GOVERNMENT OF PAKISTAN

PORT QASIM AUTHORITY

TENDER AND CONTRACT DOCUMENTS

FOR DREDGING OF NAVIGATIONAL CHANNEL

VOL IV : DRAWINGS

DECEMBER 1975

JAPAN INTERNATIONAL COOPERATION AGENCY

TIDAL INFORMATIONS AND CHART DATUM

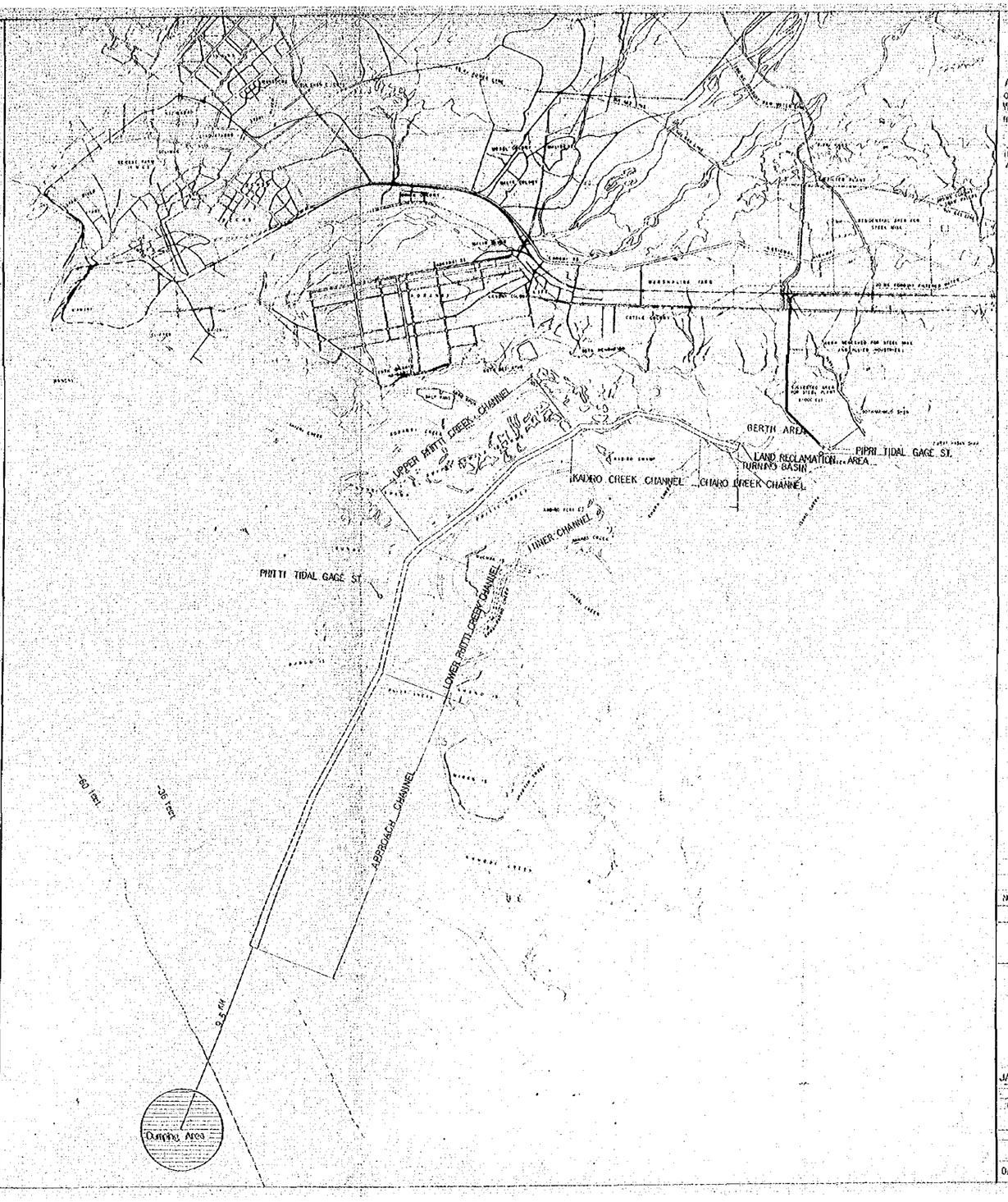
	Phitti	Pipri	Karachi
Extreme recorded high water	+3.87	+3.96	+4.88
Highest astronomic tide (H.A.T)	+3.44	+3.96	+3.20
Mean higher high water (MHHW)	+2.91	+3.40	+2.68
Mean lower high water (MLHW)	+2.26	+2.67	+2.44
Mean sea level (M.S.L)	+1.731	+2.05	+1.616
Mean higher low water (MHLW)	+1.198	+1.429	+1.067
Mean lower low water (MLLW)	+0.549	+0.701	+0.427
Chart datum	0.0	0.0	0.0
Lowest astronomic tide (L.A.T)	-0.579	-0.610	-0.427
Extreme recorded low water	-0.823	-0.823	-0.610

NOTE

(1) Chart datum of Phitti and Pipri is below survey of Pakistan datum by 1.731 and 2.05 m respectively, K.P.T datum is 1.616 m below survey of Pakistan datum.

(2) Values of MHHW, MLHW, MHLW, and MLLW for Phitti and Pipri have been computed by P.Q.A. from the observations between 11.10.72 and 31.12.73.

(3) Values of HAT, LAT, extreme high water and lowest water levels are observed values.



GENERAL NOTES

The navigation channel and location of dumping Area are indicated on the chart on a scale of 1/100 000, supplied by P.Q.A. in 1973. Water depths are indicated in feet, and other measurements are given in meters.

Dumping sites for Inner Channel are indicated on the Drawing NO 4-4-4-7, 4-11-4-14.

NO.	DATE	DESCRIPTION	APPROVED
		REVISION	

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING
GENERAL PLAN

JAPAN INTERNATIONAL COOPERATION AGENCY

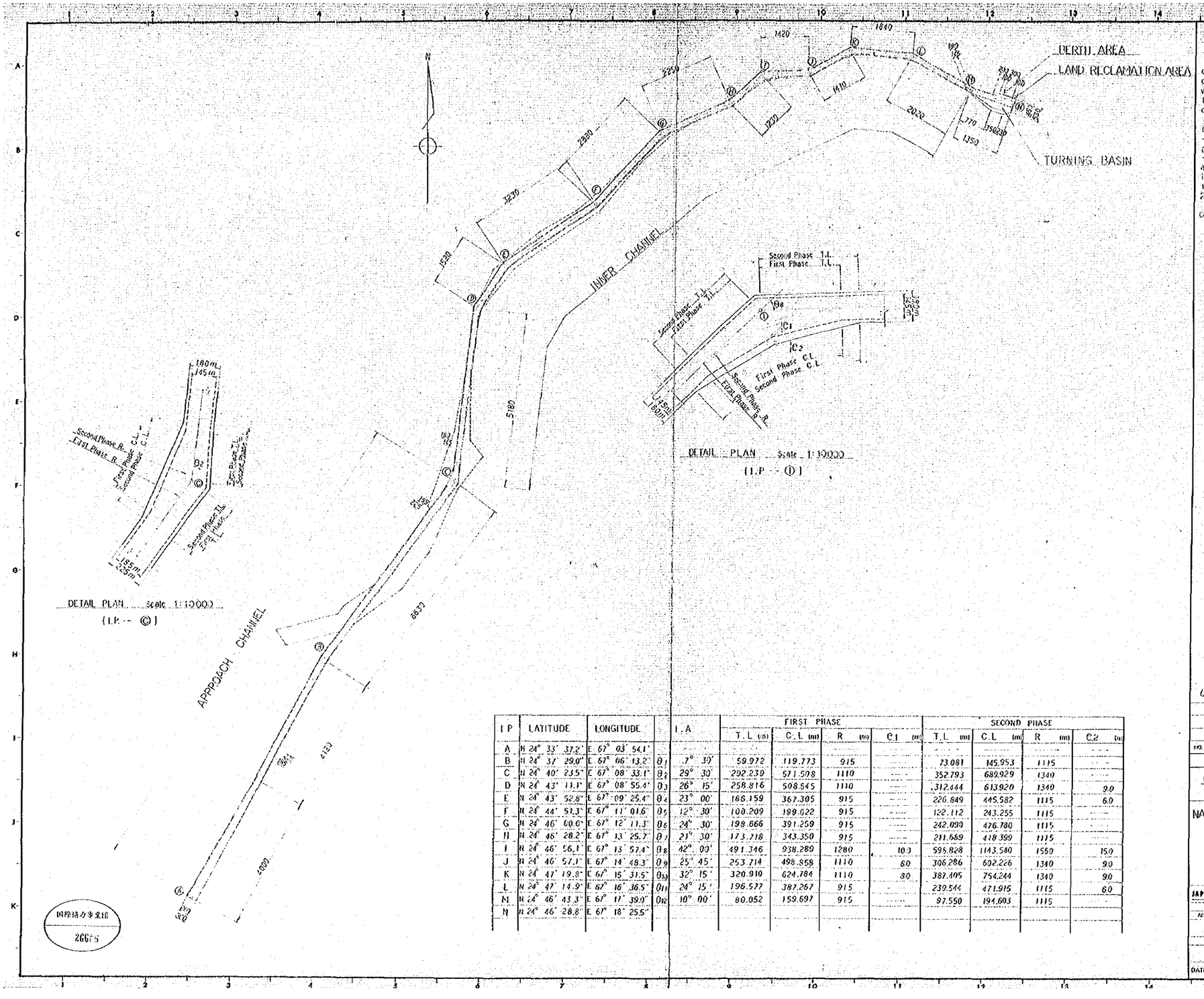
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE 1 : 100 000

KEY NO.

DATE DECEMBER 1975 DWG.No. 1 - 1



I P	LATITUDE	LONGITUDE	I. A	FIRST PHASE T.L (m)	FIRST PHASE C.L (m)	FIRST PHASE R (m)	FIRST PHASE C1 (m)	SECOND PHASE T.L (m)	SECOND PHASE C.L (m)	SECOND PHASE R (m)	SECOND PHASE C2 (m)
A	N 24° 33' 37.2"	E 67° 03' 54.1"	-	-	-	-	-	-	-	-	-
B	N 24° 37' 29.0"	E 67° 06' 13.2"	θ1 7° 39'	59.972	119.773	915	-----	73.081	145.953	1115	-----
C	N 24° 40' 23.5"	E 67° 08' 33.1"	θ2 29° 30'	292.239	571.598	1110	-----	352.793	689.929	1340	-----
D	N 24° 43' 11.1"	E 67° 08' 55.4"	θ3 26° 15'	258.816	508.545	1110	-----	312.464	613.920	1340	9.0
E	N 24° 43' 52.8"	E 67° 09' 25.4"	θ4 23° 00'	166.159	367.305	915	-----	226.849	445.582	1115	6.0
F	N 24° 44' 51.3"	E 67° 11' 01.6"	θ5 12° 30'	100.209	199.622	915	-----	122.112	243.255	1115	-----
G	N 24° 46' 00.0"	E 67° 12' 11.3"	θ6 24° 30'	198.866	391.259	915	-----	242.090	476.780	1115	-----
H	N 24° 46' 28.2"	E 67° 13' 25.7"	θ7 21° 30'	173.718	343.350	915	-----	211.669	418.399	1115	-----
I	N 24° 46' 56.1"	E 67° 13' 57.4"	θ8 42° 00'	491.346	938.289	1280	100	595.828	1143.540	1550	150
J	N 24° 46' 57.1"	E 67° 14' 48.3"	θ9 25° 45'	253.714	498.858	1110	60	306.286	602.226	1340	90
K	N 24° 47' 19.8"	E 67° 15' 31.5"	θ10 32° 15'	320.910	624.784	1110	80	387.495	754.244	1340	90
L	N 24° 47' 14.9"	E 67° 16' 36.5"	θ11 24° 15'	196.577	387.267	915	-----	239.544	471.915	1115	60
M	N 24° 46' 43.3"	E 67° 17' 39.0"	θ12 10° 00'	80.052	159.697	915	-----	97.550	194.603	1115	-----
N	N 24° 46' 28.8"	E 67° 18' 25.5"									

GENERAL NOTES

The channel alignment is shown on the drawing on a scale of 1/50 000 to show the outline of the entire configuration of the channel with the bends, the distance between bends, the deflection angle of bends, and the channel width.

The broken line - - - - - - indicates the channel for the first phase, and the line ——— indicates the channel for the second phase. The area indicated with broken lines - - - - - - on both sides of the channel indicate areas where the design depth of -11.80 m in the Approach Channel and -9.50m in the Inner Channel will be maintained for 25 000 D.W.T. vessels.

Land Reclamation and Berth Areas are Early Completion.

UNIT : m

NO.	DATE	DESCRIPTION	APPROVED
		REVISION	

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

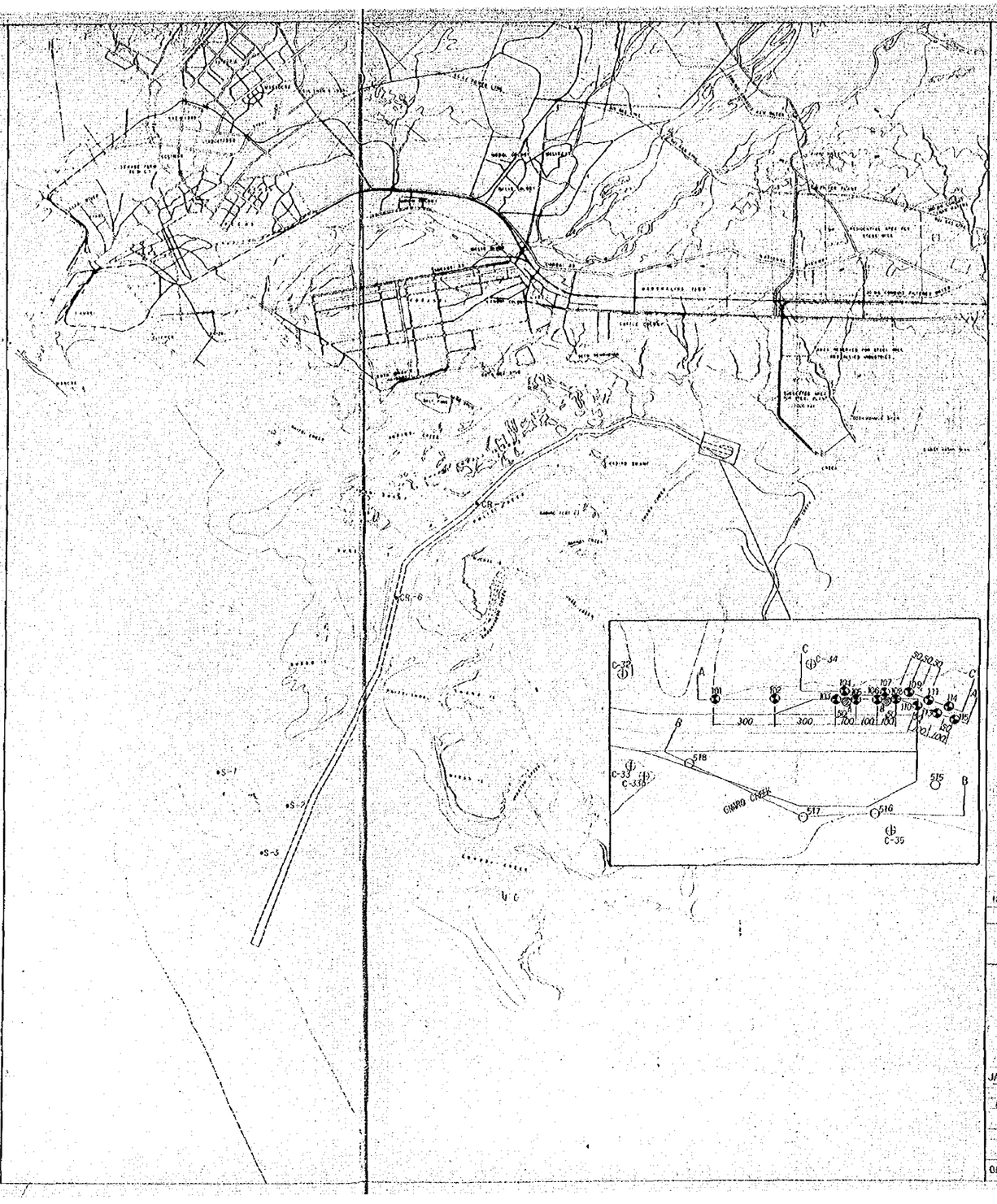
CHANNEL ALIGNMENT

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1 : 50,000	

DATE DECEMBER 1975 DWG. NO. 1 - 2



GENERAL NOTES

The channel and bore holes are indicated on the chart on a scale of 1/100000, supplied by P.Q.A. in 1973.

LEGEND

BORE HOLES MARKS		APPROX. DEPTH BELOW DATUM
100 SERIES	⊕	80'(24.39m)
500 SERIES	○	50'(15.25m)
HYDROGRAPHIC SURVEY MARK	⊕	
	⊗	CHECK BORINGS

NOTE :-
All dimension are in meters.

NO.	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING
(FOR REFERENCE ONLY)
LOCATION OF BOREHOLES

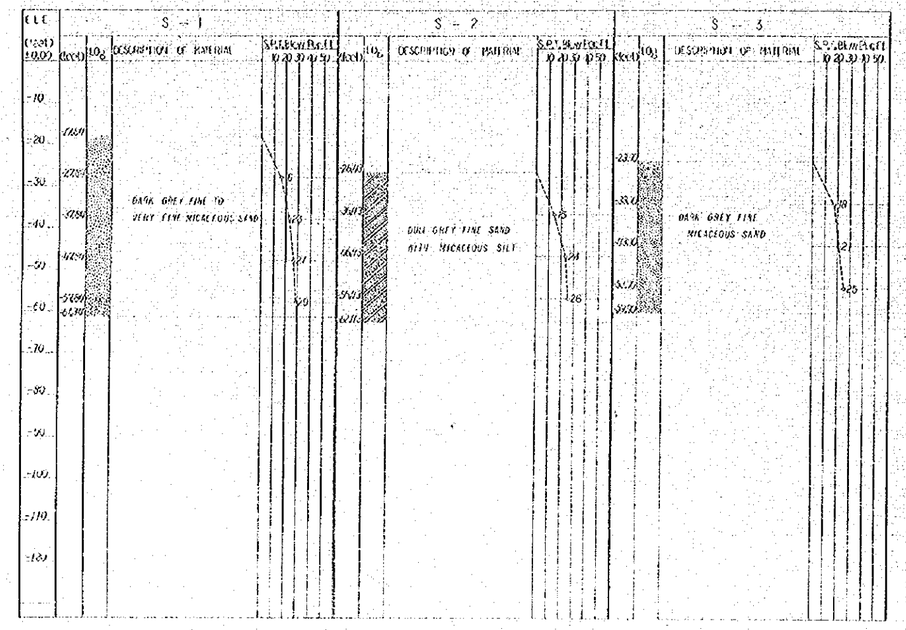
JAPAN INTERNATIONAL COOPERATION AGENCY
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

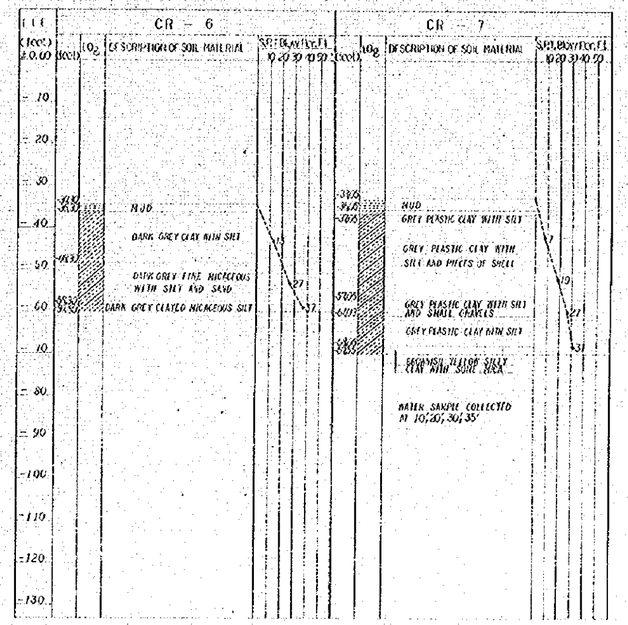
SCALE	REV. NO.
1 : 100 000	

DATE DECEMBER 1975 | DWG. No. 2 - 1

BORING LOGS OF APPROACH CHANNEL



BORING LOGS OF CREEK AREA



GENERAL NOTES

Boring logs of soil in the Approach Channel and Inner Channel, showing results of boring investigations carried out by P.O.A. were supplied in 1973. Figures represent the depths in feet and N values.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING
(FOR REFERENCE ONLY)
BORING LOGS OF APPROACH CHANNEL
BORING LOGS OF CREEK AREA

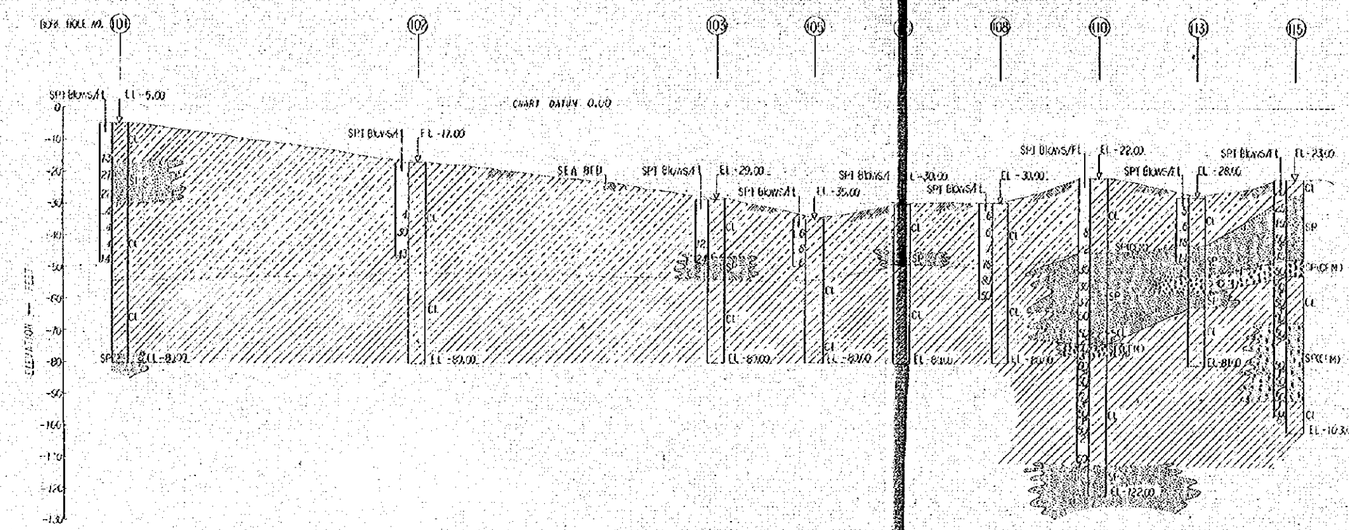
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

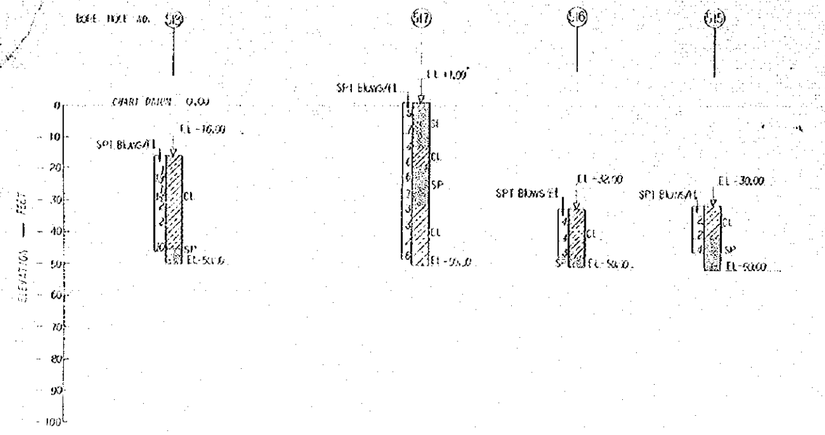
SCALE | REV. No.

DATE DECEMBER 1975 | DWG. NO. 3 – 1

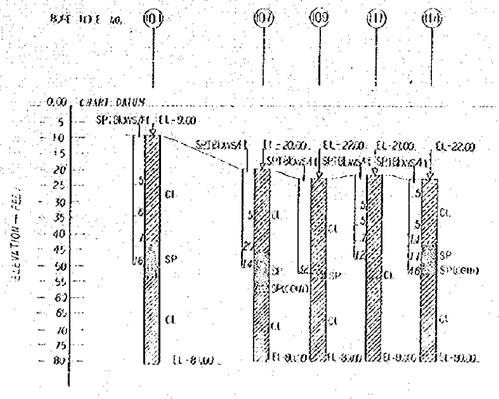
BORING LOGS -- BERTH, TURNING BASIN



SECTION A - A HOR. SCALE : 1"= 200'



SECTION B - B HOR. SCALE : 1"= 200'



SECTION C - C HOR. SCALE : 1"= 200'

GENERAL NOTES

LEGEND

- CL — GREY, SILTY CLAY TO CLAYEY SILT.
- CL — BROWN HARD SILTY CLAY WITH OCCASIONAL EMBEDDED GRAVEL
- SP — GREY FINE SAND
- SP(CL) — BROWN MEDIUM TO COARSE SAND MIXED WITH CLAY
- SP(CEM) — BROWN MEDIUM TO COARSE SAND CEMENTED

NOTES

1. For location of Section A--A, Section B-B, Section-C refer drawing no. 2-1.
2. Depth of penetration where less than first six inches is indicated below the number of blows for the test.
3. The soil profile has been plotted on the basis of data supplied by the contractors M/S. Volkerwerk.

Data in borings carried out in the proposed berth site and turning basin by P.O.A. given in the drawing, was supplied from 1973 to 1975. The figures represent the depths in feet and N values.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING
(FOR REFERENCE ONLY)
BORING LOGS -- BERTH, TURNING BASIN

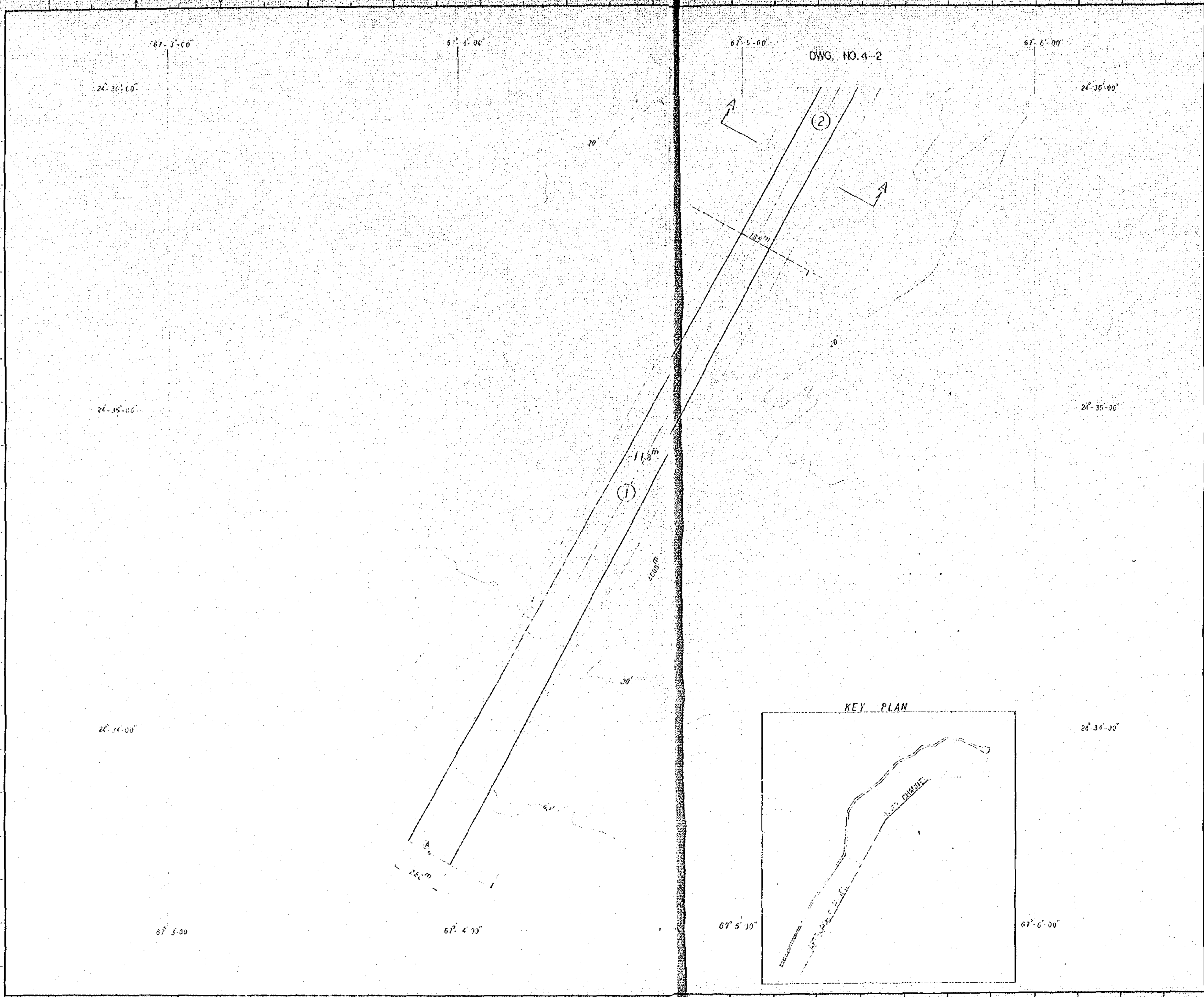
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE — REV. No.

DATE DECEMBER 1975 — DWG. NO. 3 - 2



GENERAL NOTES

The sounding chart on a scale of 1/10 000 has been enlarged from the Drawing on a scale of 1/25 000, based on soundings carried out by P.O.A. and supplied in 1973.
As the intervals of sounding survey points will be larger, figures representing average depths have been inserted in between.
The latitude and longitude in squares on the Drawing are indicated by figures supplied by P.O.A.
The latitude and longitude between Points (A) ~ (C) of the respective bends in the channel are figures taken from the sounding chart supplied by P.O.A.
The numbers [①, ②] in the Drawings are division numbers. For each division, the dredging quantity has been calculated for the areas with depths less than the design depths in the channel and anchorage.
Areas to be dredged in the channel and basin are indicated on the Drawing by light colors. Areas to be dredged on the side slopes are indicated by the mark [illegible]. The design widths and design depths are given on the Drawings.
Water depths are indicated in feet, and other dimensions are indicated in meters.
Areas indicated with broken line - - - - - on both sides of the channel indicate areas where the design depth of −11.80 m in the Approach Channel, and −9.50 m in the Inner Channel will be maintained.
Depths are measured from Datum.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

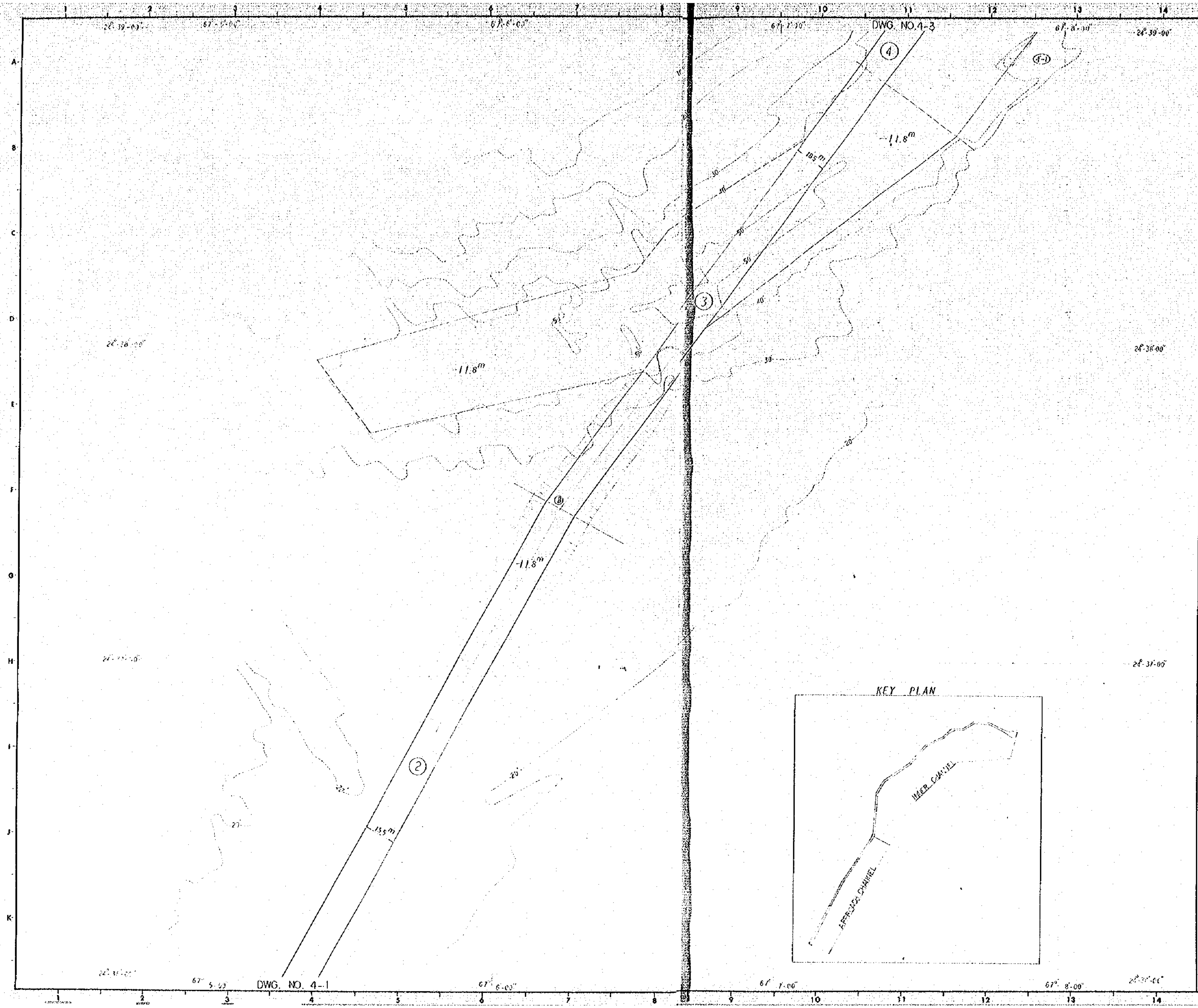
APPROACH CHANNE (FIRST PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1 : 10,000	
DATE DECEMBER. 1975	DWG. NO. 4 — 1



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

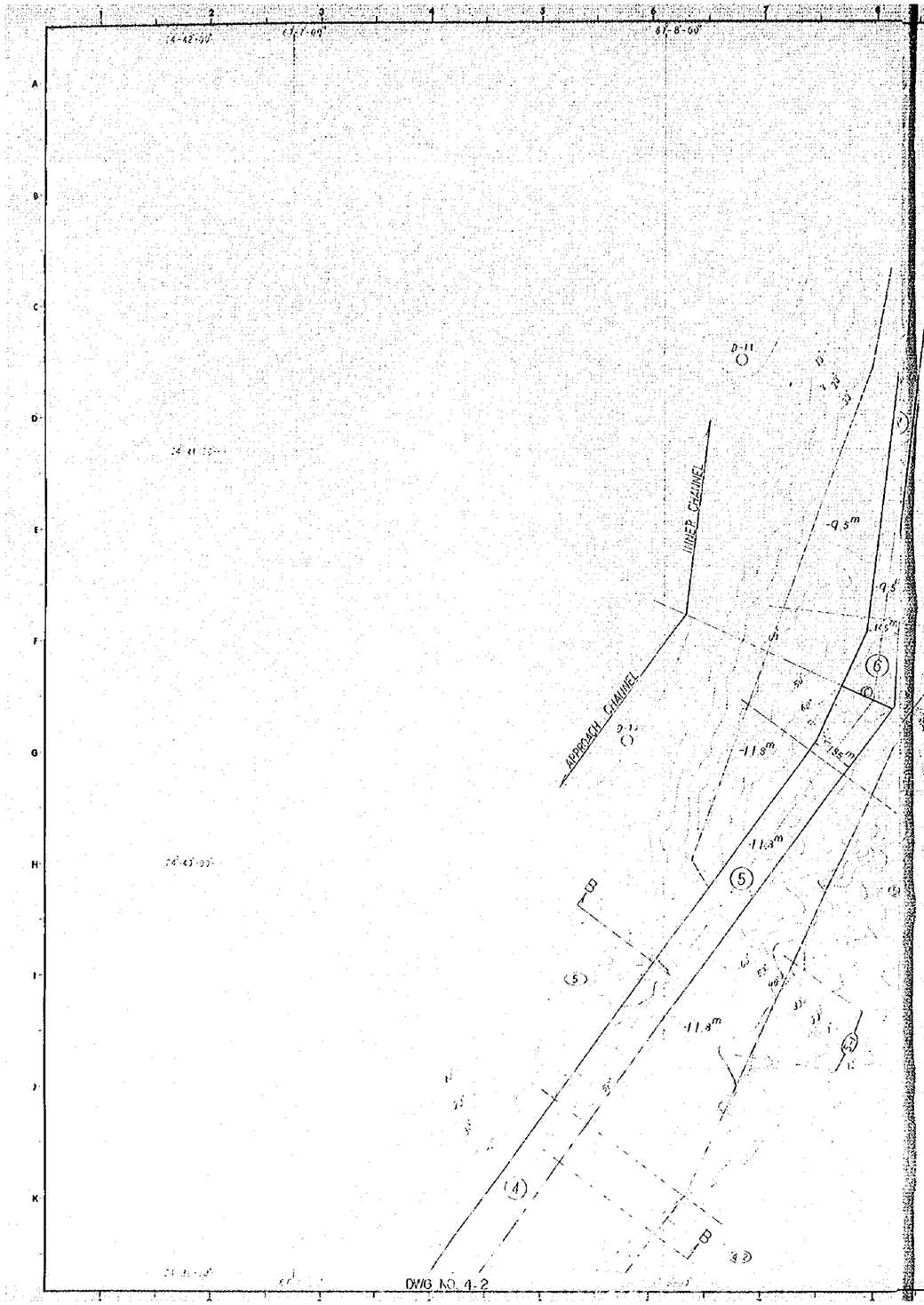
NAVIGATION CHANNEL DREDGING

APPROACH CHANNEL (FIRST PHASE)
ALIGNMENT & DREDGING AREA

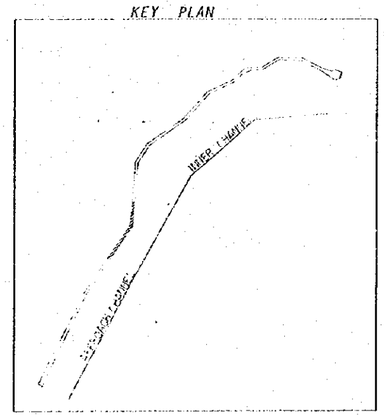
JAPAN INTERNATIONAL COOPERATION AGENCY
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1 : 10.000	
DATE DECEMBER. 1975	DWG. NO. 4 — 2



KEY PLAN



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

APPROACH CHANNEL (FIRST PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1:10000	
DATE DECEMBER, 1975	DWG. NO. 4 — 3

GENERAL NOTES

The Drawing on a scale of 1/10 000 based on sounding survey by P.Q.A., is as supplied in 1973.

The latitude and longitude in squares on the Drawing are indicated by figures supplied by P.Q.A.

The latitude and longitude between points Ⓒ~Ⓝ of the respective bends are values taken from the sounding chart supplied by P.Q.A.

The numbers [①] [⑧] in the Drawing are division numbers. For each division, the dredging quantity has been calculated for areas with depths less than the design depth in the channel, berth, anchorage, and turning basin. Areas to be dredged in the channel, berth, anchorage and turning basin are indicated with light colors in the Drawing. Areas to be dredged on the side slopes are indicated by the mark [ ].

The design widths and design depths are given in the Drawing.

Water depths are indicated in feet, and other dimensions are indicated in meters.

The dumping sites of spoil are indicated as [DUMPING SITE] in the swamp areas 500 m from the shore of the creeks of the respective dredging areas.

The broken line on both sides of the channel indicate areas where the design depth of −9.50 m for 25 000 D.W.T. vessels will be maintained.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

INNER CHANNEL (FIRST PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

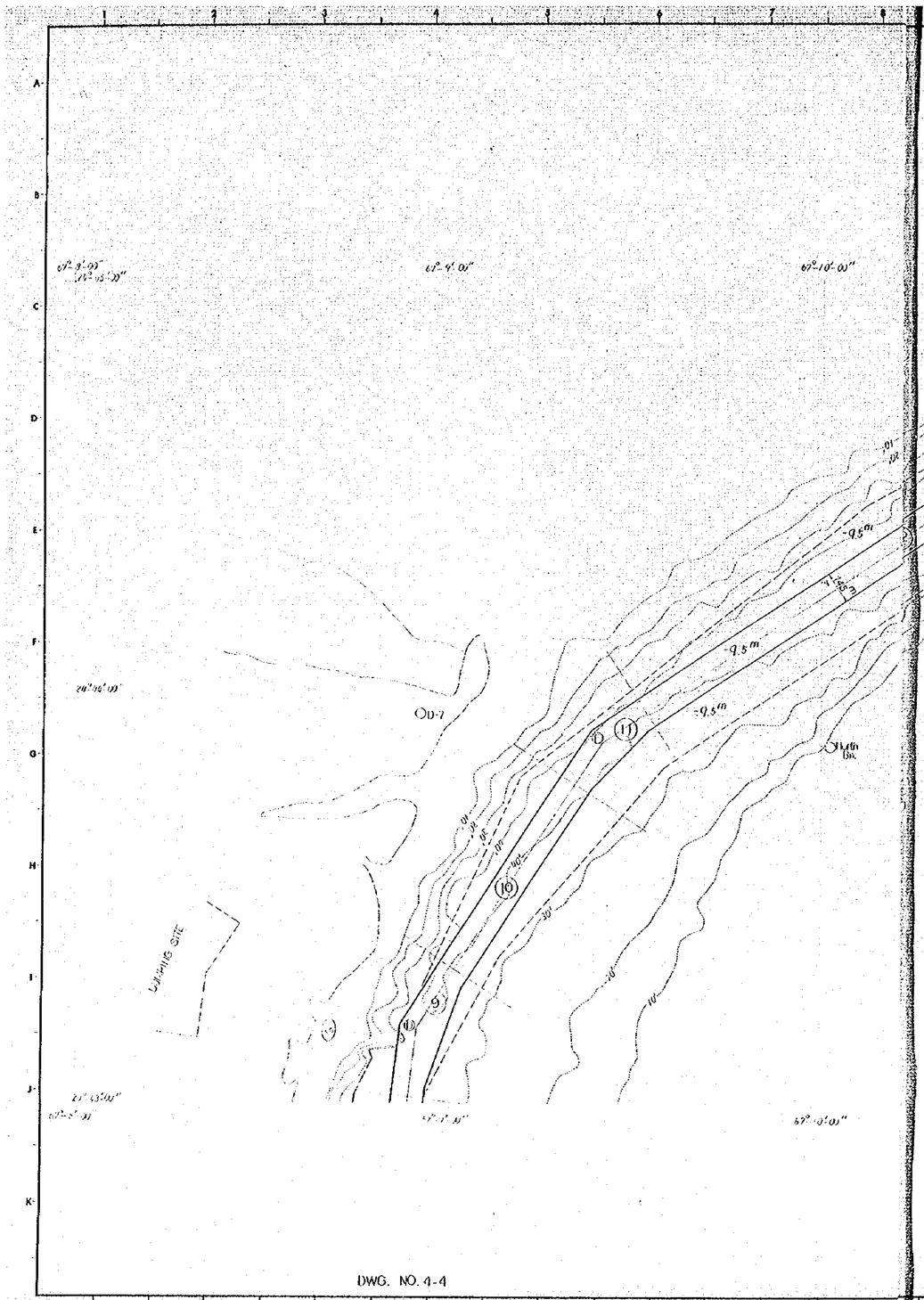
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1 : 10.000	
DATE DECEMBER. 1975	DWG. NO. 4 - - - 4

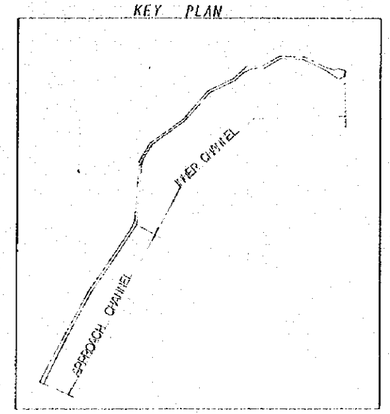
DWG. NO. 4-6

GENERAL NOTES



DWG. NO. 4-4

KEY PLAN



NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

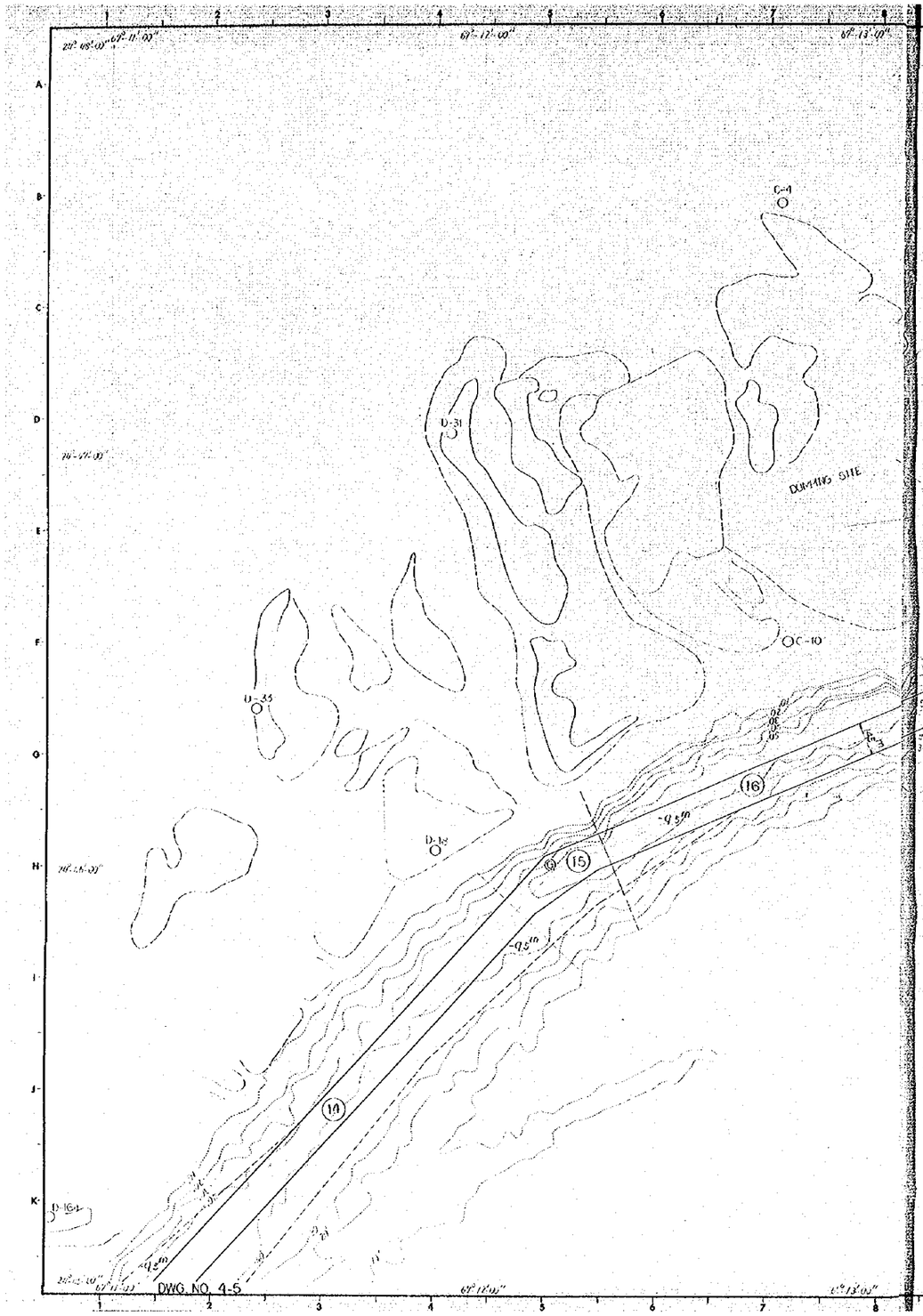
INNER CHANNEL (FIRST PHASE)
ALIGNMENT & DREDGING AREA

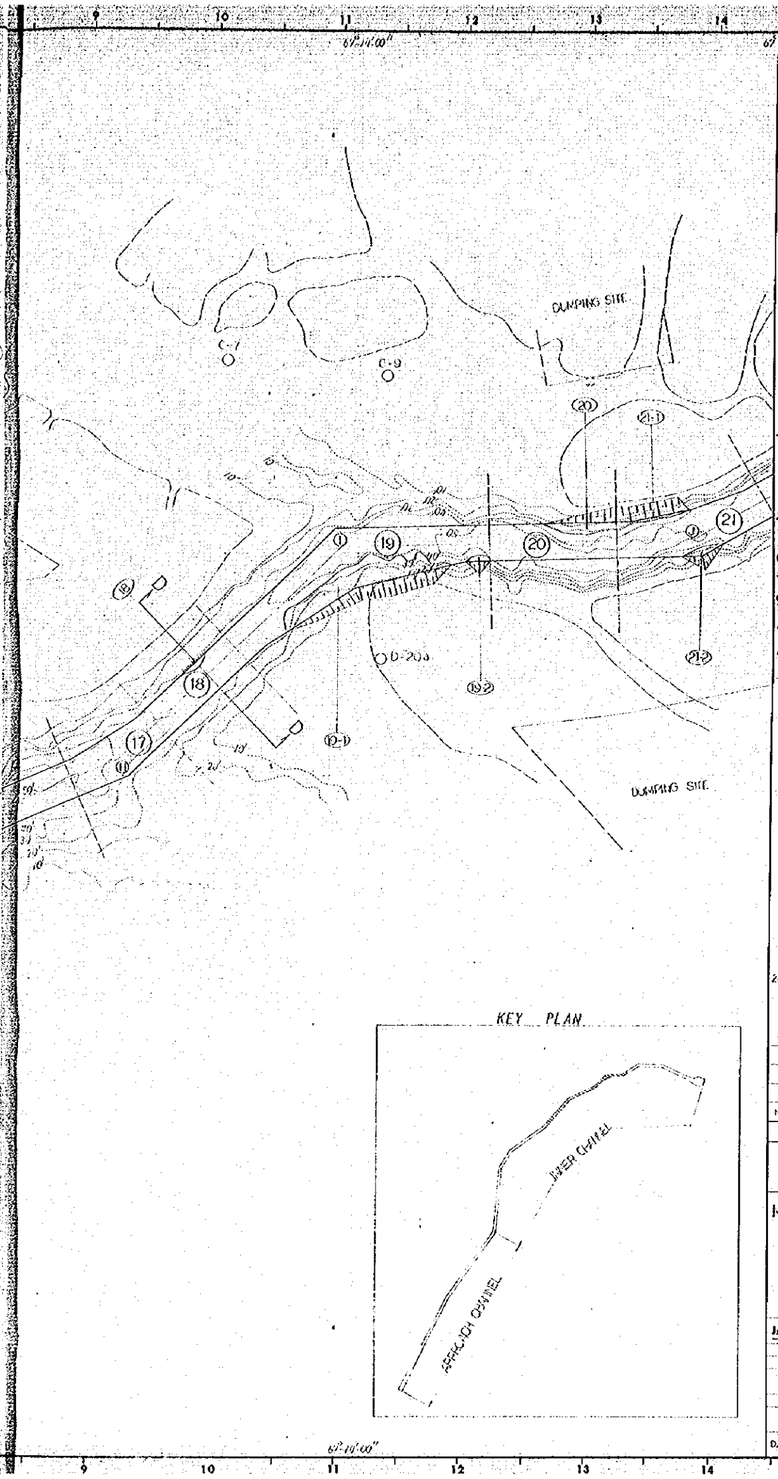
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1:10 000	
DATE DECEMBER, 1975	DWG. NO. 4 — 5

GENERAL NOTES





KEY PLAN

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

INNER CHANNEL (FIRST PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

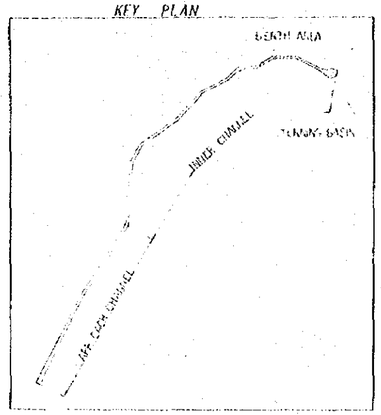
SCALE	REV. No.
1: 10,000	
DATE DECEMBER, 1975	DWG. NO. 4 — 6

GENERAL NOTES

Land Reclamation and Berth Areas are Only Completion.

DWG. NO. 4-6

KEY PLAN



UNIT : m			
NO	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

INNER CHANNEL (FIRST PHASE)
ALIGNMENT & DREDGING AREA

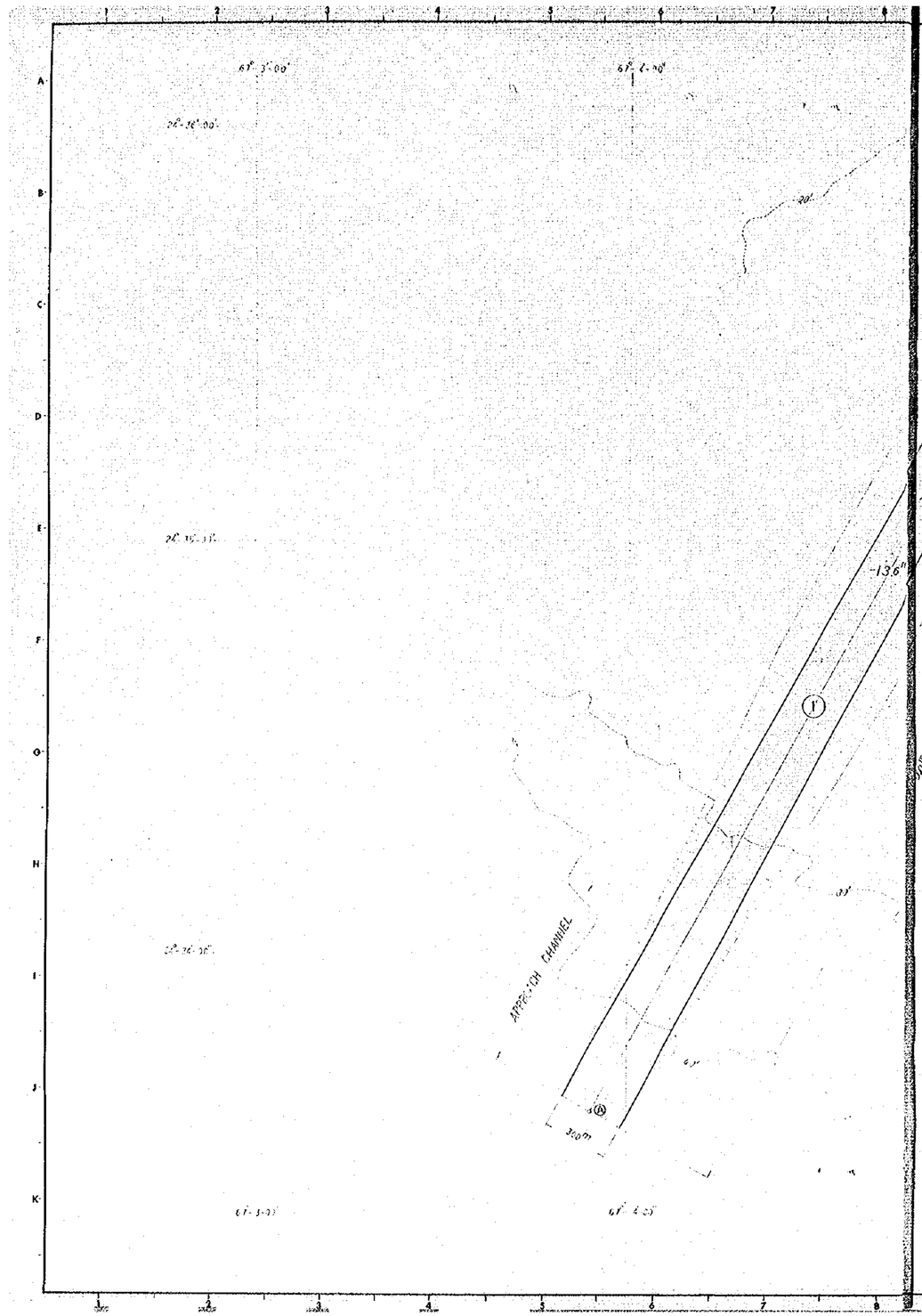
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

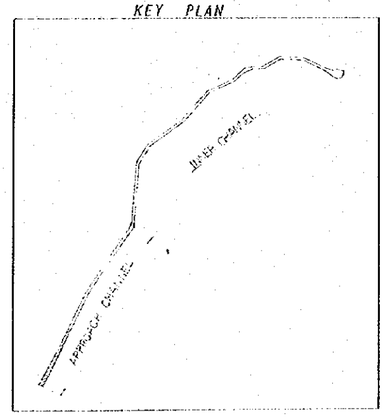
SCALE 1 : 10,000 SHT. NO.

DATE DECEMBER 1975 DWG. NO. 4 - 7

D.W.G. NO. 4—9



KEY PLAN



GENERAL NOTES

The sounding chart on a scale of 1/10000 has been enlarged from the chart on a scale of 1/25 000, based on soundings carried out by P.Q.A. and supplied in 1973. As the intervals of sounding survey points will be larger, figures representing average depths have been inserted in between.

The latitude and longitude in squares on the Drawing are indicated by figures supplied by P.Q.A.

The latitude and longitude between Points Ⓐ~Ⓒ of the respective bends in the channel are figures taken from the sounding chart supplied by P.Q.A.

The numbers ① ② in the Drawing are division numbers, for each division, the dredging quantity has been calculated for the areas with depths less than the design depths in the channel and anchorage.

Areas to be dredged in the channel and basin are indicated on the Drawing by light colors areas to be dredged on the side slopes are indicated by the mark.

Contour lines are indicated in feet.

Depths are measured from Datum.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

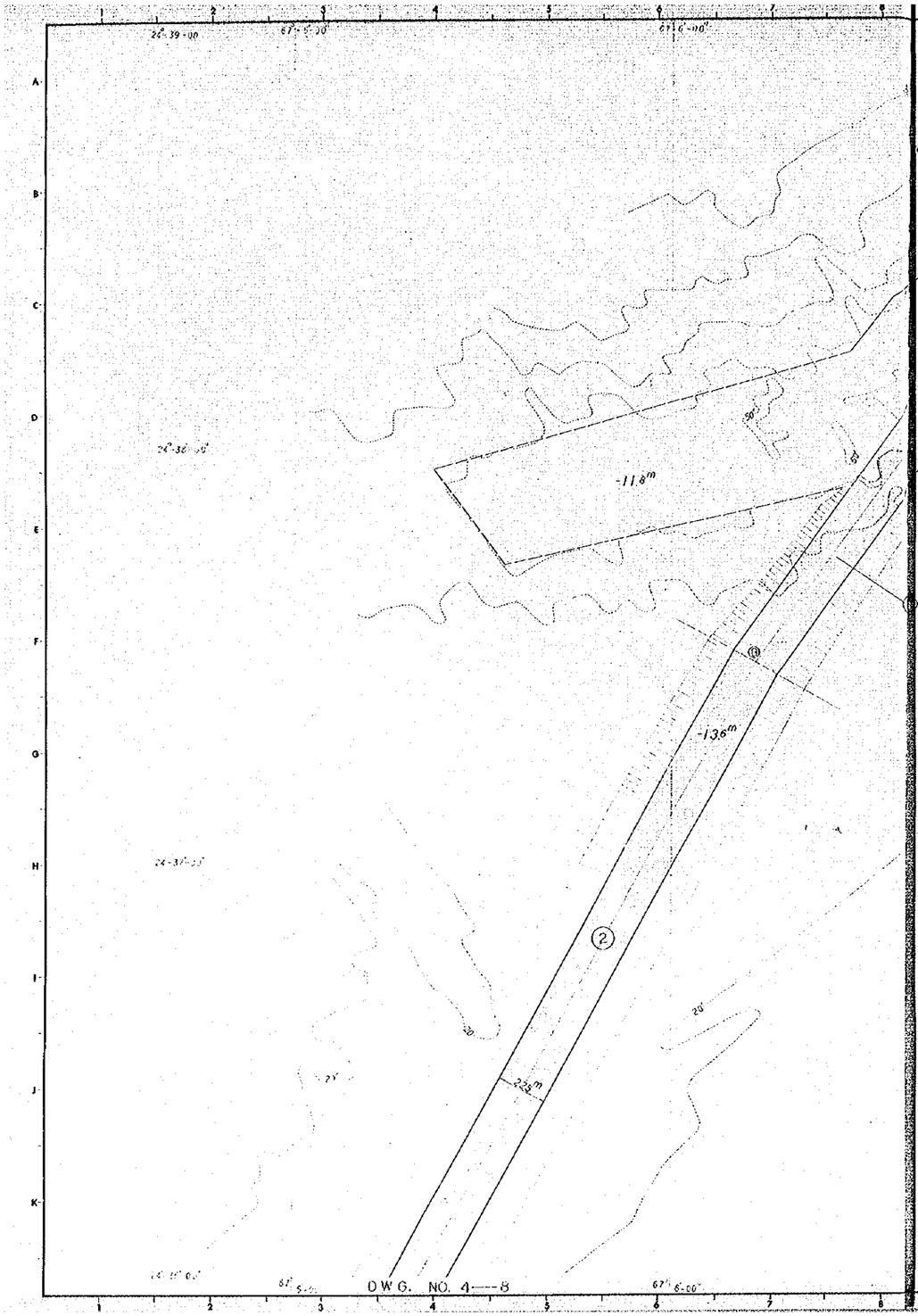
NAVIGATION CHANNEL DREDGING

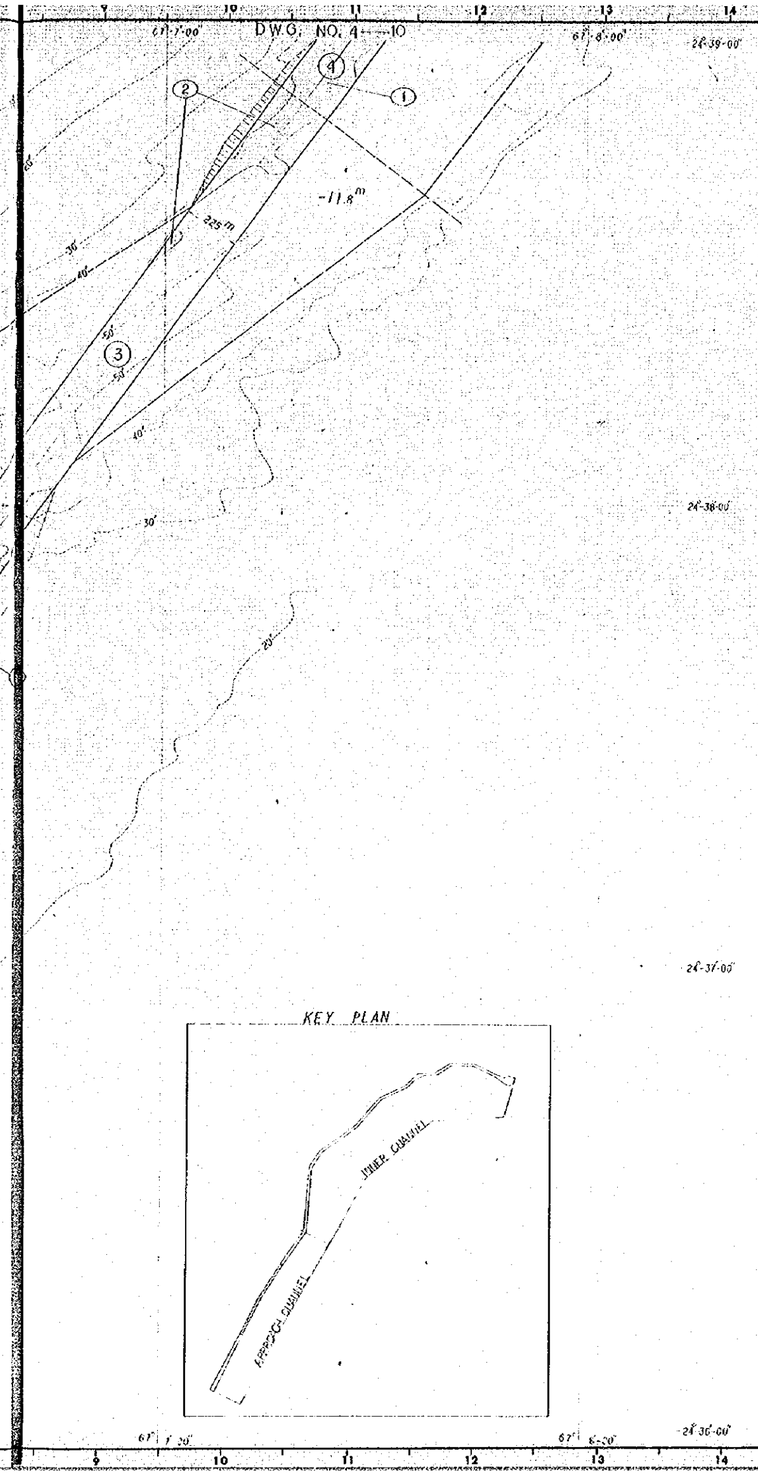
APPROACH CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1 : 10 000	
DATE DECEMBER, 1975	DWG. NO. 4 — 3





GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

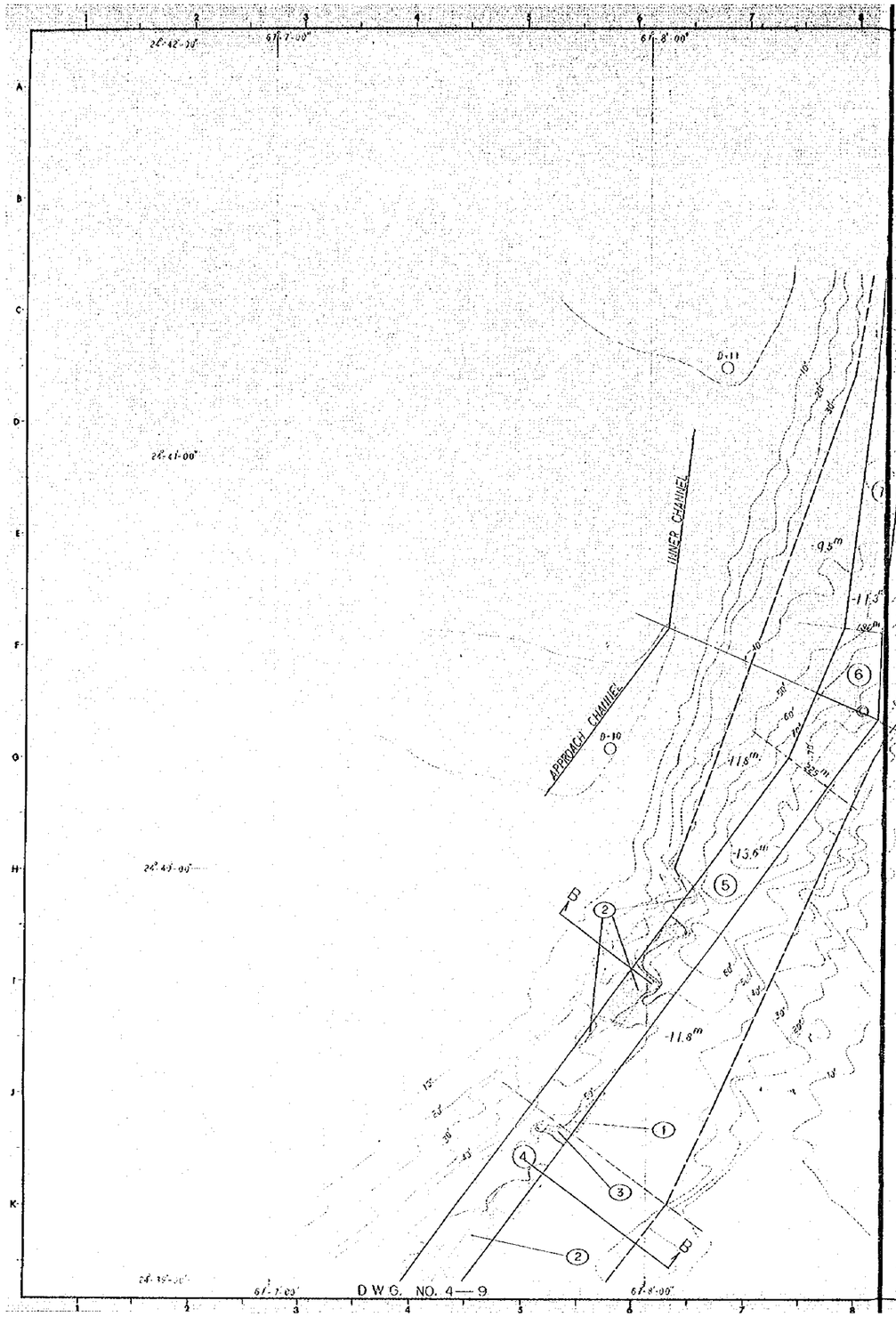
NAVIGATION CHANNEL DREDGING

APPROACH CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

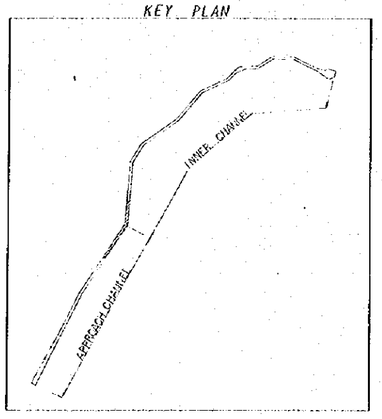
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. NO.
1 : 10,000	
DATE DECEMBER. 1975	DWG. NO. 4 -- 9



GENERAL NOTES

KEY PLAN



NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

APPROACH CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
1 : 10,000	
DATE DECEMBER 1975	DWG. NO. 4 — 10

GENERAL NOTES

The chart on a scale of 1/10 000 based on sounding survey by P.Q.A. is as supplied in 1973.

The latitude and longitude in squares on the chart are indicated by figures supplied by P.Q.A.

The latitude and longitude between Points Ⓒ~Ⓝ of the respective bends are values taken from the sounding chart supplied by P.Q.A.

The numbers (7) (30) in the chart are division numbers. For each division, the dredging quantity has been calculated for areas with depths less than the design depths in the channel, berth, anchorage, and turning basin. Areas to be dredged in the channel, berth, anchorage, and turning basin are indicated with light colors in the chart.

Areas to be dredged on the side slopes are indicated by the mark. The design widths and design depths are given in the chart.

Water depths are indicated in feet, and other dimensions are indicated in meters.

The dumping sites of spoil are indicated as [DUMPING SITE] in the swamp areas 500m from the shore of the creeks of the respective dredging areas.

The broken line on both sides of the channel indicated areas where the design depth of − 9.5 m for 25,000 DWT vessele will be maintained.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

INNER CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No
1 : 10,000	
DATE DECEMBER. 1975	DWG. NO. 4 — 11

GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

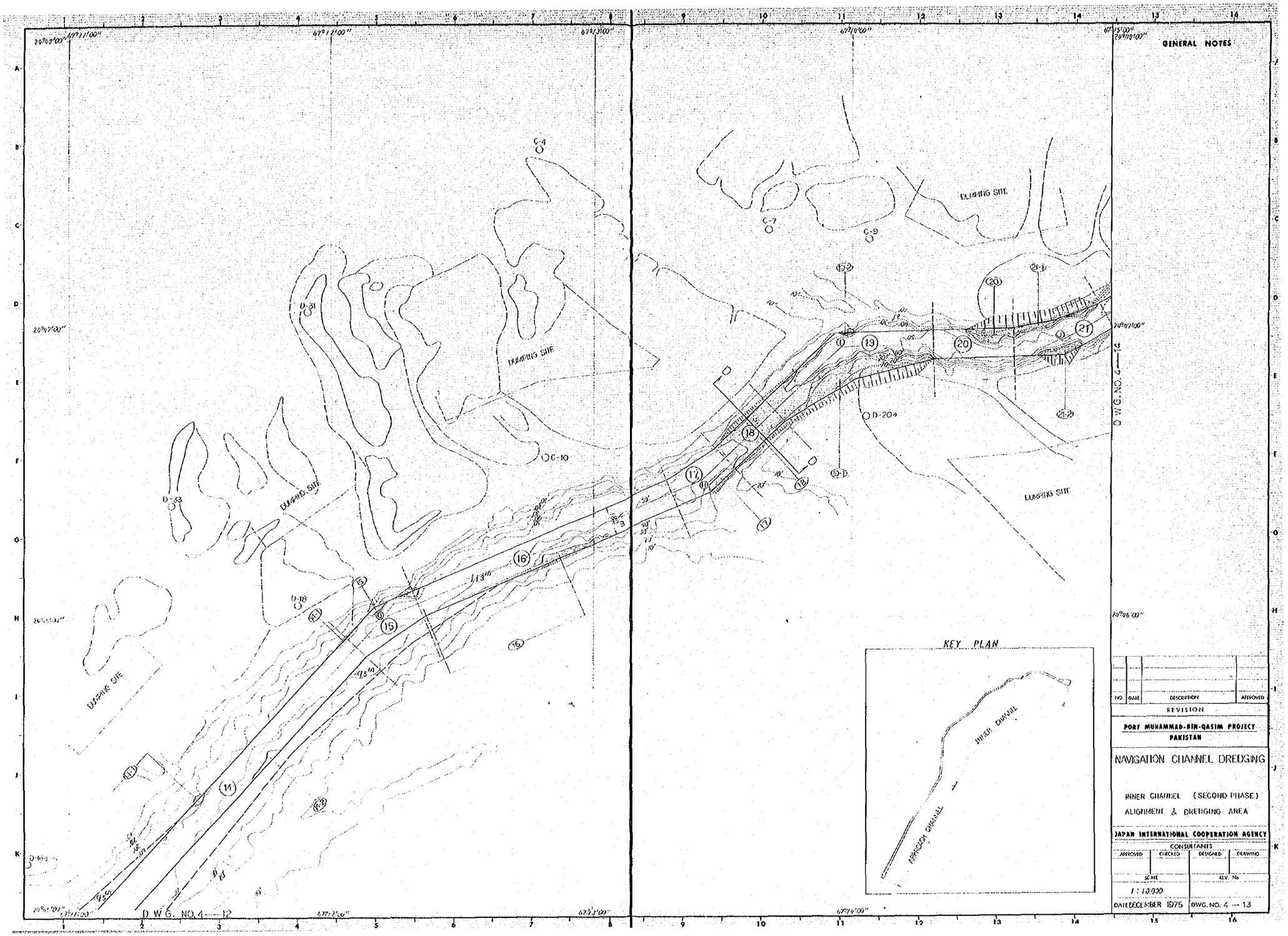
NAVIGATION CHANNEL DREDGING

INNER CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE 1:10,000
REV. No
DATE DECEMBER, 1975
DWG. NO. 4 — 12



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

INNER CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE 1 : 10,000
REV. No.
DATE DECEMBER 1975
DWG. NO. 4 — 13

DUMPING SITE

DUMPING SITE

DUMPING SITE

DUMPING SITE

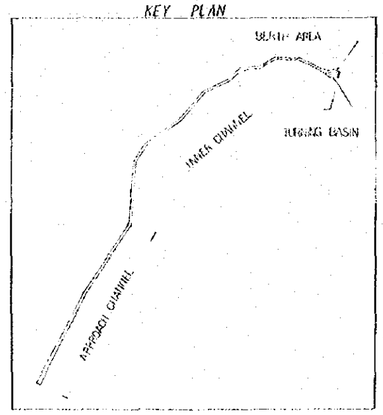
BERTH AREA

BORE HOLE NO. 108

LAND RECLAMATION AREA

TURNING BASIN

KEY PLAN



GENERAL NOTES

UNIT : m

NO.	DATE	DESCRIPTION	APPROVED
		REVISION	

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

INNER CHANNEL (SECOND PHASE)
ALIGNMENT & DREDGING AREA

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

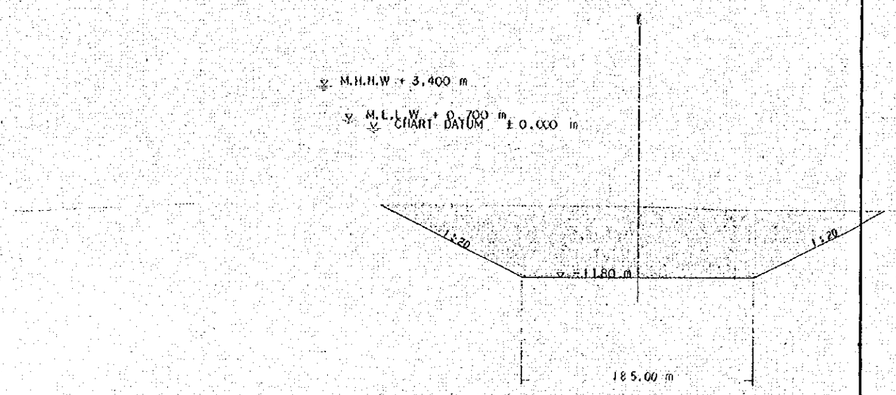
SCALE 1 : 10000 REV. No.

DATE DECEMBER 1975 DWG. NO. 4 — 14

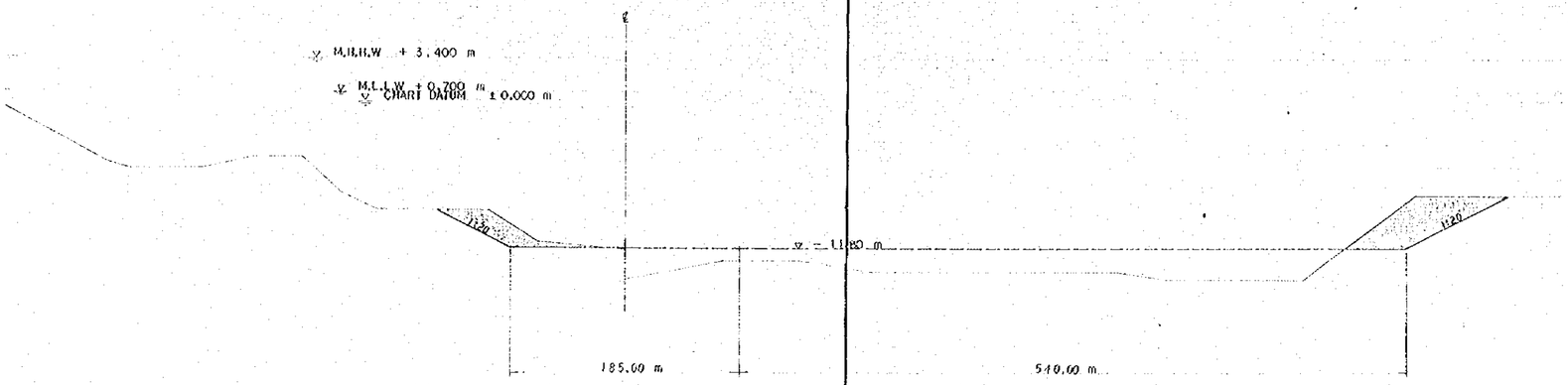
TYPICAL CROSS SECTION Scale H = 1 : 2 000 V = 1 : 200

APPROACH CHANNEL DREDGING (FIRST PHASE)

SECTION A – A



SECTION B – B



GENERAL NOTES

The sounding depths and design water depth are given with the elevation in DWG.NO.4-1 ~4-3 Approach Channel alignment and Dredging areas(First Phase), and the elevation ±0m in the chart as the datum level.

In the first phase, the standard channel design width of the Approach Channel shall be 185m, the design depth shall be -11.8m, and other dimensions shall be as given in DWG.No.4-1~4-3.

The side slopes of the channel shall be given in Drawing.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT

PAKISTAN

NAVIGATION CHANNEL DREDGING

TYPICAL CROSS SECTION

APPROACH CHANNEL DREDGING (FIRST PHASE)

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE: H = 1 : 2 000, V = 1 : 200

REV. No.

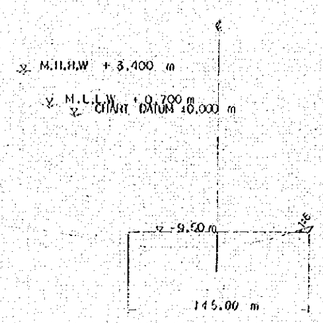
DATE DECEMBER 1975

DWG. NO. 5 – 1

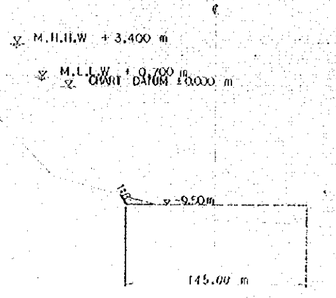
TYPICAL CROSS SECTION Scale H = 1 : 2,000 V = 1 : 200

INNER CHANNEL DREDGING (FIRST PHASE)

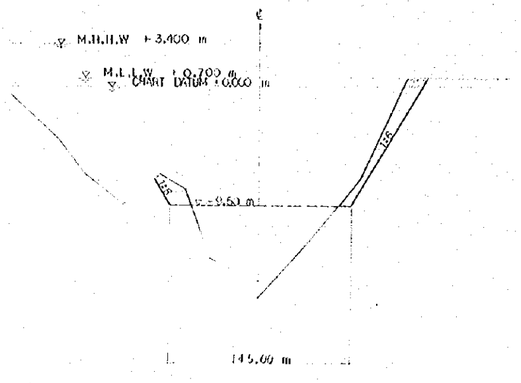
LOWER PHITTI CREEK CHANNEL
SECTION C – C



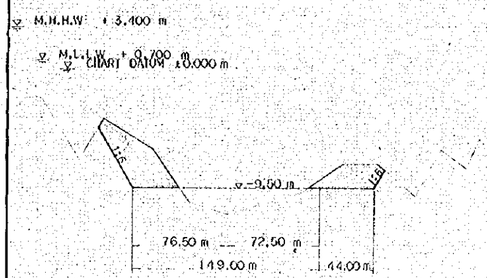
UPPER PHITTI CREEK CHANNEL
SECTION D – D



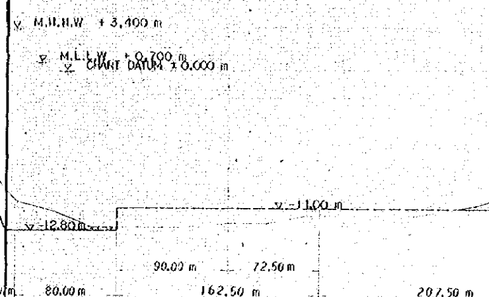
KADIRO CREEK CHANNEL
SECTION E – E



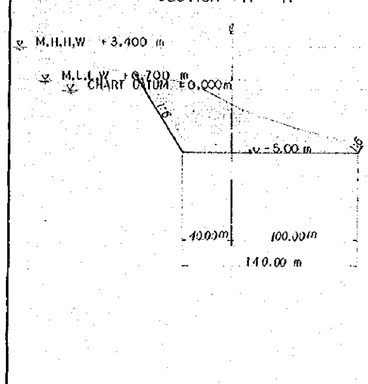
GHARO CREEK CHANNEL
SECTION F – F



TURNING BASIN AND BERTH AREA
SECTION G – G



LAND RECLAMATION AREA
SECTION H – H



GENERAL NOTES

The sounding depths and design water depth are given with the level in DWG. No. 4-4 ~ 4-7 Inner Channel Alignment and Dredgeline Area (First Phase) and the level ±0m in the chart as the datum level.

In the first phase Inner Channel dredging, the standard design channel width shall be 145 m, the design water depth shall be -9.5 m, and other dimensions shall be as given in DWG. No. 4-4 ~ 4-7.

The side slopes of the channel shall be given in Drawing.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD BIN QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

TYPICAL CROSS SECTION
INNER CHANNEL DREDGING (FIRST PHASE)

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

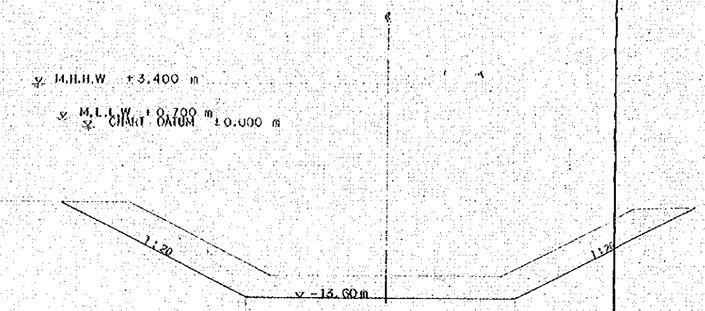
SCALE H = 1 : 2 000 V = 1 : 200 REV. No.

DATE DECEMBER 1975 DWG. NO. 5 – 2

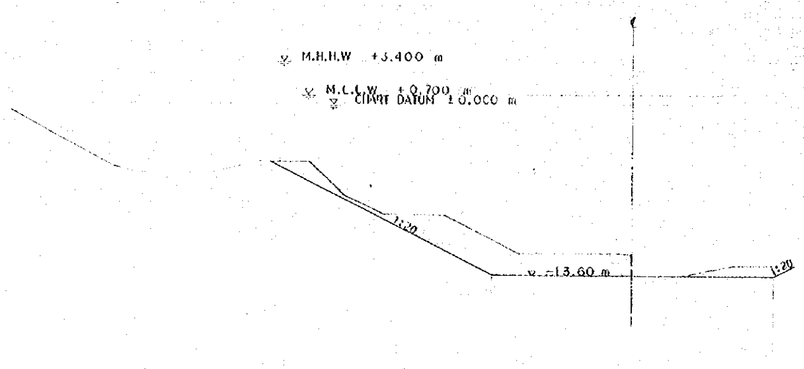
TYPICAL CROSS SECTION Scale H = 1 : 2 000 V = 1 : 200

APPROACH CHANNEL DREDGING (SECOND PHASE)

SECTION A – A



SECTION B – B



GENERAL NOTES

The sounding depths and design water depth are given with the level in DWG.No. 4-8-4-10 Approach Channel alignment and Dredging Area (Second Phase) and the level 1.0m in the chart as the datum level.

In the second chase, the standard design channel width of the Approach Channel shall be 225m, the design water depth shall be -13.6m, and other dimensions shall be as given in DWG. No.4-8-4-10.

The sides slopes of the channel shall be given in Drawing.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

TYPICAL CROSS SECTION
APPROACH CHANNEL DREDGING (SECOND PHASE)

JAPAN INTERNATIONAL COOPERATION AGENCY

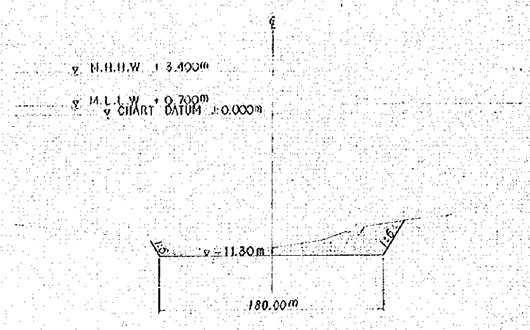
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No.
H = 1 : 2 000 V = 1 : 200	
DATE DECEMBER 1975	DWG.NO. 5 – 3

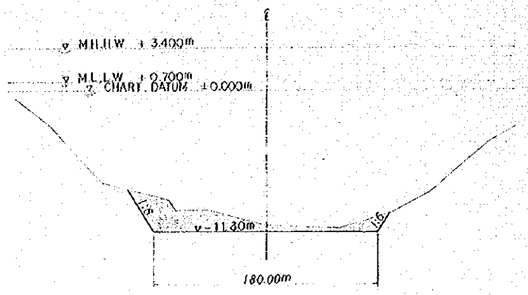
TYPICAL CROSS SECTION Scale H = 1 : 2,000 V = 1 : 200

INNER CHANNEL DREDGING (SECOND PHASE)

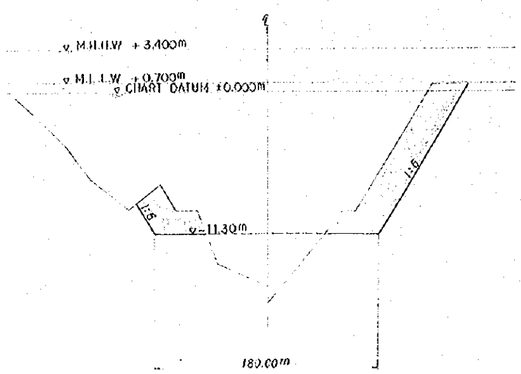
LOWER PHITTI CREEK CHANNEL
SECTION C – C



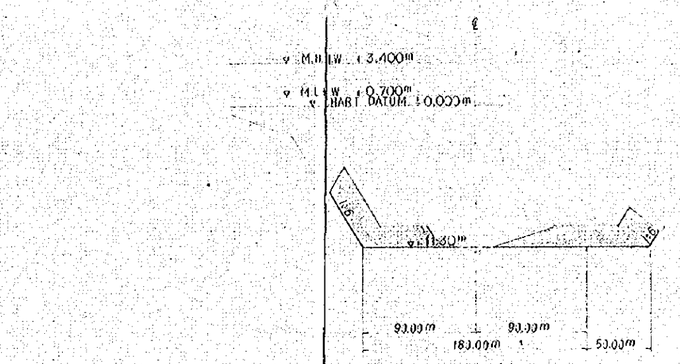
UPPER PHITTI CREEK CHANNEL
SECTION D – D



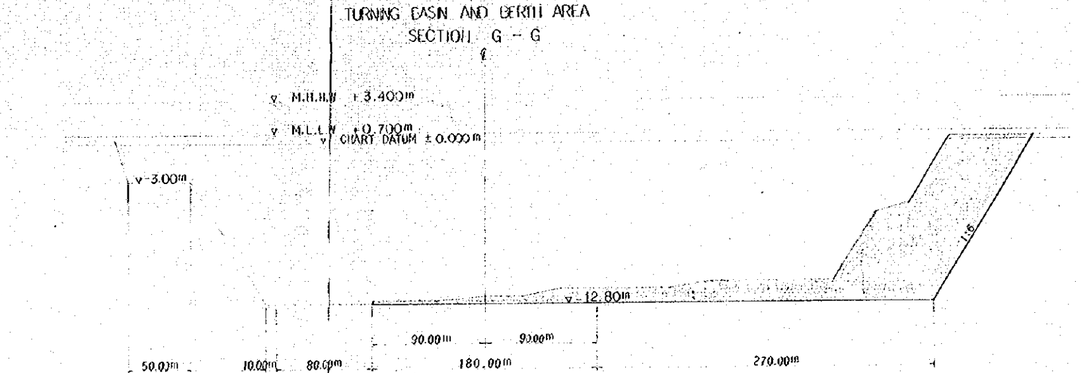
KADIRO CREEK CHANNEL
SECTION E – E



GHARO CREEK CHANNEL
SECTION F – F



TURNING BASIN AND BERTH AREA
SECTION G – G



GENERAL NOTES

The soundind depths and the design water depth are given with the level given in DWG. No. 4-11-4-14 Inner Channel Alignment and Dredging Area (Second phase) and the level of ±0m in the chart as the datum level.

In the second phase, the standard design channel width of the Inner Channel shall be 180m, the design water depth shall be -11.3m and other dimensions shall be as given in DWG. No. 4-11-4-14.

The side slopes of the channel shall be given in Drawing.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

TYPICAL CROSS SECTION
INNER CHANNEL DREDGING (SECOND PHASE)

JAPAN INTERNATIONAL COOPERATION AGENCY

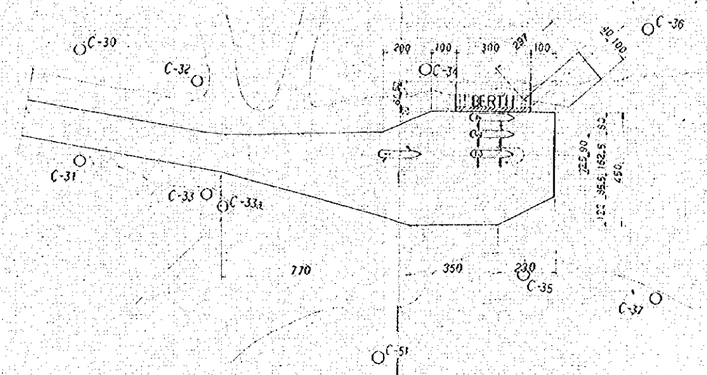
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE	REV. No
H = 1 : 2000 V = 1 : 200	

DATE DECEMBER, 1975 | DWG. NO. 5 – 4

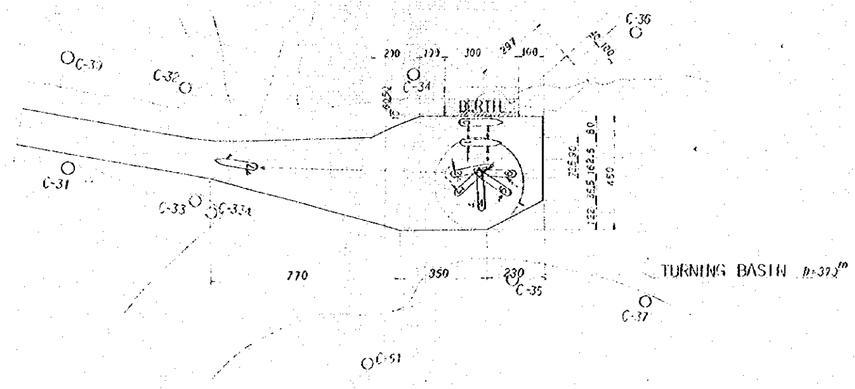
BERTHING MANEUVERS OF FIRST PHASE VESSEL

SCALE 1 : 10,000
UNIT : m



DEBERTHING MANEUVERS OF FIRST PHASE VESSEL

SCALE 1 : 10,000
UNIT : m



GENERAL NOTES

The upper drawing shows the maneuvering of a vessel of 25,000 D.W.T. entering and berthing with the aid of a tug, on a scale of 1/10,000.

The lower drawing shows the maneuvering of a vessel of 25,000 D.W.T. deberthing and leaving with the aid of a tug, on a scale of 1/10,000.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

BERTHING AND DEBERTHING MANEUVERS OF FIRST PHASE VESSEL

JAPAN INTERNATIONAL COOPERATION AGENCY

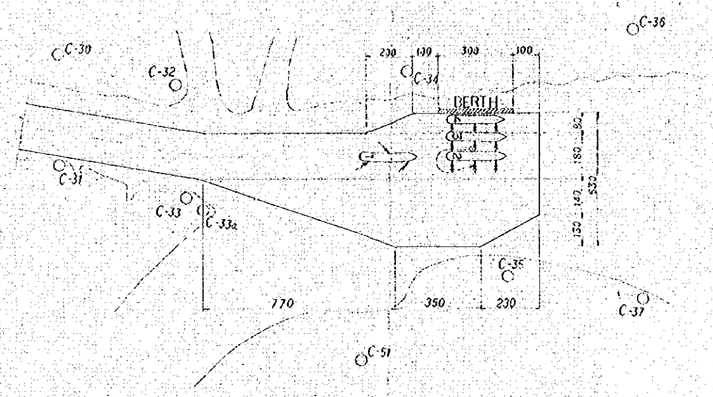
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE 1 : 10,000
REV. No.
DATE DECEMBER, 1975
DWG. NO. 6 — 1

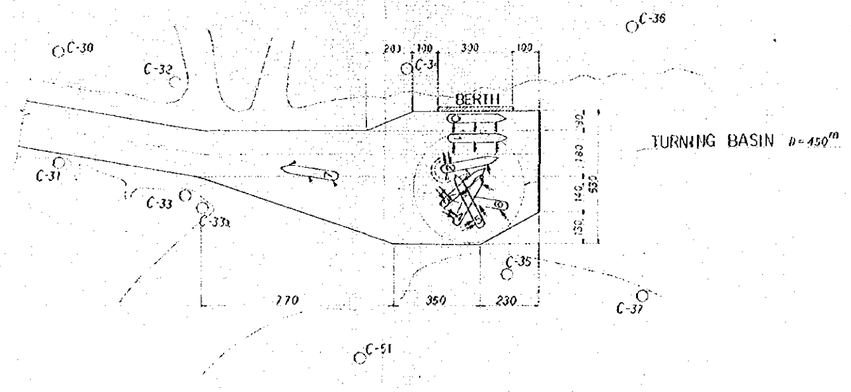
BERTHING MANEUVERS OF SECAND PHASE VESSEL

SCALE 1:10,000
UNIT : m



DEBERTHING MANEUVERS OF SECAND PHASE VESSEL

SCALE 1 : 10,000
UNIT : m



GENERAL NOTES

The upper drawing shows the maneuvering of a vessel of 50,000 DWT entering and berthing with the aid of a tug, on a scale of 1/10,000.

The lower drawing shows the maneuvering of a vessel of 50,000 DWT deberthing and leaving with the aid of a tug, on a scale 1/10,000.

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

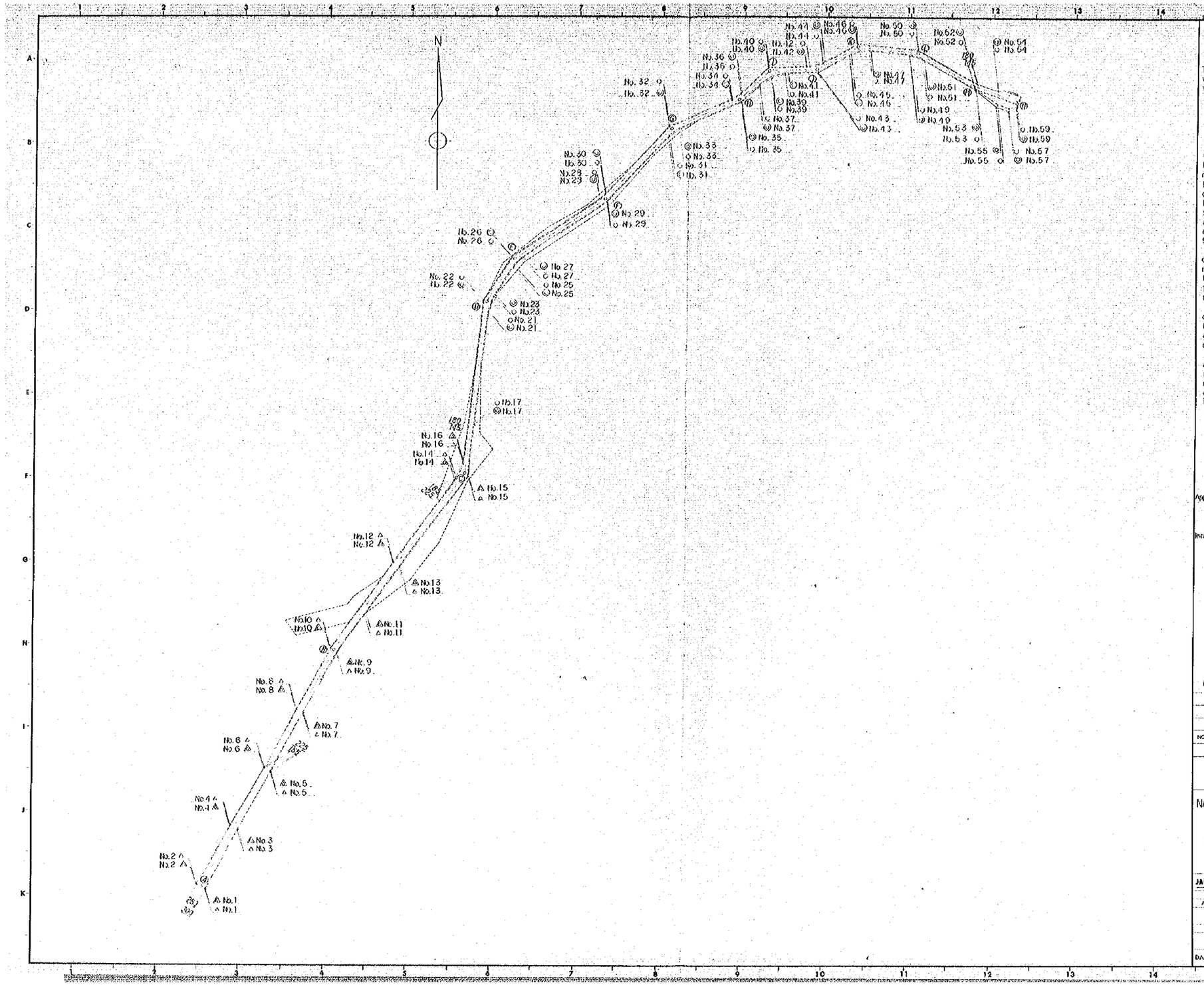
BERTHING AND DEBERTHING MANEUVERS OF SECOND PHASE VESSEL

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE 1 : 10,000
REV. No.
DATE DECEMBER, 1975
DWG. NO. 6 — 2



GENERAL NOTES

The broken line ---------- indicates the channel width and areas where the design water depth will be maintained for 25 000 D.W.T. vessels in the first phase. The line ——— indicates the channel width for 50 000 D.W.T. vessels in the second phase.

Light buoys to be installed in the first phase for 25 000 D.W.T. vessels will interfere with dredging operations to increase the width and depth of the channel for 50 000 D.W.T vessels in the second phase. Light buoys must be relocated after the dredging has been completed. Prior to the commencement of the second phase dredging, light buoys must be removed and placed temporarily at nearby sites, after the channel has been widened and deepened, the aids will be installed in new locations to mark the channel for 50 000 D.W.T. vessels.

In water areas where widening and deepening of the channel will not be required, light buoys must be relocated along the channel width for 50 000 D.W.T. vessels in the second phase.

The sites for relocation of light buoys and the numbers are given in the Drawing.

The removal, temporay placing, and relocation of light buoys to navigation will be carried out by contractors for Inner Channel dredging and Approach Channel dredging at their expense.

The location of light buoys in the Approach Channel are indicated by the mark △, and the relocating positions are indicated by the mark ▲. In the Inner Channel, the location of light buoys are indicated by the mark ○, and the relocating positions by the mark ◎.

Number of Light Buoys to be Removed and Relocated

Approach Channel
- △ To be removed and phased — 16
- in temporary position — 16
- ▲ To be relocated — 16

Inner Channel
- ○ To be removed and phased — 35
- in temporary position — 35
- ◎ To be relocated — 35

UNIT : m

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD BIN QASIM PROJECT

PAKISTAN

NAVIGATION CHANNEL DREDGING

REMOVAL AND RELOCATION OF LIGHT BUOYS

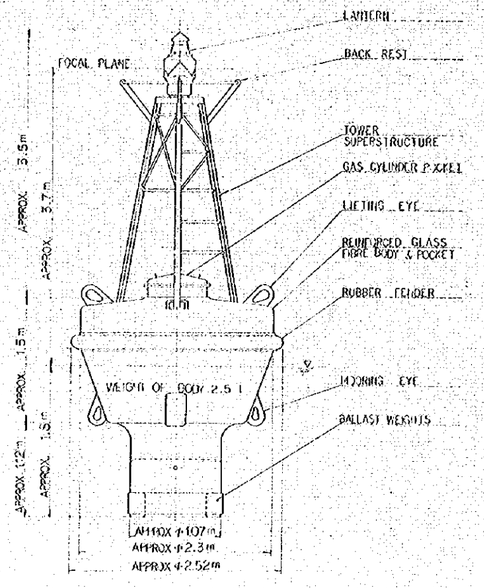
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

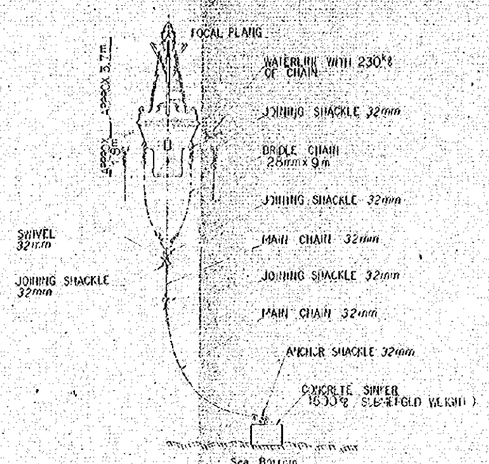
SCALE	REV. No.
1 : 50,000	
DATE DECEMBER, 1975	DWG. NO. 7 — 1

INNER CHANNEL

BUOY BODY SCALE 1:30

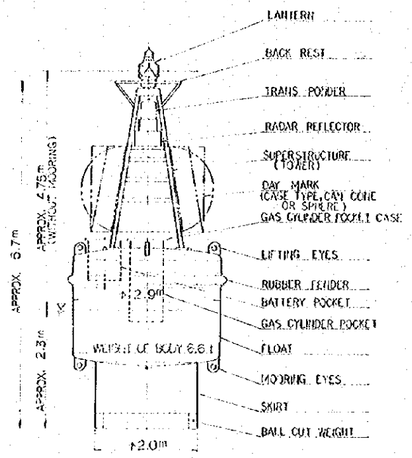


METHOD OF INSTALLATION OF BUOY BODY Scale 1:100
(DIA 2.3m Plastic Type)

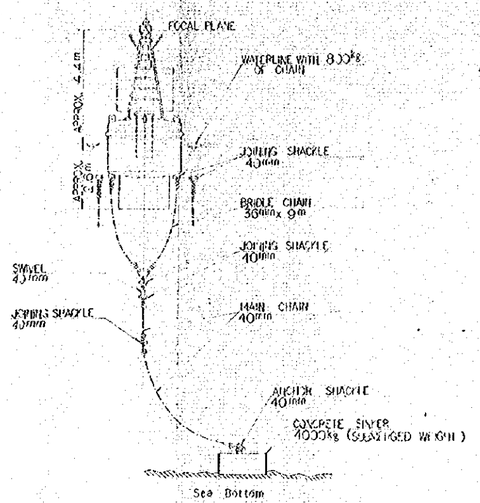


APPROACH CHANNEL

BUOY BODY SCALE 1:50



METHOD OF INSTALLATION OF BUOY BODY Scale 1:100
(DIA 2.9~3.0m Skirt Type)



GENERAL NOTES

The drawing is a brief outline of the details of light buoys to be used in the Approach Channel and Inner Channel.

NO	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD BIN QASIM PROJECT
PAKISTAN

NAVIGATION CHANNEL DREDGING

DETAILS OF LIGHT BUOYS

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE 1:30 1:50 1:100

REV. No.

DATE DECEMBER 1975

DWG. NO. 7 - 2