



ENTREPRISE DE RECHERCHES ET D'ACTIVITES PETROLIERES

FFG - 6.22.9 FRF013
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L261

elf NORGE

**FRIGG FIELD
PRODUCTION FACILITIES**

MONTHLY REPORT

OCTOBER 1975

D.E.P.

La Défense, October 30th, 1975

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FRIGG FIELD

PRODUCTION FACILITIES

Monthly Report

October 1975

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D'ÉQUIPEMENT	
Arrivée 28/11/75	
N°	28/11
ENREG.	1/12
P. Clément (X)	
X - 21	

The favorable weather conditions during the month of October allowed to place the support frame on the QP platform. The barge ETPM 1601, managed to install part of the drilling modules on the support frame. Unfortunately, the transfer of the stiff-leg structure onto the support frame became impossible as this module overturned on the barge before lifting.

We hope to be able to place the repaired module during the first fortnight of November.

The installation operations are being continued on the CDPl platform.

It has been decided to order the Buzichelli gantry crane and the studies for lifting and hook-up have been started, taking into consideration this new installation method.

The work on the TP1 structure are following a normal course. The studies mainly concern the procedure for installation of the support frame. The decision to install this support frame at ARDYNE or LOCH FYNE will be taken shortly.

A detailed planning taking into consideration the procurement situation for the TP1 modules is being drawn up by McDERMOTT and MERCANTILE. It should be ready for the end of the month.

The manufacturing at BORDEAUX of the quarters is running behind schedule. All our efforts will be concentrated on an acceleration of the work, in order to have the modules ready in January.

The construction work on the TCP2 structure is slightly ahead of schedule. The contract with AKER for the support frame has again been delayed.

The approval tests for the welding procedure have been started at ORKANGER. A more detailed planning is being drawn up for the fabrication of the modules.

A complete dossier relative to the Metering Design has been submitted to the two governments on the 4th of November 1975. A meeting will be organized during the month of November, with the two governments, in order to discuss this dossier.

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I. OFFSHORE OPERATIONS1.1. Barges activities1.11 Activity of the DB 22 from 1/10 to 15.10, 1975.

- Working : 39.80%
- Stand-by W.O.W setting & picking up of moorings included : 47.50%
- Stand-by due to technical troubles : 3.30%
- Barge movements for operations : 9.40%

1.12 Activity of the barge ETPM 1601 from the 15/10 to the 26/10, 1975

- Working : 40.50%
- Stand-by W.O.W setting & picking up of moorings included : 26.00%
- Stand-by because OCEANIC equipment not operational : 7.00%
- Barge movements for operations : 26.50%

1.2. Work performed on the QP jacket1.21 Work performed with the barge DB 22

1/10 to 11/10, 1975 :

- Setting, driving and grouting of the 54" piles B11 and A11.
- Cutting of 100" guides at A and B levels on B1 and B2 sideways.
- Preparation of the support frame setting.

12/10 to 15/10, 1975 :

- Transfer and setting of the support frame and connection with the jacket.
- During the first fortnight of October, there were many stand-by periods, due to the bad sea conditions and a bad behavior of the barge DB 22.
- On the 15th of October, the barge ETPM 1601 replaced the barge DB 22.

15/10 to 27/10, 1975 :

- DB 22 in stand-by on the Frigg Field. Then moved close to STAVANGER and was in stand-by in the Idse fjord basin, but from the 22nd until the 24th of October 1975, the DB 22 was involved in the transfer of the damaged module (stiff-leg, rack and drilling unit), from barge 258 onto barge 312-3.
- Departure for ROTTERDAM is anticipated for the 28th of October 1975.

1.22 Work performed with the barge ETPM 1601

The barge ETPM 1601 arrived on the Frigg Field on the 15th of October, control was taken over by ELF at 18.00 P.M.

16/10 to 21/10, 1975 :

- Transfer of the stiff-leg substructure from barge 250 onto the QP support frame, the transfer did not take place as the stiff-leg module overturned before the lifting started and before cutting of the fixing gussets was completed.
- Transfer of the drilling module from barge 250 onto the deck of barge 1601, in STAVANGER.

22/10 to 26/10, 1975 :

- The barge 1601 went back to the Frigg Field.
- Transfer and setting of the drilling module on the QP support frame.

1.3. CDP1 structure

The following operations were completed during the month of October :

- EUMECH quarter installation for accommodation of approximately 165 persons.
- Setting of the CDP1 sliding mark.
- Installation of the MK 60 crane, and setting of module 03.

- Clearing of tunnels C and D to be blanked off.
- Anti-scouring operations will be performed next year after pipe laying.

The following work is still in progress :

- Sand ballasting : 46.000 m3 in the month (62.5% of the total job).
- Concrete pipe electrical ventilation works in tunnels and central shaft.

1.4. Flare installation

The flare remained in a stand-by position until the end of equipment phase, on the 16th of September.

Towing to the Frigg site started on the 8th of October with three tugs attached to the main float, at the early stage of an anti-cyclonic situation.

The operations were stopped on the 9th of October, as the base hit a gravel edge at the mouth of the fjord.

After inspection, with a Perry PC 12 submarine, and deballasting operations, the towing recommenced towards the Frigg site at an average speed of approximately two knots.

Final positioning and installation occurred early Sunday the 12th, at 13.45 hours. The final location is :

59 52 53.5 N
02 03 21.0 E

The inspection showed a base properly set on the sea-bed, completely free of air. The antiscouring system (artificial sea-weed) has been activated by the submarine at approximately 95%.

1.5. ATL Operations

Measurement operations were taken simultaneously on CDP1 and British and Norwegian shore stations, these were completed on the 16th of October 1975, after some delays, due to the breakdown of equipment.

A British official observer, MR. CRIMPTON, was permanently on board of the CDP1. A Norwegian official observer was based in STAVANGER, MR. KLOEVE.

At the end of the operations, a meeting has been arranged in STAVANGER with MR. GUILLEMINOT and MR. BAKKELID from NORGES GEOGRAPHISKE OPMAALING. The main comments are as follows :

- Data acquisition seems convenient.
- Data processing by both British and Norwegian government experts may be performed as soon as a copy of the data is obtained from the ATL expert as agreed upon during the general meeting held in STAVANGER on the 2nd of September 1975.

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II. PRODUCTION FACILITIES - Phase I

2.1. CDPl production facilities

2.11 Production modules

2.111 The contract for the reworks production modules PM2, PM3 and PM4 (ex DP1), has been awarded to UTE. The work will be performed in LE HAVRE. The unloading of the barge 412, further to preparation of the site, will start at the beginning of November.

2.112 New modules (production and utilities)

<u>Engineering</u> :	Structural	: 70%
	Piping	: 80%
	Fire and safety	: 75%
	Electrical	: 86%
	Instrumentation	: 60%

<u>Procurement</u> :	Structural	: 90%
	Equipment	: 80%
	Electrical	: 60%
	Piping	: 50%
	Instrumentation	: 40%

<u>Fabrication</u> :	REG BOOTH (SD1-2-3)	: 60%
	PENN & BAUDIN (T1-T2-PH)	: 80%
	DE GROOT (WH1A & B)	: 25%
	WILSON WALTON (BR1 & 2)	: 15%

2.113 Drilling modules (SAIPEM)

The scope of reworks is completed. SAIPEM will perform the work. At the present time this matter is directly managed by ELF NORGE in STAVANGER.

2.114 Gantry crane or derrick barge

TOM, ELF and BUZICHELLI are examining the possibility of using a gantry crane instead of a derrick barge, for the installation

of the modules on the CDP1 decks. The choice between the two possible procedures will be made shortly.

The studies relative to the lifting of the modules with the help of the ETPM 1601 barge are in progress.

2.115 Hook-up on the platform

A preliminary scope of works has been completed.

2.12 Equipment for wells

The studies are nearing completion and the matter is at the present time directly followed by ELF NORGE - STAVANGER.

2.2. Treatment platform nr. 1 - TP1

2.21 Concrete structure

2.211 Structural engineering

All drawings have been issued and approved.

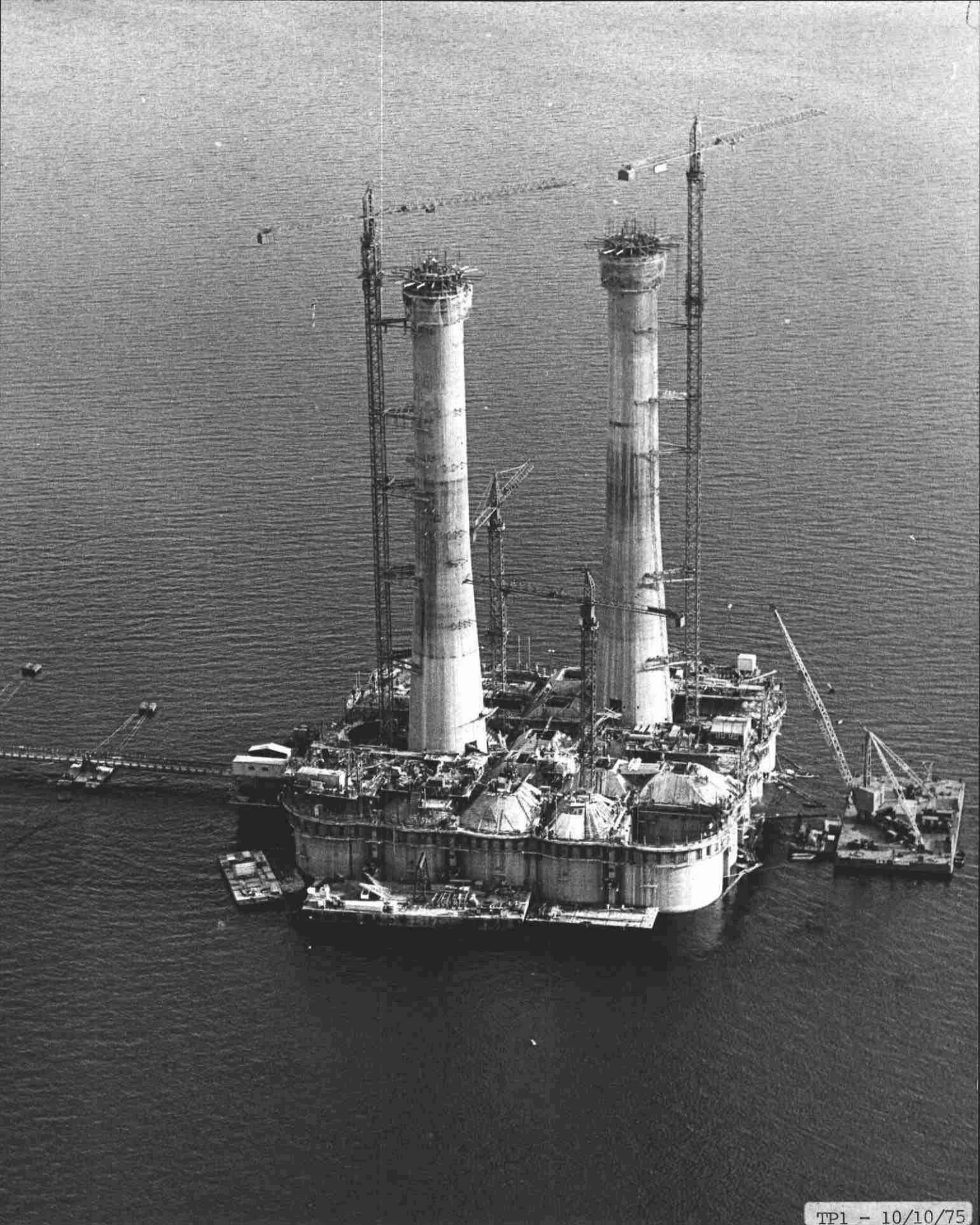
2.212 Installation studies

Installation of the support frame :

Lifting, levelling, grouting and stressing of the tie-in cans has been discussed, mainly with regard to the acceptable tolerances for the erection of the support frame. The lifting of the tie-in cans being scheduled for mid-January, the immediate concern lies in the completion in due time of the bolt holes, in the base plate of these tie-in cans and transport to ARDYNE.

Installation of the structure :

Towing and immersion procedures are in progress.



2.213 Construction

The thickening of the base slab is not yet completed for the two cells with tunnels.

Caisson : The casting of the temporary holes is still pending.

Columns : The slipforming of C1, was completed on the 30th of September. All ring beams in C1 and C2 have been poured and the threading of the stressing cables has been started and progress is reaching 50% for C1 and 60% for C2. Some obstructed ducts slowed down the operation. The ziefle flanges (risers crossings) were placed at the base of the columns (roof level) : two in C1, and four in C2. The closure of the access holes on the same level has just been started with the positioning of some missing ducts. The thickening of the top columns (beam +16.00 to +19.00) is considered at the present critical operation. External work platforms at +16.00 have been completed on both columns and the placing of the reinforcements and all other built-in ducts, (for stressing of the tie-in cans) is now dependent on the removal of the slipforms which has been started : dismantling of hanging platforms, removal of hydraulics.

Roofs : fifteen roofs have been poured. The reinforcement is under completion on three roofs and two others have just been started. Lower shutter is in progress on two cells and is supposed to be started soon, on the last one.

Concrete ballast : It is complete on 13 cells and in progress on the four other. The total progress is approximately of 75%.

Immersion system : The pipework in the caisson are in progress as well as preparation work for the pulling of the cables (electrical and control) in the column C1 and in the caisson. The progress is, however, not satisfactory, but for the present time, these operations do not have any bearing on the overall programme.

The immersion deck is now prepared for transport from FRANCE to ARDYNE.



BROWN & ROOT (UK) LTD. ELF PROJECT NO. 78-5714 AT ARDYNE POINT

SHOT NO. 151 SHOT OF BARGE CRANE WITH RISER R2 ON DECK PRIOR TO
INSTALLATION

DATE: 16th October, 1975.

NEG NO. 3000/54

2.214 Erection of risers

Work in the caisson : Minor works are still in progress in the caisson : tunnel sealing, and testing, completion of ventilation ducts, preparation of pipework for jacking.

Jacking of risers : All WIMPEY decks and equipment have been installed on levels +5.00, +7.50 and +12.00 in C2 and are nearing completion (October 28th) in C1. The first sections of R2 (flare) and R1 (32" to SCOTLAND) have been jacked and the field welds are ready.

Caisson roof : The first support for the risers has been placed on the roof.

Caisson external : all ramps and diver platforms (by divers) have been set and upper riser clamps for the external risers have been fixed to the wall nibs.

2.215 LOCH FYNE moorings

The work started and approximately 400 meters of 76mm chains, as well as 200 meters of 102mm chains were laid, respectively on the eastern and southern leg. But progress is far from being satisfactory.

2.22 Steel support frame - fabrication

(McDERMOTT-HUDSON/SEA TANK CO/CMP)

2.221 Engineering

The calculation of the stresses in the various load cases at FRIGG, during the pulling in phase of the lines is in progress.

A different division of the support frame, in view of its installation by a harbour crane has been discussed during the month of October. The drawings of the corresponding installation aids will be drawn up in November. The sea fastening drawings will have to be re-examined, should this method of erection for the support frame be decided upon.

2.222 Erection

The tie-in cans are nearing completion. Painting should be started at the beginning of November. The drilling of the holes for the fastening ties on the columns will only be started after installation of the bolts and dimensional survey.

The support frame is completed, except for process risers and several small completion jobs. The East and West trusses were brought to the central area in order to check their number.

2.223 Loading out

Preparation for load out should start within the first fortnight of November.

2.23 Steel support frame - erection on top of column
(BROWN & ROOT/WIMPEY)2.231 Engineering

The possibility of assembling the elements of the support frame at ARDYNE (the structure being light) with a giant harbour crane, the HEBE II, is being examined.

The drawings of the installation aids corresponding to this new method are being prepared.

2.232 Operations

The specifications for the erection of the support frame are being drawn up and will be forwarded to WIMPEY.

2.24 Temporary decks

(BROWN & ROOT/CMP/MONBERG THORSEN)

2.241 The engineering and structural drawings are nearly completed. The drawings for equipment are in progress and should, for the larger part, be completed during November.

2.242 Fabrication at CMP

- Accomodation deck 21 :
Cutting and profiling trusses and helideck support tubulars have been started.
- Sheave module 24:(storage pancake 25 has not yet been started.

2.243 Fabrication at MONBERG-THORSEN

- helideck 22/working module 23 :
Cutting of the former QP temporary deck into three parts has been completed.

2.25 Engineering of treatment modules
(McDERMOTT-HUDSON)

The following information reflects the situation at the end of September 75, unless otherwise stated.

2.251 Structural engineering

Finalized design and detailing of equipment skids, support platforms and access catwalks.

Continued detailed design of pipe supports and linalog handling platform.

Review of vibration isolation system for mud pump compressors : completed.

2.252 Mechanical engineering

Heating and pressurisation systems are slow in their progress, some drawings and engineering details are still expected from the vendor. Engineering is also pursued on the HALON system.

2.253 Electrical engineering

The results of the noise study in the generator package have been received and examined.

2.254 Instrument engineering

A study relative the sale gas flow measurement was carried out for discussion with the British authorities.

Changes were made to the sales gas relief valves, as new orifices were specified in order to reduce the total rate of the flow.

2.26 Construction of treatment modules and deck units
(McDERMOTT-HUDSON/MERCANTILE MARINE ENGINEERING)

The situation is progressively improving on the yard. Most of the free issue material has been delivered. The prefabrication shop for pipe spools is now functioning at a satisfactory production level. The contractor is preparing a crash programme in order to maintain completion of work in MAY 76.

2.261 Erection and painting of framing

The situation at the end of October is as follows:

- module 01	: 85%
- module 02	: 80%
- module 03	: 60%
- module 04	: 90%
- module 05	: 75%
- deck unit 06	: 70%
- deck unit 07	: 100%
- deck unit 08	: 50%
- deck unit 09	: 95%
- deck unit 10	: 95%
- deck unit 11	: 80%
- deck unit 12	: 100%
- deck unit 13	: 95%
- bridge to QP	: 45%

2.262 Prefabrication of piping

Spools in fabrication : 692

Spools completed : 554

2.263 Module outfitting

The progress is as follows (percentages) :

Module	01	02	03	04	05
Erection of equip.	15	80	0	20	5
Erection of piping	0	0	0	0	0
Electricity	0	0	0	0	0
Instruments	0	0	0	0	0
Cladding	0	0	0	0	0

2.264 Deck unit outfitting

Progress is as follows (percentages) :

Deck unit	06	07	08	09	10	11	12	13
Erection of equip.	15	0	0	20	40	0	0	-
Erection of piping	0	0	0	0	0	0	0	-
Electricity	0	0	0	5	0	0	0	-
Instruments	0	0	0	0	0	0	0	-
Cladding	0	0	0	0	0	0	0	-

2.3 Living quarters platform QP

The improvement observed on the BORDEAUX yard in the last fortnight of September, with an increase in the manpower, was not continued through October and the staff assigned to this project has remained abnormally low.

2.31 Jacket and support frame

Some loose items that were still in abeyance at ST. WANDRILLE and CHERBOURG have been loaded onto barge 252, for STAVANGER, as well as the fuel oil storage tank.

2.32 Engineering of living quarters building
(McDERMOTT-HUDSON)

The following information reflects the situation at the end of September 75, unless otherwise stated :

2.321 Structural engineering

The updating of some drawings is in progress.

2.322 Mechanical engineering

Engineering continues on air conditioning system. Due to requirements made by the DOE and the DNV, some modifications are being prepared on aviation fuel system and incinerator.

2.323 Electrical engineering

Re-appraisal of the fire and safety drawings , caused by the DNV and DOE requirements.

Engineering to check schematic and wiring diagrams.

2.324 Instrument engineering

The action during this month mainly concerned the, updating of telemetry, of terminal cabinets for the computer system and preparation of the functional tests in BORDEAUX

2.33 Construction of living quarters

(McDERMOTT-HUDSON/CHANGIERS DE LA GARONNE)

The increase in manpower observed at the end of September was not continued during the month of October, so that progress is still far from sufficient.

Further to the study of the requirements made by the DOE and the DNV, it has been necessary to bring in some modifications in order to improve the fire protection : change in material, reinforcement of partitions, watertight closing of the casings etc.....

2.331 Structure

The situation at the end of October is as follows :

Module A

- fit up : 100% (last modifications in progress)
- cladding : 90%
- stairs : 80%
- windows : 95%
- passways : 90%

Module B

- fit up : 100% (last modifications in progress)
- cladding : 90%
- stairs : 85%
- windows : 85%
- passways : 75%

Roof units

- telecommunication rooms, battery rooms
 - radio room : 95%
- helihangar : 55%
- helideck : 95%
- crane support : 95%

2.332 Outfitting

The following table indicates the progress at the end of October (percentages) :

	Module A	Module B
- inner floors	85	70
- partition walls, doors	70	40
- ceiling	20	0
- bedrooms	75	90
- common rooms	55	40
- laundry, kitchen, workshop	75	-
- service area, goods lift	-	35
- air conditioning	85	15
- piping	95	70
- electricity and telephone	55	50

2.34 Supervisory control and field communications

(McDERMOTT-HUDSON/COMSIP)

2.341 QP Modules

No progress during October in BORDEAUX, waiting for the completion of cladding assembly by CDLG.

2.4 Lines and connections

The stress analysis in the various pipes (during and after laying operations) is expected before the end of the month. The results will probably have to be adjusted in order to take into consideration the position of the flare, as installed.

The procedures for installation are being drawn up. It is understood, that the real positions of QP, CDPl and flare impose modifications, mainly in the orientation of TP1. The goal that has been set is to reduce the period and the work offshore and more precisely the number of hyperbaric welds.

In principle, the procedure for hyperbaric welding has been approved by DNV. The choice of the steels to be welded and that of the programme for qualification is being prepared.

2.5 Telecommunications

2.51 Telecommunications with UK

The construction of the microwave mast is almost completed. An on-shore pre-assembly trial is still being discussed.

2.52 Telecommunications with NORWAY

The delivery of C-ITOH equipment is now expected for the beginning of November in STAVANGER.

III. PRODUCTION FACILITIES - PHASE II

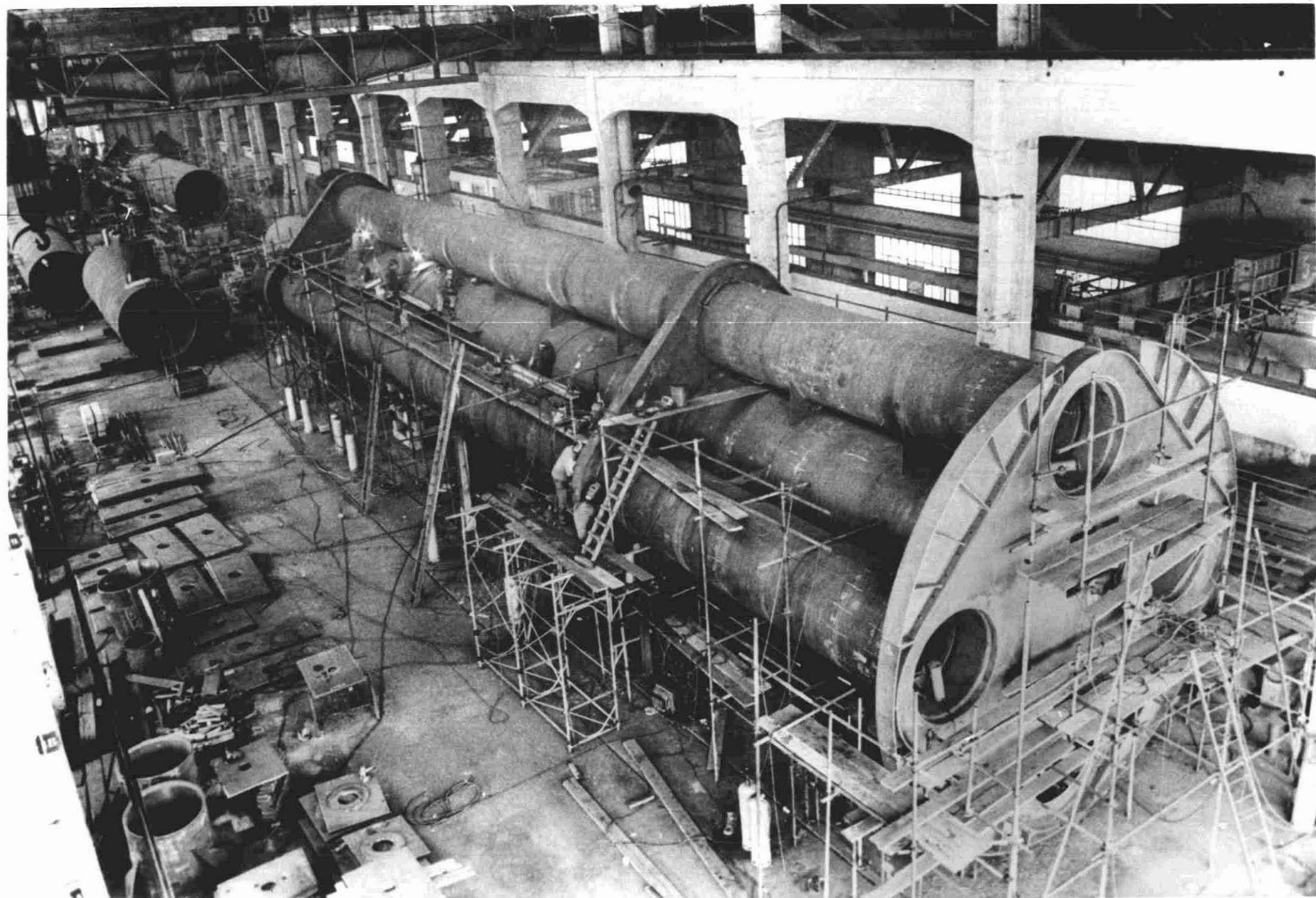
3.1 Drilling platform nr. 2

3.11 Jacket

3.111 Engineering

Following a meeting in OSLO with DNV, specialists and ELF, the decision has been taken not to perform any post-heat treatment on nodes for DP2, but to make special efforts in welding and US controls.

Further to new bathymetric studies, the present sea water depth on the DP2 site, is now a little less than 98 m. Due to this change, modifications need to be performed on the barge bumpers and boat landings. A new launching analysis (results of which have not yet been presented) entails reinforcements of bracings in order to avoid punching danger.



DP2 BOTTLE FABRICATION AT SOCOMET SHOP

The study performed by SYMINEX, is nearly completed and will be presented to the NPD at the beginning of next month.

A model study of DP2 (launching and up ending) will be performed next month in NSMB in WAGENINGEN.

The first contacts were established with OCEANIC, in order to examine the installation procedure.

3.112 Prefabrication

a) Rolling

All the tubes for the jacket and support frame are now delivered on the yard. Only 200 mt (relative to piling) remain in the subcontractor's mills

b) Bottle fabrication

. SOCOMET :

The first two bottles have been delivered on the yard. No delay is anylonger expected for the two last ones.

. RICHARD DUCROS & PICHON :

Strikes will delay the delivery of the last mini-bottles.

c) Other prefabrication

. RICHARD DUCROS :

Only transversal beams for support frame are remaining and will be delayed due to strikes. At the present time, this should not influence the planning.

. ACB :

Two 144" buoyancy tanks). The two tanks are in CHERBOURG, some repairs need to be performed.

. ACTIME :

(Recovery of two 100" and eight or nine 62" tanks)
The job is progressing.

d) CHERBOURG yard

The four nodes (-70 m) are returned to CHERBOURG after post-heat treatment. File 2 and 3 are in progress. UTE anticipates the lifting of these first two panels around the 9th of December.

The total progress is now 27% and 9% in the prefabrication of the flooding and grouting system.

e) ST. WANDRILLE yard

DPl support frame will leave this yard at the beginning of next month. The total progress is 27% for the support frame and 15% for piling.

3.12 Production modules- Engineering :

The general engineering progress is 95%

The detailed engineering progress is as follows :

~ general arrangement	: 95%
~ Model construction	: 90%
~ Piping arrangement	: 90%
~ Isoing	: 80%

- Procurement :

Procurement progress is 97%

Material delivered on site : 60% (steels for frame included)

- Fabrication progress :

a) steel constructions

Total for 4 modules : 38%

Module 1 : 31,5%

Module 2 : 45%

Module 3 : 38,5%

Module 4 : 41,2%

These percentages reflect the prefabrication of the frames.

b) Equipment installation

Total : 8,85%

(mainly piping prefabrication at SANDOUVILLE yard)

The total fabrication progress was 19,56%

Forecast : Due to the late delivery of steels for the frame and due to personnel dispute on the yard, we anticipate the completion of the modules for the end of July 76.

3.2 TCP2 platform

3.21 Structure

3.211 Yard installation

The situation on the deep water site is as follows :

- widening channel : 99%
- utilities (electricity & power water supply) : 40%

3.212 Engineering

The issue and approval of the structural drawings for the construction is still delayed. However, the delay is decreasing and the general situation is much better than the past month.

3.213 Construction

The progress in the construction of the platform is as follows :

- Lower domes : 100%
- cantilevered slab : 100%
- lower part of ballast cylinder : 100%
- installation slipform for cell wall: 90%

The construction work on the yard is now ahead of schedule. Watering of dock and towing of the lower part of TCP2 is now scheduled before the end of the year.

3.214 Support frame

Discussions relative to details have again been held with AKER, in order to finalize prices and contract. The validity of the letter of intent has been lengthened with 8 days. A final modification remains to be realised before signature of the contract. AKER STORD started the first shop drawings and welding procedure.

All the steel ordered from SUMITOMO has arrived on the AKER yard (STORD verft) on the 22nd of October 75. The other steel ordered by ELF (section for cellar deck and some additional plates), will reach STORD in January 76.

The engineering performed by KVAERNER ENGINEERING is following a normal course with yet some delays

for the calculations (analysis of support ring and fatigue investigation). Approximately 150 drawings have been delivered (100 for approval and 50 for comments).

The delivery date for the support frame is still forecasted as the 1st of October 1976. (without any change orders).

3.215 TCP2 riser installation

The progress of the BROWN & ROOT activities is as follows :

- installation of tunnel 48" : 97%
- installation of tunnel 42" : 96%
- installation of J tube nr.1 : 75%
- installation of J tube nr. 2 to 7 : 67%
- installation of padeyes & sheave blocks : 53%
- installation of ramps & protection bars : 23%

3.22 TCP2 treatment modules

3.221 Engineering of treatment modules

The estimated percentages of completion for the month, as performed by McDERMOTT-HUDSON are as follows :

- 58% for the process design
- 58% for the structural design (including bridge)
- 13% for the project management services

Structural design :

Quite a few drawings were approved for construction (approximately 38)

Process design :

All process instruments diagrams, including the condensate storage system and glycol regeneration units are being drawn again for a revised issue at the end of October 75.

Mechanical engineering :

. Pumps : quotations have been received for the condensate storage pumps and oily water pump and work is proceeding on the technical evaluation of the bids.

. Piping : Generally the delivery of the large bore pipe and fittings is proceeding according to schedule and is expected to arrive on site by the end of November.

The hydraulic power pack will be ready for shipment as soon as the pneumatic pressure switches are received and tested.

Generally, work is proceeding satisfactorily with the review of the drawings submitted by the vendors.

Electrical engineering :

A meeting was held with PARSONS & PEEBLES and KONGSBERG to discuss construction of modules and pancakes with emphasis on sequence of erection and corresponding construction periods.

Instrument engineering :

The approval of the fire and gas detection lay outs has been given to McDERMOTT and the work will begin on specifying/designing cabling etc....for the system.

Drafting :

The ESD pneumatics, schematics and hook-ups were updated and passed on to instrument engineering for final cross checking with the TP1 documents.

3.222 Project management services

The procurement situation is as follows :

- number of inquiries issued this month : 4
- number of inquiries under evaluation : 25
- bid summaries issued this month : 10
- telex orders placed this month : 13
- formal purchase orders placed : 5
- purchase order supplements : 11

3.223 Construction of the TCP2 treatment modules

. Prefabrication work at EBERSUND : The total percentage of work per modules/decks and pancakes is as follows :

Modules	main deck	upper deck
Module 01	100%	17%
Module 02	96%	13%
Module 03	19%	7%
Module 04	19%	7%

Pancakes

Pancake 05 : 9%
 Pancake 06 : 100%
 Pancake 07 : 16%
 Pancake 08 : 87%
 Pancake 09 : 80%

The figures listed afore, result in an overall completion of work of 39% for prefabrication on the 25th of October 75.

. Fabrication work at ORKANGER (contract E.20 SPIE/VIGOR):

The mechanical tests on weld procedures started on the 8th of October 75.

3.23 Compression

The progress of the engineering work realised by KVAERNER/TECHNIP is 15,6%. The following documents were published as preliminaries in three versions, corresponding to the three possibilities that were studied:

- plot plans
- repartition of the loads on the deck
- diagram process

Contacts have been established with various turbine, compressors and sea water pumps suppliers, in order to detail the specifications of the material.

A delegation was sent to the US, in order to visit various installation including gas turbines of the same types as the ones that can be anticipated for our project. The LCHF continues their studies relative to the sea water intake and the problem caused by the reject.

The contract was presented to KVAERNER/TECHNIP's signature, who requested several modifications, currently in progress.

The studies in progress should allow to next month, make a choice between the various possible compression diagrams.

3.24 Lines and connections

All steels have been purchased.

The coating of the pipes is in progress

Priority is being given to Phase I;

IV. CONTRACTS

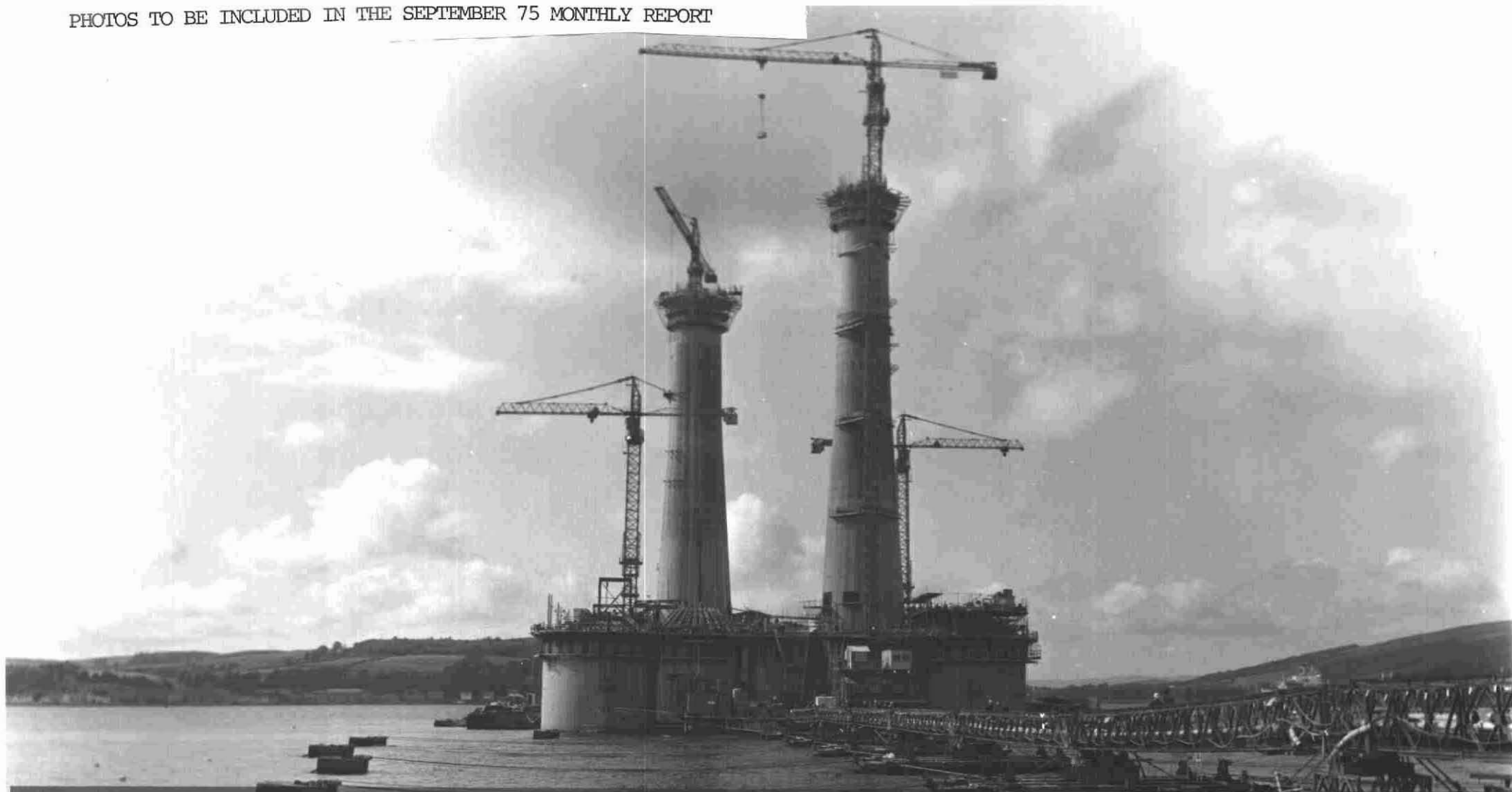
The following orders or contracts were sent out or signed during the month :

- Order 153312, for additional plates form SUMITOMO for the construction of the TCP2 support frame as requested by AKER and NORWEGIAN CONTRACTORS. Amount : FF. 54.693
- Order 153313, for profiles and export. Definitely needed for the construction of the TCP2 support frame. Amount FF. 128.994.
- Amendment nr. 1 to contract E. 16 - regularization with UIE for change orders CH2-CH4-CH5-CH12 and PA1. Construction of two buoyancy tanks, various work and services. Amount : 3.764.700
- Contract S.193 with SYMINEX - Assistance in personnel for the installation of instrumentation on CDP1. Amount : 275.000 FF.
- Telex of intent to SYMINEX S. 194, for procurement of material for instrumentation on DP2. Amount: 175.600 FF.
- Telex of intent to McDERMOTT S. 117, amendement nr. 2 for various additional studies on DP2. Amount 435.956 FF.
- Telex of intent to ACTIME, fabrication of seven buoyancy tanks for DP2, from the buoyancy tanks recuperated from DP1 - S. 39. Amount : 1.915.720 FF.
- Telex of intent to UIE - E.2 amendement nr. 12 for the adaptation of the DP1 modules, in order to be used on the CDP1. Amount : 3.769.513 FF
- Telex of agreement sent to TOM for the preliminary study by BUZICHELLI, of the gantry crane intended for the installation of the modules Amount : 235.000 FF.
- E. 35, contract with REG BOOTH for the fabrication of four modules for CDP1. Increase as compared to the telex of intent which thus becomes 133.819

- E.16, contract with UIE for the fabrication of the DP2(jacket support frame, outfitted modules. Amount : 234.329.767 FF. Further to telex of intent dated 18-07-74 for the jacket (contract E.16) and to telex dated 27-09-74 for the modules (contract E. 17)
- S. 178, amendment nr.1,with SOFRESID, for a work supervisor on the ARDYNE yard for TP1. Amount estimated at : 91.000 FF.
- S.194 for rental of a floating crane from the company NEPTUN, for a period of 14 days from the 10th January 76. Amount: 2.293.000 FF
- E.6, amendment nr. 1, for the modification of the composition of the consortium and definition of price revision formula for contract E. 6 with UIE (construction of the support frame and jacket for QP).
- E.6, amendment nr. 2, for the regularization of change orders in the amount of : 3.376.111.- FF
- E.6, amendment nr. 3, for regularization of change orders for an amount of FF7.577.351.-
- E.14,amendment nr. 4,for the regularization of modifications and additional work that occurred during the construction of TP1, for an amount of FF. 73.913.493.-

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PHOTOS TO BE INCLUDED IN THE SEPTEMBER 75 MONTHLY REPORT



BROWN & ROOT (UK) LTD. ELF PROJECT NO 78-5714 AT ARDYNE POINT

SHOT NO: 118 GENERAL VIEW OF RIG FROM PONTOON

DATE:

NEG NO: 3000/50/2e



75/727/14

ELF PLATFORM FROM SOUTH WEST

16. 9. 75.



BROWN & ROOT (UK) LTD. ELF PROJECT NO 78-5714 AT ARDYNE POINT

SHOT NO: 138 SHOT OF COL 2 FLOOD LINE PENETRATIONS EL -6

DATE: 18-9-75

NEG NO: 3000/ 50/11B



BROWN & ROOT (UK) LTD. ELF PROJECT NO 78-5714 AT ANDYME POINT

SHOT NO: 134 SHOT OF BARGE CRANE PRIOR TO INSTALLATION OF
TUNNEL APPROACH RAMP

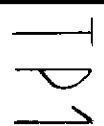
DATE: 18-9-75

NEG NO: 3000/ 50/5A

OPERATIONS	1974												1975												1976													
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
Concrete Structure Graving Dock																																						
Concrete Structure 1 st Stage Construction																																						
Concrete Structure 2 nd Stage Construction																																						
Temporary Modules Fabrication																																						
Support Frame Rollin & Prefab																																						
Support Frame Assembly																																						
Loch Fyne Opération																																						
Concrete Structure Towage & Installation																																						
Grouting Under Slab																																						
Rip Rap Protection																																						
Deck Units Framing																																						
Deck Units Out Fitting																																						
Modules & Bridge Framing																																						
Modules & Bridge, Out Fitting																																						
Decks Units, Modules & Bridge Transport & Set UP																																						
Deck Units, Modules & Bridge Hook Up & Commissioning																																						

(end 01-05-77)

(end 01-05-77)



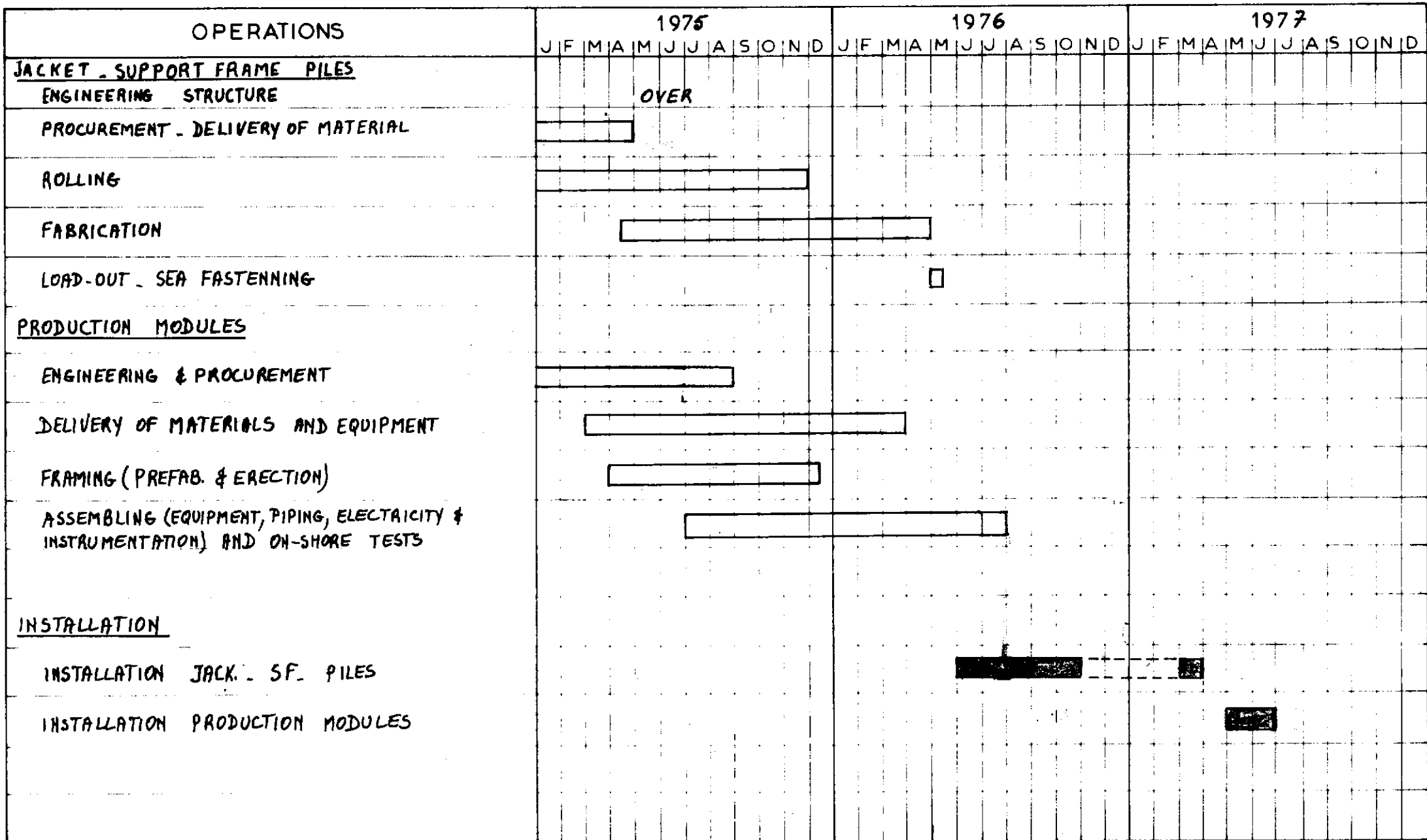
TREATMENT PLATFORM N° 1

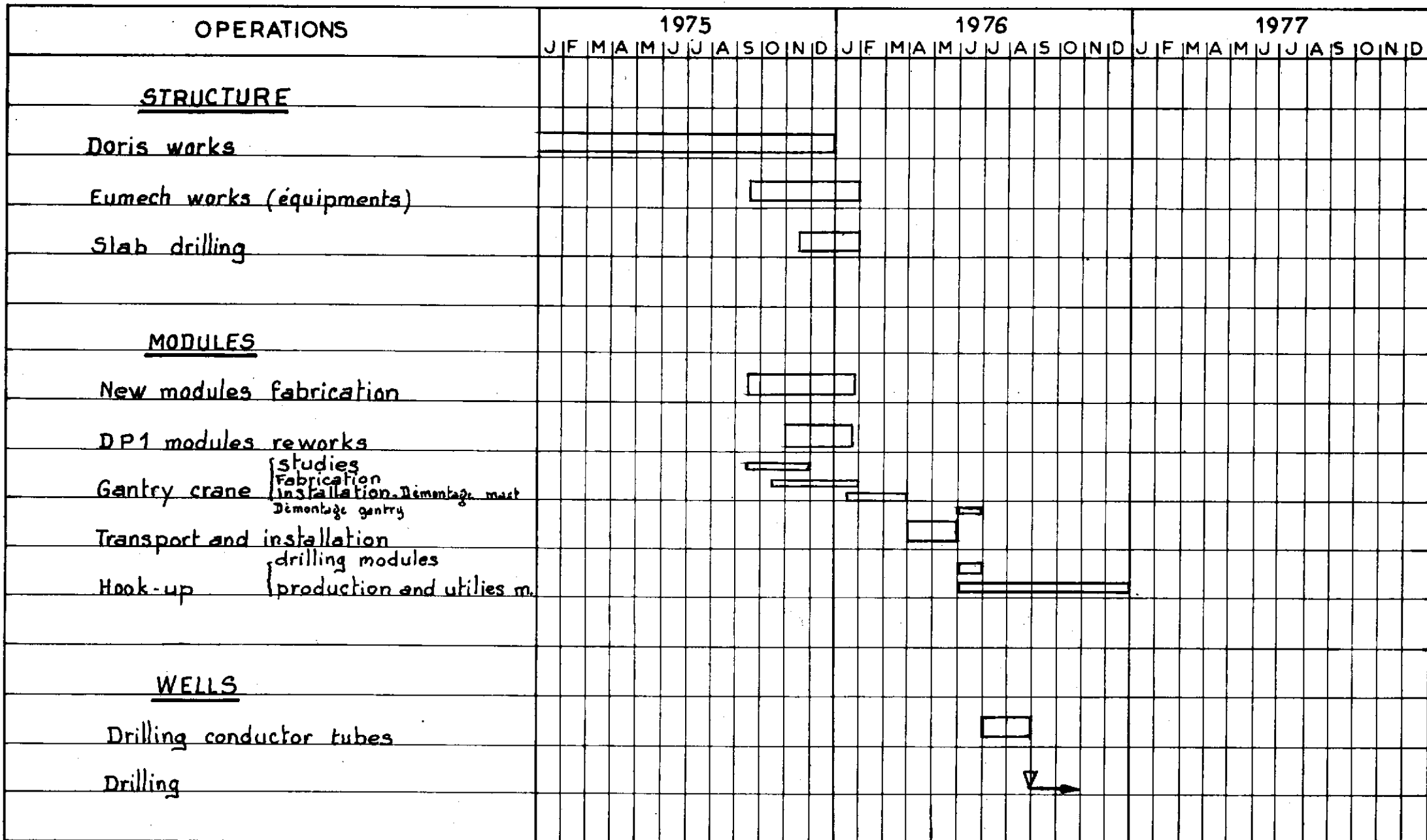
elf
NORGE

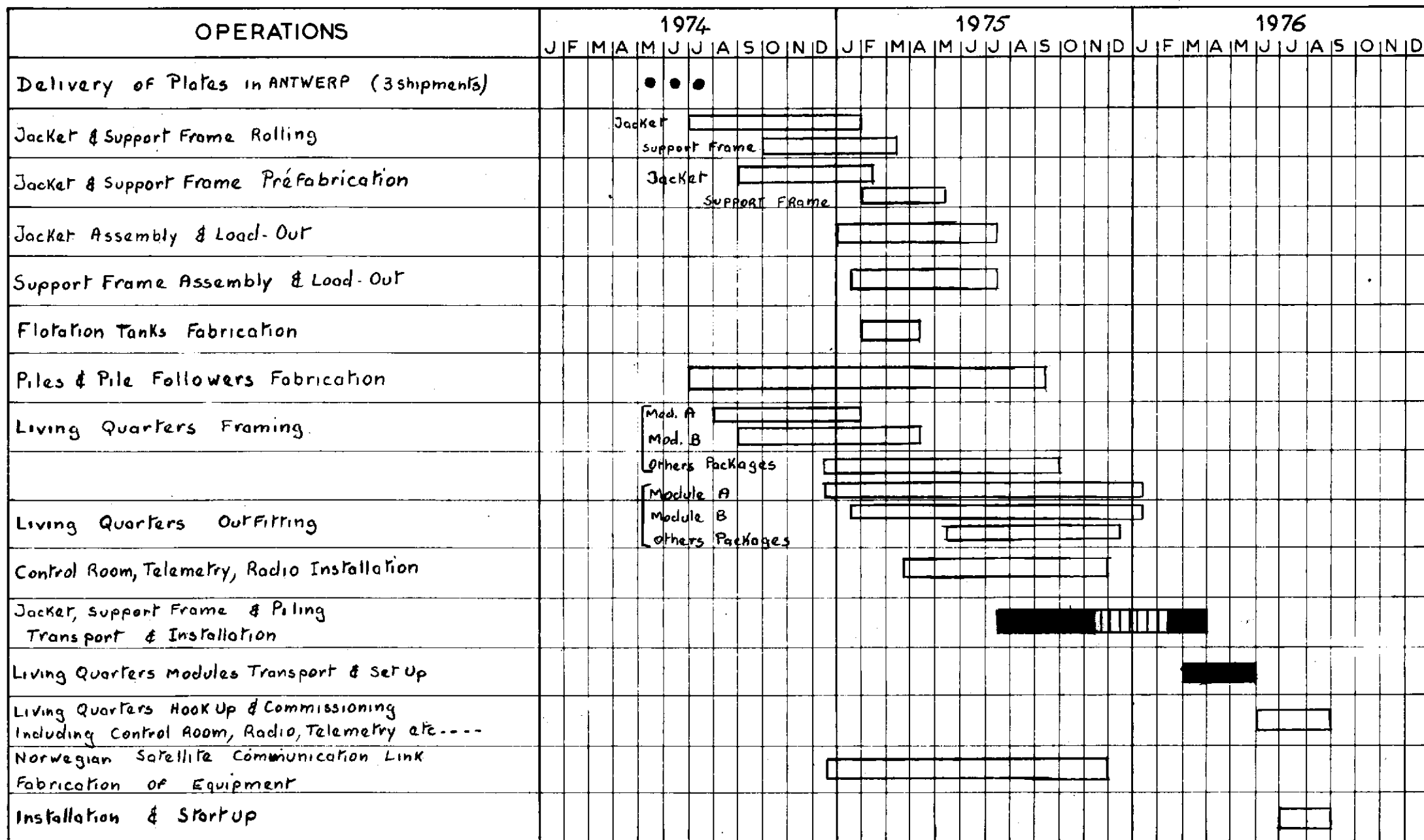
FRIGG FIELD
PRODUCTION FACILITIES

ISSUED: 1ST NOV 1975

TP1





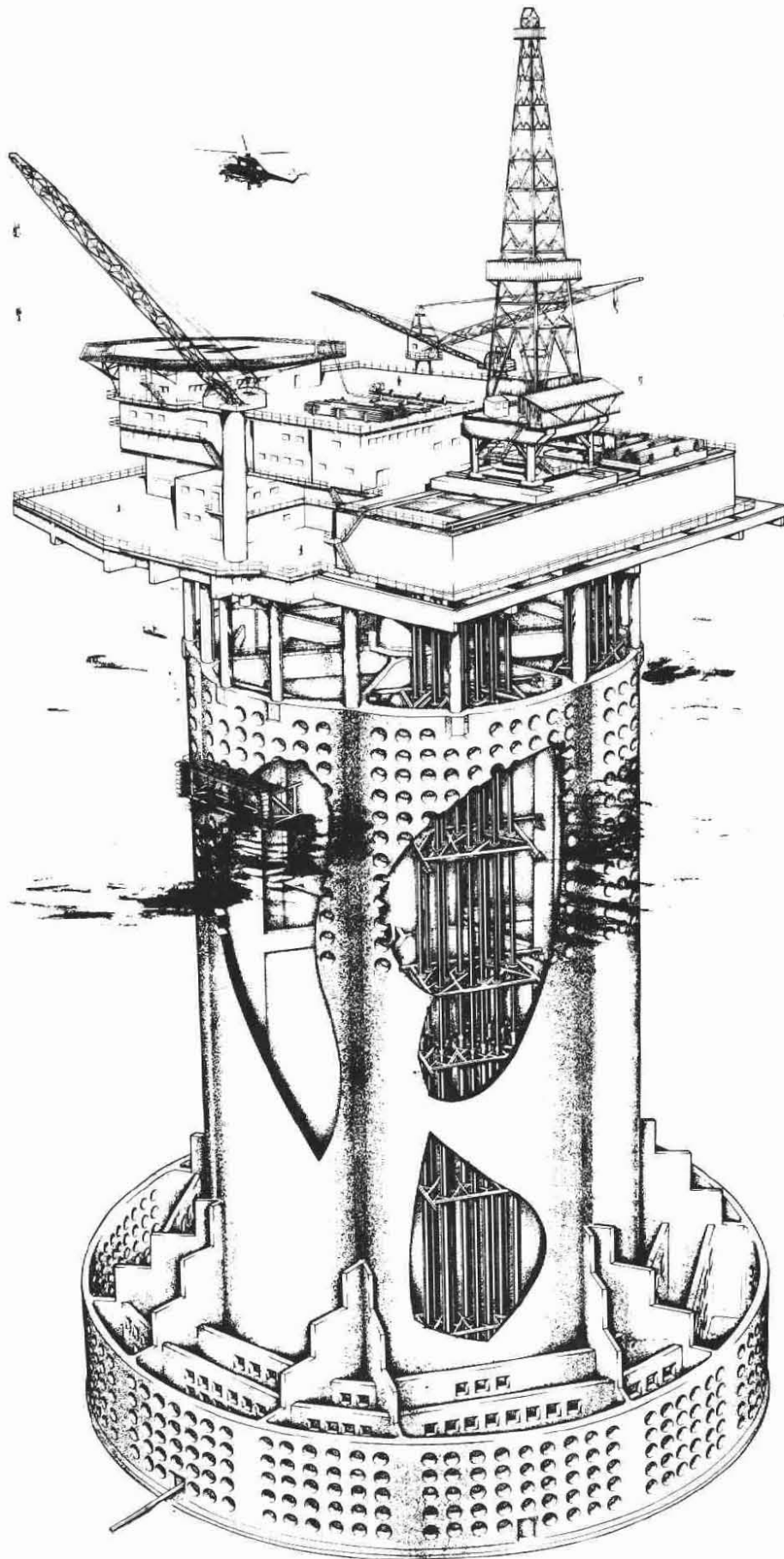


 LIVING QUARTERS PLATFORM

elf
NORGE

FRIGG FIELD
PRODUCTION FACILITIES
ISSUED: 1ST NOV. 1975

QP



CONCRETE DRILLING PLATFORM
(CDP1)

OPERATIONS	1975												1976												1977													
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
CONCRETE STRUCTURE DRY DOCK																																						
CONCRETE STRUCTURE BUILT (DRY DOCK)																																						
CONCRETE STRUCTURE BUILT (DEEP WATER)																																						
DECK FABRICATION																																						
DECK INSTALLATION																																						
MATERIALS PROCUREMENT																																						
PREFABRICATION OF DECKS MODULES & PANCAKES FRAMING I/S - KSV																																						
COMPLETING ALL MODULES & PANCAKES WITH THEIR EQUIPMENTS (Ready for transportation to in-shore position																																						
TRANSPORTATION OF (M) & (P) TO THE IN-SHORE POSITION																																						
HOOK-UP, CONNECTIONS AND PRE-COMMISSIONNING OF (M) AND (P) IN THE IN-SHORE POSITION																																						
TOWING OF THE STRUCTURE WITH THE EQUIPMENT																																						
GROUTING																																						

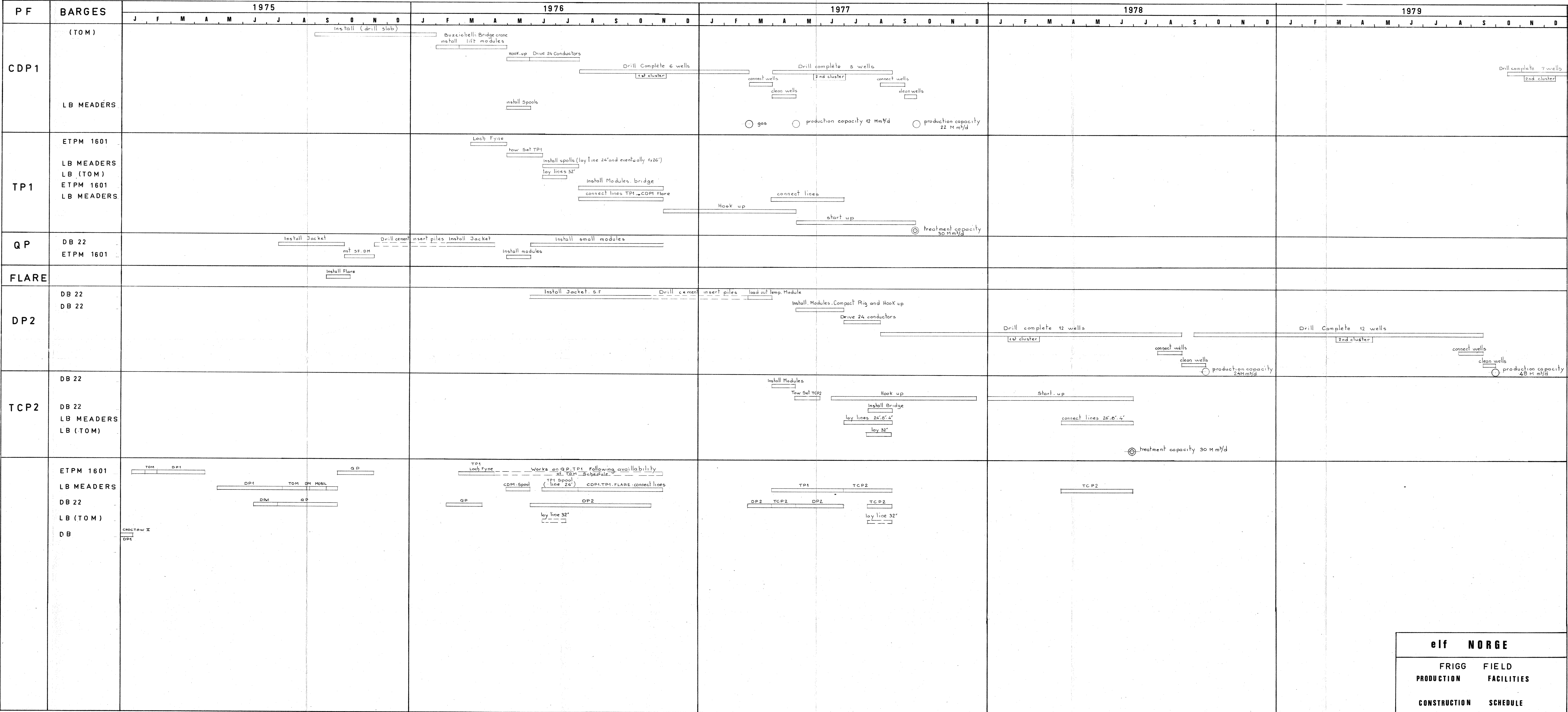


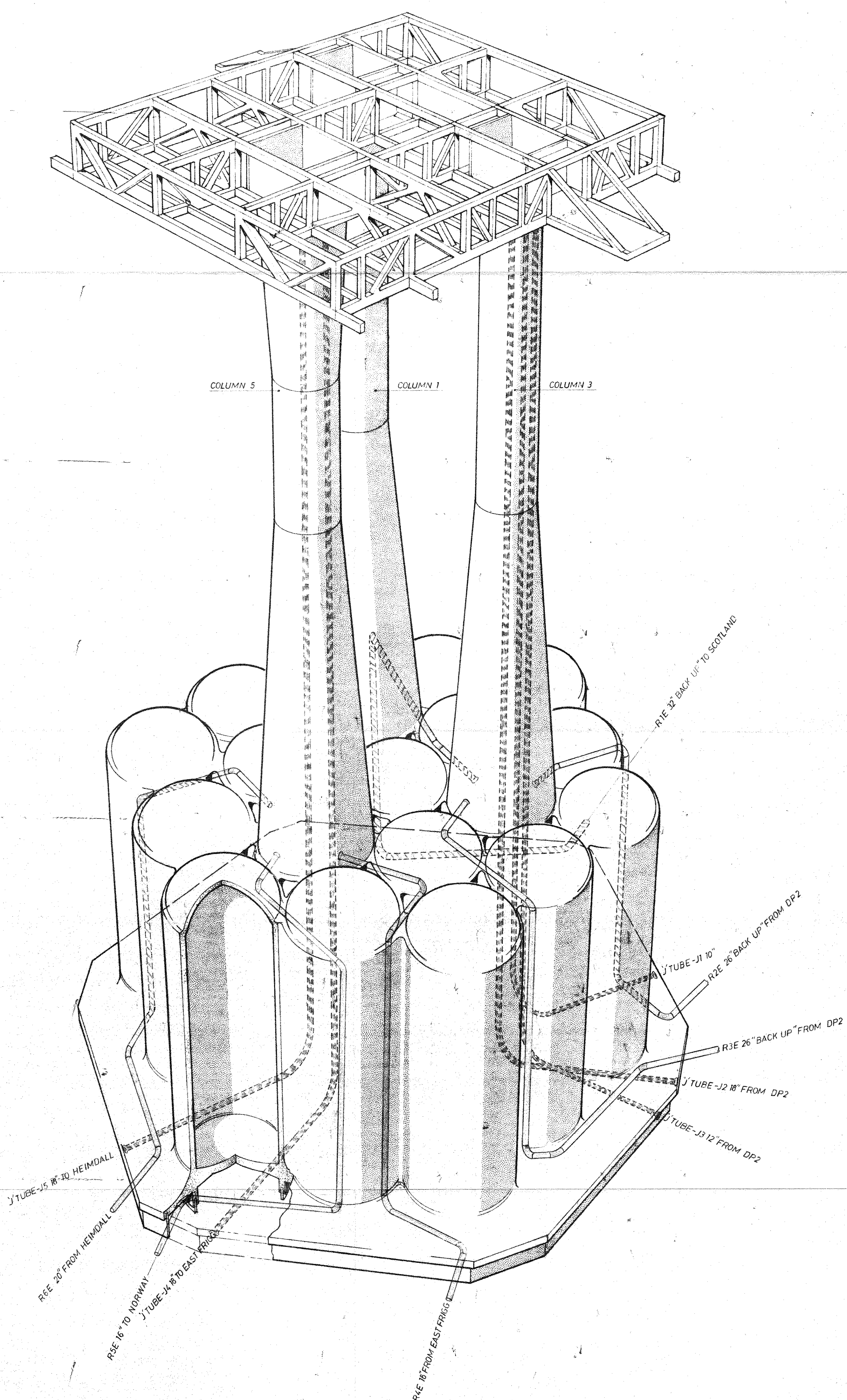
TREATMENT AND COMPRESSION
PLATFORM N°2

elf
NORGE

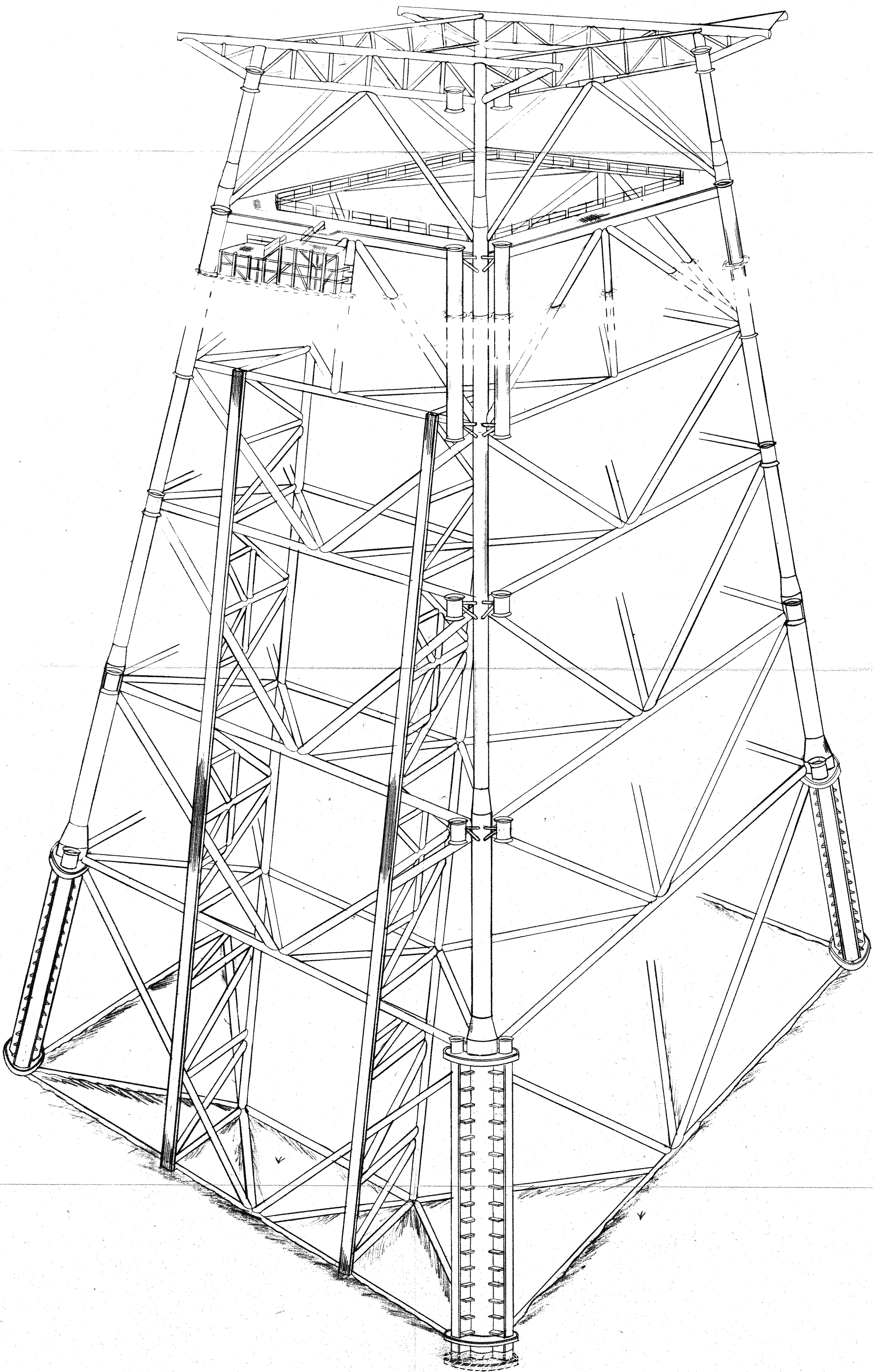
FRIGG FIELD
PRODUCTION FACILITIES
ISSUED: 1ST NOVEMB. 1975

TCP 2





NOTES :-



REFERENCE
DATE - 0 OCT 73

ELF-NORGE A/S
NORWAY

QUARTERS PLATFORM

NORTH SEA FRIGG FIELD W.D. 104-M

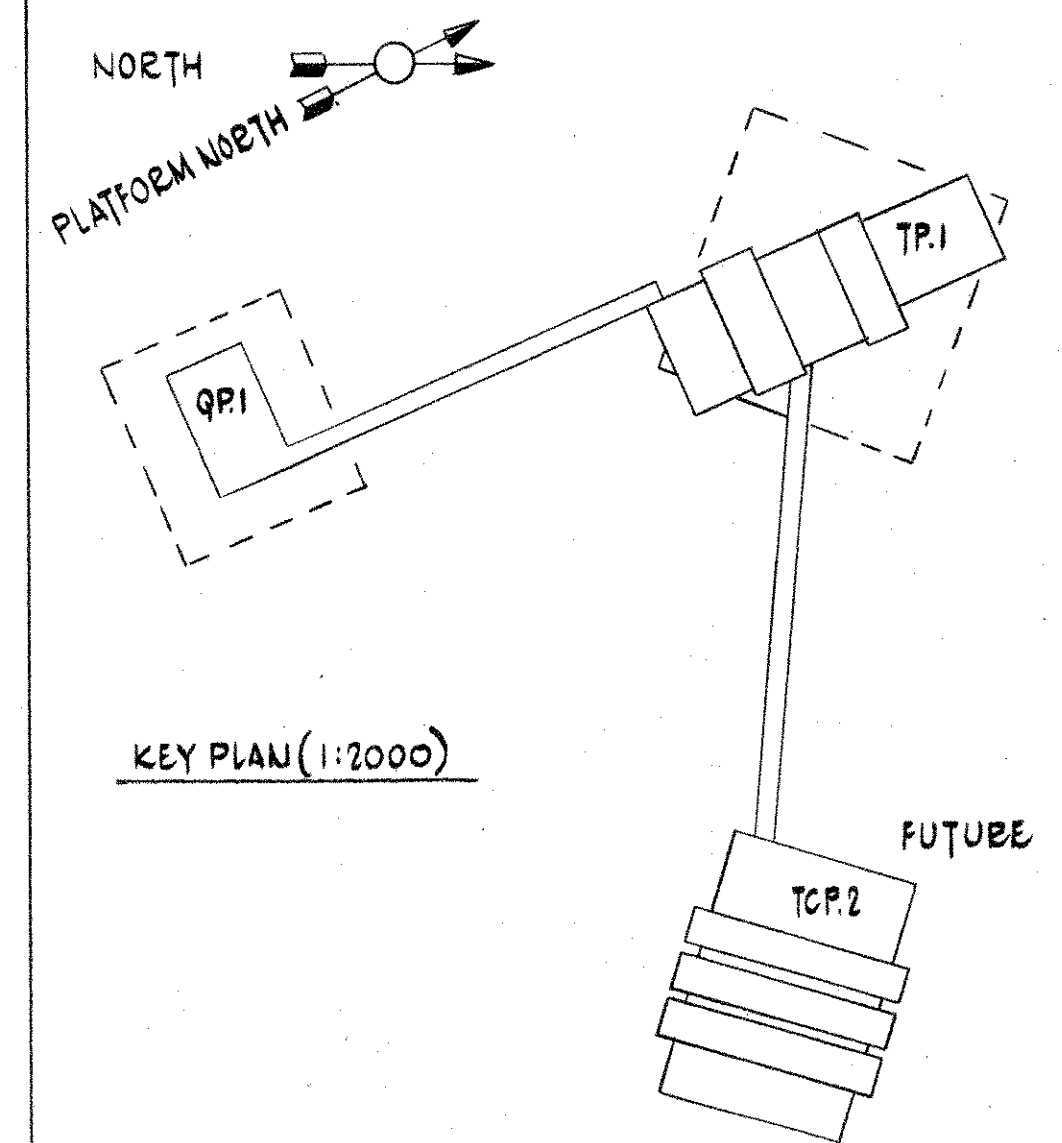
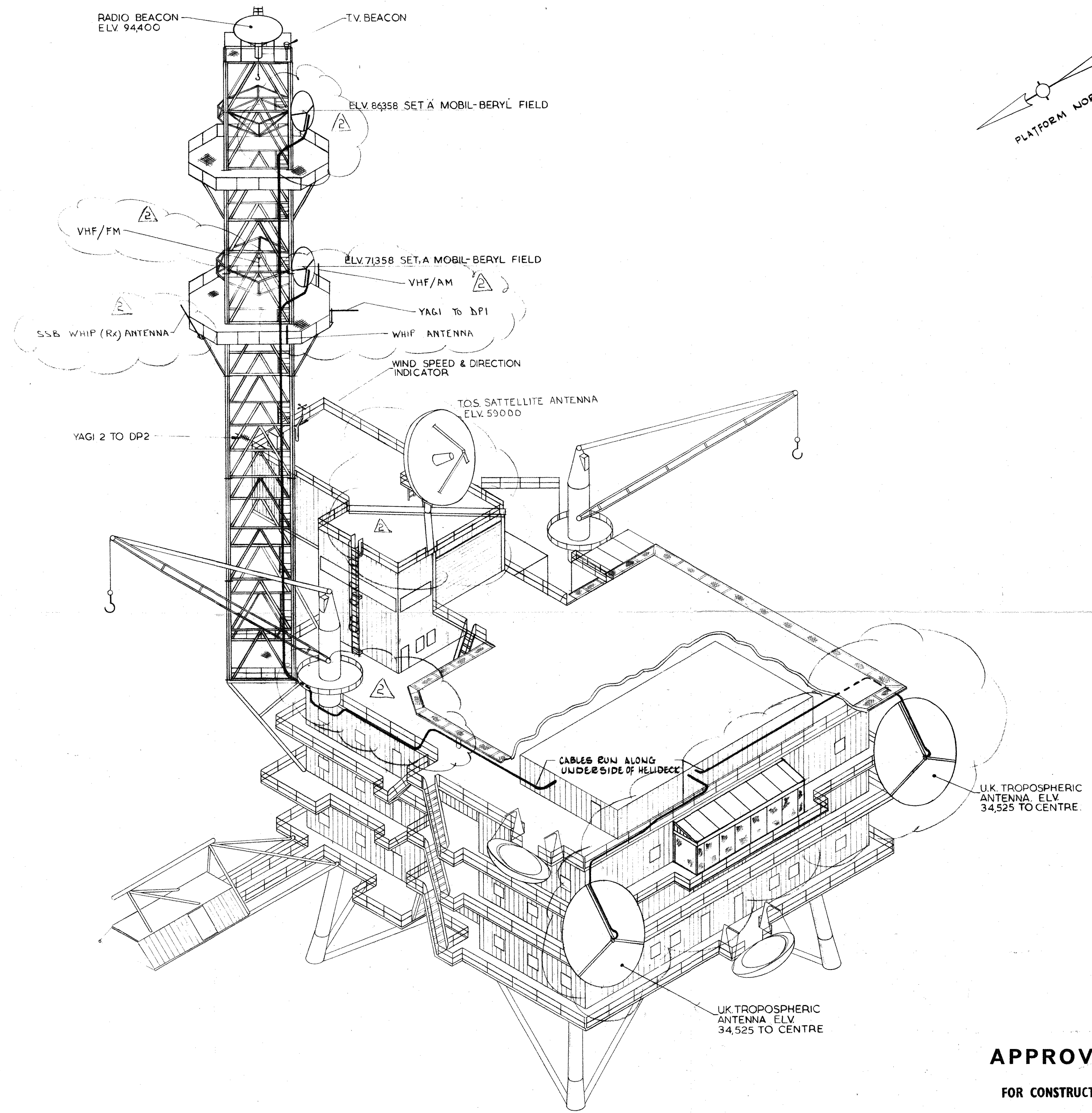
MCDERMOTT - HUDSON

LONDON - ENGLAND

APPROVED:	
MCDERMOTT - HUDSON	
DATE	
ENGINEER'S APPROVAL	
BY	DATE
PROJECT	
STRUCTURAL	
MACHINICAL	
ELECTRICAL	
INSTRUMENT	
PIPE CHECK	

DRAWN BY	SCALE	DATE	DWG. NO.
CH/PH/ELS	5-DEC 73	64N 2098	
DESIGNED BY			SHEET NO.
R. J. J.			001
QUARTERS PERSPECTIVE			

FAB. STDS. REQ'D. THIS SH'T.									
DESIGN	STRUCT.	PIPING	ELEC.	MK.	BY	DATE	REVISIONS		
							DATE	APP.	DESIGN
									STRUCT.
									PIPING
									ELEC.
									MK.
									BY
									DATE
							REVISIONS		
							DATE	APP.	DESIGN
									STRUCT.
									PIPING
									ELEC.
									MK.
									BY
									DATE
							REVISIONS		
							DATE	APP.	DESIGN
									STRUCT.
									PIPING
									ELEC.
									MK.
									BY
									DATE

[illegible]

APPROVED
FOR CONSTRUCTION

APPROVER *[Signature]*
 ML DEEMOTT *[Signature]*
 DATE *4 Feb 75*

ENGINEERS APPROVAL		
YES	BY	DATE
PROJECT	<i>[Signature]</i>	2-3-75
STRUCTURAL	<i>[Signature]</i>	3-2-75
MECHANICAL	<i>[Signature]</i>	3-2-75
ELECTRICAL	<i>[Signature]</i>	3-2-75
INSTRUMENT	<i>[Signature]</i>	3-2-75
FAB CHECK	<i>[Signature]</i>	4-1-75
PROP CHECK	<i>[Signature]</i>	4-1-75

ELF - NORGE
FRIGG FIELD

QUARTERS PLATFORM

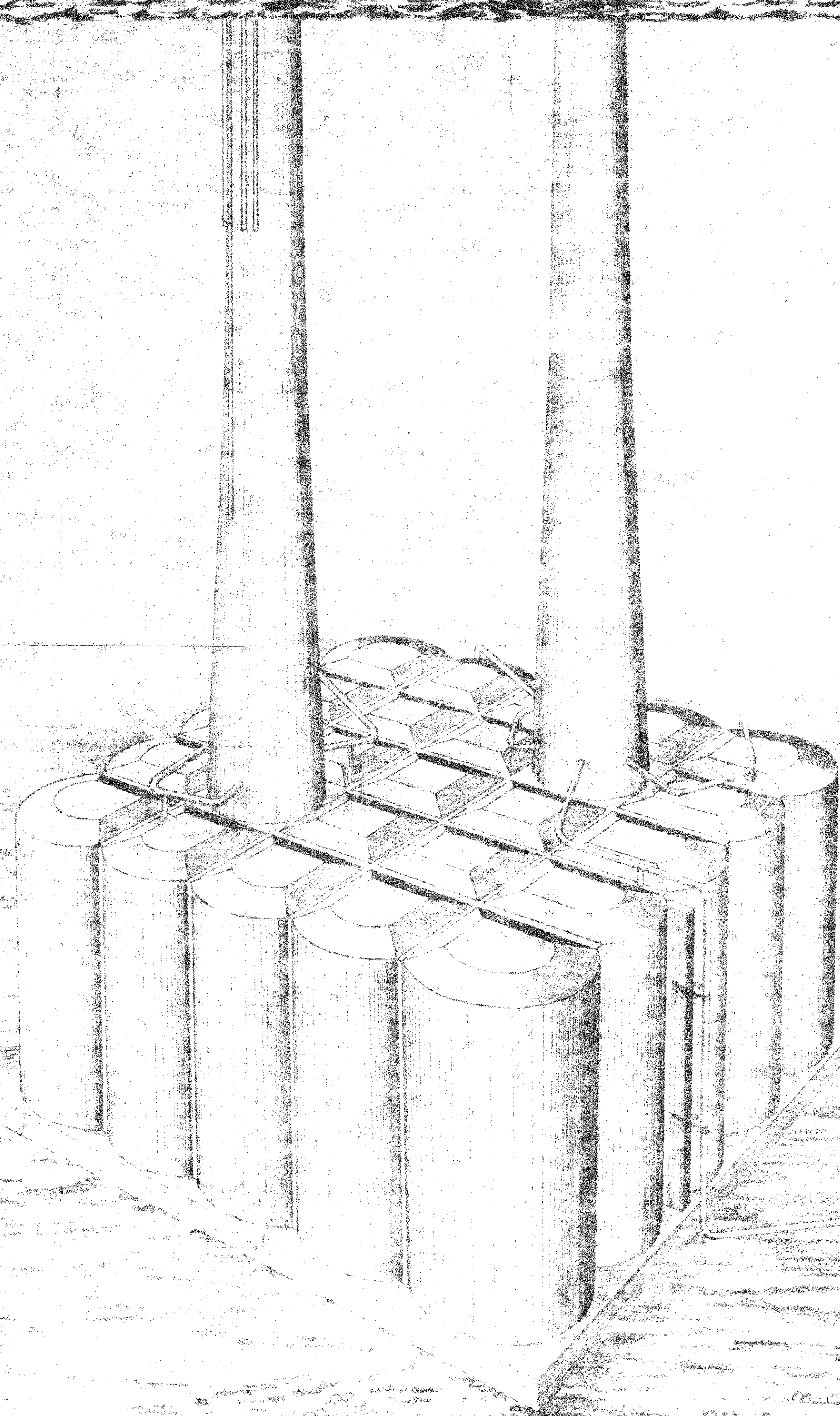
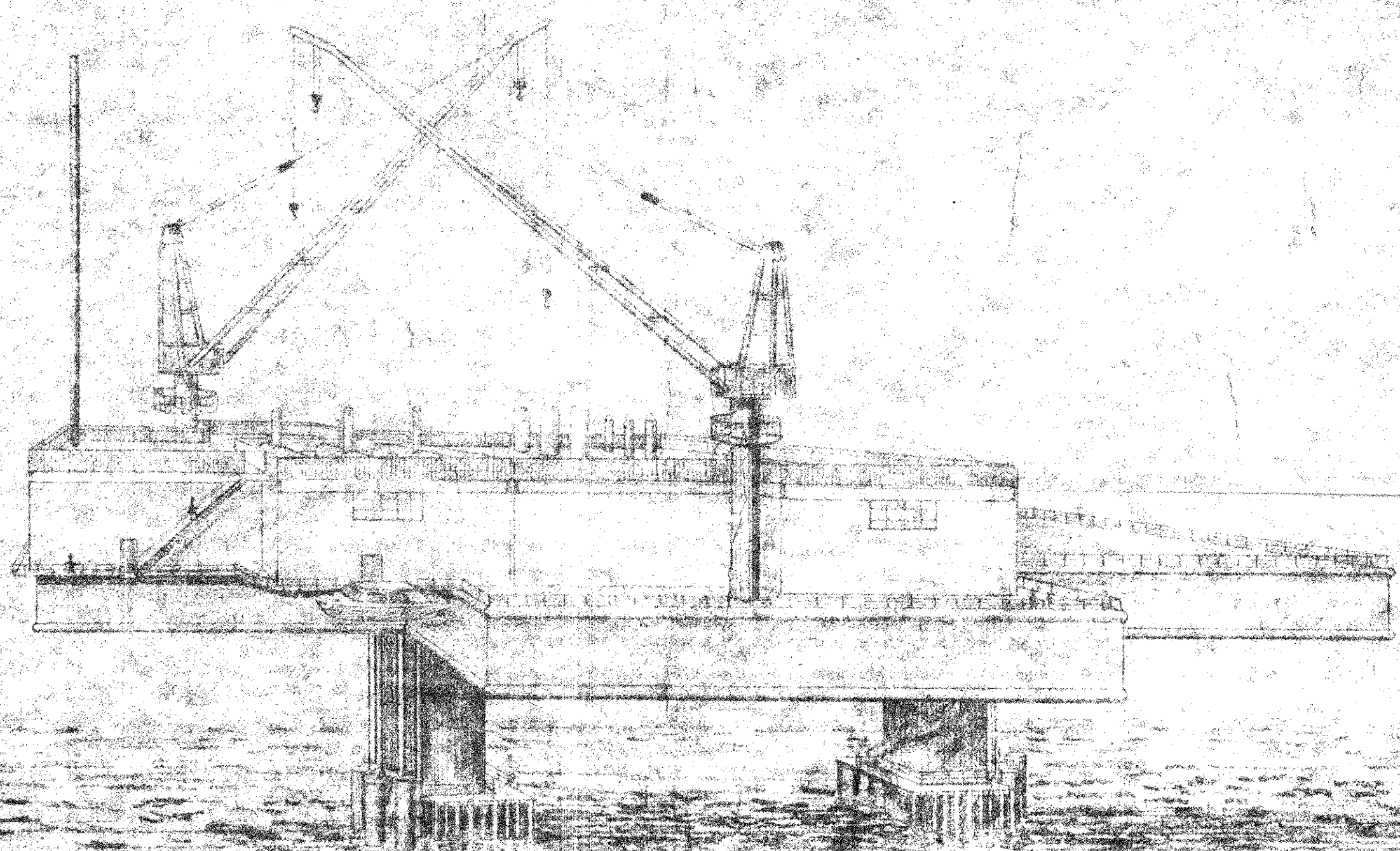
JOB 1-40-D2

NORTH SEA **W.D.104M**

McDERMOTT — HUDSON			
LONDON — ENGLAND			
DRAWN BY L.T.WAREEN.	SCALE N.T.S.	DATE 4th OCT 74	DWG NO ELN 2111
DESIGNED BY			SHEET NO 732
ANTENNAE CABLE ROUTE TO U.K. COMMUNICATIONS ROOM.			

FAB. STDS. REQ'D. THIS SHT	DESIGN	ELEC.	INSTR.	PIPING	STRUCT.	NO.	BY	DATE	REVISIONS	DATE	APP.	DESIGN	ELEC.	INSTR.	PIPING	STRUCT.	NO.	BY	DATE	REVISIONS	DATE	APP.
																	2	D.M.	25-7-75	BACKGROUND & CABLE ROUTING UPDATED	8/1/75	JEN
																	1	GP	25-7-75	ISSUED FOR CONSTRUCTION	3-3-75	JAI
																	0	TRC	24-1-75	ISSUED FOR CLIENT APPROVAL	28-1-75	RTK

TP 1



sea tank co

J. Vittori