

YEMEN PETROLEUM COM TECHNICAL&PROJECTS DEP.	SPECIFICATION	PROJECT:-RENEWAL OF OIL C.B.M TERMINAL -MUKALA
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Work Procedure And Specification

- **Pipe Work**
- General

Pipe work for liquid petroleum products shall comply with ASME B31.4. All pipe systems shall be arranged, installed, supported and provided with all necessary means of venting, draining and expansion, all to the approval of the Engineer.

The Contractor shall provide the services of a competent manufacturer's installation specialist at the commencement of pipe laying for steel pipe for both on shore and submarine pipe work.

The pipe work layout shall be designed so that items of equipment and sections of pipe work can be removed from the pipeline without major disturbance to the adjacent pipe work. Particular care shall be taken to ensure that pipe work thrusts are not transmitted to machinery or associated apparatus. The Contractor shall indicate on his detailed drawing the thrust blocks required to anchor his pipe work.

The Contractor shall provide for flexibility in the pipe work and shall submit proposals for the approval of the Engineer.

All necessary supports, saddles, slings, fixings bolts and foundation bolts shall be supplied to support the pipe work and its associated equipment in an approved manner. Valves, and other devices mounted in the pipe work shall be supported independently of the pipes to which they connect.

Template or closure pipes shall be provided where necessary to facilitate erection. The design and construction of the template pipes shall be to the approval of the Engineer, and the Contractor will be responsible for establishing the dimensions of the template pipes such that there will be no strain placed on the connected items after installation. All nuts, bolts, washers, flanges, gaskets, drain valves, vent valves, pressure gauge and special purge connection pieces, together with all terminal point connection materials shall be supplied under the Contract.

a) Hydraulic Pipe work shall be sized to maintain fluid velocities below those specified and provide safety factor of 4:1 on the design pressure, which shall be taken as 120% working pressure.

b) Compressed Air Pipe work shall be sized such that the air flow velocity does not exceed 8 m/s. To provide adequate condensate drainage, the pipe work system shall be run with a horizontal fall of not less than 1 in 50 in the direction of air flow and incorporate drainage points at distances of not less than 30 m. Drainage points shall be formed by use of equal tees with a down-pointing leg fitted preferably where changes of direction or flow occur.

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Any branch take-off shall be from the top of the main and the bottom of any falling pipe shall be drained.

Pipe work materials, sizes, pressure ratings, fittings, coupling arrangements and medium carried shall be as detailed in the Particular Specification.

- Steel Pipe work

General purpose steel pipework with screwed fittings shall be of galvanized mild steel heavy grade with fittings of galvanized malleable iron, having tapered internal and external threads.

Steel pipe and fittings shall be carbon steel in accordance with ASME B31.4. Joints shall be welded or flanged. Pipes shall be fabricated in accordance with API 5L sch.40 .with welding in accordance with ASME Boiler and Pressure Vessel Code.

After fabrication and machining of flanges all pipework and fittings shall be tested to a test pressure equal to 1.5 times the maximum working pressure (pump closed valve head).

Where pipes are to be joined with sleeves or couplings, a sufficient length of pipe shall be left bare of coating to accommodate the sleeve or coupling.

Plain ended pipes shall be supplied rounded at both ends. An adequate number of pipes shall be supplied rounded throughout their length so that they may be cut and such pipes shall be clearly marked.

Components of flexible joints from different manufacturers shall not be used together.

Tests on pipes shall be made in accordance with the relevant Standard in the manufacturer's works when required by the Engineer and in the presence of the Engineer . Two copies of the results of all such tests shall be submitted to the Engineer.

Flanges on steel pipes shall be welded in accordance with ASME B16.5 and shall have raised or flat faces. .

Gaskets for use in flanged joints shall of a suitable material for the fluid conveyed and shall be approved by the Engineer. On flat face flanges the gaskets shall extend over the full flange area and on raised face flanges they shall cover the raised face only. .

Steel pipes which are to be welded shall have the ends prepared by the manufacturer to suit the type of welded joint shown on the Drawings. The pipes shall be free of external and internal coating for a distance of 75 mm from each weld line.

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After fabrication all welding scale and beads as well as hardened fluxes shall be removed and joints shall be free of pores and as smooth as possible. Where specified all pipes and specials shall then be degreased and grit blasted prior to coating with "SKOTCHKOTE Epoxy 206N" fusion bonded epoxy coating.

The coating shall be tested to ensure the correct thickness and the absence of pores using spark testing equipment .

Bends, branches and other fittings for use with steel pipe shall comply with an approved standard. Calculations for the design of all special fittings shall be submitted to the Engineer before manufacture commences.

Pipes shall be stacked on a firm base using two timber packers only under the barrel of pipes.

Fittings and specials of any type shall stored in a single layer only.

Rubber rings and other pipe jointing material shall be stored under cover away from direct sunshine.

3.1.2 - Accuracy of Work

The fabrication, machining and finish of all pipe lengths shall be such that when assembled either in the shop or on the Site, the appropriate tolerances are obtained. Clearance at joints shall be sufficiently small to avoid turbulence, etc, and thus avoid vibration and all moving parts shall operate freely without risk of undue wear or jamming. Finished faces shall be free of any wind or twist.

Pipeline lengths shall conform to the following tolerances:

- a) Roundness, + 0.2% on a gauge length of D/4;
- b) Ovalisation, +: 0.2% D;
- c) Step between adjacent strakes, 2.0 mm maximum;
- d) Straightness, \pm : 20 minutes over a standard pipe length (12m);
- e) Line and level, each section shall be set within 10 ;nr.' of the true line and level.

3.1.3 Reference Marking

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Prior to despatch from the manufacturer's works each pipe section shall be marked with an appropriate reference number for future identification.

3.1.4 - Cutting Pipes

The cutting of pipes for making up lengths shall be carried out by a method which leaves a clean square end.

Steel pipes used for cutting shall have been rounded throughout their length and shall be clearly marked as such. Cutting shall be carried out by cutting disc or by oxy-acetylene and the cut end shall subsequently be ground to the correct profile for the method of jointing in use.

3.1.5- Gaps for Equipment

Where gaps have to be left in pipelines for the later installation of equipment such as valves and other items, the ends of the pipes shall be accurately aligned one with the other across the gap paying strict attention to bolt positions if relevant. The length of the gap shall be accurately determined with the aid of dimensional sketches which shall be submitted to the Engineer before the work is carried out. All gaps left for valves or other equipment shall include space for a dismantling joint.

3.2 - Flanges

General

All flanged connections of pipe work, valves and other relevant equipment shall have flanges in accordance with ASME B16.5 Class 150, unless otherwise specified in the Particular Specification.

Flanged Joints

Flanged joints for removable items of equipment shall be installed without twist or distortion, and fitted with gaskets in accordance with ANSI B16.20. Pipes and fittings shall be fully supported so that the flange faces are parallel and concentric. The flanges shall be drawn together uniformly by tightening opposite pairs of bolts in succession and no bolts shall be omitted. The size and number of bolts in flanged joints shall be in accordance with ANSI B16.5 for the pressure rating of the pipeline given on the Drawings.

During installation all pipes shall be hung on their respective supports and lined up so that their joint faces are parallel before flanges are bolted together.

In making joints, no springing of pipes into position shall be allowed.

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Joints on flanges that exist or have been installed under other contracts shall be made with the same material and suitable for the flange faces.

- Bonding

All flexible, flanged and similar discontinuous joints shall be bonded across the joint to provide electrical continuity throughout each buried pipeline.

Any gauges, , etc fed via small bore pipe work shall have an individual isolating cock adjacent to each component with adequate space being allowed for component removal for servicing.

installed on all pump suction and delivery pipes at least 2 pipe diameters from the pump flange unless otherwise specified in the particular Specification. Each tapping shall be provided with 1/2 inch isolating cock.

- Valves

Valves shall be provided as specification and shall be specifically designed for use in liquid petroleum applications ,

- Protection, handling and storage of Pipes

Immediately after the completion of fabrication at the Works or on Site and during transport and storage, pipe ends shall be protected from external damage and sealed against ingress of dirt by suitable caps, plugs or other similar means. After cleaning and inspection. machined surfaces of all steel and ironwork shall be covered with preserving fluids of approved types or otherwise protected and all flanges shall be fitted with blank discs bolted to each face.

- Handling and Transport of Pipes and Fittings

Pipe transport shall conform with Yemeni laws and regulations. The Contractor shall obtain all necessary permits for transport of pipe at his own expense. Access to right-of-way shall be from public roads or lands except where Contractor acquires other rights of access at his own expense.

Slings of canvas, rubber belting or other non-abrasive material, or special fittings shaped to fit pipe ends and approved by the Engineer shall be used for lifting and lowering pipes and specials. Use of tongs, bare pinch bars, chain slings, rope slings without canvas covers, canvas or composition belt slings with protruding rivets, pipe hooks without proper padding or other handling equipment injurious to the coating will not be permitted.

Pipes being transported shall be supported on timbers, sand bags or padding arranged so that pipes do not rest on prepared ends and adjacent pipes do not touch.

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Each load of pipe being transported shall be secured by ropes or other lashing arrangements so that pipes do not move or chafe, and suitable padding shall be used to ensure that the pipe coating is not damaged by these lashings.

Pipes shall be picked up clear of the ground when moved not dragged over the ground and shall not be subject to jars or impacts. Walking on pipe shall not be permitted.

Immediately upon delivery and prior to storage the Contractor shall inspect pipe, fittings, specials and accessories. Articles which are damaged shall be rejected, or may be repaired where the Engineer agrees and approves the procedures and the final results.

All pipe and fittings damaged in shipment or by handling at the job site prior to placement at the discretion of the Engineer, shall be repaired at the Site, rejected or returned to the fabrication plant for approved repairs or replacement.

Storage of Pipes and Fittings

Pipe and fittings shall be stored in such a manner as to prevent damage or deterioration. Stacking of pipe shall be limited to minimize distortion or flattening of the pipe and damage to the coating. The number of tiers of steel pipe stacks shall be as per the manufacturer's instructions and approval of the Engineer.

The Contractor shall be responsible for obtaining any necessary storage areas.

- Night Caps

The ends of welded sections of pipeline shall be securely closed by the use of suitable night caps to prevent the placing of any material inside the pipeline and the ingress of small animals or any other unwanted matter. Night caps shall be used at all ends left unattended at the close of a days work if the trench is liable to become flooded appropriate action should be taken to prevent flotation of the pipeline.

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- Welded Joints

General

Welding of circumferential joints in the pipeline shall comply with the latest edition of API Standard 1104, AWS D1.1/A C206, and AWS D10.12 and as further specified herein.

All welding shall be carried out in accordance with the specific procedures prepared by the Contractor and submitted to and approved by the Engineer.

During welding of exterior joints, the coating shall be protected by draping a 500 mm wide strip of heat-resistant material all around the circumference of the pipe on each side of the coating hold back to avoid damage to the coating by hot weld splatter.

Adequate precautions shall be taken to protect welding operations from the adverse effects of weather, such as wind, rain and blowing sand.

Welds rejected by the Engineer may, at his decision be repaired in accordance with API Standard 1104, Section 7. subject to the following:

- a) Repairs to the filler weld which would penetrate the stringer bead will not be permitted,
- b) Arc burns shall not be repaired by welding. but shall be removed by grinding provided that no reduction in wall thickness is made in excess of that permitted by the Specification.

The Contractor shall maintain records of all repairs whatever nature to pipe and pipeline and describe and locate such repairs. Welding pipe together where welds have been cut shall be done with one weld if it is practical to pull the line into position; otherwise. two welds shall be made by setting in a piece of pipe at least 2 m in length.

- Welder Qualifications

All welders employed on the Works shall be fully qualified and shall have successfully passed tests required by API codes for the type of work required.

Welder qualification tests or re-tests shall be carried out on the Site where they shall be witnessed by the Engineer or his representative.

The Contractor shall provide necessary labor, pipe welding, materials and equipment for performing welder qualification tests on Site.

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Arrangements for laboratory tests of components, if required, shall be made and paid for by the Contractor.

The Contractor shall maintain a list of approved welders agreed with Engineer and only the persons who are on the list of the approved welders shall be allowed to perform welding operations on the Permanent Works.

-Welding Procedure

Pipe ends shall be swabbed with a leather or canvas belt disc to remove dirt, loose mill scale, rust, oil, grease, and other matter which may be injurious to the weld.

Cleaning of pipe ends shall be done by power wire brushing or grinding. Pipe ends damaged such that they no longer meet joint specifications shall be re-chamfered by a suitable machine.

Stringer beads on transmission pipelines shall be applied by at least two welders welding in opposite quadrants.

The numbers of filler and finish beads shall be in accordance with the approved procedure .

Completed welds shall have a substantially uniform cross section around the entire Circumference of the pipe. At no point shall the crown surface be below the outside surface of the pipe or proud of the parent metal by more than "1.5 .

No welding shall be done when the shade temperature is below 5°C and falling unless approved by the Engineer who may require preheating of the pipe.

All joints on which welding has started shall be completed before the end of each day's work. At night or when work is not in progress, the open ends of the pipeline shall be securely capped with suitable covers to prevent the entrance of dirt, small animals, water, and foreign matter into the pipeline.

Tie-ins shall be carefully aligned to limit residual and/or reaction stresses after completion of the weld. Tie-ins shall be made within the temperature range of 10°C to 30°C. In very hot weather fully-welded lengths between restraints shall be protected from excessive heat to avoid buckling.

- Welding Quality Control

All production welds shall be subject to visual inspection by the Engineer. Visual inspections may be carried out at any stage of the welding of a joint.

Each weld shall be clearly marked adjacent to the weld indicating the identification welder.

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Non-destructive testing shall be carried out on all welds, both in the shop and on the site. All longitudinal butt welds shall be radiographically tested. All circumferential butt welds carried out shall be subject to 100% radiographic testing. Junctions between longitudinal and circumferential welds shall be included in this test. The remainder of the shop and Site welds shall be ultrasonically tested throughout 100% of their length.

Where ultrasonic tests indicate a flaw or defect in the weld this shall be examined using radiographic means.

In the case of fillet welds the Engineer may require dye penetrant tests to be carried out on selected welds.

The Contractor will pay for the testing and he should include these costs and expenses in The Contract Price.

The Engineer retains the right to have cut out and removed one weld only for each welder at no cost to the owner.

Welds rejected by the Engineer shall be cut out and replaced by the Contractor. If the out weld is found on test not to meet the Specification, the cost of the cutting out and rejoining shall be borne by the Contractor. If the weld is found satisfactory, the cost shall be borne by the owner.

Welds rejected by the Engineer may, at his discretion, be repaired subject to the following:

- a) Repairs to the filler weld which would penetrate the stringer bead' will not be permitted.
- b) Arc burns shall not be repaired by welding, but shall be removed by grinding provided that no reduction in wall thickness is made in excess of 12.5% of the nominal wall thickness.

The Contractor shall maintain records of all repairs of whatever nature to pipe and pipeline describing and locating such repairs.

Welding pipes together which have been cut shall be done with one weld if it is practical to pull the line into position, otherwise, two welds shall be made by setting in a piece of pipe at least 2 m in length.

The testing of welds shall be in accordance with the requirements of the International Institute of Welding, Collection of Reference Radiographs. These shall be used as a guide to the interpretation of radiographs and as a basis for comparing the nature and extent of weld defects. The minimum grade for acceptance shall be blue.

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- Deviations at Joints

Where a pipeline is laid to a curve by changing direction at joints the maximum deflection at each joint shall not exceed that permitted by the manufacturer.

No deviations shall be made at flanged joint.

- Testing of Pipelines

1- testing of pipelines shall be in accordance with ASME B 31.4 , ASME B 31.3 or API Recommended practice 1110

1. all pipelines before testing shall be cleaned inside by flashing or by passing through them a swab and outside to remove all loose scale, weld splatter, sand and other foreign materials.

The testing of pressure pipelines shall be carried out in length to be proposed by the contractor and agreed by the engineer ..

before testing commences the contractor shall ensure that all anchors and thrust blocks are complete or that temporary supports have been installed .

The contractor shall supply all equipments and materials necessary for carrying out the requirements of the test .

2. Pressure Test.

a. **Test general.** Prior to initial operation, installed piping shall be pressure tested to assure tightness. In the event of repairs or additions following the pressure test, the affected piping shall be retested, except that in the case of minor repairs or additions the owner may waive retest requirements, when precautionary measures are taken to assure sound construction. The pressure test shall be maintained for a sufficient time to determine if there are any leaks (not less than ten minutes).

b. **Test fluid.** The test shall be hydrostatic using clean potable water, except as follows:

- If the operating fluid or piping material would be adversely affected by water, any suitable liquid may be used. If a flammable liquid is used, its flash point shall be not less than 120 °F, and consideration shall be given to the test environment.
- If the owner does not consider hydrostatic testing practicable, a pneumatic test may be substituted using air or another non-flammable gas.
- A preliminary air test at no more than 25 psig may be made prior to hydrostatic test in order to locate major leaks.

c. **Test preparation.** All joints including welds are to be left un-insulated and exposed for examination during the test. If a joint has been previously tested in accordance with ANSI /ASME or API Standards, it may be insulated or covered. Equipment that is not subjected to the pressure test shall be either disconnected from the piping or isolated by blinds or other means during the test. Valves can be

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used provided that the valve (including the closure mechanism) is suitable for the proposed test pressure.

If a pressure test is to be maintained for a period of time and the test liquid in the system is subjected to thermal expansions, precaution shall be taken to avoid excessive pressure

d. **Test pressure.** Hydrostatic testing of internal pressure piping shall be done at 1 ½ times the design pressure.

-Test records. Records shall be made of each piping installation during the testing. These records shall include:

- date of test
- identification of piping tested
- test fluid
- test pressure

approval by inspector.

. **Commissioning Pipelines**

- Commissioning shall not be commenced until the Engineer has approved the whole of the works in writing .
- prior to filling pipelines with product they shall swabbed to remove all test water .

3.7- **Corrosion Protection**

- . All above ground pipes shall be externally painted according with the following system :-
- preparation :- abrasive blast clean to sa2.5 finish .
- painting :- apply two coats of two – pack epoxy zinc phosphate primer 50 micron DFT .
- apply two coats of two – pack epoxy undercoat 200 micron DFT .
- the finish coat shall re-coatable two-pack polyethelene 100 micron DFT .
- All submarine pipes shall be prepared and then coated with a factory applied three layer polyethylene coating system .
- the coating shall be hot applied medium density polyethylene (MDPE)and comply with the requirements of din 30670 .the pipe shall be abrasive blast cleaned to sis 055900 Sa 2.5 finish and than heated . A two pack epoxy zinc phosphate primer coat having a minimum thickness of 50 microns shall be applied , followed by an adhesive layer followed by either an extruded or wrapped MDPE layer .
- minimum coating thickness of MDPE layer shall be 2.5 mm .
- the coating shall be 100 % holiday tested at 25000 V .
- pipe work in the vicinity of welds shall be prepared and wrapped to an equivalent standard after welding .
- All pipelines above ground and submarine shall be internally coated with flowcoat type primer in accordance with the following system :-
- preparation :- abrasive blast clean to sa2.5 finish .
- painting :- apply single coat of two – pack epoxy primer 50 micron DFT approved for use with oil product line .

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- Sacrificial bracelet anodes shall be provided for submarine pipes for long life of 25 years
- Electro-insulating joints for each pipe in contact with cathodic protected pipes.

3.8 PIPING MATERIAL SPECIFICATION

PIPING MATERIAL SPECIFICATION: - PIPES

Design standard: API Spec 51 / B 36-10 M-1985
 Type: Seamless
 Material: Carbon steel, Grade B / ASTM A 106 Gr. A or equivalent
 Ends: Plain Ends with Bevel Standard
 Painting: The Pipes shall be external protected for time of shipment
 Pressure test: According to Standard
 Marking: According to MFR. Standard as to be easy identified on sit

Size 8" SCH. 40

THE PIPES SHALL BE EXTERNALLY AND INTERNALLY COATED AS PER SPECIFICATION MENTIONED

PIPING MATERIAL SPECIFICATION: - GATE VALVES

Purpose: Isolation
 Design Standard: API 600
 Valve Body: Forged / Cast with integrally forged / cast Flanges
 Type of Valve: Solid Wedge Gate, OS & Y, Rising Stem
 Bonnet: Bolted
 Ends: Flanges, Raised Face, 125-250 RMS
 Rating: 150 LB
 Seats: Threaded into the Body or weld into the Body
 Stuffing Box: Minimum of five rings of packing
 Body Material: Forged / Cast Carbon Steel, ASTM A 105/A 216 WCB or Equivalent
 Trim Material: 13% Chrome
 Gland Packing Material: CAF
 Bonnet Gasket Material: Marsit FA-A2 or metal-jacketed grafoil
 Stud Bolts / Nuts: ASTM A 193 Gr B7 / ASTM A 194 Gr 2H
 Pressure Test: API 598
 Actuation: Handwheel
 NDE Methods: ASME SEC V

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Fire Safe Certified: API 6FA

TECHNICAL SPECIFICATION FOR HOSES

SUBMARINE HOSES

The main features of integrally floated hose are ;

- High –grade synthetic rubber tube for high flow rate duty and up to 50 %aromatics.
- high tensile textile breaker ply impregnated and coated with high grade synthetic rubber to achieve maximum adhesion of tube to hose carcass .
- plies of fine cable wire of high tensile steel shall be applied at optimum angles to give maximum reinforcement and minimum elongation of hose under pressure .
- high tensile round steel wire applied helically and embedded in synthetic rubber to give high strength .
- two textile breaker plies impregnated and coated high grade synthetic rubber .
- Extra thick cover builds up incorporation the the two textile breaker plies. cover compound designed for maximum weather , sea and age resistance combined with superior abrasion resistance
- the hose shall be electrically continuous .

-size ; 8'

- length approx. 10 m

- Flanged ends shall be as per ANSI B 16 .10 CLASS 150

QUANTITY REQUIRED ;

- Manifold hose ,-variably reinforced – Submarine .
- Main line and built in reducer hose –Submarine .
- built in reducer hose - Submarine
- tanker rail hose - Submarine equipped with end assembly component .

Total length a approx. 50 m for each pipeline .

-Pick up assembly for each pipe comprising ;

- blind flange
- short spool camlock quick release`coupling .
- separating valve suitable for oil product .
- hang of chain .
- marker buoy with light .
- polypropylene rope .
- large bow mild steel shackle with type Epin .o

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- ' O'Ring seal suitable for oil product .

Material for Submarine Pipelines Marker Buoy

- marker buoy
- stud link cable
- shackles

4. MOORING ANCHORAGE SYSTEM

Anchor chain , Fittings

,The contractor shall be responsible for designing , supplying , position and installation mooring anchorage system elements , and shall include with his offer specification of anchorage system elements ;

- Pear link with mooring shackle .
- Joining shackle pear link to pendant .
- Stud link cable pendant .
- End shackle –pendant to bridle ring .
- Bridle ring to take end shackles .
- Stud link cable .
- mooring anchor .
- etc.

- MOORINGS BUOYS

The existing Moorings Buoys (3 m dia.) of steel construction ,shall be inspected plate corroded repairs ,rubber fendering repairs and shall be fitted around the complete perimeter,

one of them is already disconnected and removed to the bulk plant site , the other ones shall be removed by the contractor and both shall be repaired conform the an international standard , and shall be internally and externally coated in accordance with specification suitable for zone climatic condition and shall be equipped with suitable cathodic protection anode .

- Installation Procedure

Before commencing work , the contractor shall submit to the engineer complete details of

the his design , method and sequence for installation and testing of the new moorings and the design , method shall be rechecked , approved by third party under contractor cost .

particular attention shall be paid in the installation of the mooring components to ensure that no item can work loose and to the controlled loweing of anchors and Laying out of chain at all stages to ensure that the chain does not pile up on itself or on anchors .

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the complete new mooring shall be tested by the contractor conform method approved and the position of each anchor shall re-checked and record .

- **Diver Inspection**

After completion of the test loading the contractor shall carry out an inspection by diver of the below water components of all moorings which are not buried below the seabed , to confirm that all connections are secure and that chains are straight and unlinked . A report of the inspection shall be submitted to the engineer with the as built drawings of the mooring system .

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BILL OF QUANTITIES

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NOTE -

- The length of each above ground pipeline is approx. 60m having total for both pipelines 120m.
- The length of each submarine pipeline is approx. 300m having total for both pipelines 600m , because The quantities set out in the Bill of Quantities nr. 2 are the estimated quantities of the work, but they are not to be taken as the actual and correct quantities of the work to be executed by the Contractor in fulfillment of his obligations under the Contract. The Works as completed shall be measured and paid for in accordance with the Contractor price
- Each unit of submarine hoses having total length of 50 m and means complete set for each pipeline and as per specification and quantity required mentioned in page . 36 .
- buoys maintenance cost shall be estimated by the tendered during the site visit .
- The tendered shall prepare and attach with the offer purpose anchorage system design specified element specification ,quantities for both mooring buoy .

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BILL No. 1
SITE ORGANIZATION

	Description	Unit	Qty	Unit price .\$	Total price .\$
1	Site organization, equipment mobilization, demobilization , Stores, power , water supply , including , transportation and other facilities for Engineer mentioned in page 23 .	Sum	1		
2	Removal old Piping and Anchorage Systems	sum			
Total (In Words)					

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BILL No. 2 . Pipelines Works

Item	Description	Unit	Qty	Unit price.\$	Total price.\$
1	ABOVEGROUND BLACK STEEL PIPES Designing ,Supplying , installation , testing , and commissioning the following black steel pipes ,including hangers, supports, fittings, welding, flanges, flushing connections, air vents at high points where required, drains , coated and connection to the submarine pipes including all necessaries accessories as specified. DN 200.	LM	120		
2	SUBMARIN BLACK STEEL PIPES Designing ,Supplying, installation , testing , flushing and commissioning submarine pipelines , coated as per specification complete with anti corrosion, , supports, ,pipelines anchoring , flanges, , Plem connections, , and all necessaries accessories as specified. DN 200	LM.	600		
3	Manifold Supply, install, test and commision the following , fitting , gate valves , with iron body, bronze trim., rizing stem, handwheel, double wedge, flanged ends and connection aboveground pipes to main line of filling tanks farm (.DN 200	Pcs.	4		

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4	SUBMARINE HOSES Supply, installation ,Mogas and Gas oil Manifold hoses , main line hoses, Built in reducer hoses tanker rail hoses, End Assembly component , marker buoy , lights and the other accessories. And connection to submarine pipes .	Pcs.	10		
Total (In Words)					

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bill no. 3 Mooring Buoy

A- East Mooring Buoy

	Description	Unit	Qty.	Unit price .\$	Total price .\$
1	Repair ,internal and external sand plast ,and painting of the existing , buoy (3 m dia.) , reconnect to the anchorage system conform the specification	Sum	1		
2	ANCHORAGE SYSTEM Designing , Supplying ,position , installation all East anchorage system Elements .and testing .				
Total (In Words)					

B – Vest Mooring Buoy

	Description	Unit	Qty.	Unit price .\$	Total price .\$
1	Disconnected the existing buoy ,transport to the repairing yard ,Repair , replace the damaged rubber washer , shackle etc, internal and external plasting , painting of the existing , buoy (3 m dia.) , reconnect to the anchorage system .	Sum	1		
2	ANCHORAGE SYSTEM Designing Supplying ,position , installation , all anchorage system elements .and testing .				
Total (In Words)					

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BILL No. 4
Cathodic Protection

	Description	Unit	Qty.	Unit price . \$	Total price . \$
1	Designing, supply , installation cathodic protection for ,				
	- submarine pipelines	Sum			
	- mooring buoys	Sum			

RECAPITULATION TABLE		Amount.\$
Bill No. 1	Site organization	
Bill No. 2	pipelines Works	
Bill No. 3	Moorings buoys works	
Bill No. 4	Cathodic protection	
Total cost In Words.		

Authorized person.

[signature] _____
[in the capacity of]

Bid Form

Date: _____
TenderRef: _____

To: *[name and address of Purchaser]*
Gentlemen and/or Ladies:

Having examined the bidding documents, the receipt of which is hereby duly acknowledged and we have no reservations of its contents, appendix and amendments, we, the undersigned, offer to execute [description of Works] in conformity with the said bidding documents for the sum of [total bid amount in words and figures]with out discount mentioned in the clause 4 below.

Comment [N1]: What clause 4
?????

The discount of our bid and method of calculation is as follow.....

The net amount of our bid is[total bid amount in words and figures

We ascertain that the appendix attached to this bid is integral parts of our bid.

We agree to abide by this Bid for the Bid Validity Period during () starting from deadline of submission according to the bidding documents and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Attached to our bid is an irrevocable bid security for in the format mentioned in the bidding documents in the amountfrom (bank.).

If our bid is accepted, we undertake to provide a performance security in the form, in the amounts, and within the times specified in the Bidding Documents.

We confirm that we have only apply one bid in the tender except for alternatives(if allowed).

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount Currency	and	Purpose Commission or gratuity	of
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
(if none, state "none")				

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

Dated this _____ day of _____ 200_____.

[signature] *[in the capacity of]*
Authorized person.

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Contract Forms

Contract Award Notification Form, Contract, Bid Security, Performance Security, Advance Payment Security

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Bid Security (Bank Guarantee)

TO: *[Name and Address of Employer]*

Name of Tender:..... Tender no. () of *[Year]*

Gentlemen,

We, the *[Name of Bank]*, in accordance with Instructions to Bidder clause (22), agree unconditionally and irrevocably to guarantee as primary obligor and not as Surety merely, the payment to *[Name of Employer]* on his first demand without whatsoever right of objection on our part, in the amount not exceeding *[amount of Guarantee]*, *[amount of Guarantee in words]*.

This guarantee shall remain valid and in full effect for () days starting on dd/mm/yyyy.

Signature and seal

Name of Bank

Address

Date

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Performance Security

TO: *[Name and Address of Employer]*

Name of Tender:..... Tender no. () of *[Year]*

Gentlemen,

We, the *[Name of Bank]*, in accordance with GCC clause (20) for the provision of performance security, agree unconditionally and irrevocably to guarantee as primary obligor and not as Surety merely, the payment to *[Name of Employer]* on his first demand without whatsoever right of objection on our part, in the amount not exceeding *[amount of Guarantee]*, *[amount of Guarantee in words]*.

We further agree that no change or addition to or other modification of the terms of the Contract or the works under the Contract which may be made between *[Name of Employer]* and the Contractor, shall not in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from () until the end of ().

Signature and seal

Name of Bank

Address

Date

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Bank Guarantee for Advance Payment

TO: *[Name and Address of Employer]*

Name of Contract:..... Contract no. () of *[Year]*

Gentlemen,

We, the *[Name of Bank]*, in accordance with SCC, agree unconditionally and irrevocably to guarantee as primary obligor and not as Surety merely, the payment to *[Name of Employer]* on his first demand without whatsoever right of objection on our part and without waiting for the first claim by the contractor, in the amount not exceeding *[amount of Guarantee]*, *[amount of Guarantee in words]*.

This guarantee shall remain valid and in full effect from the date of the advance payment under Contract until *[Name of Employer]* receives full repayment of the same amount from the Contractor.

Signature and seal

Name of Bank

Address

Date

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Notification of Award

Date: \ \

Mr. _____ *[name of Contractor]*

Address: _____

We would like to notify you that the Tender no.[##] for *[year]* to execute*[works]*, has been awarded to you according to your bid dated *[dd/mm/yyyy]*, with an amount *[amount of bid in figures and words]* Yemeni Rials.

Could you please provide us with Performance Security in rate of () % *[amount of guarantee in figures]* of the Contract Value. The Security must be submitted not later than 15 days from the date of receiving this notification, and in accordance with the Form attached to BDs. The Security should be addressed to us, and must be irrevocable, unconditioned and valid until completing the procedures of inspection and primary handover on *[dd/mm/yyyy]*.

In case you delayed attending to sign Contract or submit Performance Security during the timing specified above, the award will be cancelled and your Bid Security will be confiscated.

Procurement Manager

Financial Manager

Head of Entity

Name:

Name:

Name:

Signature:

Signature:

Signature:

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Form of Contract

This Contract (hereinafter called the "Contract") is made on [dd/mm/yyyy] between the [name of Employer] (hereinafter called the "The Employer") and on the other hand [Name of company] (hereinafter called the "Contractor").

WHEREAS

The first party has announced works and ancillary services tender [description of required works and services] and has accepted contractor's bid in [amount in words and numbers] (called hereinafter contract cost).

THEREFORE the parties agreed that:

Words and descriptions mentioned in this contract shall have the same meaning indicated respectively in contract conditions.

The following documents are piece and parcel of this Contract:

- (a) the Notice of Award of Contract;
- (b) any correspondence took place before contract signature
- (c) the Bid form and any Appendices to Bid; (Such as priced Bills of Quantity)
- (c) the Special Conditions of Contract ;
- (d) the General Conditions of Contract ;
- (e) the Specifications;
- (f) the Drawings;
- (g) other documents, as listed in the Appendix to Bid

The Contractor shall perform the Works, Services and remedy any defects thereto according to the terms of this Contract against all payments by the Employer.

The Employer shall pay timely the Contractor his due payments according to the terms of this Contract against satisfactory completion of works and ancillary services and remedy any defects thereto.

The two parties signed the Contract on the date specified above.

For the [name of against all payments by
the Employer the Employer]

[authorized representative]

Sign / Stamp / Deliver

For the [name of the Contractor]

[authorized representative]

A witness Name

Sign / Stamp / Deliver

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Completion Form

Date:

Project Name:

Site: City/ District/ Governorate

Payment certificate No.

Contract No.

Advance Payment

Previous Certificate Payment

Date

Site Possession Date

Completion Date

Contractor Name

No	Item	Works Description	Unit	Executed Quantity	Unit Price	Total
1						
2						
3						
4						
5						
6						