

資料編

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資料 1.2.1 : 調査団構成

担 当 氏 名 所 属

(1) 基本設計調査団(昭和 63 年 5 月 22 日より 6 月 16 日)

団 長	川口 毅	農林水産省水産庁・漁港部計画課課長補佐
漁業振興	田口 博人	農林水産省水産庁・海洋漁業部国際課技官
計画管理	千賀 和雄	国際協力事業団 神奈川国際水産研修センター研修室長代理
漁港計画	酒田 一直	(株)パシフィック・コンサルタンツ・ インターナショナル
港湾土木	吉田健太郎	同 上
施設設計	西牧 裕	同 上
自然条件調査	斉賀 直三	同 上
積算・経済分析	水野 正博	同 上

(2) 基本設計調査ドラフト説明調査段団(昭和 63 年 8 月 7 日より 8 月 18 日)

総 括	西 裕司	農林水産省水産庁・漁港部防災海岸課 課長補佐
計画管理	野津 善男	国際協力事業団 神奈川国際水産研修センター研修室
漁港計画	酒田 一直	(株)パシフィック・コンサルタンツ・ インターナショナル
港湾土木	吉田健太郎	同 上
施設設計	西牧 裕	同 上

資料 1.2.2 : 調査日程 (昭和 63 年 5月22日～ 6月16日)

- | | |
|----------------------|---|
| 5月22日(日)
東京/ロンドン | ・ BA008 便(成田発 13:30)にて成田よりロンドンへ出発
17:50 ロンドン着 |
| 5月23日(月)
ロンドン/アクラ | ・ BR375 便(ロンドン発 11:30)にてロンドンよりガーナ国アクラに出発
18:40 アクラ着 |
| 5月24日(火)
アクラ/テマ | ・ 大蔵・経済企画省, 運輸・通信省, 農業省・漁業局表敬(午前)
・ 大使表敬及びガーナ港湾局表敬, 打合せ(午前) |
| 5月25日(水)
アクラ/テマ | ・ テマ漁港現場視察及び団内打合せ
・ 潮位観測準備(斉賀) |
| 5月26日(木)
アクラ/テマ | ・ 大蔵・経済企画省にて無償資金協力, 調査の目的
Inception Reportの説明(午前)
・ ガーナ港湾局にて第1回協議(要請内容の確認, 午後)
・ 潮位計観測準備(斉賀) |
| 5月27日(金)
アクラ/テマ | ・ テマ漁港にて要請内容の調査・確認(午前)
・ ガーナ港湾局にて第2回協議(要請内容の確認とMinutes 案の
検討, 午後)
・ 潮位計設置, 観測開始
・ 安藤大使主催晩餐会大使公邸 |
| 5月28日(土)
アクラ/テマ | ・ 潮位計修理(Pipeのカバー) |
| 5月29日(日)
アクラ/テマ | ・ 潮位計修理(PVC Pipeの設置)
・ 団内打合せ(調査結果の分析と基本方針) |
| 5月30日(月)
アクラ/テマ | ・ 大蔵・経済企画省にてMinutes 内容最終確認と調印(午前)
・ 調査団主催昼食会
・ 深淺測量準備(B.M.の確認と観測点の設置)
・ 官側3名 アクラ 発(BA 007) |

- 5月31日(火)
アクラ/テマ
- ・深浅測量準備
 - ・資料収集 (MFED, GPHA & Survey Department)
 - ・漁業局でヒアリング調査
 - ・CPC でヒアリング調査
- 6月1日(水)
アクラ/テマ
- ・水野BA008 便にて成田よりロンドンへ出発
 - ・深浅測量準備
 - ・漁業局でヒアリング調査
 - ・CPC でヒアリング調査
- 6月2日(木)
アクラ/テマ
- ・水野BA7367便にてロンドンよりアクラへ向けて出発
 - ・深浅測量準備
 - ・テマ冷凍施設調査
 - ・官側3名 成田 着 (BA 007)
- 6月3日(金)
アクラ/テマ
- ・水野アクラ着 6:40
 - ・漁業局でヒアリング調査
 - ・深浅測量
- 6月4日(土)
アクラ/テマ
- ・深浅測量及び潮流観測
 - ・ボーリング調査準備
 - ・砕石現場調査
 - ・岸壁延長の検討
- 6月5日(日)
アクラ
- ・団内ミーティング
 - ・エルミナ漁港視察
- 6月6日(月)
アクラ/テマ
- ・ジェット・ボーリング調査
 - ・資料収集 (漁業局, HEFP & MTC)
 - ・建設資機材調査 (業者へヒアリング)
- 6月7日(火)
アクラ/テマ
- ・ジェット・ボーリング調査
 - ・資料収集 (テマ漁港管理事務所, GPHA etc)
 - ・建設資機材調査 (Eastern Quarry Ltd, GIHOC Steel Works)

- | | |
|--------------------|--|
| 6月8日(水)
アクラ/テマ | <ul style="list-style-type: none"> ・ガーナ世銀事務所ヒアリング調査 ・レッドサウンディング ・海底土サンプリング ・変電所調査 ・資料収集 (GPHA, TUC, 現地業者, 漁業局) |
| 6月9日(木)
アクラ/テマ | <ul style="list-style-type: none"> ・地形測量 ・資料収集 (MEFD, GHACEH, GARC) |
| 6月10日(金)
アクラ/テマ | <ul style="list-style-type: none"> ・ガーナ港湾局にて、ポートレイアウトについての協議 ・資料収集 (GPHA, MEFD) ・地形測量 |
| 6月11日(土)
アクラ/テマ | <ul style="list-style-type: none"> ・地形測量 (魚市場) ・建設資機材調査 |
| 6月12日(日)
アクラ | <ul style="list-style-type: none"> ・団内ミーティング ・ボルタ湖淡水漁業視察 ・資料整理 |
| 6月13日(月) | <ul style="list-style-type: none"> ・資料収集 (AESC, GPHA) ・大蔵・経済企画省と最終打合せ ・大使へ調査概要の報告 ・潮位計撤去 ・BA7376にてアクラよりロンドンへ向けて出発 |
| 6月14日(火)
ロンドン | <ul style="list-style-type: none"> ・ロンドン着 6:15 |
| 6月15日(水) | <ul style="list-style-type: none"> ・BA007 便にてロンドンより成田に向け出発 |
| 6月16日(木) | <ul style="list-style-type: none"> ・東京着 10:10 |

ドラフト説明調査日程 (昭和 63 年 8月 7日～ 8月18日)

- | | |
|------------------------|---|
| 8月7日 (日)
東京/パリ | ・ AF269便にて東京よりパリへ向け出発 |
| 8月8日 (月)
パリ/アムス/アラク | ・ パリよりアクラに向け出発 (KL324/KL585)
アムステルダム経由 |
| 8月9日 (火)
アクラ/テマ | ・ 日本大使館、JICA表敬 (午前)
・ ガーナ港湾局表敬及び打合わせ (午後)
・ テマ漁港視察 |
| 8月10日 (水)
アクラ/テマ | ・ テマ漁港視察
・ ガーナ港湾局にてドラフトレポート説明・協議 |
| 8月11日 (木)
アクラ/テマ | ・ ガーナ港湾局にてドラフトレポート説明・協議 |
| 8月12日 (金)
アクラ | ・ ガーナ漁業局にて資料収集
・ 大蔵・経済企画省にてミニッツ協議
・ 安藤大使主催晩餐会 (大使公邸) |
| 8月13日 (土)
アラク | ・ 補足資料収集
・ アクラ魚市場視察 |
| 8月14日 (日)
アクラ | ・ 団内ミーティング
・ エルミナ漁港視察 |
| 8月15日 (月)
アクラ | ・ 大蔵・経済企画省にてミニッツサイン
・ 調査団主催昼食会
・ BA7376便にてアクラよりロンドンに向けて出発 |
| 8月16日 (火)
ロンドン | ロンドン着 (10:00) |
| 8月17日 (水)
ロンドン | ・ BA007便にてロンドンより東京に向けて出発 |
| 8月18日 (木)
東京 | ・ 調査団東京着 (10:00) |

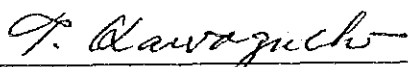
MINUTES OF DISCUSSIONS
FOR
BASIC DESIGN STUDY
ON
TEMA FISHING HARBOUR REHABILITATION PROJECT
IN
REPUBLIC OF GHANA

In response to the request of the Government of Ghana, the Government of Japan had decided to conduct a basic design study on Tema Fishing Harbour Rehabilitation Project and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Republic of Ghana the Basic Design Study Team headed by Mr. Takeshi KAWAGUCHI, Deputy Director, Planning Division, Fishing Port Department, Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries from May 22 to June 2, 1988.

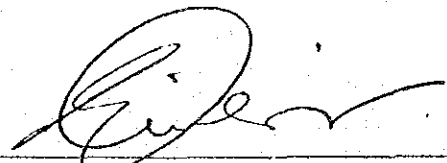
The Team had a series of discussions on the Project with the officials concerned of the Government of Ghana headed by Miss Quist, Acting Chief Director, International Economic Relations Division and conducted a field survey in Tema Fishing Port.

As a result of the study, both parties agree to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Accra May 30, 1988



Mr. Takeshi KAWAGUCHI
Leader, Japanese Basic Design
Study Team
Japan International Cooperation
Agency (JICA)



Miss Eleanor Quist
Acting Chief Director
International Economic Relations
Division

A T T A C H M E N T

1. OBJECTIVE OF THE PROJECT

The objective of the Project is to rehabilitate the present congested and deteriorated facilities at Tema Fishing Harbour in order to contribute the development of Ghanaian marine fisheries and fishing industry.

2. EXECUTING BODY

The responsible and executing body for the Project is Ghana Ports and Harbours Authority, which is under the supervision of the Ministry of Transport and Communications.

3. SITE OF THE PROJECT

The proposed site of the Project is located in Tema Inner fishing Harbour as shown in Annex-1.

4. REQUEST BY THE GOVERNMENT OF GHANA

The Study Team will convey the request of the Government of Ghana to the Government of Japan that the latter will take necessary measures to cooperate in implementing the Project and provide necessary facilities and equipment as listed in Annex-2 within the scope of the Japan's Grant Aid Programme.

5. MEASURES TO BE TAKEN BY THE GOVERNMENT OF GHANA

The Government of Ghana will take the necessary measures listed in Annex-3 on conditions that the Grant Aid by the Government of Japan is extended to the Project.

T. Kawaguchi

[Signature]


6. SYSTEM OF JAPAN'S GRANT AID

The Government of Ghana has understood the system of Japan's Grant Aid explained by the Team, which includes a principle of the use of the Japanese consultant and Japanese firms for the execution of the Project.

7. BUDGET AND PERSONNEL

The Government of Ghana will assure the necessary budget and personnel for the operation and maintenance of the facilities and equipment provided, on condition that the Grant Aid by the Government of Japan is extended to the Project.

F. Kawaguchi



FOKI OF IEMA

From Ghana surveys in 1958 and 1959
with additions to 1961

SOUNDINGS IN FATHOMS (Under Eleven in Fathoms and Feet)

reduced to the approximate level of Mean Low Water Springs
HEIGHTS IN FEET ABOVE MEAN HIGH WATER SPRINGS

For Symbols and Abbreviations, see Chart No. 1

MERCATOR PROJECTION
LOCAL DATUM

SCALE 1:10,000

CHANGES IN BUOYAGE

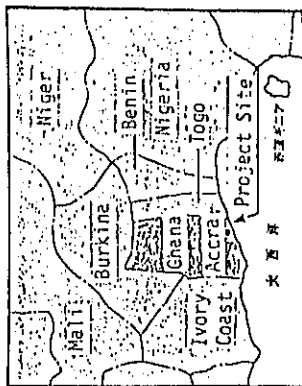
Certain buoys, lights and beacons within the area of this chart will be affected by the implementation of the conversion to IALA Maritime Buoyage System in Region A. For further explanation, see annual NIMA (6) and chart No. 1.

© T. (S. U)

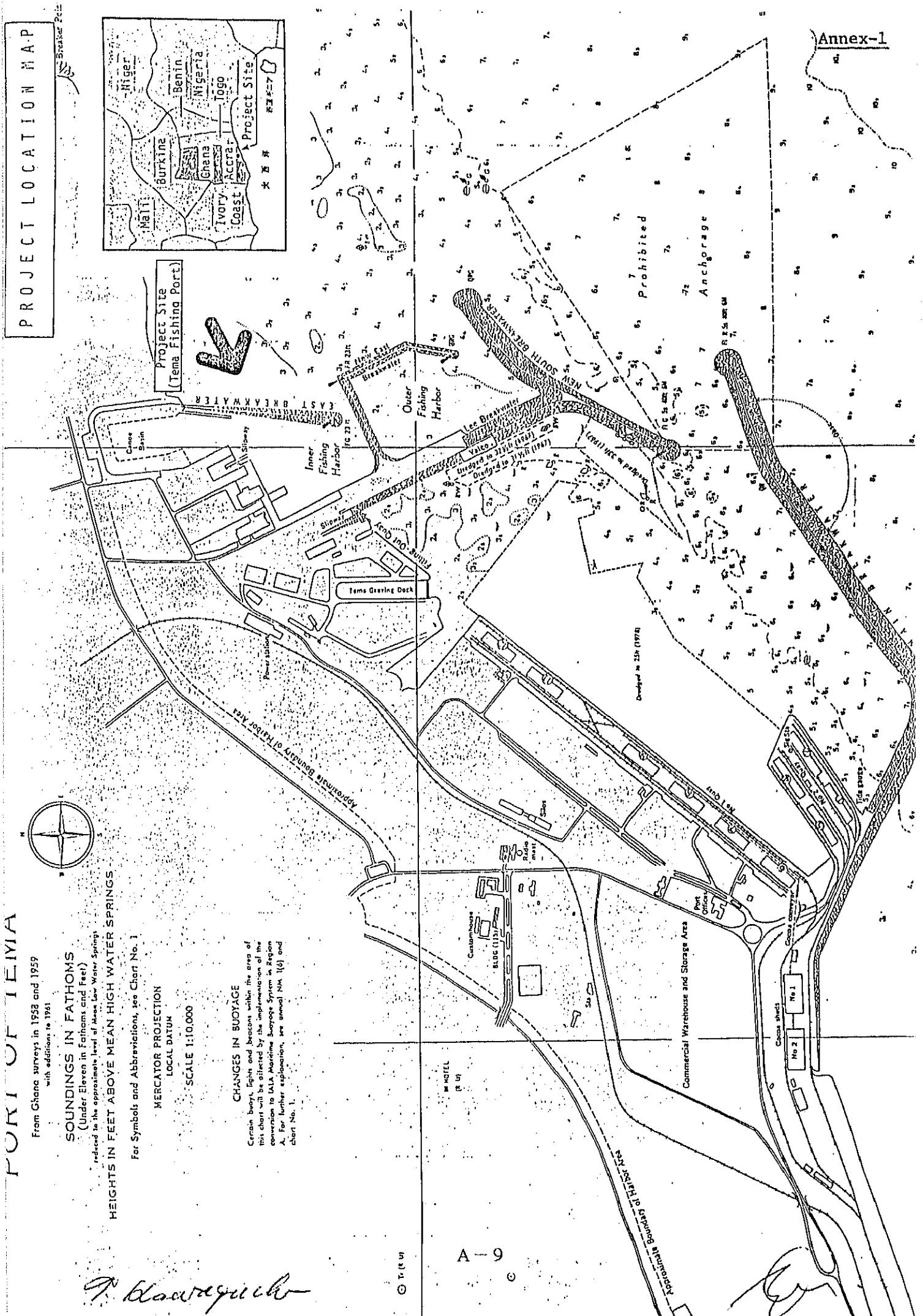
A-9

T. Klawnsyich

PROJECT LOCATION MAP



Project Site
(Tema Fishing Port)



Annex-1

Major facilities and structures of the Project requested by the Government of Ghana.

1. Lay-by wharf and/or jetties.
2. Lay-by mooring for non-operational vessels about 20 vessels.
3. Repairs to wooden jetty in canoe basin, broken parts only.
4. Fitting-out quay, 30m long at GIHOC boatyard.
5. Net repairing yard, if the place is obtainable behind the new quay wall.
6. Refurbishing of market area (Details are listed in Annex - 4)
7. Repairs to Services (Details are listed in Annex - 5)

T. Kwameyako



Necessary measures to be taken by the Government of Ghana.

1. (*) To secure land necessary for the execution of the Project and provide enough space for such construction as temporary.
2. (*) To ensure that sea area necessary for the construction of the facilities be freely acceptable.
3. (*) To ensure the successful implementation of the project for removal of all wrecks and non-operation vessels from the inner fishing harbours.
4. To provide facilities for distribution of electricity, water supply, drainage and sewage, telephone and other incidental facilities up to the Project site. (These facilities will be completed its distribution line before the completion of the Project.)
5. To ensure prompt unloading, tax, exemption, customs clearance at ports of disembarkation in Ghana and prompt internal transportation therein of the products purchased under the grant.
6. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Ghana with respect to the supply of the products and services under the verified contracts.
7. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Ghana and stay therein for the performance of their work.

Note: Marked with (*) should be completed before start of construction of the facilities.

T. Nawapark



8. To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid.
9. To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A.
 - a) Advising commission of A/P
 - b) Payment commission

P. Kawaguchi

[Signature]

Details of Refurbishing of Market Area.

1. Installation of stalls for fish monger inside the existing fish market.
2. Rehabilitation of roof for day lighting.
3. Water supply system inside the fish market.
4. Electrical lighting.
5. Rehabilitation of wall.
6. Ice Storage.

T. Kawaguchi



Details of Repairs of Services

1. Rehabilitation of switch gears of substations No. 10, 11 and 12.
2. Installation of flood lighting tower.
3. Transit shed for handling of fresh fish.

F. Kawaguchi



ATTENDANTS LIST

1. Japanese Side

(1) Japanese Study Team:

Mr. Takeshi KAWAGUCHI	-	Team Leader
Mr. Hiroto TAGUCHI	-	Fishery Promoter
Mr. Kazuo SENGA	-	Project Coordinator
Mr. Kazunao SAKATA	-	Technical Expert (Fishing Port Planning)
Mr. Mentaro YOSHIDA	-	Technical Expert (Port Civil Engineering)
Mr. Hiroshi NISHIMAKI	-	Technical Expert (Fishery/Facility Design)

(2) Japan Embassy

<u>Mr.</u> Haruyuki TOGASHI	-	Second Secretary
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2. Ghana Side

Miss Eleanor Quist	-	Ag. Chief Director Int. Economic. Relations Min. of Finance & Econ. Plann.
Mr. Samuel Aabo	-	(IERD) M.F.EP.
Mr. John Aidoo	-	Ag. Director-General G. P. H. A.
Mr. T. T. Addy	-	Director of Ports - Tema
Mr. Joe Owusu	-	Engineer in Chief - GPHA
Mr. Bismarck B.K. Okutu	-	Chief Port Engineer - GPHA
Mr. E. A. Kwakye	-	Min. of Transport & Commun.
Mr. V. N. Dowuona	-	Director of Fisheries
Mr. E. O. Prempeh	-	Economic Planning Officer M. F. E. P.
Mr. Kwasi Opoku	-	M. F. E. P.

T. Kawaguchi

[Signature]


MINUTES OF DISCUSSION
ON
THE TEMA FISHING HARBOUR REHABILITATION PROJECT
IN
REPUBLIC OF GHANA

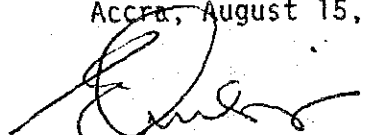
In response to the request of the Government of Republic of Ghana for Grant Assistance for the Tema Fishing Harbour Rehabilitation Project (hereinafter referred to as "the Project"), the Government of Japan decided to conduct a basic design study on the Project and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Ghana the team headed by Mr. Takeshi KAWAGUCHI, Deputy Director, Planning Division, Fishing Port Department Fisheries Agency, Ministry of Agriculture, Forestry and Fisheries, from May 22nd to June 16, 1988.

As a result of the study, JICA prepared a draft report and dispatched a team headed by Mr. Yuji NISHI, Deputy Director, Disaster Prevention & Coastal Protection Division, Fishing Port Department, Fisheries Agency to explain and discuss it from August 7, to August 18, 1988.

Both parties had a series of discussions on the Report and agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realization of the Project.

Accra, August 15, 1988


Mr. Yuji NISHI
Leader, Japan Basic Design
Study Team
Japan International Cooperation
Agency (JICA)


Miss Eleanor Quist
Acting Chief Director
International Economic Relations
Division

A I I A C H M E N T

1. The Ghana side has agreed in principle to the basic design proposed in the Draft Final Report with minor but appropriate alternation as shown in Annex-I mutually agreed upon to be incorporated in the Final Report.
2. The Ghana side has understood Japan's grant aid system and confirmed that the necessary measures will be taken by the Ghana side as shown in Annex-II which are manifested in the Annex 3 of the MINUTES OF DISCUSSIONS on the project signed on May 30, 1988, on condition that the grant aid by the Government of Japan would be extended to the Project.
3. The Ghana side will assure the necessary budget (from Fiscal Year 1990/91) for operation and maintenance of the equipment provided, on condition that the grant aid of the Government of Japan should be extended to the Project.
4. The Final Report (10 copies in English) will be submitted to the Ghana side in the middle of October, 1988.

ANNEX-I

1. Mooring facilities for 20 non-operational steel vessels.
Anti corrosive painting will be applied for the steel members at the platforms of mooring facility in outer harbour.

2. Rehabilitation of fish market hall
Removal work of existing wooden louver of longitudinal sides of wall at the fish market hall shall be deleted.

11

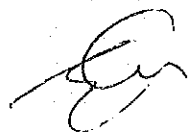
ANNEX-II

Necessary measures to be taken by the Government of Ghana.

1. (*) To secure land necessary for the execution of the Project and provide enough space for such construction as temporary.
2. (*) To ensure that sea area necessary for the construction of the facilities be freely acceptable.
3. (*) To ensure the successful implementation of the project for removal of all wrecks and non-operation vessels from the inner fishing harbours.
4. To provide facilities for distribution of electricity, water supply, drainage and sewage, telephone and other incidental facilities up to the Project site. (These facilities will be completed its distribution line before the completion of the Project.)
5. To ensure prompt unloading, tax, exemption, customs clearance at ports of disembarkation in Ghana and prompt internal transportation therein of the products purchased under the grant.
6. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Ghana with respect to the supply of the products and services under the verified contracts.
7. To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into Ghana and study therein for the performance of their work.

Note: Marked with (*) should be completed before start of construction of the facilities.

8. To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid.
9. To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A.
 - a) Advising commission of A/P
 - b) Payment commission



ATTENDANTS LIST

1. Japanese Side

(1) Japanese Study Team:

Mr. Yuji NISHI	Team Leader
Mr. Yoshio NOTSU	Project Coordinator
Mr. Kazunao SAKATA	Technical Expert (Fishing Port Planing)
Mr. Kentaro YOSHIDA	Technical Expert (Port Civil Engineering)
Mr. Hiroshi NISHIMAKI	Technical Expert (Fishery/Facility Design)

(2) Japan Embassy

Mr. Terufusa ARIGA	Counsellor
--------------------	------------

2. Ghana Side

Miss Eleanor Quist	Ag. Chief Director Int. Economic Relations Min. of Finance & Econ. Plann.
Mr. Samuel Kabo	(IERD) M.F. EP.
Mr. E.O. Prempeh	Economic Planning Officer M.F.E.P.
Mr. V.N. Dowuona	Director of Fisheries

資料 1.3.1 : 面談者リスト

<u>面談者</u>	<u>職位</u>
<u>日本側面談者</u>	
在ガーナ日本国大使館	
安藤 茂実	大使
有賀 照房	参事官
富樫 治幸	二等書記官
山崎 昇	JICAガーナ事務所長 (現地調査時)
長倉 孝	JICAガーナ事務所長 (ドラフト説明時)
阿部 徳雄	若湖水産(株)代表

ガーナ側面談者

運輸・通信省ガーナ港湾局	
Mr. John Aidros	Acting Director Ghana Ports & Harbour Authority (GPHA)
Mr. Joseph Owusu	Engineer-in-Chief (GPHA)
Mr. B. B. K. Okutu	Chief Port Engineer (GPHA)
Mr. Klaus Riebenschalm	Project Co-ordinator (GPHA)
Mr. John N. Wolfe-Barry	Chief Resident Engineer Sir William Halcrow & Partners Ltd.
Mr. Sam Quist	Marine Operation Department ~ GPHA (Hydrographic Section at Tema)
Mr. Stephen Ray Afagkedzi	Senior Public Relation Officer (GPHA)

面 談 者

職 位

運輸・通信省

DR. WILLIAM ADOE

Chief Director (Planning)
Ministry of Transport/Communication

Mr. E. A. Kwakye

Principal Planning Officer
Transport Planning Division,
Ministry of Transport &
Communications (MTC)

大蔵・経済企画省

Miss Eleanor Quist

Acting Chief Director
International Economic Relations
Division (MFEP)

Mr. Samuel K. Kabo

Senior Economic Planning Officer
Ministry of Finance & Economic
Planning (MFEP)

Mr. Osei Prempeh

Economic Planning Officer (MFEP)

農業省、漁業局

Mr. Victor N. Dowuona

Director of Fisheries
Fisheries Department,
Ministry of Agriculture

Mr. M. Arman

Deputy Director of Fisheries
Fisheries Department

面 談 者

職 位

Tema Fishery Port

Adjei Lomo

Fisheries Biologist

Regional Fishery Officer

Joe Akepey

Senior Technical Officer

Fisheries Department

MR. CHERLES AUUDI

Fishing Harbour Manager

Fishing Harbour Manager Office

MR. RAJENDRA K. SHARMA

Deputy Resident Representative

The World Bank, Resident Mission
in Ghana

MR. FOLI AMEKOR

General Secretary of Construction

& Building, Trades Union Congress

MR. G. K. OWUSU-ADDO

Director, Structures Divi, AESC

漁業局勤務帰国研修員

Mr. Joseph K. Akpey

Senior Fisheries Extension Officer

Fisheries Department

Mr. Godwin Yao Kowu

Fisheries Extension Officer

Fisheries Department

ガーナ・ツナフィッシング・デベロプメント(株)

Mr. Emmanuel Blankson

Joint Operation Manager

Ghana Tuna Fishing Dev. Co, Ltd.

資料 2.2.1 : GPHAの予算(1988)

GPHA 予算 1988

A basic summary of the GPHA 1988 Budget which highlights the main features is detailed below:

GPHA Budget Summary 1988

REVENUE	(€000's)
Tema Port	€3,715,235
Takoradi Port	1,746,326
Headquarters	22,140
TOTAL:	€5,483,701

Dollar earnings have been converted at the rate of €190 per dollar and account for 67% of Tema Port Revenue and 73% in the case of Takoradi.

EXPENDITURE

Tema Port	€1,640,473
Takoradi Port	1,258,390
Headquarters	178,945
TOTAL:	€3,077,808

REVENUE SURPLUS FOR THE YEAR
(AFTER DEPRECIATION)

Tema Port	€1,773,762
Takoradi Port	339,936
Headquarters	156,805
TOTAL:	€1,956,893

The forecast operating revenue surplus for 1988 amounts to €1,956,893,000 after providing for depreciation but before taxation.

GHANA PORTS AND HARBOURS AUTHORITY

BUDGET PROFIT AND LOSS ACCOUNT FOR THE YEAR TO 31ST DECEMBER 1988

	TEMA	TAKORADI	TOTAL
Revenue (Port Operations)	3,715,235	1,746,326	5,461,561
Less: Expenditure (Port Operations)			
Payroll Costs	994,986	718,511	1,713,497
Operating Materials	10,000	15,820	25,820
Maintenance	130,000	262,703	392,703
Fuel, Power & Water	374,500	105,633	480,133
Third Party Services	-	22,000	22,000
Other Administration Costs	130,987	1,337,23	264,710
Operating Profit	164,0473	1,258,390	3,163,573
Less: Depreciation	207,4762	487,936	256,2698
	301,000	148,000	449,000
	1,773,762	339,936	2,113,698
Less: Headquarters			72,761
Payroll Costs			106,184
Other Costs			178,945
			(221,40)
Less: Headquarters Income			156,805
Total Headquarters Costs			195,6893
Budgeted Net Profit before taxation			900,000
Less: Provisional estimate for taxation			€105,6893
Budgeted Net Profit for the year			€1,956,893

資料 2.3.1：国内向漁種別水揚量（全国：1983—1986）

(トン)

魚種	1983	1984	1985	1986
クロダイ	8,377	11,462	9,787	9,939
スズキ	9,838	17,425	14,109	20,929
モンガラカワハギ	3,676	4,020	3,595	7,473
マイワシ	45,130	38,032	60,667	48,395
ヒライワシ	8,265	11,015	23,262	17,882
アンチョビ	24,392	47,231	27,590	15,209
ムロアジ	241	712	164	19,292
カイワリ	33	46	170	141
ヒラソウダガツオ	3,570	7,079	3,521	3,256
イカ	1,412	1,702	1,828	1,136
キハダ	2,231	4,230	5,714	5,551
メバチ	284	119	77	187
カツオ	22,404	20,252	21,551	25,213
その他	75,332	68,185	62,185	94,253
合計	205,185	231,510	234,220	269,156
転載	26,268	25,133	24,337	24,569
輸入	4,000	—	1,001	497
輸出	—	182	1,819	11,910
国内消費	184,957 (2,040)	206,370 (1,805)	209,065	233,174

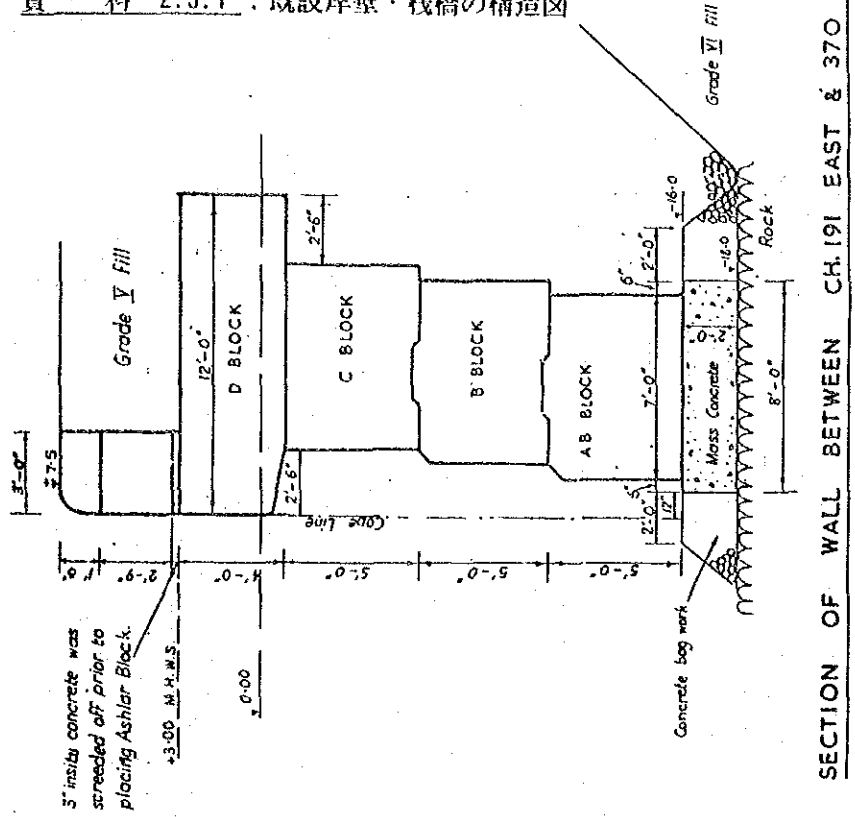
国内消費 = 合計 - 転載 - 輸入 - 輸出

国内消費には（ ）内の外国籍船の国内向け水揚げを含む。

外国籍船による漁獲は、1983：8,372 ton、1984：2,123 ton

1985年以降は外国籍船は無し。

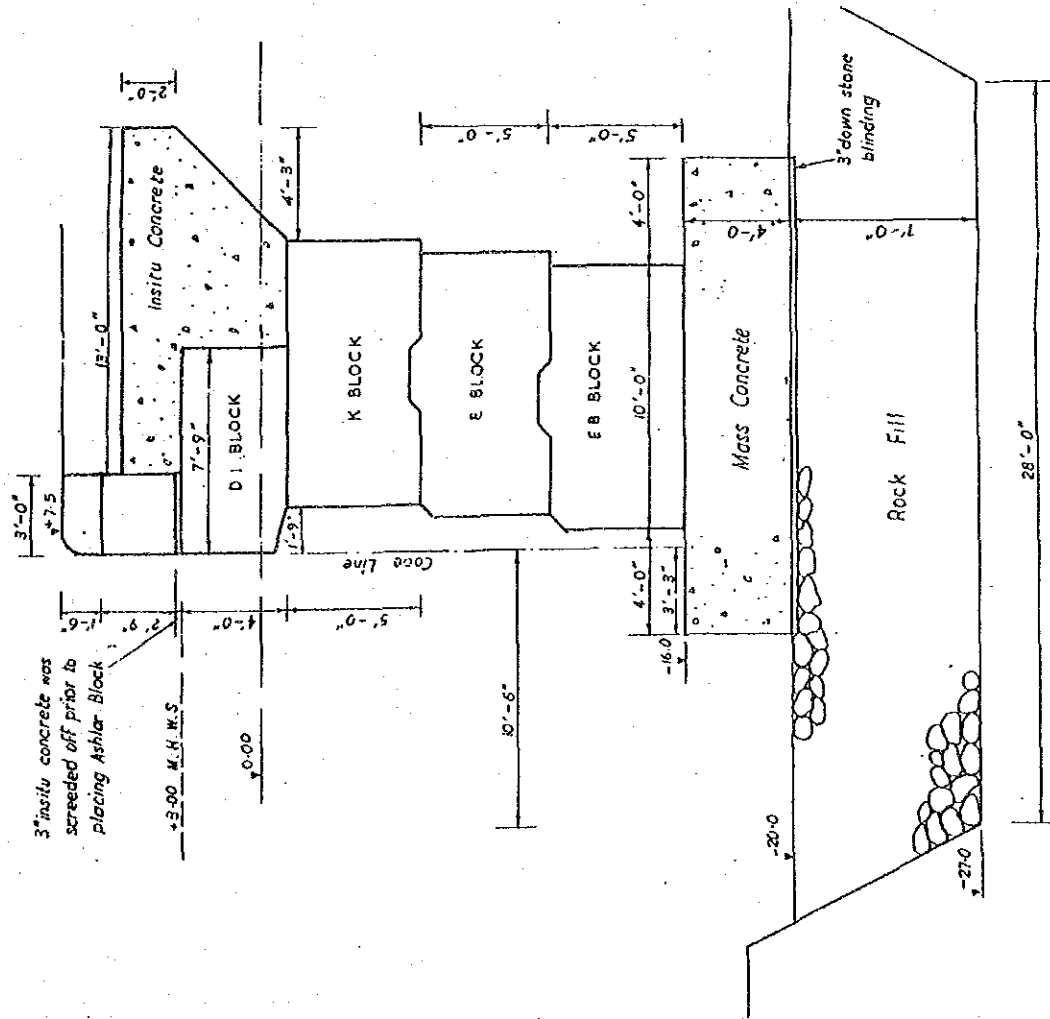
漁業局資料



SECTION OF WALL BETWEEN CH.191 EAST & 370 EAST.

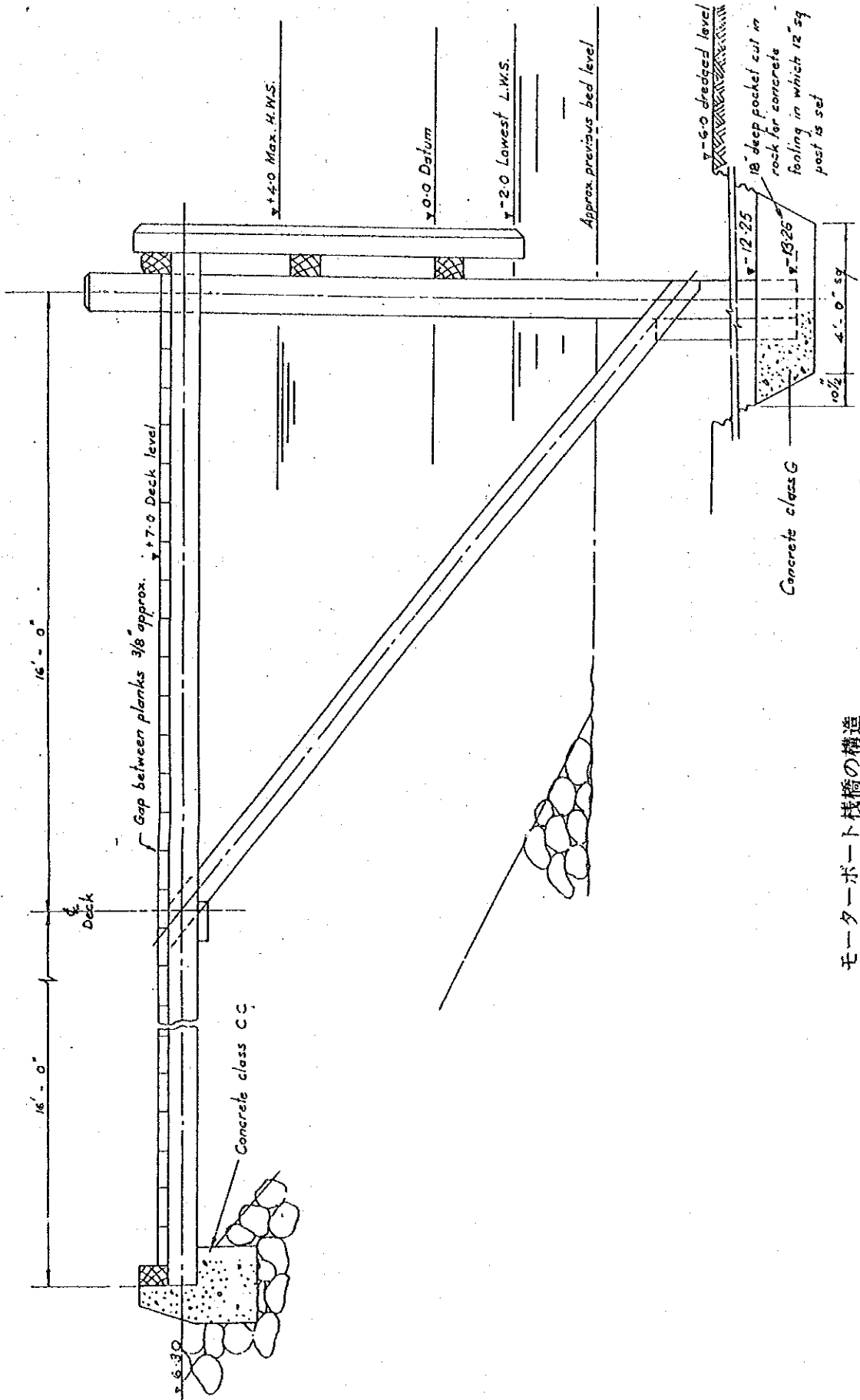
Scale: 5 ft. to 1 in.

岸壁の構造



SECTION OF WALL BETWEEN CH.711 & 1244 ON NORTH - SOUTH QUAY WALL.

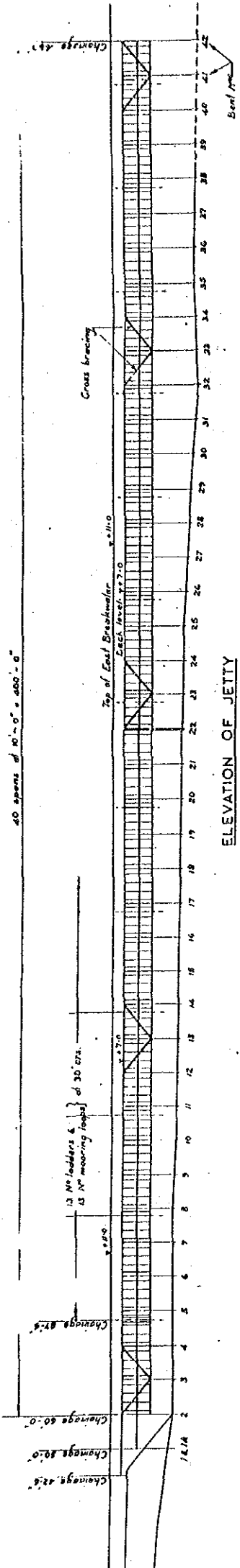
Scale 5 ft. to 1 in.



SECTION A-A

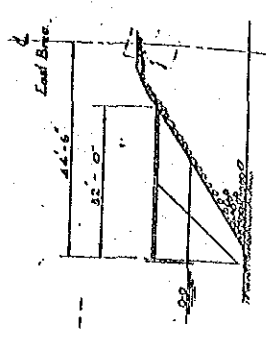
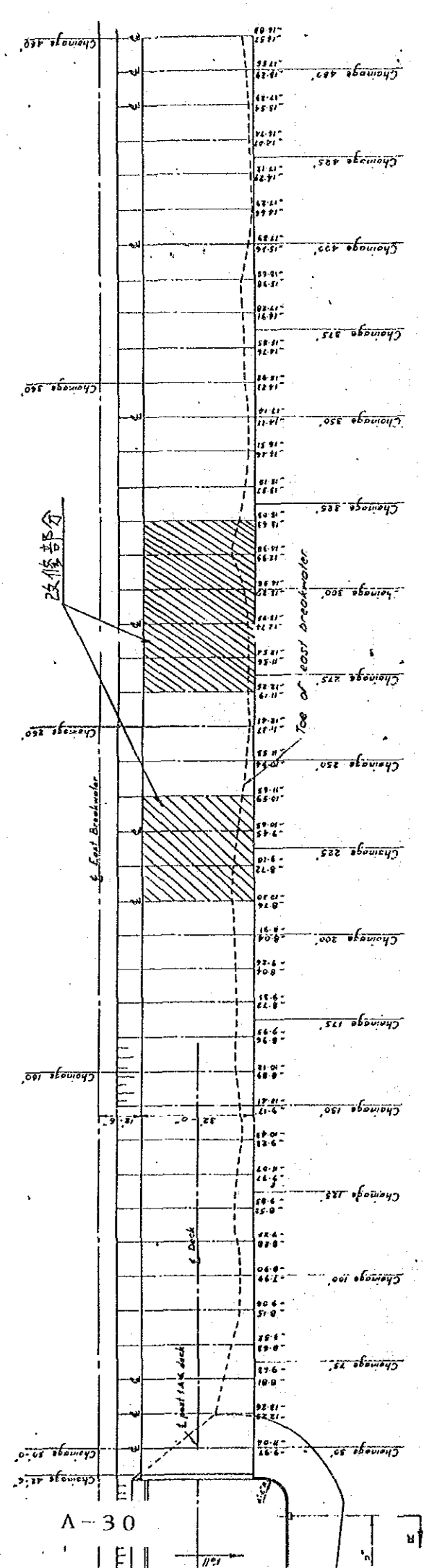
Scale = 3/8 in. to 1 ft.

モーターボート棧橋の構造



ELEVATION OF JETTY

Scale: 1/4" = 10 ft

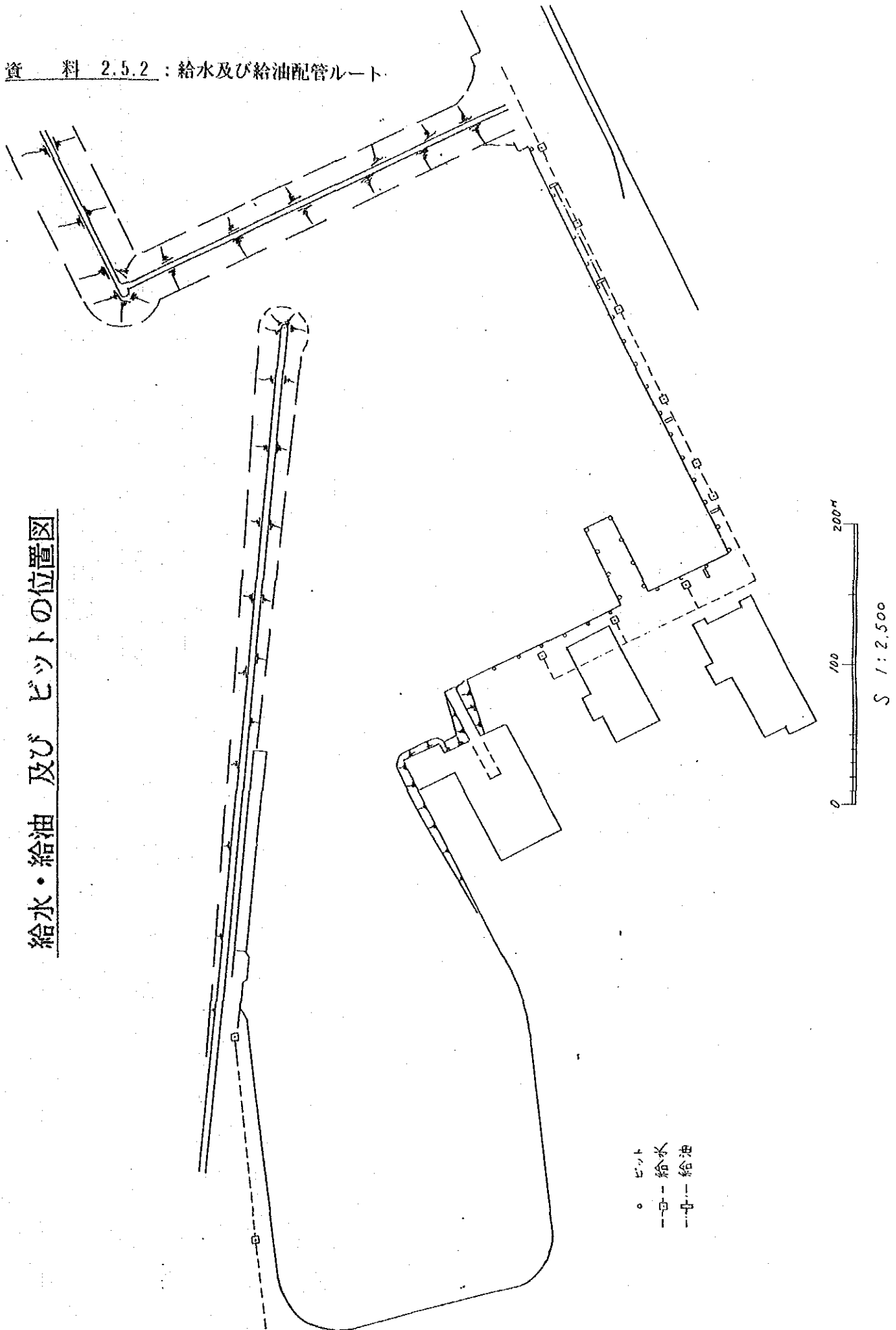


END ELEVATION

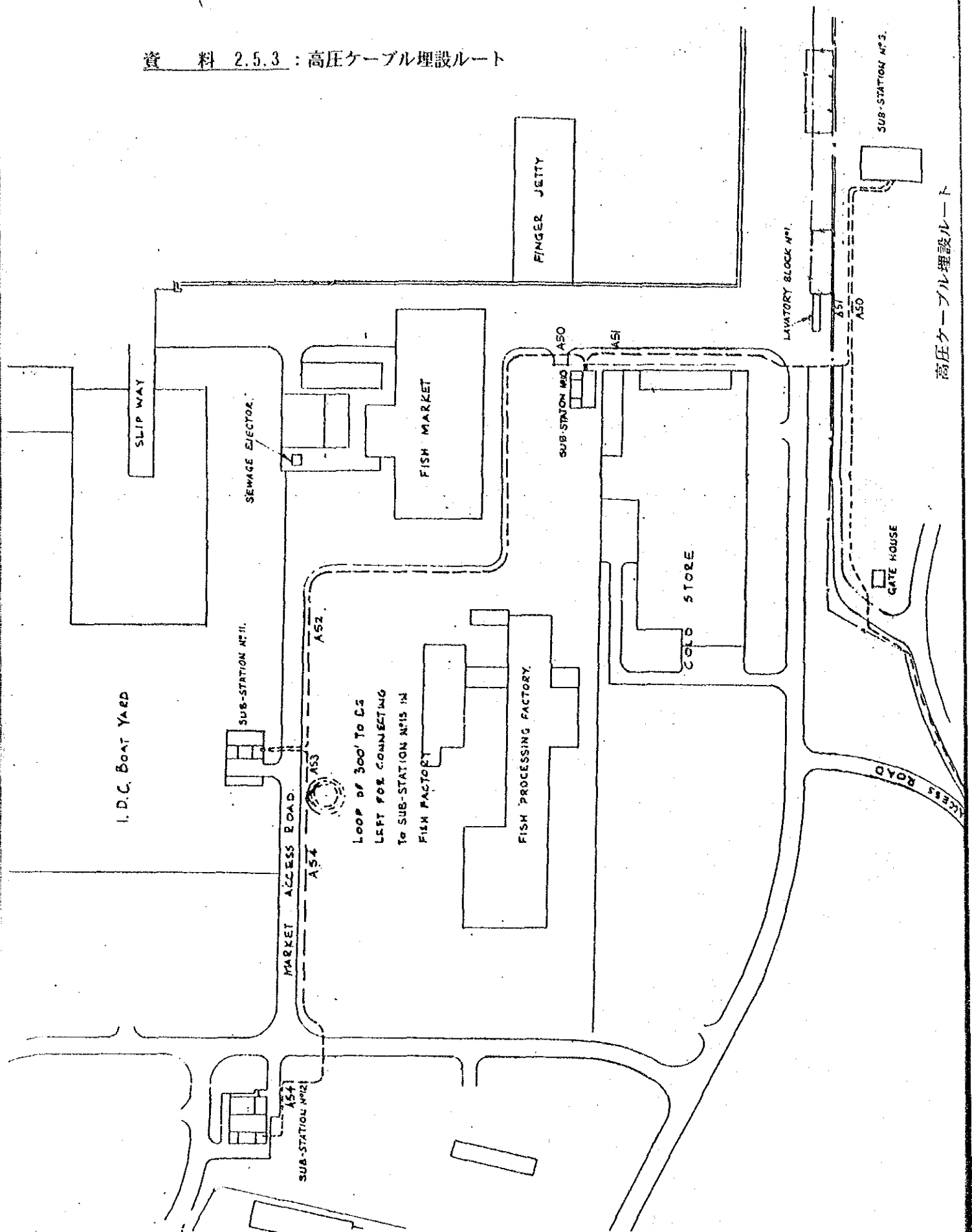
モーターボート桟橋縦断・平面図

A-30

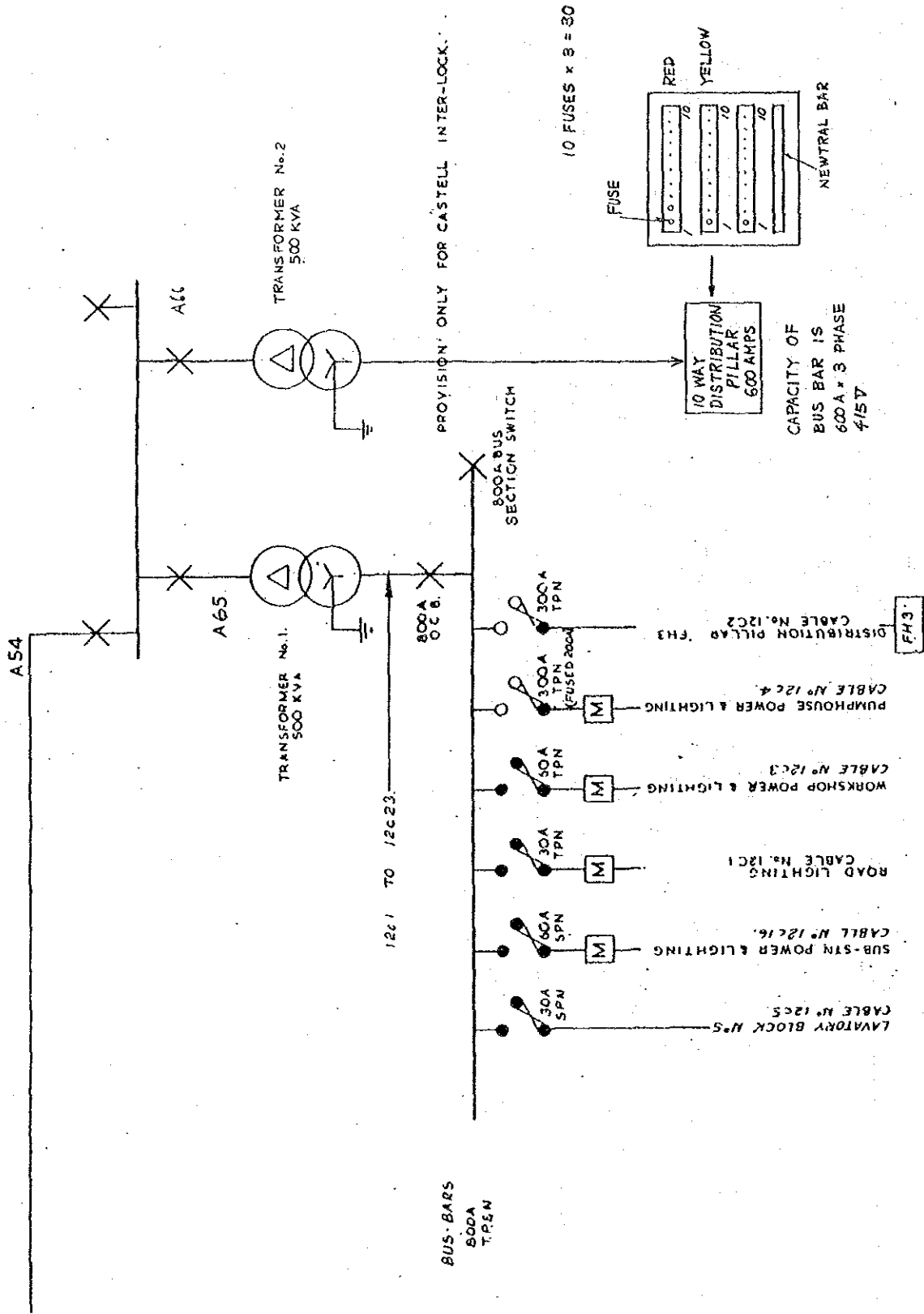
給水・給油 及び ビットの位置図

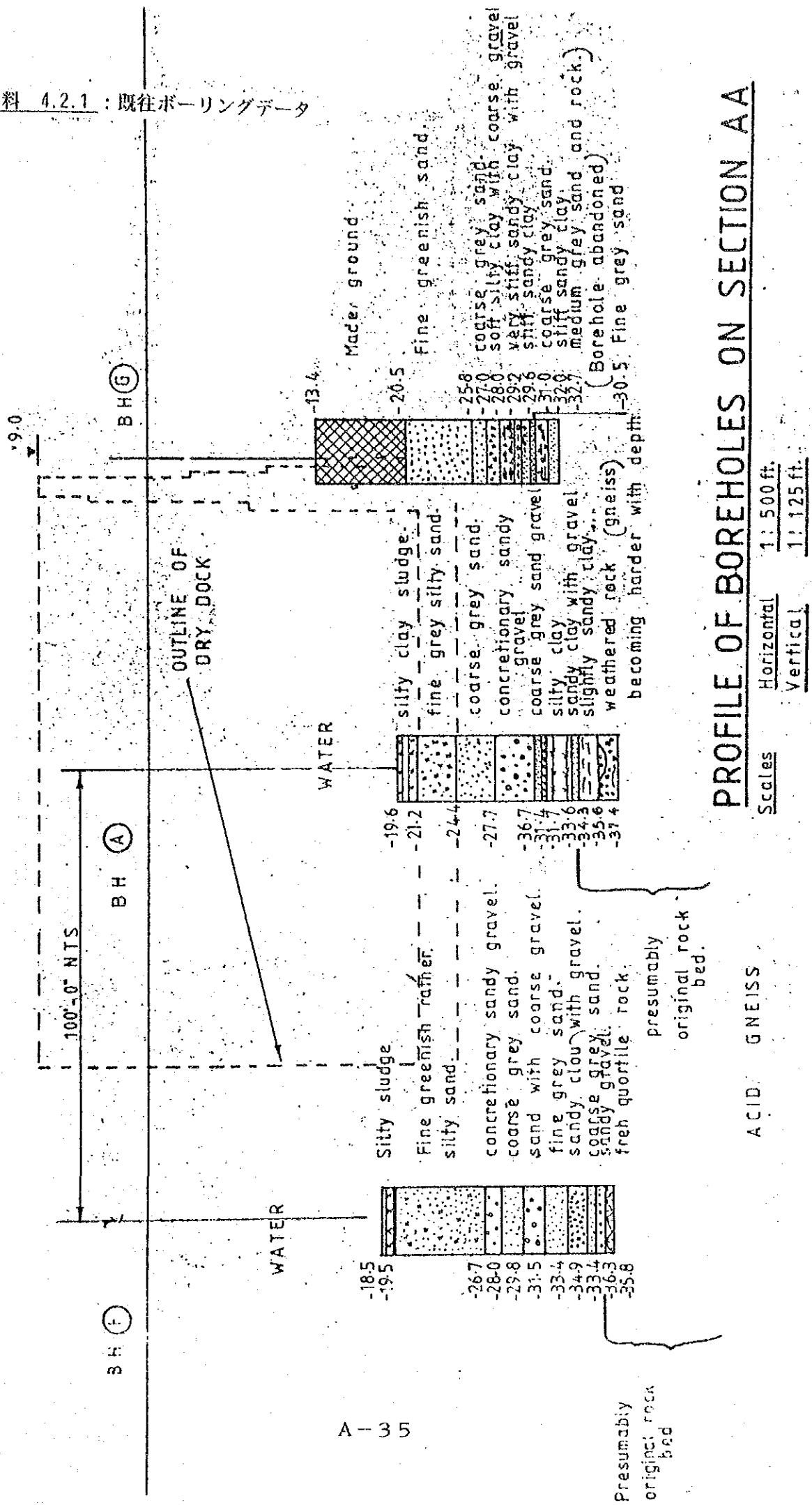


資料 2.5.3 : 高圧ケーブル埋設ルート

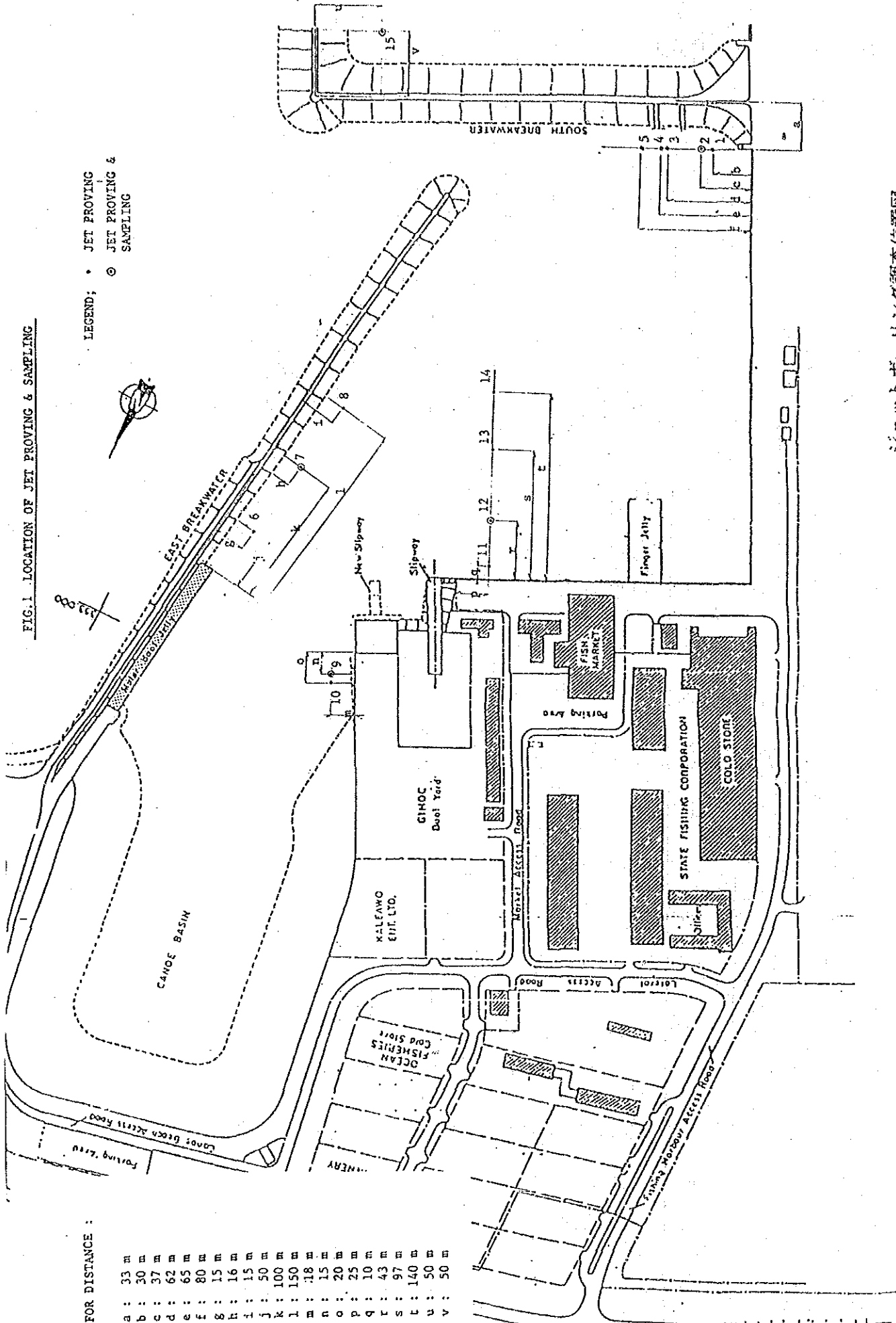


高圧ケーブル埋設ルート







資料 4.2.2 : ジェットボーリング調査位置図



ジェットボーリング調査位置図

FIG.2 PROFILE OF JET PROVING HOLES

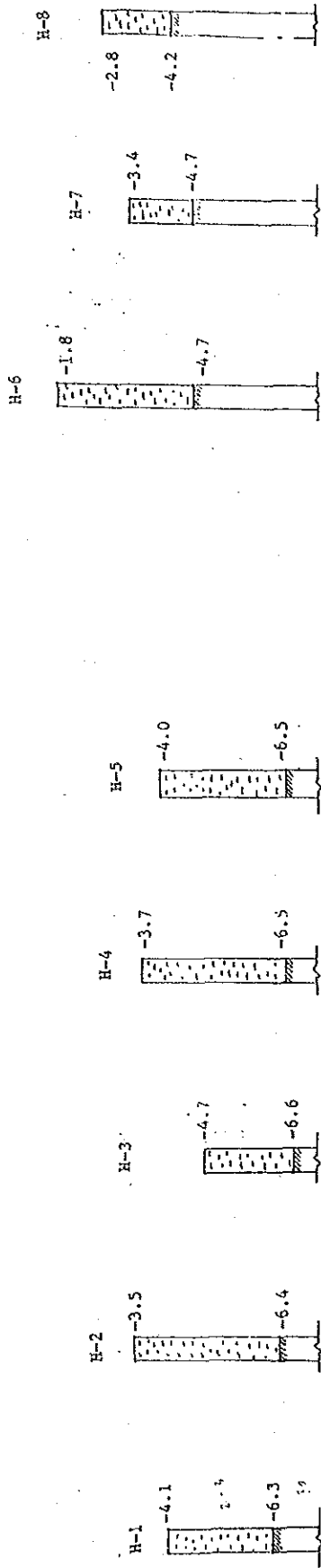
LEGEND;
 SOFT LAYER
 HARD BED

ジェットボーリング調査結果

SECTION 1 - 5

SECTION 6 - 8

DL ± 0

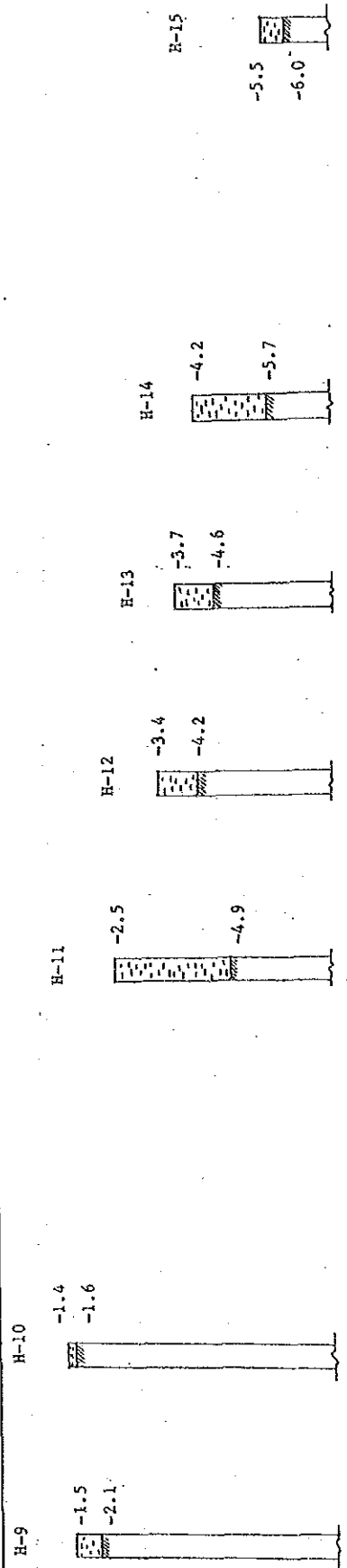


SECTION 9 - 10

SECTION 11 - 14

SECTION 15

DL ± 0



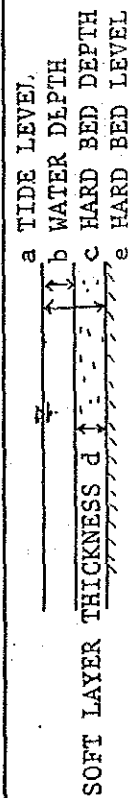
(UNIT m)

FIELD DATA OF JET PROVING

ジェットボローリング調査結果表

LOCATION NO.	TIDE LEVEL a	WATER DEPTH b	HARD BED DEPTH c	SOFT LAYER THICKNESS d = c - b	HARD BED LEVEL e = a - c	REMARKS
1	DL + 1.2	5.3	7.5	2.2	DL - 6.3	Hard bed is like rock.
2	DL + 1.2	4.7	7.6	2.9	DL - 6.4	- ditto -
3	DL + 1.0	5.7	7.6	1.9	DL - 6.6	- ditto -
4	DL + 0.9	4.6	7.4	2.8	DL - 6.5	- ditto -
5	DL + 0.8	4.8	7.3	2.5	DL - 6.5	Hard bed is like sandy gravel.
6	DL + 1.4	3.2	6.1	2.9	DL - 4.7	- ditto -
7	DL + 1.4	4.8	6.1	1.3	DL - 4.7	- ditto -
8	DL + 1.4	4.2	5.6	1.4	DL - 4.2	- ditto -
9	DL + 1.2	2.7	3.3	0.6	DL - 2.1	- ditto -
10	DL + 1.1	2.5	2.7	0.2	DL - 1.6	- ditto -
11	DL + 0.6	3.1	5.5	2.4	DL - 4.9	- ditto -
12	DL + 0.6	4.0	4.8	0.8	DL - 4.2	- ditto -
13	DL + 0.5	4.2	5.1	0.9	DL - 4.6	- ditto -
14	DL + 0.5	4.7	6.2	1.5	DL - 5.7	- ditto -
15	DL + 0.5	6.0	6.5	0.5	DL - 6.0	- ditto -

NOTE:



資料 4.2.4 : 潮位観測記録

Hourly Tidal Observation

Area : Ghana
 Station : Tema
 Latitude : 5° 37'
 Longitude : 0° 00'
 Duration : 88/06
 Unit : cm

Date	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Sum	Mean
29	99	112	121	118	102	79	55	41	40	58	80	105	128	145	147	131	111	90	63	36	18	15	29	50	1973	82.2
30	75	100	116	124	117	100	75	51	40	40	56	78	104	129	145	149	140	119	88	51	23	9	10	25	1964	81.8
31	50	82	108	124	128	117	95	72	49	38	40	55	79	109	132	146	147	133	102	71	36	9	3	9	1934	80.6
1	36	64	95	116	132	133	117	93	67	46	37	42	61	87	113	133	147	142	132	97	60	28	9	2	1989	82.9
2	14	40	70	101	124	135	133	114	85	58	39	33	42	64	91	116	138	148	142	120	87	51	19	4	1968	82.0
3	2	16	46	82	110	131	139	131	111	88	65	48	43	53	75	96	118	135	141	133	108	75	42	16	2004	83.5
4	5	9	26	57	86	111	129	136	129	108	84	61	41	32	46	73	98	119	132	135	125	99	70	40	1951	81.3
5	19	8	14	34	60	91	116	134	139	129	111	86	60	51	50	59	76	94	110	123	123	114	94	67	1962	81.8
6	43	24	19	25	43	67	91	114	130	140	133	115	92	65	50	48	56	74	90	104	115	120	110	90	1958	81.6
7	70	47	31	21	28	46	70	94	116	135	142	134	114	90	70	53	47	51	64	78	93	105	110	105	1914	79.8
8	91	71	49	35	28	35	51	71	96	120	136	142	132	116	98	74	55	50	55	70	88	107	115	112	1997	83.2
9	100	86	71	58	49	45	47	62	81	106	126	143	150	144	123	98	70	52	43	46	56	73	89	104	2022	84.3
10	113	111	101	83	62	49	43	47	63	86	112	133	145	146	138	115	89	64	43	32	35	49	68	85	2012	83.8
11	104	116	117	108	90	71	51	43	47	63	88	112	134	146	145	133	110	79	51	30	23	33	53	75	2022	84.3
12	96	112	121	123	112	92	70	51	45	53	73	93	115	138	149	145	129	102	73	41	21	17	26	45	2043	85.1



Monthly Mean
 29 days
 Sum 29783
 Mean 82.7

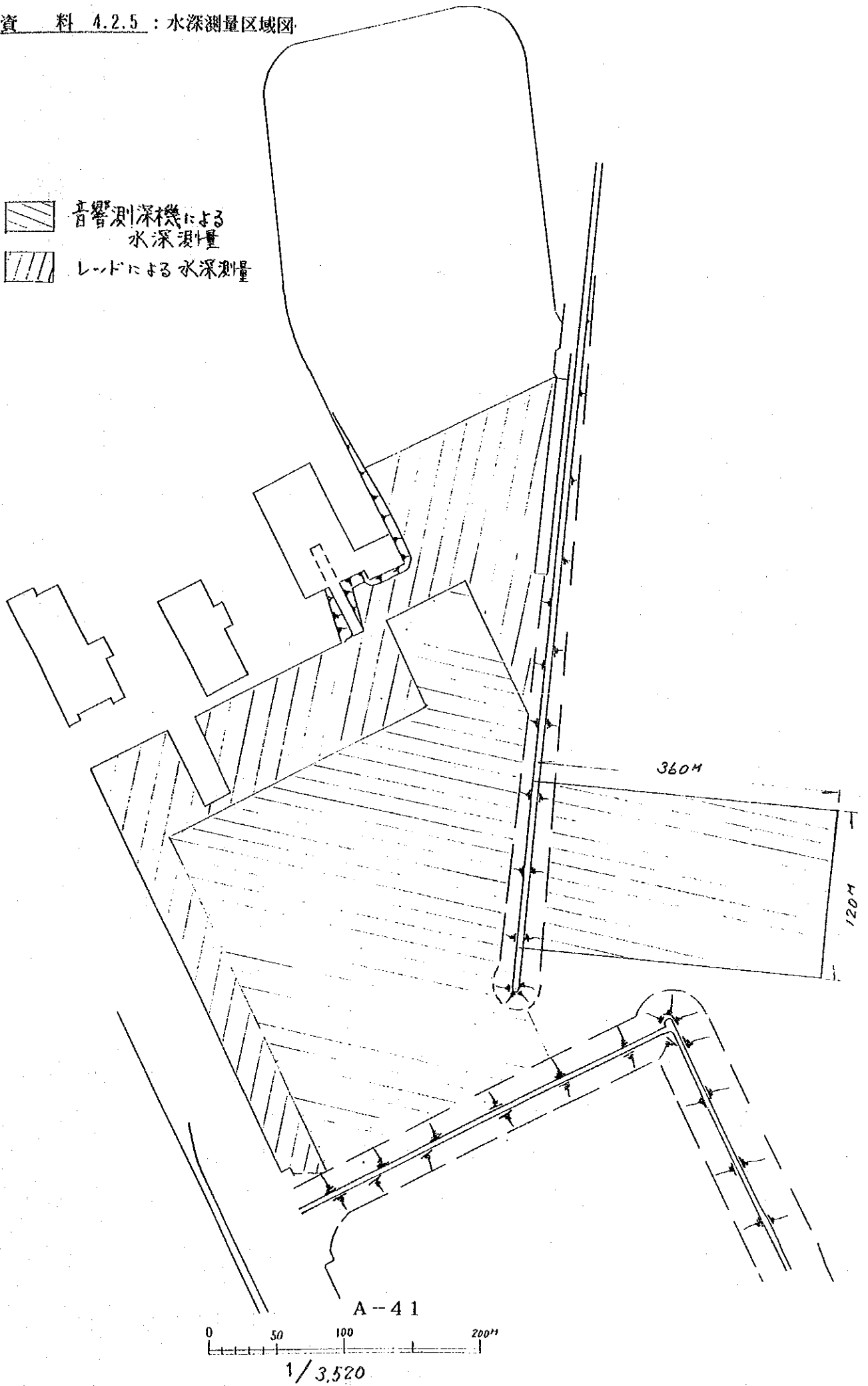
Hourly Tidal Observation (High & Low Water Level)

Area : Ghana
 Station : Tema
 Latitude : 5° 37'
 Longitude : 0° 00'
 Duration : 88/06
 Unit : cm

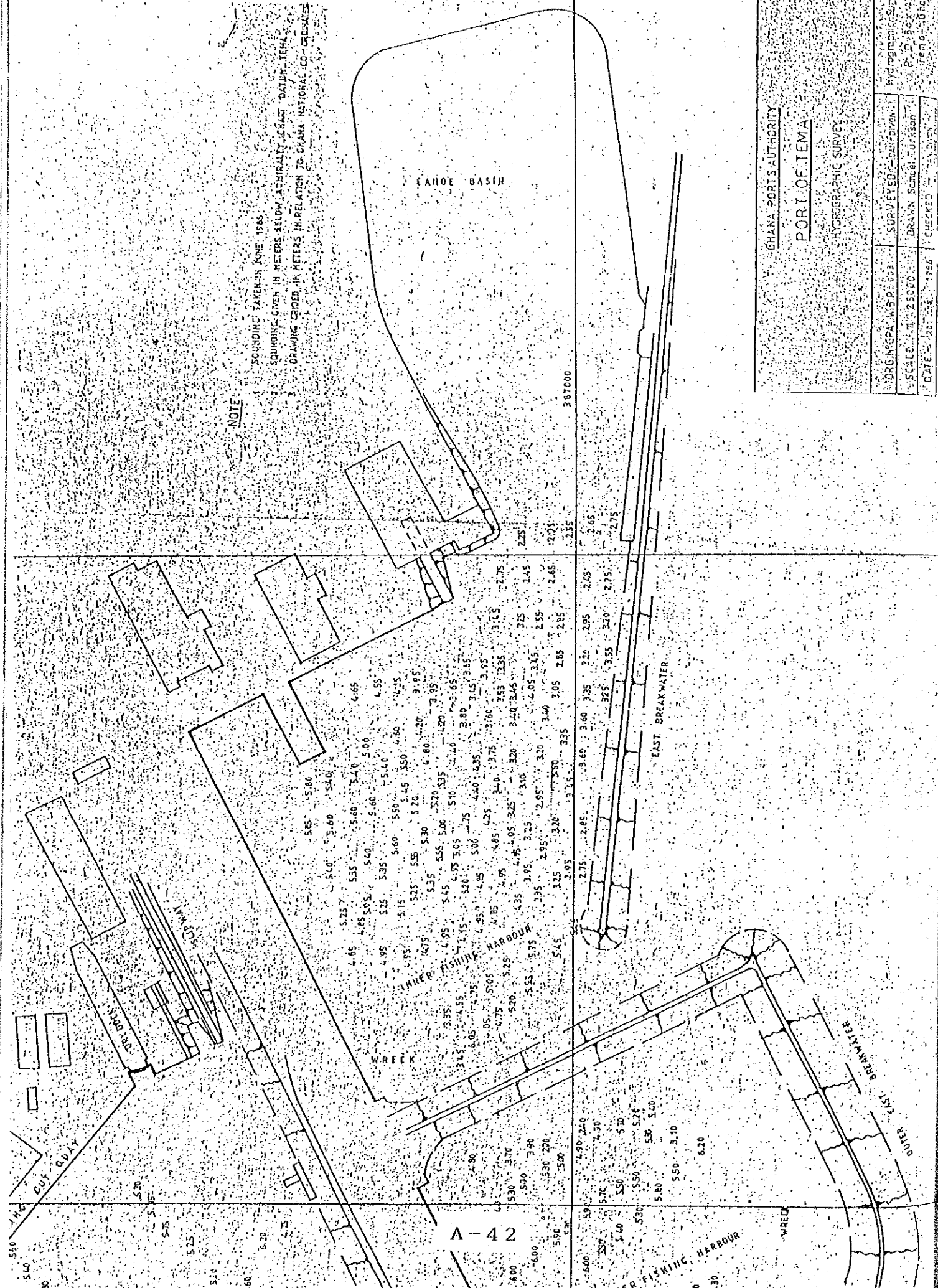
Date	H.W.		L.W.		H.W.		L.W.	
29	2:20	122	7:40	39	13:35	148	20:40	14
30	3:10	124	8:30	38	14:50	149	21:25	8
31	3:40	129	9:20	37	15:30	148	22: 5	3
1	4:30	134	10:10	37	16:15	148	22:50	2
2	5:25	136	10:55	33	17:10	148	23:40	0
3	6:10	139	11:40	42	17:50	141	:	
4	7: 0	136	0:20	5	18:40	136	12:50	32
5	7:50	139	1: 0	8	19:20	124	13:40	48
6	9:10	140	1:55	19	20:50	120	14:40	47
7	9:50	142	3:10	21	21:50	111	16:10	47
8	10:45	143	4:10	28	22:10	116	17: 5	50
9	11:50	150	5:15	44	:		18:10	43
10	0:20	114	5:55	43	12:40	147	19:15	31
11	1:40	117	7:10	43	13:35	147	19:50	23
12	2:40	124	7:55	45	14:20	150	20:45	17

資料 4.2.5 : 水深測量区域図

-  音響測深機による水深測量
-  レッドによる水深測量



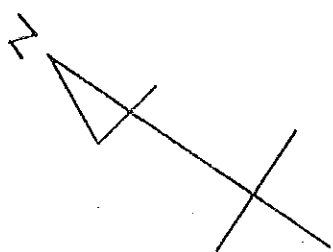
資料 4.2.6 : 既存深淺測量図



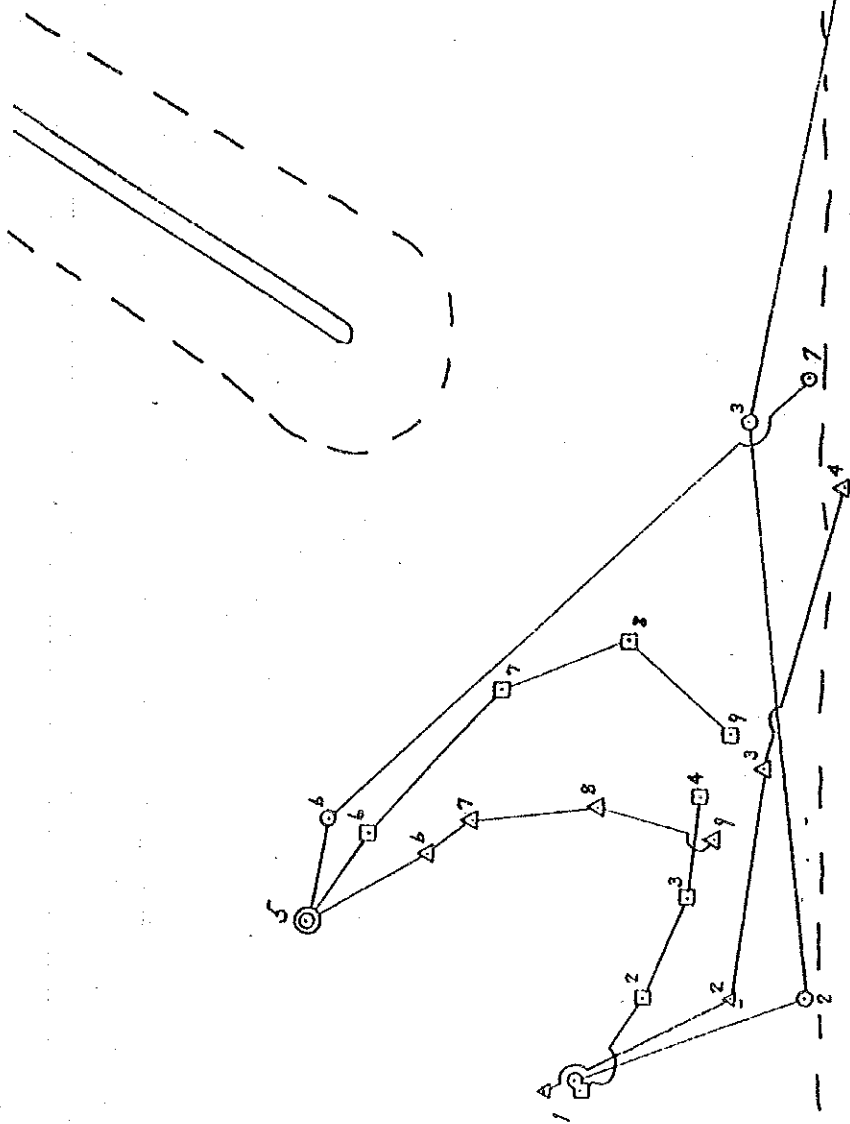
NOTE
 SOUNDING TAKEN IN JUNE 1956
 SOUNDINGS GIVEN IN METERS BELOW ADIRALTY CORRECT DATUM LEVEL
 DRAWING CORRECTED IN METERS IN RELATION TO GHANA NATIONAL CO-ORDINATES

GHANA PORTS AUTHORITY		HYDROGRAPHIC SURVEY UNIT	
PORT OF TEMA		SURVEYED BY: [blank]	
HYDROGRAPHIC SURVEY		DRAWN BY: [blank]	
ORGANISATION: [blank]	SCALE: 1:25000	DATE: [blank]	CHECKED: [blank]
DATE: [blank]		DRAWN: [blank]	

A-42

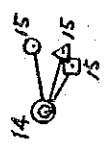
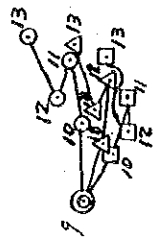
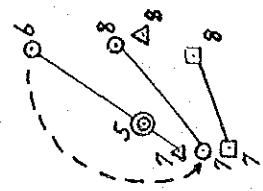
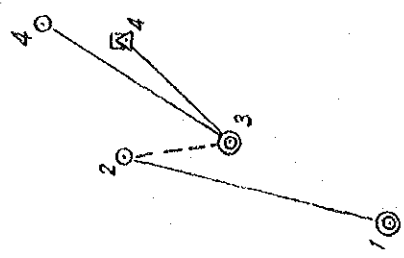
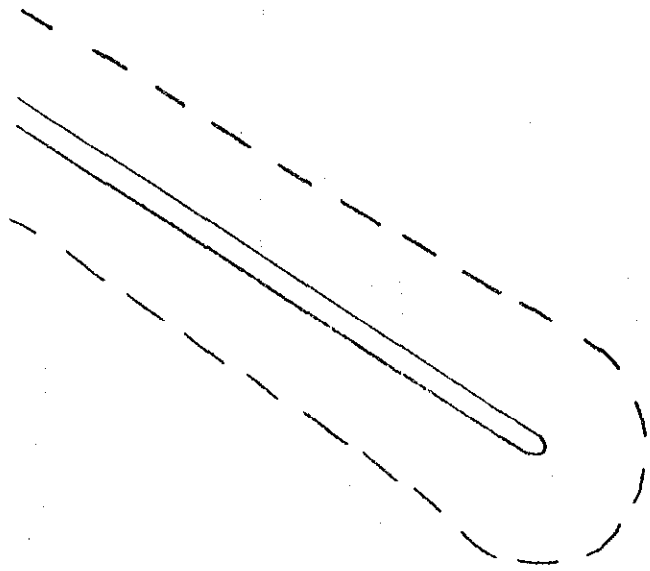
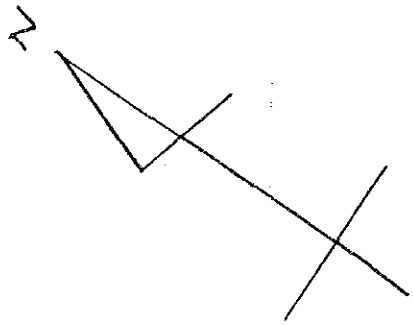


投入層
 ◎ 1^m層
 ○ 2^m層
 △ 3^m層

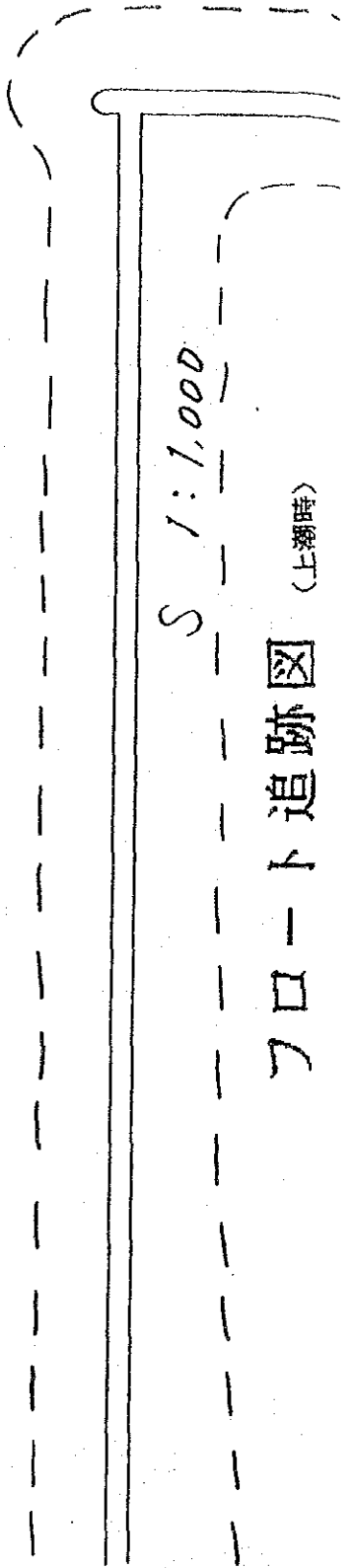


S 1 : 1,000

フロート追跡図 (下潮時)



投 入
 1st 層
 2nd 層
 3rd 層
 ◎ ○ △ □



フロード追跡図 (上潮時)

JICA