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GOVERNMENT OF PAKISTAN
PORT QASIM AUTHORITY

TENDER AND CONTRACT DOCUMENTS

FOR CONSTRUCTION OF
IRON-ORE AND COAL BERTH
AND
RELATED FACILITIES

VOL. IV : DRAWINGS
PART 1 IRON-ORE AND COAL BERTH

DECEMBER 1975

JAPAN INTERNATIONAL COOPERATION AGENCY

PORT QASIM VOL. IV : DRAWINGS PART 1 IRON-ORE AND COAL BERTH

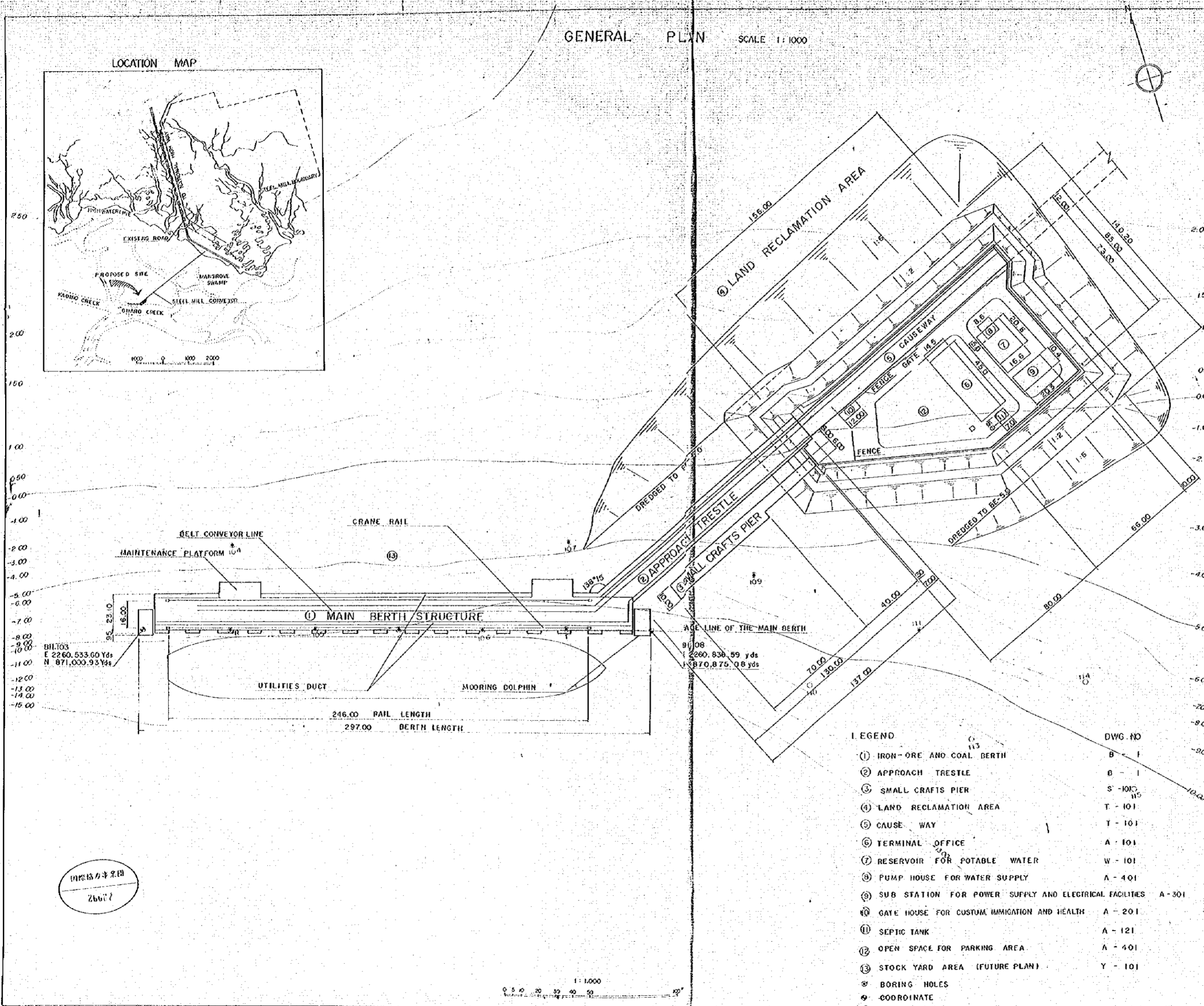
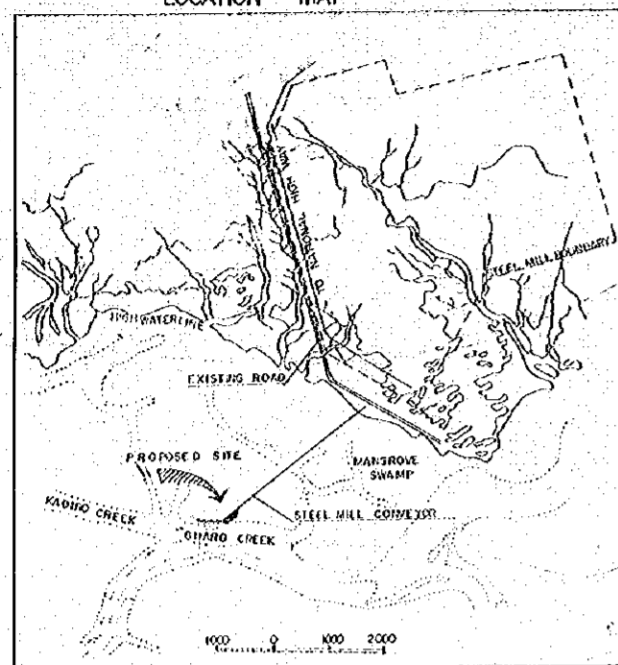
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GENERAL PLAN SCALE 1:1000

LOCATION MAP



- GENERAL NOTES
- UNLESS OTHERWISE INDICATED, ALL DIMENSIONS SHOWN ON THIS Dwg. ARE IN METERS.
 - ELEVATIONS INDICATED ON ALL DgGS ARE SHOWN WITH + OR - AND EXPRESSED IN METERS ABOVE OR BELOW THE CHART DATUM.
 - DREDGING WORKS IN THE VICINITY OF THE MAIN BERTH SHALL BE PERFORMED BY OTHERS. THE MINIMUM DEPTH TO BE DREDGED SHALL BE - 12.80 M. DREDGING DEPTH FOR FUTURE EXTENSION WORKS SHALL BE - 14.30 M.

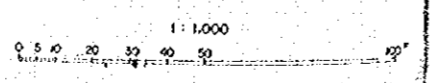
BELT CONVEYOR LINE
 MAINTENANCE PLATFORM
 CRANE RAIL
 MAIN BERTH STRUCTURE
 UTILITIES DUCT
 MOORING DOLPHIN
 216.00 RAIL LENGTH
 297.00 BERTH LENGTH
 BIL 103
 E 2260,533.60 Yds
 N 871,000.93 Yds

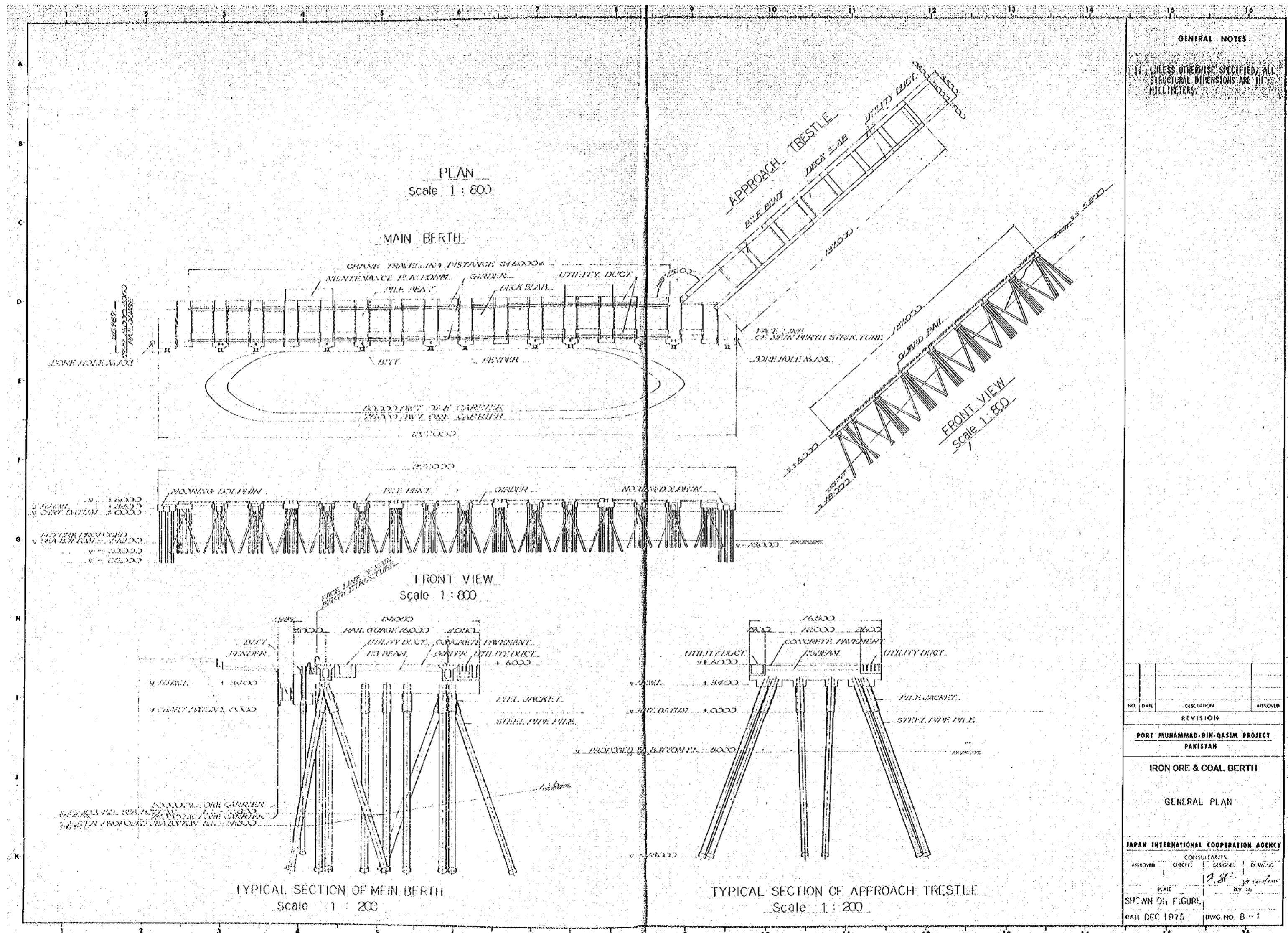
LEGEND

NO.	DESCRIPTION	DWG. NO.
①	IRON-ORE AND COAL BERTH	B - 1
②	APPROACH TRESTLE	B - 1
③	SMALL CRAFTS PIER	S - 101
④	LAND RECLAMATION AREA	T - 101
⑤	CAUSEWAY	T - 101
⑥	TERMINAL OFFICE	A - 101
⑦	RESERVOIR FOR POTABLE WATER	W - 101
⑧	PUMP HOUSE FOR WATER SUPPLY	A - 401
⑨	SUB STATION FOR POWER SUPPLY AND ELECTRICAL FACILITIES	A - 301
⑩	GATE HOUSE FOR CUSTOM, IMMIGRATION AND HEALTH	A - 201
⑪	SEPTIC TANK	A - 121
⑫	OPEN SPACE FOR PARKING AREA	A - 401
⑬	STOCK YARD AREA (FUTURE PLAN)	Y - 101
⊗	BORING HOLES	
⊙	COORDINATE	

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD - BIN-QASIM PROJECT, PAKISTAN			
GENERAL PLAN OF PROJECT			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>K. Saito</i>	<i>S. Sugahara</i>
SCALE 1:1,000			
DATE		DWG. NO. G - 1	

国際協力事業団
Zbvt

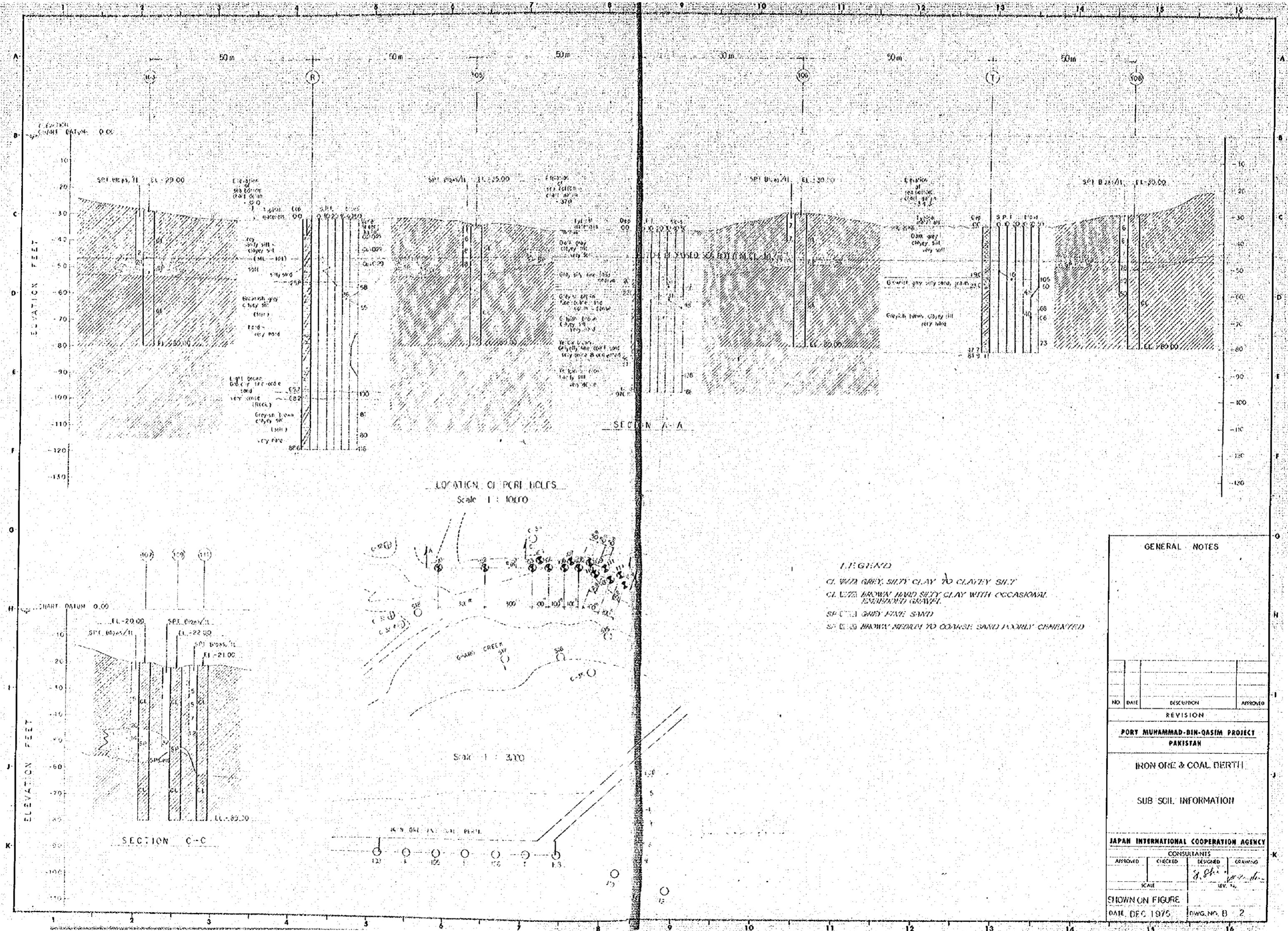




GENERAL NOTES

UNLESS OTHERWISE SPECIFIED, ALL STRUCTURAL DIMENSIONS ARE IN MILLIMETERS.

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIH-QASIM PROJECT			
PAKISTAN			
IRON ORE & COAL BERTH			
GENERAL PLAN			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED		CONSULTANTS	
CHECKED	DESIGNED	DRAWING	
SCALE	BY		REV. NO.
DRAWN BY F. GURE			
DATE DEC 1975		DWG. NO. B-1	



LOCATION OF BORE HOLES
Scale 1 : 10,000

Scale 1 : 3,000

SECTION C-C

SECTION A-A

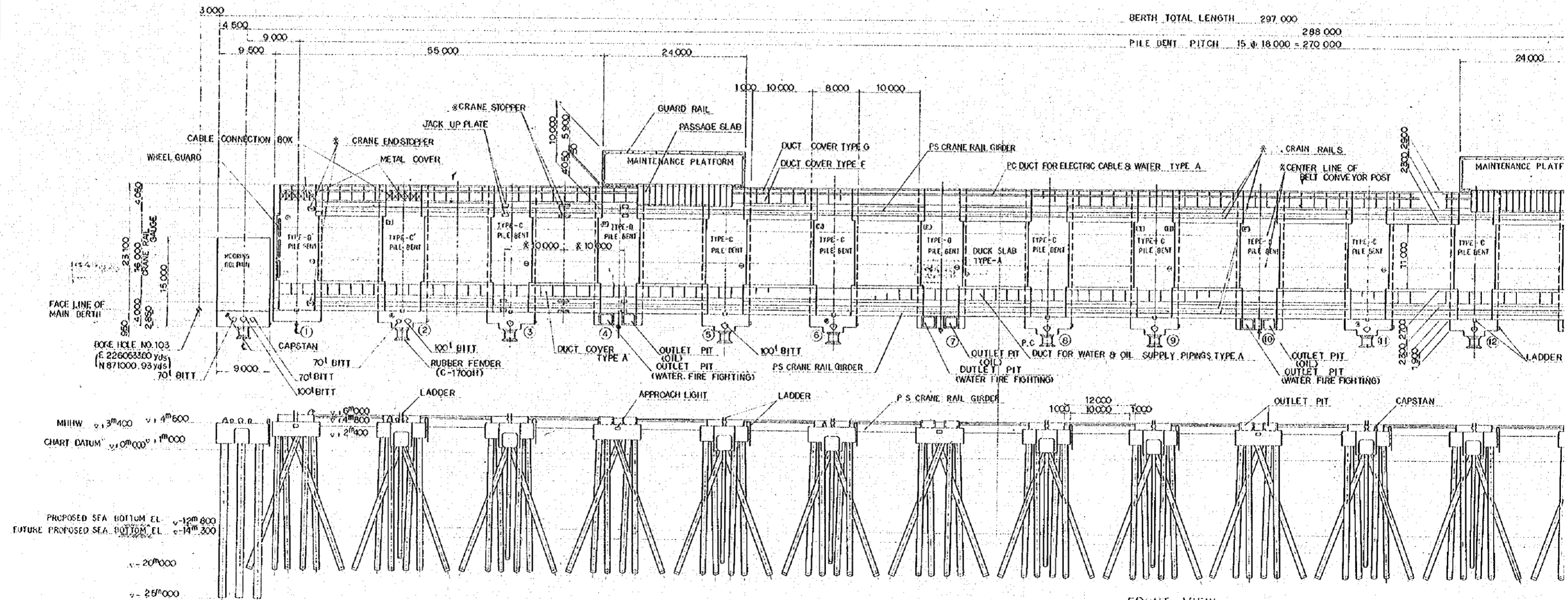
- LEGEND**
- CL WITH GREY, SILTY CLAY TO CLAYEY SILT
 - CL WITH BROWN, HARD SILTY CLAY WITH OCCASIONAL ROUND GRAVEL
 - SP (S) SILTY SAND
 - SC (S) BROWN, MEDIUM TO COARSE SAND, POORLY CEMENTED

GENERAL NOTES			
NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH			
SUB SOIL INFORMATION			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>[Signature]</i>	<i>[Signature]</i>
SCALE		REV. No.	
SHOWN ON FIGURE			
DATE, DEC. 1975		DWG. NO. B-2	

MAIN BERTH

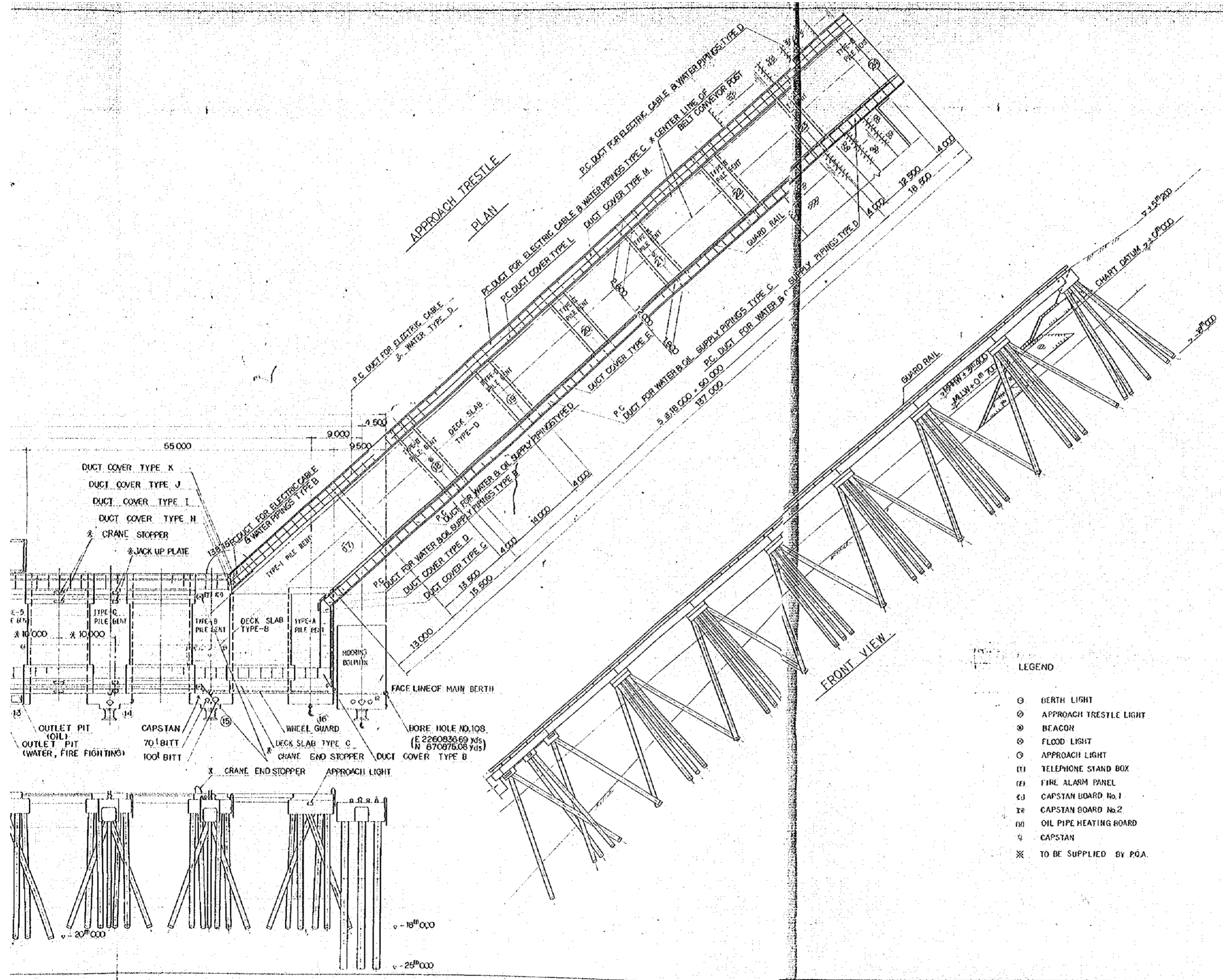
PLAN

BERTH TOTAL LENGTH 297.000
298.000
PILE BENT PITCH 15 @ 18.000 = 270.000



FRONT VIEW

PROPOSED SEA BOTTOM EL. -12m 800
FUTURE PROPOSED SEA BOTTOM EL. -14m 300
MILLW 3m 400 v 4m 500
CHART DATUM 0m 000 v 1m 000
20m 000
25m 000



GENERAL NOTES

1. CRANE RAILS INCLUDING INCIDENTALS AND MATERIALS FOR CONVEYOR BELTS SHALL BE SUPPLIED BY THE P.O.A.
2. FOR DETAILS OF TYPE A-D, AND TYPE I-III PILE BENTS, SEE DRG. NO. D-6 & D-14.
3. UNLESS OTHERWISE SPECIFIED, ALL CONCRETE SHALL BE CLASS 'D' OF 240 kg/cm² COMPRESSIVE STRENGTH AT 28 DAYS.
4. FOR DETAILS OF BEACON, FLOOD LIGHT, BERTH LIGHT, APPROACH TRESTLE LIGHT, APPROACH LIGHT, TELEPHONE STAND BOX, FIRE ALARM PANEL, CAPSTAN BOARD NO. 1, NO. 2, OIL PIPE HEATING BOARD, SEE DRGS. "ELECTRIC FACILITIES & POWER SUPPLY".

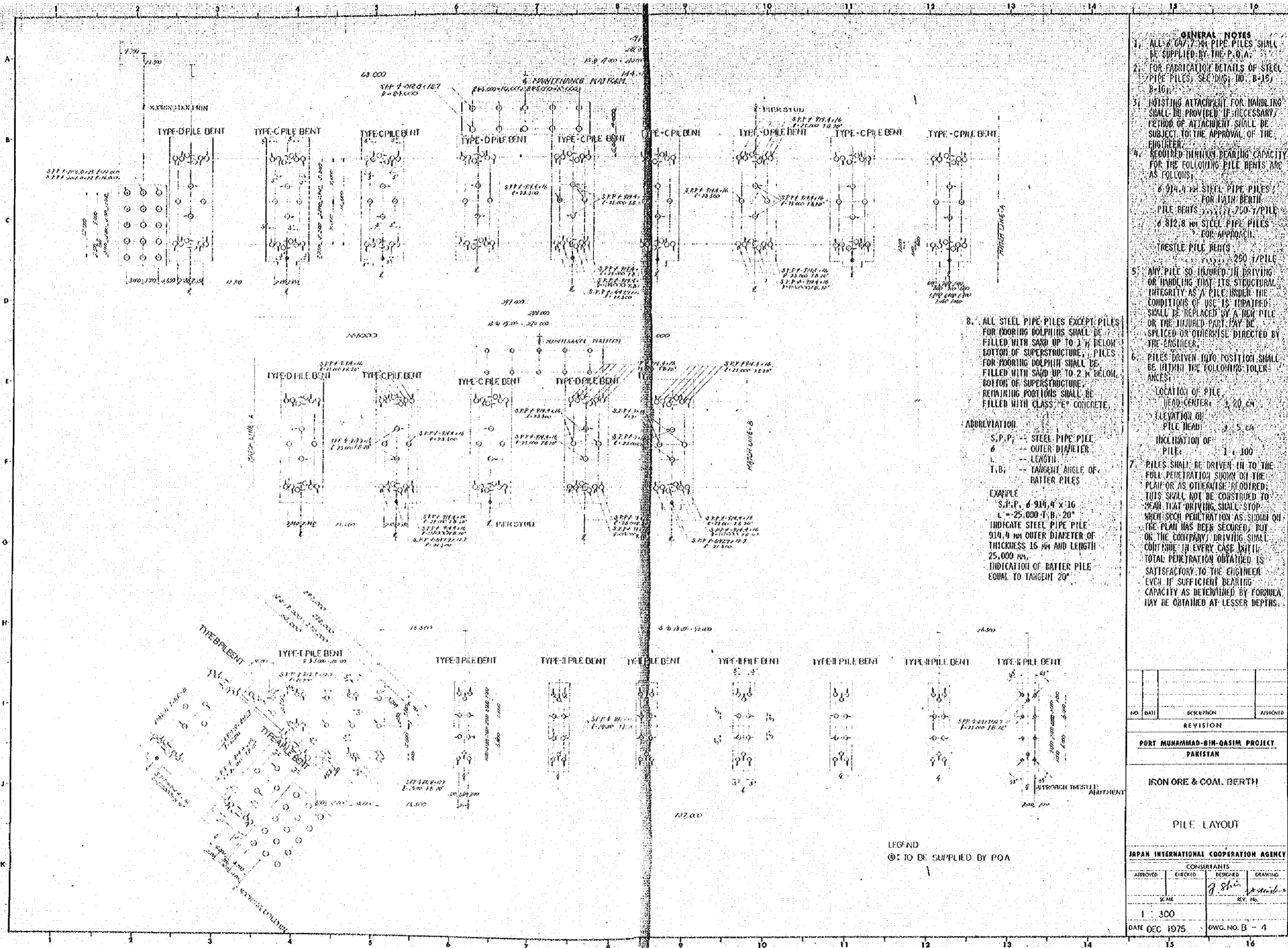
- LEGEND
- ⊙ BERTH LIGHT
 - ⊙ APPROACH TRESTLE LIGHT
 - ⊙ BEACON
 - ⊙ FLOOD LIGHT
 - ⊙ APPROACH LIGHT
 - (T) TELEPHONE STAND BOX
 - (F) FIRE ALARM PANEL
 - (C) CAPSTAN BOARD No. 1
 - (R) CAPSTAN BOARD No. 2
 - (H) OIL PIPE HEATING BOARD
 - ⊙ CAPSTAN
 - ⊗ TO BE SUPPLIED BY P.O.A.

NO	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN
IRON ORE & COAL BERTH
ARRANGEMENT
OF
FACILITIES

JAPAN INTERNATIONAL COOPERATION AGENCY
CONSULTANTS

PROJECT	DATE	DESIGNER	SCALE
		<i>R. Sh. A. Qureshi</i>	1:300
DATE DEC 1975		PAGE 3	



- GENERAL NOTES**
- ALL 914.4 mm PIPE PILES SHALL BE SUPPLIED BY THE P.O.A.
 - FOR FABRICATION DETAILS OF STEEL PIPE PILES, SEE DIG. NO. B-15 & B-16.
 - HOISTING ATTACHMENT FOR HANDLING SHALL BE PROVIDED, IF NECESSARY. METHOD OF ATTACHMENT SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
 - REQUIRED MINIMUM BEARING CAPACITY FOR THE FOLLOWING PILE BENTS ARE AS FOLLOWS:
 6 914.4 mm STEEL PIPE PILES FOR MAIN BERTH
 PILE BENTS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
 6 812.8 mm STEEL PIPE PILES FOR APPROACH
 TRESTLE PILE BENTS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
 250 T/PILE
 - ANY PILE SO INJURED IN DRIVING OR HANDLING THAT ITS STRUCTURAL INTEGRITY AS A PILE UNDER THE CONDITIONS OF USE IS IMPAIRED SHALL BE REPLACED BY A NEW PILE OR THE INJURED PART MAY BE SPLICED OR OTHERWISE DIRECTED BY THE ENGINEER.
 - PILES DRIVEN INTO POSITION SHALL BE WITHIN THE FOLLOWING TOLERANCES:
 LOCATION OF PILE HEAD: CENTER ± 20 CM
 ELEVATION OF PILE HEAD: ± 5 CM
 INCLINATION OF PILE: 1:100
 - PILES SHALL BE DRIVEN IN TO THE FULL PENETRATION SHOWN ON THE PLAN OR AS OTHERWISE REQUIRED. THIS SHALL NOT BE CONSIDERED TO MEAN THAT DRIVING SHALL STOP WHEN SUCH PENETRATION AS SHOWN ON THE PLAN HAS BEEN SECURED, BUT ON THE CONTRARY DRIVING SHALL CONTINUE IN EVERY CASE UNTIL TOTAL PENETRATION OBTAINED IS SATISFACTORY TO THE ENGINEER. EVEN IF SUFFICIENT BEARING CAPACITY AS DETERMINED BY FORMULA MAY BE OBTAINED AT LESSER DEPTHS.

8. ALL STEEL PIPE PILES EXCEPT PILES FOR ROORING DOLPHINS SHALL BE FILLED WITH SAND UP TO 1 M BELOW BOTTOM OF SUPERSTRUCTURE. PILES FOR ROORING DOLPHIN SHALL BE FILLED WITH SAND UP TO 2 M BELOW BOTTOM OF SUPERSTRUCTURE. REMAINING PORTIONS SHALL BE FILLED WITH CLASS 'C' CONCRETE.

ABBREVIATION
 S.P.P. -- STEEL PIPE PILE
 Ø -- OUTER DIAMETER
 L -- LENGTH
 T.B. -- TANGENT ANGLE OF BATTER PILES

EXAMPLE
 S.P.P. 914.4 x 16
 L = 25,000 T.B. = 20°
 INDICATE STEEL PIPE PILE 914.4 mm OUTER DIAMETER OF THICKNESS 16 mm AND LENGTH 25,000 mm.
 INDICATION OF BATTER PILE EQUAL TO TANGENT 20°.

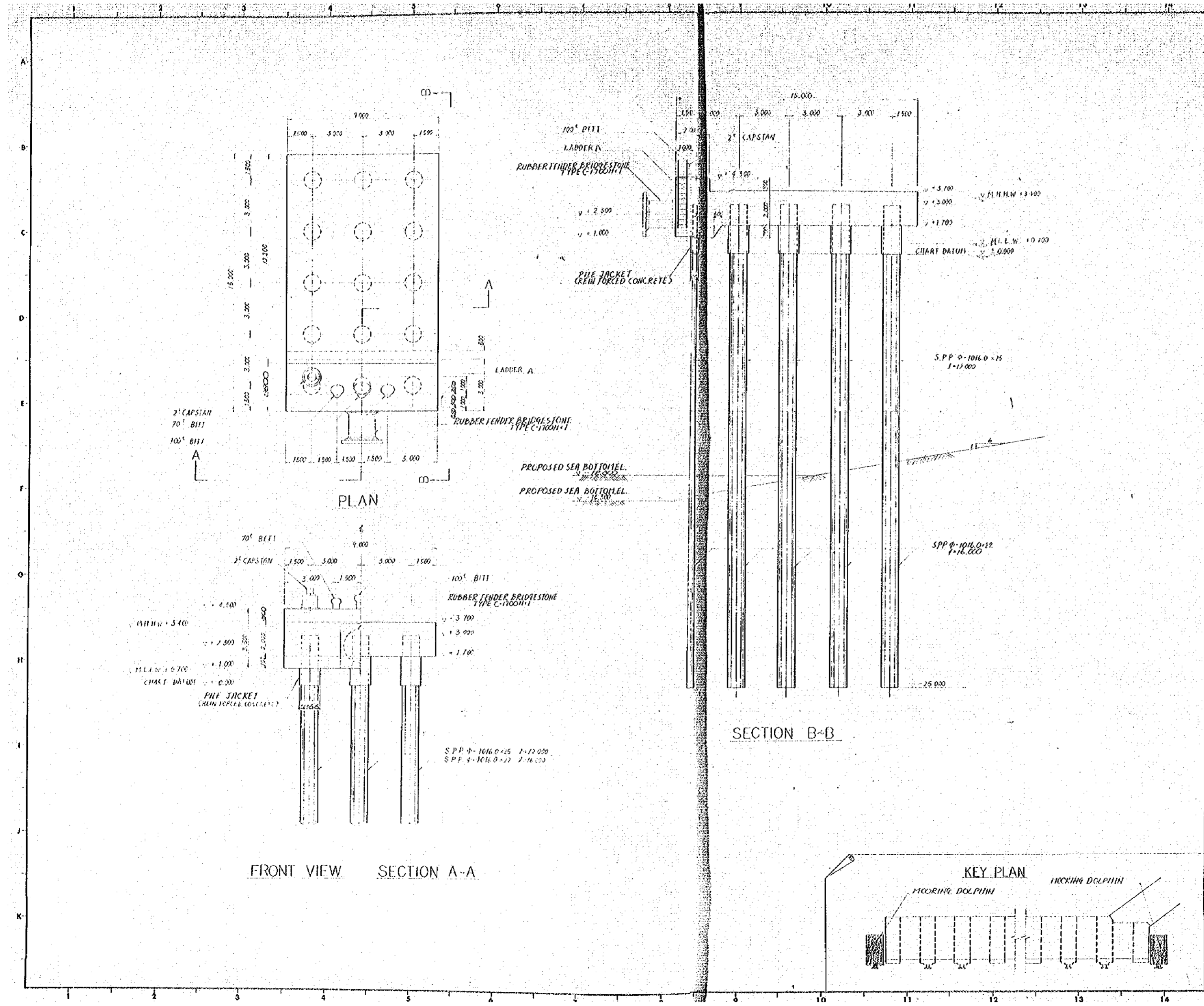
LEGEND
 ⊙: TO BE SUPPLIED BY P.O.A.

NO.	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN
IRON ORE & COAL BERTH
PILE LAYOUT

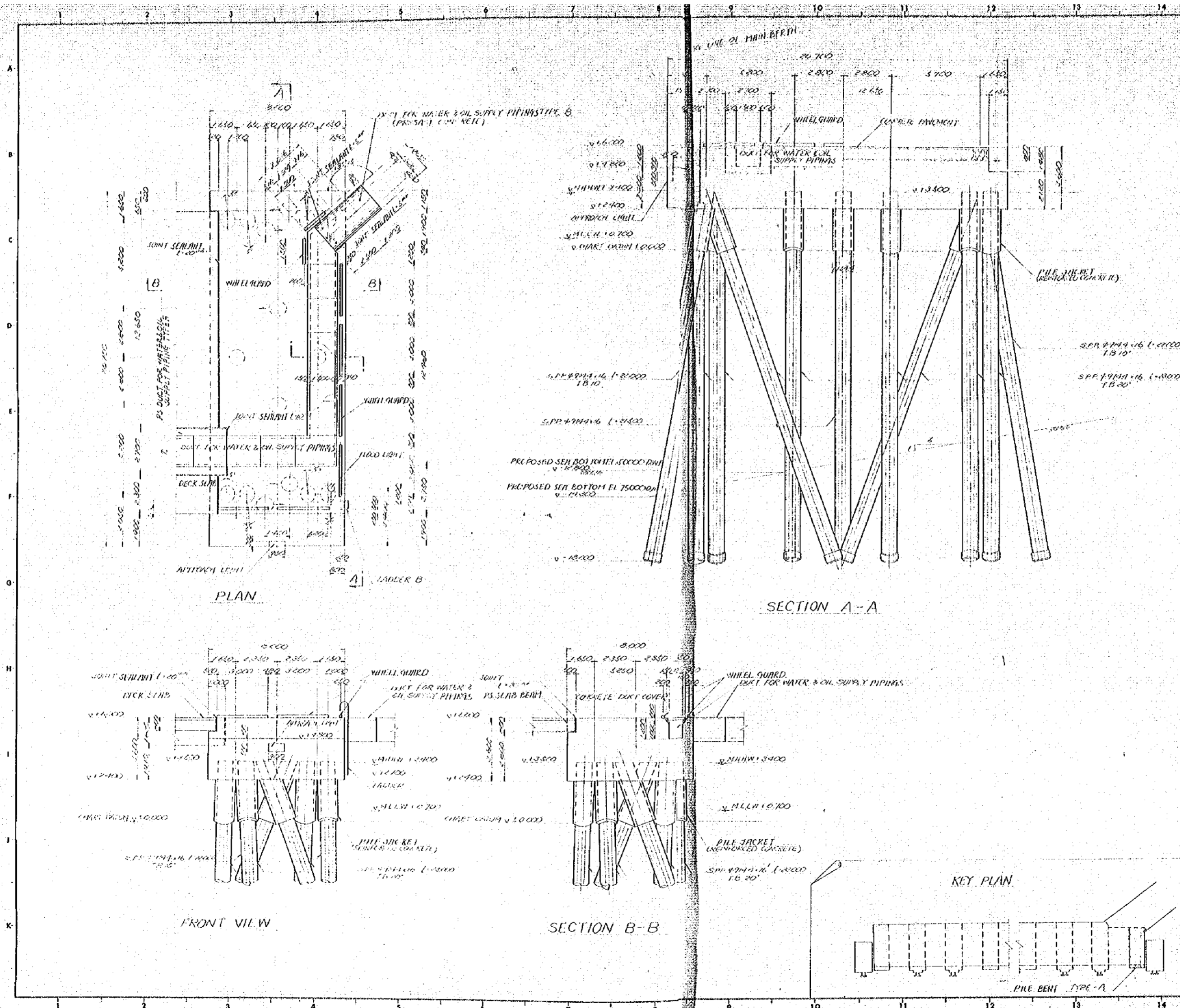
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. Shi	M. K. Iqbal
SCALE			
1 : 300			
DATE DEC 1975		DWG. NO. B - 4	



- GENERAL NOTES**
1. THIS DWG. REPRESENTS THE MOORING DOLPHIN LOCATED AT THE SIDE OF BORE HOLE NO. 103 AS SHOWN ON DWG. NO. B-5.
 2. MOORING DOLPHIN LOCATED AT THE SIDE OF BORE HOLE NO. 108 IS SAME AS THIS DWG. EXCEPT THAT THE CAPSTAN SHALL BE INSTALLED AT THE OPPOSITE SIDE WITH RESPECT TO THE CENTER LINE OF THE PLAN SHOWN ON THIS DWG.
 3. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS DWG. SEE DWG. NO. B-25.
 4. FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-18.
 5. FOR DETAILS OF FENDERING SYSTEM, SEE DWG. NO. B-61.
 6. FOR DETAILS OF BITTS AND CAPSTAN, SEE DWG. NOS. B-62 & B-63.
 7. FOR DETAILS OF LADDER, SEE DWG. NO. B-60.
 8. FOR REINFORCING DETAILS OF PILEHEADS, SEE DWG. NO. B-19 & 22.
 9. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH GENERAL PLAN OF MOORING DOLPHIN			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. Shw	M. M. Khan
SCALE			
1 : 100			
DATE DEC 1975		DWG. NO. B - 5	



- GENERAL NOTES**
1. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS BENT, SEE DNG. NO. B-20, B-23.
 2. FOR DETAILS OF PILE JACKET, SEE DNG. NO. B-17.
 3. FOR DETAILS OF LADDER, SEE DNG. NO. B-10.
 4. FOR DETAILS OF WHEEL GUARD, SEE DNG. NO. B-59.
 5. FOR ANCHOR BOLT FOR FLOOD LIGHT, SEE DNG. NO. B-64.
 6. FOR REINFORCING DETAILS OF PILE HEADS, SEE DNG. NO. B-19, B-22.
 7. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".

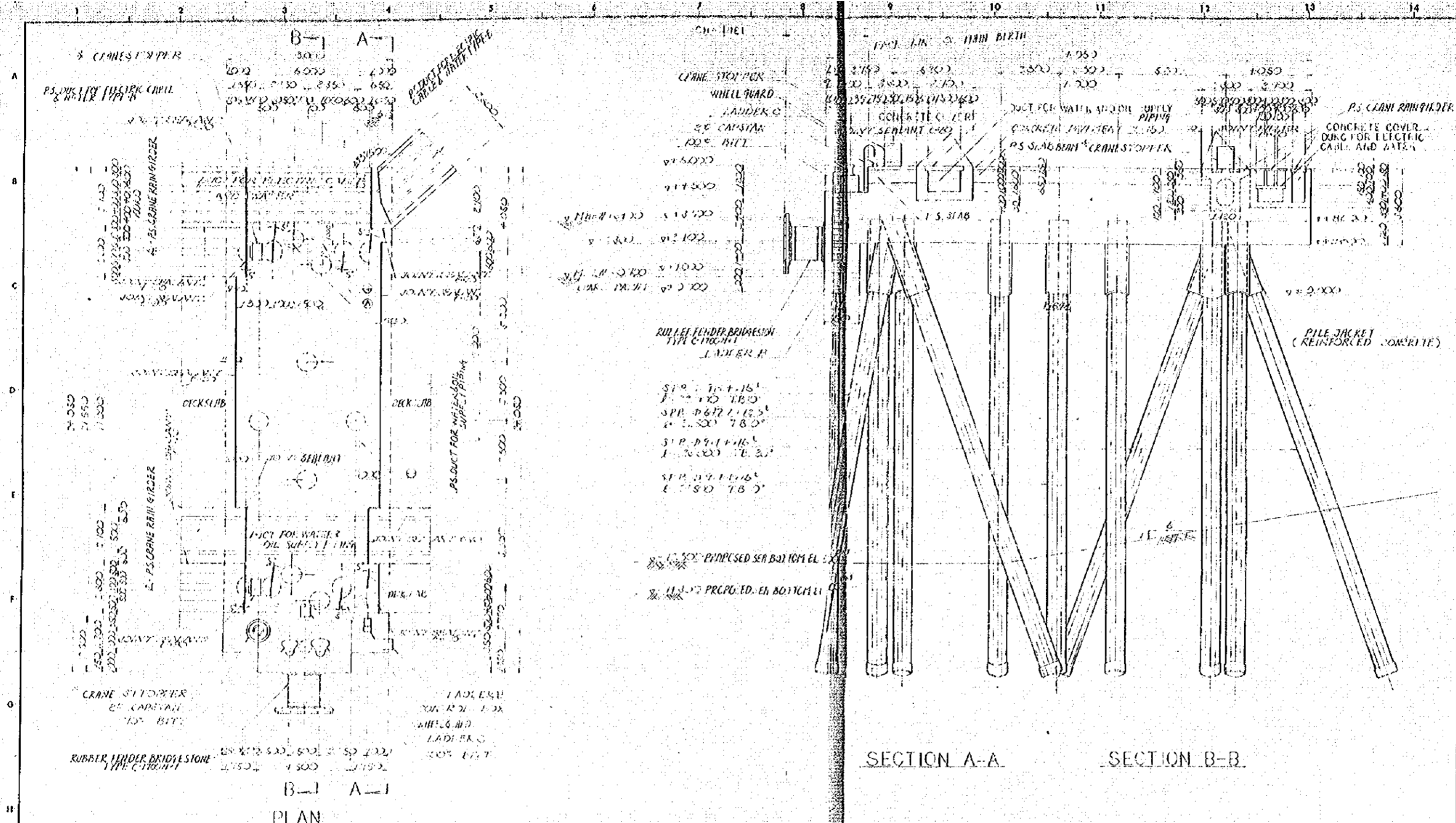
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REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

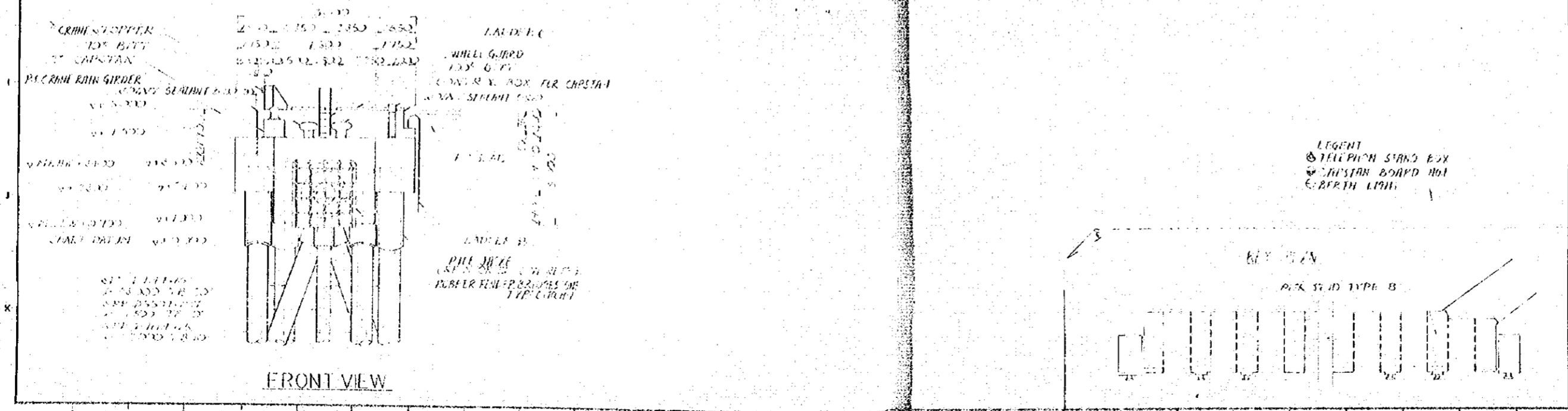
IRON ORE & COAL BERTH
MAIN BERTH
GENERAL PLAN
OF TYPE-A PILE BENT

JAPAN INTERNATIONAL COOPERATION AGENCY

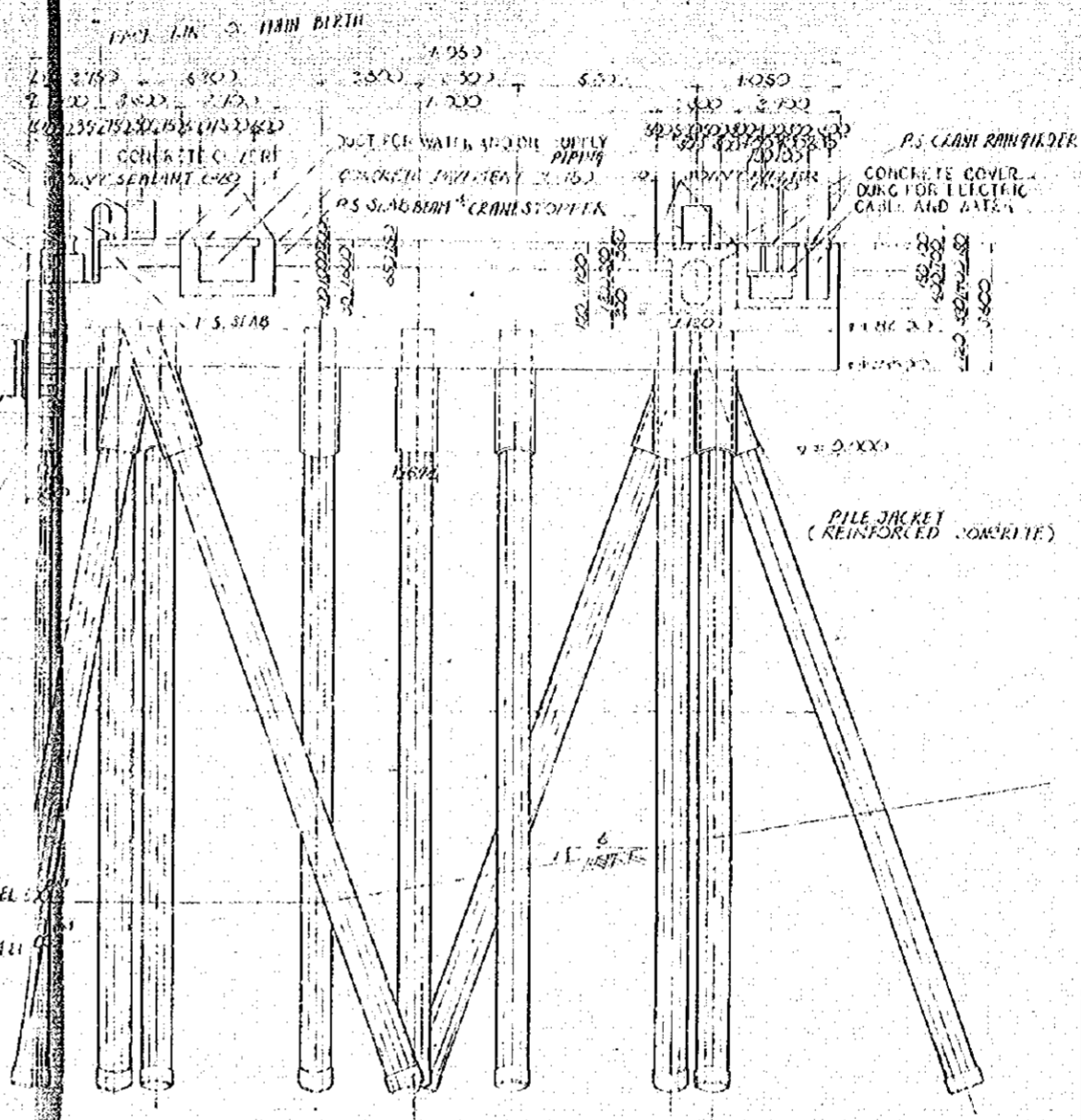
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SCALE			
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DATE DEC. 1975			
DWG. NO. B-6			



PLAN



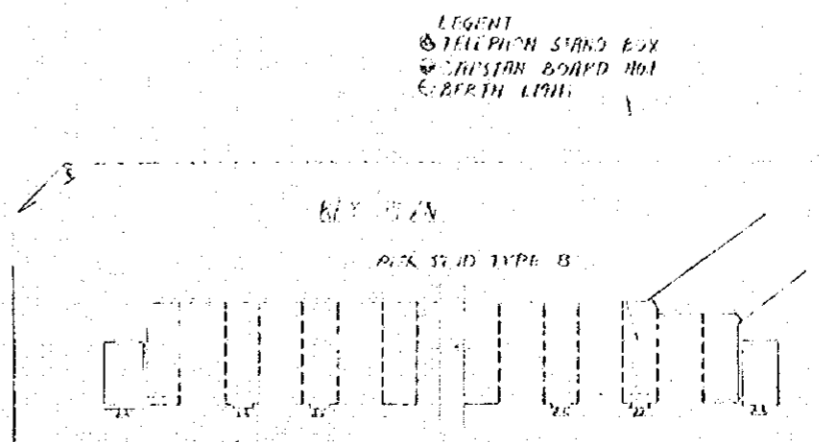
FRONT VIEW



SECTION A-A

SECTION B-B

- GENERAL NOTES**
1. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS DWG., SEE DWG. NO. B-26 & 27.
 2. FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-16 & 17.
 3. FOR DETAILS OF FENDERING SYSTEM, SEE DWG. NO. D-61.
 4. FOR DETAILS OF BITTS AND CAPSTAN, SEE DWG. NO. B-62 & 63.
 5. TELEPHONE STAND BOX SHALL BE INSTALLED TO PILE BENT NO. D & 15 AS SHOWN ON DWG. NO. D-3. FOR DETAILS OF ANCHOR BOLT, SEE DWG. NO. B-64.
 6. FOR DETAILS OF ANCHOR BOLT FOR CAPSTAN BOARD NO. 1, SEE DWG. NO. B-64.
 7. BERTH LIGHT SHALL BE INSTALLED TO PILE BENTS NO. 1, 3, 5, 7, 9, 11, 13, 15, AS SHOWN ON DWG. NO. D-3. FOR DETAILS OF ANCHOR BOLT FOR BERTH LIGHT, SEE DWG. NO. D-64.
 8. FOR REINFORCING DETAILS OF PILE HEADS, SEE DWG. NO. B19 & 22.
 9. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".



REVISION		
NO.	DATE	DESCRIPTION

PORT MUHAMMAD-BIN-QASIM PROJECT
 PAKISTAN

IRON ORE & COAL BERTH
 MAIN BERTH
 GENERAL PLAN
 OF
 TYPE B PILE BENT

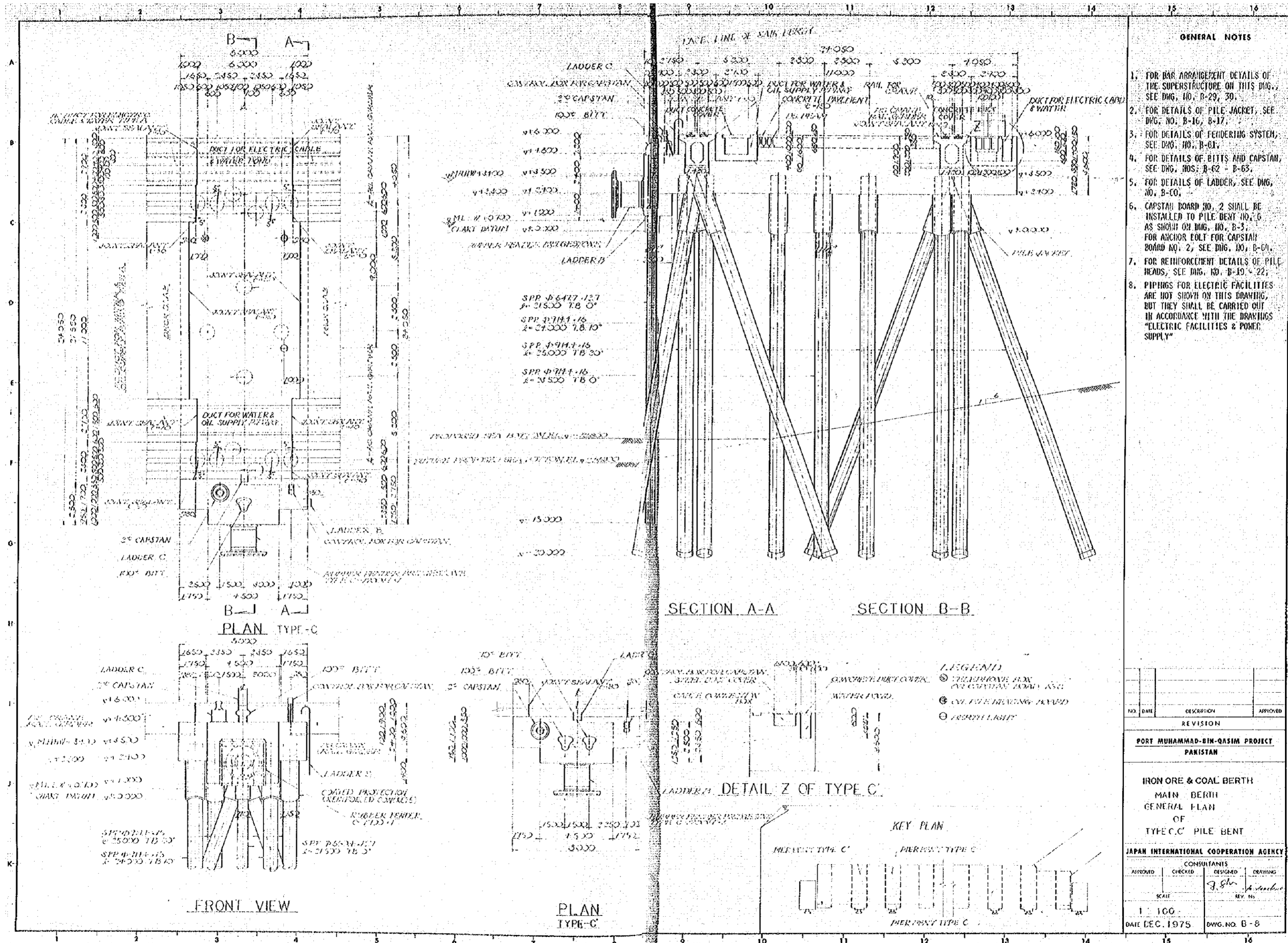
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWN

SCALE
 1 : 100

DATE DEC 1975

DWG. NO. B-7



GENERAL NOTES

1. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS BENT, SEE DWG. NO. B-29, 30.
2. FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-16, B-17.
3. FOR DETAILS OF FENDERING SYSTEM, SEE DWG. NO. B-61.
4. FOR DETAILS OF BITTS AND CAPSTAN, SEE DWG. NOS. B-62 - B-63.
5. FOR DETAILS OF LADDER, SEE DWG. NO. B-60.
6. CAPSTAN BOARD NO. 2 SHALL BE INSTALLED TO PILE BENT NO. 6 AS SHOWN ON DWG. NO. B-3. FOR ANCHOR BOLT FOR CAPSTAN BOARD NO. 2, SEE DWG. NO. B-64.
7. FOR REINFORCEMENT DETAILS OF PILE HEADS, SEE DWG. NO. B-10, 22.
8. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY"

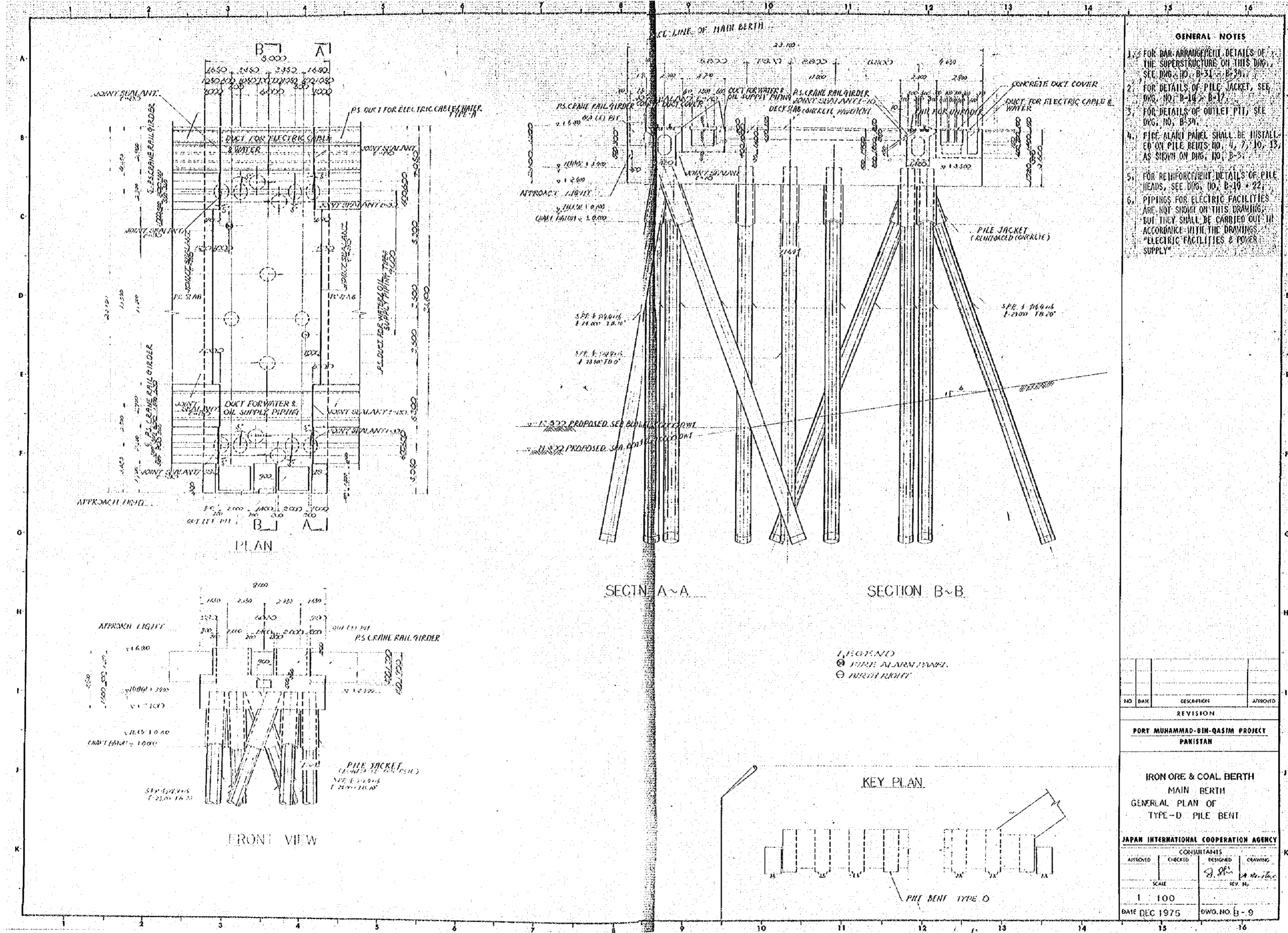
NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
MAIN BERTH
GENERAL PLAN
OF
TYPE 'C' PILE BENT

JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
SCALE		REV. NO.	
1 : 100			
DATE DEC. 1975		DWG. NO. B-8	



- GENERAL NOTES**
- FOR BAY ARRANGEMENT, DETAILS OF THE SUPERSTRUCTURE ON THIS DRAWING, SEE DWG. NO. B-31, B-30, B-32.
 - FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-14, B-17.
 - FOR DETAILS OF OUTLET PIT, SEE DWG. NO. B-34.
 - FIRE ALARM PANEL SHALL BE INSTALLED ON PILE BENTS NO. 4, 7, 10, 13, AS SHOWN ON DWG. NO. B-3.
 - FOR REINFORCEMENT DETAILS OF PILE HEADS, SEE DWG. NO. B-19, B-22.
 - PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".

- LEGEND**
- ⊙ FIRE ALARM PANEL
 - ⊙ BERTH MARK

NO.	DATE	DESCRIPTION	APPROVED
REVISION			

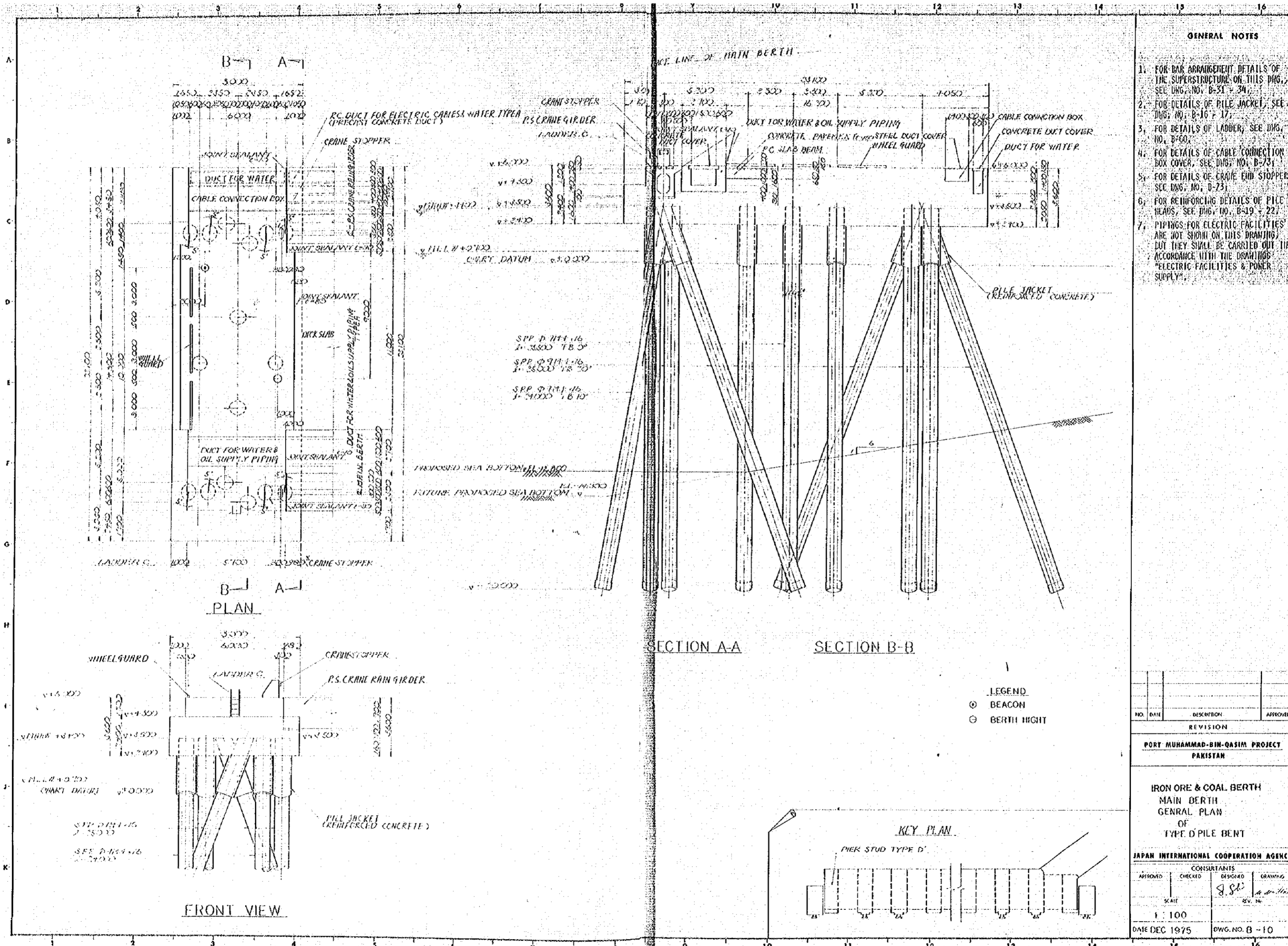
**PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN**

**IRON ORE & COAL BERTH
MAIN BERTH
GENERAL PLAN OF
TYPE-D PILE BENT**

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. S. S.	A. M. I. C.
SCALE		REV. NO.	
1 : 100			

DATE DEC 1975 DWG. NO. B-9



GENERAL NOTES

1. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS DRAWING, SEE DWG. NO. B-31 & 34.
2. FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-16 & 17.
3. FOR DETAILS OF LADDER, SEE DWG. NO. B-60.
4. FOR DETAILS OF CABLE CONNECTION BOX COVER, SEE DWG. NO. B-73.
5. FOR DETAILS OF CRANE END STOPPER, SEE DWG. NO. D-73.
6. FOR REINFORCING DETAILS OF PILE HEADS, SEE DWG. NO. B-19 & 22.
7. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".

NO.	DATE	DESCRIPTION	APPROVED

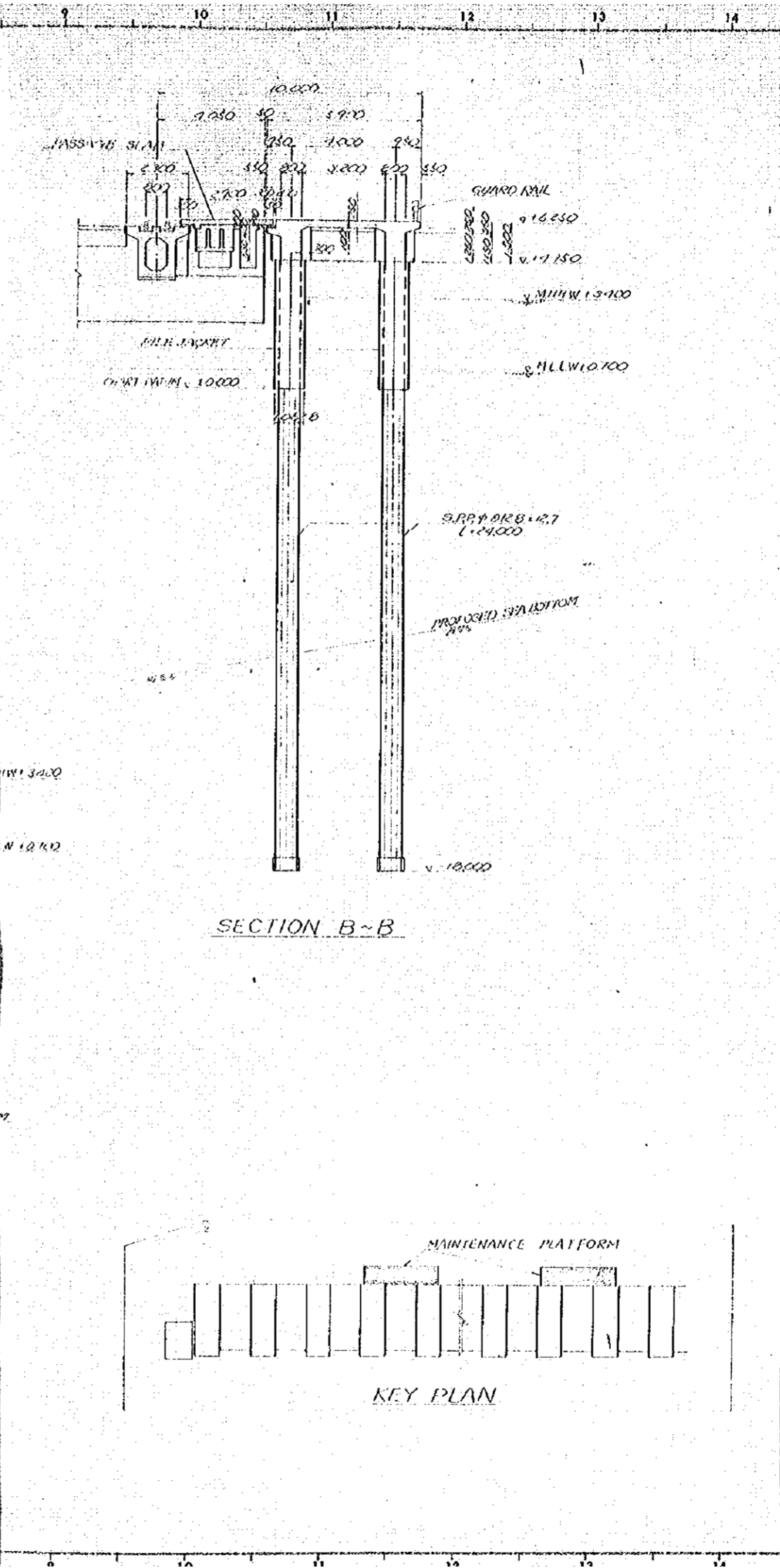
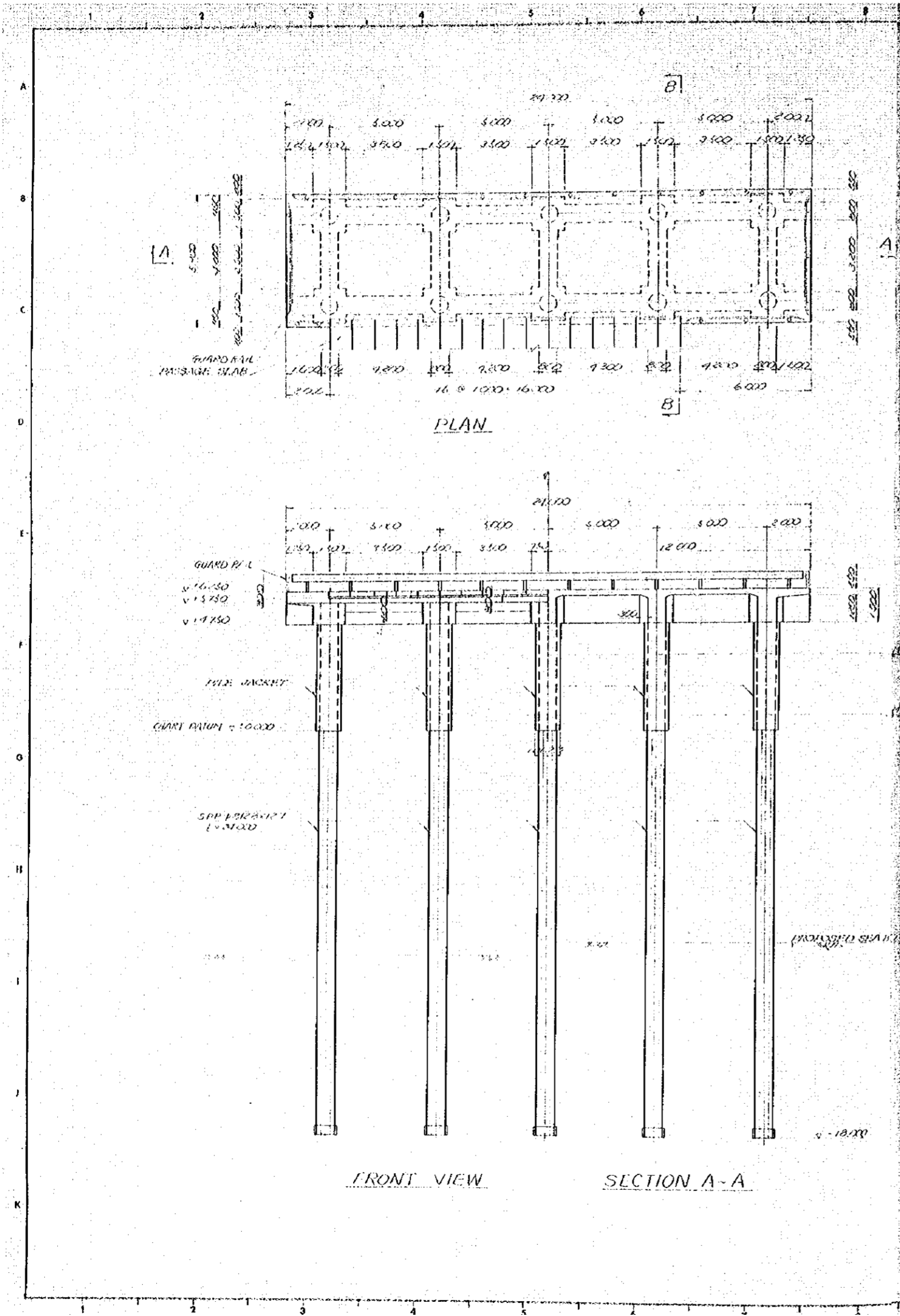
PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
MAIN BERTH
GENERAL PLAN
OF
TYPE 'D' PILE BERTH

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		S.S.	A. M. H.
SCALE		REV. NO.	
1 : 100			

DATE DEC 1975 DWG. NO. B-10



GENERAL NOTES

1. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS DWG. SEE DWG. NO. B-10.
2. FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-16 & B-17.
3. FOR REINFORCING DETAILS OF PILE HEADS, SEE DWG. NO. B-19 & 22.
4. FOR DETAILS OF PASSAGE SLAB, SEE DWG. NO. B-57.
5. FOR DETAILS OF GUARD RAIL, SEE DWG. NO. B-50.

NO.	DATE	DESCRIPTION	APPROVED
REVISION			

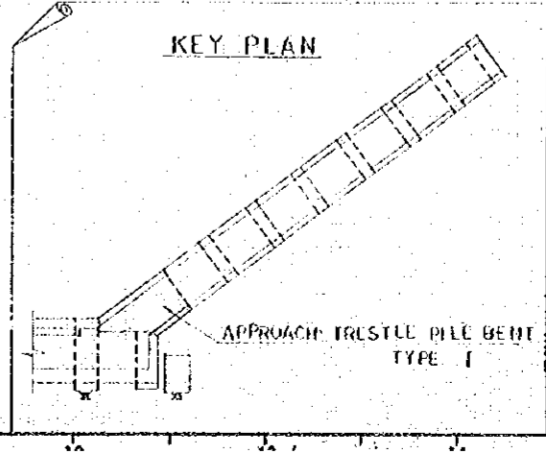
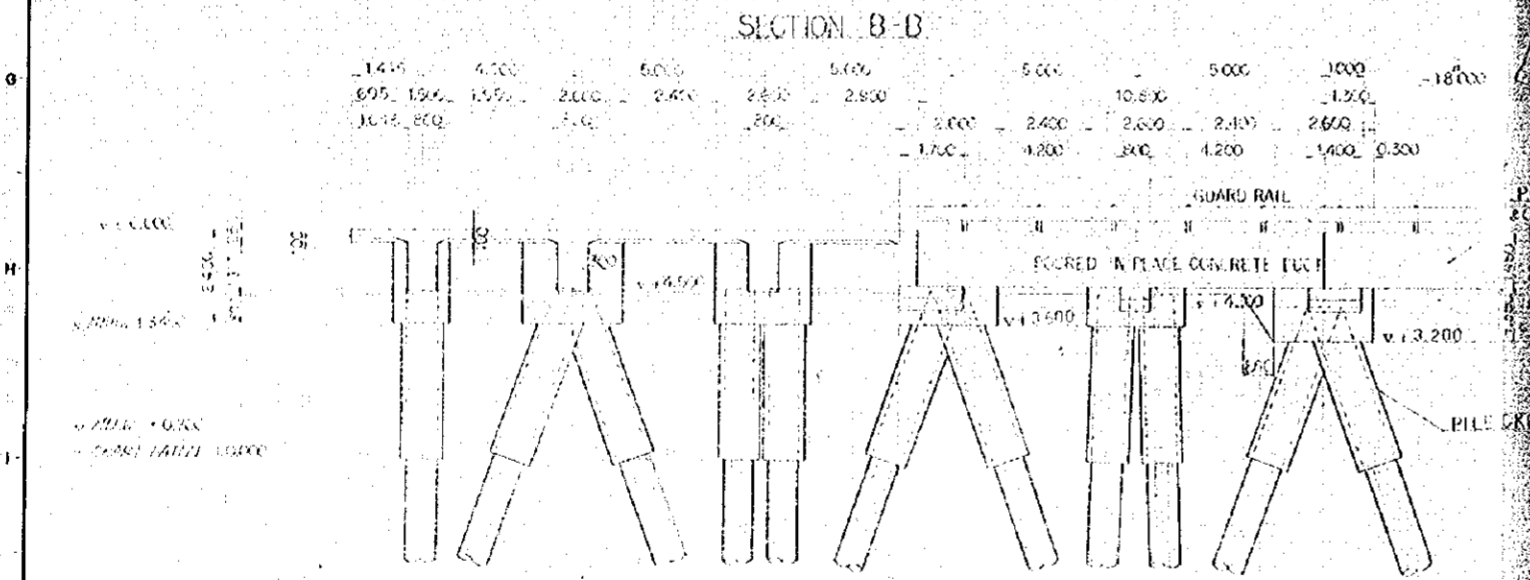
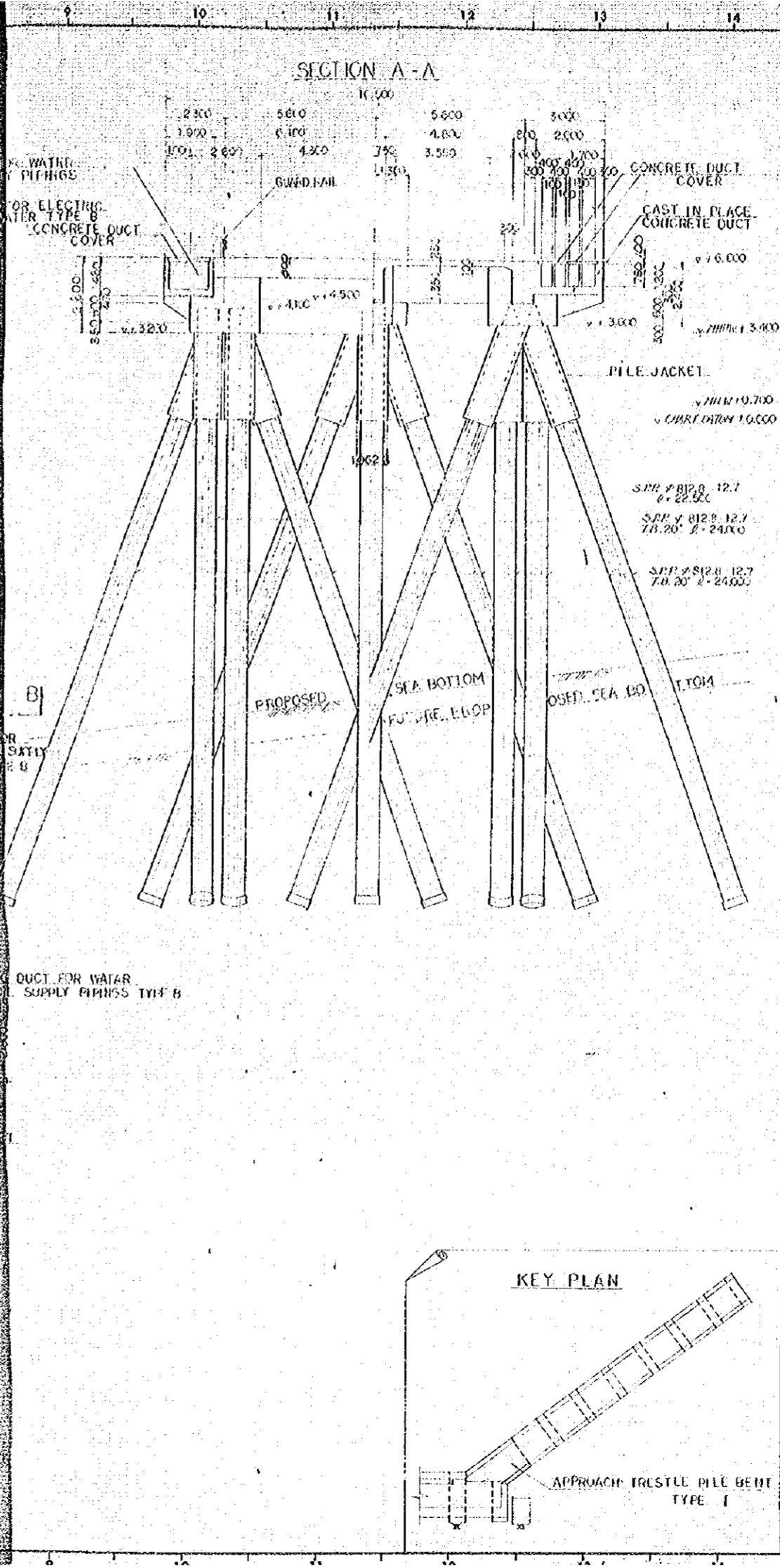
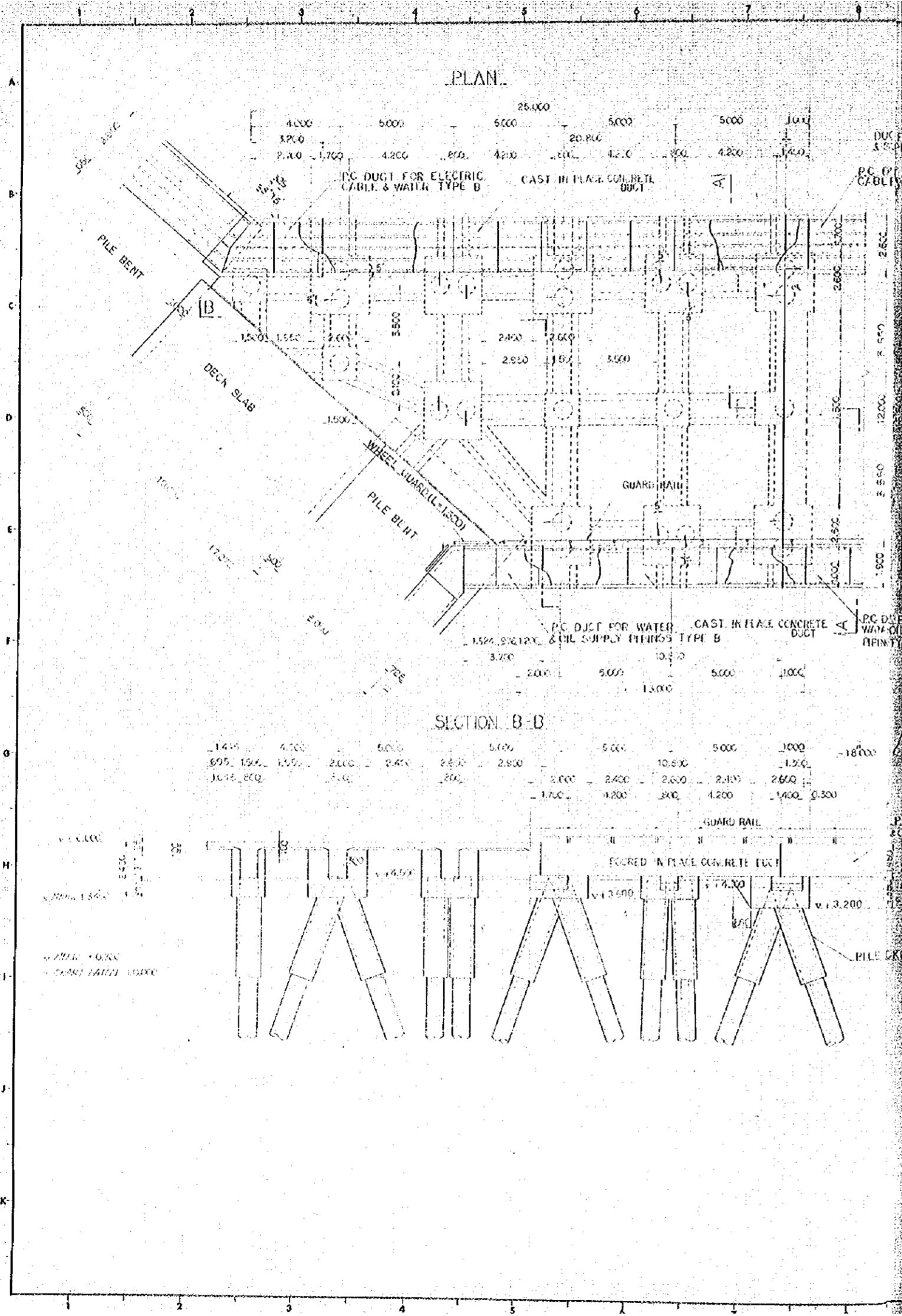
PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH

MAIN BERTH
GENERAL PLAN
OF MAINTENANCE PLATFORM

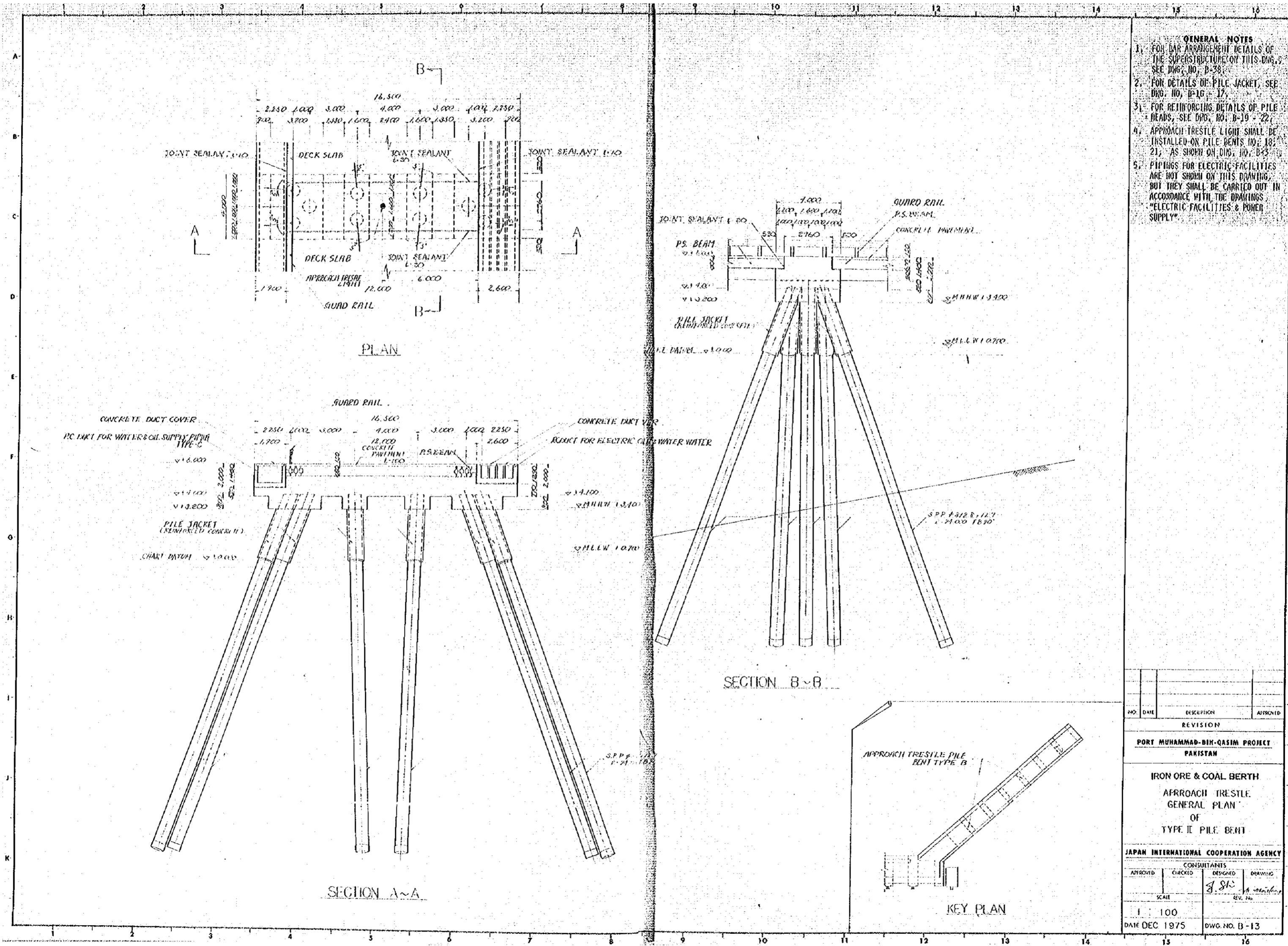
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>G. Sh.</i>	<i>[Signature]</i>
SCALE		REV. NO.	
1 : 100			
DATE DEC 1975		DWG. NO B-11	

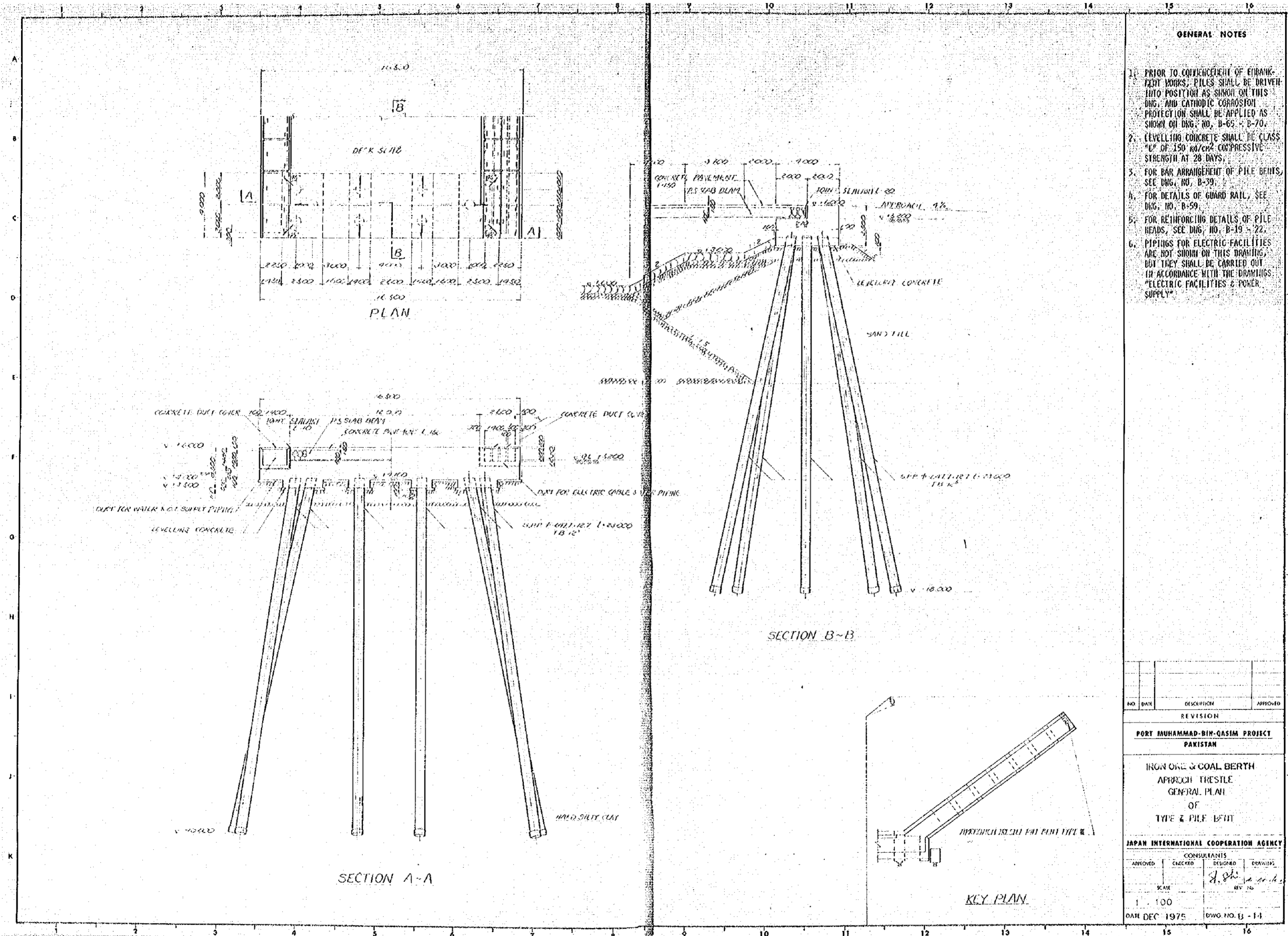


- GENERAL NOTES**
1. FOR BAR ARRANGEMENT DETAILS OF THE SUPERSTRUCTURE ON THIS DWT, SEE DWG. NO. B-75 - 37.
 2. FOR DETAILS OF PILE JACKET, SEE DWG. NO. B-16 - 17.
 3. FOR REINFORCING DETAILS OF PILE HEADS, SEE DWG. NO. B-19 - 22.
 4. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH APPROACH TRESTLE GENERAL PLAN OF TYPE - I PILE BENT			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS		DRAWING	
APPROVED	CHECKED	DESIGNED	DRAWN
		<i>J. Sh.</i>	<i>M. Mustafa</i>
SCALE		REV. NO.	
1 : 100			
DATE DEC 1975		DWG. NO. B-12	



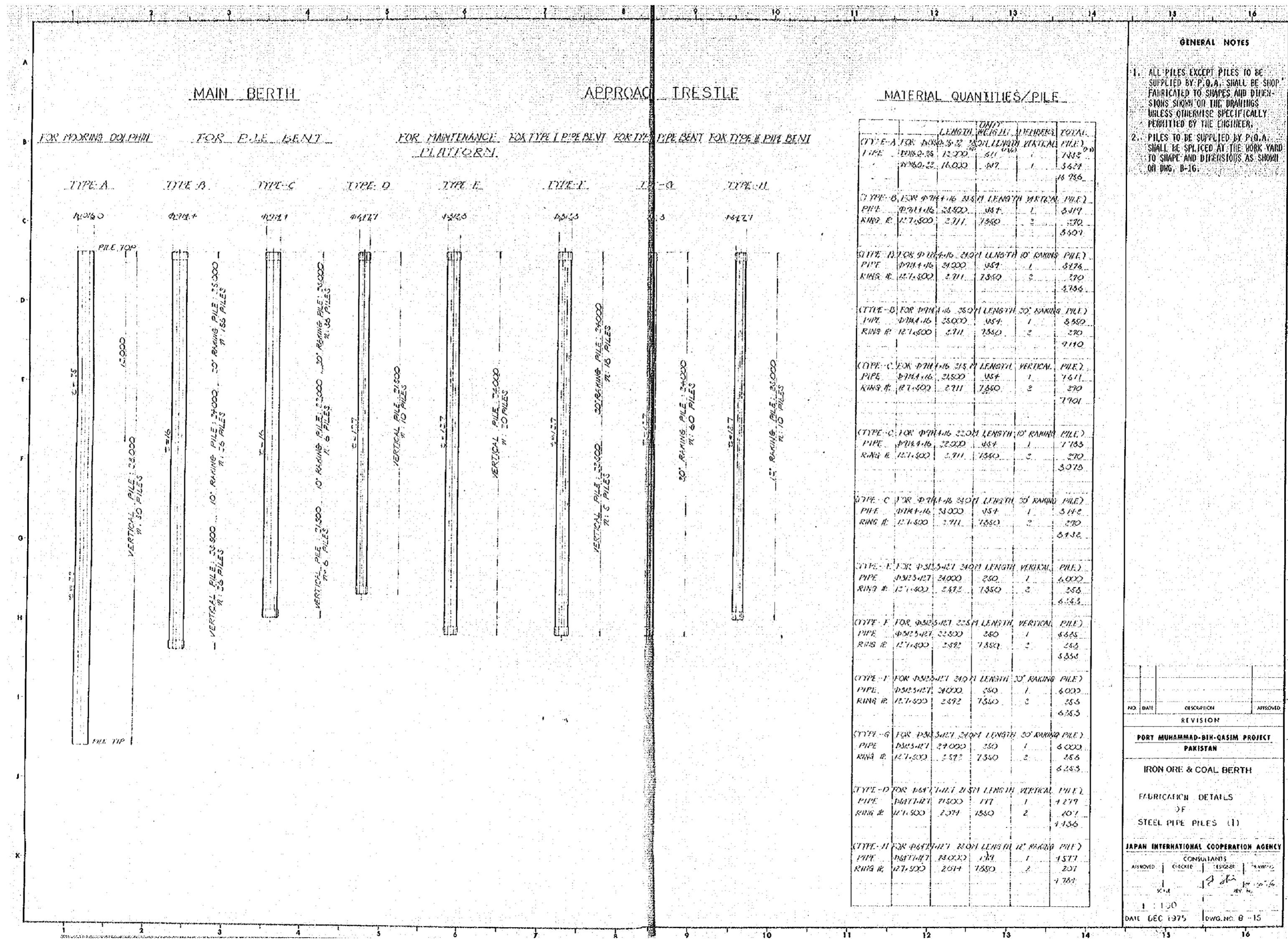
NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH APPROACH TRESTLE GENERAL PLAN OF TYPE II PILE BENT			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>J. S. K.</i>	<i>A. M. M.</i>
SCALE		REV. NO.	
1 : 100			
DATE DEC 1975		DWG. NO. B-13	



GENERAL NOTES

1. PRIOR TO COMMENCEMENT OF EMBANKMENT WORKS, PILES SHALL BE DRIVEN INTO POSITION AS SHOWN ON THIS DNG. AND CATHODIC CORROSION PROTECTION SHALL BE APPLIED AS SHOWN ON DNG. NO. B-65 & B-70.
2. LEVELLING CONCRETE SHALL BE CLASS "C" OF 150 kg/cm² COMPRESSIVE STRENGTH AT 28 DAYS.
3. FOR BAR ARRANGEMENT OF PILE BEAMS, SEE DNG. NO. B-39.
4. FOR DETAILS OF GUARD RAIL, SEE DNG. NO. B-59.
5. FOR REINFORCING DETAILS OF PILE HEADS, SEE DNG. NO. B-19 & 22.
6. PIPINGS FOR ELECTRIC FACILITIES ARE NOT SHOWN ON THIS DRAWING, BUT THEY SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS "ELECTRIC FACILITIES & POWER SUPPLY".

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH APPROACH TRESTLE GENERAL PLAN OF TYPE & PILE BENT			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED		CONSULTANTS	
SCALE	1:100	DESIGNED	DRAWING
DATE	DEC 1975	REV 76	
		DWG. NO. B-11	



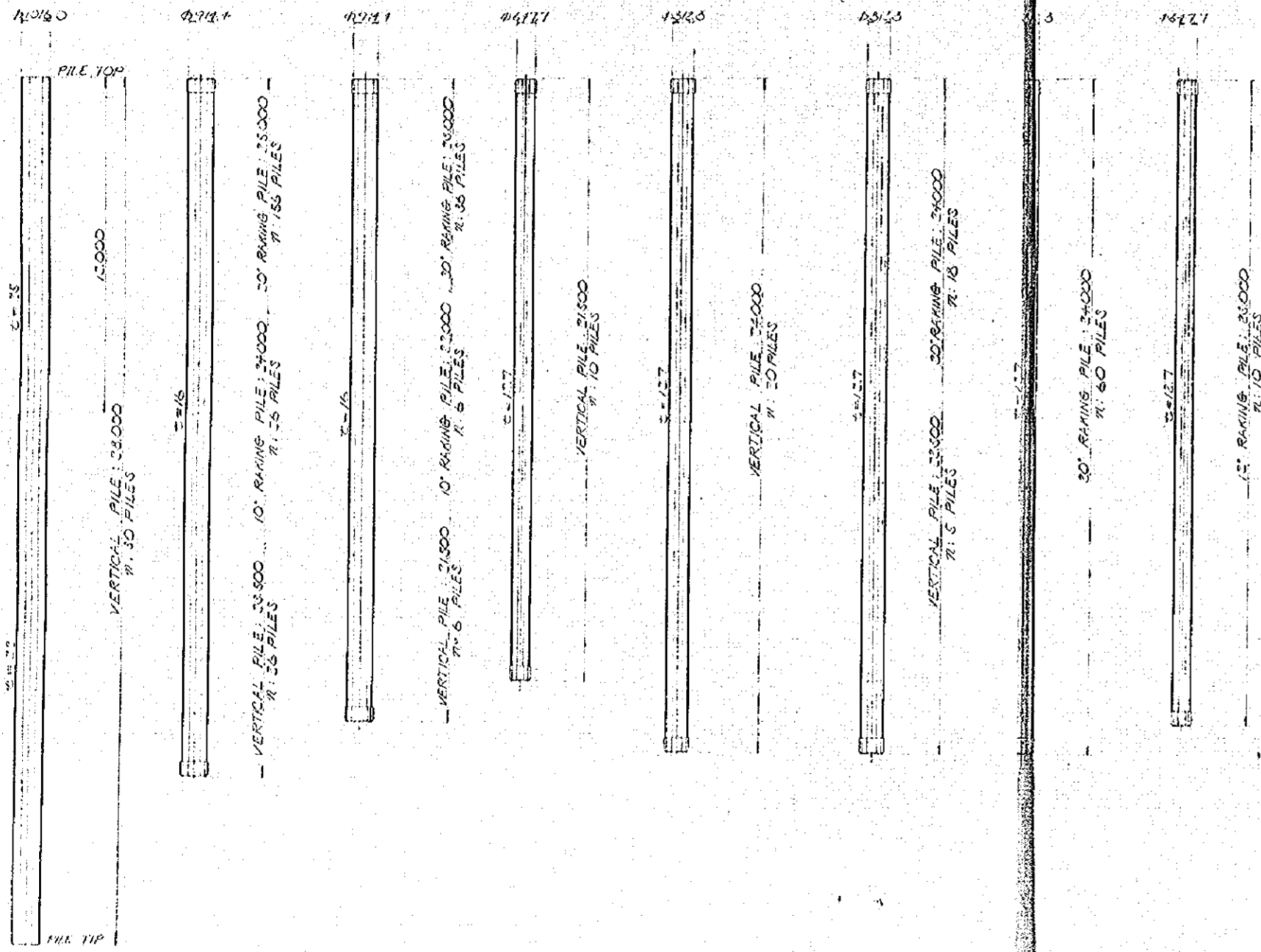
MAIN BERTH

APPROACH TRESTLE

MATERIAL QUANTITIES/PILE

FOR MOORING DOLPHIN FOR PILE BENT FOR MAINTENANCE FOR TYPE I PIPE BENT FOR TYPE II PIPE BENT FOR TYPE III PIPE BENT

TYPE A TYPE B TYPE C TYPE D TYPE E TYPE F TYPE G TYPE H



TYPE	LENGTH (M)	WEIGHT (KG)	MEMBERS	TOTAL
(TYPE A FOR MOORING DOLPHIN 25.0M LENGTH VERTICAL PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE B FOR PILE BENT 25.0M LENGTH VERTICAL PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE C FOR PILE BENT 25.0M LENGTH 10' RAKING PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE D FOR PILE BENT 25.0M LENGTH 20' RAKING PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE E FOR PILE BENT 25.0M LENGTH 30' RAKING PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE F FOR PILE BENT 25.0M LENGTH 40' RAKING PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE G FOR PILE BENT 25.0M LENGTH 50' RAKING PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876
(TYPE H FOR PILE BENT 25.0M LENGTH 60' RAKING PILE)	PIPE Ø1016.46 25000	454	1	454
RING R. 127.500	2711	7350	2	1422
				1876

GENERAL NOTES

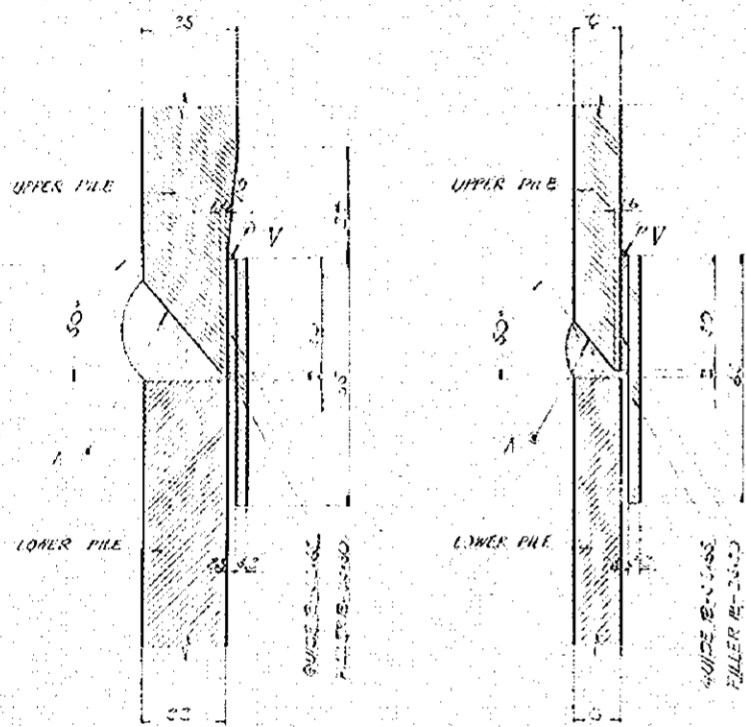
- ALL PILES EXCEPT PILES TO BE SUPPLIED BY P.O.A. SHALL BE SHOP FABRICATED TO SHAPES AND DIMENSIONS SHOWN ON THE DRAWINGS UNLESS OTHERWISE SPECIFICALLY PERMITTED BY THE ENGINEER.
- PILES TO BE SUPPLIED BY P.O.A. SHALL BE SPliced AT THE WORK YARD TO SHAPES AND DIMENSIONS AS SHOWN ON DWG. B-16.

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIH-QASIM PROJECT			
PAKISTAN			
IRON ORE & COAL BERTH			
FABRICATION DETAILS			
OF			
STEEL PIPE PILES (I)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWN
DATE DEC 1975 DWG. NO. B-15			

JOINT-WELDING AT FIELD

Scale 1:1

FOR D1060-25 PILE
FOR D1141-16 PILE
FOR D125-171 PILE
FOR D1471-121 PILE



TYPE - A
(IN CASE OF UPPER PILE IS NOT EQUIVALENT TO LOWER PILE)

TYPE - B
(IN CASE OF UPPER PILE IS EQUIVALENT TO LOWER PILE)

JOINT MATERIALS/POSITION

PILE NO.	GUIDE R.	FILLER R.	TYPE	MEMBERS TOTAL
FOR D1060-25 PILE TYPE - A				
GUIDE R.	32.65	3023	1	50
FILLER R.	23.30	3045	1	16
				66
FOR D1060-25 PILE TYPE - B				
GUIDE R.	32.65	3023	1	50
FILLER R.	23.30	3016	1	16
				66
FOR D1141-16 PILE TYPE - B				
GUIDE R.	32.65	2716	1	15
FILLER R.	23.30	2784	1	15
				60
FOR D125-171 PILE TYPE - B				
GUIDE R.	32.65	2443	1	10
FILLER R.	23.30	2465	1	18
				28
FOR D1471-121 PILE TYPE - B				
GUIDE R.	32.65	1790	1	32
FILLER R.	23.30	1777	1	11
				43

WELDING OF REINFORCEMENT RING PLATE FOR PILE END

Scale 1:20

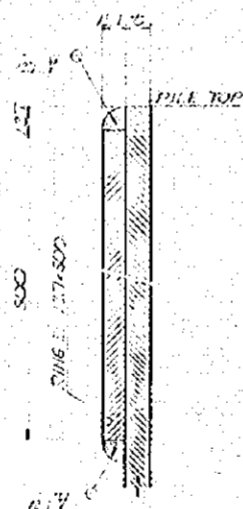
FOR D1141-16 PILE
FOR D125-171 PILE
FOR D1471-121 PILE



REINFORCEMENT OF PILE TOP

Scale 1:2

FOR D1141-16 PILE
FOR D125-171 PILE
FOR D1471-121 PILE



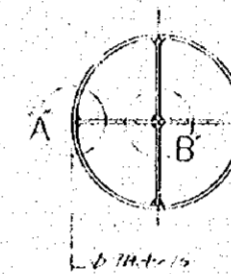
REINFORCEMENT MATERIALS/POSITION

PILE NO.	GUIDE R.	FILLER R.	TYPE	MEMBERS TOTAL
FOR D1141-16 PILE				
GUIDE R.	32.65	2716	1	15
FILLER R.	23.30	2784	1	15
				60
FOR D125-171 PILE				
GUIDE R.	32.65	2443	1	10
FILLER R.	23.30	2465	1	18
				28
FOR D1471-121 PILE				
GUIDE R.	32.65	1790	1	32
FILLER R.	23.30	1777	1	11
				43

WELDING OF CROSS PLATE FOR PILE TOP

Scale 1:20

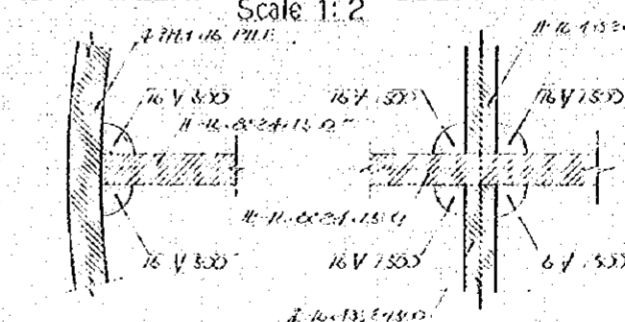
FOR D1141-16 PILE



DETAIL A

Scale 1:2

DETAIL B



CROSS PLATE / POSITION

PILE NO.	GUIDE R.	FILLER R.	TYPE	MEMBERS TOTAL
FOR D1141-16 PILE				
GUIDE R.	32.65	2716	1	15
FILLER R.	23.30	2784	1	15
				60

GENERAL NOTES

FOR THE PENETRATION OF FOUNDATION PILES FOR PILE BENT INTO THE HARD STRONG, WHEN IT IS UNAVOIDABLY THAT A PILE IS DRIVEN INTO AN OVER-SIZED PIT DRILLED TO 18 METER DEPTH AND FILLED WITH SAND, THE INNER SIDE OF THE PILE TIP SHALL BE FABRICATED WITH CROSSED PLATES AS SHOWN ON THE DRAWING OR SHALL BE TREATED AS APPROVED BY THE ENGINEER.

NO.	DATE	REVISION	APPROVED

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH

FABRICATION DETAILS
OF
STEEL PIPE PILES (2)

JAPAN INTERNATIONAL COOPERATION AGENCY

APPROVED	CHECKED	DESIGNED	DRAWING

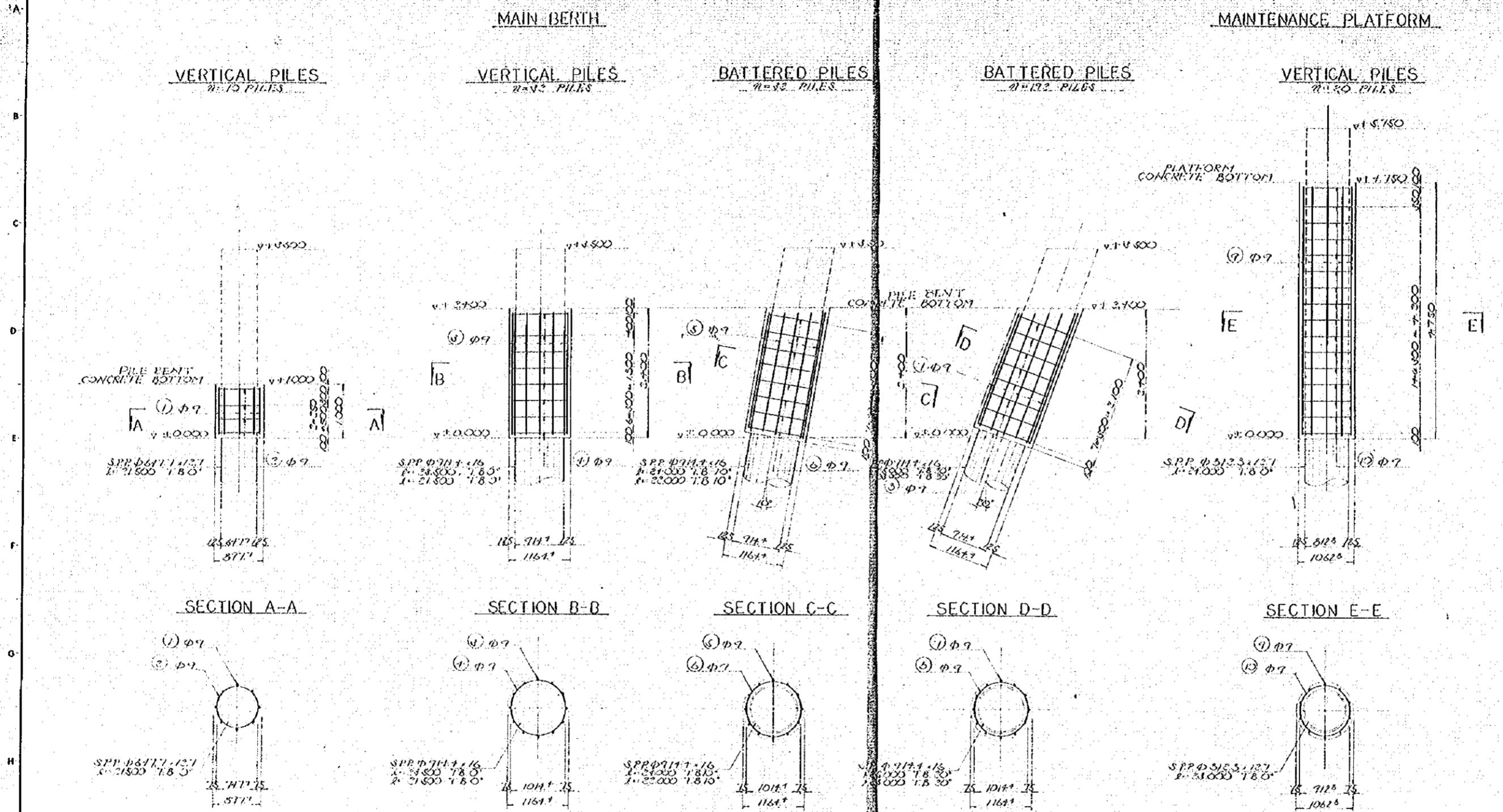
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SHOWN OF ASSURE: 7.81

DATE DEC 19 75

DWG. NO. B-10

GENERAL NOTES



MATERIAL QUANTITIES/PIL

(VERTICAL PILE)

BAR NUMBER	DIA.	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR (1)	φ 7	0.500	0.111	3	4.171
BAR (2)	φ 7	2.117	-	4	14.57
CONCRETE					1.333
					0.900

(VERTICAL PILE)

BAR NUMBER	DIA.	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR (1)	φ 7	0.500	0.111	12	13.171
BAR (2)	φ 7	3.187	-	5	12.713
CONCRETE					26.871
					0.775

(BATTERED PILE 30°)

BAR NUMBER	DIA.	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR (1)	φ 7	2.257	0.111	12	14.471
BAR (2)	φ 7	3.187	-	5	12.713
CONCRETE					26.871
					1.042

(BATTERED PILE 10°)

BAR NUMBER	DIA.	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR (1)	φ 7	2.257	0.111	12	14.471
BAR (2)	φ 7	3.187	-	5	12.713
CONCRETE					26.117
					0.775

(VERTICAL PILE)

BAR NUMBER	DIA.	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR (1)	φ 7	1.650	0.111	10	22.705
BAR (2)	φ 7	2.365	-	16	22.875
CONCRETE					45.602
					1.717

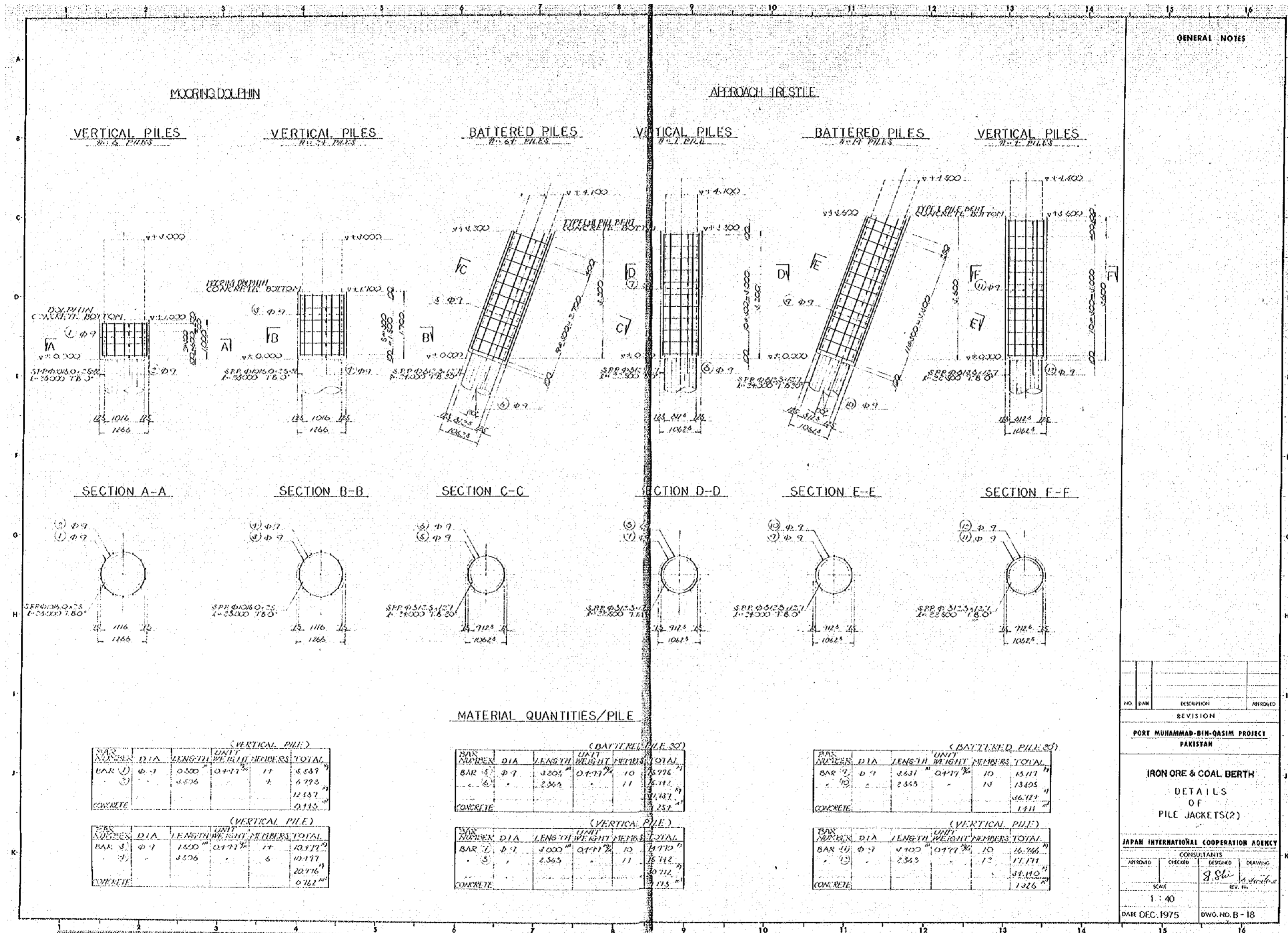
NO.	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
DETAILS
OF
PILE JACKETS (1)

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>J. Shiraishi</i>	<i>M. Masuda</i>
SCALE			
1 : 40			
DATE DEC 1975		DWG. NO. B-17	



GENERAL NOTES

VERTICAL PILES
7-1 PILES

VERTICAL PILES
7-1 PILES

BATTERED PILES
7-1 PILES

VERTICAL PILES
7-1 PILES

BATTERED PILES
7-1 PILES

VERTICAL PILES
7-1 PILES

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SECTION E-E

SECTION F-F

MATERIAL QUANTITIES/PILE

(VERTICAL PILE)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR 1	φ 7	0.300	0.177	11	5.537
BAR 2	φ 7	3.506	0.177	2	6.773
CONCRETE					12.537
					0.115

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR 3	φ 7	1.500	0.177	11	10.271
BAR 4	φ 7	3.506	0.177	6	10.177
CONCRETE					20.416
					0.162

(BATTERED PILE 30)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR 5	φ 7	3.204	0.177	10	5.773
BAR 6	φ 7	2.504	0.177	11	4.447
CONCRETE					10.220
					0.251

(VERTICAL PILE)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR 7	φ 7	3.000	0.177	10	5.310
BAR 8	φ 7	2.365	0.177	11	4.212
CONCRETE					9.522
					0.115

(BATTERED PILE 20)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR 9	φ 7	2.631	0.177	10	4.677
BAR 10	φ 7	2.365	0.177	10	4.155
CONCRETE					8.832
					0.111

(VERTICAL PILE)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR 11	φ 7	2.100	0.177	10	3.700
BAR 12	φ 7	2.365	0.177	12	4.176
CONCRETE					7.876
					0.126

NO.	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
DETAILS
OF
PILE JACKETS(2)

JAPAN INTERNATIONAL COOPERATION AGENCY
CONSULTANTS

APPROVED	CHECKED	DESIGNED	DRAWING
		J. Shu	

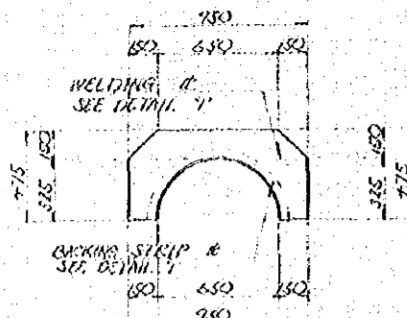
SCALE
1 : 40

DATE DEC. 1975 DWG. NO. B-18

KEY PLAN OF MAIN BERTH PILE BENT

Scale 1:200

DETAIL 'J'
Scale 1:20

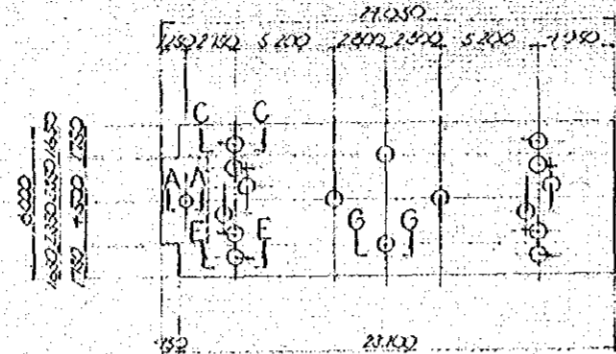


SECTION A-A

DETAIL 'N'
Scale 1:40



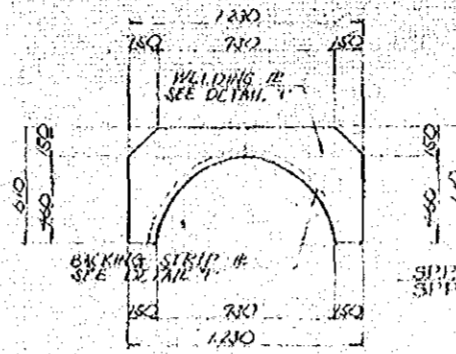
SECTION C-C



SECTION E-E

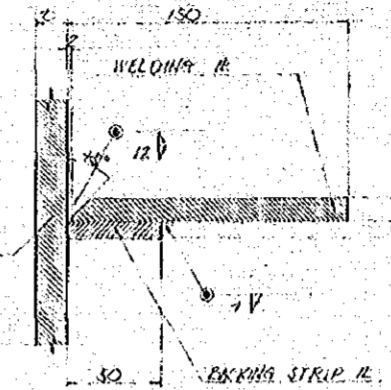
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DETAIL 'K'
Scale 1:20

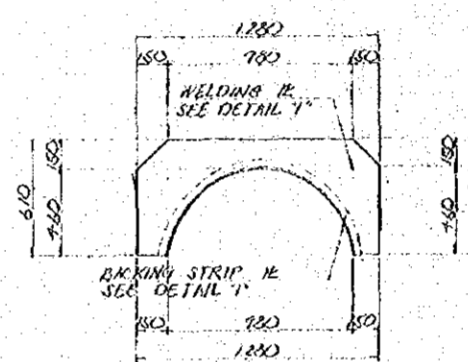


SECTION G-G

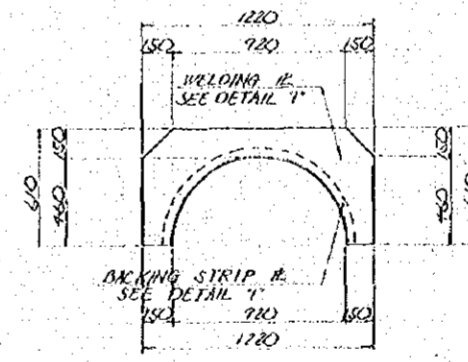
DETAIL 'T'
Scale 1:2



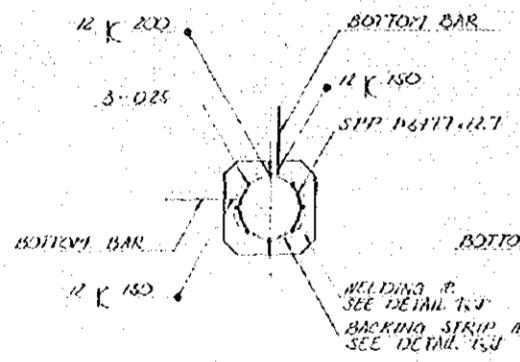
DETAIL 'L'
Scale 1:20



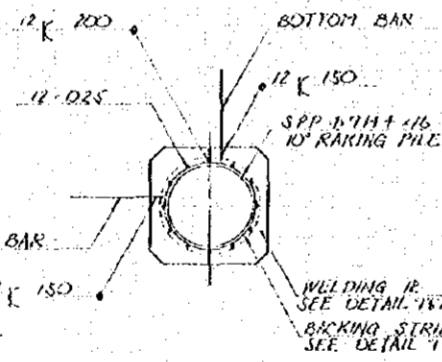
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Scale 1:20



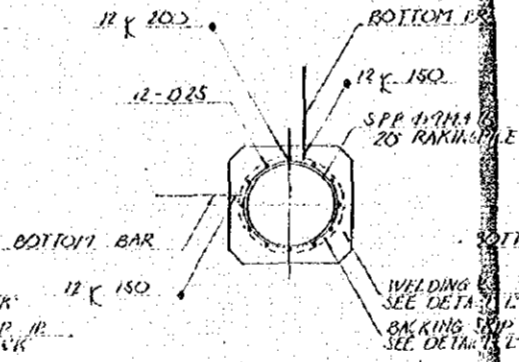
SECTION B-B



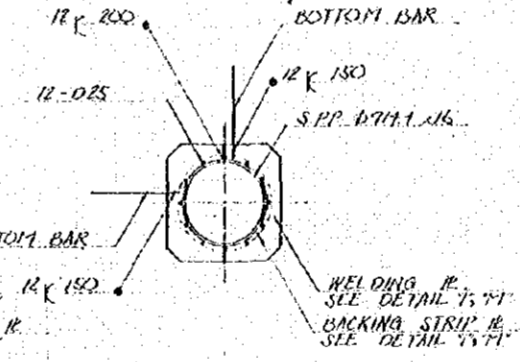
SECTION D-D



SECTION F-F



SECTION H-H



MATERIAL QUANTITIES/PILE

BAR	DIA	LENGTH (m)	UNIT WEIGHT (kg/m)	MEMBERS	TOTAL
BAR	200	0.820	378	12	11088
WELDING #				2	17.195
BACKING STRIP #				2	7.167
					59.151

BAR	DIA	LENGTH (m)	UNIT WEIGHT (kg/m)	MEMBERS	TOTAL
BAR	25	0.820	378	3	11088
WELDING #				2	17.195
BACKING STRIP #				2	7.167
					125.144

BAR	DIA	LENGTH (m)	UNIT WEIGHT (kg/m)	MEMBERS	TOTAL
BAR	200	0.820	378	12	11088
WELDING #				2	17.195
BACKING STRIP #				2	7.167
					125.151

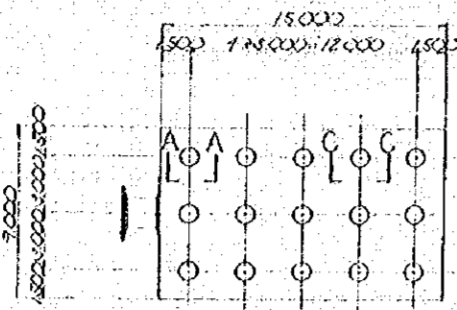
BAR	DIA	LENGTH (m)	UNIT WEIGHT (kg/m)	MEMBERS	TOTAL
BAR	200	0.820	378	12	11088
WELDING #				2	17.195
BACKING STRIP #				2	7.167
					125.151

GENERAL NOTES

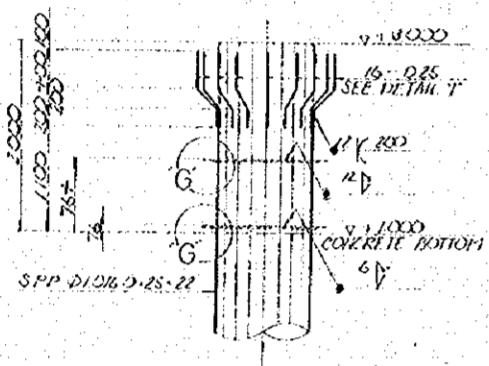
NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH REINFORCING DETAILS OF PILE HEADS (1)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>[Signature]</i>	
SCALE			
SHOWN ON FIGURE			
DATE DEC. 1975		DWG NO B-19	

KEY PLAN OF DOLPHIN

Scale 1:200

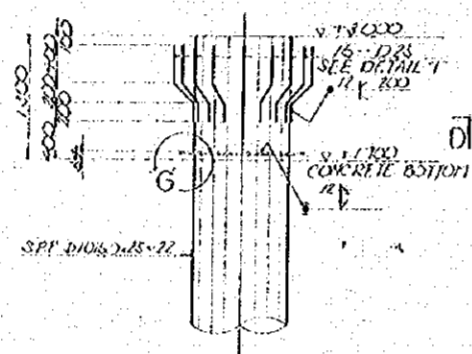


TYPE - A
SECTION A-A



SECTION B-B

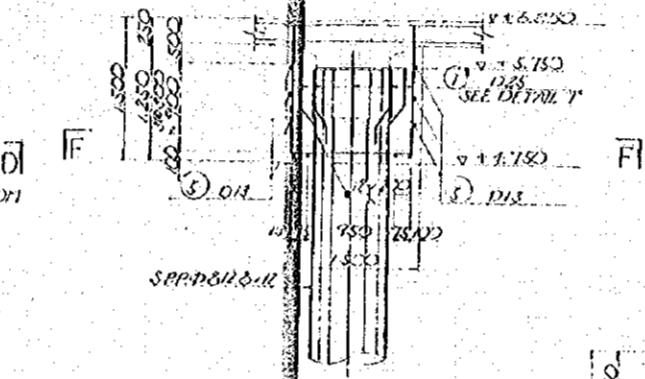
TYPE - B
SECTION C-C
Scale 1:40



SECTION D-D

KEY PLAN OF MAINTENANCE PLATFORM

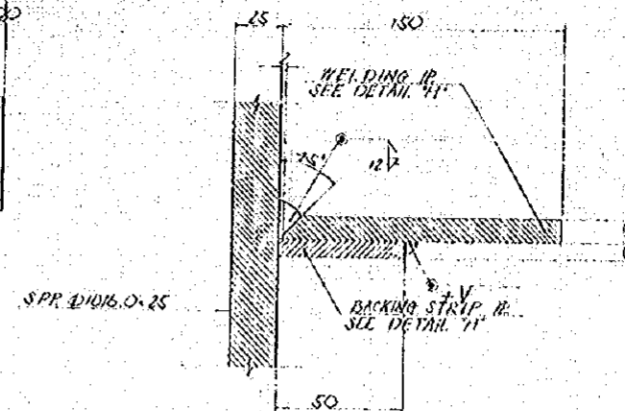
SECTION E-E



SECTION F-F

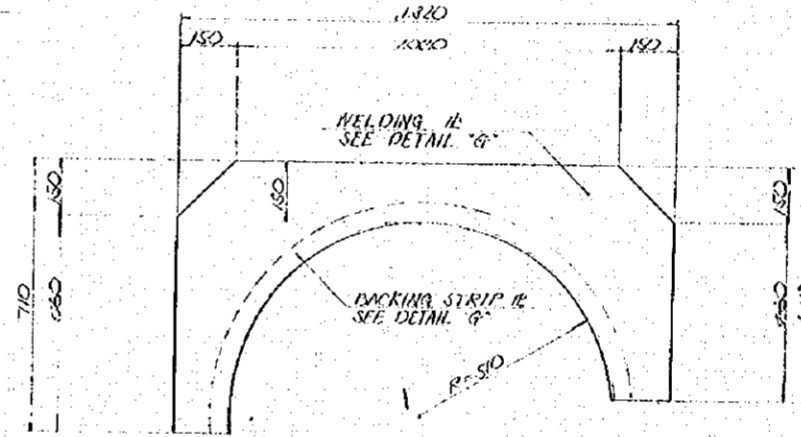
DETAIL 'G'

Scale 1:2



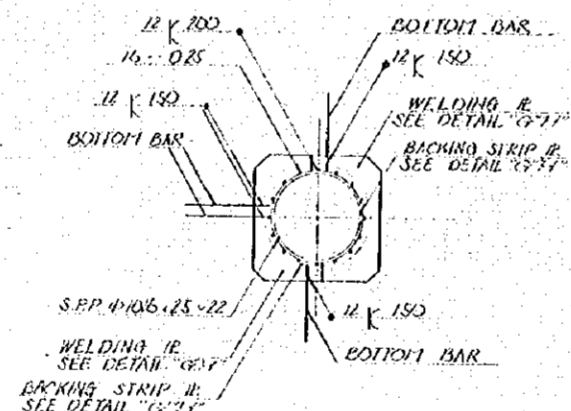
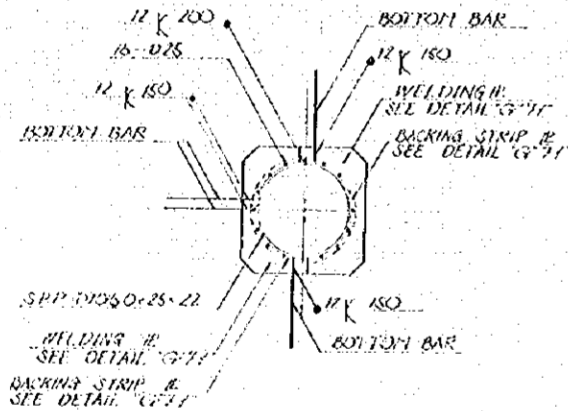
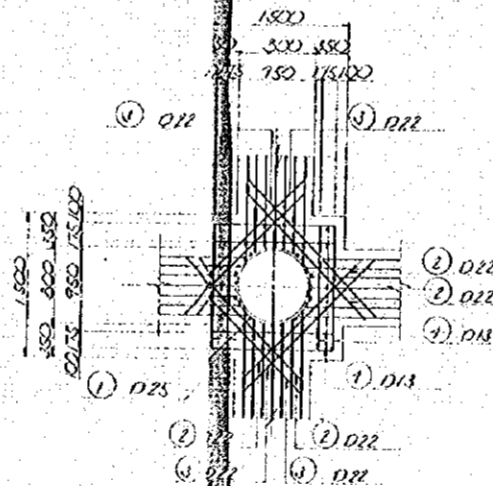
DETAIL 'H'

Scale 1:10



DETAIL 'I'

Scale 1:40



MATERIAL QUANTITIES/PILE

(TYPE - A)					
BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR	1225	0.530	475	16	86.016
WELDING				1	164.712
BACKING STRIP				1	244.151

(TYPE - B)					
BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
BAR	025	0.830	475	16	64.016
WELDING				2	11.563
BACKING STRIP				2	192.624

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
①	1225	0.530	475	10	86.016
②	022	1.200	304	7	21.280
③	022	1.200	304	7	21.280
④	015	1.200	0775	5	11.563
⑤	025	1.200	475	4	15.400
⑥	025	1.200	475	4	15.400

GENERAL NOTES

NO. DATE DESCRIPTION APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH

REINFORCING DETAILS
OF
PILE HEADS (2)

JAPAN INTERNATIONAL COOPERATION AGENCY

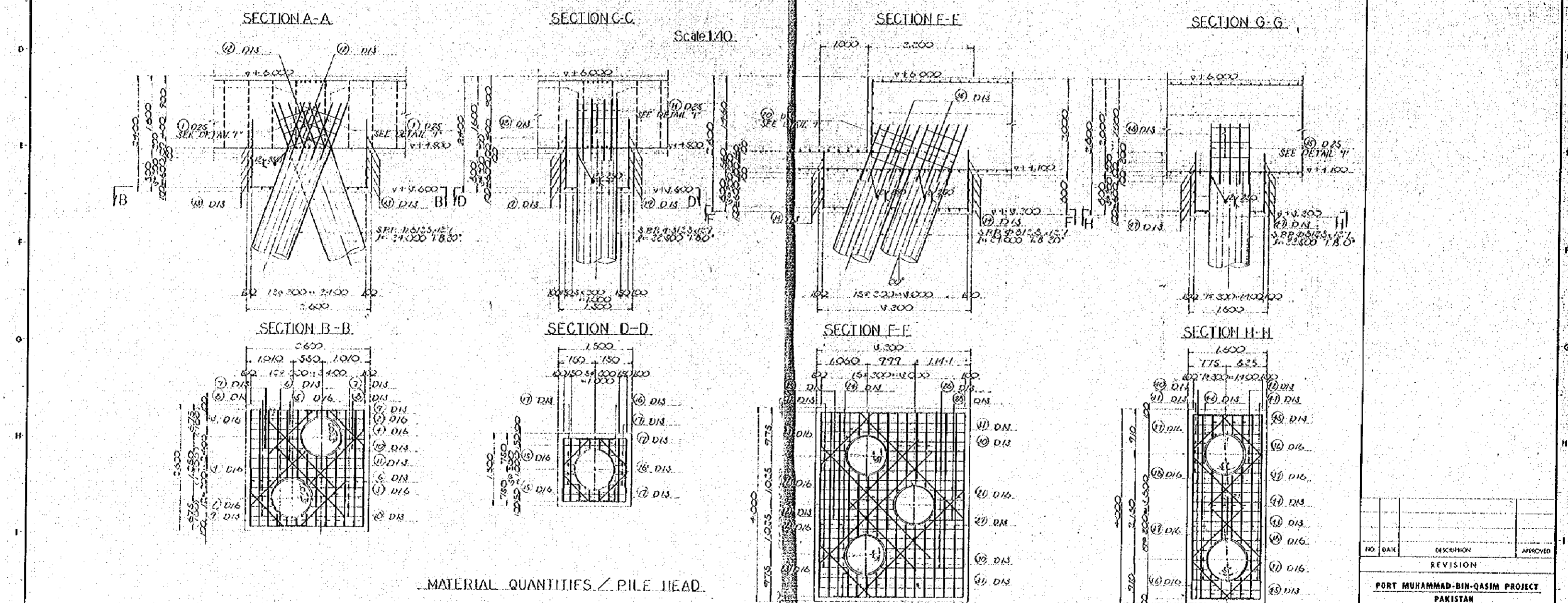
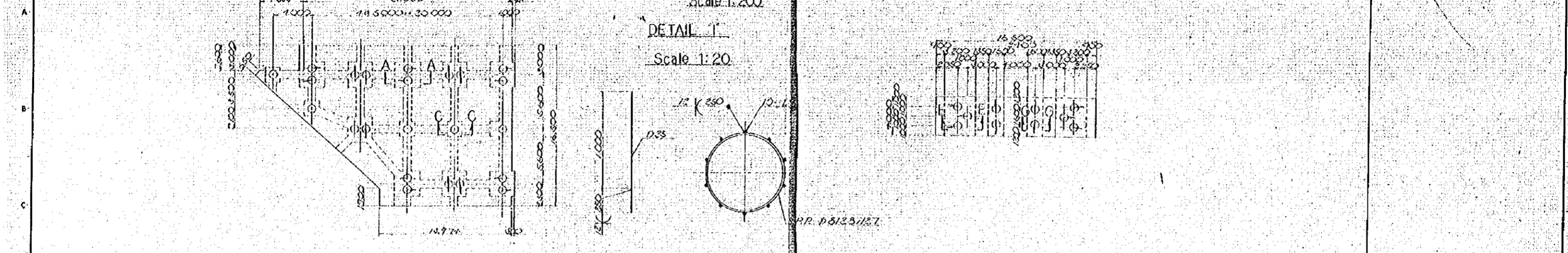
CONSULTANTS
APPROVED CHECKED DESIGNED DRAWING

SCALE
REV. No.

SHOWN ON FIGURE
DATE DEC. 1975 DWG. NO. (1) - 20

APPROACH TRESTLE PILE BENT PLAN

Scale 1:200



MATERIAL QUANTITIES / PILE HEAD

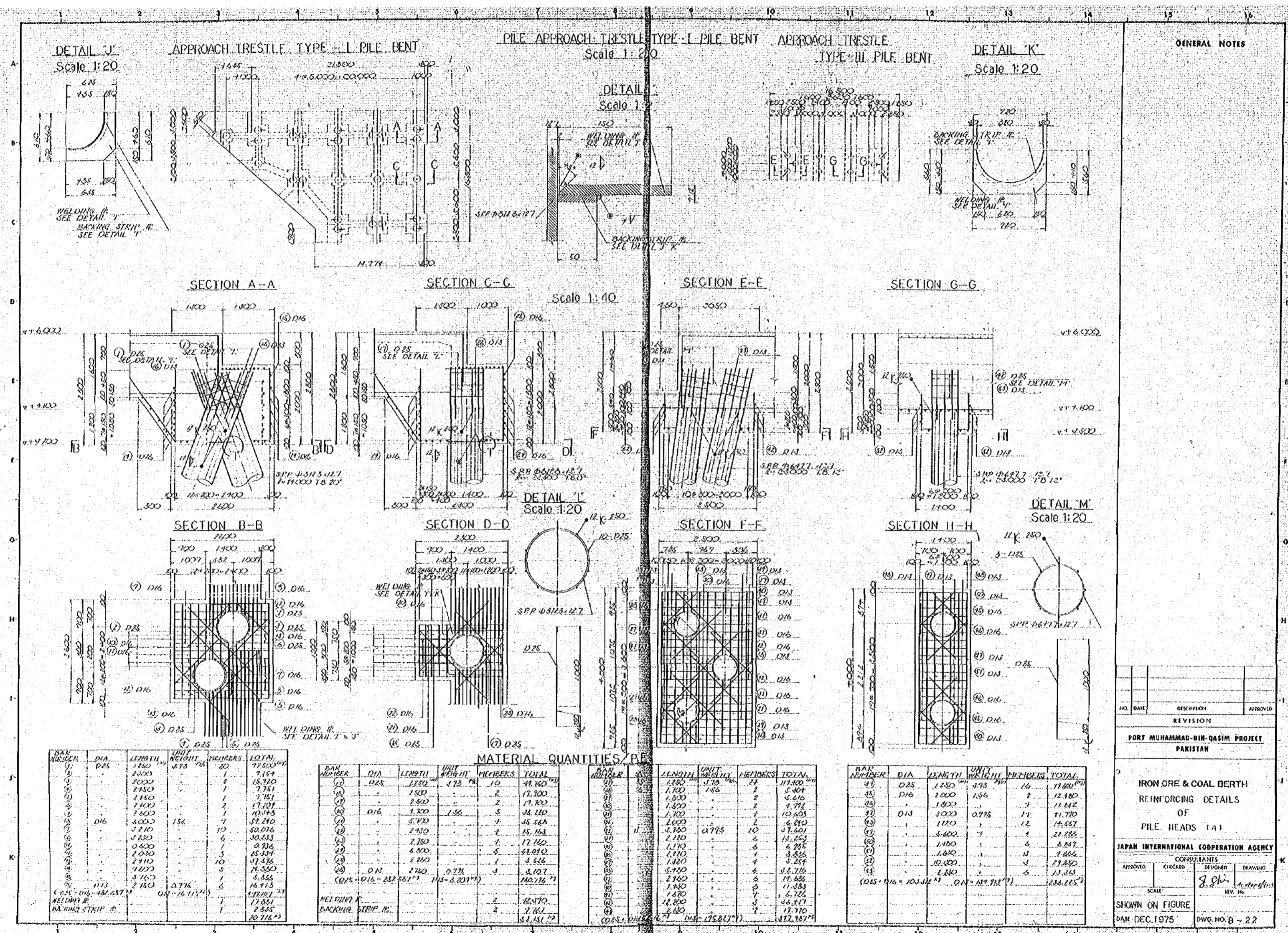
CLASS NUMBER	DIA	LENGTH	UNIT WEIGHT	NUMBERS	TOTAL
1	D25	1.500	3.75	20	71.500
2	D16	1.780	1.58	7	4.551
3	D16	1.780	1.58	2	5.760
4	D16	2.000	1.58	2	6.210
5	D16	2.000	1.58	1	6.210
6	D16	2.000	1.58	11	56.714
7	D16	1.500	1.58	5	20.513
8	D16	1.500	1.58	5	15.111
9	D16	1.500	1.58	3	12.184
10	D16	0.500	1.58	1	11.441
11	D16	0.500	1.58	1	0.577
12	D16	2.500	1.58	5	16.715
13	D16	1.500	1.58	5	71.740
14	D16	2.000	1.58	1	110.565

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	NUMBERS	TOTAL
1	D25	1.850	3.98	10	71.780
2	D16	1.710	1.58	1	10.255
3	D16	1.710	1.58	3	32.614
4	D16	1.550	1.58	5	15.111
5	D16	2.750	1.58	1	8.247
6	D16	3.500	1.58	1	25.820
7	D16	1.500	1.58	7	150.157

BAR NUMBER	LENGTH	UNIT WEIGHT	NUMBERS	TOTAL
1	2.850	3.98	10	117.800
2	4.600	1.58	1	12.184
3	2.000	1.58	2	6.210
4	2.160	1.58	2	7.176
5	5.100	0.785	3	12.184
6	1.780	1.58	1	11.041
7	2.550	1.58	3	22.746
8	1.740	1.58	3	17.013
9	1.550	1.58	1	11.441
10	5.200	1.58	3	17.882
11	2.700	1.58	3	21.711
12	1.710	1.58	3	12.614
13	1.500	1.58	1	6.210
14	2.740	1.58	1	12.614
15	1.500	1.58	5	47.513

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	NUMBERS	TOTAL
1	D25	1.850	3.98	20	71.500
2	D16	1.780	1.58	7	4.551
3	D16	1.780	1.58	2	5.760
4	D16	2.000	1.58	2	6.210
5	D16	2.000	1.58	1	6.210
6	D16	2.000	1.58	11	56.714
7	D16	1.500	1.58	5	20.513
8	D16	1.500	1.58	5	15.111
9	D16	1.500	1.58	3	12.184
10	D16	0.500	1.58	1	11.441
11	D16	0.500	1.58	1	0.577
12	D16	2.500	1.58	5	16.715
13	D16	1.500	1.58	5	71.740
14	D16	2.000	1.58	1	110.565

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIH-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH			
REINFORCING DETAILS OF PILE HEADS 131			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWING
SCALE: 1:200			
SHOWN ON FIGURE			
DATE DEC 1975 ... DWG. NO. B-21			



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			

IRON ORE & COAL BERTH
REINFORCING DETAILS
OF
PILE HEADS (A)

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>R. Ch...</i>	<i>M. Asif...</i>
SCALE: _____			
SHOWN ON FIGURE _____		DATE DEC. 1975	
		DWG. NO. B-22	

MATERIAL QUANTITIES (PARTIAL)

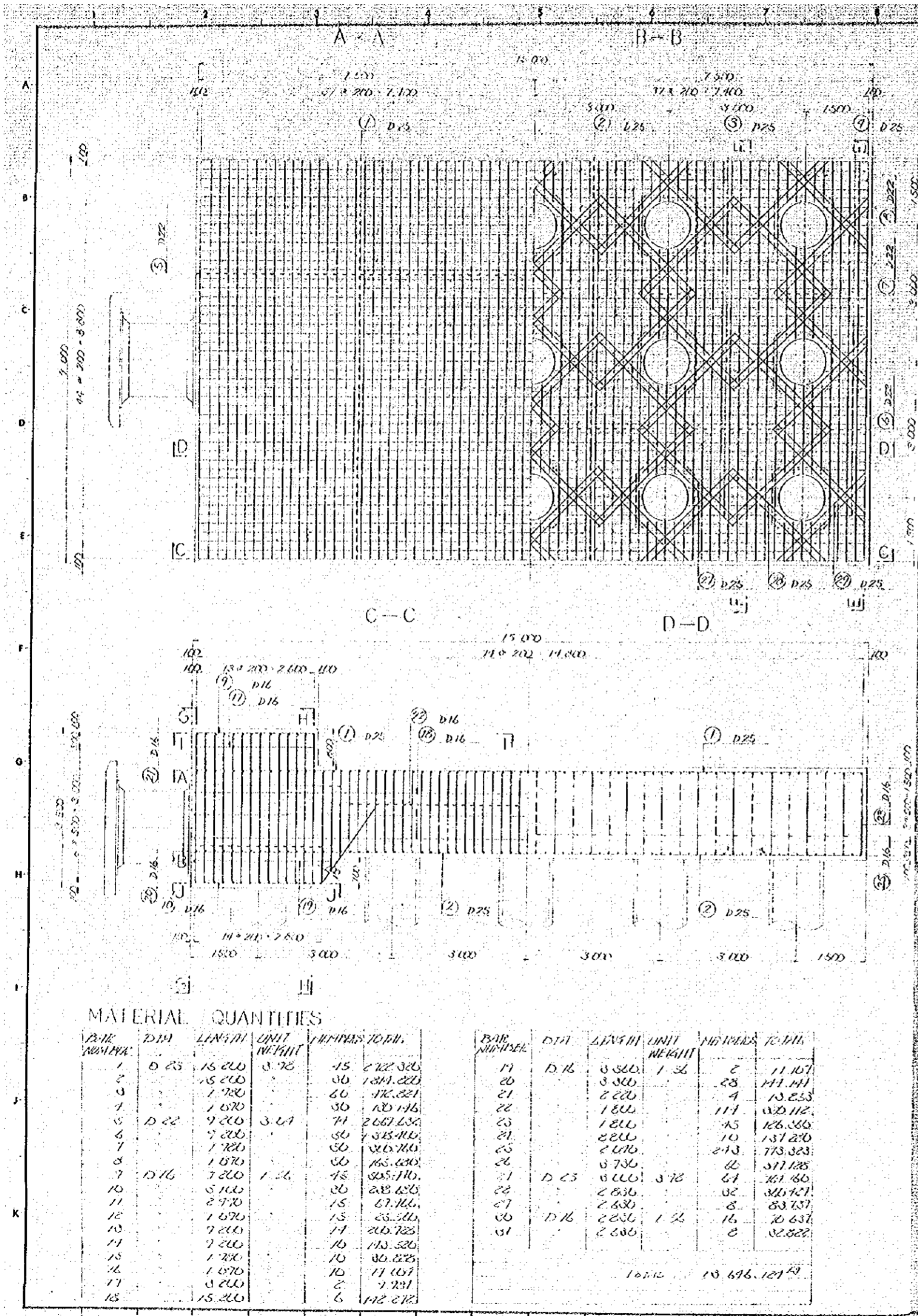
BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
(1)	D25	2100	0.78	20	7154
(2)	D25	2400	0.78	2	1520
(3)	D25	2000	0.78	1	760
(4)	D25	1450	0.78	1	715
(5)	D25	1450	0.78	1	715
(6)	D25	1700	0.78	2	1472
(7)	D16	1600	0.278	1	160
(8)	D16	1600	0.278	1	160
(9)	D16	1600	0.278	1	160
(10)	D16	1600	0.278	1	160
(11)	D16	1600	0.278	1	160
(12)	D16	1600	0.278	1	160
(13)	D16	1600	0.278	1	160
(14)	D16	1600	0.278	1	160
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(16)	D16	1600	0.278	1	160
(17)	D16	1600	0.278	1	160
(18)	D16	1600	0.278	1	160
(19)	D16	1600	0.278	1	160
(20)	D16	1600	0.278	1	160
(21)	D16	1600	0.278	1	160
(22)	D16	1600	0.278	1	160
(23)	D16	1600	0.278	1	160
(24)	D16	1600	0.278	1	160
(25)	D16	1600	0.278	1	160
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(27)	D16	1600	0.278	1	160
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(31)	D16	1600	0.278	1	160
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(37)	D16	1600	0.278	1	160
(38)	D16	1600	0.278	1	160
(39)	D16	1600	0.278	1	160
(40)	D16	1600	0.278	1	160
(41)	D16	1600	0.278	1	160
(42)	D16	1600	0.278	1	160
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(44)	D16	1600	0.278	1	160
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(46)	D16	1600	0.278	1	160
(47)	D16	1600	0.278	1	160
(48)	D16	1600	0.278	1	160
(49)	D16	1600	0.278	1	160
(50)	D16	1600	0.278	1	160
(51)	D16	1600	0.278	1	160
(52)	D16	1600	0.278	1	160
(53)	D16	1600	0.278	1	160
(54)	D16	1600	0.278	1	160
(55)	D16	1600	0.278	1	160
(56)	D16	1600	0.278	1	160
(57)	D16	1600	0.278	1	160
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(59)	D16	1600	0.278	1	160
(60)	D16	1600	0.278	1	160
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(80)	D16	1600	0.278	1	160
(81)	D16	1600	0.278	1	160
(82)	D16	1600	0.278	1	160
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(85)	D16	1600	0.278	1	160
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(88)	D16	1600	0.278	1	160
(89)	D16	1600	0.278	1	160
(90)	D16	1600	0.278	1	160
(91)	D16	1600	0.278	1	160
(92)	D16	1600	0.278	1	160
(93)	D16	1600	0.278	1	160
(94)	D16	1600	0.278	1	160
(95)	D16	1600	0.278	1	160
(96)	D16	1600	0.278	1	160
(97)	D16	1600	0.278	1	160
(98)	D16	1600	0.278	1	160
(99)	D16	1600	0.278	1	160
(100)	D16	1600	0.278	1	160

MATERIAL QUANTITIES (PARTIAL)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
(1)	D25	1850	0.78	10	4950
(2)	D25	1850	0.78	2	1770
(3)	D25	1850	0.78	2	1770
(4)	D16	1300	0.278	5	3820
(5)	D16	1300	0.278	1	382
(6)	D16	1300	0.278	1	382
(7)	D16	1300	0.278	1	382
(8)	D16	1300	0.278	1	382
(9)	D16	1300	0.278	1	382
(10)	D16	1300	0.278	1	382
(11)	D16	1300	0.278	1	382
(12)	D16	1300	0.278	1	382
(13)	D16	1300	0.278	1	382
(14)	D16	1300	0.278	1	382
(15)	D16	1300	0.278	1	382
(16)	D16	1300	0.278	1	382
(17)	D16	1300	0.278	1	382
(18)	D16	1300	0.278	1	382
(19)	D16	1300	0.278	1	382
(20)	D16	1300	0.278	1	382
(21)	D16	1300	0.278	1	382
(22)	D16	1300	0.278	1	382
(23)	D16	1300	0.278	1	382
(24)	D16	1300	0.278	1	382
(25)	D16	1300	0.278	1	382
(26)	D16	1300	0.278	1	382
(27)	D16	1300	0.278	1	382
(28)	D16	1300	0.278	1	382
(29)	D16	1300	0.278	1	382
(30)	D16	1300	0.278	1	382
(31)	D16	1300	0.278	1	382
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(60)	D16	1300	0.278	1	382
(61)	D16	1300	0.278	1	382
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(63)	D16	1300	0.278	1	382
(64)	D16	1300	0.278	1	382
(65)	D16	1300	0.278	1	382
(66)	D16	1300	0.278	1	382
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(69)	D16	1300	0.278	1	382
(70)	D16	1300	0.278	1	382
(71)	D16	1300	0.278	1	382
(72)	D16	1300	0.278	1	382
(73)	D16	1300	0.278	1	382
(74)	D16	1300	0.278	1	382
(75)	D16	1300	0.278	1	382
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(77)	D16	1300	0.278	1	382
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(86)	D16	1300	0.278	1	382
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(88)	D16	1300	0.278	1	382
(89)	D16	1300	0.278	1	382
(90)	D16	1300	0.278	1	382
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(92)	D16	1300	0.278	1	382
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(94)	D16	1300	0.278	1	382
(95)	D16	1300	0.278	1	382
(96)	D16	1300	0.278	1	382
(97)	D16	1300	0.278	1	382
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(99)	D16	1300	0.278	1	382
(100)	D16	1300	0.278	1	382

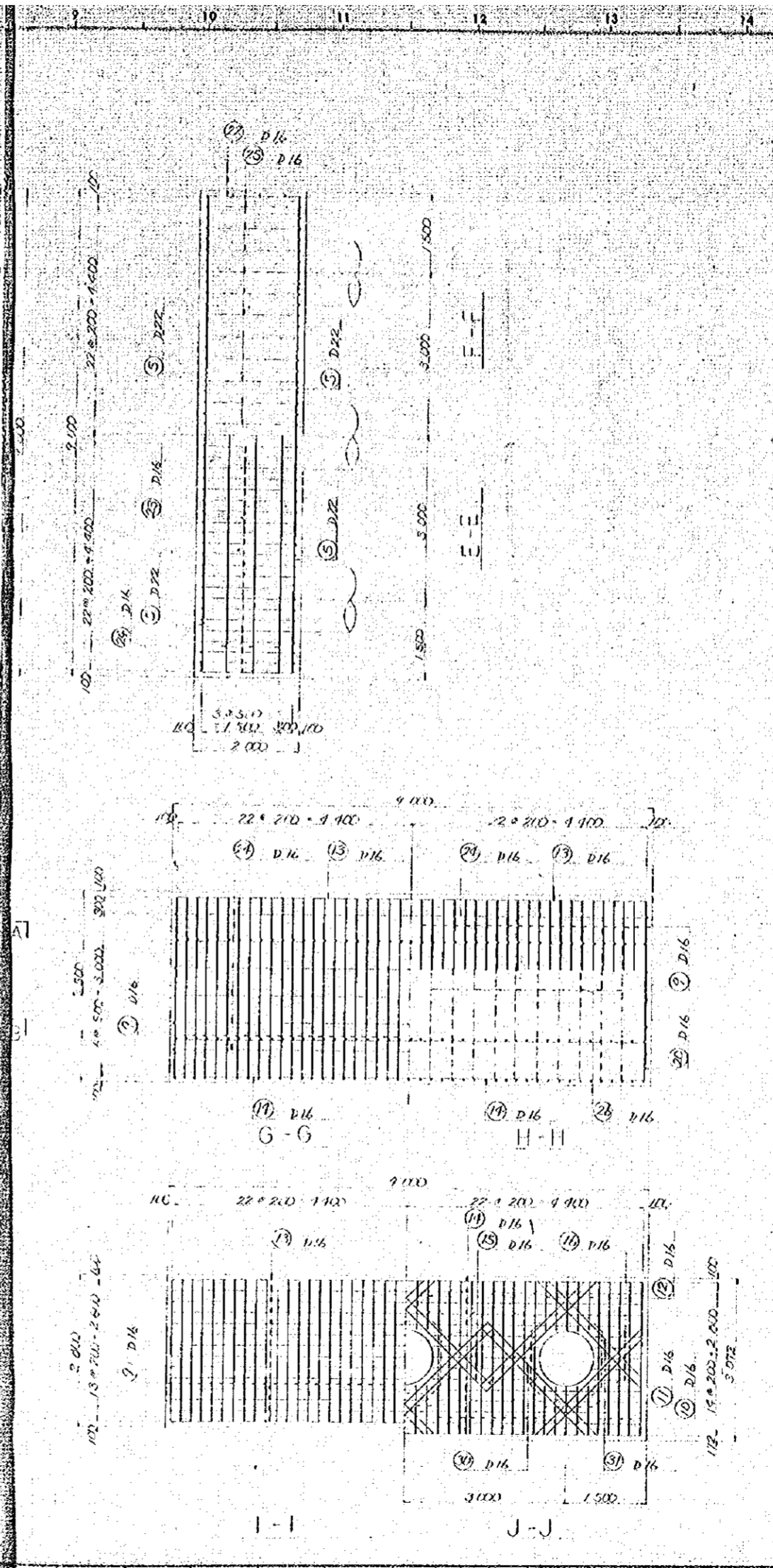
MATERIAL QUANTITIES (PARTIAL)

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	MEMBERS	TOTAL
(1)	D25	1850	0.78	10	4950
(2)	D25	1850	0.78	2	1770
(3)	D25	1850	0.78	2	1770
(4)	D16	1300	0.278	5	3820
(5)	D16	1300	0.278	1	382
(6)	D16	1300	0.278	1	382
(7)	D16	1300	0.278	1	382
(8)	D16	1300	0.278	1	382
(9)	D16	1300	0.278	1	382
(10)	D16	1300	0.278	1	382
(11)	D16	1300	0.278	1	382
(12)	D16	1300	0.278	1	382
(13)	D16	1300	0.278	1	382
(14)	D16	1300	0.278	1	382
(15)	D16	1300	0.278	1	382
(16)	D16	1300	0.278	1	382
(17)	D16	1300	0.278	1	382
(18)	D16	1300	0.278	1	382
(19)	D16	1300	0.278	1	



MATERIAL QUANTITIES

BAR NO.	DIAM.	LENGTH	UNIT	QUANTITY	WEIGHT	BAR NO.	DIAM.	LENGTH	UNIT	QUANTITY	WEIGHT
1	D 25	15 000	M	15	612.320	11	D 16	5 100	M	32	111.107
2		15 000	M	30	1224.640	20		3 500	M	28	111.111
3		1 700	M	20	72.821	21		2 200	M	4	15.253
4		1 570	M	30	132.116	22		1 800	M	111	325.112
5	D 22	7 200	M	71	2667.630	23		1 800	M	45	126.560
6		7 200	M	50	1815.000	24		2 800	M	10	151.220
7		1 700	M	50	216.710	25		2 400	M	213	773.323
8		1 570	M	50	165.030	26		6 700	M	22	511.125
9	D 16	7 200	M	75	265.170	27	D 25	6 000	M	61	261.180
10		5 100	M	30	218.420	28		2 800	M	32	126.727
11		2 700	M	15	67.166	29		2 800	M	8	83.757
12		1 570	M	15	25.111	30	D 16	2 800	M	16	20.637
13		7 200	M	14	216.723	31		2 800	M	2	32.822
14		7 200	M	10	110.520						
15		1 700	M	10	30.823						
16		1 570	M	10	11.657						
17		3 200	M	2	7.231						
18		15 000	M	6	112.213						



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

REVISION

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

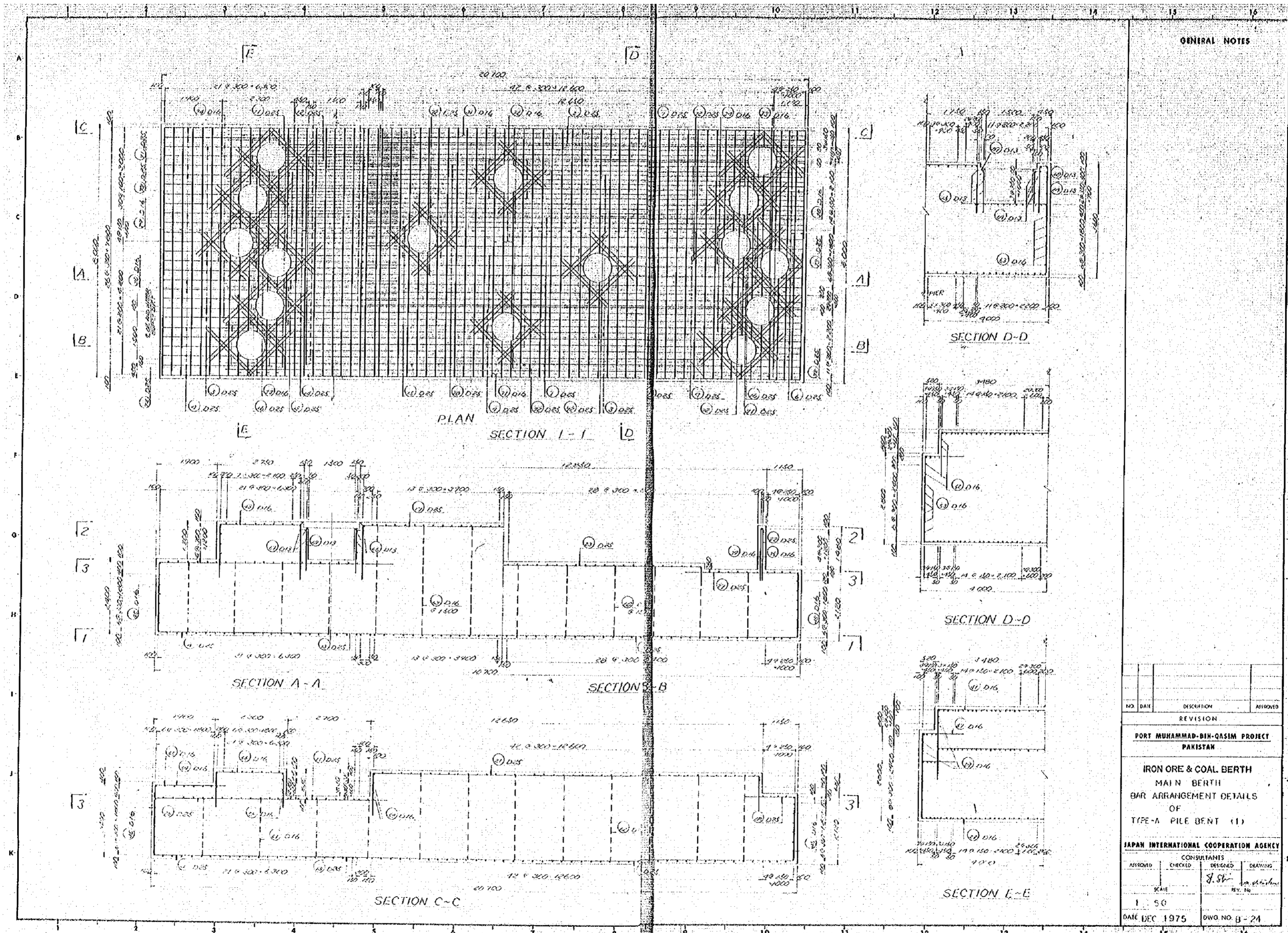
IRON ORE & COAL BERTH
MAIN BERTH
BAR ARRANGEMENT DETAILS
OF MOORING DOLPHIN

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. Sh.	

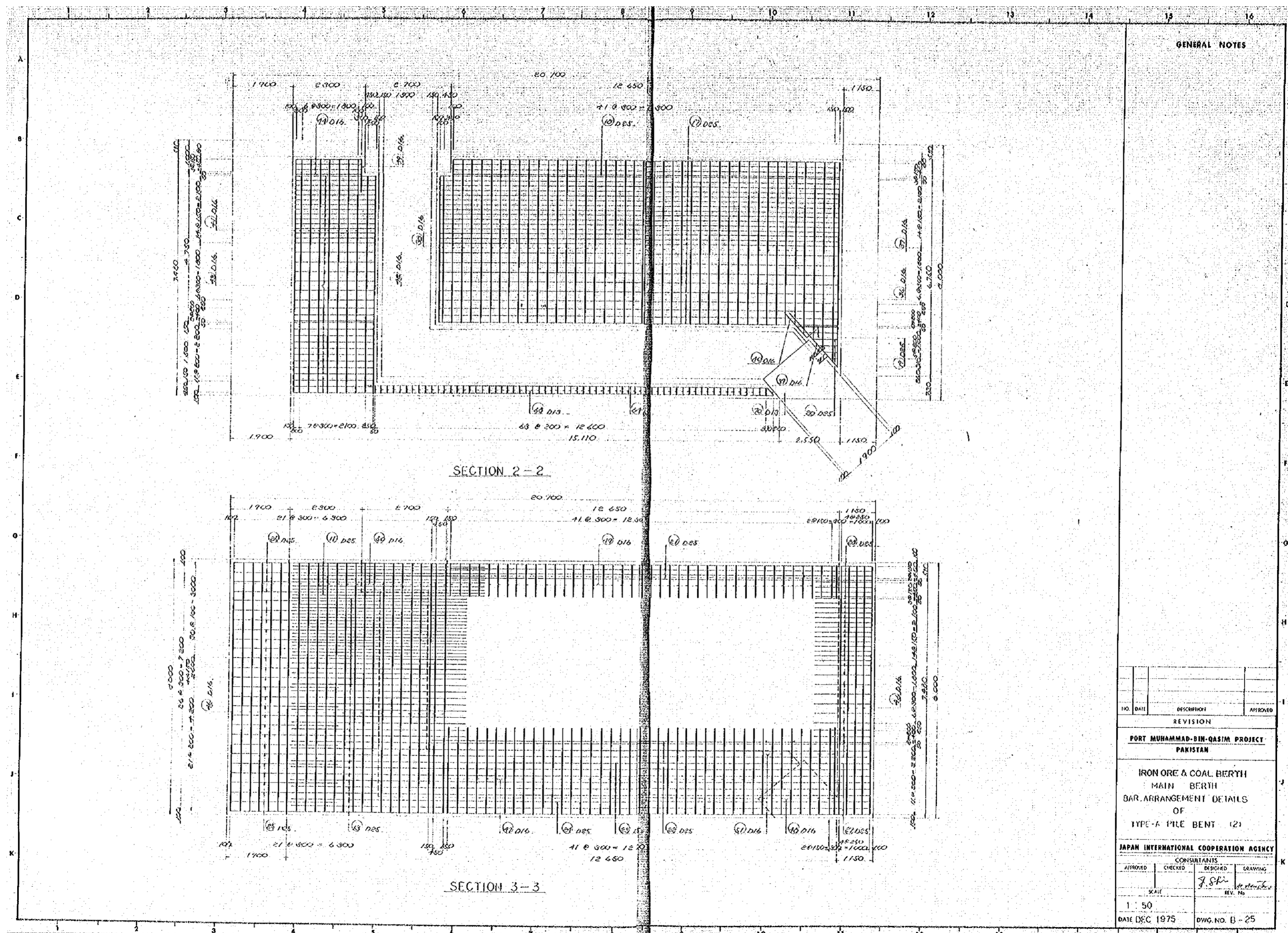
SCALE: 1:50

DATE: DEC. 1975 DWG. NO. B-23



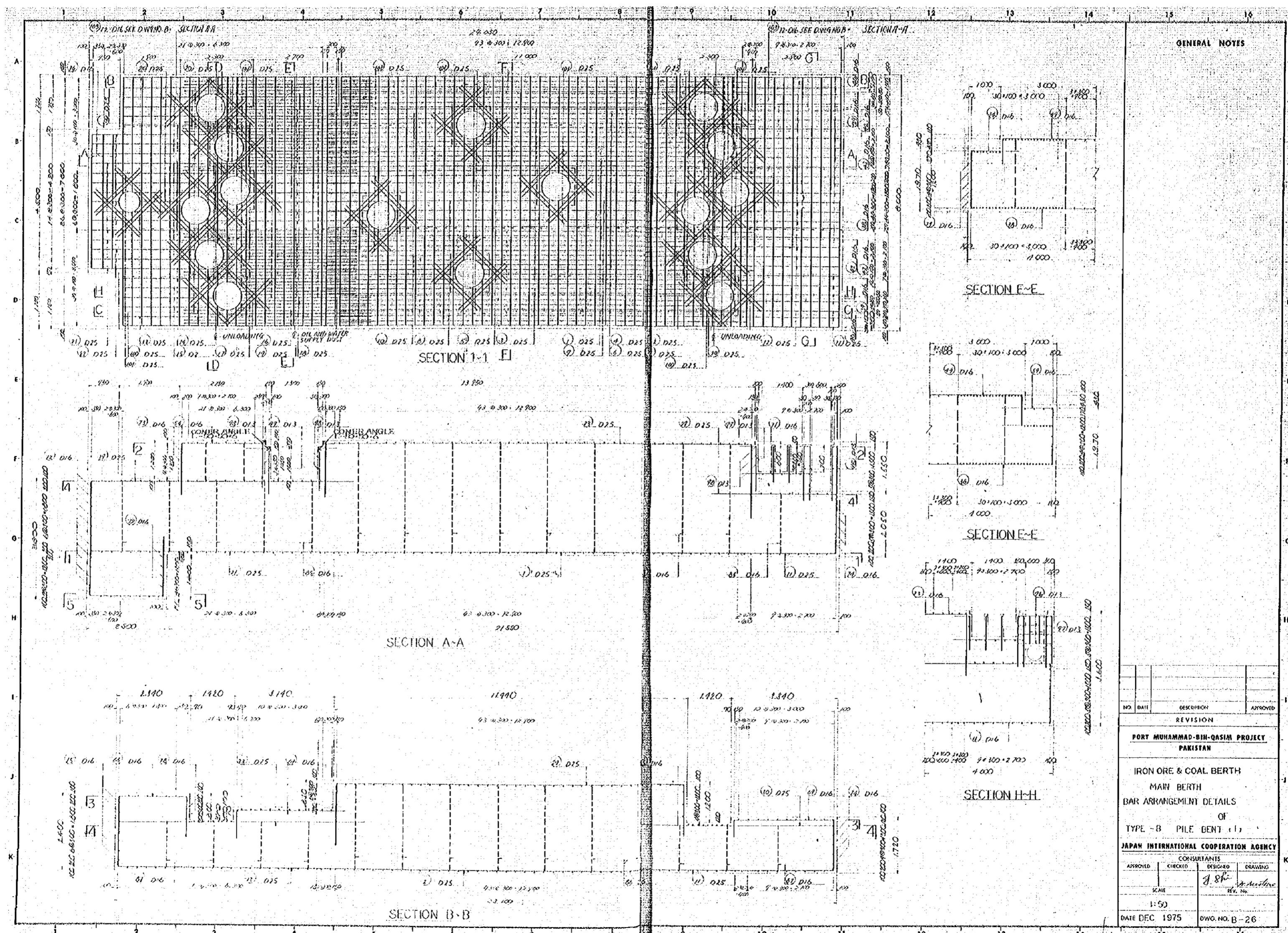
GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE-A PILE BENT (1)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
ASSIGNED		CONSULTANTS	
SCALE	CHECKED	DESIGNED	DRAWING
1 : 50		J. Sh...	...
DATE DEC 1975	DWO NO.		B-21



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE-A PILE BENT (2)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>F. Shin</i>	<i>De. Shin</i>
SCALE		REV. NO.	
1 : 50			
DATE DEC 1975		DWG. NO. B-25	



GENERAL NOTES

NO	DATE	DESCRIPTION	APPROVED

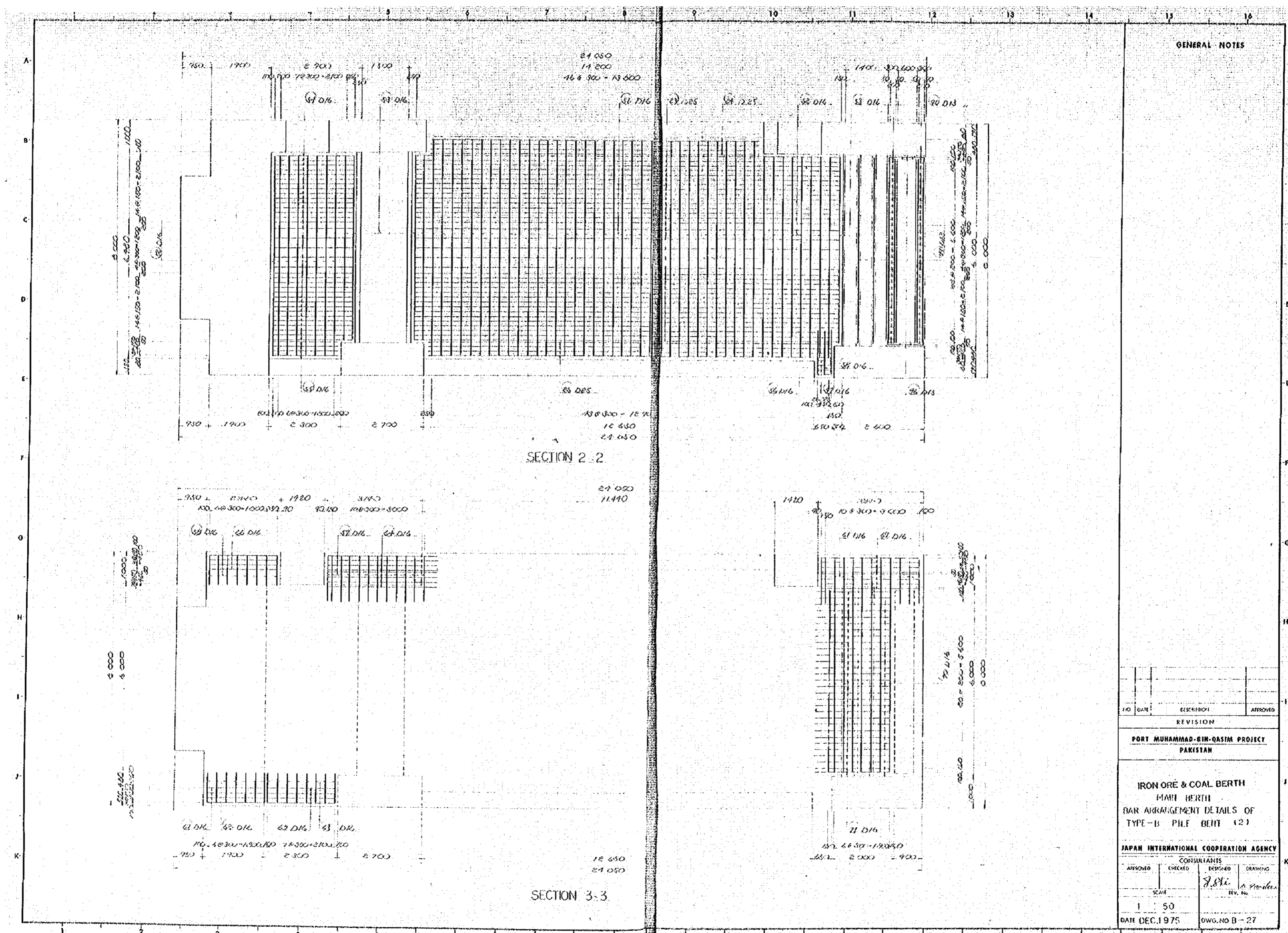
PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
MAIN BERTH
BAR ARRANGEMENT DETAILS
OF
TYPE - B PILE BENT (1)

JAPAN INTERNATIONAL COOPERATION AGENCY

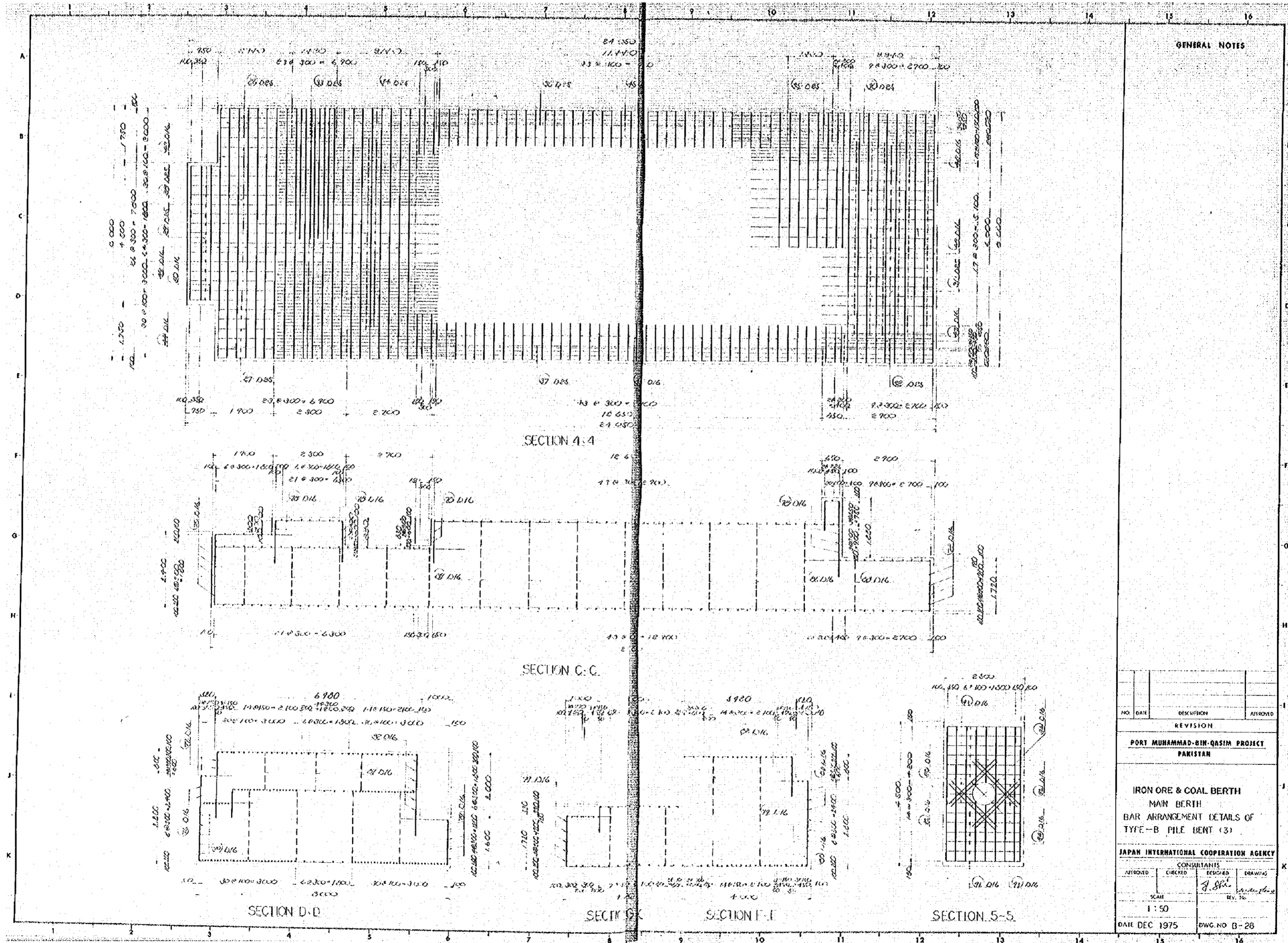
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING

SCALE: 1:50
DATE: DEC 1975
DWG. NO. B-26



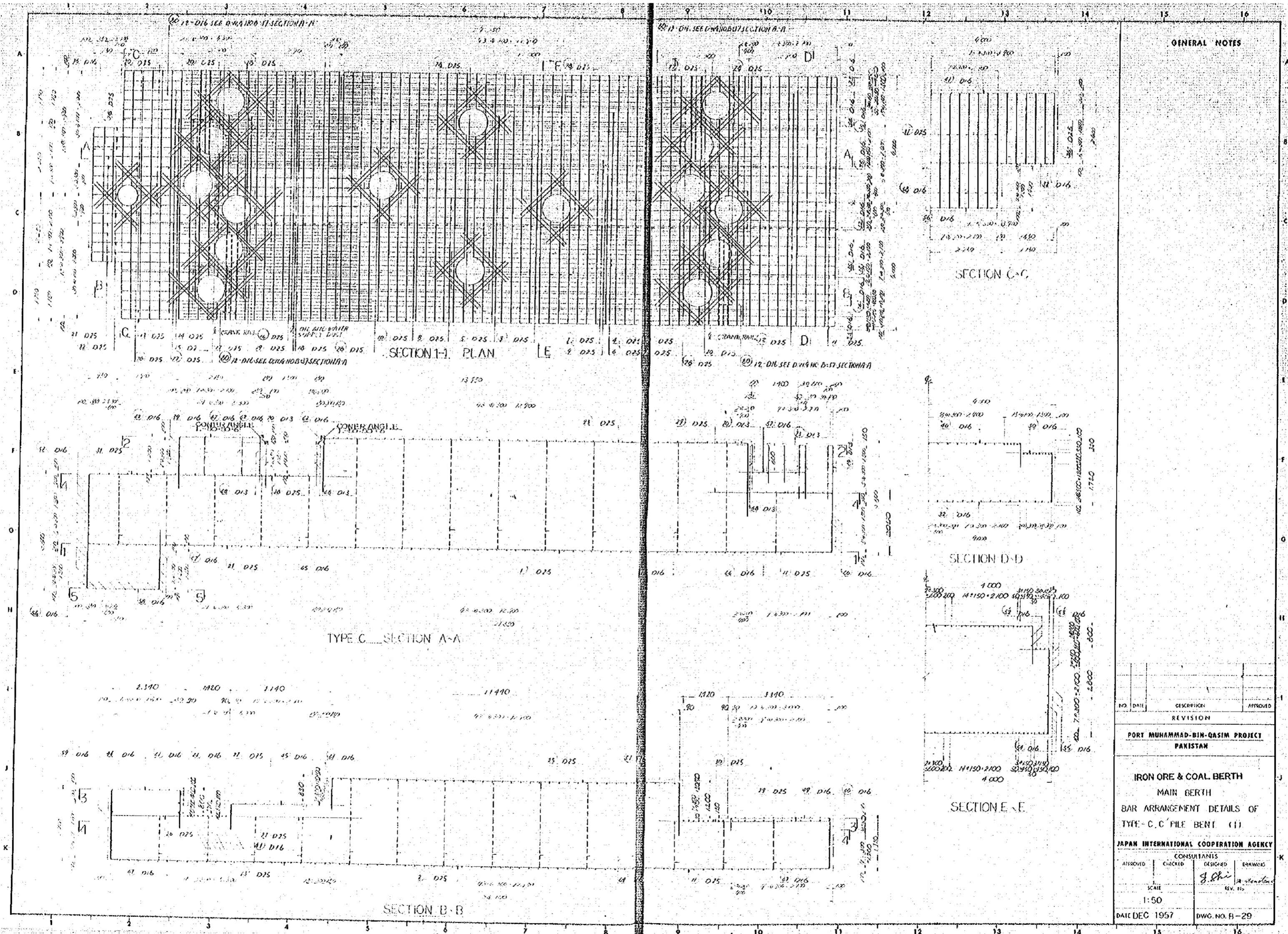
GENERAL NOTES

NO	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE-B PILE BERTH (2)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>J. Shi</i>	<i>A. Khatun</i>
SCALE		REV. No.	
1 : 50			
DATE DEC. 1975		DWG. NO B-27	



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE-B PILE BENT (3)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>[Signature]</i>	<i>[Signature]</i>
SCALE		REV. NO.	
1 : 50			
DATE DEC 1975		DWG. NO B-28	



GENERAL NOTES

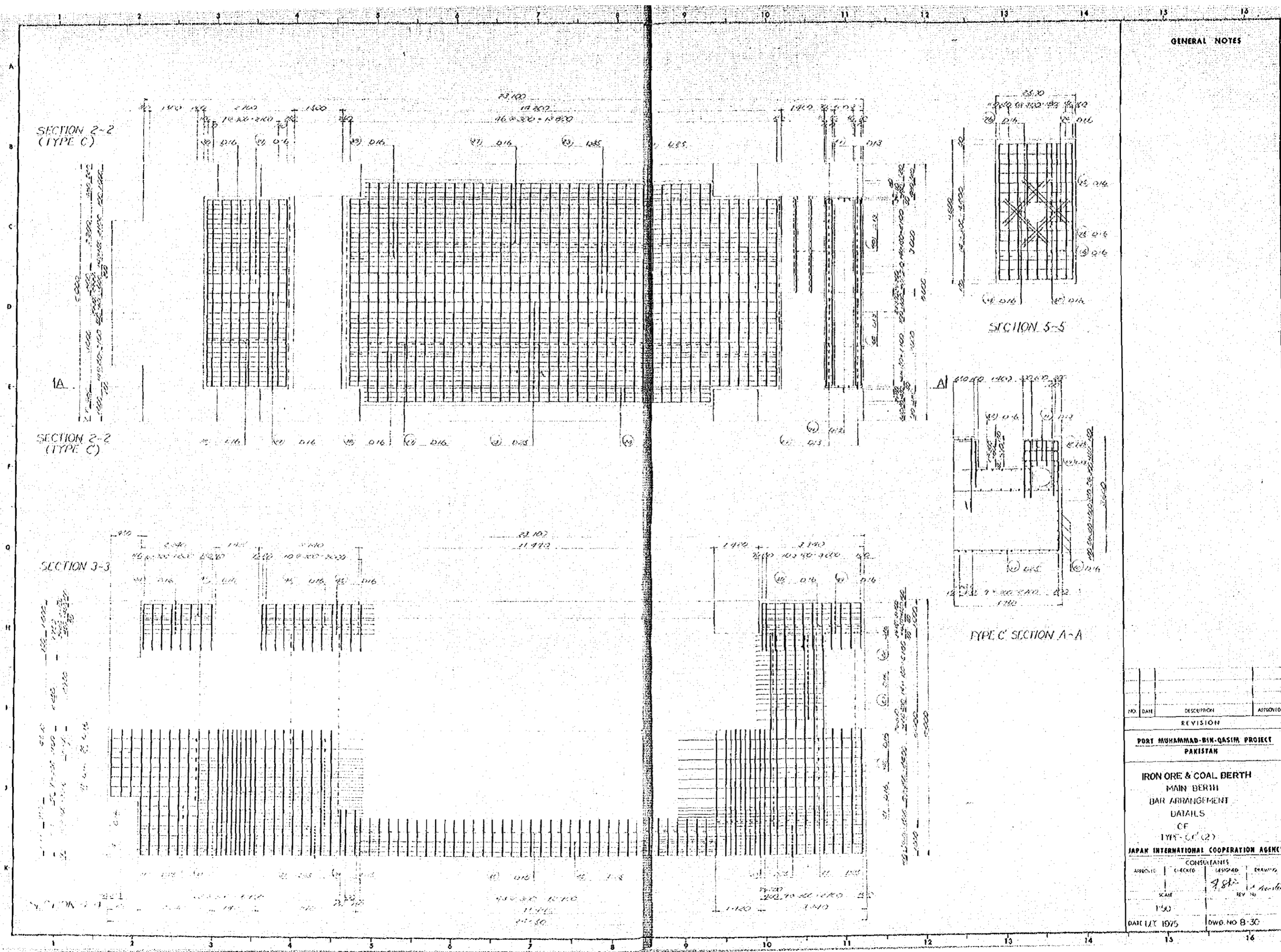
NO.	DATE	DESCRIPTION	APPROVED
REVISION			

PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
MAIN BERTH
BAR ARRANGEMENT DETAILS OF
TYPE-C, C' PILE BENT (1)

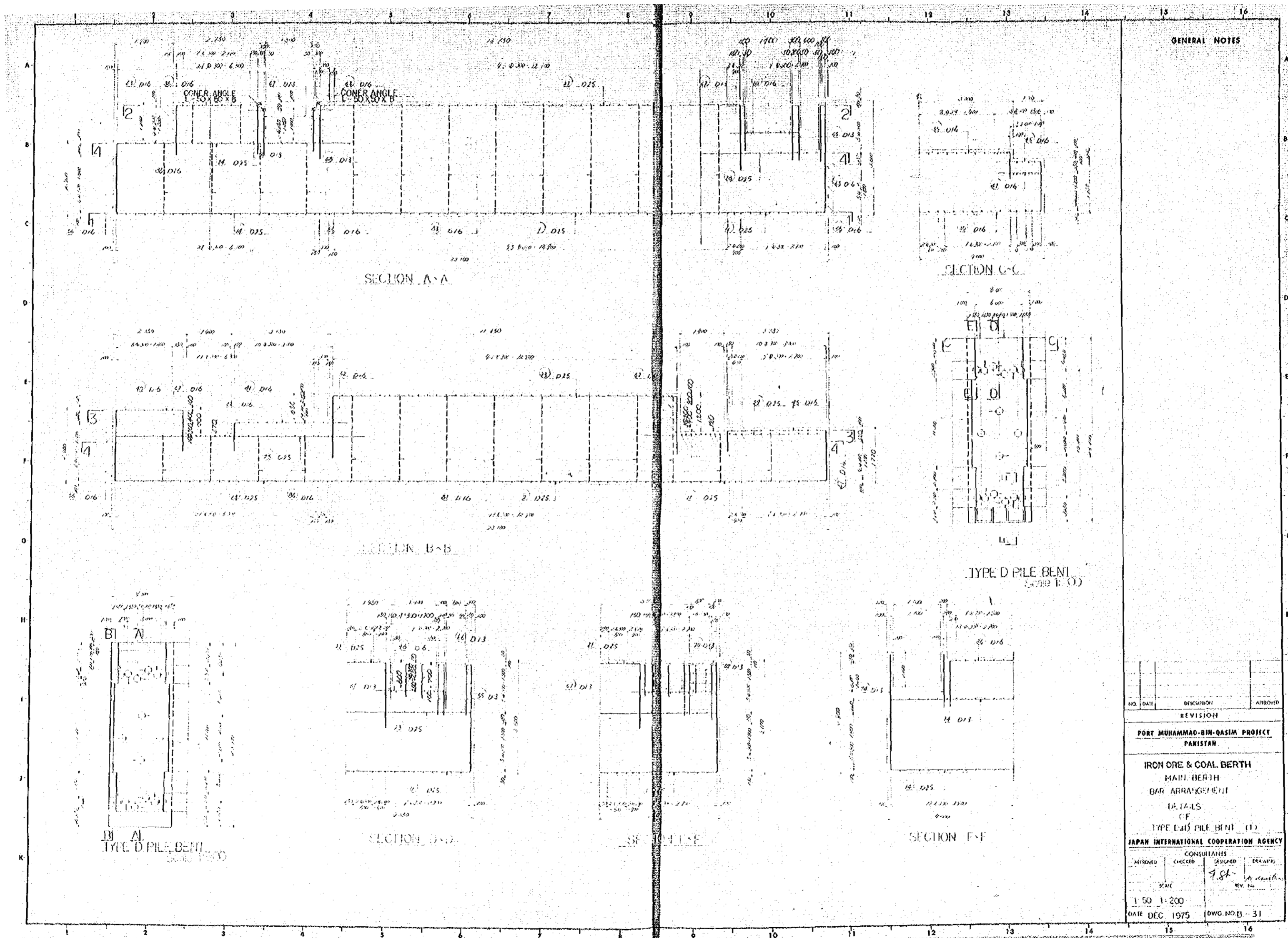
JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS		
APPROVED	CHECKED	DRAWING
		<i>J. Chi</i>
SCALE		REV. NO.
1:50		
DATE DEC 1957		DWG. NO. B-29



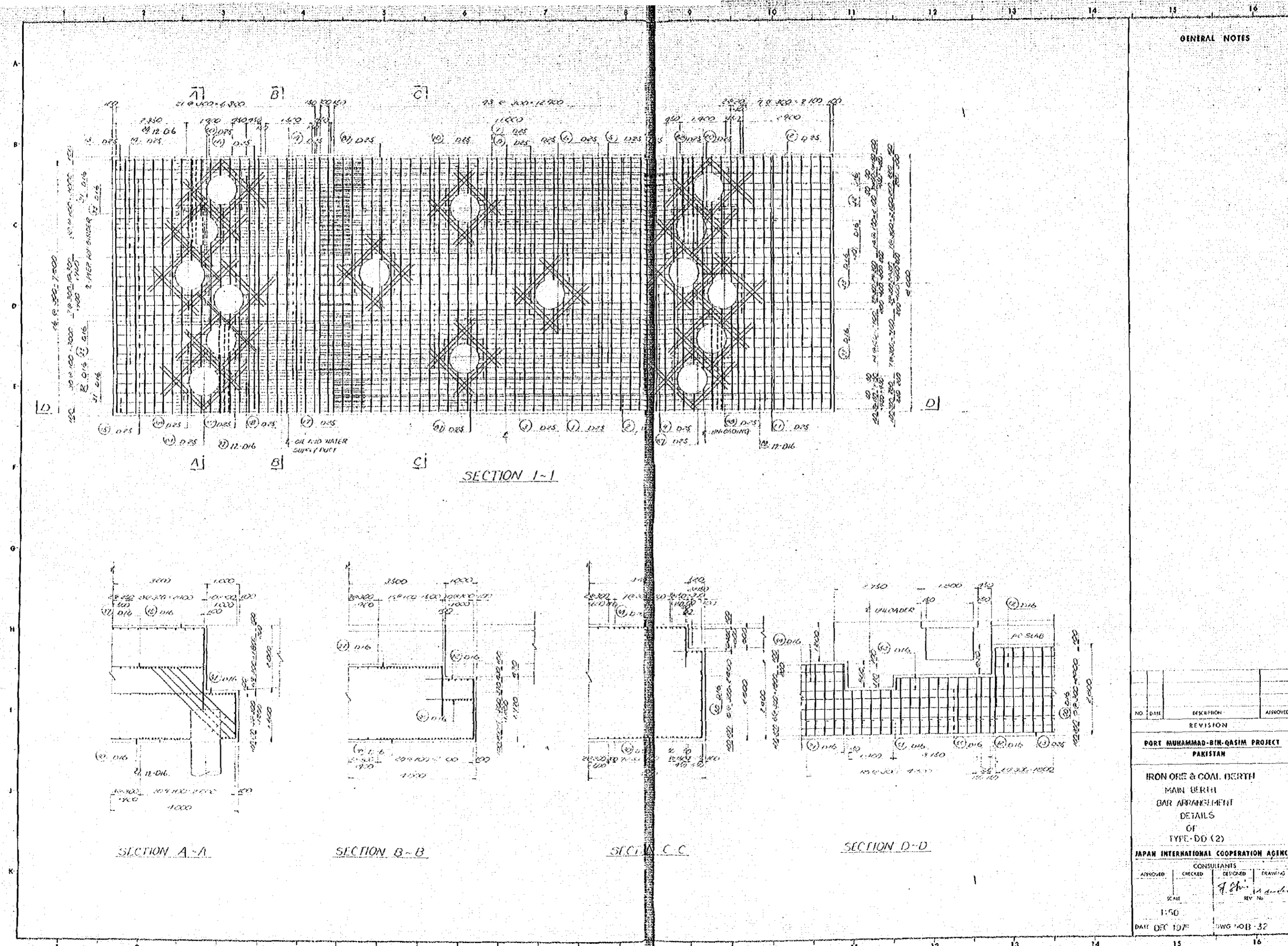
GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE C (2)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWING
		9.8.75	1. Aslam
SCALE		REV. NO.	
1:50			
DATE 1/11/1975		DWG. NO B-30	



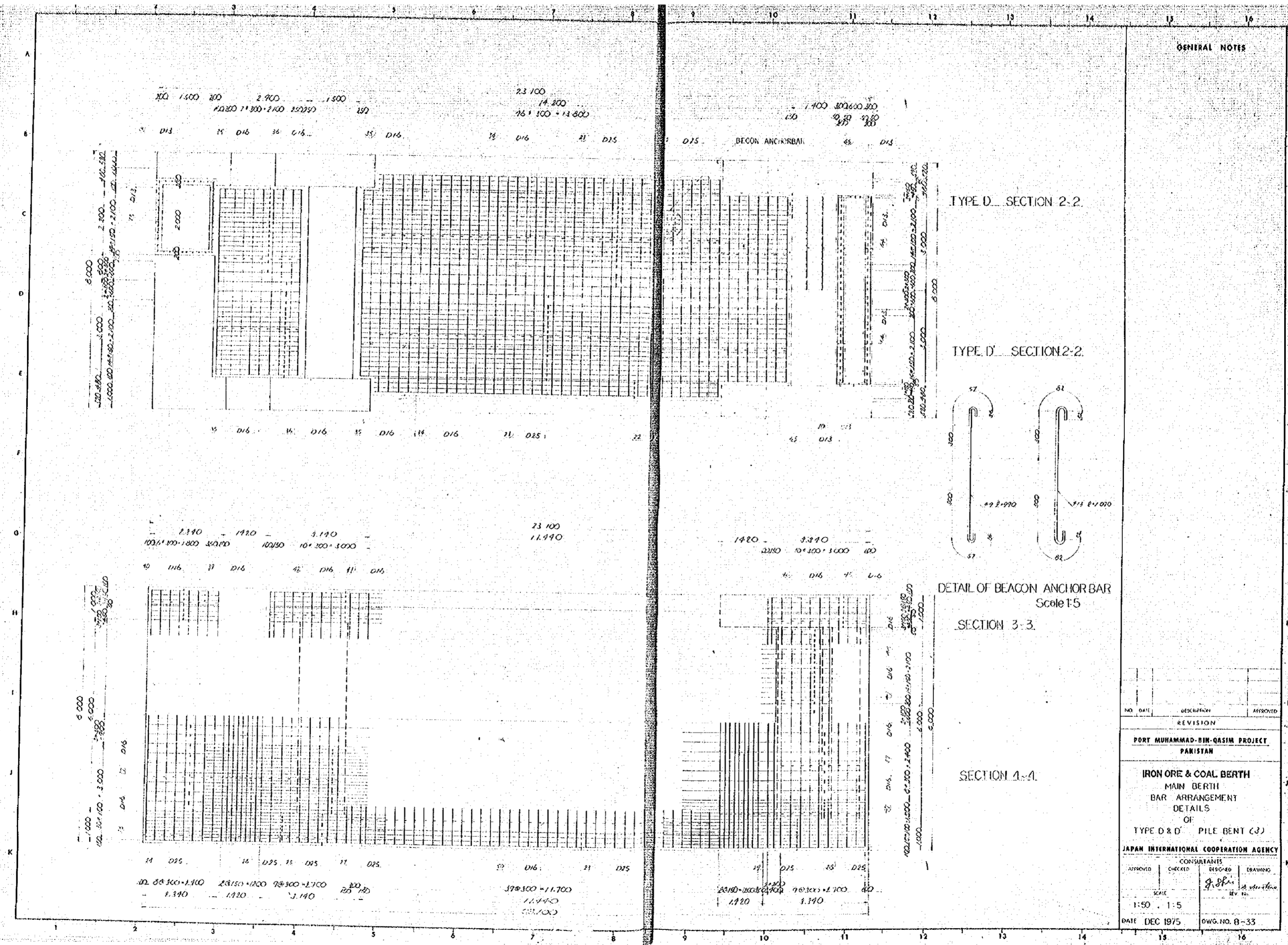
GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE D-65 PILE BENT (1)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWN
		<i>[Signature]</i>	<i>[Signature]</i>
DATE		REV. NO.	
1 50 1-200			
DATE DEC 1975		DWG. NO. B-31	



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE-D (2)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>F. Khan</i>	<i>M. Anwar</i>
SCALE		REV. No.	
1:50			
DATE DEC 1977		DWG NO. B-32	

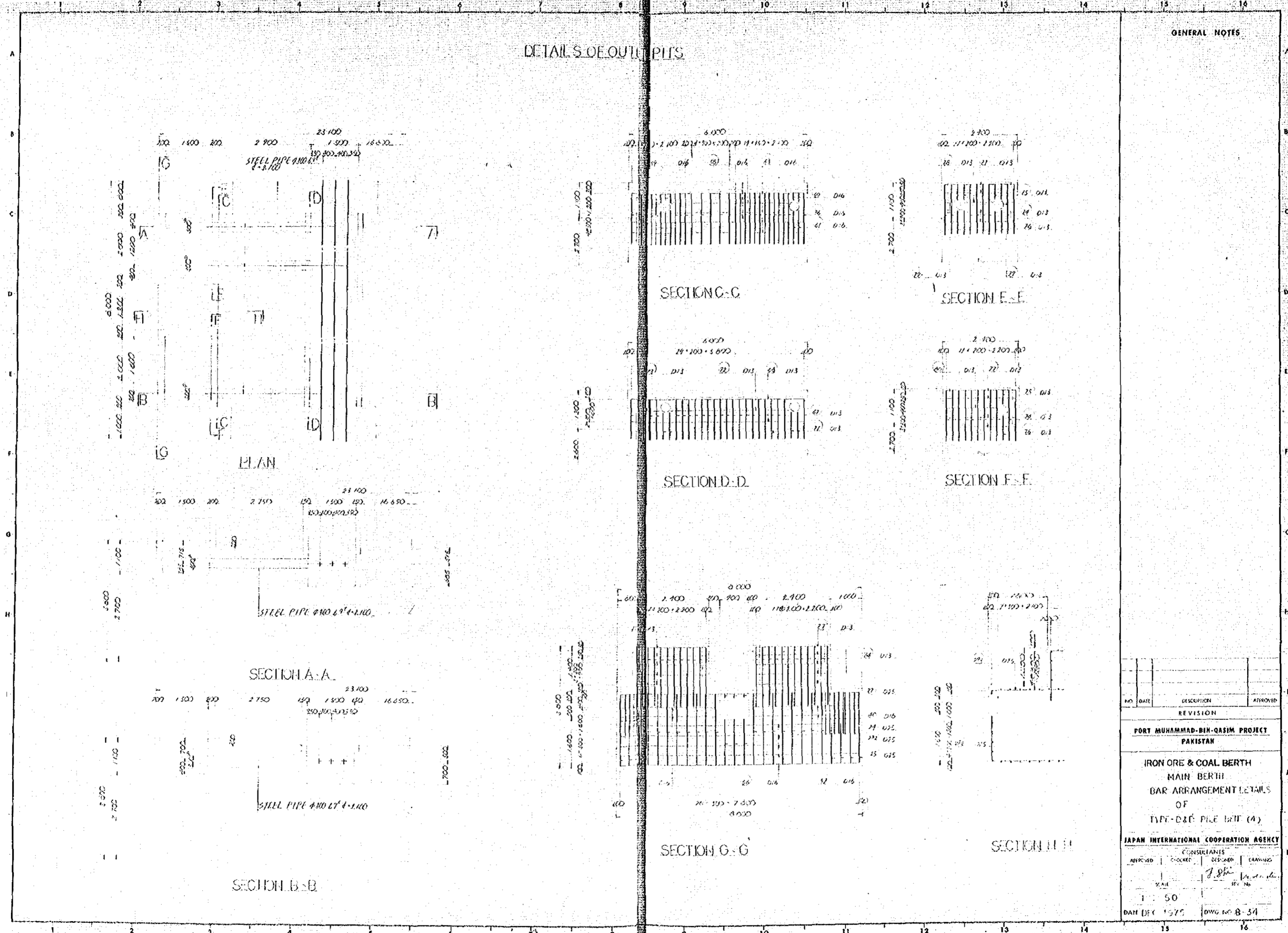


GENERAL NOTES

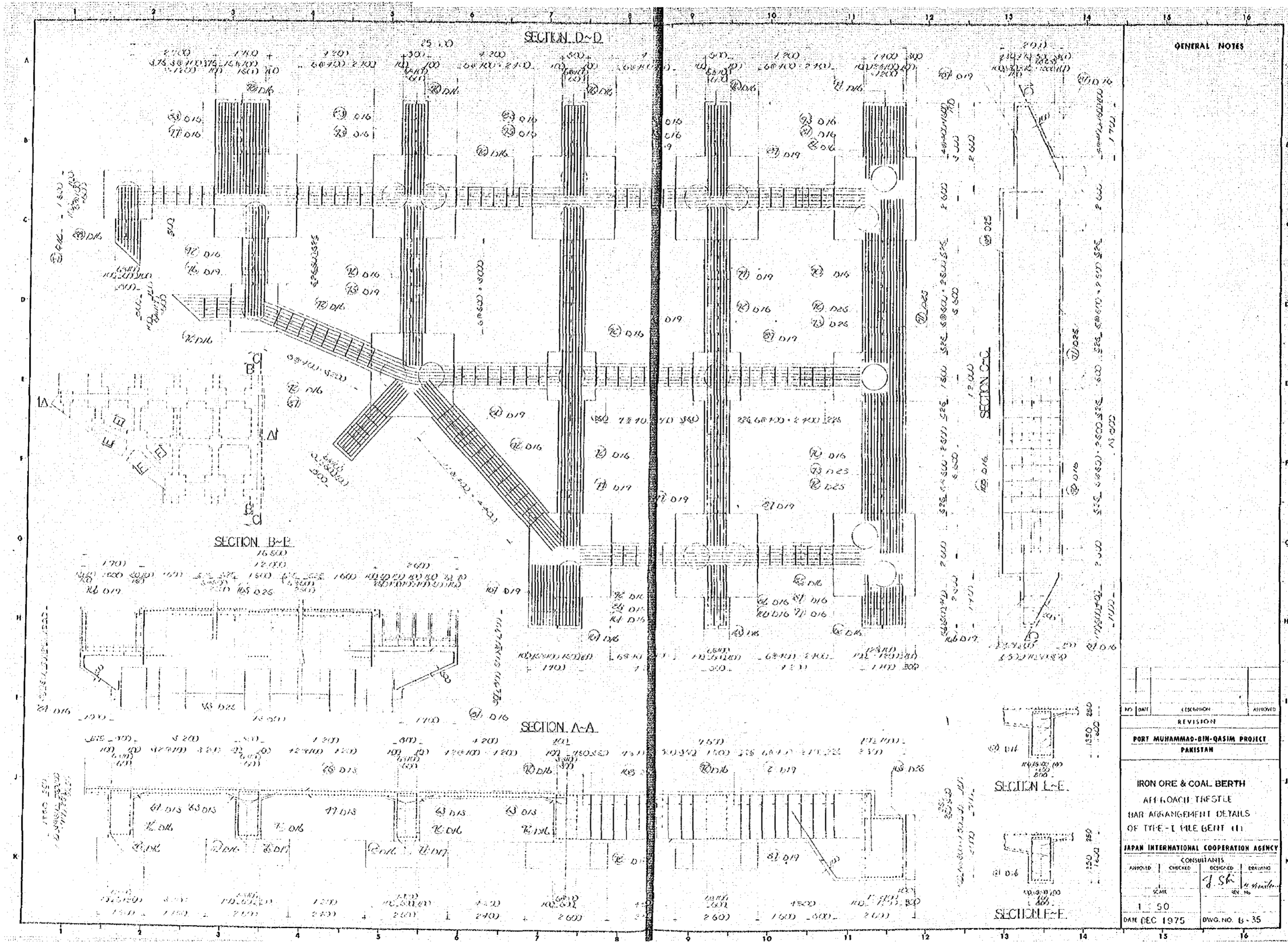
NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE D & D' PILE BENT (J)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>J. S. Khan</i>	<i>M. S. Khan</i>
SCALE		REV.	
1:50		1:5	
DATE DEC 1975		DWG. NO. B-35	

DETAILS OF OUTLETTES

GENERAL NOTES

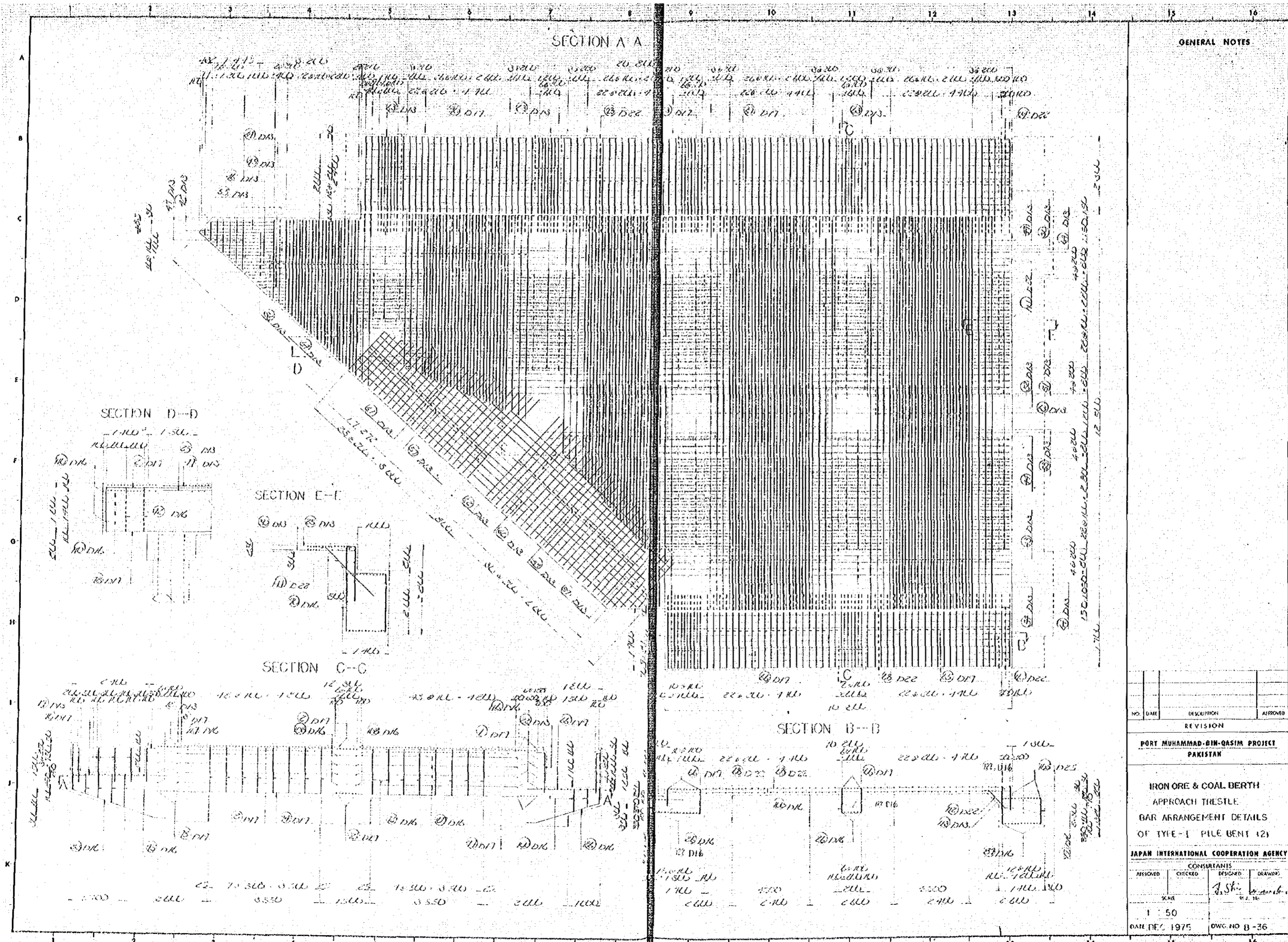


NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF TYPE-D&E PILE BERTH (4)			
JAPAN INTERNATIONAL COOPERATION AGENCY CONSULTANTS			
APPROVED	DESIGNED	DESIGNED	DRAWING
		<i>J. Shik</i>	<i>M. A. I.</i>
SCALE		REV. NO.	
1 : 50			
DATE DEC 1975		DWG NO. B-34	



GENERAL NOTES

NO.	DATE	REVISION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH AFFILIATION THE GLE BAR ARRANGEMENT DETAILS OF THE T-BEAM (III)			
JAPAN INTERNATIONAL COOPERATION AGENCY CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. Sh.	M. H.
SCALE: 1:50			
DATE: DEC 1975		DWG. NO. B-35	



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			

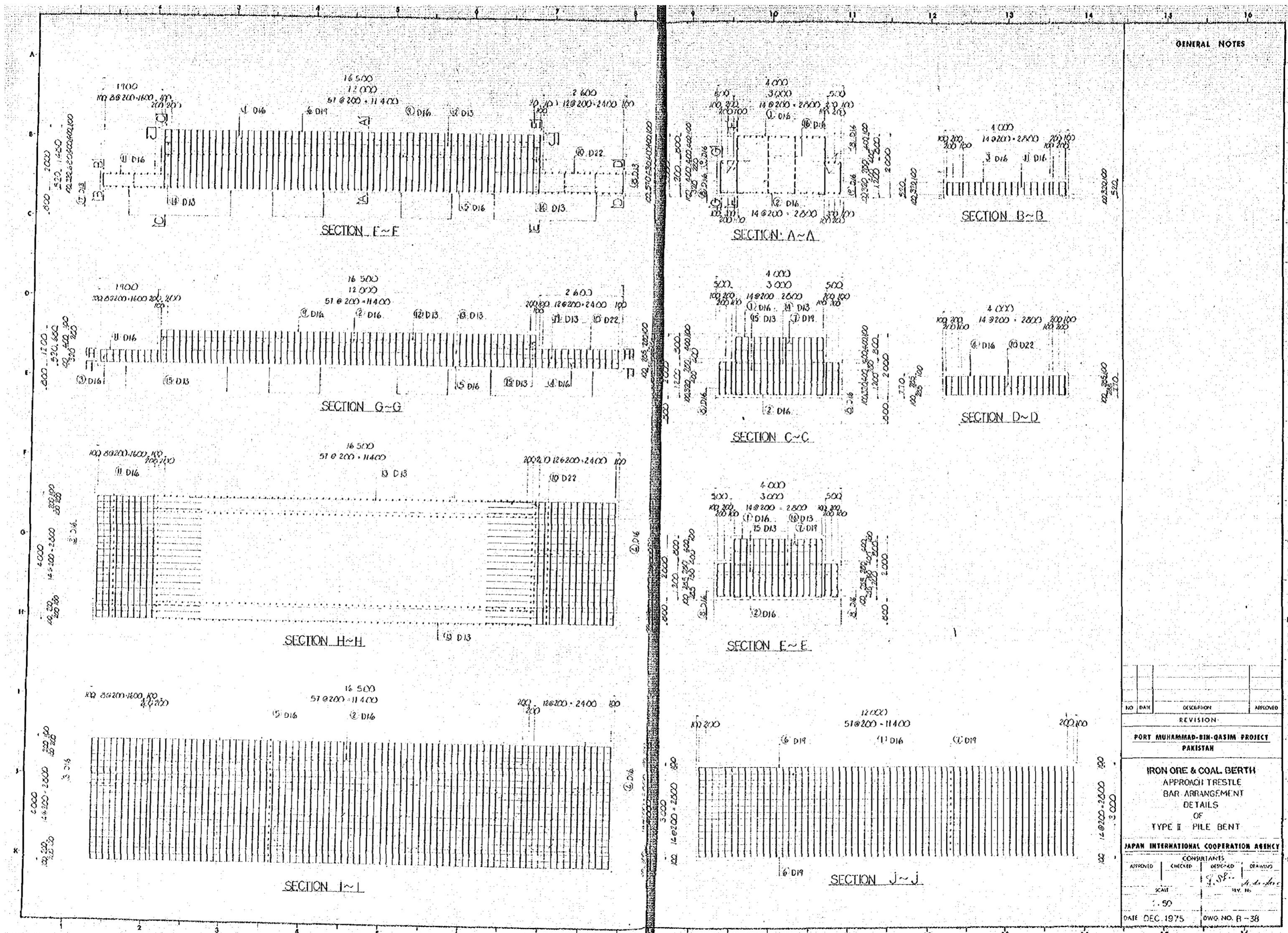
PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
APPROACH TRESTLE
BAR ARRANGEMENT DETAILS
OF TYPE-I PILE BENT (2)

JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWN
		J. Shi	

SCALE
1 : 50
DATE DEC 1975
DWG. NO. B-36



GENERAL NOTES

NO	DATE	DESCRIPTION	APPROVED

REVISION

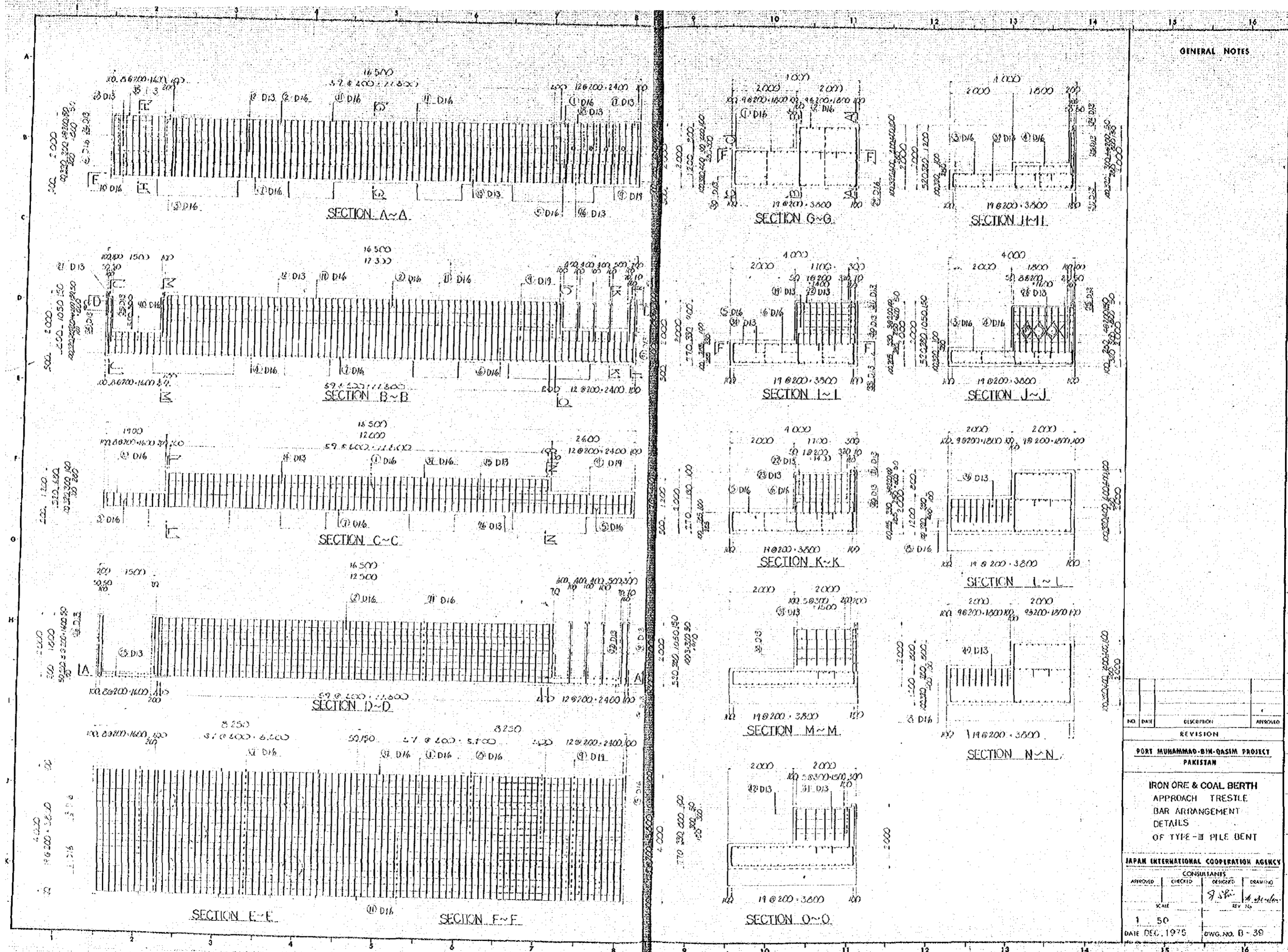
PORT MUHAMMAD-BIN-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
APPROACH TRESTLE
BAR ARRANGEMENT
DETAILS
OF
TYPE II PILE BENT

JAPAN INTERNATIONAL COOPERATION AGENCY

APPROVED	CHECKED	DESIGNED	DRAWING

SCALE: 1:50
DATE: DEC. 1975
DWG. NO. B-38



GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED

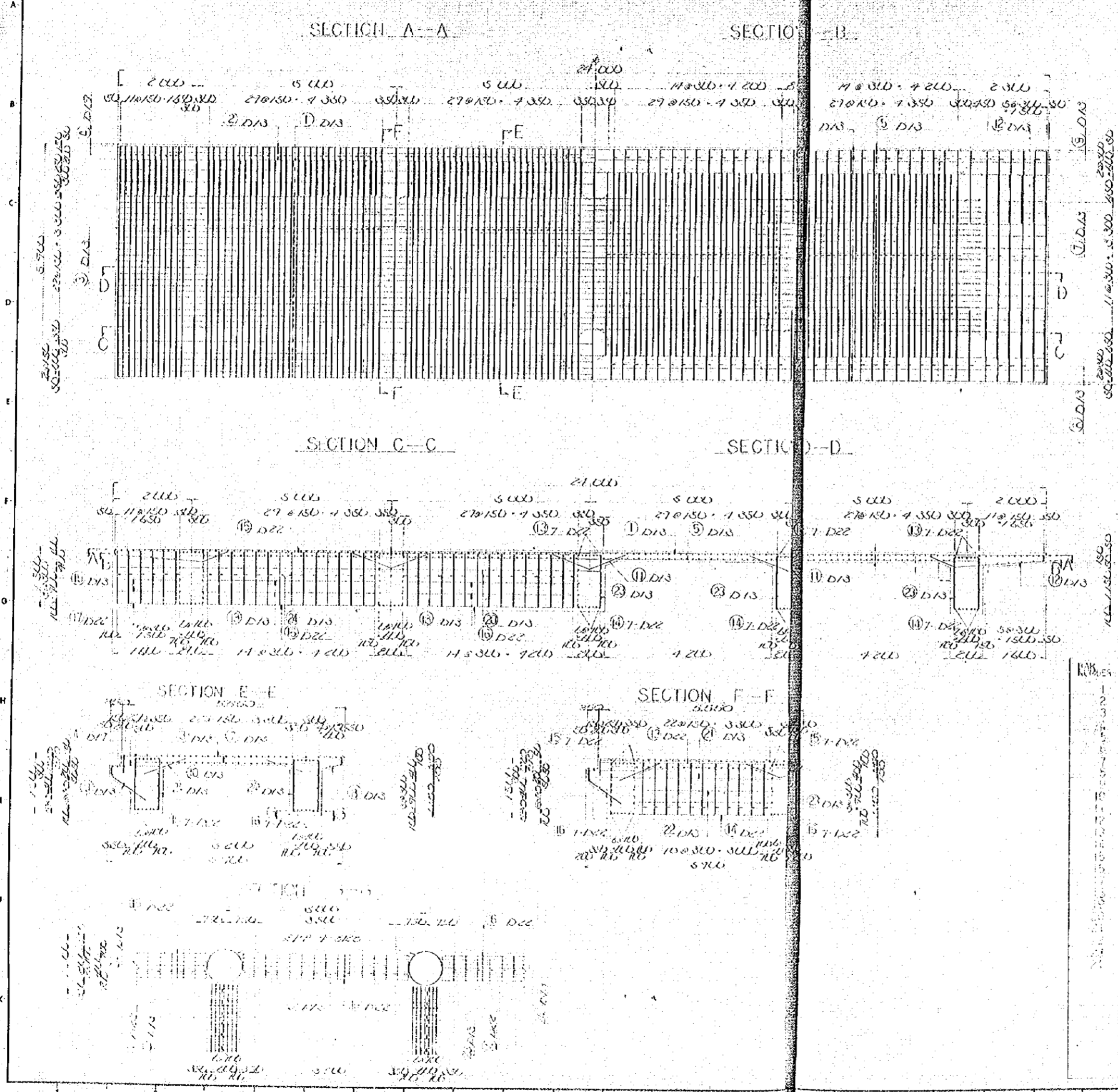
PORT MUHAMMAD-BIH-QASIM PROJECT
PAKISTAN

IRON ORE & COAL BERTH
APPROACH TRESTLE
BAR ARRANGEMENT
DETAILS
OF TYPE - III PILE BENT

JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
SCALE	REV. NO.		
1 : 50			
DATE DEC. 1975	DWG. NO. B-39		

BAR ARRANGEMENT FOR MAINTENANCE PLATFORM Scale 1:50

GENERAL NOTES



MATERIAL QUANTITIES

DIA	LENGTH	WEIGHT	NUMBERS	TOTAL
D13	27.000	0.773	32	770.528
D13	27.000	0.773	3	23.190
D13	4.000	0.122	157	19.174
D17	1.350	2.25	157	353.250
D13	20.000	0.773	28	216.436
D13	7.000	0.217	6	1.302
D13	7.000	0.217	132	28.644
D13	2.000	0.061	77	4.787
D13	1.650	0.050	77	3.825
D13	1.650	0.050	77	3.825
D13	2.000	0.061	36	2.216
D13	3.000	0.092	27	2.484
D22	8.000	3.69	35	129.150
D22	8.000	3.69	35	129.150
D22	8.000	3.69	11	40.590
D13	7.000	0.217	36	7.812
D13	7.000	0.217	28	6.084
D13	7.000	0.217	32	7.008
D13	7.000	0.217	76	16.512
D13	23.000	0.703	4	28.120
D13	7.000	0.217	10	2.170
D13	3.000	0.092	20	1.840
D13	1.000	0.030	55	1.650
D13	4.000	0.122	117	14.274
				792.228

NO	DATE	REVISION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH MAIN BERTH BAR ARRANGEMENT DETAILS OF MAINTENANCE PLATFORM			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. Shi	A. Sultan
SCALE			
1:50			
DATE DEC 1975		DWG. NO. B-10	

BAR LISTS FOR PILE BENT (1)

BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK
1	D25	14.500	3.90%	7	105.367
2		14.100		4	22.1472
3		10.100		6	24.1100
4		4.000		19	159.200
5		3.200		17	216.672
6		1.800		26	18.6264
7		11.800		4	187.056
8		11.300		15	674.610
9		6.500		10	260.700
10		4.000		10	159.200
11		6.000		16	302.000
12		4.000		6	100.296
13		5.150		61	1323.151
14		4.000		29	461.600
15		1.250		3	14.925
16		0.600		3	7.164
17		16.700		24	1575.154
18		16.250		4	250.700
19		8.000		2	37.000
20		4.360		4	67.232
21		15.450		4	245.964
22		11.000		2	111.110
23		11.000		6	277.008
24		11.150		3	133.151
25		5.600		23	512.624
26		5.800		4	62.284
27		4.750		9	170.145
28		3.000		35	527.540
29	D16	0.600	1.56%	17	285.216
30		1.200		22	144.144
31		1.600		26	64.516
32		3.500		3	15.252
33		2.700		10	42.120
34		0.600		12	11.232
35		7.150		5	55.770
36		9.000		5	70.200
37		6.000		33	974.240
38		7.150		2	24.150
39		2.900		5	17.740
40		1.700		5	13.850
41		10.250		6	127.730
42		10.000		2	51.200
43		5.750		36	322.920
44		5.300		4	33.012
45		7.500		14	157.452
46		10.250		29	461.710
47		4.900		33	252.252
48		3.350		10	52.260
49		1.600		14	297.194
50		2.950		14	61.910

BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK
51	D16	2.000	1.56%	7	60.000
52		12.450		9	503.266
53		60.500		12	353.760
54		8.000		4	60.892
55		1.900		7	20.740
56		4.100		4	27.360
57		2.250		9	31.590
58		1.500		5	16.740
59		2.900		3	13.572
60		2.200		30	130.416
61		1.000		3	3.924
62		2.700		6	33.676
63		3.900		21	111.660
64	D13	13.250	0.79%	21	105.170
65		11.500		4	45.772
66		1.600		4	10.960
67		6.000		4	27.064
68		0.050		63	171.167
69		1.200		177	211.310
70		3.150		1	3.134
71	D15	1.500	1.70%	12	119.400
72		1.000		102	211.970
73		1.400		2	11.444
D25					2770.217
D16					2219.951
D13					602.813
TOTAL					14199.787
DIA 10-26 6.000 1.13					13 115.540
DIA 10-26 0.210 0.179					14 16.136
TOTAL					361.676

BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK
1		1.500	3.78%	5	372.350
2		1.000		9	165.210
3		1.000		11	510.934
4		11.000		7	314.818
5		3.400		6	700.572
6		7.150		6	70.194
7		3.500		3	113.430
8		5.500		3	67.674
9		1.150		3	52.133
10		1.200		12	200.592
11		4.500		19	340.740
12		1.110		10	124.574
13		6.100		3	132.116
14		3.000		2	22.654
15		1.000		6	71.670
16		3.000		7	161.160
17		5.200		9	197.012
18		4.150		9	155.817
19		4.500		11	477.531
20		1.100		5	27.040
21		5.500		5	116.115
22		2.900		6	155.240
23		7.100		15	2375.763
24		6.600		4	165.648
25		16.500		9	265.103
26		5.800		4	67.976
27		1.500		4	11.100
28		1.700		4	75.028
29		5.100		15	348.270
30		7.100		10	157.950
31		1.350		21	574.917
32		1.800		7	135.171
33		1.200		20	672.000
34		5.500		15	213.210
35		1.600		12	145.280
36		6.200		4	264.172
37		6.100		4	225.600
38		6.300	1.56%	54	741.312
39		1.300		20	156.200
40		1.500		13	42.150
41		3.700		2	27.444
42		2.500		23	75.195
43		2.650		28	115.712
44		1.400		4	21.666
45		1.750		63	514.203
46		1.900		23	133.241
47		3.250		7	35.470
48		5.300		21	235.253
49		0.100		16	25.952
50		4.000		2	21.044

BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK
51	D16	9.300	1.56%	16	522.288
52		10.500		16	261.020
53		2.600		5	22.040
54		3.750		23	251.410
55		4.700		4	27.306
56		3.250		3	45.210
57		2.700		4	6.816
58		3.500		9	27.972
59		3.100		12	60.810
60		3.650		12	37.076
61		1.700		7	22.778
62		7.600		6	24.760
63		4.600		3	57.908
64		1.550		4	63.392
65		1.300		4	20.592
66		4.400		4	27.436
67		4.500		5	36.724
68		5.900		3	73.632
69		3.100		20	96.710
70		7.000		15	163.200
71		6.000		5	46.200
72		2.400		5	30.240
73		6.000		6	19.800
74		3.250		2	10.400
75		1.750		2	3.530
76		1.500		16	97.140
77		23.100		4	216.216
78		1.600		7	45.552
79		11.000		3	51.430
80		13.200		2	11.184
81		3.400		18	75.472
82		1.650		4	11.514
83		2.700		10	26.820
84		2.650		15	62.010
85		1.700		19	31.476
86		2.300		5	15.000
87		1.750		1	3.012
88		3.200		7	67.674
89		4.300		12	70.476
90		3.000		4	25.712
91		2.850		6	26.676
92		2.000		3	24.760
93	D13	1.000	0.71%	123	222.021
94		1.100		6	6.736
95		0.650		4	3.363
96		5.900		22	132.151
97		1.000		93	146.363
98	D15	2.500	1.70%	12	119.160
99		2.000		112	811.570
100	D13	1.900	1.09%	6	36.816
101	D16	3.000	1.56%	24	112.320
D25					11965.766
D16					5567.636
D13					529.357
D15					36.316
TOTAL					13009.175
DIA 10-26 6.000 1.13					4 111.310
DIA 10-26 0.210 0.179					44 4.611
TOTAL					116.331

GENERAL NOTES

- LAP LENGTHS ARE EXCLUDED IN ALL BAR LISTS.
- ALL DEFORMED REINFORCEMENT BARS SHALL CONFORM TO GRADE 60 OF A.S.T.M. A-615, A-616 & A-617 OR APPROVED EQUIVALENTS.
- ALL PLAIN REINFORCEMENT BARS SHALL CONFORM TO GRADE 40 OF A.S.T.M. A-C15 AND A-C17 OR APPROVED EQUIVALENTS.

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT			
PAKISTAN			
IRON ORE & COAL BERTH			
MAIN BERTH			
BAR LIST FOR PILE BENT (1)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWN
SCALE			
DATE DEC 1975			
DWG. NO. B-41			

DAR LISTS FOR PILE BENT (2)

TYPE D.D

TYPE C.C

BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK	BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK
1	D15	13.000	3.78	176.110		1	D15	13.000	3.78	176.110	
2		13.000		176.110		2		13.000		176.110	
3		11.900		163.670		3		11.900		163.670	
4		11.300		157.722		4		11.300		157.722	
5		8.900		100.572		5		8.900		100.572	
6		7.150		170.742		6		7.150		170.742	
7		7.500		173.430		7		7.500		173.430	
8		5.850		129.847		8		5.850		129.847	
9		4.450		53.133		9		4.450		53.133	
10		4.200		163.876		10		4.200		163.876	
11		4.500		170.270		11		4.500		170.270	
12		3.130		124.574		12		3.130		124.574	
13		3.200		112.116		13		3.200		112.116	
14		7.900		157.210		14		7.900		157.210	
15		2.900		124.920		15		2.900		124.920	
16		6.000		127.160		16		6.000		127.160	
17		5.500		218.100		17		5.500		218.100	
18		7.350		155.817		18		7.350		155.817	
19		4.050		197.687		19		4.050		197.687	
20		7.00		5.572		20		7.00		5.572	
21		7.200		237.160		21		7.200		237.160	
22		14.650		520.186		22		14.650		520.186	
23		17.650		542.872		23		17.650		542.872	
24		7.800		611.303		24		7.800		611.303	
25		6.700		277.663		25		6.700		277.663	
26		5.700		272.232		26		5.700		272.232	
27		5.100		285.341		27		5.100		285.341	
28		5.150		524.911		28		5.150		524.911	
29		7.000		557.200		29		7.000		557.200	
30		7.100		61.774		30		7.100		61.774	
31		1.900		16.716		31		1.900		16.716	
32	D16	6.300	1.56	115.065		32		6.300	1.56	115.065	
33		1.450		10.116		33		1.450		10.116	
34		3.350		125.474		34		3.350		125.474	
35		2.700		81.700		35		2.700		81.700	
36		9.200		545.176		36		9.200		545.176	
37		8.200		115.175		37		8.200		115.175	
38		5.150		251.172		38		5.150		251.172	
39		6.300		286.283		39		6.300		286.283	
40		1.900		190.668		40		1.900		190.668	
41		3.500		81.360		41		3.500		81.360	
42		4.550		77.372		42		4.550		77.372	
43		4.200		164.832		43		4.200		164.832	
44		3.300		123.552		44		3.300		123.552	
45	D16	4.350	1.56	108.576		45		4.350	1.56	108.576	
46		3.050		114.172		46		3.050		114.172	
47		2.850		151.764		47		2.850		151.764	
48		3.100		147.260		48		3.100		147.260	

TYPE D

D15	12.174	790.79
D16	5305.750	
D18	1310.682	
D15	86.816	
TOTAL	18228.322	

TYPE D'

D15	12.174	790.79
D16	5305.750	
D18	1310.682	
TOTAL	18500.385	

CONF. PART 1-R-28

49	6.000	1.93	1	116.310
49	6.000	0.112	11	4.611
TOTAL				116.951

* AND () ARE APPLIED TO TYPE D'

BAR NO.	DIA	LENGTH	UNIT	WEIGHT	REMARK
1	D15	13.000	3.78	176.110	
2		13.000		176.110	
3		11.900		163.670	
4		11.300		157.722	
5		8.900		100.572	
6		7.150		170.742	
7		7.500		173.430	
8		5.850		129.847	
9		4.450		53.133	
10		4.200		163.876	
11		4.500		170.270	
12		3.130		124.574	
13		3.200		112.116	
14		7.900		157.210	
15		2.900		124.920	
16		6.000		127.160	
17		5.500		218.100	
18		7.350		155.817	
19		4.050		197.687	
20		7.00		5.572	
21		7.200		237.160	
22		14.650		520.186	
23		17.650		542.872	
24		7.800		611.303	
25		6.700		277.663	
26		5.700		272.232	
27		5.100		285.341	
28		5.150		524.911	
29		7.000		557.200	
30		7.100		61.774	
31		1.900		16.716	
32	D16	6.300	1.56	115.065	
33		1.450		10.116	
34		3.350		125.474	
35		2.700		81.700	
36		9.200		545.176	
37		8.200		115.175	
38		5.150		251.172	
39		6.300		286.283	
40		1.900		190.668	
41		3.500		81.360	
42		4.550		77.372	
43		4.200		164.832	
44		3.300		123.552	
45	D16	4.350	1.56	108.576	
46		3.050		114.172	
47		2.850		151.764	
48		3.100		147.260	

TYPE C

D15	12.299	792.79
D16	5691.118	
D18	606.353	
D15	26.816	
TOTAL	18654.079	

TYPE C'

D15	12.299	792.79
D16	5691.118	
D18	606.353	
D15	532.125	
TOTAL	18628.235	

CONF. PART 1-R-28

49	6.000	1.93	1	116.310
49	6.000	0.112	11	4.611
TOTAL				116.951

GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH			
MAIN BERTH BAR LISTS FOR PILE BENT (2)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
CONSULTANTS			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. S. P.	M. A. A.
SCALE		REV. No.	
DATE DEC 1971		DWG. NO. E-02	

MATERIAL QUANTITIES - TYPE-I PILE BENT

PILE NO.	DIAMETER	LENGTH	UNIT WEIGHT	VOLUME	WEIGHT
1	D 17	11.300	2.25	7.177	7.177
2		21.300		7.382	7.382
3		13.700		7.467	7.467
4		2.200		7.452	7.452
5		3.150		7.593	7.593
6		1.700		7.717	7.717
7		10.300		7.165	7.165
8		10.300		7.165	7.165
9		6.300		7.162	7.162
10	D 13	16.400	6.775	12.163	12.163
11	D 17	2.200	2.25	11.228	11.228
12	D 13	23.200	6.775	2.716	2.716
13		21.000		4.285	4.285
14		20.000		12.245	12.245
15		20.000		5.163	5.163
16	D 13	1.250	1.56	7.100	7.100
17	D 13	1.600	6.775	216	216
18		1.200		70	70
19	D 13	7.100	1.01	70	70
20		1.300		31	31
21		1.800		37	37
22	D 13	1.170	6.775	57	57
23	D 13	21.300	3.61	12	12
24	D 16	2.620	1.56	57	57
25	D 13	23.400	6.775	42	42
26		11.500		17	17
27		1.700		7	7
28	D 17	3.500	2.25	7	7
29	D 13	1.650	6.775	5	5
30		3.650		6	6
31		4.250		21	21
32		7.000		11	11
33		12.650		8	8
34		16.000		10.6	10.6
35		10.700		10	10
36		11.300		5	5
37		10.700		1	1
38		27.000		7	7
39		3.000		1	1
40		20.000		1	1
41		3.000		4	4
42		5.450		8	8
43	D 13	12.000	6.775	71	71
44		2.250		25	25
45		5.300		33	33
46		3.000		27	27
47		1.200		6	6
48		6.400		2	2
49		23.700		21	21
50		21.300		5	5
51		26.300		3	3
52		12.300		2	2
53		18.300		38	38
54		11.300		19	19
55		2.100		2	2
56		1.500		11	11
57		2.100		22	22
58		2.700		7	7
59		11.300		6	6
60	D 16	2.100	1.56	4	4
61	D 17	1.700	2.25	17	17
62	D 17	2.700	2.25	25	25
63		3.600		23	23
64		2.700		23	23

PILE NO.	DIAMETER	LENGTH	UNIT WEIGHT	VOLUME	WEIGHT
61	D 22	20.600	3.07	13.276	13.276
62		16.600		20.61	20.61
63	D 17	3.200	2.25	17.2	17.2
64		3.300		23.20	23.20
65	D 17	11.000	2.25	5.122	5.122
66		5.100		6.6	6.6
67		4.000		16.9	16.9
68		16.000		19.35	19.35
69		2.000		7.3	7.3
70		3.500		7.9	7.9
71		23.700		7.57	7.57
72		22.000		7.35	7.35
73		7.400		1.15	1.15
74		12.200		7.16	7.16
75	D 16	2.000	1.56	7.9	7.9
76		2.550		4.6	4.6
77		2.250		37	37
78		1.700		7.75	7.75
79		1.000		7.1	7.1
80		1.700		73	73
81		2.750		7.28	7.28
82		2.000		7.7	7.7
83	D 17	3.300	2.25	12.8	12.8
84	D 16	6.300	1.56	16.157	16.157
85		1.700		21.55	21.55
86		4.300		137.76	137.76
87		7.200		4.4	4.4
88		1.200		2	2
89		3.100		12	12
90		6.600		6	6
91		4.200		7.2	7.2
92	D 17	1.500	2.25	2	2
93	D 16	3.200	1.56	2.16	2.16
94		2.500		2	2
95		4.400		2.13	2.13
96		1.200		2.1	2.1
97		6.200		2	2
98		4.200		2	2
99	D 25	16.300	3.78	13.81	13.81
100	D 17	3.000	2.25	13.12	13.12
101		3.700		13.117	13.117
102	D 16	13.500	1.56	16.5	16.5
103		10.000		16.250	16.250
104		3.700		7.21	7.21
105	D 22	2.700	3.61	57.22	57.22
106		1.000		16.3	16.3
107	D 13	6.100	6.775	16	16
108	D 22	1.000	3.61	13.1	13.1
109	D 13	4.300	6.775	13	13
110	D 16	7.400	1.56	3.11	3.11
111		23.750		2.24	2.24
112		4.000		2.7	2.7
113		2.500		3	3
114		4.200		1.45	1.45
115		5.400		1.55	1.55
116		1.250		11.21	11.21
117		1.380		24.62	24.62
118		3.000		4	4
119		3.400		7.3	7.3

413 271.911
 D13 828.776
 D16 - D25 15213.567
 CROSS SECTION

GENERAL NOTES

NO.	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH APPROACH TRESTLE BAR LISTS FOR PILE BENT (3)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWING
		J. Shik	
SCALE		REV. No.	
DATE DEC 1975		DWG NO. B 43	

GENERAL NOTES

MATERIAL QUANTITIES
/ APPROACH TRESTLE TYPE-III PILE BENT

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	NUMBERS	TOTAL
1	D16	10 730	1.56	60	1004.320
2	"	5 910	"	62	511.615
3	"	9 460	"	10	147.576
4	"	3 610	"	9	50.684
5	"	9 860	"	13	194.961
6	"	4 110	"	12	76.939
7	"	16 300	"	20	508.560
8	"	13 060	"	9	183.362
9	D19	4 070	2.25	30	274.725
10	D16	4 030	1.56	30	188.404
11	"	12 100	"	20	317.520
12	D13	12 100	0.995	3	36.119
13	"	10 500	"	1	10.448
14	"	11 790	"	1	11.131
15	"	10 300	"	1	10.249
16	"	3 800	"	2	7.562
17	"	5 560	"	4	22.129
18	"	2 700	"	1	2.681
19	"	3 950	"	4	15.721
20	"	1 350	"	19	25.522
21	"	1 250	"	21	26.119
22	"	2 090	"	13	27.034
23	"	1 150	"	24	21.462
24	"	1 500	"	18	26.865
25	"	1 490	"	18	26.636
26	"	3 930	"	5	19.552
27	"	1 420	"	1	1.910
28	"	4 400	"	5	21.890
29	D16	2 110	1.56	16	52.666
30	D13	1 280	0.995	15	14.104
31	"	900	"	1	0.896
32	"	640	"	1	0.637
33	"	1 150	"	2	2.289
34	"	840	"	3	2.507
35	"	2 150	"	1	2.139
36	"	2 430	"	1	2.418
37	D16	11 190	1.56	1	10.392
38	D13	1 350	0.995	6	8.060
39	"	2 150	"	4	8.551
40	"	2 430	"	1	2.418
41	"	2 070	"	3	6.119
42	"	1 150	"	6	6.866
TOTAL					4031.638

MATERIAL QUANTITIES
/ APPROACH TRESTLE TYPE-II PILE BENT

BAR NUMBER	DIA	LENGTH	UNIT WEIGHT	NUMBERS	TOTAL
1	D16	6 920	1.56	60	617.112
2	"	7 750	"	40	725.400
3	"	8 960	"	10	139.116
4	"	9 380	"	13	190.226
5	"	16 350	"	21	335.626
6	"	11 840	2.25	2	53.280
7	"	15 440	"	13	151.620
8	"	13 890	1.56	4	26.614
9	"	11 840	"	4	73.892
10	"	4 620	3.04	21	274.941
11	"	3 120	1.56	21	121.867
12	"	11 840	0.995	4	47.123
13	"	10 820	"	2	21.532
14	"	3 180	"	4	12.656
15	"	4 180	"	2	8.318
16	"	2 110	1.56	22	72.415
17	"	640	0.995	4	2.547
18	"	850	"	8	6.766
19	"	3 000	"	2	5.910
TOTAL					3473.331

NO	DATE	DESCRIPTION	APPROVED
REVISION			
PORT MUHAMMAD-BIN-QASIM PROJECT PAKISTAN			
IRON ORE & COAL BERTH, APPROACH TRESTLE BAR LIST FOR PILE BENT (4)			
JAPAN INTERNATIONAL COOPERATION AGENCY			
APPROVED	CHECKED	DESIGNED	DRAWING
		<i>J. Shi</i>	<i>A. Anwar</i>
SCALE		REV. NO.	
DATE DEC 15/75		DWG. NO B-41	