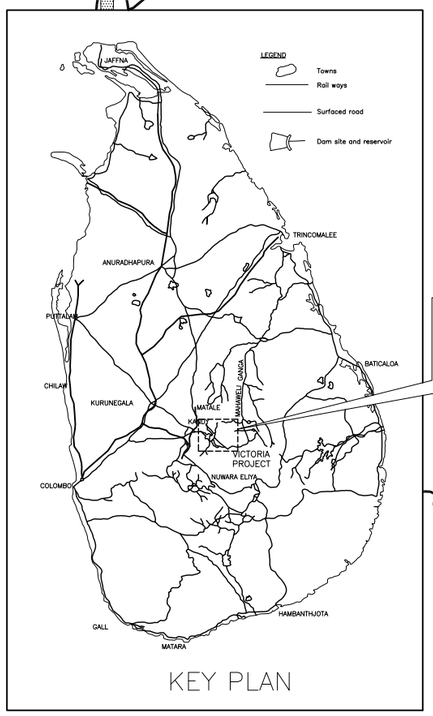
MAHA OYA BRIDGE

TUNNEL

PUSSALAMANKADA

VICTORIA
POWER STATION

PROJECT
AREA



KEY PLAN

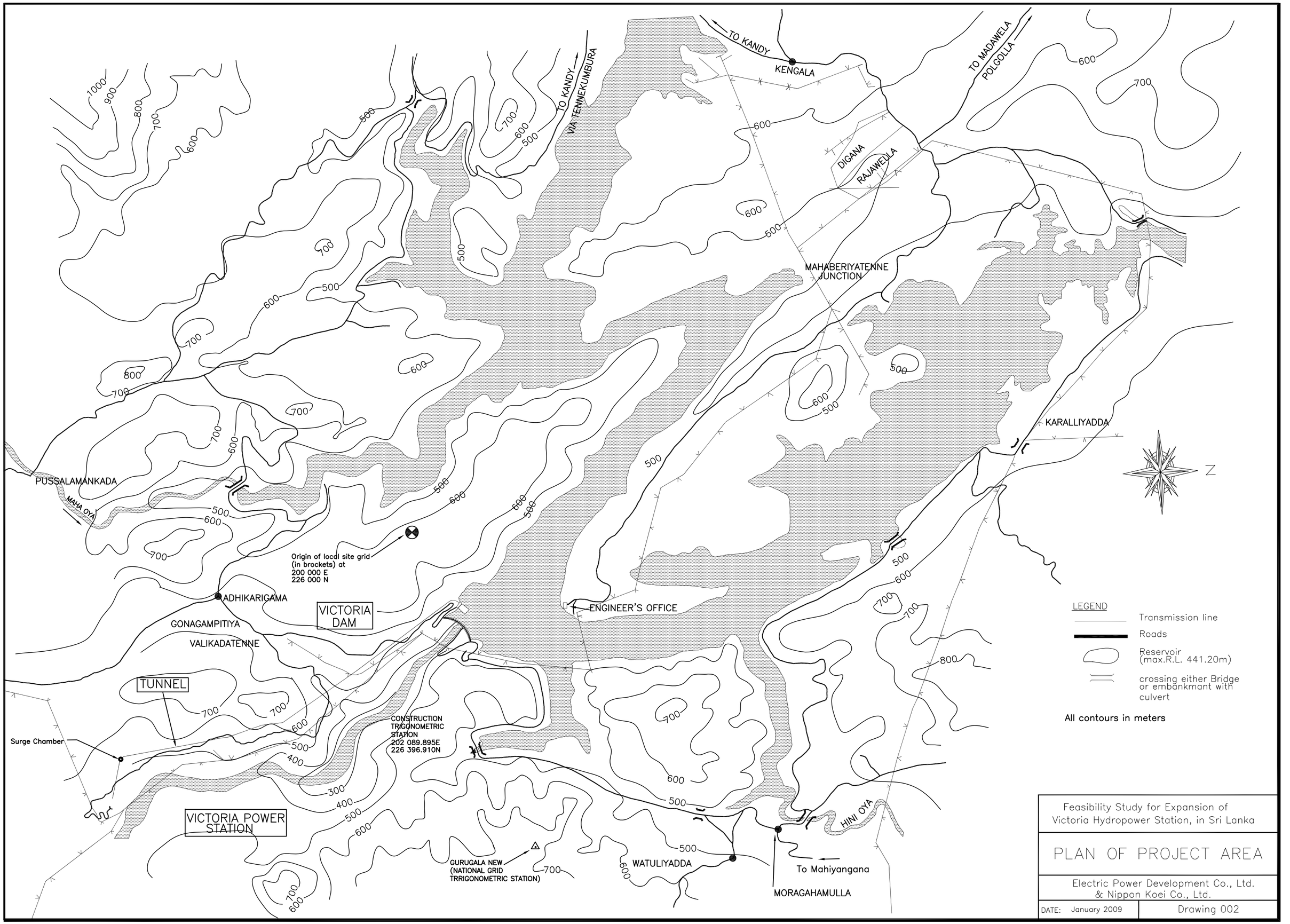
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

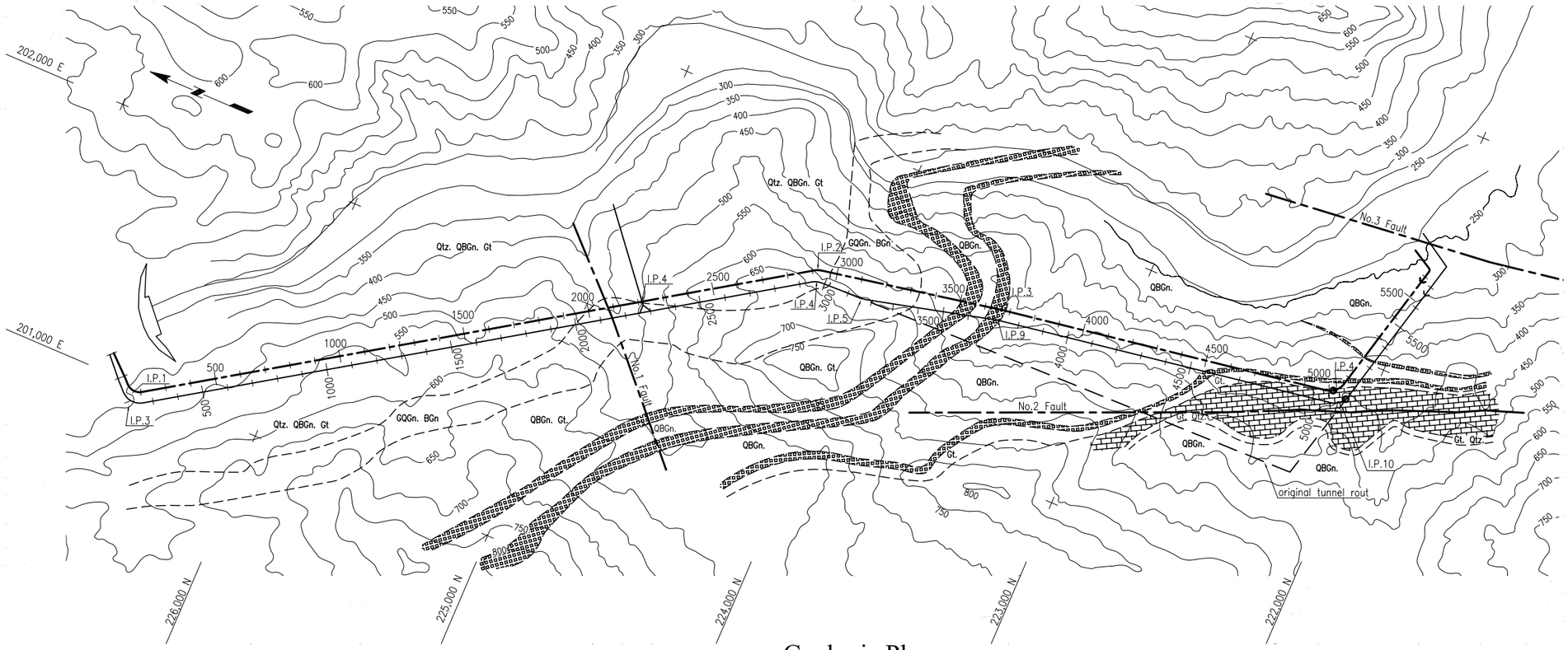
MAP OF SRI LANKA AND PROJECT AREA

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

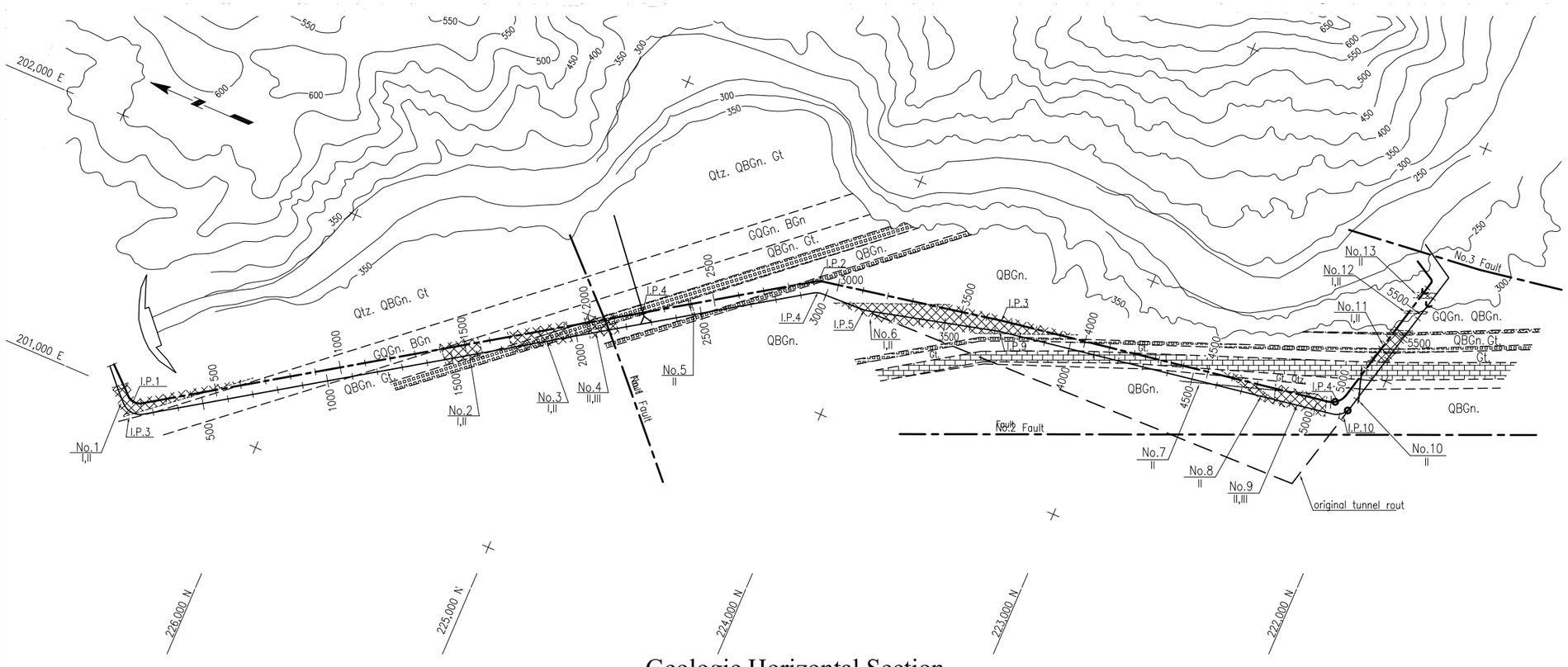
DATE: January 2009

Drawing 001


TO KANDY
KENGALA
TO MADAWELA
POLGOLLA
TO KANDY
VIA TENNEKUMBURA
DIGANA
RAJAWELLA
MAHABERIYATENNE
JUNCTION
KARALLIYADDA
PUSSALAMANKADA
MAHA OYA
Origin of local site grid
(in brockets) at
200 000 E
226 000 N
ADHIKARIGAMA
VICTORIA
DAM
ENGINEER'S OFFICE
GONAGAMPITIYA
VALIKADATENNE
TUNNEL
Surge Chamber
CONSTRUCTION
TRIGONOMETRIC
STATION
202 089.895E
226 396.910N
VICTORIA POWER
STATION
GURUGALA NEW
(NATIONAL GRID
TRRIGONOMETRIC STATION)
WATULIYADDA
To Mahiyangana
MORAGAHAMULLA
HINI OYA
N
LEGEND
Transmission line
Roads
Reservoir
(max.R.L. 441.20m)
crossing either Bridge
or embankmant with
culvert
All contours in meters
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka
PLAN OF PROJECT AREA
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.
DATE: January 2009
Drawing 002



Geologic Plan



Geologic Horizontal Section

LEGEND

Pre Cambrian

High-Land Complex

- GQGn Garnetiferous Quartz Gneiss
- BGn Boitite Gneiss
- QBGn Quartz Biotite Gneiss
- Gt Granulite
- Qzt Quartzite
- Mbl Crystalline Limestone(Marble)

geologic boundary

fault

Poor Zone

No.1 zone No. (see report Table 6.3.1-2)

I,II rock type (see report Table 6.3.1-1)

Note:
Distribution of Geology and Poor zones are assumed depending on the records of existing tunnel, which are listed below.

"contract no.2 tunnnel report on geotechnical conditions (1983,C.E.C.B)"
"geological cross section along tunnnel (1982,DRG.No.78350/SL234-245,S.A.G&P)
"summary of tunnel geology and supports (1982,DRG.No.78350/SL248,S.A.G&P)"
"geological study drawing plan and section along tunnel line-2 (1983,DRG.No.78350/SL250,S.A.G&P)"

0 1000m

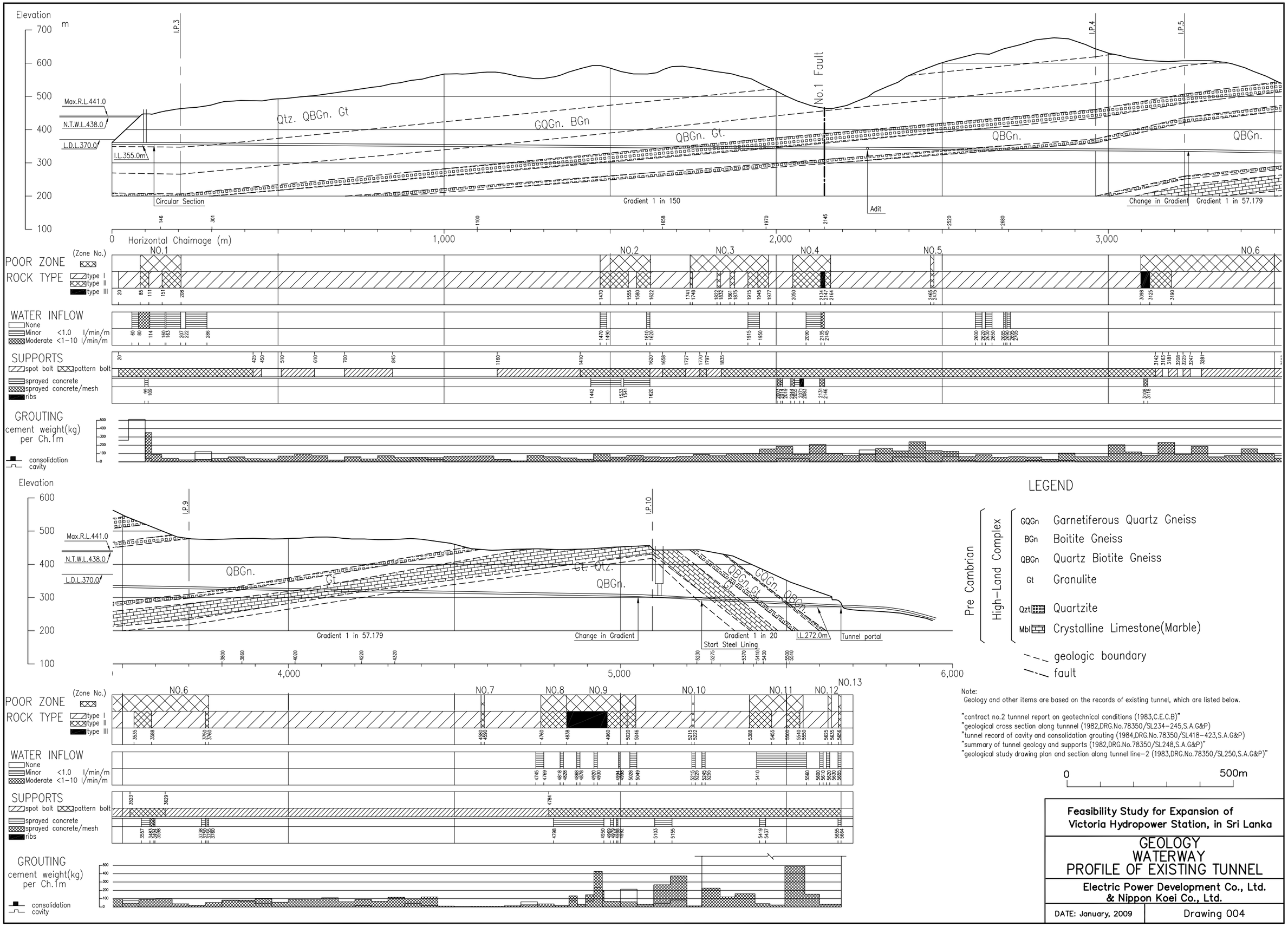
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

GEOLOGY WATERWAY PALN & HORIZONTAL SECTION

Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

DATE: January, 2009

Drawing 003



LEGEND

Pre Cambrian — High-Land Complex

- GQGn — Garnetiferous Quartz Gneiss
- BGn — Boitite Gneiss
- QBGn — Quartz Biotite Gneiss
- Gt — Granulite
- Qzt — Quartzite
- Mbl — Crystalline Limestone(Marble)
- geologic boundary
- fault

Note:
Geology and other items are based on the records of existing tunnel, which are listed below.

"contract no.2 tunnnel report on geotechnical conditions (1983,C.E.C.B)"
"geological cross section along tunnnel (1982,DRG.No.78350/SL234~245,S.A.G&P)
"tunnel record of cavity and consolidation grouting (1984,DRG.No.78350/SL418~423,S.A.G&P)
"summary of tunnel geology and supports (1982,DRG.No.78350/SL248,S.A.G&P)"
"geological study drawing plan and section along tunnel line-2 (1983,DRG.No.78350/SL250,S.A.G&P)"

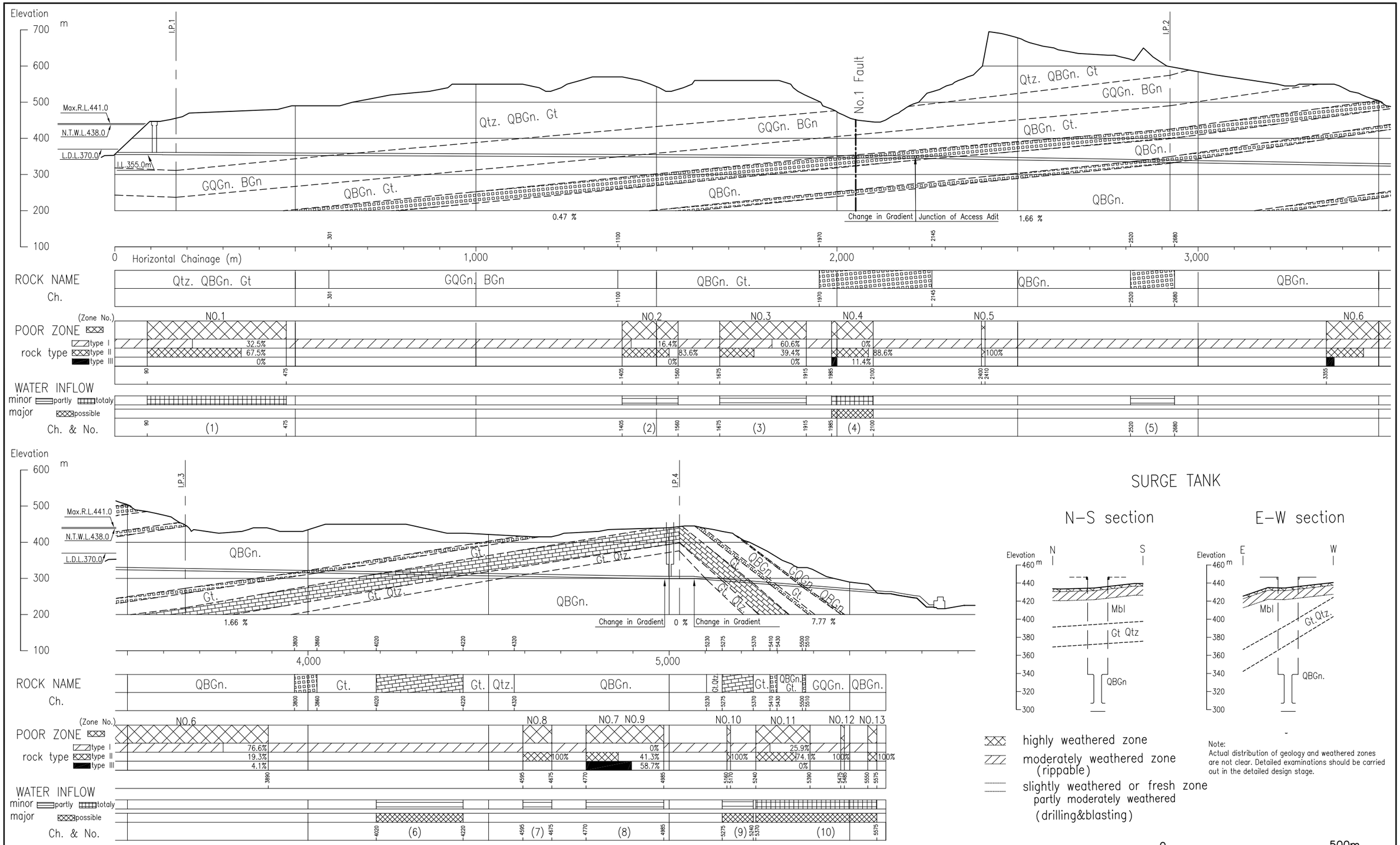
0 500m

Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

GEOLOGY WATERWAY PROFILE OF EXISTING TUNNEL

Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

DATE: January, 2009 | Drawing 004



SURGE TANK

N–S section

E–W section

- highly weathered zone
- moderately weathered zone (rippable)
- slightly weathered or fresh zone partly moderately weathered (drilling&blasting)

Note:
Actual distribution of geology and weathered zones are not clear. Detailed examinations should be carried out in the detailed design stage.

0 500m

LEGEND

- geologic boundary
- fault

Pre Cambrian / High-Land Complex

- GQGn Garnetiferous Quartz Gneiss
- BGn Boitite Gneiss
- QBGn Quartz Biotite Gneiss
- Gt Granulite
- Qzt Quartzite
- Mbl Crystalline Limestone(Marble)

Note:
Geology and other items are assumed depending on the records of existing tunnel, which are listed below.

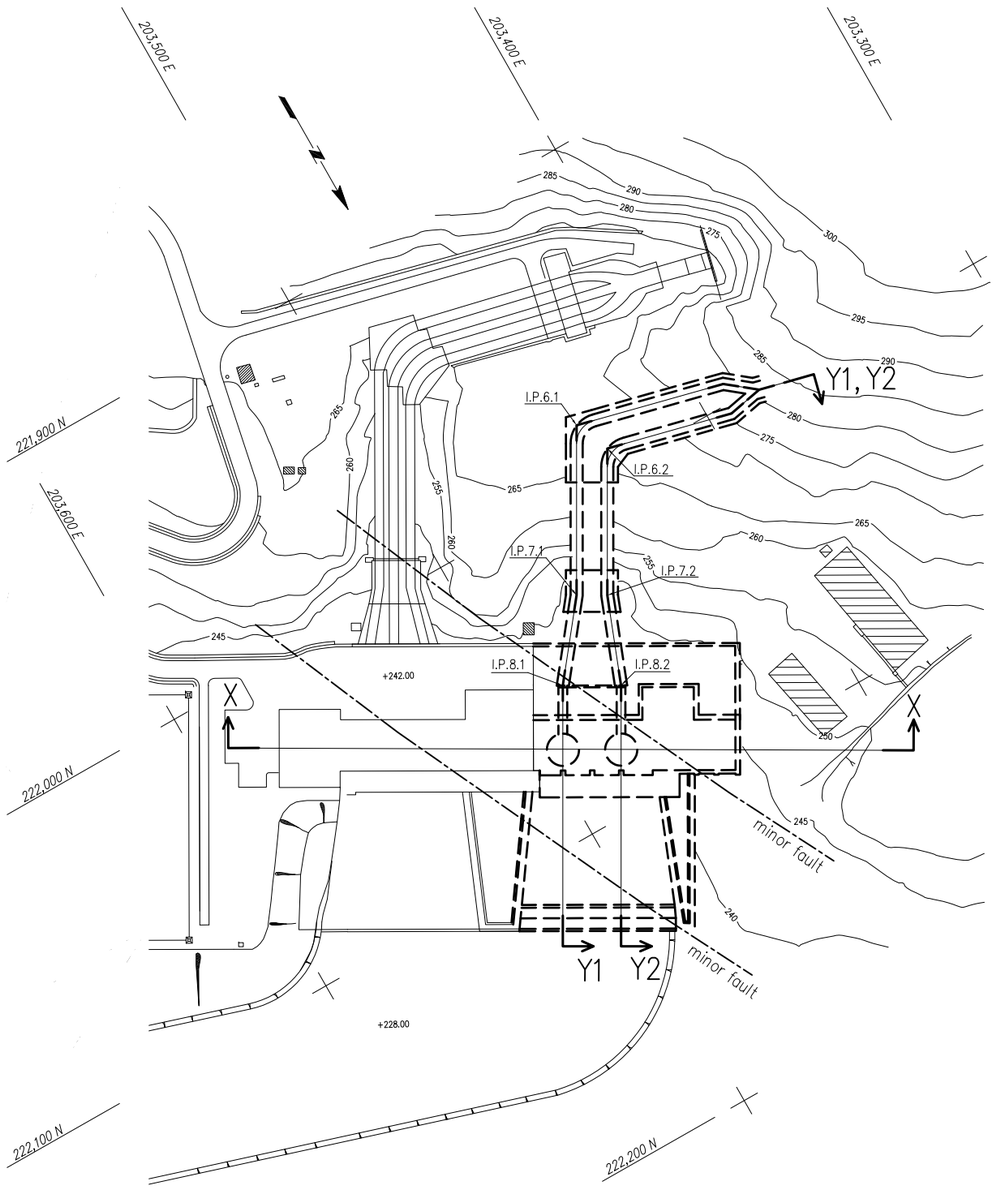
"contract no.2 tunnnel report on geotechnical conditions (1983,C.E.C.B)"
"geological cross section along tunnnel (1982,DRG.No.78350/SL234–245,S.A.G&P)
"tunnel record of cavity and consolidation grouting (1984,DRG.No.78350/SL418–423,S.A.G&P)
"summary of tunnel geology and supports (1982,DRG.No.78350/SL248,S.A.G&P)"
"geological study drawing plan and section along tunnel line–2 (1983,DRG.No.78350/SL250,S.A.G&P)"

Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

GEOLOGY WATERWAY PROFILE OF NEW TUNNEL

Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

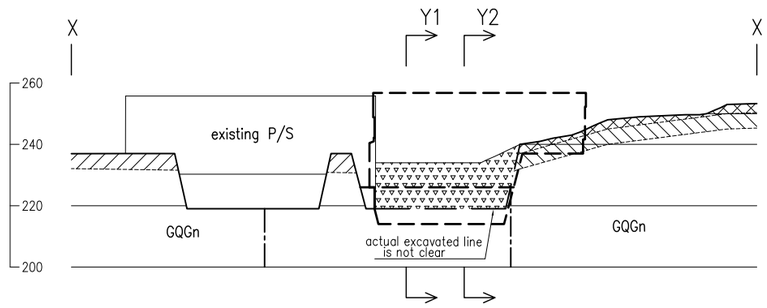
DATE: January, 2009 | Drawing 005



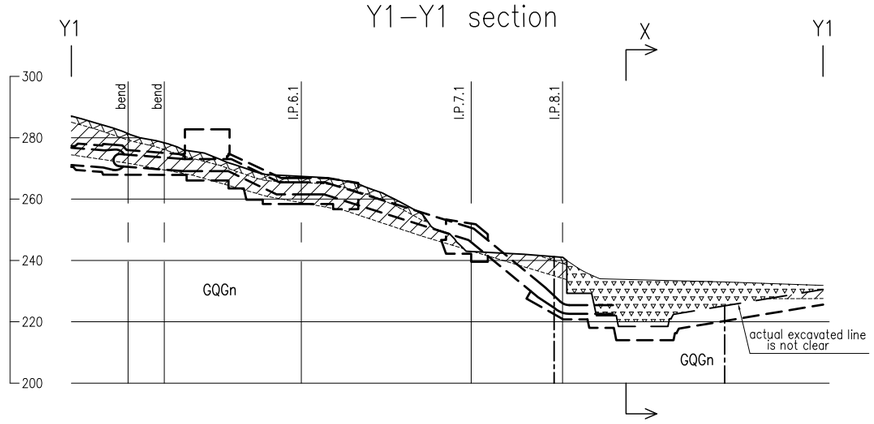
PLAN

0 50m

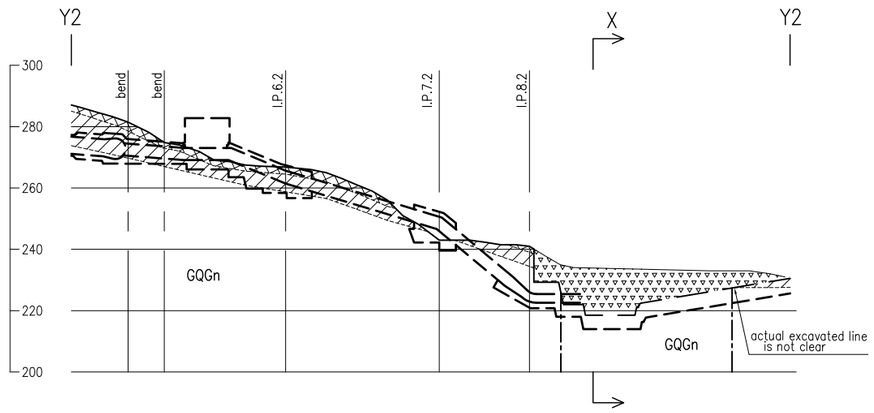
X–X section



Y1–Y1 section



Y2–Y2 section



0 50m

LEGEND

Pre Cambrian
High–Land Complex

- GQGn — Garnetiferous Quartz Gneiss
- fault
- highly weathered zone
- moderately weathered zone (rippable)
- slightly weathered or fresh zone partly moderately weathered (drilling&blasting)
- backfill

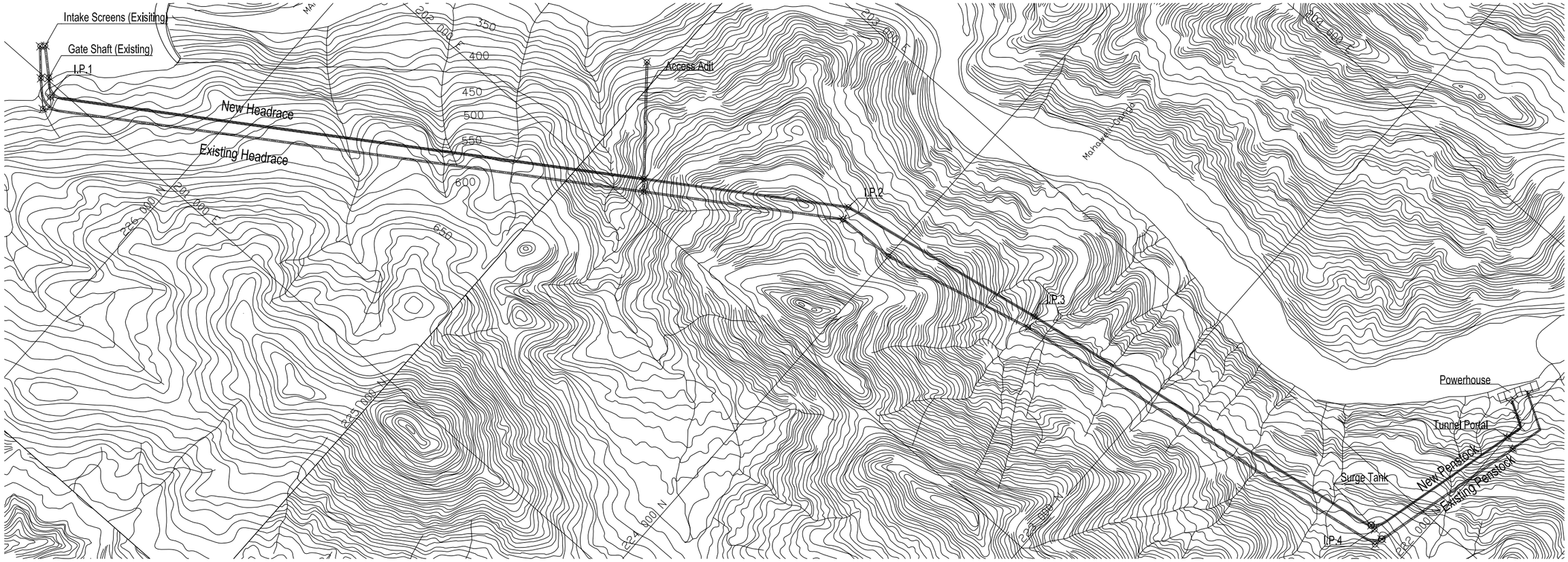
Note:
Geology, fault and weathered zone were assumed depending on the "victria power station civil engineering & architectual works construction report volume I (1986,S.A.G&P.)". But the actual distribution of each geologic items are not clear. Detailed examinations should be carried out in the detailed design stage.

Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

GEOLOGY
POWERHOUSE & PENSTOCK
PALN & SECTION

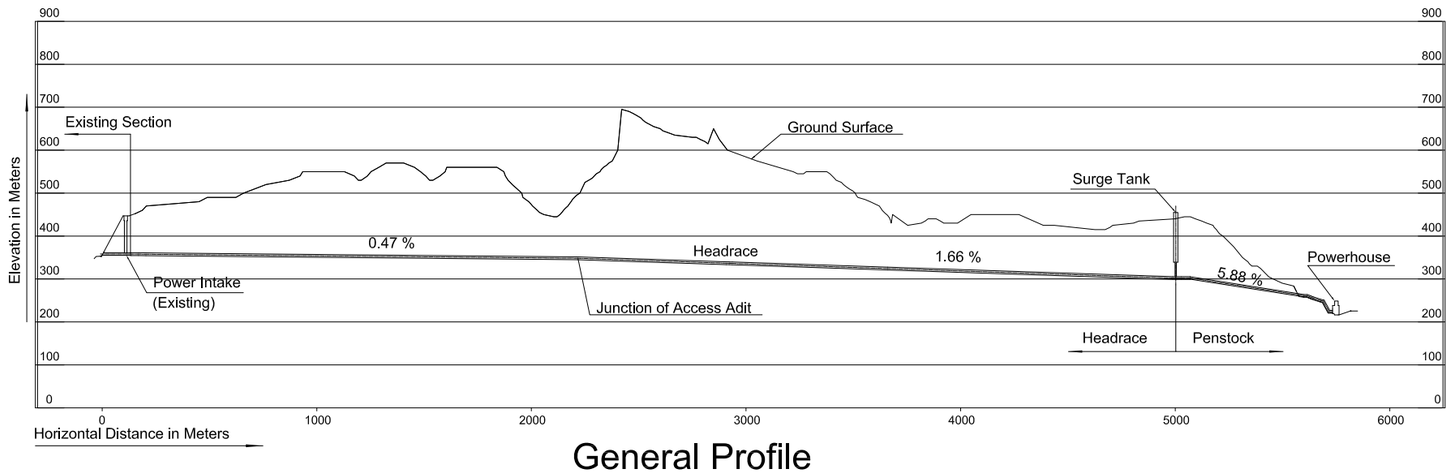
Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

DATE: January, 2009 | Drawing 006



General Plan

Scale a



General Profile

Horizonal; scale a. Vertical; scale b

	E	N	Bend Radius (m)	Holizontal Chainage (m)	Center EL. (m)
Intake screen (Existing)	201,081.44	226,643.99		0.000	
Gate shaft (Existing)	201,008.01	226,562.62		109.606	358.100
T.P.1 (A)	-	-		135.512	357.979
I.P.1	200,961.08	226,515.37	50.000	-	-
T.P.1 (B)	-	-		203.821	357.598
Adit junction	202,092.79	224,803.53		2,215.245	348.250
T.P.2 (A)	-	-		2,908.350	336.743
I.P.2	202,482.73	224,213.70	70.000	-	-
T.P.2 (B)	-	-		2,935.920	336.279
I.P.3	202,622.33	223,488.85		-	-
Change in Gradient	202,836.10	222,183.44		4,982.916	302.302
Start of Steel Lining	202,836.10	222,183.44		4,982.916	302.302
T.P4 (A)	-	-		4,987.916	302.302
Surge tank	202,847.41	222,151.53	70.000	5,002.497	302.302
I.P.4	202,844.37	222,132.97	70.000	-	-
T.P.4 (B)	-	-		5,069.580	302.302
Start of Contraction	202,889.16	222,121.87		5,069.580	302.302
End of Contraction	202,894.69	222,120.50		5,069.580	301.967
Tunnel portal	203,381.15	222,000.01		5,576.437	272.496

SCALE a 0 2 km

SCALE b 0 1 km

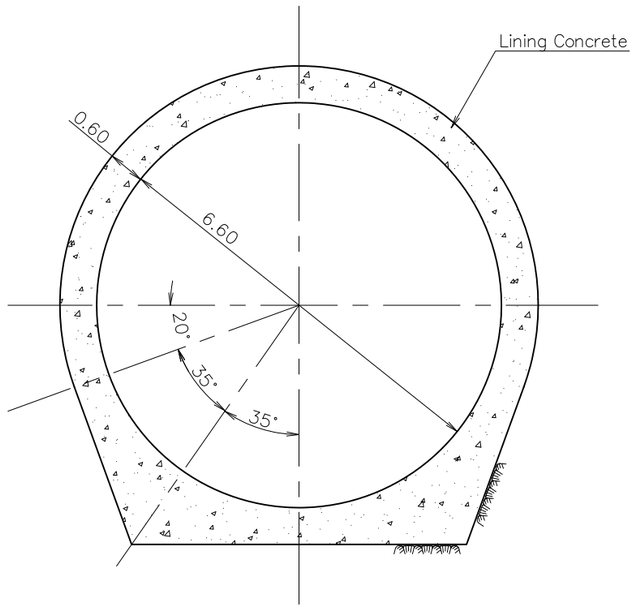
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

WATER WAY
PLAN AND PROFILE

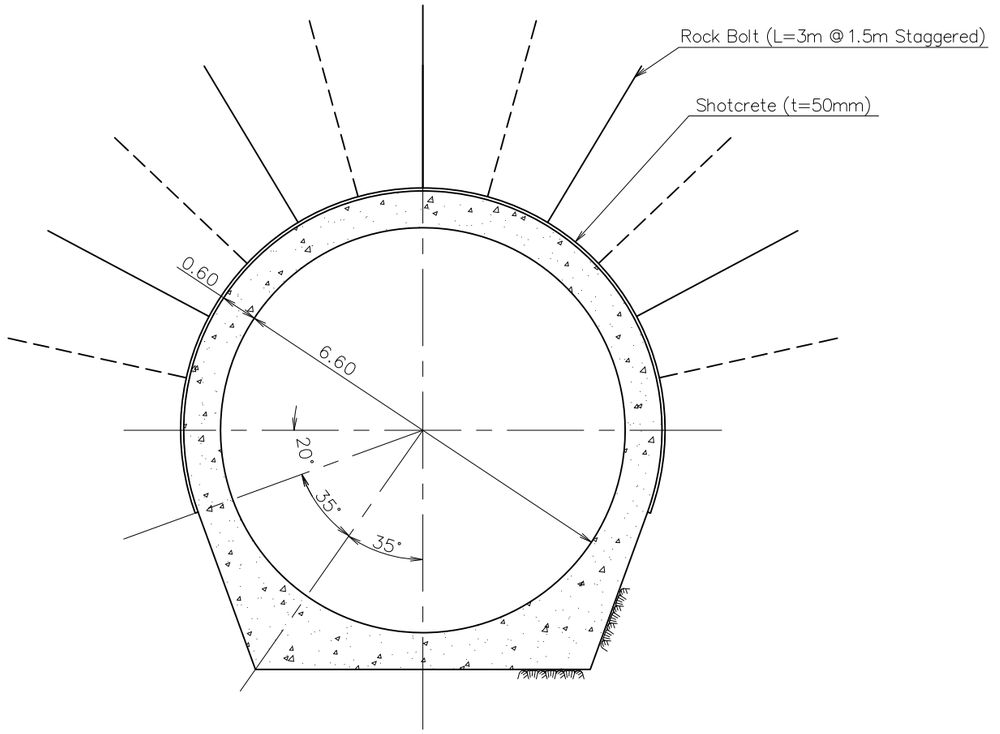
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January, 2009

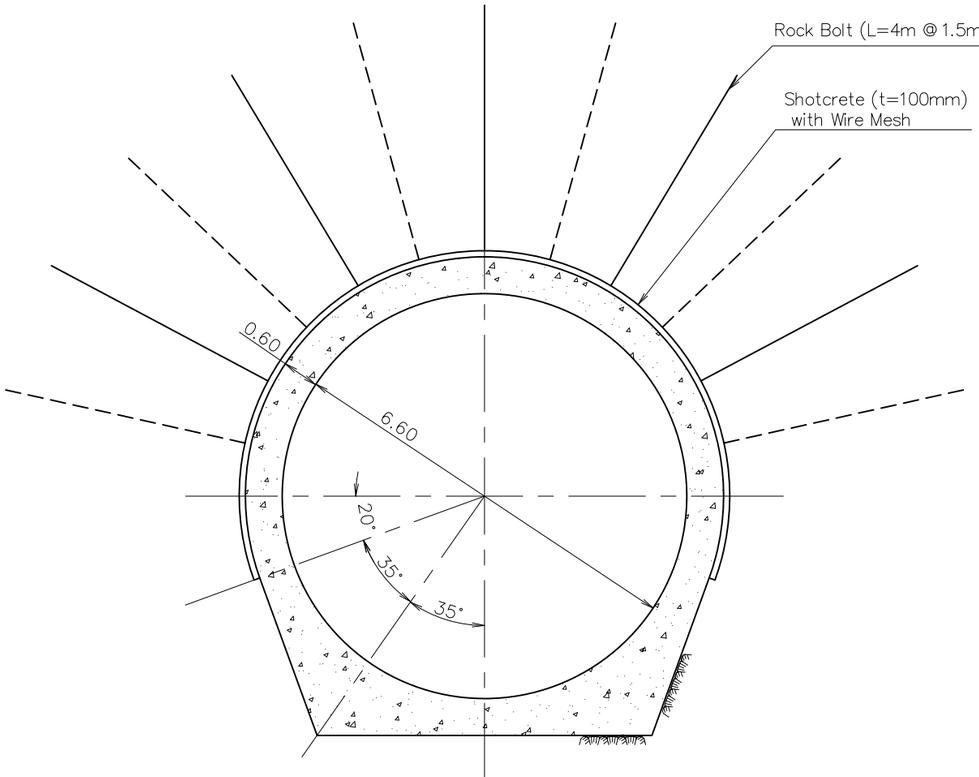
Drawing 007



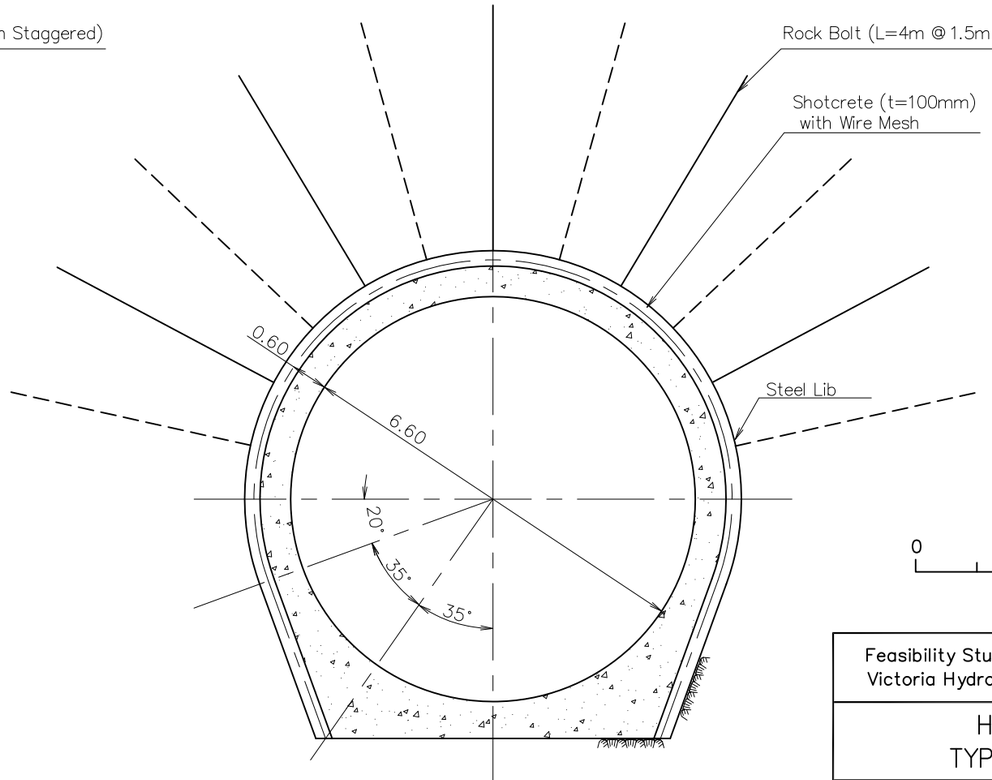
TYPE – I



TYPE – II



TYPE – III



TYPE – IV

0 5m

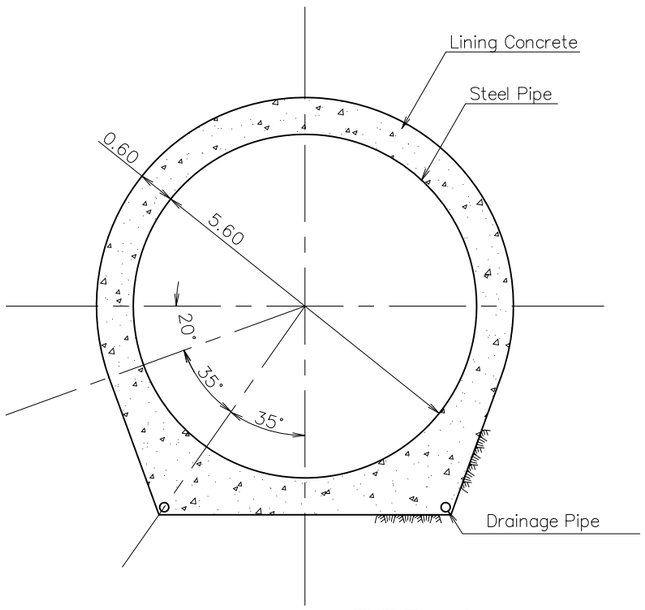
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

HEADRACE
TYPICAL SECTION

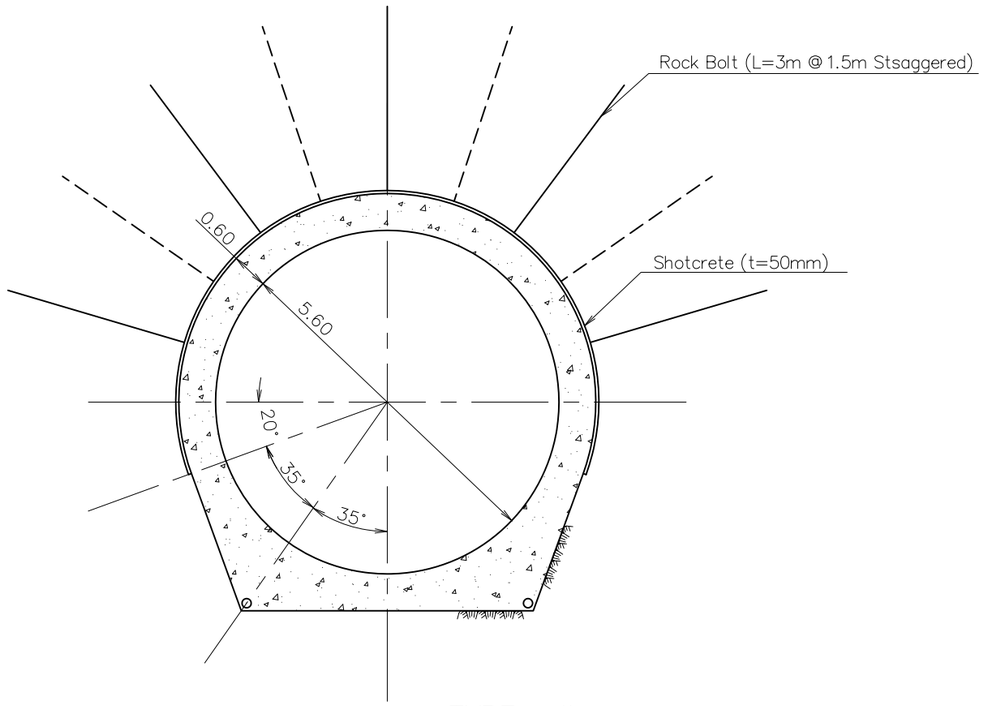
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January, 2009

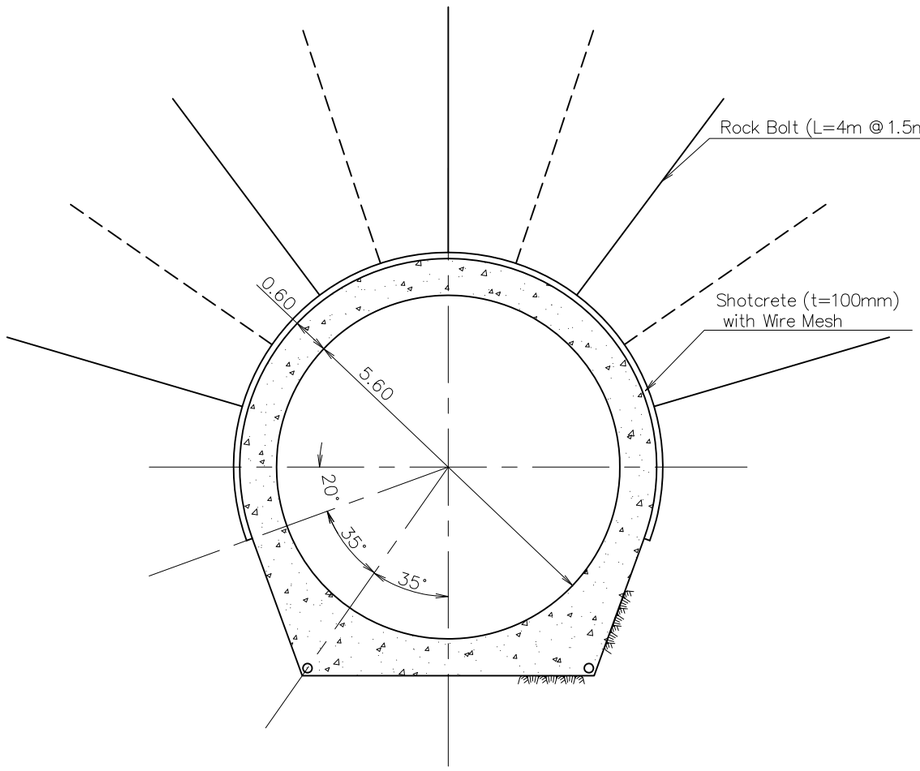
Drawing 008



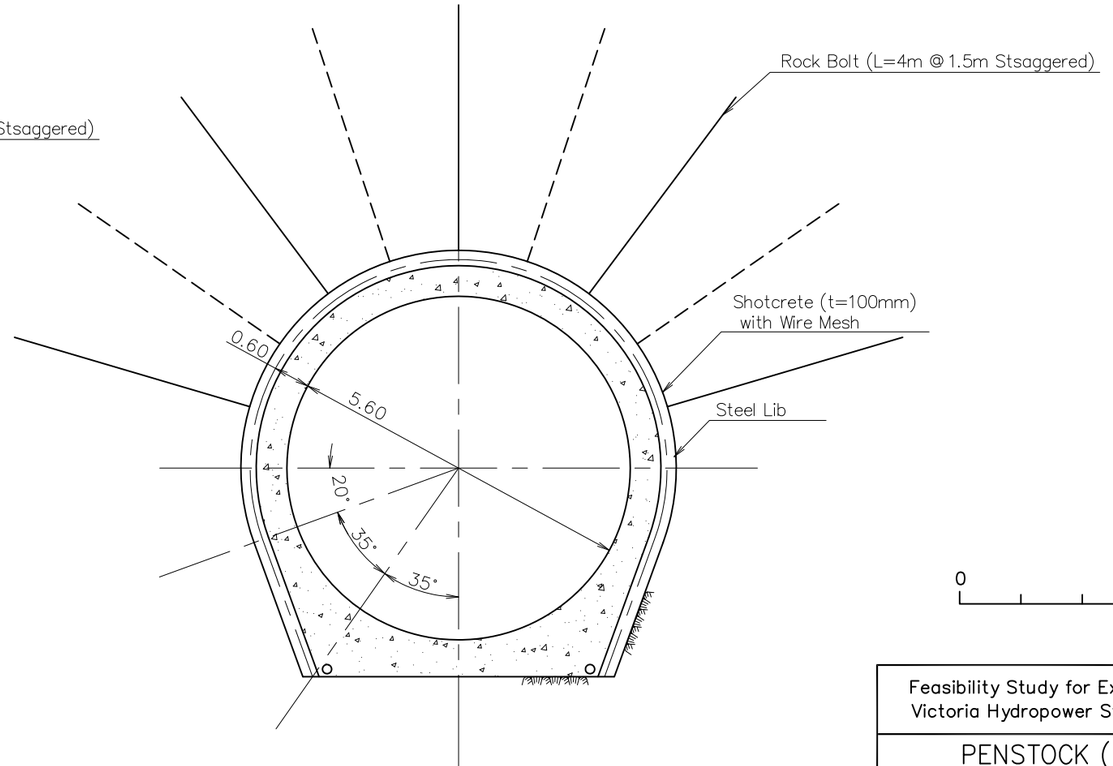
TYPE – I



TYPE – II



TYPE – III



TYPE – IV

0 5m

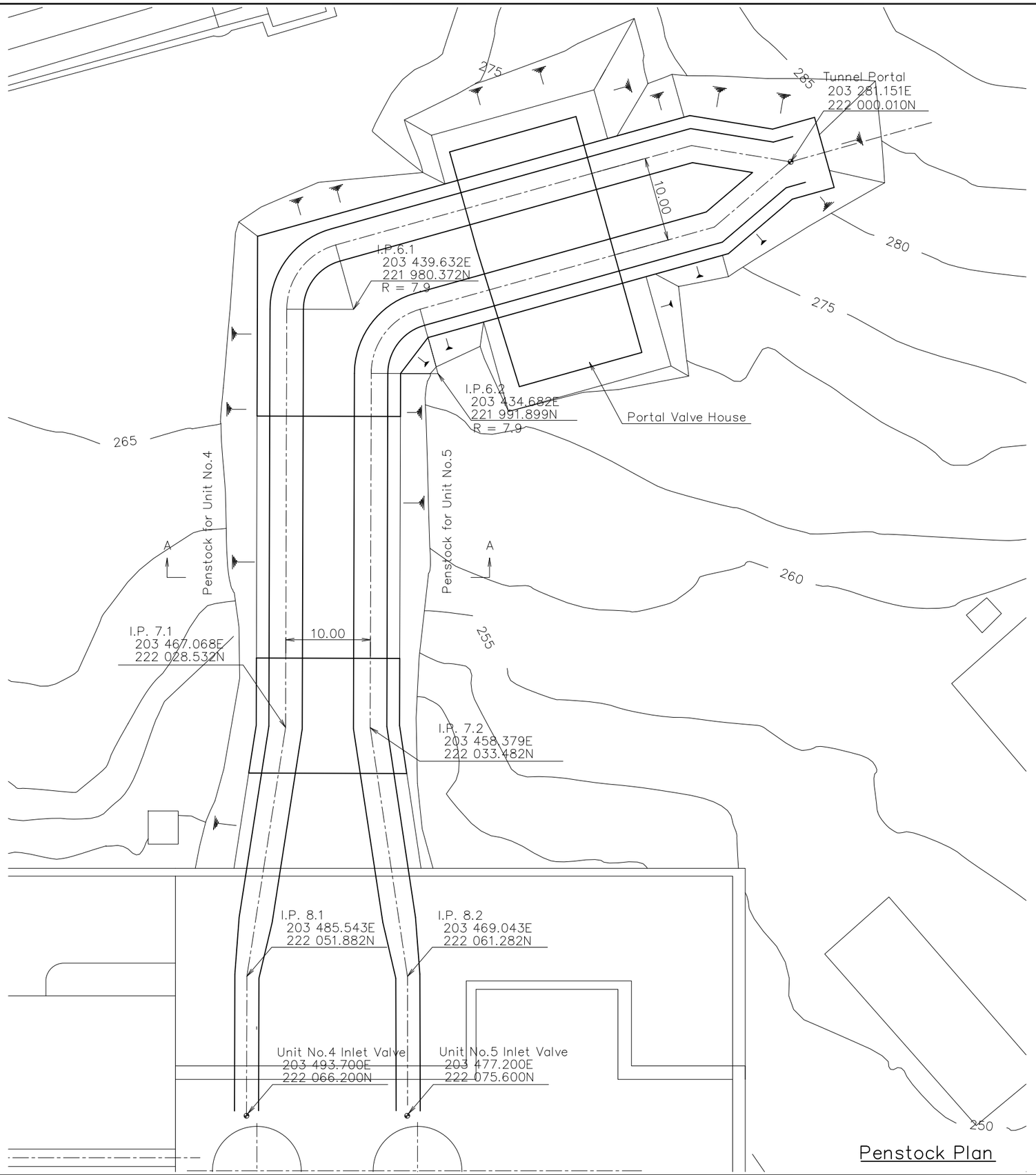
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

PENSTOCK (TUNNEL)
TYPICAL SECTION

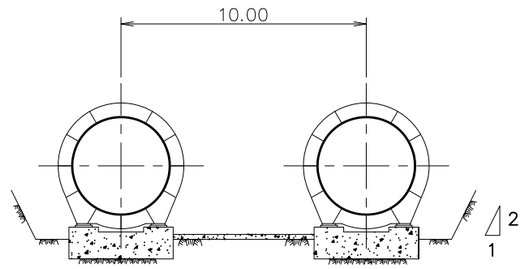
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January, 2009

Drawing 009



Penstock Plan



A—A

NOTE:
Coordinations are tentative value. They shall be finalized at D/D stage.

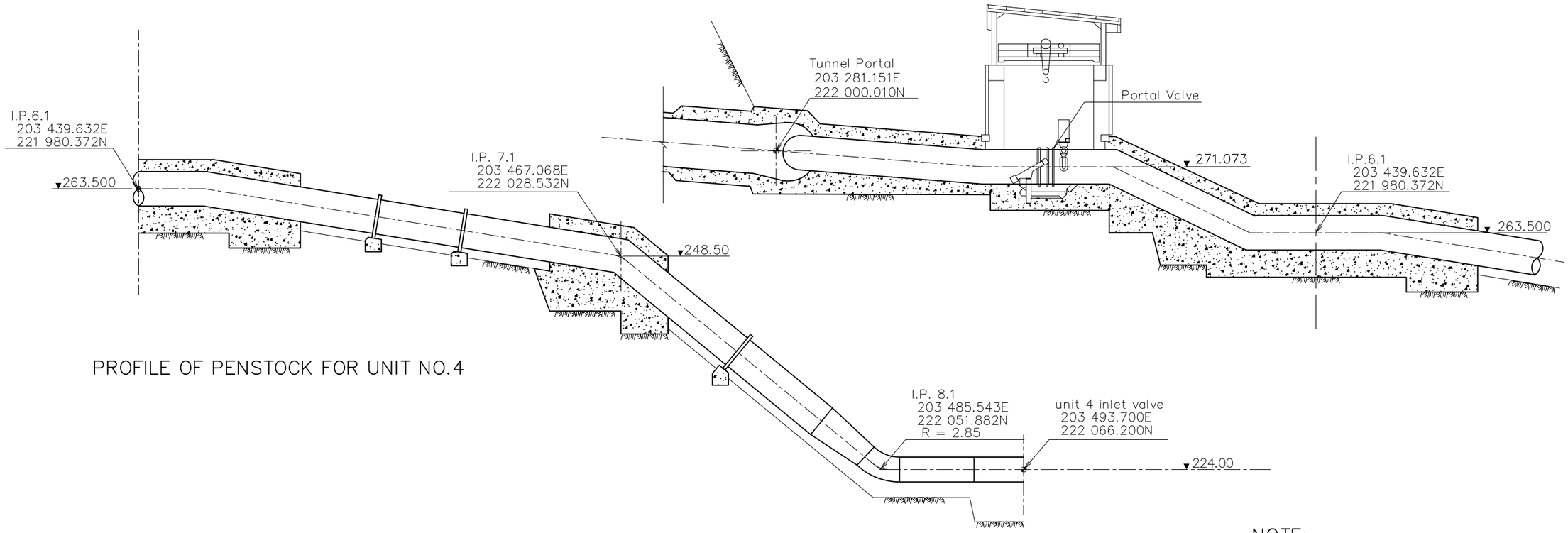
0 25m

Penstock Plan

0 12.5m

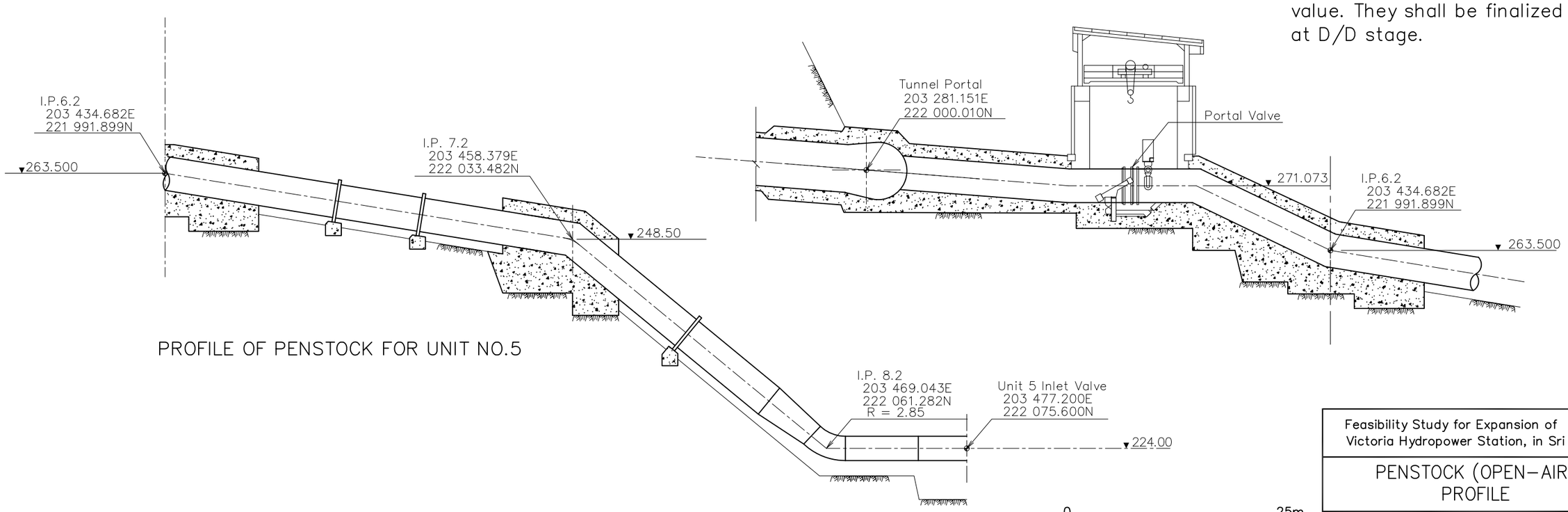
A—A

Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka	
PENSTOCK (OPEN—AIR) PLAN AND SECTION	
Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.	
DATE: January, 2009	Drawing 010



PROFILE OF PENSTOCK FOR UNIT NO.4

NOTE:
Coordinations are tentative value. They shall be finalized at D/D stage.



PROFILE OF PENSTOCK FOR UNIT NO.5

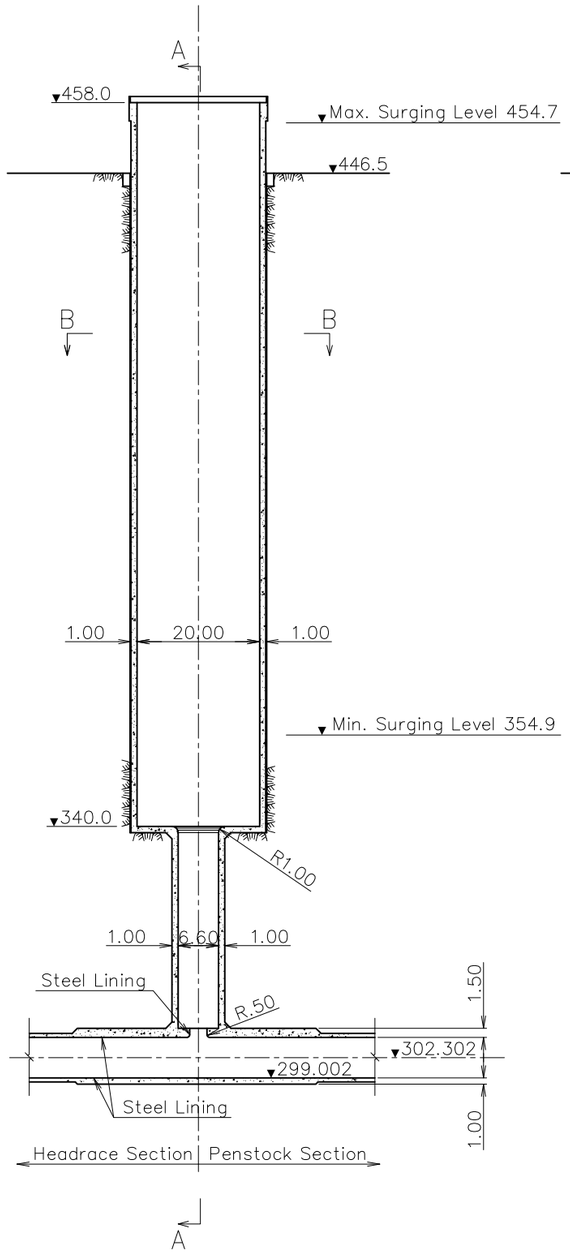
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

PENSTOCK (OPEN–AIR) PROFILE

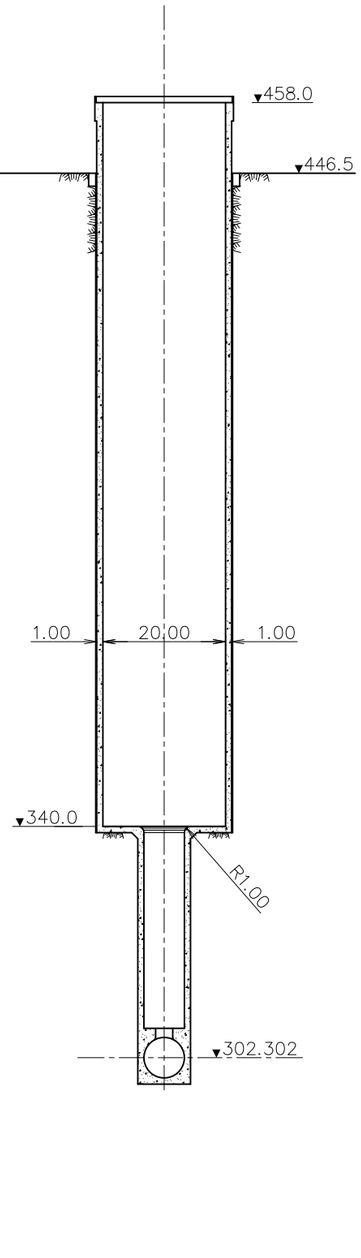
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January, 2009

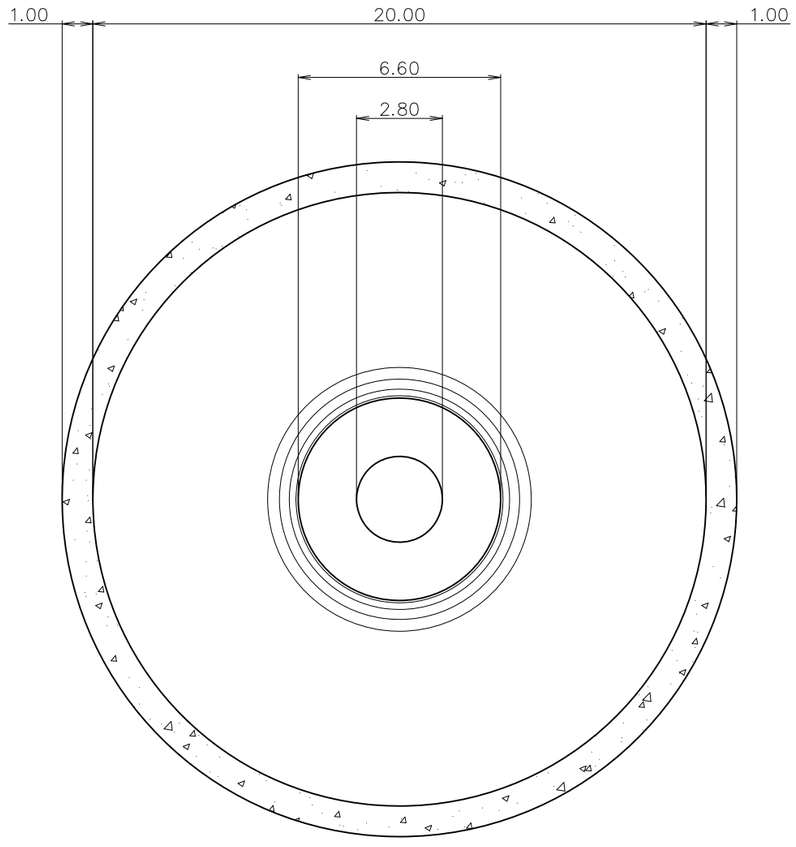
Drawing 011



VERTICAL SECTION



A–A



B–B

0 50m
(VERTICAL SECTION and A–A)

0 10m
(B–B)

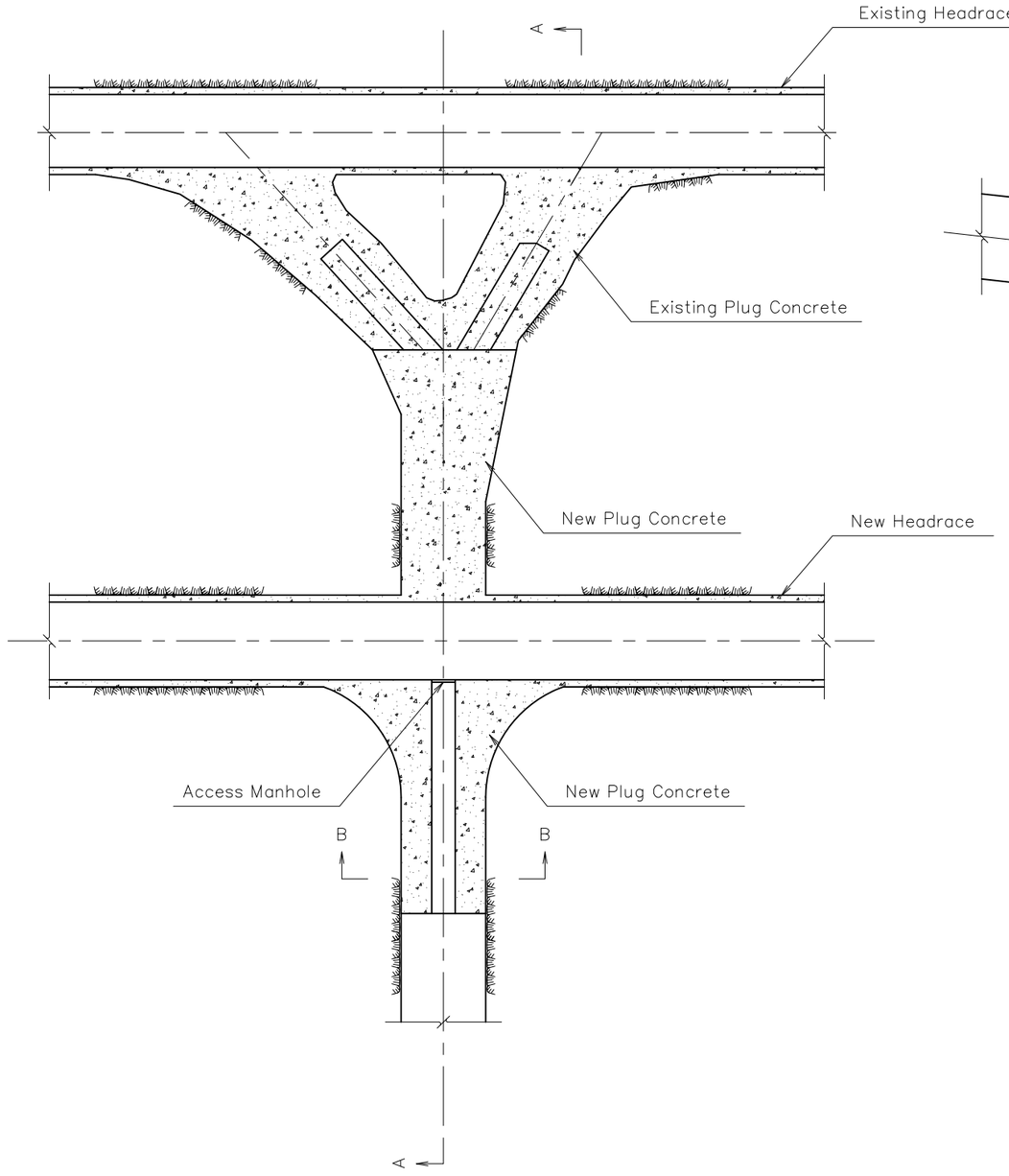
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

SURGE TANK
VERTICAL AND CROSS SECTION

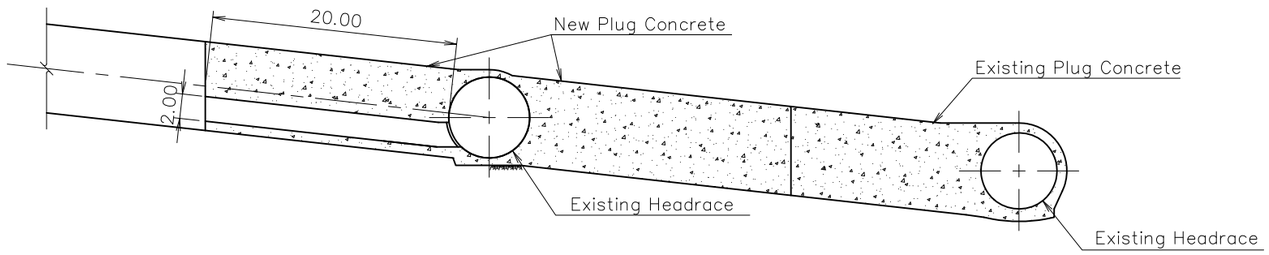
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January, 2009

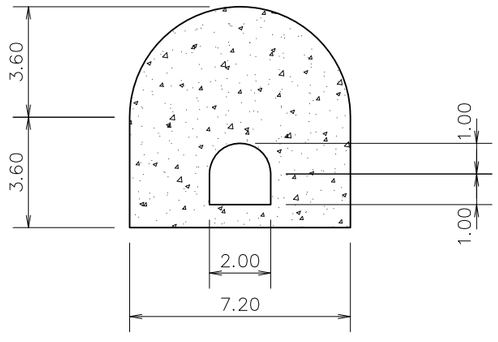
Drawing 012



PLAN



A–A



B–B

0 25m

PLAN and A–A

0 10m

B–B

Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

ACCESS ADIT PLUG CONCRETE PLAN AND SECTION

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January, 2009

Drwing 013

POWER STATION ACCESS RORAD

TO ADHIKARIGAMA

ACCESS ROAD TO PORTAL VALVE HOUSE

NAYA KANDURA DIVERSION

221.900 N

ACCESS RORAD

DRAINAGE DITCH

SWITCH YARD
+242.00

220 KV TRANSMISSON LINE TO KOTMALE

220 KV TRANSMISSON LINE TO RANDENIGALA

222.000 N

Access Road

+242.00

223.500 E

223.600 E

223.700 E

222.100 N

+228.00

TAILRACE

FLOW

265 260 255 250 245 240 275 285 290 295 300 280

0 50

Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

POWERHOUSE
OVERALL SITE PLAN

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009 | Drawing 014

LONGITUDINAL SECTION C–C

℄ of Column
(Existing power house)

℄
Set No.4

℄
Set No.5

0 1 2 3 4 5 6 7 8 9

1.50 | 9.50 | 9.50 | 9.50 | 9.50 | 8.00 | 7.00 | 6.50 | 7.00

Crane Rail Top
▼ 249.00

Beam Top
▼ 248.90

Entrance

▼ 242.00

Storage
Area

▼ 238.00

▼ 238.00

TO EXISTING
POWER HOUSE

▼ 230.25

▼ 226.00

▼ 224.00

▼ 220.00

Drainage
pit

▼ 215.00

▼ 214.00

0 10m

Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

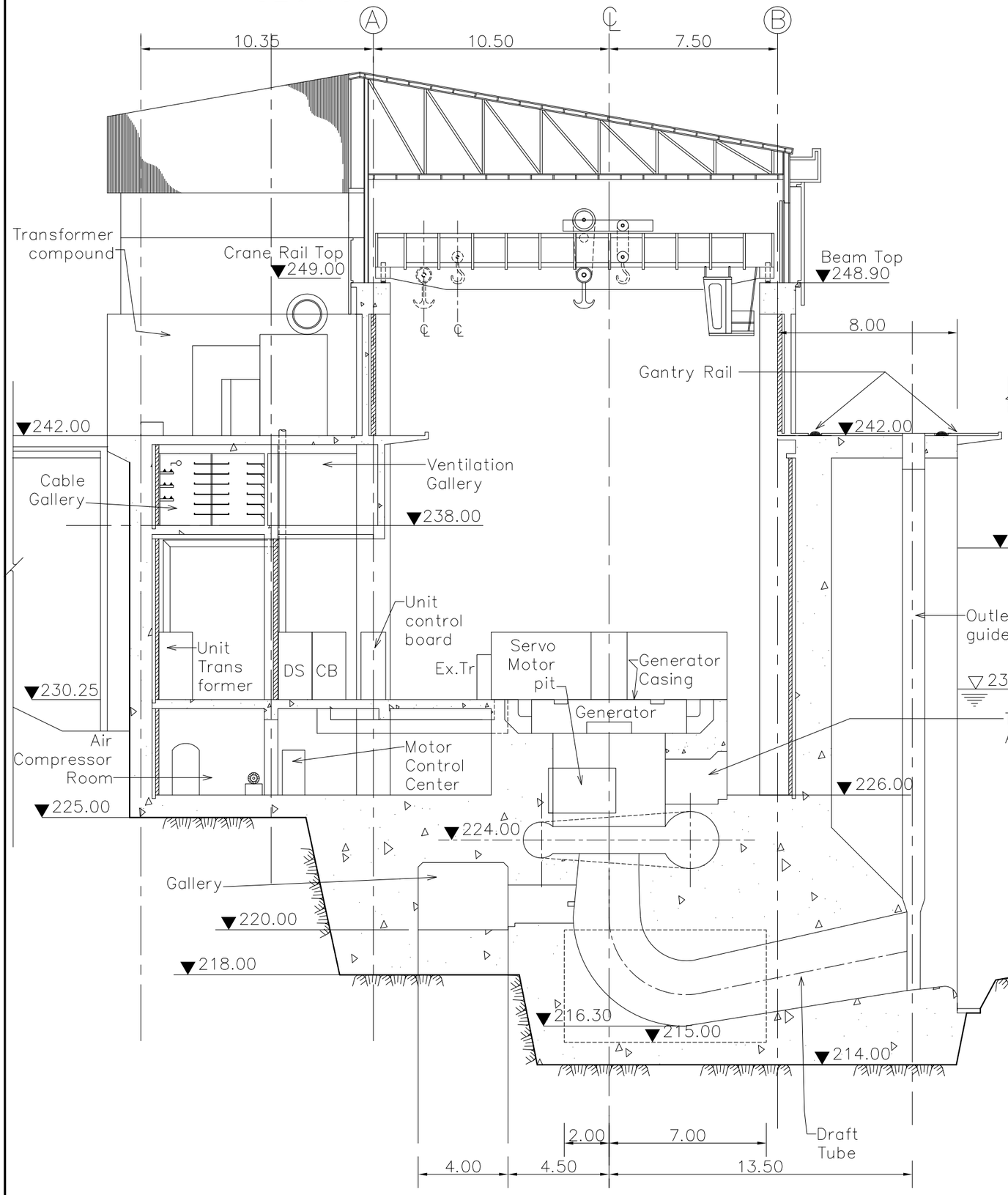
POWERHOUSE
LONGITUDINAL SECTION C–C

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

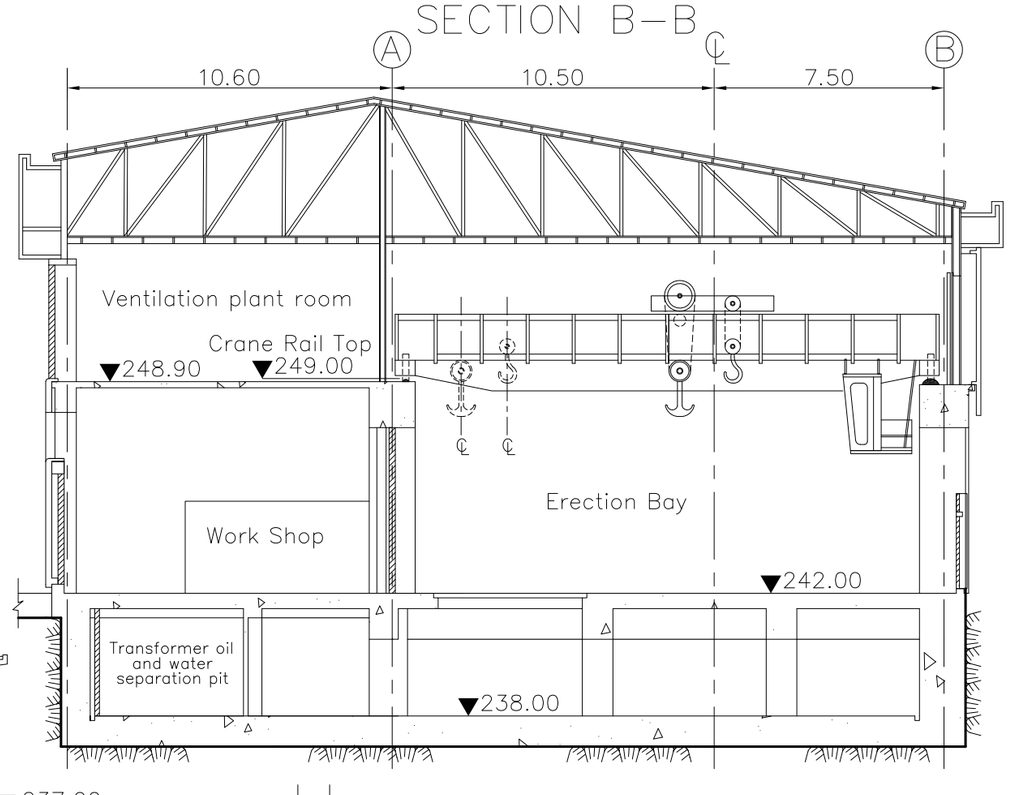
DATE: January 2009

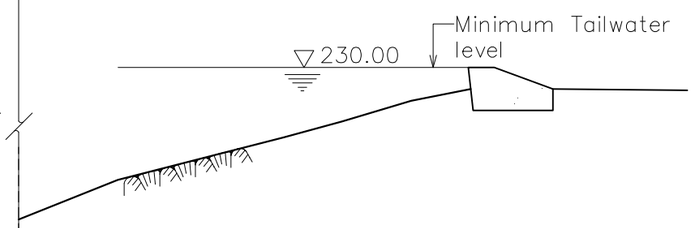
Drawing 015

SECTION A–A



SECTION B–B





0 10m

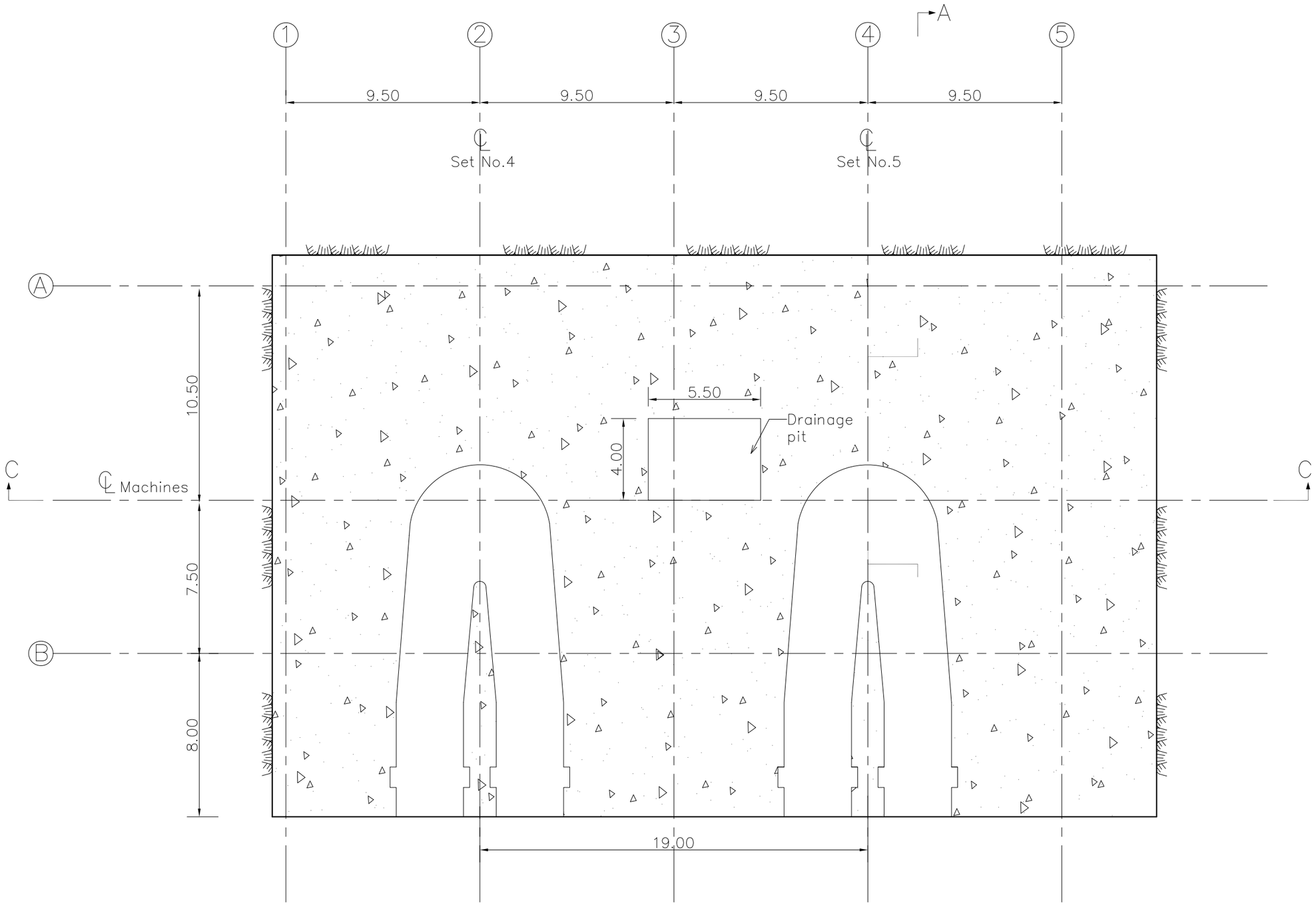
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

POWERHOUSE
CROSS SECTION (A–A,B–B)

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 016



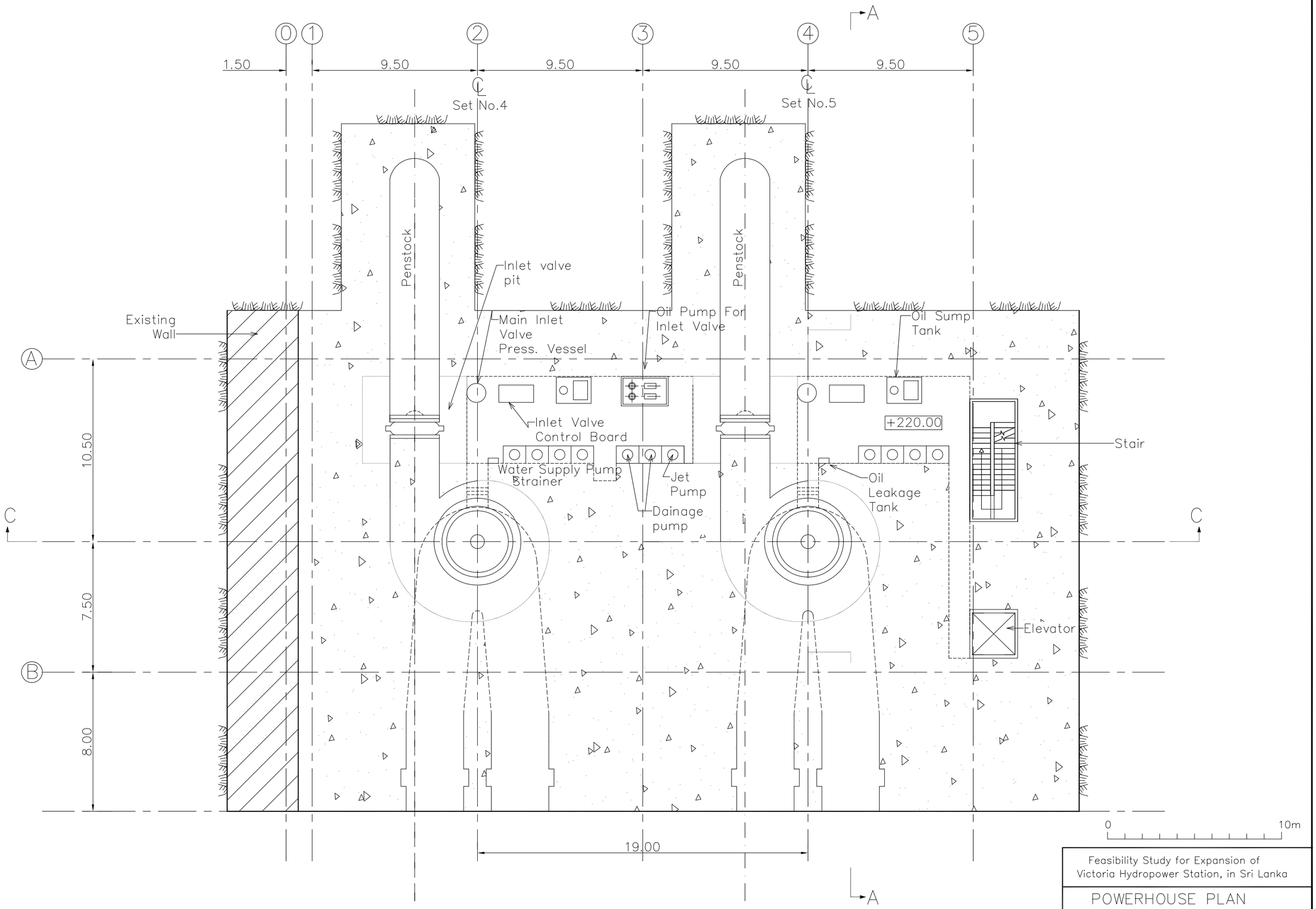
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

POWERHOUSE PLAN
at ELEVATION 218.00

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 017



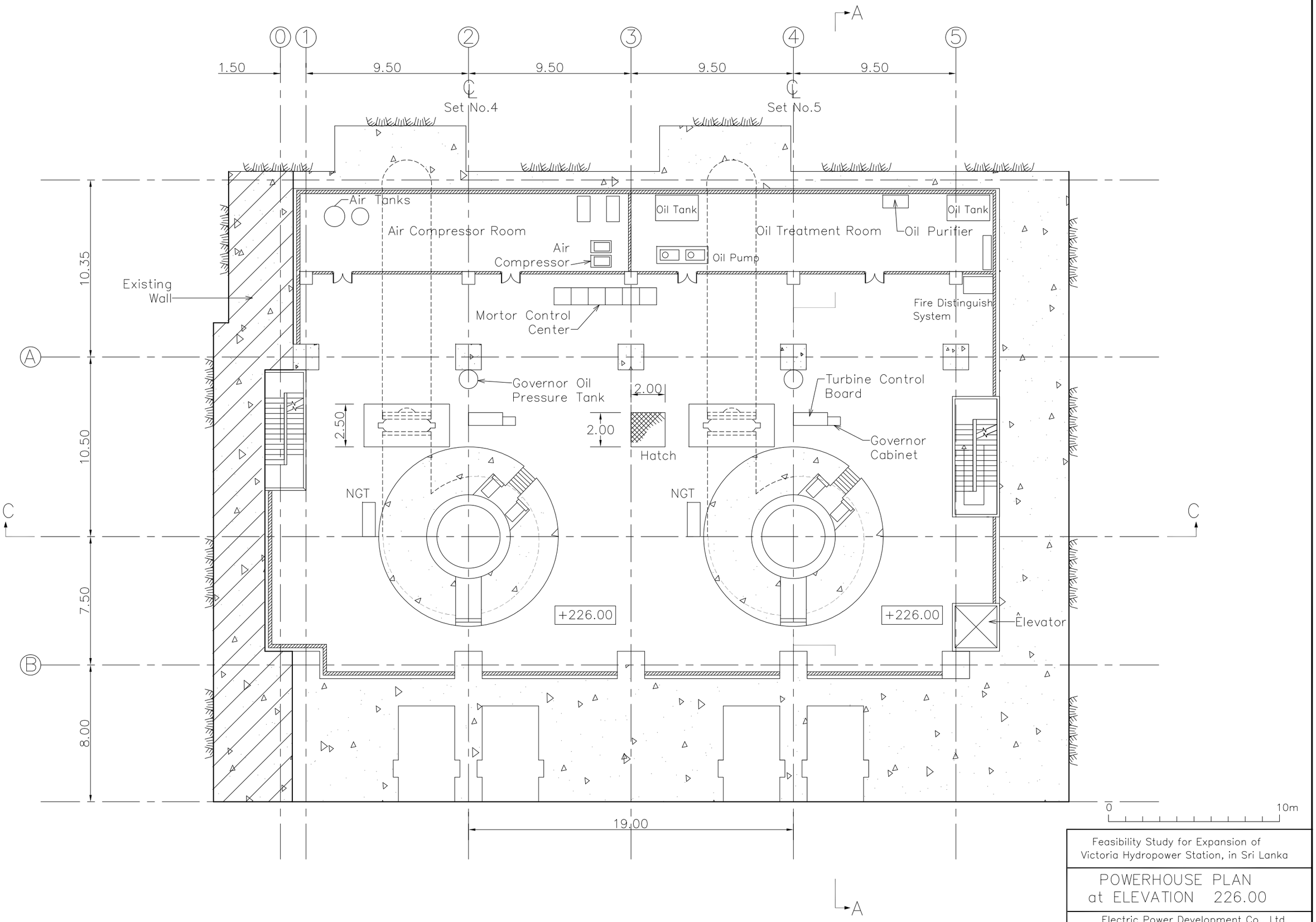
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

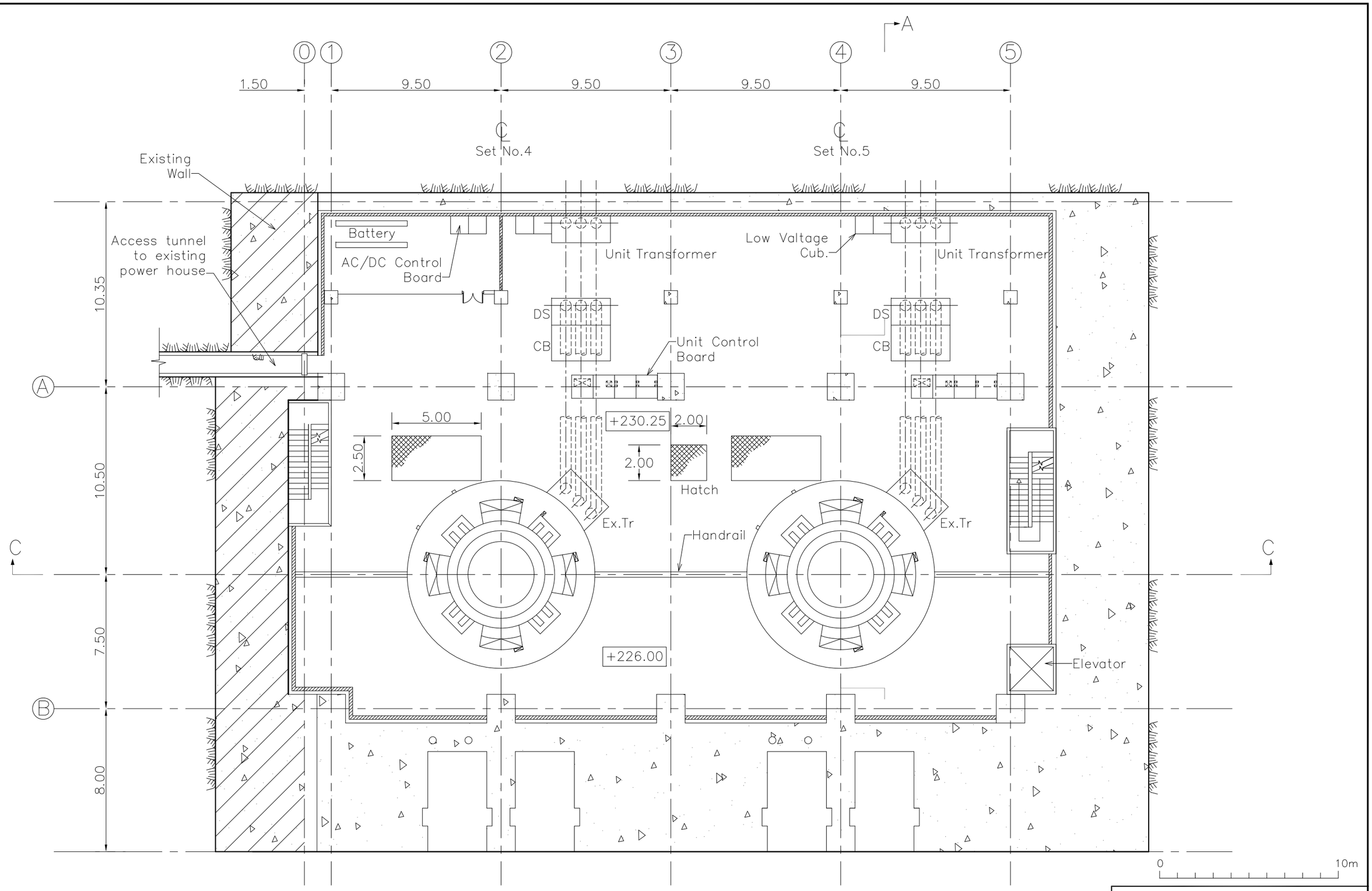
POWERHOUSE PLAN at ELEVATION 224.00

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 018


A
0
1
2
3
4
5
1.50
9.50
9.50
9.50
9.50
Set No.4
Set No.5
Air Tanks
Air Compressor Room
Oil Tank
Oil Treatment Room
Oil Purifier
Oil Tank
Air Compressor
Oil Pump
Existing Wall
Mortor Control Center
Fire Distinguish System
Governor Oil Pressure Tank
2.00
2.50
2.00
Hatch
Turbine Control Board
Governor Cabinet
NGT
NGT
+226.00
+226.00
Elevator
10.35
10.50
7.50
8.00
A
B
C
C
0
10m
19.00
A
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka
POWERHOUSE PLAN at ELEVATION 226.00
Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.
DATE: January 2009
Drawing 019



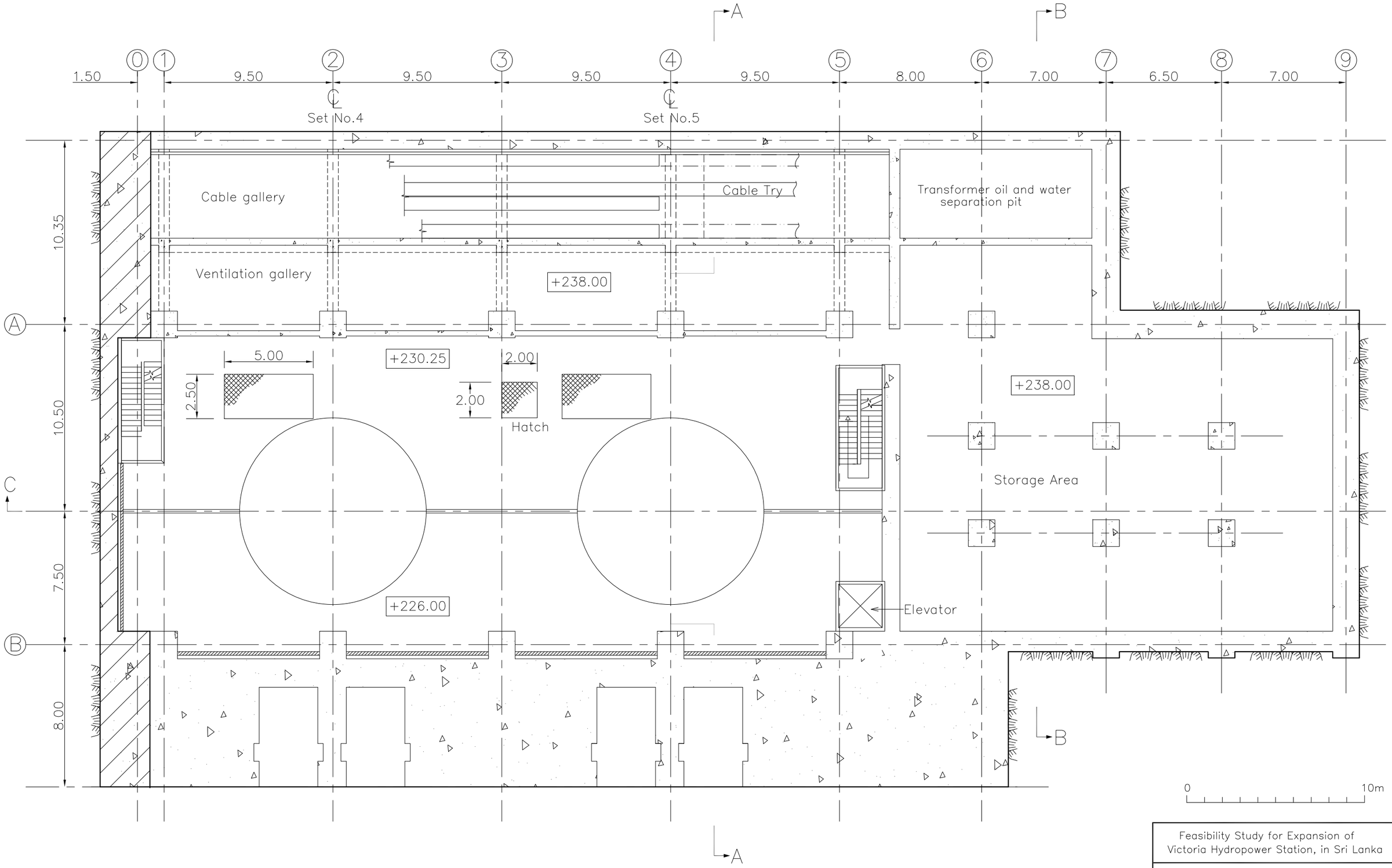
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

POWERHOUSE PLAN at ELEVATION 230.25

Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 020



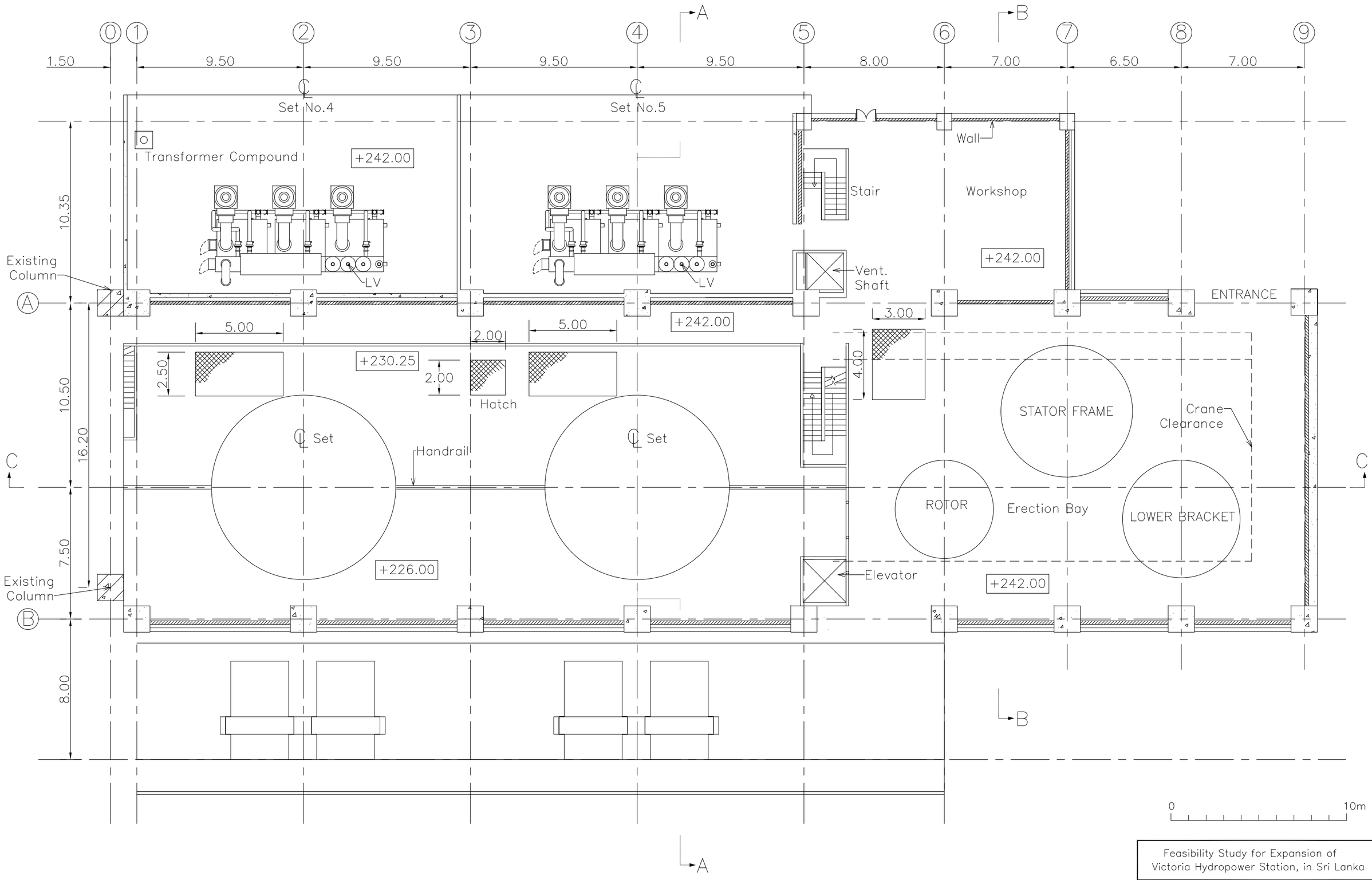
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

POWERHOUSE PLAN at ELEVATION 238.00

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 021



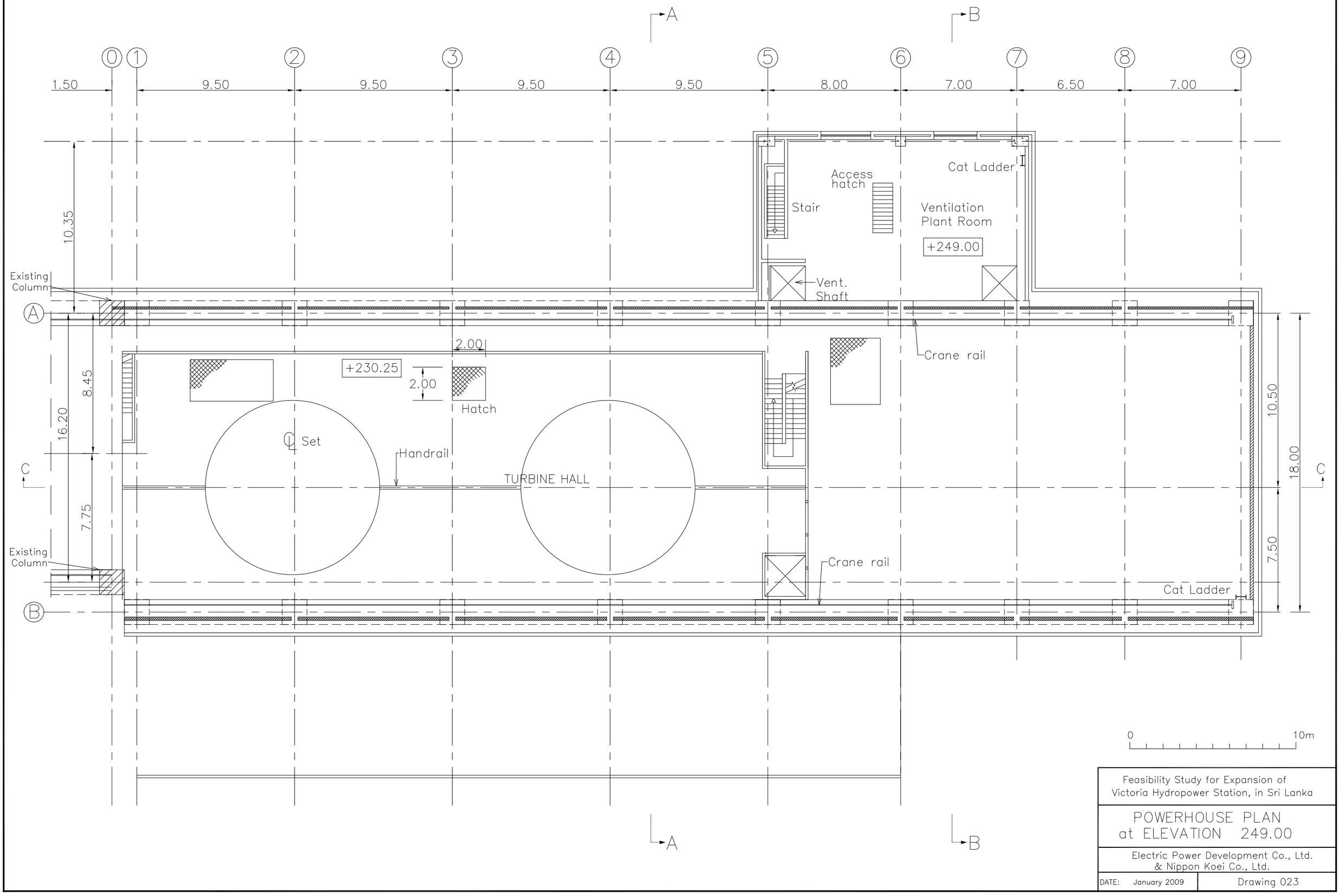
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

POWERHOUSE PLAN at ELEVATION 242.00

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 022



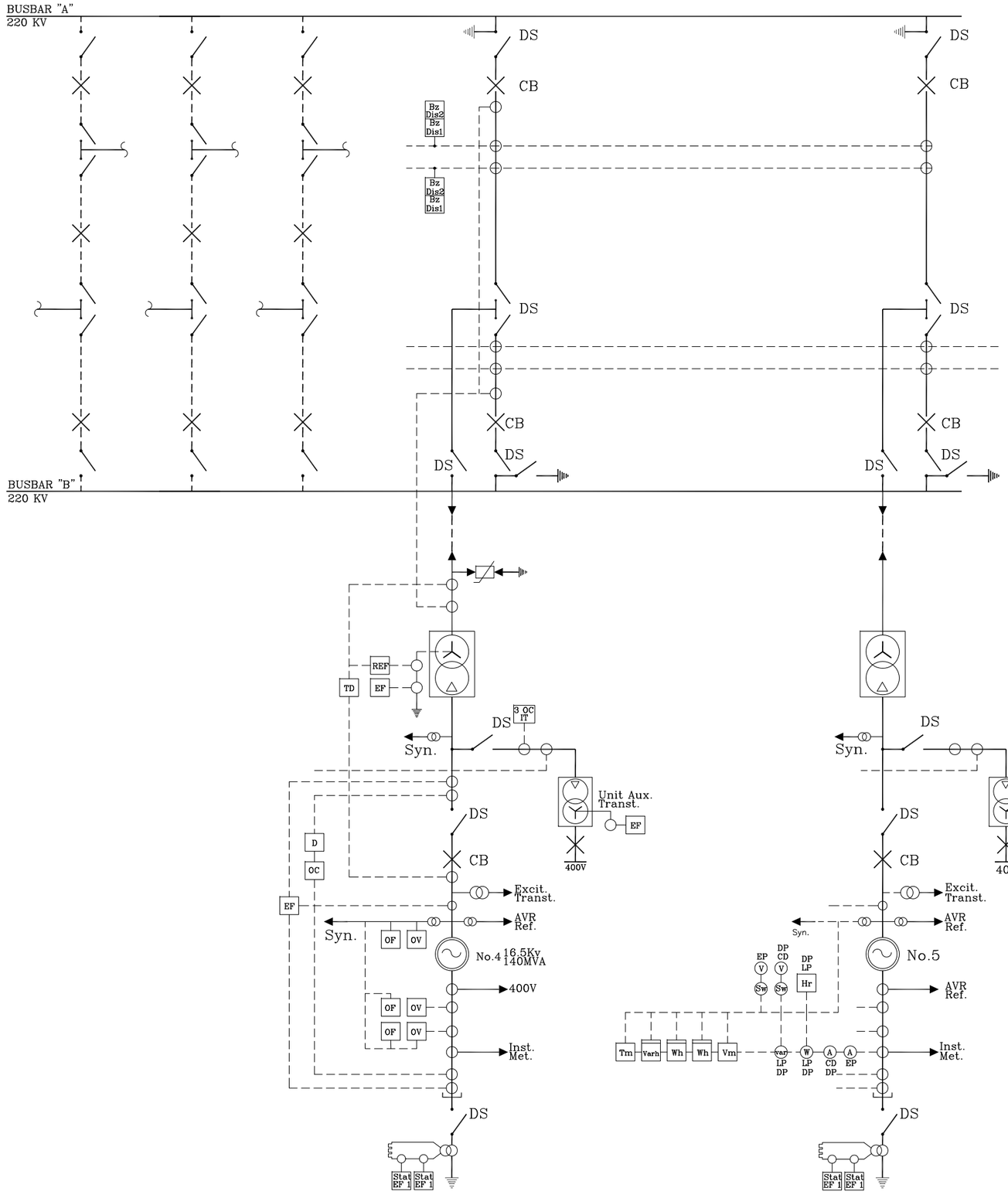
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

POWERHOUSE PLAN at ELEVATION 249.00

Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 023



SUBSCRIPTS

CD	:	Indicates Control Room
LP	:	indicates unit Local Control Panel
EP	:	Indicates Excitation Panel
DP	:	Display Panel

LEGEND

Bz Dis 1	:	Bus bar protection Discriminating relay No. 1
Bz Dis 2	:	Bus bar protection Discriminating relay No. 2
Bz Ch 1	:	bus bar protection check relay No. 1
Bz Ch 2	:	bus bar protection check relay No. 2
CC	:	High impedance circulating current relay
EF	:	Inverve time earth fault
REF	:	Restricted earth fault Differential protection
OV	:	Over voltage relay
OF	:	Generator transformer Over Fluxing protection
NPS	:	Negative phase sequence
VROC	:	Voltage restraint over current
RP	:	Reverse power
FF	:	Field falure
Stat. EF	:	Stator earth fault protection
Protn.	:	Protection equipment
Syn.	:	Syncronising equipment
Met.	:	Metering equipment
Tm	:	Telemetering equipment
Wh	:	Active energy meter
Varh	:	Reactive energy meter
Vm	:	Vector meter
Var	:	Varmeter
W	:	Wattmeter
A	:	Ammeter
V	:	Voltmeter
Hr	:	Hours run meter
Sw	:	Selector switch
GD	:	Generator high impedence differential
TD	:	Transformer differential
CB	:	Circuit breaker
DS	:	Disconnecting switch

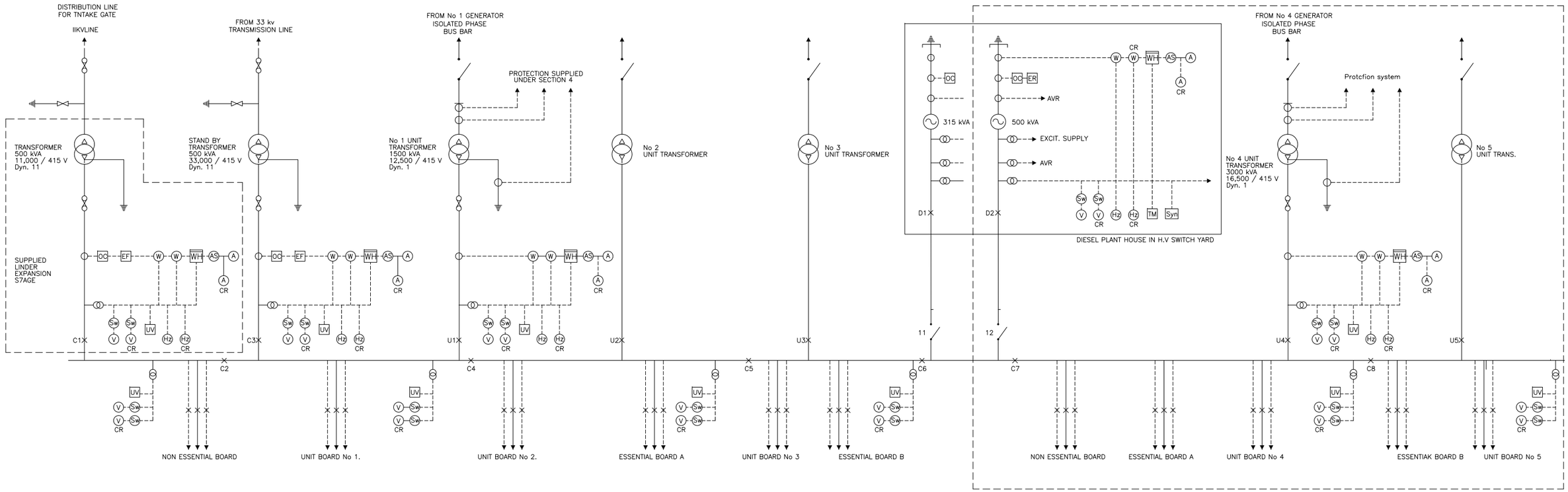
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

GENERATOR CIRCUIT SINGLE LINE DIAGRAM

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 024



400 V NON ESSENTIAL BOARD FEEDERS
CONTROL BLOCK LIGHTING & SMALL POWER FEESER No 2
POWER HOUSE " " " " " No 2
WORK SHOP DISTRIBUTION BOARD
STREAM LINE FILTER SOCKETS
UNIT LIGHTING & HEATING DISTRIBUTION No 1
" " " " No 2
" " " " No 3
OVERHEAD CRANE
DRAFT TUBE GATE GANTRY CRANE
SEWAGE TREATMENT EQUIPMENT
WATER TREATMENT EQUIPMENT
OIL PURIFIRE EQUIPMENT
SWITCH YARD LIGHTING & HEATIN DISTRIBUTION BOARD
NON ESSENTIAL & ESSENTIAL BOARDS LIGHTING & HEATING SUPPLIES
PLUS 6 SPARE FEEDERS

400 V ESSENTIAL BOARD (SECTION A) FEEDERS
230 V BATTERY CHARGER No 1
50 V " " " No 1
DRAINAGE / DEWATERING FEEDER No 1
COMMUNICATION EQUIPMENT
STATION H.P. COMPRESSOR No 1
POWER HOUSE LIGHTING & S.P. FEEDER No 1
CONTROL BLOCK " " " No 1
POWER HOUSE VENTILATION PLANT ROOM
POWER HOUSE EXTRACT VETILATION FANS
PORTAL VALVE FEEDER No 1
INLET VALVE OIL PUMP FEEDER No 01
PLUS 4 SPARE FEEDERS

400 V ESSENTIAL BOARD (SECTION B) FEEDERS
230 V BATTERY CHARGER No 2
50 V " " " No 2
DRAINAGE / DEWATERING FEEDER No 2
FIRE FIGHTING PUMP & EMERG. WATER SUPPLY
STATION H.P. COMPRESSOR No 1
CONTROL BLOCK AIR CONDITIONING PLANT
TRANSFORMER OIL STORAGE TANK PUMPS
PORTAL VALVES FEEDER No 2
DIESEL PLANT HOUSE BATTERY CHARGER
INLET VALVE OIL PUMP FEEDER No 2
FIRE DETECTION PANEL (CABLE GALLERY)
" " " (CONTROL BLOCK)
" " " (TRANSFORMERS)
" " " (DIESEL PLANT HOUSE)
" " " (MACHINE HALL)
STATION SIREN SUPPLY
PLUS 4 SPARE FEEDERS

UNIT BOARD FEEDERS
EQUIPMENT
GOVERNOR OIL PUMP No 1
" " " No 2
OIL INJECTION PUMP No 1
" " " No 2
BRAKES AIR COMPRESSOR
GENERATOR SPACE HEATERS
EXCITATION EQUIPMENT
GREASE PUMP
COOLING WATER EQUIPMENT
ISOLATED PHASE BUSBAR COMP
TRANSFORMER FANS
FLOW METERING EQUIPMENT
UNIT RECORDERS
PLUS 4 SPARE FEEDERS

LEGEND

CR: indicates Control room meter (Supplied under Section 4)
UV: Under Voltage relay
V : Voltmeter
Sw: Selection Switch
Hz: Frequency meter
W : Water meter
EF: Earth fault relay
OC: Over current relay (3 pole)
WH: Watthour meter
AS: Ammeter switch
A : Ammeter
Syn: Synchronicing check relay
TM: Time meter

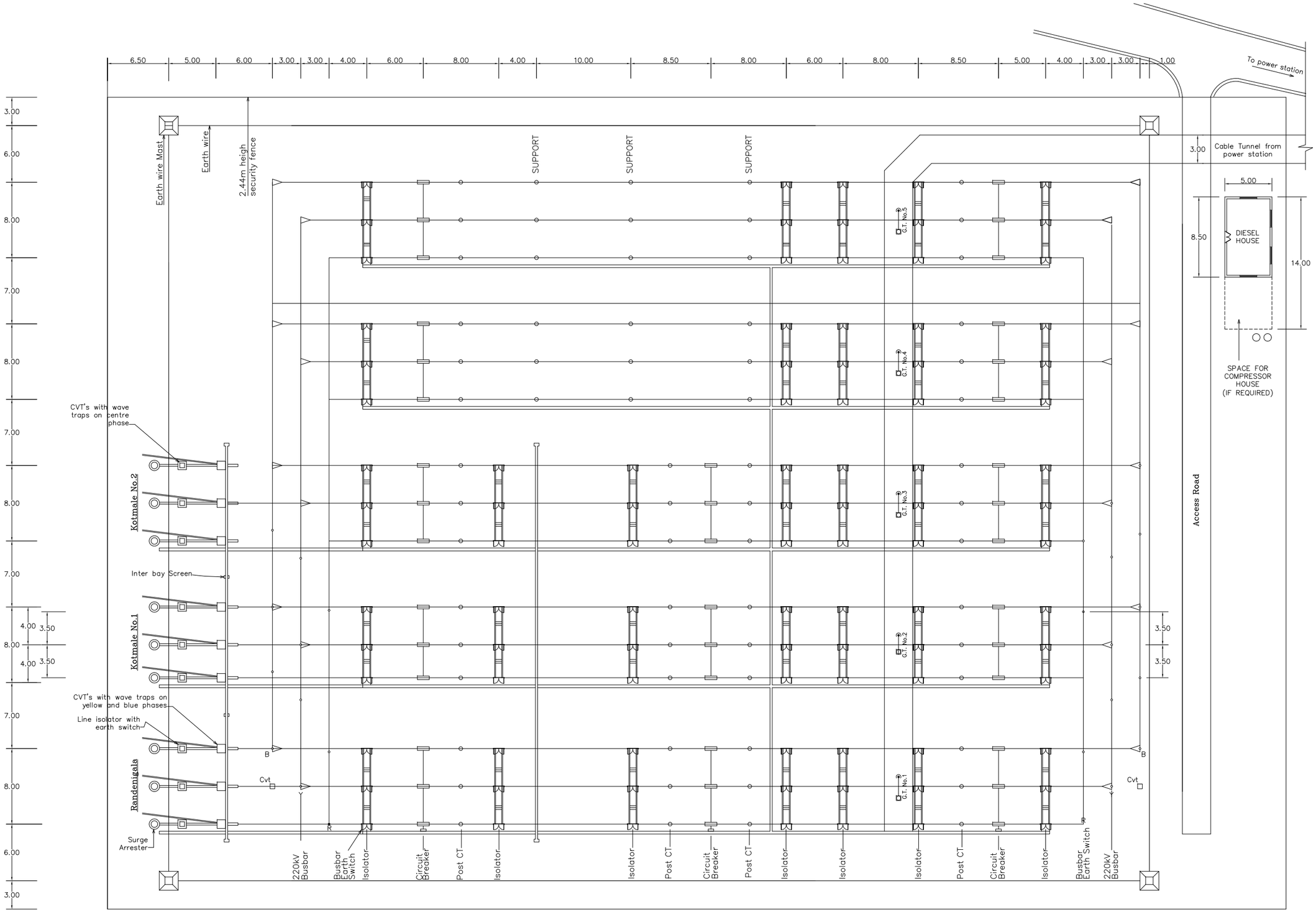
Feasibility Study for Expansion of Victoria Hydropower Station, in Sri Lanka

400 VOLT SYSTEM SINGLE LINE DIAGRAM

Electric Power Development Co., Ltd. & Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 025



PLAN OF 220kV SWITCHYARD

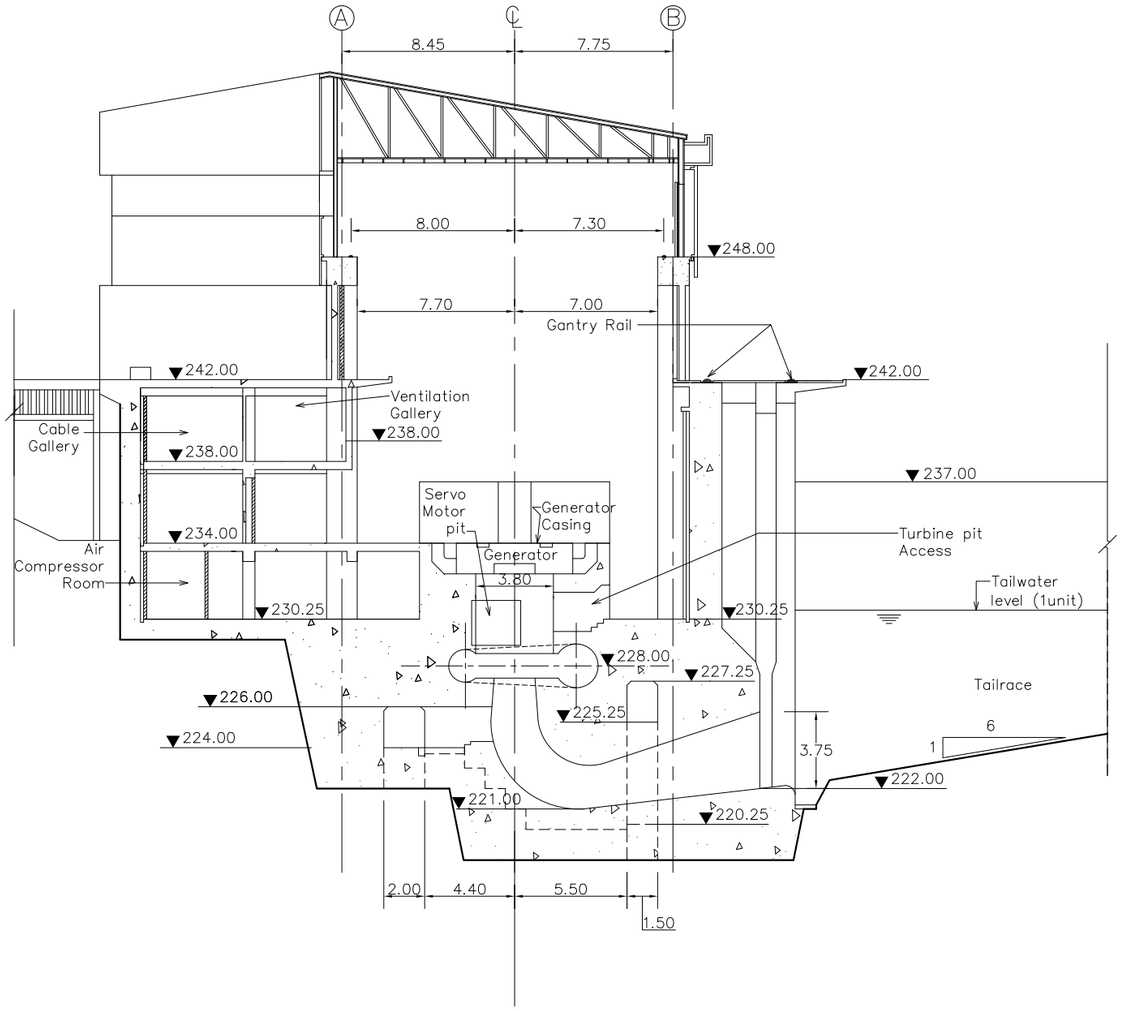
Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

SWITCHYARD
PLAN OF 220kV SWITCHYARD

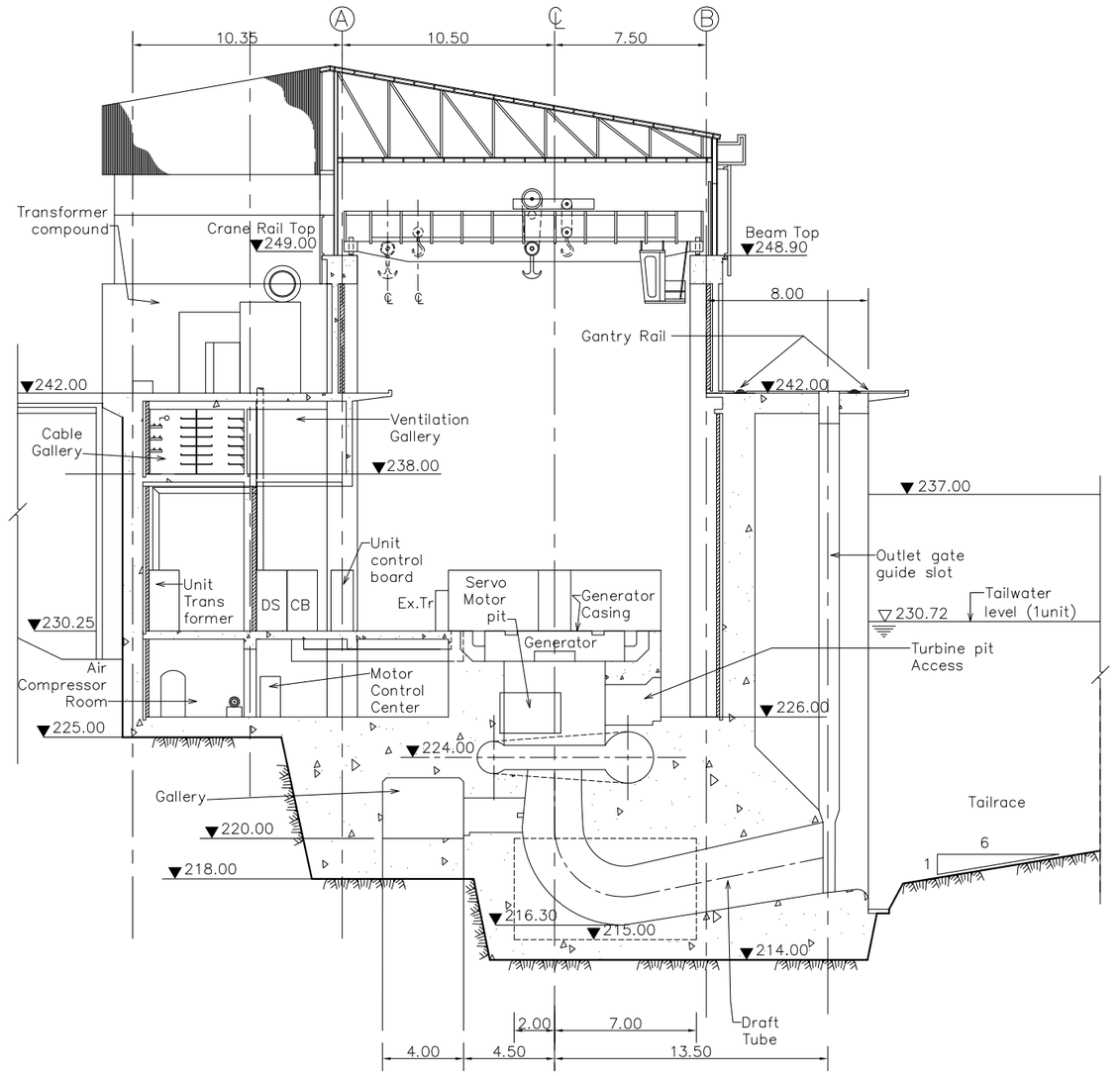
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 026



EXISTING



EXPANSION

Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

POWERHOUSE
COMPARISON OF SECTION

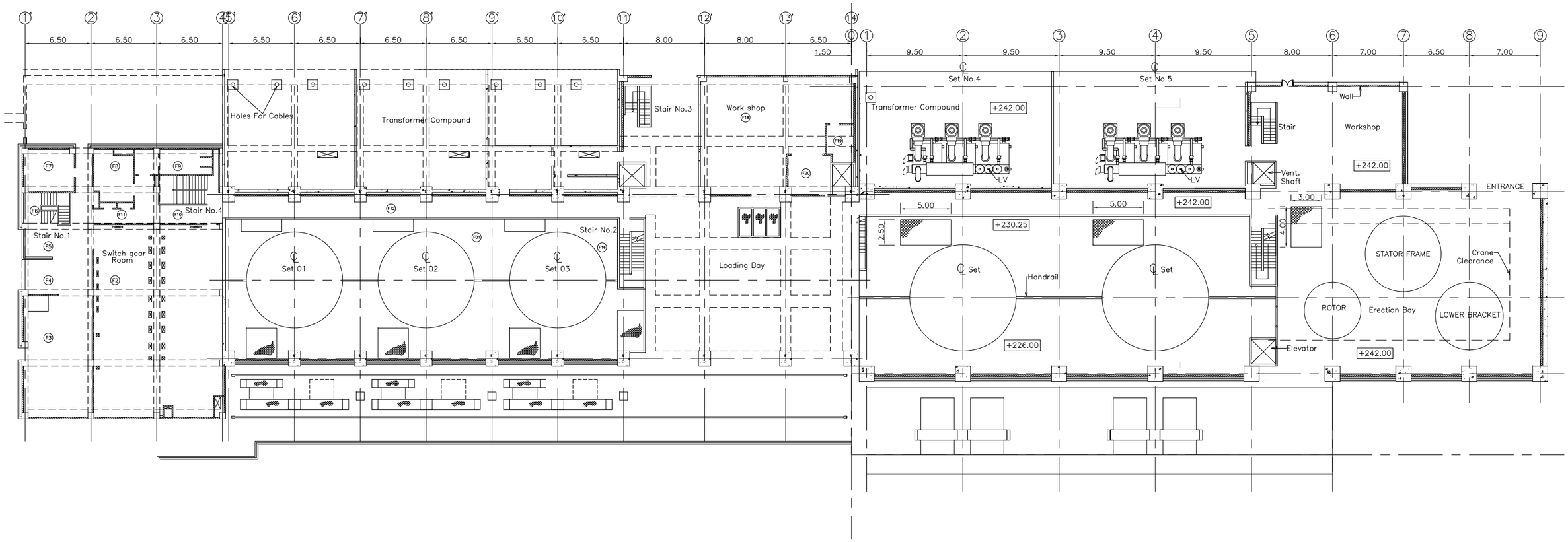
Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 027

EXISTING

EXPANSION



Feasibility Study for Expansion of
Victoria Hydropower Station, in Sri Lanka

POWERHOUSE COMPARISON OF PLAN
at ELEVATION 242.00

Electric Power Development Co., Ltd.
& Nippon Koei Co., Ltd.

DATE: January 2009

Drawing 028