OIL INDIA LIMITED

(A Government of India Enterprise)
P.O. Duliajan, Pin – 786602
Dist-Dibrugarh, Assam

CORRIGENDUM NO. 1 DATED 20.04.2018 TO E-TENDER NO. CDO7507P18 for Construction and Commissioning of 02 (Two) nos. of 795 KL and 02 (Two) nos. of 40 KL Capacity Crude Oil Storage Tanks.

This Corrigendum is issued to notify the following changes:

- 1. Extension of Dates:
 - Bid Selling date extended up to **26.04.2018 (15:30 Hrs IST)**
 - Bid Submission and Bid Opening dates extended up to **03.05.2018** (11:00 Hrs IST) and **03.05.2018** (14:00 Hrs IST), respectively.
- 2. The following documents have been uploaded in the "Amendments" folder in E-portal as replacements of the existing:
 - i. Part-II SOQ
- 3. The following document has been uploaded under "Notes and Attachments" tab in E-portal:
 - i. Price Bid Format Revised
- 4. Also, please take note of the newly uploaded document in the "Amendments" folder in E-portal as under:
 - i. Schematic Drawings (as mentioned in Part-III SCC)

All others terms and conditions of the Bid Document remain unchanged. Details can be viewed at www.oil-india.com.

<u>DESCRIPTION OF SERVICES</u>: Construction and Commissioning of 02 (Two) nos. of 795 KL and 02 (Two) nos. of 40 KL Capacity Crude Oil Storage Tanks.

Part-II (SOQ) Schedule of Work, Unit and Quantity

Item No.	Description of Services	UOM	Estimated Quantity
10	Erection and dismantling of barrier wall: Erection of barrier wall with CGI sheet to a height of minimum 10.0metre to isolate the working area from the existing installation on three sides as per the instruction of the site engineer. The wall should be strong enough with proper structural supports and drawings should be submitted to site engineer for approval prior to erection job. No hot job (welding/cutting/grinding etc.) would be allowed at site during the installation of the barrier wall and also in the working place till the wall is completed and the area is made completely gas-free which is to be confirmed by gas testing. The site shall also have to be free from any hazardous/inflammable substances/materials etc. and necessary work permit/clearance from concerned Installation Manager (IM)/Site engineer/incharge must be taken prior to start of the job on daily basis. The required pipes for the posts to be used for erection of barrier wall shall be arranged by company which shall have to be transported by the contractor to the work site for job execution. The contractor shall have to dismantle the so erected barrier walls upon completion of the tank construction job. The Contractor will have to arrange all necessary infrastructure (scaffolding/working platform etc.) to facilitate erection and dismantling of the barrier walls in a safe manner which is to be to the satisfaction of the Site engineer.	M (Meter)	320.00
20	Isolation of process pipelines: Isolation of all process pipelines (e.g. oil/water/gas/firefighting system etc.) to make the tank completely safe for dismantling/erection & fabrication job. The job involves opening up/removal of existing flanged/screwed joints etc. and installation of blind flange(s)/plug(s) in the pipings leading to the tanks. Isolation of such pipelines must be displayed by putting appropriate signage/playcard at places clearly visible from all angles/corners.	NO (Number)	5.00
30	Dismantling of foundation of two nos. of 18 Kl tank: The job involves breaking of existing damaged tank foundation including RCC column/beam removal of compacted sand/cement excavation of earth etc.	NO (Number)	2.00
40	Dismantling of foundation of one no. of 40 Kl tank: The job involves breaking of existing damaged tank foundation including RCC column/beam removal of compacted sand/cement excavation of earth etc.	NO (Number)	1.00
50	Dismantling of foundation of two nos. of 795 Kl tank: The job involves breaking of existing damaged tank foundation including RCC column/beam removal of compacted sand/cement excavation of earth etc.	NO (Number)	2.00
60	Dismantling of old (damaged) two nos. of 18 Kl tank: All the plates and other items must be shifted to a	NO (Number)	2.00

	designated place as per direction of Site-engineer/ Installation Manager (IM) or his/her representative. The job includes:		
	i) Internal cleaning of the tanks to make it completely free from oil/gas sludge etc. and make it ready for dismantling.		
	ii) Dismantling of the existing pipings/units/connections/fittings etc. from the tanks/tank farm areas and storing of the dismantled components/parts in a nearby location/yard (within 50 metre distance) as directed by the site engineer/Installation Manager (IM) or his/her representative. The job involves dismantling of all types of inlet/outlet lines including valves walkways pipe-supports CC supports etc. inside the tank farm/working area.		
	iii) Dismantling of 18 KL capacity old (damaged) tanks by unfastening the bolts/cutting down with oxy/acetylene flame cutting at about 2 mts height from the ground level; or any other approved safe techniques/methods keeping the rest of the tank on the jack supports. In no case the contractor would be allowed to work any hot work beyond 3.75 metres of height above the ground level. In no case the contractor would be allowed to work any hot work beyond the height of the barrier wall during the dismantling. Necessary work permit/clearance from concerned Installation Manager (IM)/Site engineer/Incharge must be taken prior to start of the job on daily basis.		
	iv) Cleaning and clearing of the area inside the tank dyke/bundh and collection and removal/disposal of tank bottom sand/earth/sludge by any approved suitable means and transportation to a 'sludge pit' of the company as directed by the Site-engineer/ Installation Manager (IM) or his/her representative prior to dismantling of the old (damaged)/earmarked tank. The tank dyke area should be cleaned to the satisfaction of the site engineer/Installation Manager (IM) or his/her representative. The Contractor will have to arrange all necessary infrastructure (scaffolding /working platform etc.) for cleaning job to the satisfaction of site engineer. After cleaning necessary gas testing would be carried out in these tanks and only after satisfactory test results these tanks would be allowed to be dismantled by site engineer. The job also involves cleaning of the outer surfaces and the area inside the tank dyke as and where required to scrap off the oil content.		
70	Dismantling of old (damaged) one no. of 40 Kl tank: All the plates and other items must be shifted to a designated place as per direction of Site-engineer/Installation Manager (IM) or his/her representative. The job includes:	NO (Number)	1.00
	i) Internal cleaning of the tanks to make it completely free from oil/gas sludge etc. and make it ready for dismantling.		

	ii) Dismantling of the existing pipings/units/connections/fittings etc. from the tanks/tank farm areas and storing of the dismantled components/parts in a nearby location/yard (within 50 metre distance) as directed by the site engineer/Installation Manager (IM) or his/her representative. The job involves dismantling of all types of inlet/outlet lines including valves walkways pipe-supports CC supports etc. inside the tank farm/working area. iii) Dismantling of 40 KL capacity old (damaged) tanks by unfastening the bolts/ cutting down with oxy/acetylene flame cutting at about 2 mts height from the ground level; or any other approved safe techniques/methods keeping the rest of the tank on the jack supports. In no case the contractor would be allowed to work any hot work beyond 3.75 metres of height above the ground level. In no case the contractor would be allowed to work any hot work beyond the height of the barrier wall during the dismantling. Necessary work permit/clearance from concerned Installation Manager (IM)/Site engineer/incharge must be taken prior to		
	iv) Cleaning and clearing of the area inside the tank dyke/bundh and collection and removal/disposal of tank bottom sand/earth/sludge by any approved suitable means and transportation to a 'sludge pit' of the company as directed by the Site-engineer/ Installation Manager (IM) or his/her representative prior to dismantling of the old (damaged)/earmarked tank. The tank dyke area should be cleaned to the satisfaction of the site engineer/Installation Manager (IM) or his/her representative. The Contractor will have to arrange all necessary infrastructure (scaffolding/working platform etc.) for cleaning job to the satisfaction of site engineer. After cleaning necessary gas testing would be carried out in these tanks and only after satisfactory test results these tanks would be allowed to be dismantled by site engineer. The job also involves cleaning of the outer surfaces and the area inside the tank dyke as and where required to scrap off the oil content.		
80	Dismantling of old (damaged) two nos. of 795 Kl tank: All the plates and other items must be shifted to a designated place as per direction of Site-engineer/Installation Manager (IM) or his/her representative. The job includes: i) Internal cleaning of the tanks to make it completely free from oil/gas sludge etc. and make it ready for dismantling. ii) Dismantling of the existing pipings/units/connections/fittings etc. from the tanks/tank farm areas and storing of the dismantled components/ parts in a nearby location/yard (within 50 metre distance) as directed by the site engineer/Installation Manager (IM) or his/her representative. The job involves dismantling	NO (Number)	2.00

		T	Г
	tank farm/ working area.		
	iii) Dismantling of 795 KL capacity old (damaged) tanks by unfastening the bolts/cutting down with oxy/ acetylene flame cutting at about 2 mts height from the ground level; or any other approved safe techniques/ methods keeping the rest of the tank on the jack supports. In no case the contractor would be allowed to work any hot work beyond 3.75 metres of height above the ground level. In no case the contractor would be allowed to work any hot work beyond the height of the barrier wall during the dismantling. Necessary work permit/clearance from concerned Installation Manager (IM)/Site engineer/incharge must be taken prior to start of the job on daily basis.		
	iv) Cleaning and clearing of the area inside the tank dyke/bundh and collection and removal/ disposal of tank bottom sand/earth/sludge by any approved suitable means and transportation to a 'sludge pit' of the company as directed by the Site-engineer/ Installation Manager (IM) or his/her representative prior to dismantling of the old (damaged)/earmarked tank. The tank dyke area should be cleaned to the satisfaction of the site engineer/Installation Manager (IM) or his/her representative. The Contractor will have to arrange all necessary infrastructures (scaffolding /working platform etc.) for cleaning job to the satisfaction of site engineer. After cleaning necessary gas testing would be carried out in these tanks and only after satisfactory test results these tanks would be allowed to be dismantled by site engineer. The job also involves cleaning of the outer surfaces and the area inside the tank dyke as and where required to scrap off the oil content.		
90	Design of two nos. of 40 Kl tank foundation:	NO	2.00
	Complete design of 40 KL tank as per API 650 specification detail engineering preparation of all drawings and third party approval of all the tanks of 40 KL safe holding capacity fixed cone roof formation water storage tanks including its Concrete Ring Wall Foundation. All designs detail engineering documents and drawings will have to be vetted/certified by Engineers India Limited (EIL)/Projects Development India Limited (PDIL)/Indian Institute of Technology (IIT) or a third party of repute. The job also includes soil survey of the site for which the Contractor shall have to submit report to the company.	(Number)	
100	Design of two nos. of 795 Kl tank foundation: Complete design of 795 KL tank as per API 650 specification detail engineering preparation of all drawings and third party approval of all the tanks of 795 KL safe holding capacity fixed cone roof including its Concrete Ring Wall Foundation. All designs detail engineering documents and drawings will have to be vetted/certified by Engineers India Limited (EIL)/Projects Development India Limited (PDIL)/Indian Institute of Technology (IIT) or a third party of repute. The job also includes soil survey of the site for which the Contractor shall have to submit report to the company.	NO (Number)	2.00

110	Construction of new PCC foundation for two near of 40	NO	2.00
110	Construction of new RCC foundation for two nos. of 40 Kl tank:	NO (Number)	2.00
100	Complete design of 795 KL tank as per API 650 specification detail engineering preparation of all drawings and third party approval of all the tanks of 795 KL safe holding capacity fixed cone roof including its Concrete Ring Wall Foundation. All designs detail engineering documents and drawings will have to be vetted/certified by Engineers India Limited (EIL)/Projects Development India Limited (PDIL)/Indian Institute of Technology (IIT) or a third party of repute. The job also includes soil survey of the site for which the Contractor shall have to submit report to the company.	NO	2.00
120	Construction of new RCC foundation for two nos. of 795 Kl tank:	NO (Number)	2.00
	Construction of RCC foundation for 2 nos. of 795 KL tanks as per the approved Oil drawing no. OIL/4113 and soil survey report/recommendations as mentioned in line no 100 and painting the external surface with weather proof paint. This job also includes construction of circular drain around the foundation. All materials for construction will be supplied by the contractor.		
	Note: Depending on the soil survey report based on design of the tank as per line item no. 100 either line item 120 or 140 will be used for construction of RCC foundation.		
130	Construction of new RCC foundation with boulder packing for two nos. of 40 Kl tank: Construction of RCC foundation for 2 nos. of 40 KL tanks with boulder packing as per the approved drawings and soil survey report/recommendations as mentioned in line no 90 and painting the external surface with weather proof paint. This job also includes construction of circular drain around the foundation. All materials for construction will be supplied by the contractor. Note: Depending on the soil survey report based on	NO (Number)	2.00
	design of the tank as per line item no. 90 either line item 110 or 130 will be used for construction of RCC foundation with boulder packing.		
140	Construction of new RCC foundation with boulder packing for two nos. of 795 Kl tank: Construction of RCC foundation for 2 nos. 795 KL tanks with boulder packing as per the approved drawings and soil survey report/recommendations as mentioned in line no 100 and painting the external surface with weather proof paint. This job also includes construction of circular drain around the foundation. All materials for construction will be supplied by the contractor. Note: Depending on the soil survey report based	NO (Number)	2.00
	design of the tank as per line item no. 100 either line item 120 or 140 will be used for construction of RCC foundation with boulder packing.		
150	Fabrication and Erection of two nos. of 40 Kl tank:	NO (Navas boss)	2.00
	Supply of materials fabrication and erection of 40 KL capacity fixed roof tank as per OIL Drawings (OIL/2402) and API 650 standard along with anti-	(Number)	

	corrosive coating.		
	i) The anti-corrosive coating is to be applied for the entire internal surfaces inclusive of tank bottom plate roof and other structural members. Anti-corrosive coating on all the internal surfaces of the tanks including top and bottom plates shall be applied with High temperature resistant and chemical resistant anti-corrosive solvent free ceramic reinforced composite/amine cured phenolic epoxy resin coating.		
	ii) The coating shall have 100% solid by Volume and Mixed Density/specific gravity 1.25 gm/cc Minimum. The Dry Film Thickness (DFT) 300 to 600 microns two coat system with minimum 150 micron per coat. Dry film thickness shall be measured after each coat using thickness gauge e.g. Mikrotest Ecometer or any other suitable instruments. Holiday or spark testing shall be done after application of last coat to find nicks scrapes and pin holes in the coating.		
	iii) The coating shall have tensile shear/Pull off adhesion of Minimum 200 kg/sq cm (2840 psi) as per ASTM D 1002/ASTM D 4541/ISO 4624. The coating shall be chemical resistant to mixture of crude oil & water in continuous emersion as per ASTM D543/ISO 2812-2. Service temperature shall be Minimum 80 Deg C in Wet (Immersion) service condition and Minimum 100 Deg C in Dry service condition as per ASTM D 648. The Surface preparation shall be achieved by abrasive/shot blasting to near white metallic as per NACE No. 2/SSPC-SP10 ISO 8501-1 Sa 2 ½ with blast surface profile depth of 75-125 micron. Profile measurement for abrasive blast cleaned surface shall be made with Testex Press-O-Film or other suitable method. Prior to blasting all weld spatters shall be removed & sharp or rough welds rounded & contoured. Any change in the surface preparation recommended by the OEM of the coating system shall be forwarded in the technical bid for approval by OIL. The application shall be airless spray method.		
	iv) The anti-corrosive coating to be applied on internal surfaces of the tank shall be of make CHEMCLAD SC/Hempel/Belzona/Chesterton or equivalent and Performance Guarantee of minimum 10 years shall be provided by the OEM to OIL for product as well as application procedure.		
	The contractor has to fabricate and erect the syphon system for the tank(s) as per the site Engineer/Installation Manager (IM)/his or her representative. All materials such as pipe valves nozzle etc. required for the job will be supplied and fitted by the contractor.		
160	Fabrication and Erection of two nos. of 795 Kl tank: Supply of materials fabrication and erection of 795 KL capacity fixed roof tank as per OIL Drawings (OIL/3077 OIL/0559 and OIL/4240) and API 650 standard along with anti-corrosive coating.	NO (Number)	2.00
	i) The anti-corrosive coating is to be applied for the		

	entire internal surfaces inclusive of tank bottom plate roof and other structural members. Anti-corrosive coating on all the internal surfaces of the tanks including top and bottom plates shall be applied with High temperature resistant and chemical resistant anti-corrosive solvent free ceramic reinforced composite/amine cured phenolic epoxy resin coating.		
	ii) The coating shall have 100% solid by Volume and Mixed Density/specific gravity 1.25 gm/cc Minimum. The Dry Film Thickness (DFT) 300 to 600 microns two coat system with minimum 150 micron per coat. Dry film thickness shall be measured after each coat using thickness gauge e.g. Mikrotest Ecometer or any other suitable instruments. Holiday or spark testing shall be done after application of last coat to find nicks scrapes and pin holes in the coating.		
	iii) The coating shall have tensile shear/Pull off adhesion of Minimum 200 kg/sq cm (2840 psi) as per ASTM D 1002/ASTM D 4541/ISO 4624. The coating shall be chemical resistant to mixture of crude oil & water in continuous emersion as per ASTM D543/ISO 2812-2. Service temperature shall be Minimum 80 Deg C in Wet (Immersion) service condition and Minimum 100 Deg C in Dry service condition as per ASTM D 648. The Surface preparation shall be achieved by abrasive/shot blasting to near white metallic as per NACE No. 2/SSPC-SP10 ISO 8501-1 Sa 2 ½ with blast surface profile depth of 75-125 micron. Profile measurement for abrasive blast cleaned surface shall be made with Testex Press-O-Film or other suitable method. Prior to blasting all weld spatters shall be removed & sharp or rough welds rounded & contoured. Any change in the surface preparation recommended by the OEM of the coating system shall be forwarded in the technical bid for approval by OIL. The application shall be airless spray method.		
	iv) The anti-corrosive coating to be applied on internal surfaces of the tank shall be of make CHEMCLAD SC/Hempel/Belzona/Chesterton or equivalent and Performance Guarantee of minimum 10 years shall be provided by the OEM to OIL for product as well as application procedure. The contractor has to fabricate and erect the syphon system for the tank(s) as per the site Engineer/Installation Manager (IM)/his or her representative. All materials such as pipe valves nozzle etc. required for the job will be supplied and fitted by the contractor.		
170	Foam Pouring system: Installation of automatic foam pouring system for 2 nos of 795 kl safe filling capacity crude oil capacity fixed roof crude oil storage tanks. The item consist of following jobs:	JOB (Job)	1.00
	i) Fabrication of 3 kl capacity Foam tanks with 3m thick S.S plates with suitable brachings inside to avoid collapse of the tank plates. This also includes fabrication and erection of ladder made of angle iron/pipes/ MS rods of suitable size. All amterial for the		

	tank will be supplied by the contractor.		
	ii) Fabrication of a Staging of 100 mm NB pipe or angle iron for the foam tank fabricated against item no (i). above. The legs of the staging will be grouted as per the instruction of the site engineer. All the material for the staging of the tank will be supplied by the contractor.		
	iii) Fabrication of the foam manifold of 150 mm NB size with 5 nos. 25 mm NB points and then completing the piping connections as well as valves installations form the manifold to foam inductor. The foam manifold will be connected to the foam tank fabricated against item no (i).		
	iv) Fabrication of a 8" NB water manifold with 5 nos 4" NB points and then completing with 4" NB pipeline connections as well as valves and installation of foam inductor stainless steel make (to be supplied by the contractor) from the manifold to the existing crude oil tanks. The water manifold will then be connected to the 200 mm NB water ring line by taking out two 150 mm NB points with valves. Only pipes of dia 100NB and above will be supplied by OIL.		
	v) Fixing of foam maker cum pourer stainless steel make (to be supplied by the contractor) with the existing flanges in the crude oil tanks and then connecting the foam pourers by laying 4" NB vertical pipelines laid against item no (iv). All materials except pipes of dia 100 mm NB and above will be supplied by the contractor and will make necessary arrangement for scaffolding including scaffolding of materials.		
180	External Painting:	M2	1,140.00
	Thorough cleaning and painting of external surfaces of the tank including shell roof soil side bottom plate and all fittings/accessories etc. connected to the tank body as per direction of company engineer/Installation Manager/his or her representative. After putting two coats of Epoxy Zinc Chromate Primer (30 micron DFT in each coat) two coats of aluminium/enamel paint will have to be applied (colour to be approved by Company engineer). For the soil side bottom plate one coat of Zinc Silicate primer (65 micron DFT) followed by two coats of high build Epoxy black paint (100 micron DFT in each coat) will have to be applied. The plate surfaces shall be adequately cleaned and there shall be no rust/scale left over the plates. Painting jobs shall only be done after completion of cleaning jobs and physical inspection by the company's engineer at site. The Contractor will have to arrange all necessary infrastructure (scaffolding/working platform etc.) to facilitate painting jobs. All paints primers painting materials etc. will have to be supplied by the contractor and should be duly approved by the company's engineer prior to application of paint.	(Square Meter)	
190	Hydraulic testing of two nos. of 40 Kl tank: Hydraulic testing of 2 nos. of 40 KL tank as per specification and direction of Site Engineer/Installation Manager/his or her representative.	JOB (Job)	2.00
	Note: Source Water for Hydraulic testing will be		

	'1 11 /1 0		
	provided by the Company. However Temporary pipeline connection etc should be arranged/made by the contractor for lifting/filling water in the tank. For hydraulic testing of the newly fabricated/constructed tanks all work such as arrangement of suitable pumps for filling of water to the tanks running of the pump including the water source will be arranged/executed by the contractor. After filling the tank with water a minimum period of 24 hours duration shall be maintained to observe any possible leakage/settlement of foundation etc.		
200	Hydraulic testing of two nos. of 795 Kl tank: Hydraulic testing of 2 nos. of 795 KL tank as per specification and direction of Site Engineer/ Installation Manager/his or her representative. Note: Source Water for Hydraulic testing will be provided by the Company. However Temporary pipeline connection etc. should be arranged/made by the contractor for lifting/filling water in the tank. For hydraulic testing of the newly fabricated/constructed tanks all work such as arrangement of suitable pumps for filling of water to the tanks running of the pump including the water source will be arranged/executed by the contractor. After filling the tank with water a minimum period of 24 hours duration shall be maintained to observe any possible leakage/settlement of foundation etc.	JOB (Job)	2.00
210	Calibration of two nos. of 40 Kl tank: Calibration of the 2 nos. of 40 KL tanks including all necessary arrangement. Note: Contractor will have to make all necessary arrangements for Calibration of the tanks which are already fabricated and tested. The callibration job is to be done by a Govt. approved agency and relevant documents issued by Govt. authority will have to be submitted to OIL.	JOB (Job)	2.00
220	Calibration of two nos. of 795 Kl tank: Calibration of the 2 nos. of 795 KL tanks including all necessary arrangement. Note: Contractor will have to make all necessary arrangements for Calibration of the tanks which are already fabricated and tested. The callibration job is to be done by a Govt. approved agency and relevant documents issued by Govt. authority will have to be submitted to OIL.	JOB (Job)	2.00
230	Transportation of various diameter pipes Bevel/Screwed up to 250 mm NB: Transportation of various diameter pipes Bevel/ Screwed up to 250 mm NB diameter from pipe yards at the new/old industrial areas/well-head set up/site /OCS/EPS/Department/field location including loading and unloading with the help of pipe Trailors /Crane without causing any damage to the pipes/pipe ends. Defective pipes shall be rejected prior to loading/receiving by the Company Engineer /Installation Manager/his or her representative. Maximum distance - 60 km. Average length of pipe - 11.90 m.	TKM (Ton Kilometre)	600.00
240	Transportation of various types of valves up to 250 mm NB:	TKM (Ton	200.00

	Transportation of various types of materials including valves such as gate/plug ball/check/control valves etc. pipe fittings such as elbow bend flange tee swage etc. of various sizes ranging up to 250 mm NB diameter M.S plates gratings angle iron flat bar rod etc. as per the requirement of the job from OIL godowns near OCS 3/South Bank office/Industrial area etc. to the work site in truck/trailor including loading & unloading of such materials. (maximum load per trip - 10 tonnes).	Kilometre)	
250	Handling of 200mm NB Pipes and Fittings: Handling laying aligning swabbing purging and Welding of bevel ended pipes and various fittings such as flange bend reducer elbow tee etc. on ground/above ground/under ground/elevated position for making connection to various equipment/vessel/tank within the working Complex. This job also includes bending of pipes through appropriate method/repair of pipe ends etc. if necessary with cutting torch grinding removing ovality through jacks etc. Welding should be as per API 1104 with requisite number of runs.	JT (Joint)	40.00
260	Handling of 150mm NB Pipes and Fittings: Handling laying aligning swabbing purging and Welding of bevel ended pipes and various fittings such as flange bend reducer elbow tee etc. on ground/above ground/underground/elevated position for making connection to various equipment/vessel/tank within the working Complex. This job also includes bending of pipes through appropriate method/ repair of pipe ends etc. if necessary with cutting torch grinding removing ovality through jacks etc. Welding should be as per API 1104 with requisite number of runs.	JT (Joint)	40.00
270	Handling of 100mm NB Pipes and Fittings: Handling laying aligning swabbing purging and Welding of bevel ended pipes and various fittings such as flange bend reducer elbow tee etc. on ground/above ground/underground/elevated position for making connection to various equipment/vessel/tank within the working Complex. This job also includes bending of pipes through appropriate method/ repair of pipe ends etc. if necessary with cutting torch grinding removing ovality through jacks etc. Welding should be as per API 1104 with requisite number of runs.	JT (Joint)	60.00
280	Handling of 50mm NB Pipes and Fittings: Handling laying aligning swabbing purging and Welding of bevel ended pipes and various fittings such as flange bend reducer elbow tee etc. on ground/above ground/underground/elevated position for making connection to various equipment/vessel/tank within the working Complex. This job also includes bending of pipes through appropriate method/repair of pipe ends etc. if necessary with cutting torch grinding removing ovality through jacks etc. Welding should be as per API 1104 with requisite number of runs.	JT (Joint)	30.00
290	Handling, aligning and installation of 200 mm NB size Flanged type Valves: Handling aligning and installation of 200 mm NB size Flanged type Valves such as control/gate/check/ball/plug valves etc. with already existing flanges on pipeline laid over ground/underground/overhead or at all elevation wherever required with proper gaskets nuts & bolts in both sides as per the instruction of site	NO (Number)	1.00

	* /T 11 1		
	engineer/Installation Manager (IM) or his/ her representative. In case of generation of shear/deformations on the pipelines or its fittings after the activity on either side of valves the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company. Gaskets and nut-bolts shall be supplied by OIL. Before installation the valves to be tested hydraulically to the requisite pressure as per the instruction of the site engineer/Installation Manager (IM) or his/her representative.		
300	Handling, aligning and installation of 150 mm NB size	NO	3.00
	Flanged type Valves: Handling aligning and installation of 150 mm NB size Flanged type Valves such as control/gate/check /ball/plug valves etc. with already existing flanges on pipeline laid over ground/underground/overhead or at all elevation wherever required with proper gaskets nuts & bolts in both sides as per the instruction of site engineer/Installation Manager (IM) or his/her representative. In case of generation of shear/ deformations on the pipelines or its fittings after the activity on either side of valves the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company. Gaskets and nut-bolts shall be supplied by OIL. Before installation the valves to be tested hydraulically to the requisite pressure as per the instruction of the site engineer/Installation Manager (IM) or his/her representative.	(Number)	
310	Handling, aligning and installation of 100 mm NB size	NO	3.00
	Flanged type Valves: Handling aligning and installation of 100 mm NB size Flanged type Valves such as control/gate/check /ball/plug valves etc. with already existing flanges on pipeline laid over ground/underground/overhead or at all elevation wherever required with proper gaskets nuts & bolts in both sides as per the instruction of site engineer/Installation Manager (IM) or his/her representative. In case of generation of shear /deformations on the pipelines or its fittings after the activity on either side of valves the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company. Gaskets and nut-bolts shall be supplied by OIL. Before installation the valves to be tested hydraulically to the requisite pressure as per the instruction of the site engineer/Installation Manager (IM) or his/her representative.	(Number)	
320	Handling, aligning and installation of 50 mm NB size Flanged type Valves: Handling aligning and installation of 50 mm NB size Flanged type Valves such as control/gate/check/ball/plug valves etc. with already existing flanges on pipeline laid over ground/underground/overhead or at all elevation wherever required with proper gaskets nuts & bolts in both sides as per the instruction of site engineer/Installation Manager (IM) or his/her representative. In case of generation of shear	NO (Number)	3.00

	/deformations on the pipelines or its fittings after the activity on either side of valves the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company. Gaskets and nut-bolts shall be supplied by OIL. Before installation the valves to be tested hydraulically to the requisite pressure as per the instruction of the site engineer/Installation Manager (IM) or his/her representative.		
330	Handling of 200 mm NB Companion Flange: Handling aligning and hooking up of Companion Flanges on pipe lines over ground/underground/overhead or at all elevation as required complete with jointing materials/nut-bolts (supplied by OIL) wherever required as per the instruction of site engineer/Installation Manager (IM) or his/her representative. In case of generation of shear/deformations on the pipelines or its fittings after the activity on either side of Flange the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company.	PAA (Pair)	1.00
340	Handling of 150 mm NB Companion Flange: Handling aligning and hooking up of Companion Flanges on pipe lines over ground/underground/ overhead or at all elevation as required complete with jointing materials/nut-bolts (supplied by OIL) wherever required as per the instruction of site engineer/ Installation Manager (IM) or his/her representative. In case of generation of shear/deformations on the pipelines or its fittings after the activity on either side of Flange the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company.	PAA (Pair)	3.00
350	Handling of 100 mm NB Companion Flange: Handling aligning and hooking up of Companion Flanges on pipe lines over ground/underground/overhead or at all elevation as required complete with jointing materials/nut-bolts (supplied by OIL) wherever required as per the instruction of site engineer/Installation Manager (IM) or his/her representative. In case of generation of shear/deformations on the pipelines or its fittings after the activity on either side of Flange the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation to the effect shall be entertained by the company.	PAA (Pair)	6.00
360	Handling of 50 mm NB Companion Flange: Handling aligning and hooking up of Companion Flanges on pipe lines over ground/under ground/overhead or at all elevation as required complete with jointing materials/nut-bolts (supplied by OIL) wherever required as per the instruction of site engineer/Installation Manager (IM) or his/her representative. In case of generation of shear/deformations on the pipelines or its fittings after the activity on either side of Flange the same will have to be repaired/rectified to bring back the same to the original condition by the Contractor at his/her own cost and no compensation	PAA (Pair)	4.00

	to the effect shall be entertained by the company.		
370	Fabrication of various pipe fittings like Bend, Tee: Fabrication of various pipe fittings like Bend Tee Reducer etc. by welding including handling cutting end preparation etc. The job will be quantified as per unit length of welding measured in centimeter. All welding joints shall be as per API 1104 specification.	CM (Centimeter)	5,000.00
380	Supply fabrication welding & erection of Single Leg Pipe Supports: Supply fabrication welding & erection of Single Leg Pipe Supports with 100 mm O.D. M.S pipes including clamping of pipes up to 1.5 mtr. height generally as per the sketch no OIL/PO/04. All materials like pipes clamps base plates bolts & nuts etc. will be arranged and supplied by the contractor. The job also includes construction of Pillar Foundations for the pipe supports fabricated of size 0.25 m (L)x 0.25 (B) x0.40m (Depth) made out of CC of 1:2:4 ratio including grouting.	NO (Number)	20.00
390	Supply fabrication welding & erection of Double Leg Pipe Supports: Supply fabrication welding & erection of Double Leg Pipe Supports with 100 mm O.D. M.S pipes including clamping of pipes up to 1.5 mtr height generally as per the sketch no. OIL/PO/05. All materials like pipes clamps base plates bolts & nuts etc. will be arranged and supplied by the contractor. The job also includes Pillar Foundations for the pipe supports fabricated of size 0.25 m (L) x 0.25 (B) x 0.40m (Depth) made out of CC of 1:2:4 ratio including grouting.	NO (Number)	10.00
400	Erection of Concrete Pipe Supports as per latest OISD norms: Supply of all materials erection installation plastering curing of RCC Pipe Supports (1:1.5:3 mixture) including clamping System/arrangement as per OIL drawing no. OIL/PSS/01. Provision of clamping with the help of U clamps with nuts (dia of clamps 1.27 cm) to clamp different diameter pipes with nuts and washers including all civil construction materials will have to be supplied by the contractor. All the supplied materials must be approved by OIL prior to erection including material test certificates and other documents.	M3 (Cubic Meter)	5.00
410	Supply Fabrication and erection of walkway and walkway platform: Supply Fabrication and erection of walkway and walkway platform of 750 mm width with railings over the pipe/bunch of pipes bundh dyke wall drains etc. as per sketch no. OIL/PP/17 supplied herewith. The contractor will supply all necessary materials like M S Grating (500 mm width) support pipes Angle iron frame railing etc. and prior approval for all materials will have to be obtained from the company representative. After fabrication/erection the posts are to be grouted out of CC composition 1:2:4 as per directive of site engineer/Installation Manager (IM) or his/her representative. All grouting materials will be supplied by the contractor.	M (Meter)	20.00
	Size of the grouting 0.2 m (L) x 0.2 m (W) x 0.4 m (H).	l l	

	Radiographic inspection of welded joints by a third party inspection agency (approved by BARC) as directed by the site engineer/Installation Manager (IM)		
	or his/ her representative as per API 650 as directed by the OIL. All necessary equipment including the inspection agency to be arranged by the contractor at his/her own cost (no reimbursement shall be entertained by company) with the approval of the company engineer/Installation Manager (IM) or his/her representative. Certification from the third party inspection agency to the effect shall have to be deposited to OIL.		
430	Radiographic inspections of welded joints of 795 Kl Tanks:	JT (Joint)	140.00
	Radiographic inspection of welded joints by a third party inspection agency (approved by BARC) as directed by the site engineer/Installation Manager (IM) or his/her representative as per API 650 as directed by the OIL. All necessary equipment including the inspection agency to be arranged by the contractor at his/her own cost (no reimbursement shall be entertained by company) with the approval of the company engineer/Installation Manager (IM) or his/her representative. Certification from the third party inspection agency to the effect shall have to be deposited to OIL.		
440	Radiographic inspections of Pipe Joints (200 to 150 mm NB): Radiographic inspection of welded joints by a third party inspection agency (approved by BARC) as directed by the site engineer/Installation Manager (IM) or his/her representative. All necessary equipment including the inspection agency to be arranged by the contractor at his/her own cost (no reimbursement shall be entertained by company) with the approval of the company engineer/Installation Manager (IM) or his/her representative. Certification from the third party inspection agency to the effect shall have to be deposited to OIL. Size: 200mmNB/150mm NB	NO (Number)	30.00
450	Radiographic inspections of Pipe Joints (100 to 50 mm NB): Radiographic inspection of welded joints by a third party inspection agency (approved by BARC) as directed by the site engineer/Installation Manager (IM) or his/her representative. All necessary equipment including the inspection agency to be arranged by the contractor at his/her own cost (no reimbursement shall be entertained by company) with the approval of the company engineer/Installation Manager (IM) or his/ her representative. Certification from the third party inspection agency to the effect shall have to be deposited to OIL. Size: 100mm NB/50mm NB.	NO (Number)	20.00
460	Letter writing (300 mm to 450 mm): Arrow marking on piping and letter writing on vessels tanks signboards piping shed pumps etc. Writing will be in English Assamese and Hindi as per the instruction of the site engineer with approved paints. All materials including paint paint brush etc. for the job will be arranged by the contractor.	NO (Number)	480.00

	Letter size - From 300mm to 450 mm.		
470	Erection/Repairing of brick wall around the Tanks: Erection/Repairing of brick wall around the Tanks as per OIL drawing no. OIL/2488 including steps on both side PCC work (ratio 1:3) on the top of the brick wall (both side) and painting the all exposed surfaces with exterior weather proof paint. All materials will be supplied by the contractor.	M (Meter)	200.00
480	Casting of PCC for the Tank Farm Floor: Casting of PCC (1:2:4) for the tank farm floor including broken floor in the adjoining areas supports drains etc. The job is to be carried out with one layer of brick soling followed by 75 mm cc and as per the directive of the company engineer/Installation Manager (IM) or his/her representative. The job involved chipping /breaking/cleaning the existing floor and reconstruction of the same including drainage system. All the material for the job is to be supplied by the contractor.	M2 (Square Meter)	521.00
490	Earthing system of tanks: Earthing connection of the storage tanks including supply of all materials. Providing complete earthing system to the constructed tanks consisting of G. I. earthing Bus Earth Electrodes connected firmly to the shell as per drawing/specifications provided in Drawing No. OIL/PO/07 including all the associated jobs. This item includes supply of all materials fabrication and erection as needed. This item also includes construction of brick/RCC enclosure as per sketch no OIL/PO/08 for earth electrode pits with concrete cover at various locations.	JOB (Job)	4.00
500	Supply of API 600 GATE VALVE & Companion flange 8": Supply of API 600 GATE VALVE & Companion flange 8"X150 Class RF FLANGED END with companion flange stud & nuts: Cast Carbon Steel Gate valve as per API 600 specification regular bore type rising stem bolted bonnet outside screw and yoke integrally cast flexible wedge gate. End flanges having serrated RF face drilled in accordance with ANSI B-16.5 face to face dimension as per ANSI B-16.10 & tested as per API 598 specification.	NO (Number)	1.00
510	Supply of API 600 GATE VALVE & Companion flange 6": Supply of API 600 GATE VALVE & Companion flange 6"X150 Class RF FLANGED END with companion flange stud & nuts: Cast Carbon Steel Gate valve as per API 600 specification regular bore type rising stem bolted bonnet outside screw and yoke integrally cast flexible wedge gate. End flanges having serrated RF face drilled in accordance with ANSI B-16.5 face to face dimension as per ANSI B-16.10 & tested as per API 598 specification.	NO (Number)	3.00
520	Supply of API 600 GATE VALVE & Companion flange 4": Supply of API 600 GATE VALVE & Companion flange 4"X 150 class RF FLANGED END with companion flange stud & nuts:Cast Carbon Steel Gate valve as per API 600 specification regular bore type rising stem bolted bonnet outside screw and yoke integrally cast	NO (Number)	6.00

E-TENDER NO. CDO7507P18

	flexible wedge gate. End flanges having serrated RF face drilled in accordance with ANSI B-16.5 face to face dimension as per ANSI B-16.10 & tested as per API 598 specification.		
530	Supply of API 600 GATE VALVE & Companion flange 2": Supply of API 600 GATE VALVE & Companion flange 2"X150 Class RF FLANGED END with companion flange stud & nuts: Cast Carbon Steel Gate valve as per API 600 specification regular bore type rising stem bolted bonnet outside screw and yoke integrally cast flexible wedge gate. End flanges having serrated RF face drilled in accordance with ANSI B-16.5 face to face dimension as per ANSI B-16.10 & tested as per API 598 specification.	NO (Number)	3.00
540	Additional increase in height of Tank Foundation over line item no. 110/or 120: Additional Construction of RCC ring wall tank foundation over the foundation to be constructed as per line no. 30/or40 if required. The design consideration of line item no.110/or 120 shall be the basis of all such additional construction activities. It should be constructed in such a way that it becomes an integral part of the foundation. The contractor will have to take prior approval from Company's Engineer for such additional construction prior to starting the job against line no.110/or 120. The payment will be made on actual (per metre or part thereof) against such	M (Meter)	58.00

2. Mobilisation Period: **60** (Sixty) days from date of issue of LOA.

OIL INDIA LIMITED

(A Government of India Enterprise) Duliajan, Assam

DESCRIPTION OF WORK/SERVICE: Construction and Commissioning of 02 (Two) nos. of 795 Kl and 02 (Two) nos. of 40Kl Capacity Crude Oil Storage Tanks.

PRICE BID FORMAT TENDER NO. CDO7507P18

NAME OF BIDDER

Bidder's GST No.

SAC/HSN Code

Select the benefit sought under the Policy

(Use Drop Down List)

(Use Drop Down List)									
	Description of Services (For detailed description of Services Refer SOQ)	UOM	Estimated Quantity	Rate (Rs.) to be quoted Excluding GST	Applicable GST Rate in %	Applicable GST (Select from Drop down List)	Amount (Rs.) Excluding GST	Applicable GST amount (Rs.)	Amount (Rs.) Including GST
			A	В	С		D = A * B	E= C*D	F = D + (D * C)
10	Erection and dismantling of barrier wall	M	320.00				0.00	0.00	0.00
20	Isolation of process pipelines	NO	5.00				0.00	0.00	0.00
30	Dismantling of foundation of two nos. of 18 Kl tank	NO	2.00				0.00	0.00	0.00
40	Dismantling of foundation of one no. of 40 Kl tank	NO	1.00				0.00	0.00	0.00
50	Dismantling of foundation of two nos. of 795 Kl tank	NO	2.00				0.00	0.00	0.00
60	Dismantling of old(damaged) two nos. of 18 Kl tank	NO	2.00				0.00	0.00	0.00
70	Dismantling of old(damaged) one no. of 40 Kl tank	NO	1.00				0.00	0.00	0.00
80	Dismantling of old(damaged) two nos. of 795 Kl tank	NO	2.00				0.00	0.00	0.00
90	Design of two nos. of 40 Kl tank foundation	NO	2.00				0.00	0.00	0.00
100	Design of two nos. of 795 Kl tank foundation	NO	2.00				0.00	0.00	0.00
110	Construction of new RCC foundation for two nos. of 40 Kl tank	NO	2.00				0.00	0.00	0.00
120	Construction of new RCC foundation for two nos. of 795 Kl tank	NO	2.00				0.00	0.00	0.00
130	Construction of new RCC foundation with boulder packing for two nos. of 40 Kl tank	NO	2.00				0.00	0.00	0.00
140	Construction of new RCC foundation with boulder packing for two nos. of 795 Kl tank	NO	2.00				0.00	0.00	0.00
150	Fabrication and Erection of two nos. of 40 Kl tank	NO	2.00				0.00	0.00	0.00
160	Fabrication and Erection of two nos. of 795 Kl tank	NO	2.00				0.00	0.00	0.00
170	Foam Pouring system	JOB	1.00				0.00	0.00	0.00

180	External Painting	M2	1,140.00		0.00	0.00	0.00
190	Hydraulic testing of two nos.of 40 Kl tank	JOB	2.00		0.00	0.00	0.00
200	Hydraulic testing of two nos.of 795 Kl tank	JOB	2.00		0.00	0.00	0.00
210	Calibration of two nos.of 40 Kl tank	JOB	2.00		0.00	0.00	0.00
220	Calibration of two nos.of 795 Kl tank	JOB	2.00		0.00	0.00	0.00
230	Transportation of various diameter pipes Bevel/ Screwed up to 250 mm NB	TKM	600.00		0.00	0.00	0.00
240	Transportation of various types of valves up to 250 mm NB	TKM	200.00		0.00	0.00	0.00
250	Handling of 200mm NB Pipes and Fittings	JT	40.00		0.00	0.00	0.00
260	Handling of 150mm NB Pipes and Fittings	JT	40.00		0.00	0.00	0.00
270	Handling of 100mm NB Pipes and Fittings	JT	60.00		0.00	0.00	0.00
280	Handling of 50mm NB Pipes and Fittings	JT	30.00		0.00	0.00	0.00
290	Handling, aligning and installation of 200 mm NB size Flanged type Valves	NO	1.00		0.00	0.00	0.00
300	Handling, aligning and installation of 150 mm NB size Flanged type Valves	NO	3.00		0.00	0.00	0.00
310	Handling, aligning and installation of 100 mm NB size Flanged type Valves	NO	3.00		0.00	0.00	0.00
320	Handling, aligning and installation of 50 mm NB size Flanged type Valves	NO	3.00		0.00	0.00	0.00
330	Handling of 200 mm NB Companion Flange	PAA	1.00		0.00	0.00	0.00
340	Handling of 150 mm NB Companion Flange	PAA	3.00		0.00	0.00	0.00
350	Handling of 100 mm NB Companion Flange	PAA	6.00		0.00	0.00	0.00
360	Handling of 50 mm NB Companion Flange	PAA	4.00		0.00	0.00	0.00
370	Fabrication of various pipe fittings like Bend,Tee	CM	5,000.00		0.00	0.00	0.00
380	Supply fabrication welding & erection of Single Leg Pipe Supports	NO	20.00		0.00	0.00	0.00
390	Supply fabrication welding & erection of Double Leg Pipe Supports	NO	10.00		0.00	0.00	0.00
400	Erection of Concrete Pipe Supports as per latest OISD norms	M3	5.00		0.00	0.00	0.00
410	Supply Fabrication and erection of walkway and walkway platform	M	20.00		0.00	0.00	0.00
420	Radiographic inspections of welded joints of 40 Kl Tanks	JT	60.00		0.00	0.00	0.00
430	Radiographic inspections of welded joints of 795 Kl Tanks	JT	140.00		0.00	0.00	0.00
440	Radiographic inspections of Pipe Joints(200 to 150 mm NB)	NO	30.00		0.00	0.00	0.00
	Radiographic inspections of Pipe Joints(100 to 50 mm NB)	NO	20.00		0.00	0.00	0.00
460	Letter writing (300 mm to 450 mm)	NO	480.00		0.00	0.00	0.00
470	Erection/Repairing of brick wall around the Tanks	M	200.00		0.00	0.00	0.00

480	Casting of PCC for the Tank Farm Floor	M2	521.00				0.00	0.00	0.00
490	Earthing system of tanks	JOB	4.00				0.00	0.00	0.00
500	Supply of API 600 GATE VALVE & Companion flange 8"	NO	1.00				0.00	0.00	0.00
510	Supply of API 600 GATE VALVE & Companion flange 6"	NO	3.00				0.00	0.00	0.00
520	Supply of API 600 GATE VALVE & Companion flange 4"	NO	6.00				0.00	0.00	0.00
530	Supply of API 600 GATE VALVE & Companion flange 2"	NO	3.00				0.00	0.00	0.00
540	Additional increase in height of Tank Foundation over line	M	58.00				0.00	0.00	0.00
	Total (Rs) (Exclusive of GST							Grand Total	0.00

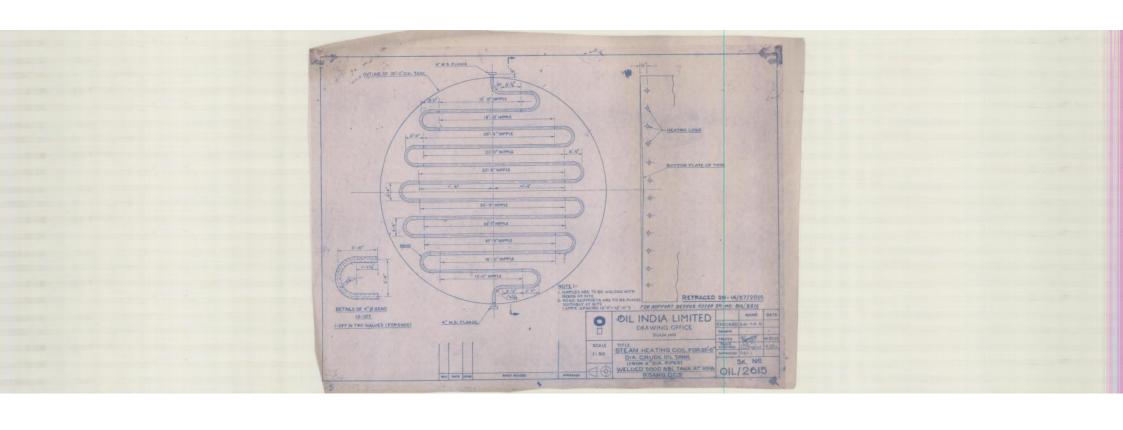
- 1. The price/rate(s) quoted by the Bidders will be inclusive of all taxes except GST (i.e. IGST or CGST and SGST/UTGST as applicable in case of interstate supply or intra state supply respectively and Cess on GST, if applicable) on the final services. However, GST rate (including cess) to be provided in the respective places in the Price Bid.
- 2. Price Bids shall be evaluated on overall lowest cost to OIL (L-1 offer) basis i.e. considering total quoted price for all services including applicable GST(CGST & SGST/UTGST or IGST)
- 3 OIL will prefer to deal with registered bidder under GST. Therefore, bidders are requested to get themselves registered under GST, if not registered yet.

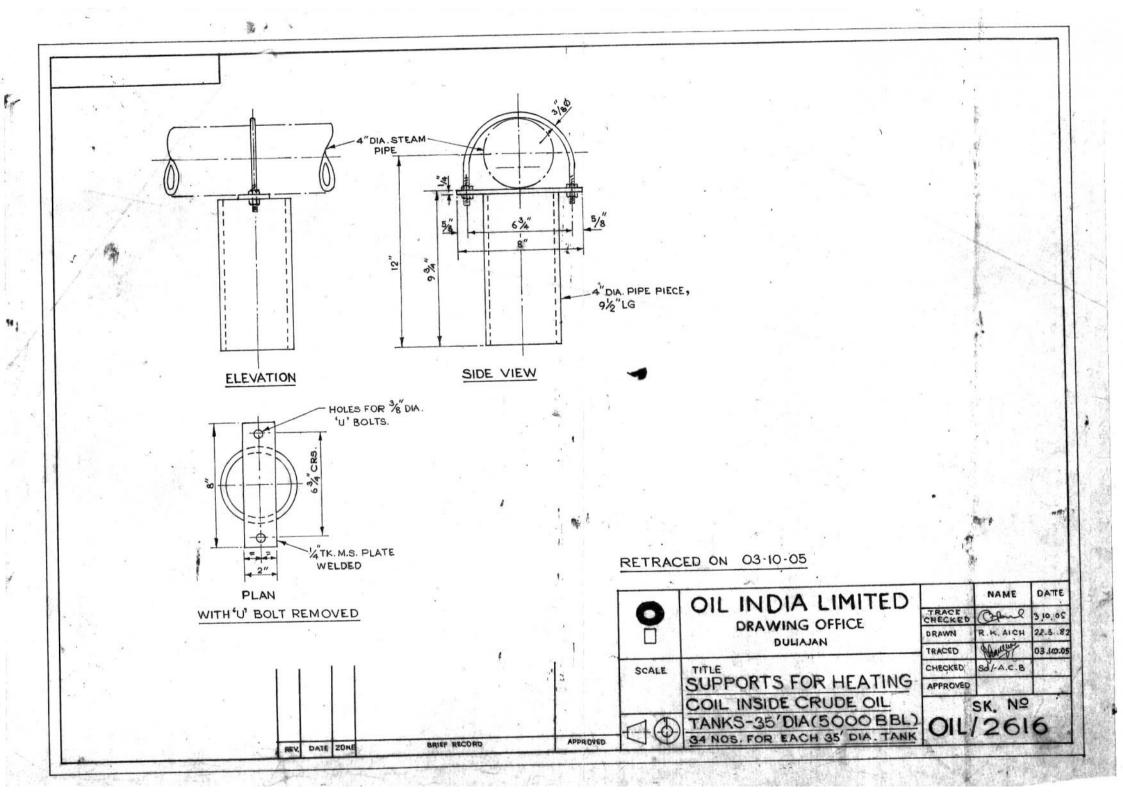
However, in case any unregistered bidder is submitting their bid, their prices will be loaded with applicable GST while evaluation of bid. Where OIL is entitled for input credit of GST, the same will be considered for evaluation of bid as per evaluation methodology of tender document.

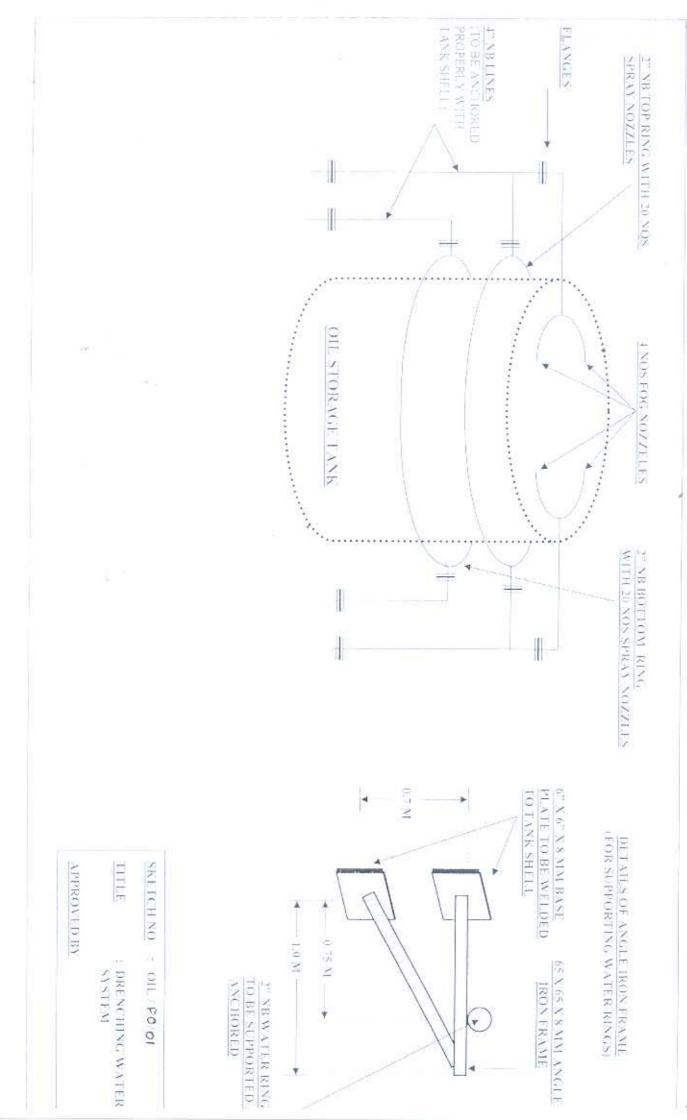
4. Price Bid uploaded without giving any of the details of the taxes (Including rates and amounts) will be considered as inclusive of all taxes including GST.

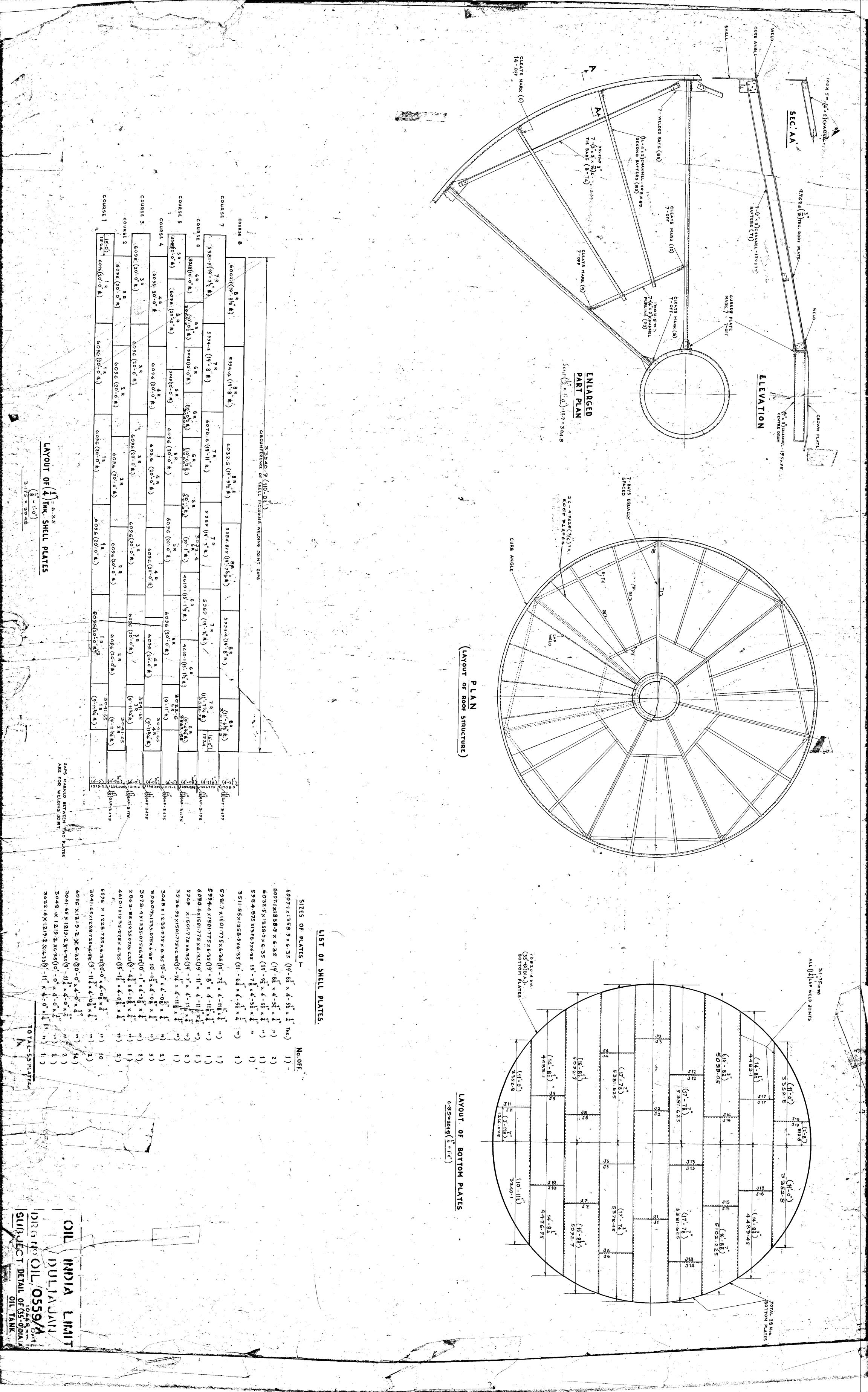
When a bidder mentions taxes as extra without specifying the rates & amount, the offer will be loaded with maximum value towards taxes received against the tender for comparison purposes. If the bidder emerges as lowest bidder after such loading, in the event of order on that bidder, taxes mentioned by OIL on the Purchase Order/ Contracts will be binding on the bidder.

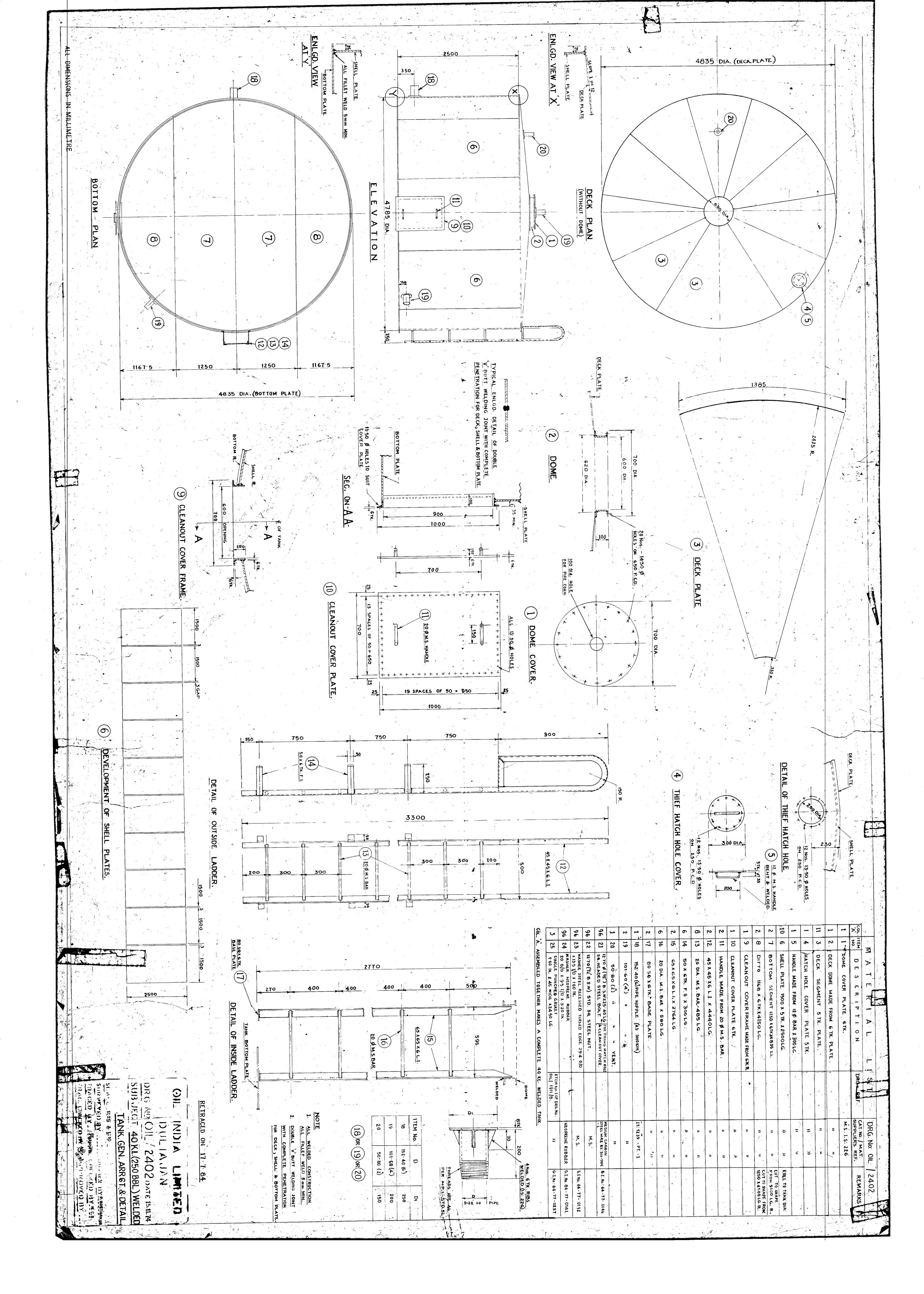
- 5. Input Tax Credit on GST (Goods & Service Tax) for this service is NOT available to OIL & The bids will be evaluated based on total price including GST.
- 6. Bidder may seek benefits under PP-LC policy. Purchase Preferences allowed as per Government Guidelines in Vogue and PPP [Public Procurement policy] for Micro and Small Enterprises is not applicable for this tender (being works contract tender).
- 7. Purchase preference policy-linked with Local Content (PP LC) notified vide letter No. O-27011/44/2015-ONG/II/FP dated 25.04.2017 of MoPNG shall be applicable in this tender Bidders seeking benefits under Purchase Preference Policy (linked with Local Content) (PP LC) shall have to comply with all the provisions specified in ITB and shall have to submit all undertakings / documents applicable for this policy.
- 8. Refer to GCC for detail of GST
- 9. Refer to SOQ & SCC for Item detail Description
- 10. Period of Contract: 02 (Two) years.
- 11. Mobilisation Period: 60 (Sixty) days from date of issue of LOA.

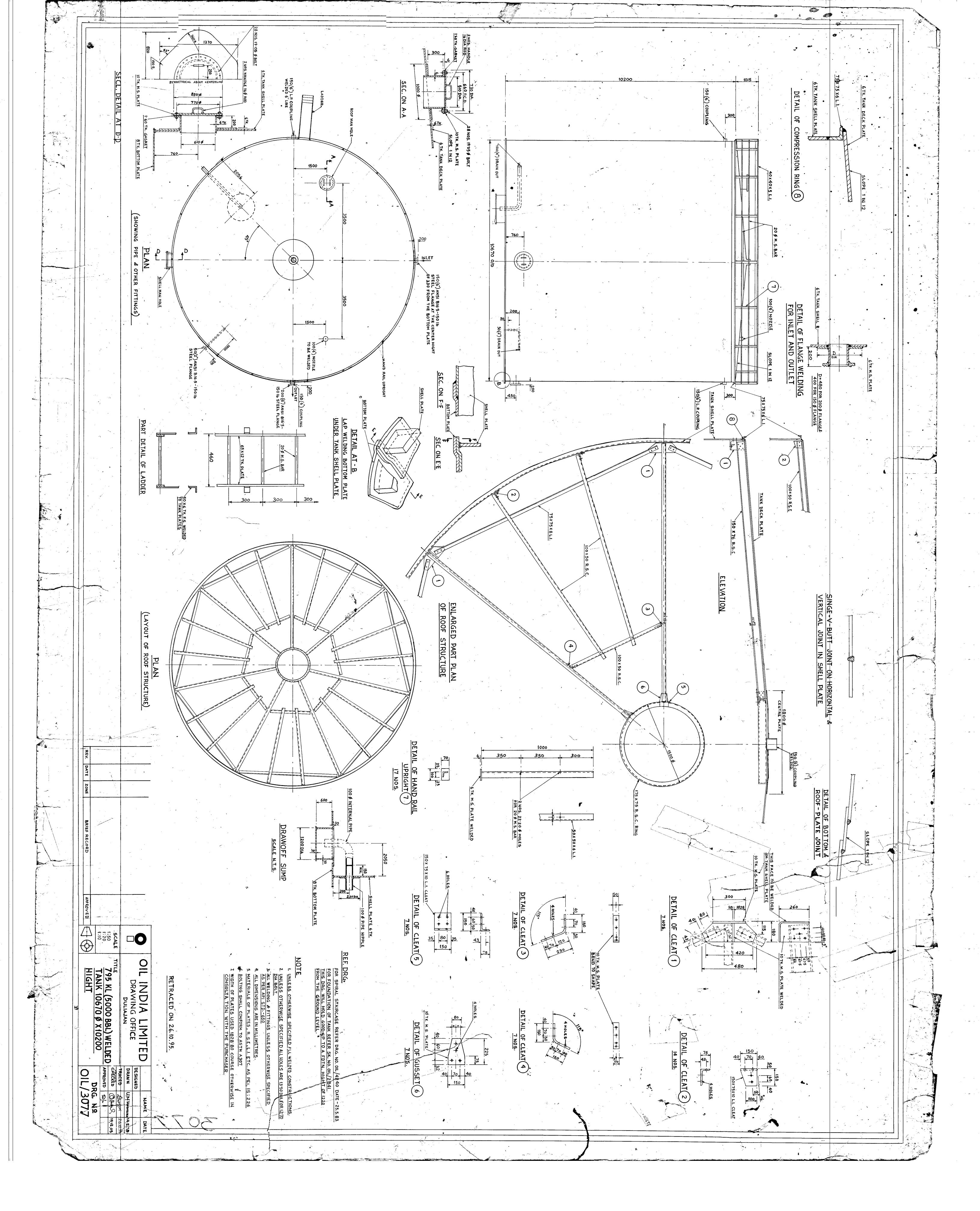


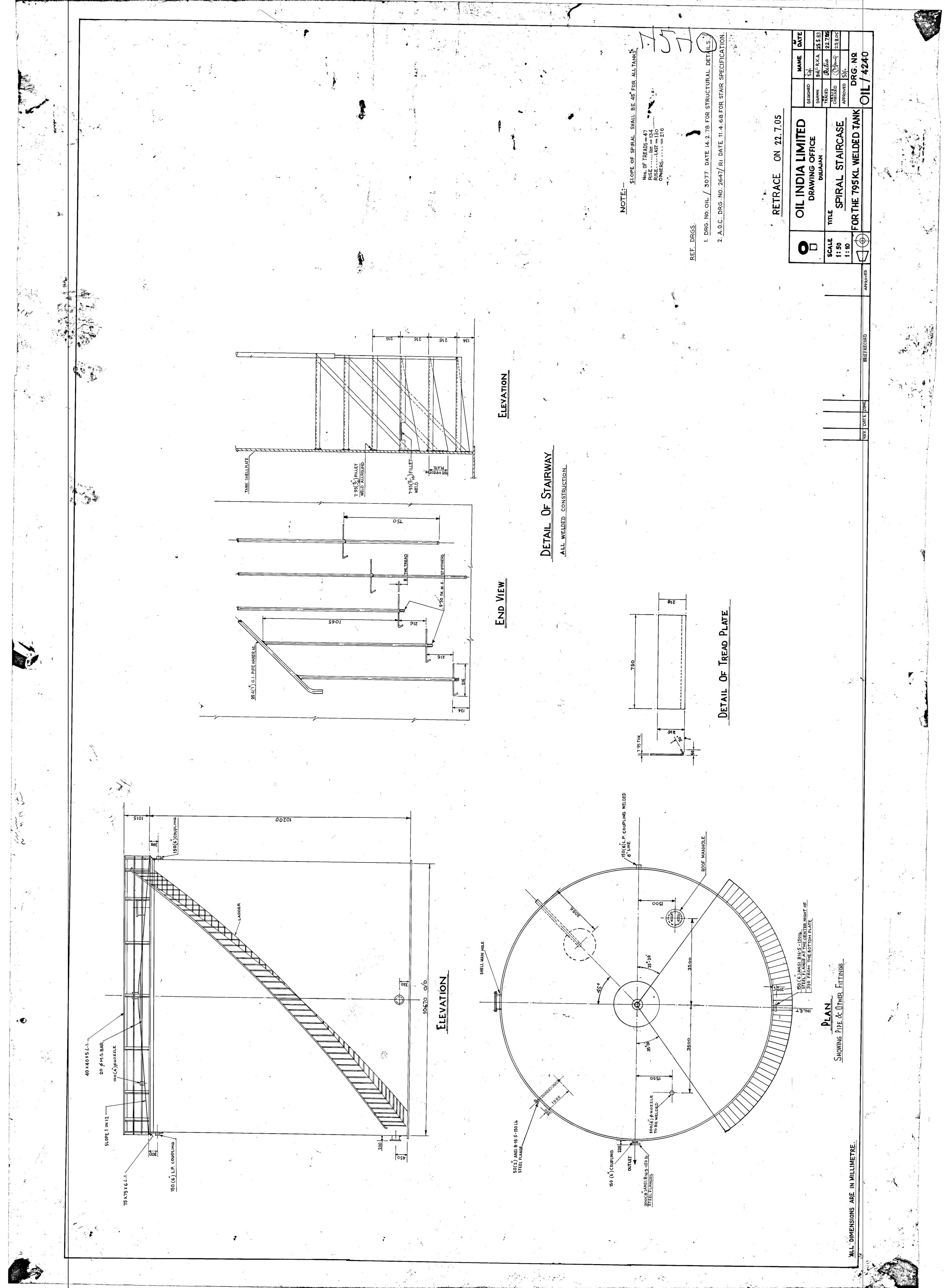


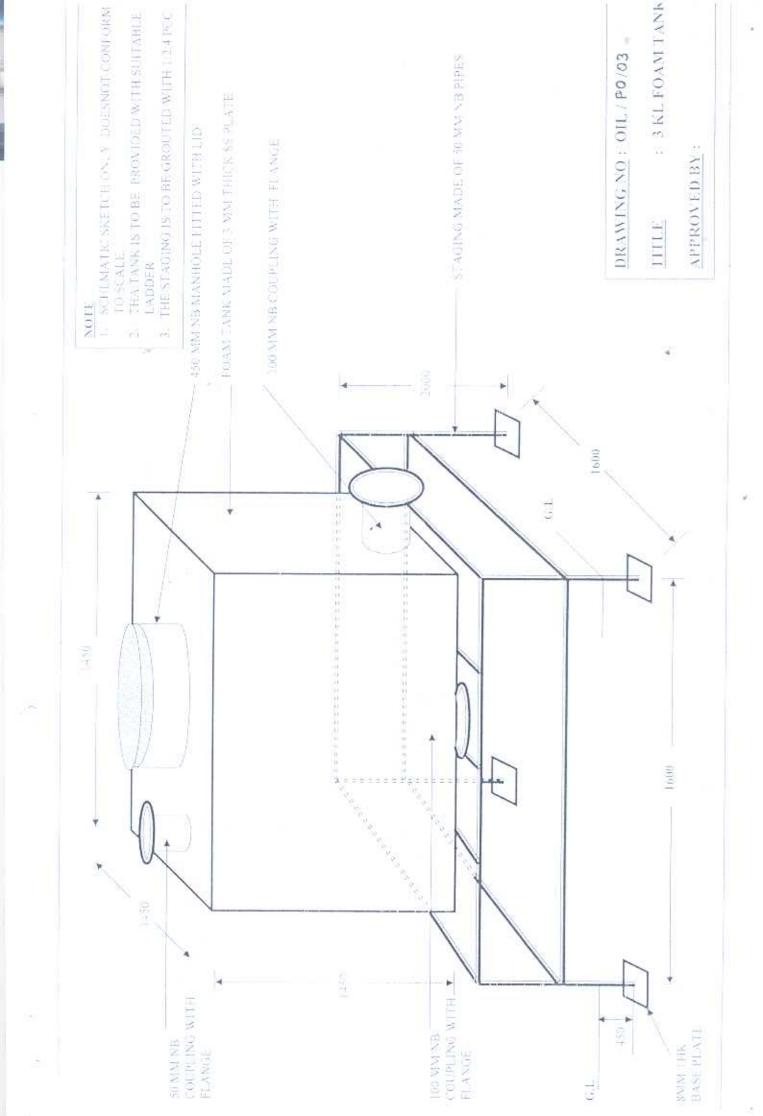


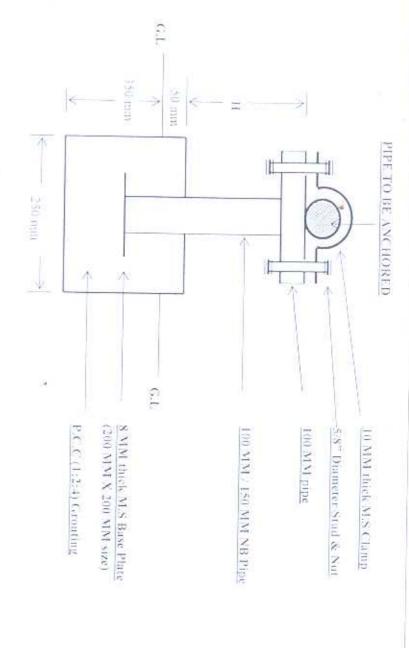












NOTE

- The value of 'H' will vary in between 0.1 Meter to 1 Meter;
- Schematic sketch only. Does not conform to scale
- 3. All dimension are in MM.

ELEVATION

250 rs)rp.

250 mm

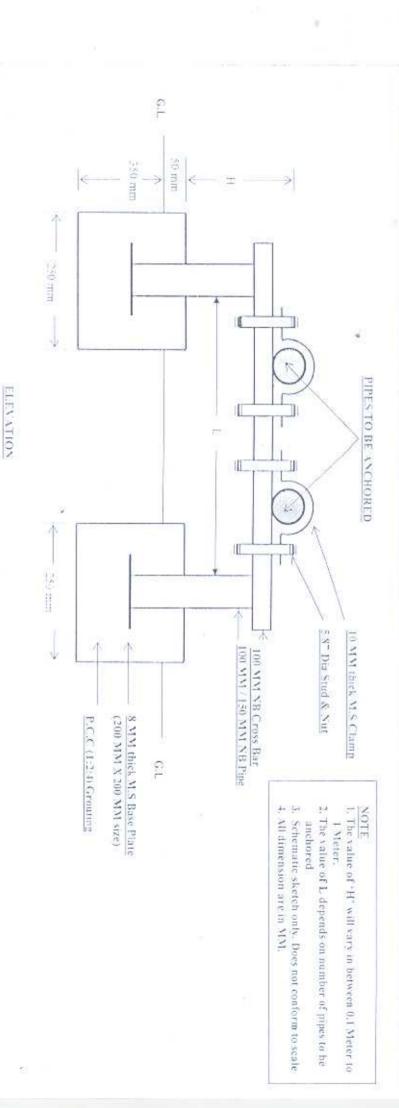
SKETCH NO.: OH. / PO/04

SINGLE LEGGED PIPE SUPPORT

TITLE

APPROVED BY:

1111



23 X SS

150 mm

0

0

0

0

250 mm

150 mm

SKETCHNO, : OIL / PURE

: DOUBLE LEGGED PIPE SUPPORT

TITLE

APPROVED BY:

