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ARCHEOLOGICAL, ENGINEERING & HALLARD STUDY  
OF  
PROPOSED 30 INCH GAS PIPELINE ROUTE  
FROM  
BLOCK A-76, BRAZOS AREA, SOUTH ADDITION  
TO  
BLOCK 538-L, BRAZOS AREA  
IN  
GULF OF MEXICO, O.C.S.

TRANSCONTINENTAL GAS PIPE LINE CORPORATION  
HOUSTON, TEXAS

OCTOBER, 1981

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## INTRODUCTION

Transcontinental Gas Pipeline Corporation of Houston, Texas, contracted John E. Chance & Associates, Inc., to perform an Archeological, Engineering and Hazard Study. This investigation encompassed the proposed right-of-way for a planned 30 inch pipeline route from Block A-76, Brazos Area South Addition to Block 538-L, Brazos Area. Specifically, this planned route extends from the Cities Service A-76 "A" Structure (Latitude = 27° 58' 17.7229" N, Longitude = 95° 55' 12.0883" W) to the Transco 538-L Junction Platform (Latitude = 28° 18' 51.9543" N, Longitude = 95° 37' 14.0892" W). The total length of this proposed 30 inch pipeline is 159,209.49 feet or 30.15 miles.

The field work was conducted from August 19 to 24, 1981, aboard the M/V Global Surveyor. Horizontal control of the survey vessel was accomplished by utilizing the Cubic Western DM 54 Automatic Range Grid Overlay positioning system (ARGO). Geophysical systems utilized during the survey included a side scan sonar (S.M.S. 960), proton magnetometer and subbottom profiler units (boomer and pinger). Detailed descriptions of these systems are included in the Appendix B section. Core samples were also retrieved at 1 mile intervals along the route and have been analyzed for soil engineering properties as specified. Results from the analyses are presented in Appendix C of this report.

All aspects of the field work were carried out in accordance with the latest federal guidelines concerning marine hazard studies

INTRODUCTION (cont'd.)

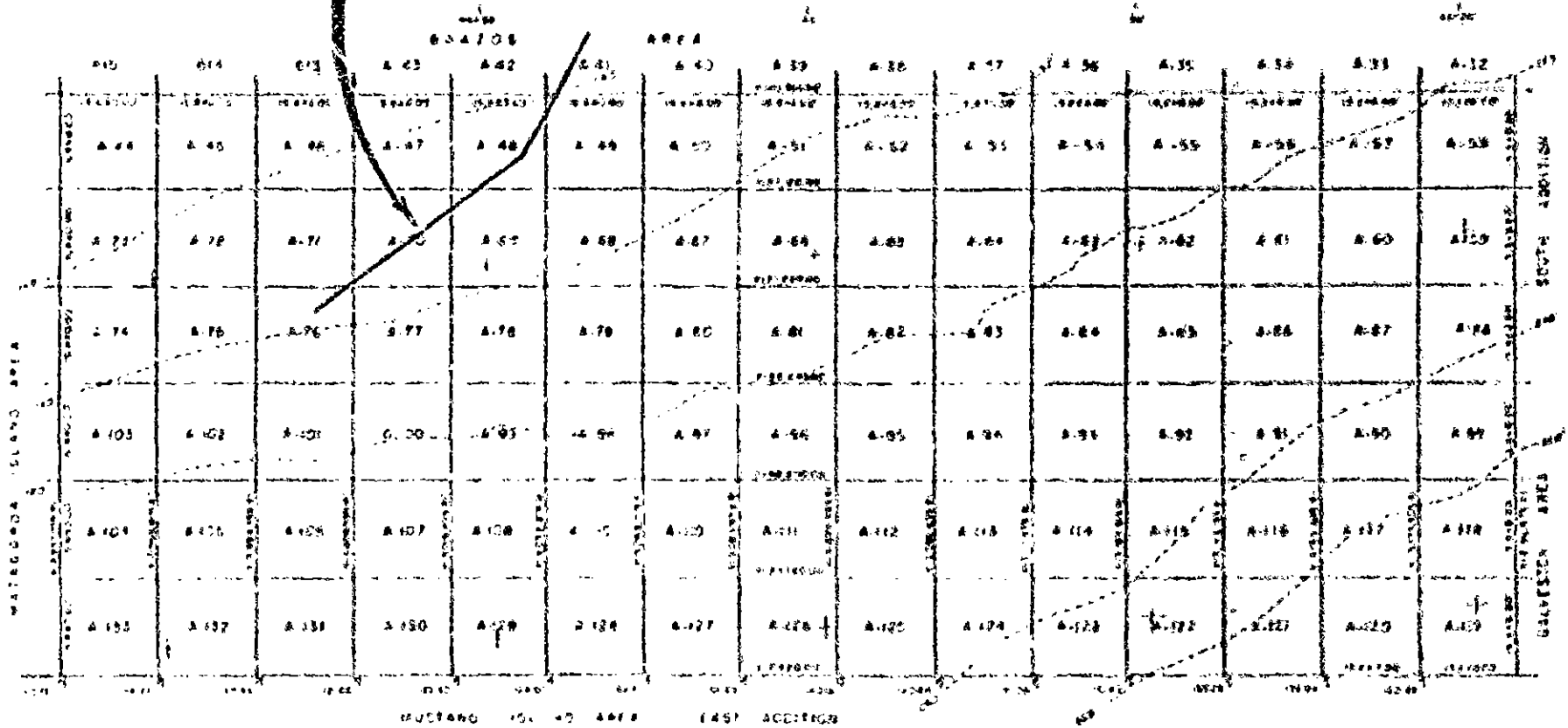
utilizing geophysical remote sensing devices. This report also follows these guidelines and is provided to assist Transcontinental Gas Pipeline Corporation in obtaining the necessary approval for construction of proposed 30 inch pipeline.



BRAZOS AREA  
SOUTH ADDITION

PROPOSED PIPELINE ROUTE

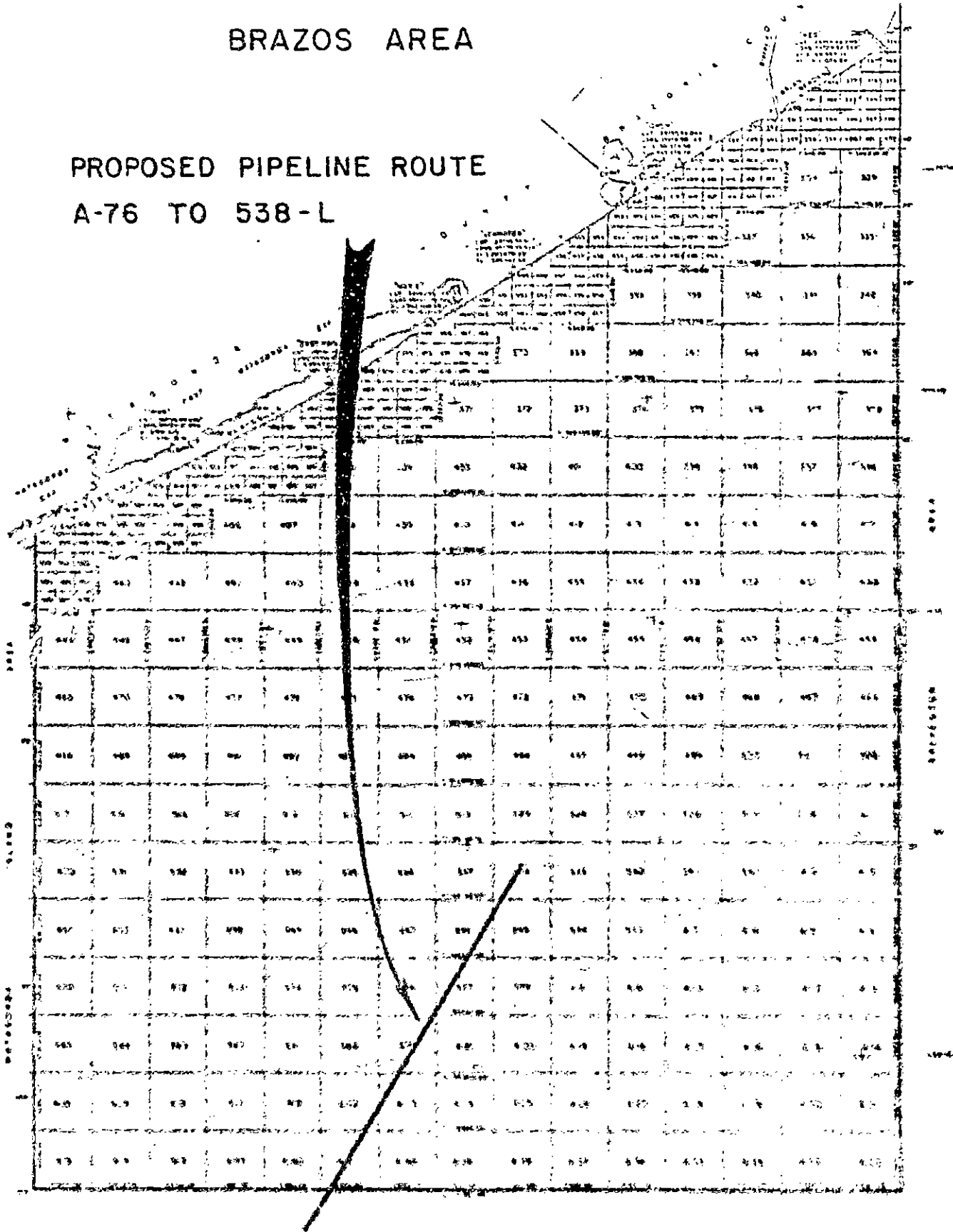
A-76 TO 538-L



VICINITY MAP

# BRAZOS AREA

## PROPOSED PIPELINE ROUTE A-76 TO 538-L



VICINITY MAP

### INTERPRETATION

The following is a written description of the seafloor and subbottom features encountered during the preliminary survey of Transco's proposed 30" pipeline. Interpretations are based on the recorded data from the remote sensing systems, i.e. proton magnetometer, subbottom profiler, etc. The accumulated records along with reference materials were examined collectively to evaluate present geological conditions and to determine if any potential hazards exist along the proposed route. Those features pertinent to construction operations have been projected onto the Archeological, Engineering and Hazard Study Maps (Enclosures No. 1, 2 and 3) and a Subbottom Profile Map for convenient reference.

The seafloor slopes gently to the south across the study area at a gradient rate of 4 to 5 feet per mile ( $0.05^\circ$ ). Water depths along the proposed route range from 160 feet at the Cities Service A-76 "A" Structure to 92 feet at the Transco 538-L Junction Platform. There are no irregular topographic features along the proposed route, i.e. scarps, depressions, reefs, etc.

The proton magnetometer and side scan sonar systems were used to verify the locations of existing structures or wells and detect possible obstructions. All of the known structures within the survey limits have been plotted on the enclosed



INTERPRETATION (cont'd.)

study maps and are as follows:

Block A-76	-	Cities Service "A" Structure
"	-	(2) Transco 20" P/L's
"	-	Transco 16" P/L
Block A-70	-	Cities Service "A" Structure
Block A-48	-	Shell Well No. 1
Block A-22	-	Tenneco Well No. 1
Block 579-L	-	Exxon Well No. 1
"	-	Exxon Well No. 3
Block 538-L	-	Transco Junction Platform
"	-	Ground Bed with Cable
"	-	(2) Transco 20" P/L's
"	-	Transco 30" P/L

It should be noted that the true location of the Exxon Well No. 1 in Block 579-L differs from the Transco preplots. The coordinates of the well location are  $x = 3,052,631.20'$ ,  $y = 140,518.30'$ , which is along the northwest offset, Line 1, at S.P. 13.1 (See Enclosure No. 1).

The proton magnetometer detected three small anomalies around the 538-L Junction Platform (Noted in Appendix A). These contacts represent small ferrous objects possibly discarded during prior construction operations. There were no side scan sonar contacts associated with these magnetic anomalies suggesting that the objects are either buried in the soft muds

INTERPRETATION (cont'd.)

or are too small to be acoustically detected. These contacts are considered minor and should pose no problem in pipeline construction. No anomalies were detected along the centerline (Line 4, first and second stages).

The side scan sonar revealed some typical bottom phenomena across the area. These included anchor drag marks and the remains of the existing pipeline trenches. Some slight textural changes of the seafloor sediments were also noted, which reflect variations in the sand: silt: clay ratios.

Sediment samples were retrieved at one mile intervals along the proposed route. Analysis of the core samples shows that the near-surface deposits are predominantly very soft, sandy, silty clays and clayey sands with occasional shell fragments and organics. The tested core samples exhibited a wide range of vane shear strengths from 64 lbs./ sq. ft. to 250 lbs. / sq. ft. This range indicated the poor sorting and uneven consolidation of the mudline sediments. The mass specific gravity values reflect a relative homogeneity of the sandy clays with a mean value of 1.75 and a low standard deviation of 0.123.

The series of cores No. 21 through 24, penetrated a layer of reddish-brown clays. Test results for these clay deposits showed a wide range of vane shear values (164 to 907 lbs./ sq. ft.) as well as a varied range of mass specific gravities

INTERPRETATION (cont'd.)

(1.61 to 1.95). The subbottom profiler data outline a horizon, interpreted as an unconformable surface, approaching the mudline beneath these core locations. The reddish-brown clay deposits are presumably the oxidized clays typically associated with that erosional surface. Their varied test values would indicate some redeposition of the eroded deposits atop the unconformity.

Core No. 33 penetrated an accumulation of well-packed sands with shell fragments and organics. The core location is between two erosional channel cuts observed on the profiler data. The sands here may be part of a transgressive accumulation, deposited during the rapid rise in sea-level in the Early Recent Age. The mass specific gravity value of this sample was 2.06. Core No. 39 also contained well-packed sands, but these sands are believed to be associated with the dispersion of a reported ancient barrier spit complex, north of the area.

Specific sediment properties are reported in the Appendix C of this report. Core locations have been projected onto the enclosed study maps.

Seismic data were used to construct a subbottom profile along the survey centerline (Line 4, first and second stages). Reflectors were projected on the profile maps using an assumed sediment velocity of 5,000 feet per second.

INTERPRETATION (cont'd.)

The near-surface geological sequence is characterized by a Holocene topstratum approximately 20 feet thick in Block 538-L, thinning to 4 - 6 feet across Block 579-L, and gradually increasing in thickness to 16 to 20 feet across Block A-76. The Holocene sediments overlie an unconformable surface which marks a time lapse in the depositional sequence. During the last glacial age (Late Wisconsin Glaciation : 12,000 to 24,000 years ago) sea-levels regressed, subjecting the older Pleistocene top soils to weathering and corrasion processes. The prolonged period of subaerial exposure caused the top soils (primarily deltaic clays) to become oxidized and overconsolidated. This terminal Pleistocene sequence is generally referred to as the Beaumont-Prairie Formation. The subbottom profiles indicate that the Beaumont Formation is within 8 feet of the mudline between Shot Points 100 and 165 of Line 4, (first stage). Cores 21 through 24 penetrated this oxidized clay bed 4 - 6 feet below the mudline, between Shot Points 140 and 165.

The sequence of sediments below the unconformity is composed of discontinuous beds and chaotic facies (Mid Wisconsin : 24,000 to 36,000 years ago). These deposits are interpreted as reworked and redeposited sediments of a rapidly developed delta front. There are several erosional channels incised in these deposits, the most prominent of which is between Shot Points 60 and 73 of Line 4, (second stage). Below the reworked

INTERPRETATION (cont d.)

deposits are parallel beds dipping to the south at a rate of 5 to 8 feet per mile.

A second unconformity lies 105 feet below the mudline in Block 538-L and, dipping southward, is 360 feet below the mudline in Block A-76. Sediments along this surface were exposed to subaerial erosion during the Early Wisconsin Glaciation, 36,000 to 54,000 years ago. The older sediments below this second unconformity would then correspond to terminal deposits of the Sangamon Interstade (over 54,000 years old).

Several growth faults are present beneath the proposed pipeline route (see profile map) which are resultant of increased overburden pressures. The upper limit of the fault displacement is within 30 to 50 feet of the mudline. The most prominent fault intersects the centerline (Line 4, first stage) at Shot Point 30.5 and it exhibits throws of 10 feet and 36 feet at depths 60 and 210 feet below the mudline, respectively. Termination of the faults below the mudline and lack of any seafloor disturbances or dip rate change indicate no movement for the past 12,000 years.

Sedimentary gas accumulations beneath the survey area were depicted by "bright spotting" of the seismic signal returns. A plume of gas is present between Shot Points 80 and 86 of Line 4 (first stage). Lack of recent seepage suggests that

INTERPRETATION (cont'd.)

this gas has reached a state of equilibrium. Traces of organic material found in the core samples indicate that bacterial degradation of plant life, present during the last low sea level stand, is occurring. The gas accumulations are not a hazard to pipeline construction.

### CONCLUSIONS AND RECOMMENDATIONS

Data obtained during this survey indicate the proposed pipeline route is free of any hazardous conditions that might hinder placement of the pipe.

Subbottom records show the near-surface strata are presently stable. Over the majority of the route, resistance to burial operation should be light to moderate. Resistances are anticipated to be higher where the stiff clays of the Beaumont Prairie Formation lie 4 - 6 feet below the mudline (Shot Point 100 to Shot Point 165, Line 4, first stage). Some flowback can be expected during jetting in those areas where the coarser grain sand accumulations are present. The three small anomalies detected in Block 538-L are interpreted as possible debris, but, are too small in magnitude to be considered a major hazard. No anomalies were detected along the centerline.

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## ARCHEOLOGICAL ASSESSMENT

The proposed Transco 30 inch pipeline right-of-way from Block A-76 to Block 538-L, Brazos Area, was surveyed along 7 parallel track lines spaced 1,200 feet apart. The centerline, Line 4, was designed to cover the planned pipe position with the remaining lines covering the area for anchor placement during construction. Gravity cores taken along the centerline have been analyzed, and the test results are presented in Appendix C. Magnetic anomalies not directly related to identified existing structures have been mapped on the Plan Maps and listed in Appendix A. An enclosed profile map shows the near-surface stratigraphy derived from the seismic data acquired along the centerline.

The proposed pipeline route crosses the offshore Texas Brazos Area in water depths ranging from 160 to 92 feet. The side scan sonar and magnetometer data were analyzed for evidence of shipwreck remains in the area. There are no reported wrecks within close proximity of the planned route. The water depths in the area are too deep for any vessel to have run aground at any time during the last 500 years of maritime activity in the Gulf of Mexico. If a vessel had foundered in heavy seas in this project area, it is highly probable that wreckage would still be concentrated along the mudline. The side scan sonar records did not produce any evidence of bottom obstructions or debris which would suggest a possible wreck site. The small amplitude magnetic anomalies plotted along

ARCHEOLOGICAL ASSESSMENT (cont'd.)

the offset lines do not represent likely shipwreck remains, but those plotted anomalies should be avoided if possible when positioning barge anchors during construction.

The subbottom profiles acquired along the proposed route indicate that across Blocks 579-L and A-22, the oxidized Pleistocene top soils are present about 4 to 6 feet below the seafloor. Cores 22, 23, and 24 contain highly oxidized clays which were subaerially exposed during the last low sea-level cycle. Prehistoric human groups could have inhabited this Pleistocene horizon during the extended period of low sea-level, but there was no specific evidence of artifactual material or site indicators in the core samples. The subbottom profiles do not reflect any highly probable prehistoric zones in the areas of the near-surface oxidized clay horizon.

Over most of the route, the Recent sediment which has accumulated since sea-level transgressed the Pleistocene surface is about 15 to 20 feet thick. Buried channels across the Pleistocene surface have been mapped on the enclosed profile map. The channel banks would have been highly favorable zones for prehistoric human occupation during the late Wisconsin and early Recent periods. The channel banks along the proposed route are buried well beneath the seafloor and will not be encountered when burying the pipe.

APPENDIX A

ANOMALOUS CONTACTS

Line 3 - S.P. 7.45 5 gammas possible debris  
x = 3,086,900' y = 192,150'

Line 5 - S.P. 9.35 5 gammas possible debris  
x = 3,088,400' y = 190,075'

Line 7 - S.P. 4.60 13 gammas possible debris  
x = 3,100,700' y = 190,850'

APPENDIX B

SURVEY PERSONNEL

August 19 - 21, 1981

- 1) Ronald D. Butcher - Party Chief
- 2) Chris F. Marbach - Assistant Party Chief
- 3) John M. King - Geophysical Supervisor
- 4) Geoge E. Coleman - Assistant Geophysical Supervisor
- 5) Mike W. Cupples - Geophysical Operator
- 6) Michael B. Aldridge - Technician

August 22 - 24, 1981

- 1) Marshall K. Crawford- Party Chief
- 2) Terry Lynn Henry - Assistant Party Chief
- 3) John W. Pearson - Geophysical Supervisor
- 4) Joseph H. Daniel - Assistant Geophysical Supervisor
- 5) Jerry L. Hughes - Geophysical Operator
- 6) John Allen Boudreaux - Technician

Client Representatives

Clayton Crawford and Walter Heimer

SURVEY LOG

August 19, 1981

1600 hours: Arrive at work area. Preparing to begin preliminary study for a proposed Transco 30" pipeline route. This survey will consist of 7 parallel track lines spaced 1,200 feet apart and will extend from Block A-76 to Block 538-L, Brazos Area.

1617 hours: Start of Line 1 at S.P. 1, heading 211°. Setback distances for subsea sensors are noted on the hard copy records. (first stage).

1948 hours: End of Line 1 at S.P. 240.

1956 hours: Start of Line 2 at S.P. 240, heading 031°.

August 20, 1981

0008 hours: End of Line 2 at S.P. 1.

0020 hours: Gear secured for the night.

0730 hours: Equipment in water and tuned.

0809 hours: Start of Line 3 at S.P. 1, heading 211°.

1143 hours: Abort Line 3 at S.P. 236 - ARGO positioning system down.

1200 hours: Picked up gear enroute to Block 538-L to recalibrate ARGO.

1443 hours: Start of Line 4 at S.P. 1, heading 211°.

1808 hours: End of Line 4 at S.P. 240.

1818 hours: Start of Line 5 at S.P. 240, heading 031°.

2b

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SURVEY LOG (cont'd.)

August 20, 1981

2305 hours: End of Line 5 at S.P. 1.

2330 hours: Gear secured for the night.

August 21, 1981

0715 hours: Equipment in water and operational.

0730 hours: Start of Line 6 at S.P. 2, heading 211°.

1115 hours: End of Line 6 at S.P. 240.

1143 hours: Restarting Line 3 at S.P. 230, heading 211°.

1154 hours: End of Line 3 at S.P. 240.

1208 hours: Start of Line 7 at S.P. 240 heading 031°.

1641 hours: End of Line 7 at S.P. 1.

1700 hours: Gear secured on deck. Enroute to Freeport for supplies and crew change.

August 22, 1981

1015 hours: Returned to work area. Equipment in water and operational. Note: Replaced E.P.C. recorder.

1058 hours: Start of Line 1, of the second stage, at S.P. 1 heading 049°.

1108 hours: Abort Line 1 to recover data for S.P. 1 through 4.

1137 hours: Restart of Line 1 at S.P. 1, heading 049°.

1321 hours: End of Line 1 at S.P. 102.

1431 hours: Start of Line 2 at S.P. 102, heading 229°.

1530 hours: Abort Line 2 at S.P. 46, EPC recorder malfunction.

3b



SURVEY LOG (cont'd.)

August 22, 1981

- 1824 hours: Restart of Line 2 at S.P. 46, heading 229°.
- 1905 hours: End of Line 2 at S.P. 1.
- 1915 hours: Start of Line 3 at S.P. 1, heading 049°.
- 2008 hours: Abort Line 3 at S.P. 34. Event mark box malfunction.
- 2052 hours: Restart of Line 3 at S.P. 34, heading 049°.
- 2104 hours: Abort Line 3 at S.P. 42. Tape Transport on SMS 960 is malfunctioning.
- 2118 hours: Restart of Line 3 at S.P. 42, heading 049°.
- 2225 hours: End of Line 3 at S.P. 102.
- 2230 hours: SMS 960 tape transports continue to malfunction. Print status is bad on tape No. 45 at S.P. 46. Seafloor data is still good. Equipment up and secured. Enroute to Port O'Connor.

August 23, 1981

- 0945 hours: Return to work area, equipment operational
- 1028 hours: Start of Line 4 at S.P. 1, heading 049°.
- 1221 hours: End of Line 4 at S.P. 102.
- 1240 hours: Start of Line 5 at S.P. 102, heading 229°.
- 1403 hours: Abort Line 5 at S.P. 20. Tape transport malfunction.
- 1438 hours: Restart of Line 5 at S.P. 20, heading 229°.
- 1502 hours: End of Line 5 at S.P. 1.
- 1506 hours: Start of Line 6 at S.P. 1, heading 049°.

SURVEY LOG (cont'd.)

August 23, 1981

1707 hours: End of Line 6 at S.P. 102.

1714 hours: Start of Line 7 at S.P. 102, heading 229°.

1815 hours: End of Line 7 at S.P. .

1905 hours: Gear secured on deck. Rigging coring equipment standing-by for night.

August 24, 1981

0630 hours: Beginning coring operations at Location No. 1 in Block A-76.

1600 hours: Completed coring operations, retrieving samples at 40 locations. Location No. 40 was in Block 538-L.

1700 hours: Gear secured on deck. End of job.

## EQUIPMENT DESCRIPTION

### Positioning

The Cubic Western DM-54 Automatic Range Grid Overlay (ARGO) Positioning System was utilized to provide accurate positioning during the course of the survey. This is a high precision range-range radio positioning system with a lane ident feature capable of determining lane loss. The ARGO computes range by measuring the phase delay between the instantaneous output of the modulated signal and a signal which has traveled to a known point and back. The survey vessel can then be navigated along a preplotted route by monitoring the range measurements from two or more geographic points.

ARGO provides an operating range of 740 kilometers (day) and 408 kilometers (night) with a range error of  $\pm 3$  meters. Its carrier frequency ranges from 1600 to 2000 KHz with 100 watts peak power.

The Magnavox Geceiver Satellite Surveyor was used to update and verify the ARGO system. This is a highly portable system which receives and records data from the Navy Navigation "Transit" Satellite Network. It has the capability of computing real time position fixes from each acceptable satellite observed or creating a one position solution from all satellite data observed at one point. In addition to the above, two satellite receivers can be used, one on a known geodetic station and one on an unknown point, to achieve greater accuracy with reduced observation time. This technique is known as translocation.

## EQUIPMENT DESCRIPTION

### Subbottom Profiler

The subbottom profiler or boomer is used to study the subsurface structure of the seafloor. The frequency range utilized with this device is such that penetration capabilities are limited, yet resolution is greatly enhanced. The subbottom profiler essentially produces a cross-sectional view of the stratigraphic column beneath the ocean bottom.

The system used for this survey consists of an E.P.C. Model 4100 recorder, E.G. & G. transducer driver, boomer plate transducer, Krohn Hite 3500 filter and a ten element hydrophone streamer. The transducer and hydrophone streamer were manufactured by Hydrosurveys.

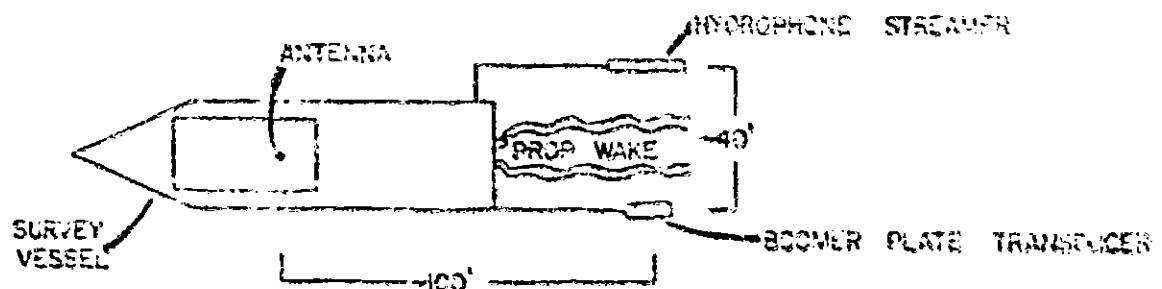
Seismic systems operate on the principle that an acoustic impulse will reflect part of its energy upon encountering a density interface. The boomer transducer is a mechanical means of generating enough sound energy to penetrate into the subsurface sediments. The signal frequency ranges from 5-3000 Hz with a peak power output of 100-1000 joules. Signals are reflected from the various bedding planes (density interfaces) and received by the hydrophone streamer. The sound reflections are converted into electrical impulses, filtered and sent to the recorder. The resulting seismic

### EQUIPMENT DESCRIPTION

record is printed on 19 inch dry paper.

The hydrophone and transducer are towed at the water surface on opposite sides of the survey vessel (See figure 1). By towing symmetrically on opposite sides of the wake, the hydrophone is shielded from the direct pulse as well as the first and third multiples. This is accomplished by the attenuation of the seismic signal within the propeller turbulence. Since the hydrophone trails the navigation antenna by approximately 100 feet, all information on the printed record will be offset by this distance. - Navigation fixes are taken at predetermined intervals and numbered sequentially.

Fig. 1



### EQUIPMENT DESCRIPTION

The depth of seismic penetration obtained with this system is controlled by the sediment type and the amount of initial discharged energy. In many instances, the presence of organic gas will attenuate the signal and mask any deeper reflections. The boomer is capable of being discharged as often as every 250 milliseconds to as little as once every 8 seconds. The firing rate is dependent upon the power output and water depth. An assumed water velocity of 5000 feet per second is used for interpretative purposes, therefore, each 10 millisecond timing line represents 25 feet.

Seismic profiling is only capable of producing a cross-sectional representation of subbottom structure without regard to composition or lithology. However, this information can be used in conjunction with the sonar and coring data to provide a geologic interpretation of the study area.

## EQUIPMENT DESCRIPTION

### Pinger:

The O.R.E. Model 140 Transceiver combines a variable frequency, high power transmitter with an adjustable bandwidth, variable frequency, time varying gain receiver to form a multi-purpose seismic system. A pinger may be utilized as a bathymetric system, subbottom profiling system, and sonar navigation system. Frequency and power output may be adjusted continuously from 1 to 12 KHz and 0 to 10 Kw, respectively. The transceiver is mounted either directly under the hull or with an over-the-side gimbal mount.

Records are obtained by transmitting high powered pulses of acoustic energy into the water column. The acoustic pulse is reflected by the seafloor and subbottom bedding layers. The degree of penetration and reflection is dependent on the properties of the bottom and subbottom material, the power output and carrier frequency. Reflected signals are received by the same acoustic transducer used for transmission. The resulting analog record is printed on a 19 inch dry paper recorder.

## EQUIPMENT DESCRIPTION

### Seafloor Mapping System

The EG&G Model SMS 960 Seafloor Mapping System consists of the Master Unit, Digital Tape Deck, towfish and a tow cable system. The towfish is a hydrodynamically stable towed body which contains the transducers and electronics necessary to generate the sonar signal and receive its echoes. The various tow cable systems provide the mechanical means for towing the fish near the seafloor, and the electrical means for triggering the transmitter and sending the return signals to the shipboard unit. The Master Unit powers the towfish, processes the received echoes using a microprocessor, and displays a map of the sonar data on dry 11 inch recording paper. The Digital Tape Deck records minimally processed sonar data with reference status data on 10 1/2 inch reels of magnetic tape.

The SMS 960 compares with the conventional side scan sonar systems in that it provides for classification of seafloor materials based on the darkness and texture of the image. The system differs in that it applies automatic spatial corrections for slant range and speed such that the hard copy record is a true plan view. Therefore, the size, shape, and location of any seafloor material or object may be directly measured. Superimposed over the records are 25 meter scale markers to permit accurately scaled measurements.



## EQUIPMENT DESCRIPTION

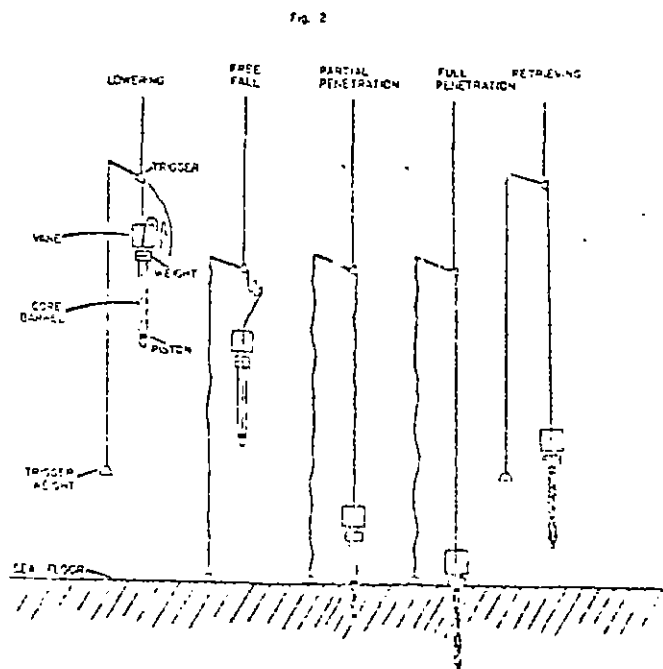
### Proton Magnetometer

The Geometrics Marine Magnetometer Model 801/03 was utilized during the survey to locate objects which are buried, submerged or otherwise hidden from view. This instrument monitors the earth's ambient magnetic field and detects any change or disruption in this field. An object can be found when it is itself magnetic or where it may displace material which is otherwise uniformly magnetic. During the course of this survey, the proton magnetometer was used to locate ferrous objects (pipelines, wellheads, industrial debris, etc.) within the study area. The recorded magnetic anomaly is compared with known structures in the area to determine possible hazards.

The proton magnetometer utilizes the precession of spinning hydrogen protons in a sample of hydrocarbon fluid to measure the total magnetic field intensity. These spinning magnetic dipoles are polarized by application of a uniform magnetic field in a coil of wire. When the current is removed, the protons begin to precess about direction of the ambient field. A small signal is generated by the precessing dipoles whose frequency is proportional to the total magnetic field intensity. Magnetic field values are presented with 1 gamma sensitivity on a digital readout and graphically displayed utilizing a setting of 100 gammas.

### Coring System

Bottom samples were obtained utilizing a modified Kullenburg piston corer. This consists of a vane, weights, triggering apparatus, and 2" steel tubing which contains a plastic liner, piston and core catcher. The coring device is lowered to the bottom on an electro-hydraulic winch (see Figure 2). As the trigger weight touches the seafloor, the corer is allowed to free-fall 30 feet and penetrate the sediments. The piston is pulled up the core barrel during penetration and draws the core sample into the liner. The core catcher ensures that the sample is not lost during recovery. Cores are taken at predetermined locations as well as in anomalous areas as seen on the seismic and sonar systems. Upon recovery, the core liner is sealed to prevent moisture loss and shipped to the laboratory for analysis.



13b

APPENDIX C

CORE ANALYSIS NOMENCLATURE

Dw = Wet Density (lbs./cu. ft.)

Mc = Moisture Content (%)

Vs = Vane Shear Strength (lbs./sq. ft.)

Dd = Dry Density (lbs./cu. ft.)

Uc = Unconfined Compressive Strength (lbs./sq. ft.)

msg = Mass Specific Gravity

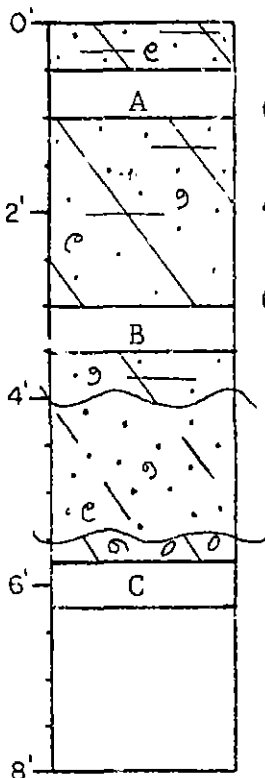
# CORE LOG

CORE NO. 1

DATE TAKEN : 8-24-81

CORE LENGTH 75"

TUBE DIAMETER : 1.75"











## DESCRIPTION

0" - 48" Very soft gray sandy silty clay with shell fragments.

48" - 66" Very soft gray clayey sand with shell fragments.

66" - 75" Very soft reddish-brown clay with shell fragments and organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>110.8</u>	Dd. <u>77.5</u>
	Mc. <u>42.9</u>	Uc. <u>193</u>
	Vs. <u>157</u>	M <sub>sq.</sub> <u>1.78</u>
B	Dw. <u>109.2</u>	Dd. <u>76.5</u>
	Mc. <u>42.7</u>	Uc. <u>140</u>
	Vs. <u>157</u>	M <sub>sq.</sub> <u>1.75</u>
C	Dw. <u>112.3</u>	Dd. <u>81.6</u>
	Mc. <u>37.6</u>	Uc. <u>-</u>
	Vs. <u>107</u>	M <sub>sq.</sub> <u>1.8</u>

CLASSIFICATION: Very soft gray sandy silty clay w/shell fragments.

CLASSIFICATION: Very soft gray sandy silty clay w/shell fragments.

CLASSIFICATION: Very soft reddish-brown clay with shell fragments and organics.

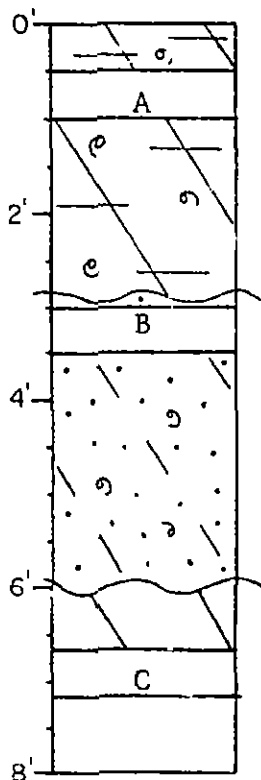
# CORE LOG

CORE NO. 2

DATE TAKEN: 8-24-81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 36" Very soft gray silty clay with shell fragments.

36" - 72" Very soft gray clayey sand with shell fragments.

72" - 85" Very soft reddish-brown clay.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>92.8</u>	Dd. <u>50.3</u>
	Mc. <u>84.6</u>	Uc. <u>too soft</u>
	Vs. <u>114</u>	Msg. <u>1.49</u>
B	Dw. <u>111.1</u>	Dd. <u>79.1</u>
	Mc. <u>40.4</u>	Uc. <u>157</u>
	Vs. <u>218</u>	Msg. <u>1.78</u>
C	Dw. <u>93.9</u>	Dd. <u>63.6</u>
	Mc. <u>47.7</u>	Uc. <u>239</u>
	Vs. <u>221</u>	Msg. <u>1.5</u>

CLASSIFICATION: Very soft gray silty clay w/shell fragments.

CLASSIFICATION: Very soft gray clayey sand with shell fragments.

CLASSIFICATION: Very soft reddish-brown clay.

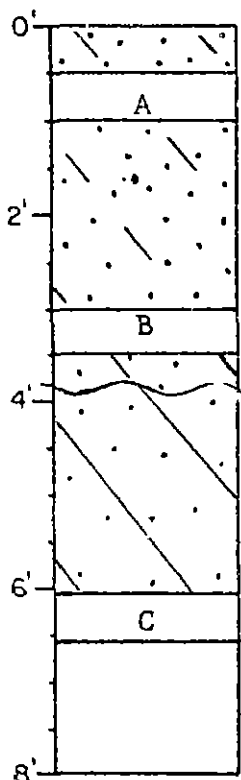
# CORE LOG

CORE NO. 3

DATE TAKEN : 8-24-81

CORE LENGTH 79"

TUBE DIAMETER : 1.75"



## DESCRIPTION

0" - 46" Very soft gray clayey sand.

46" - 79" Very soft gray sandy clay.

## LEGEND



CLAY



SILT



SAND



SHELL FG.



ROCK FG.



ORGANICS



COLOR CHANGE



SEDIMENT CHANGE

## SAMPLES

**A**

Dw. <u>114.2</u>	Dd. <u>80.5</u>
Mc. <u>41.8</u>	Uc. <u>119</u>
Vs. <u>143</u>	Msg. <u>1.83</u>

CLASSIFICATION: Very soft gray clayey sand.

**B**

Dw. <u>109.2</u>	Dd. <u>73.9</u>
Mc. <u>47.7</u>	Uc. <u>too soft</u>
Vs. <u>93</u>	Msg. <u>1.75</u>

CLASSIFICATION: Very soft gray clayey sand.

**C**

Dw. <u>99.2</u>	Dd. <u>65.9</u>
Mc. <u>50.5</u>	Uc. <u>121</u>
Vs. <u>107</u>	Msg. <u>1.59</u>

CLASSIFICATION: Very soft gray sandy clay.

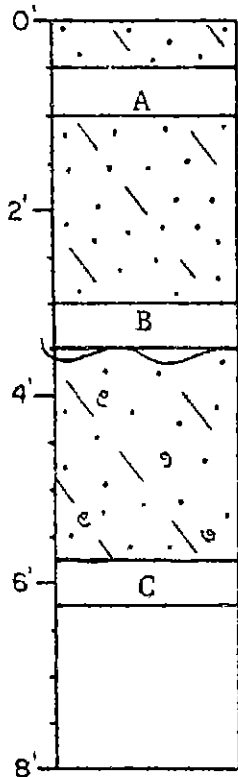
# CORE LOG

CORE NO. 4

DATE TAKEN: 8-24-81

CORE LENGTH 75"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 42" Very soft gray clayey sand.

42" - 75" Very soft gray clayey sand with shell fragments.

## LEGEND



CLAY



SILT



SAND



SHELL FG.



ROCK FG.



ORGANICS



COLOR CHANGE



SEDIMENT CHANGE

## SAMPLES

**A**

Dw. <u>110.5</u>	Dd. <u>82.3</u>
Mc. <u>34.3</u>	Uc. <u>105</u>
Vs. <u>129</u>	Msg. <u>1.77</u>

CLASSIFICATION: Very soft gray clayey sand.

**B**

Dw. <u>96.5</u>	Dd. <u>62.0</u>
Mc. <u>55.6</u>	Uc. <u>too soft</u>
Vs. <u>89</u>	Msg. <u>1.55</u>

CLASSIFICATION: Very soft gray clayey sand.

**C**

Dw. <u>110.5</u>	Dd. <u>83.4</u>
Mc. <u>32.5</u>	Uc. <u>too soft</u>
Vs. <u>64</u>	Msg. <u>1.77</u>

CLASSIFICATION: Very soft gray clayey sand with shell fragments.



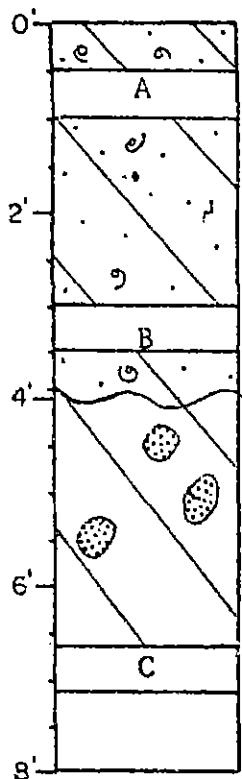
# CORE LOG

CORE NO. 5

DATE TAKEN: 8-24-81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"











## DESCRIPTION

0" - 48" Very soft gray sandy clay with shell fragments.

48" - 86" Soft reddish-brown clay with sand pockets.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

<b>A</b>	Dw. <u>99.8</u>	Dd. <u>71.6</u>
	Mc. <u>39.3</u>	Uc. <u>too soft</u>
	Vs. <u>93</u>	Msg. <u>1.6</u>
<b>B</b>	Dw. <u>112.6</u>	Dd. <u>82.4</u>
	Mc. <u>36.6</u>	Uc. <u>130</u>
	Vs. <u>129</u>	Msg. <u>1.8</u>
<b>C</b>	Dw. <u>104.7</u>	Dd. <u>74.3</u>
	Mc. <u>40.9</u>	Uc. <u>279</u>
	Vs. <u>336</u>	Msg. <u>1.68</u>

CLASSIFICATION: Very soft gray sandy clay with shell fragments.

CLASSIFICATION: Very soft gray sandy clay with shell fragments.

CLASSIFICATION: Soft reddish-brown clay with sand pockets.

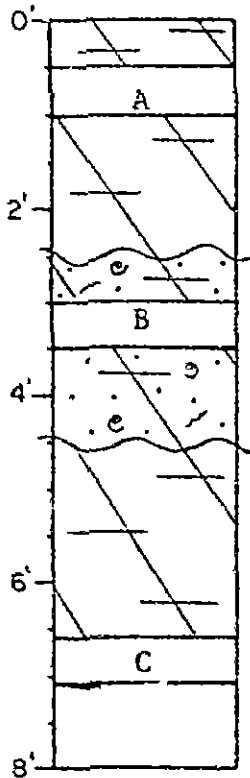
# CORE LOG

CORE NO. 6

DATE TAKEN: 8-24-81

CORE LENGTH 85"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 30" Very soft gray silty clay.

30" - 54" Very soft gray sandy silty clay with shell fragments.

54" - 85" Firm gray silty clay.

## LEGEND



CLAY



SILT



SAND



SHELL FG.



ROCK FG.



ORGANICS



COLOR CHANGE



SEDIMENT CHANGE

## SAMPLES

**A**

Dw. <u>89.4</u>	Dd. <u>45.1</u>
Mc. <u>98.4</u>	Uc. <u>too soft</u>
Vs. <u>86</u>	M <sub>sq.</sub> <u>1.43</u>

CLASSIFICATION: Very soft gray silty clay.

**B**

Dw. <u>108.6</u>	Dd. <u>74.0</u>
Mc. <u>45.7</u>	Uc. <u>102</u>
Vs. <u>161</u>	M <sub>sq.</sub> <u>1.74</u>

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

**C**

Dw. <u>97.5</u>	Dd. <u>61.6</u>
Mc. <u>58.3</u>	Uc. <u>668</u>
Vs. <u>457</u>	M <sub>sq.</sub> <u>1.56</u>

CLASSIFICATION: Firm gray silty clay.

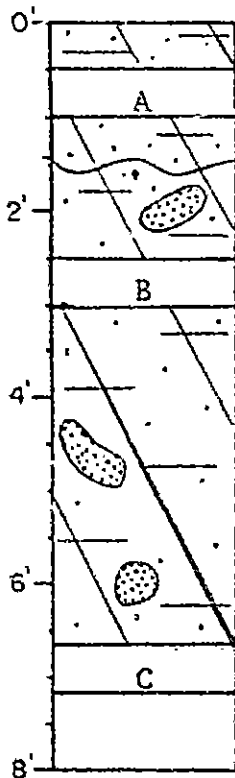
# CORE LOG

CORE NO. 7

DATE TAKEN: 8-24-81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 18" Very soft gray sandy silty clay.

18" - 86" Very soft gray sandy silty clay with sand pockets.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG
- ROCK FG
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>100.0</u>	Dd. <u>67.2</u>
	Mc. <u>48.7</u>	Uc. <u>too soft</u>
	Vs. <u>89</u>	Msq. <u>1.6</u>
B	Dw. <u>106.1</u>	Dd. <u>71.5</u>
	Mc. <u>48.3</u>	Uc. <u>137</u>
	Vs. <u>143</u>	Msq. <u>1.7</u>
C	Dw. <u>103.4</u>	Dd. <u>71.8</u>
	Mc. <u>44.1</u>	Uc. <u>140</u>
	Vs. <u>171</u>	Msq. <u>1.66</u>

CLASSIFICATION: Very soft gray sandy silty clay.

CLASSIFICATION: Very soft gray sandy silty clay with sand pockets.

CLASSIFICATION: Very soft gray sandy silty clay with sand pockets.

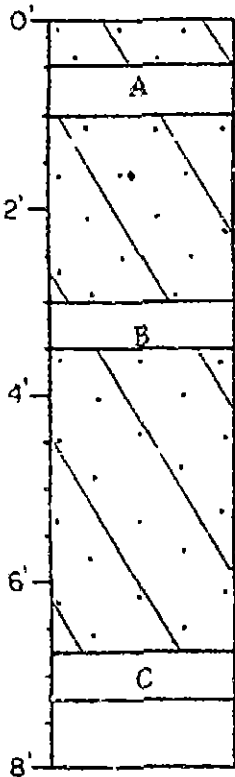
# CORE LOG

CORE NO. 8

DATE TAKEN: 8-24-81

CORE LENGTH 87"









TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 87" Very soft gray sandy clay.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>106.7</u>	Dd. <u>73.8</u>
	Mc. <u>44.5</u>	Uc. <u>85</u>
	Vs. <u>111</u>	Msg. <u>1.71</u>
B	Dw. <u>104.6</u>	Dd. <u>67.3</u>
	Mc. <u>55.4</u>	Uc. <u>208</u>
	Vs. <u>157</u>	Msg. <u>1.68</u>
C	Dw. <u>101.4</u>	Dd. <u>66.8</u>
	Mc. <u>51.8</u>	Uc. <u>Altered sample</u>
	Vs. <u>143</u>	Msg. <u>1.62</u>

CLASSIFICATION: Very soft gray sandy clay.

CLASSIFICATION: Very soft gray sandy clay.

CLASSIFICATION: Very soft gray sandy clay.

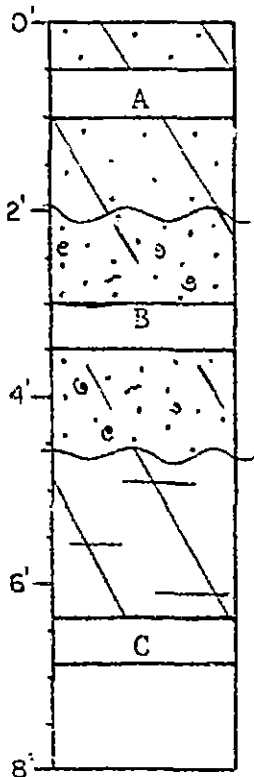
# CORE LOG

CORE NO. 9

DATE TAKEN: 8-24-81

CORE LENGTH 82"

TUBE DIAMETER: 1.75"











## DESCRIPTION

0" - 24" Very soft gray sandy clay.

24" - 56" Very soft gray clayey sand with shell fragments.

56" - 82" Very soft gray silty clay.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

**A**

Dw. <u>107.4</u>	Dd. <u>74.4</u>
Mc. <u>44.4</u>	Uc. <u>too soft</u>
Vs. <u>100</u>	M <sub>sq</sub> . <u>1.72</u>

CLASSIFICATION: Very soft gray sandy clay.

**B**

Dw. <u>98.1</u>	Dd. <u>59.9</u>
Mc. <u>63.8</u>	Uc. <u>too soft</u>
Vs. <u>79</u>	M <sub>sq</sub> . <u>1.57</u>

CLASSIFICATION: Very soft gray clayey sand with shell fragments.

**C**

Dw. <u>95.5</u>	Dd. <u>57.1</u>
Mc. <u>67.7</u>	Uc. <u>too soft</u>
Vs. <u>82</u>	M <sub>sq</sub> . <u>1.53</u>

CLASSIFICATION: Very soft gray silty clay.

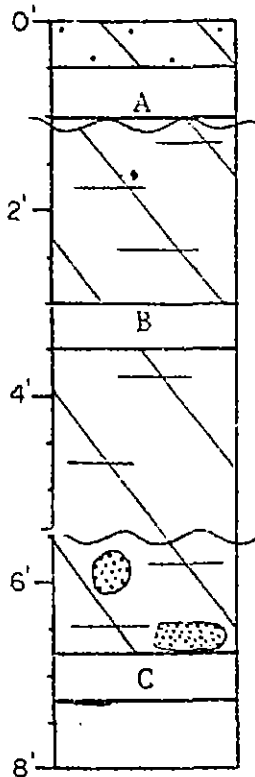
# CORE LOG

CORE NO. 10

DATE TAKEN: 8-24-81

CORE LENGTH 87"









TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 12" Very soft gray sandy clay.  
 12" - 66" Very soft gray silty clay.  
 66" - 87" Very soft gray silty clay with sand pockets.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A

Dw. <u>108.1</u>	Dd. <u>69.2</u>
Mc. <u>56.3</u>	Uc. <u>101</u>
Vs. <u>179</u>	Msg. <u>1.73</u>

CLASSIFICATION: Very soft gray sandy clay.

B

Dw. <u>93.0</u>	Dd. <u>57.2</u>
Mc. <u>62.7</u>	Uc. <u>too soft</u>
Vs. <u>71</u>	Msg. <u>1.49</u>

CLASSIFICATION: Very soft gray silty clay.

C

Dw. <u>93.6</u>	Dd. <u>57.9</u>
Mc. <u>61.7</u>	Uc. <u>too soft</u>
Vs. <u>79</u>	Msg. <u>1.50</u>

CLASSIFICATION: Very soft gray silty clay with sand pockets.

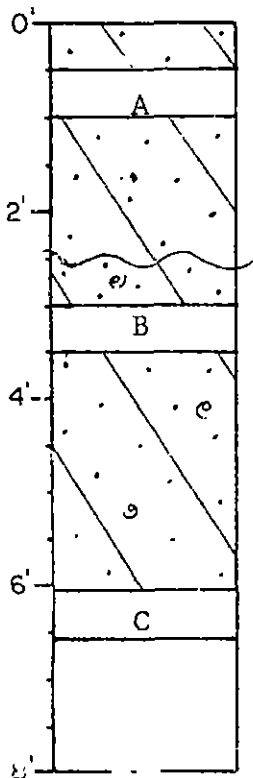
# CORE LOG

CORE NO. 11

DATE TAKEN: 8-24-81

CORE LENGTH 79"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 30" Very soft gray sandy clay

30" - 79" Very soft gray sandy clay with shell fragments.

## LEGEND



CLAY



SILT



SAND



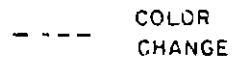
SHELL FG.



ROCK FG.



ORGANICS



COLOR CHANGE



SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>109.0</u>	Dd. <u>75.7</u>
	Mc. <u>44.0</u>	Uc. <u>98</u>
	Vs. <u>143</u>	Msg. <u>1.75</u>
B	Dw. <u>104.9</u>	Dd. <u>74.9</u>
	Mc. <u>40.0</u>	Uc. <u>too soft</u>
	Vs. <u>86</u>	Msg. <u>1.68</u>
C	Dw. <u>111.0</u>	Cd. <u>77.7</u>
	Mc. <u>42.9</u>	Uc. <u>161</u>
	Vs. <u>171</u>	Msg. <u>1.78</u>

CLASSIFICATION: Very soft gray sandy clay.

CLASSIFICATION: Very soft gray sandy clay with shell fragments.

CLASSIFICATION: Very soft gray sandy clay with shell fragments.

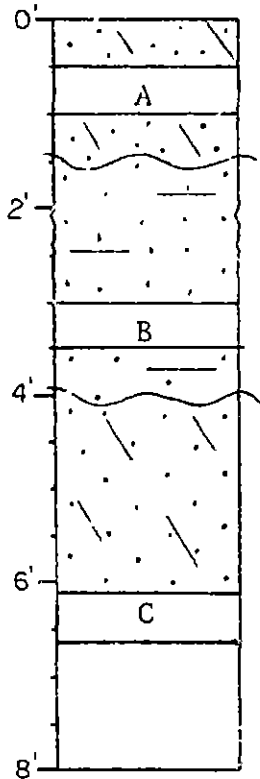
# CORE LOG

CORE NO. 12

DATE TAKEN: 8-24-81

CORE LENGTH 80"









TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 18" Very soft gray clayey sand.  
 18" - 48" Very soft gray silty sand.  
 48" - 80" Very soft gray clayey sand

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>107.0</u>	Dd. <u>76.9</u>
	Mc. <u>39.2</u>	Uc. <u>130</u>
	Vs. <u>150</u>	Msg. <u>1.71</u>
B	Dw. <u>113.9</u>	Dd. <u>88.3</u>
	Mc. <u>29.0</u>	Uc. <u>Sand</u>
	Vs. <u>129</u>	Msg. <u>1.83</u>
C	Dw. <u>99.2</u>	Dd. <u>68.5</u>
	Mc. <u>44.9</u>	Uc. <u>too soft</u>
	Vs. <u>57</u>	Msg. <u>1.59</u>

CLASSIFICATION: Very soft gray clayey sand.

CLASSIFICATION: Very soft gray silty sand.

CLASSIFICATION: Very soft gray clayey sand.



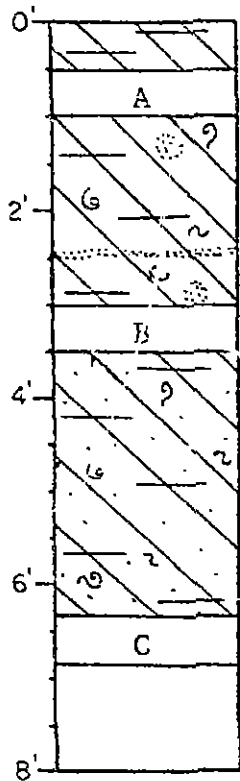
# CORE LOG

CORE NO. 13

DATE TAKEN: 8/24/81

CORE LENGTH 83"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft, gray silty clay.  
 6" - 12" Very soft gray sandy silty clay.  
 12" - 36" Very soft gray silty clay with sand lenses, pockets and shell fragments.  
 36" - 42" Very soft, gray sandy clay.  
 42" - 83" Very soft gray sandy silty clay with shell fragments.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

<b>A</b>	Dw. <u>101.8</u>	Dd. <u>56.3</u>
	Mc. <u>80.7</u>	Uc. <u>too soft</u>
	Vs. <u>61</u>	Msg. <u>1.63</u>
<b>B</b>	Dw. <u>111.7</u>	Dd. <u>77.4</u>
	Mc. <u>44.3</u>	Uc. <u>149</u>
	Vs. <u>186</u>	Msg. <u>1.79</u>
<b>C</b>	Dw. <u>104.3</u>	Dd. <u>64.4</u>
	Mc. <u>62.0</u>	Uc. <u>163</u>
	Vs. <u>107</u>	Msg. <u>1.67</u>

CLASSIFICATION Very soft gray sandy silty clay.

CLASSIFICATION Very soft gray sandy clay.

CLASSIFICATION Very soft gray sandy silty clay with shell fragments

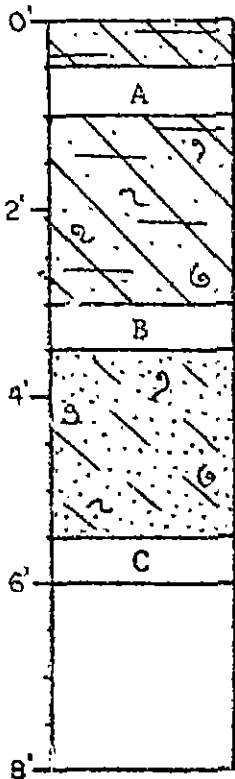
# CORE LOG

CORE NO. 14

DATE TAKEN: 8/24/81

CORE LENGTH 72"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft gray sandy silty clay.

6" - 12" Very soft gray silty sand.

12" - 36" Very soft gray sandy silty clay with shell fragments.

36" - 42" Very soft gray clayey sand.

42" - 72" Very soft gray clayey sand with shell fragments.

## LEGEND



CLAY



SILT



SAND



SHELL FG.



ROCK FG.



ORGANICS



COLOR CHANGE



SEDIMENT CHANGE

## SAMPLES

A	D <sub>w</sub> <u>113.5</u>	D <sub>s</sub> <u>82.4</u>
	M <sub>c</sub> <u>37.7</u>	U <sub>c</sub> <u>too soft</u>
	V <sub>s</sub> <u>89</u>	M <sub>sq</sub> <u>1.83</u>
B	D <sub>w</sub> <u>110.1</u>	D <sub>s</sub> <u>67.5</u>
	M <sub>c</sub> <u>63.2</u>	U <sub>c</sub> <u>too soft</u>
	V <sub>s</sub> <u>82</u>	M <sub>sq</sub> <u>1.76</u>
C	D <sub>w</sub> <u>118.1</u>	D <sub>s</sub> <u>91.3</u>
	M <sub>c</sub> <u>29.4</u>	U <sub>c</sub> <u>too soft</u>
	V <sub>s</sub> <u>86</u>	M <sub>sq</sub> <u>1.89</u>

CLASSIFICATION: Very soft gray silty sand.

CLASSIFICATION: Very soft gray clayey sand.

CLASSIFICATION: Very soft gray clayey sand with shell fragments.

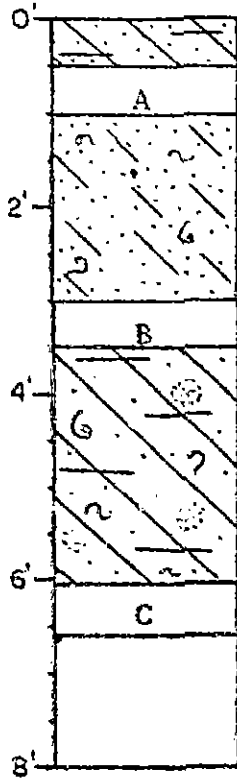
# CORE LOG

CORE NO. 15

DATE TAKEN: 8/24/83

CORE LENGTH 79"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft gray sandy silty clay.

6" - 12" Very soft gray clayey sand.

12" - 42" Same as above with shell fragments.

42" - 73" Very soft gray sandy silty clay with sand pockets and shell fragments.

73" - 79" Very soft gray silty clay.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	D <sub>s</sub> <u>114.1</u>	D <sub>10</sub> <u>90.0</u>
	M <sub>s</sub> <u>26.7</u>	U <sub>c</sub> <u>84</u>
	V <sub>s</sub> <u>107</u>	M <sub>10</sub> <u>1.83</u>
B	D <sub>s</sub> <u>112.5</u>	D <sub>10</sub> <u>84.6</u>
	M <sub>s</sub> <u>93.3</u>	U <sub>c</sub> <u>115.3</u>
	V <sub>s</sub> <u>225</u>	M <sub>10</sub> <u>1.80</u>
C	D <sub>s</sub> <u>94.0</u>	D <sub>10</sub> <u>54.6</u>
	M <sub>s</sub> <u>76.6</u>	U <sub>c</sub> <u>too soft</u>
	V <sub>s</sub> <u>89</u>	M <sub>10</sub> <u>1.51</u>

CLASSIFICATION: Very soft gray clayey sand

CLASSIFICATION: Very soft clayey sand with shell fragments.

CLASSIFICATION: Very soft gray silty clay.

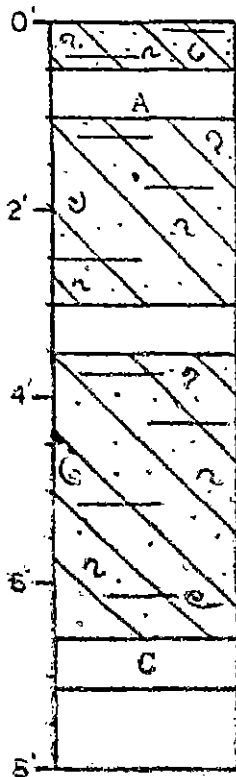
# CORE LOG

CORE NO. 16

DATE TAKEN: 8/24/81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft gray sandy silty clay with shell fragments.

6" - 12" Very soft gray clayey sand.

12" - 80" Soft gray sandy silty clay with shell fragments.

80" - 86" Firm brownish-gray clay with oxidized zones.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	D <sub>w</sub> <u>115.3</u>	D <sub>s</sub> <u>82.6</u>
	M <sub>c</sub> <u>39.6</u>	U <sub>c</sub> <u>135</u>
	V <sub>s</sub> <u>186</u>	W <sub>ig</sub> <u>1.55</u>
B	D <sub>w</sub> <u>111.8</u>	D <sub>s</sub> <u>80.4</u>
	M <sub>c</sub> <u>12.0</u>	U <sub>c</sub> <u>115.3</u>
	V <sub>s</sub> <u>252</u>	W <sub>ig</sub> <u>1.79</u>
C	D <sub>w</sub> <u>111.7</u>	D <sub>s</sub> <u>81.0</u>
	M <sub>c</sub> <u>39.6</u>	U <sub>c</sub> <u>118</u>
	V <sub>s</sub> <u>673</u>	W <sub>ig</sub> <u>1.84</u>

CLASSIFICATION: Very soft, gray clayey sand.

CLASSIFICATION: Soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Firm brownish-gray clay with oxidized zones.

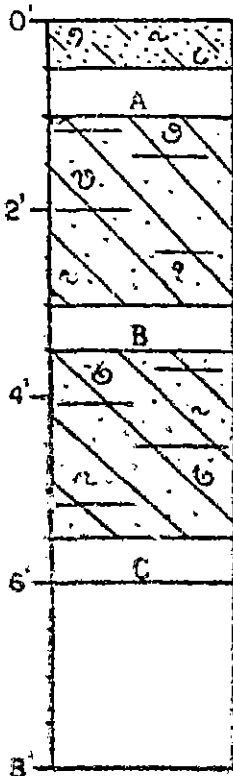
# CORE LOG

CORE NO. 17

DATE TAKEN: 8/24/81

CORE LENGTH 72"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft clayey sand and shell fragments.









6" - 12" Very soft gray sandy silty clay.

12" - 36" Same as above with shell fragments.

36" - 42" Very soft gray sandy silty clay.

42" - 72" Same as above with shell fragments.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEG. INT. CHANGE

## SAMPLES

A	Dc. <u>102.8</u>	Dc. <u>88.1</u>
	Mc. <u>16</u>	Mc. <u>105</u>
	Vc. <u>57</u>	Vc. <u>1.36</u>
B	Dc. <u>106.8</u>	Dc. <u>81.6</u>
	Mc. <u>37</u>	Mc. <u>287</u>
	Vc. <u>100</u>	Vc. <u>1.55</u>
C	Dc. <u>113.0</u>	Dc. <u>87.1</u>
	Mc. <u>37</u>	Mc. <u>105</u>
	Vc. <u>100</u>	Vc. <u>1.40</u>

CLASSIFICATION: Very soft gray sandy silty clay.

CLASSIFICATION: Very soft gray sandy silty clay.

CLASSIFICATION: Soft gray sandy silty clay with shell fragments.

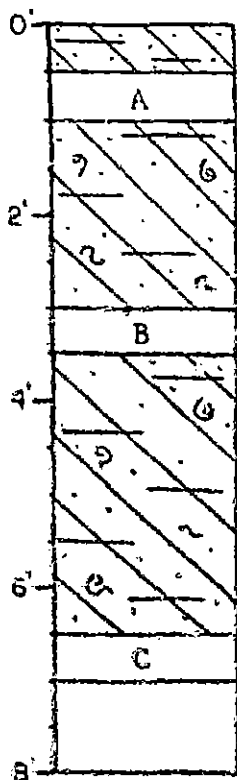
# CORE LOG

CORE NO. 18

DATE TAKEN: 8/24/81

CORE LENGTH 84"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 12" Very soft gray sandy silty clay.  
 12" - 79" Same as above with shell fragments.  
 79" - 84" Soft gray silty clay with organics.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>111.1</u>	D <sub>1</sub> <u>77.7</u>
	Mc. <u>43</u>	L <sub>1</sub> <u>148</u>
	Vt. <u>207</u>	M <sub>12</sub> <u>1.83</u>
B	Dw. <u>113.6</u>	D <sub>1</sub> <u>82.9</u>
	Mc. <u>37</u>	L <sub>1</sub> <u>177</u>
	Vt. <u>143</u>	M <sub>12</sub> <u>1.67</u>
C	Dw. <u>117.0</u>	D <sub>1</sub> <u>85.6</u>
	Mc. <u>37</u>	L <sub>1</sub> <u>613</u>
	Vt. <u>424</u>	M <sub>12</sub> <u>1.68</u>

CLASSIFICATION: Very soft gray sandy silty clay.

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Soft gray silty clay with organics.

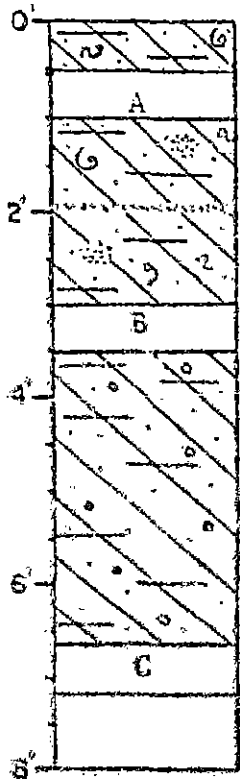
# CORE LOG

CORE NO. 19

DATE TAKEN: 8/24/81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"



## DESCRIPTION

- 0" - 6" Very soft gray sandy silty clay with shell fragments.
- 6" - 12" Very soft gray silty clay with sand pockets.
- 12" - 36" Very soft gray sandy silty clay with sand lenses, pockets and shell fragments.
- 36" - 42" Soft gray sandy silty clay with shell fragments.
- 42" - 86" Very soft gray sandy silty clay with organics.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	D <sub>w</sub> <u>100.5</u>	D <sub>s</sub> <u>51.3</u>
	M <sub>c</sub> <u>85</u>	U <sub>c</sub> <u>99</u>
	V <sub>s</sub> <u>132</u>	M <sub>10</sub> <u>1.61</u>
B	D <sub>w</sub> <u>112.9</u>	D <sub>s</sub> <u>82.4</u>
	M <sub>c</sub> <u>97</u>	U <sub>c</sub> <u>193</u>
	V <sub>s</sub> <u>192</u>	M <sub>10</sub> <u>1.61</u>
C	D <sub>w</sub> <u>100.5</u>	D <sub>s</sub> <u>62.0</u>
	M <sub>c</sub> <u>62</u>	U <sub>c</sub> <u>198</u>
	V <sub>s</sub> <u>221</u>	M <sub>10</sub> <u>1.61</u>

CLASSIFICATION Very soft gray silty clay with sand pockets.

CLASSIFICATION Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION Soft brownish-gray sandy silty clay.

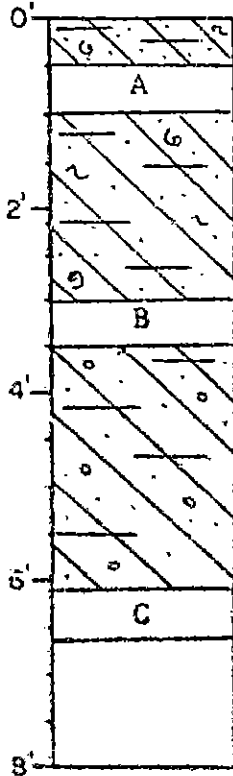
# CORE LOG

CORE NO. 20

DATE TAKEN: 8/24/81

CORE LENGTH 80"









TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 12" Very soft gray sandy silty clay with shell fragments.  
 12" - 42" Soft gray sandy silty clay with shell fragments.  
 42" - 80" Very soft gray sandy silty clay with organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	D <sub>s</sub> <u>84.0</u>	G <sub>s</sub> <u>57.3</u>
	M <sub>c</sub> <u>47</u>	U <sub>c</sub> <u>181</u>
	V <sub>s</sub> <u>102</u>	M <sub>10</sub> <u>1.35</u>
B	D <sub>s</sub> <u>116.7</u>	G <sub>s</sub> <u>34.6</u>
	M <sub>c</sub> <u>38</u>	U <sub>c</sub> <u>306</u>
	V <sub>s</sub> <u>290</u>	M <sub>10</sub> <u>1.85</u>
C	D <sub>s</sub> <u>116.1</u>	G <sub>s</sub> <u>34.6</u>
	M <sub>c</sub> <u>31</u>	U <sub>c</sub> <u>too soft</u>
	V <sub>s</sub> <u>86</u>	M <sub>10</sub> <u>1.86</u>

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Very soft gray sandy silty clay with organics.



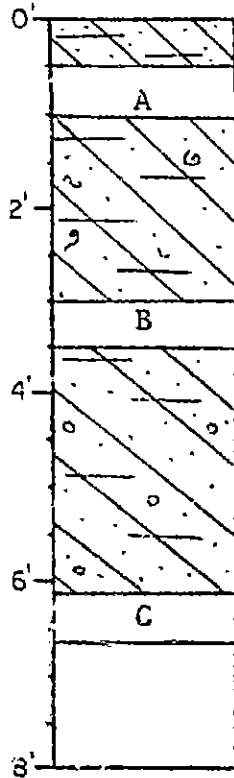
# CORE LOG

CORE NO. 21

DATE TAKEN: 8/24/81

CORE LENGTH 80"









TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft gray sandy silty clay.  
 6" - 42" Same as above with shell fragments.  
 42" - 74" Same as above with organics  
 74" - 80" Firm gray silty clay.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>117.3</u>	Od. <u>83.8</u>
	Mc. <u>40</u>	Uc. <u>133</u>
	Vs. <u>143</u>	Msp. <u>1.88</u>
B	Dw. <u>122.3</u>	Od. <u>92.7</u>
	Mc. <u>32</u>	Uc. <u>164</u>
	Vs. <u>214</u>	Msp. <u>1.86</u>
C	Dw. <u>121.7</u>	Od. <u>91.5</u>
	Mc. <u>33</u>	Uc. <u>-</u>
	Vs. <u>532</u>	Msp. <u>1.95</u>

CLASSIFICATION Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION Soft gray sandy silty clay with shell fragments.

CLASSIFICATION Firm gray silty clay.

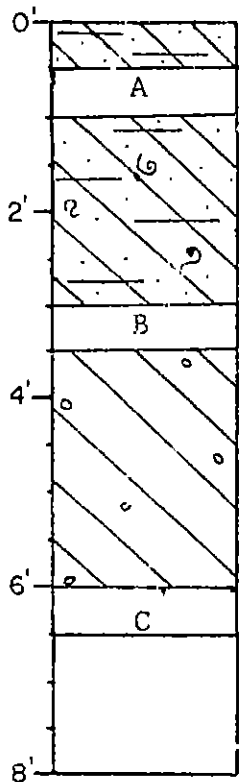
# CORE LOG

CORE NO. 22

DATE TAKEN: 8/24/81

CORE LENGTH 78"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6" Very soft gray sandy silty clay.

6" - 42" Same as above with shell fragments.

42" - 72" Firm reddish-brown clay with oxidized zones and organics.

72" - 78" Very soft brownish-gray clay with organics.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>111.7</u>	Dd. <u>79.2</u>
	Mc. <u>41</u>	Uc. <u>148</u>
	Vs. <u>129</u>	Msg. <u>1.79</u>
B	Dw. <u>116.7</u>	Dd. <u>85.2</u>
	Mc. <u>37</u>	Uc. <u>116</u>
	Vs. <u>257</u>	Msg. <u>1.87</u>
C	Dw. <u>103.6</u>	Dd. <u>70.0</u>
	Mc. <u>48</u>	Uc. <u>-</u>
	Vs. <u>164</u>	Msg. <u>1.66</u>

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Very soft brownish-gray clay with organics.

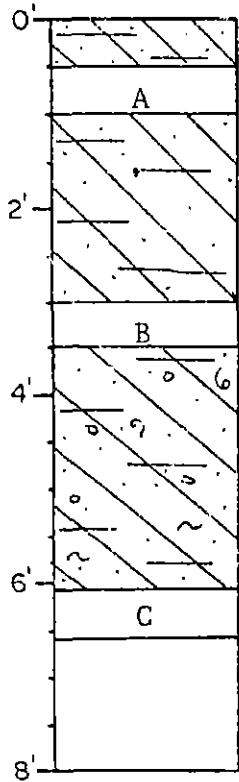
# CORE LOG

CORE NO. 23

DATE TAKEN: 8/24/81

CORE LENGTH 79"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 36" Soft gray sandy silty clay.  
 36" - 42" Very soft gray sandy silty clay.  
 42" - 68" Soft gray sandy silty clay with shell fragments and organics.  
 68" - 72" Soft reddish-brown clay with shell fragments.

## LEGEND



CLAY



SILT



SAND



SHELL FG.



ROCK FG.



ORGANICS



COLOR CHANGE



SEDIMENT CHANGE

## SAMPLES

**A**

Dw. <u>113.6</u>	Dd. <u>80.6</u>
Mc. <u>41</u>	Uc. <u>180</u>
Vs. <u>214</u>	Msg. <u>1.82</u>

CLASSIFICATION: Soft gray sandy silty clay.

**B**

Dw. <u>113.6</u>	Dd. <u>82.3</u>
Mc. <u>38</u>	Uc. <u>68</u>
Vs. <u>114</u>	Msg. <u>1.82</u>

CLASSIFICATION: Very soft gray sandy silty clay.

**C**

Dw. <u>114.2</u>	Dd. <u>82.0</u>
Mc. <u>39</u>	Uc. <u>198</u>
Vs. <u>286</u>	Msg. <u>1.82</u>

CLASSIFICATION: Soft reddish-brown clay with shell fragments.

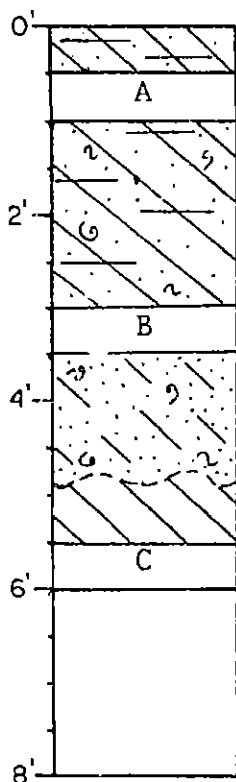
# CORE LOG

CORE NO. 24

DATE TAKEN: 8/24/81

CORE LENGTH 72"

TUBE DIAMETER: 1.75"



## DESCRIPTION









0" - 6" Very soft gray sandy silty clay.

6" - 36" Same as above with shell fragments.

36" - 59" Very soft clayey sand with shell fragments.

59" - 72" Stiff reddish-brown oxidized clay.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dv. <u>112.9</u>	Dd. <u>80.1</u>
	Mc. <u>41</u>	Uc. <u>117</u>
	Vs. <u>114</u>	Msg. <u>1.81</u>
B	Dv. <u>124.8</u>	Dd. <u>95.2</u>
	Mc. <u>31</u>	Uc. <u>149</u>
	Vs. <u>121</u>	Msg. <u>2.00</u>
C	Dv. <u>114.8</u>	Dd. <u>85.0</u>
	Mc. <u>35</u>	Uc. <u>632</u>
	Vs. <u>907</u>	Msg. <u>1.84</u>

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

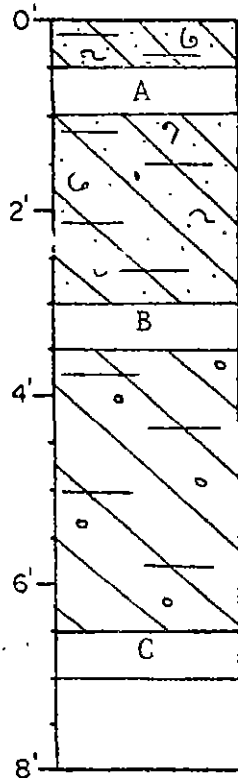
CLASSIFICATION: Very soft clayey sand with shell fragments.

CLASSIFICATION: Stiff reddish-brown oxidized clay

# CORE LOG

CORE NO. 25  
 CORE LENGTH 84"









DATE TAKEN: 8/24/81  
 TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 42" Very soft gray sandy silty clay with shell fragments.  
 42" - 78" Soft gray silty clay with sand pockets and shell fragments.  
 78" - 84" Very soft gray silty clay with organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>111.7</u>	Dd. <u>81.5</u>
	Mc. <u>37</u>	Uc. <u>165</u>
	Vs. <u>143</u>	Msg. <u>1.79</u>
B	Dw. <u>116.7</u>	Dd. <u>87.7</u>
	Mc. <u>33</u>	Uc. <u>83</u>
	Vs. <u>146</u>	Msg. <u>1.87</u>
C	Dw. <u>94.8</u>	Dd. <u>51.8</u>
	Mc. <u>83</u>	Uc. <u>308</u>
	Vs. <u>211</u>	Msg. <u>1.52</u>

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

CLASSIFICATION: Very soft gray silty clay with organics.

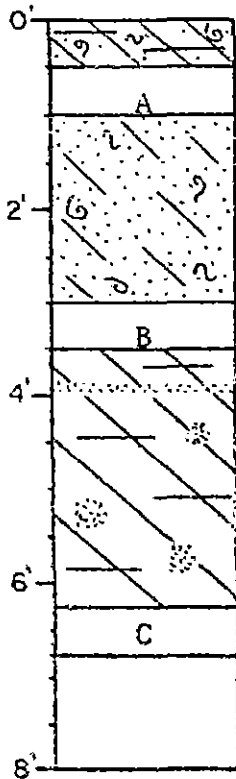
# CORE LOG

CORE NO. 26

DATE TAKEN: 8/24/81

CORE LENGTH 81"









TUBE DIAMETER: 1.75"



## DESCRIPTION

- 0" - 6" Very soft, gray sandy silty clay with shell fragments.
- 6" - 12" Very soft, gray, sandy, silty clay.
- 12" - 42" Very soft, gray clayey sand with shell fragments.
- 42" - 75" Very soft, gray silty clay with sand lenses, pockets and shell fragments.
- 75" - 81" Very soft, gray silty clay with organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw.	<u>111.1</u>	Ds.	<u>79.4</u>
	Mc.	<u>40</u>	Uc.	<u>76</u>
	Vs.	<u>143</u>	Msq.	<u>1.78</u>
B	Dw.	<u>115.4</u>	Ds.	<u>88.8</u>
	Mc.	<u>30</u>	Uc.	<u>59</u>
	Vs.	<u>136</u>	Msq.	<u>1.85</u>
C	Dw.	<u>106.1</u>	Ds.	<u>69.9</u>
	Mc.	<u>54</u>	Uc.	<u>too soft</u>
	Vs.	<u>86</u>	Msq.	<u>1.70</u>

CLASSIFICATION Very soft, gray sandy silty clay.

CLASSIFICATION Very soft, gray clayey sand with shell fragments.

CLASSIFICATION Very soft, gray silty clay with organics.

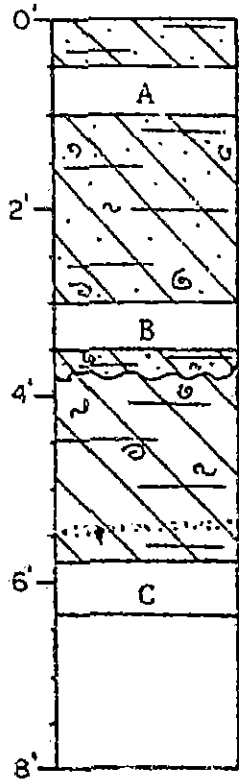
# CORE LOG

CORE NO. 27

DATE TAKEN: 8/24/81

CORE LENGTH 76"

TUBE DIAMETER: 1.75"



## DESCRIPTION

- 0" - 46" Very soft, gray, sandy silty clay with shell fragments.
- 46" - 59" Very soft, brownish-gray silty clay with shell fragments.
- 59" - 70" Same as above with sand lenses.
- 70" - 76" Same as above with organics.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A

Dw. <u>109.2</u>	Ct. <u>79.7</u>
Mc. <u>37</u>	Cc. <u>too soft</u>
Va. <u>96</u>	Mag. <u>1.75</u>

CLASSIFICATION: Very soft gray sandy silty clay with shell fragments.

B

Dw. <u>95.5</u>	Ct. <u>64.1</u>
Mc. <u>49</u>	Cc. <u>60</u>
Va. <u>189</u>	Mag. <u>1.53</u>

CLASSIFICATION: Very soft, brownish-gray silty clay with shell fragments.

C

Dw. <u>116.1</u>	Ct. <u>80.6</u>
Mc. <u>44</u>	Cc. <u>too soft</u>
Va. <u>86</u>	Mag. <u>1.86</u>

CLASSIFICATION: Very soft, brownish-gray silty clay with organics.

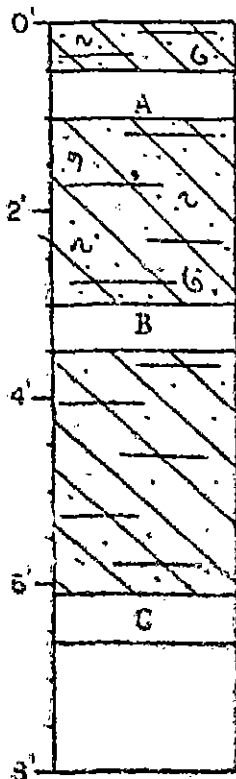
# CORE LOG

CORE NO. 28

DATE TAKEN: 8/24/81

CORE LENGTH 80"

TUBE DIAMETER: 1.75"



## DESCRIPTION









0" - 36" Very soft, gray sandy silty clay with shell fragments.

36" - 42" Very soft, clayey sand with shell fragments.

42" - 74" Very soft, gray, sandy silty clay.

74" - 80" Very soft, gray silty clay with organics.

## LEGEND

-  CLAY
-  SILTY
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS.
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

<b>A</b>	D <sub>w</sub> <u>119.6</u>	D <sub>s</sub> <u>83.5</u>
	M <sub>c</sub> <u>36</u>	U <sub>c</sub> <u>5%</u>
	V <sub>s</sub> <u>191</u>	M <sub>g</sub> <u>1.82</u>
<b>B</b>	D <sub>w</sub> <u>119.6</u>	D <sub>s</sub> <u>69.6</u>
	M <sub>c</sub> <u>33</u>	U <sub>c</sub> <u>-</u>
	V <sub>s</sub> <u>136</u>	M <sub>g</sub> <u>1.50</u>
<b>C</b>	D <sub>w</sub> <u>101.7</u>	D <sub>s</sub> <u>6.4</u>
	M <sub>c</sub> <u>58</u>	U <sub>c</sub> <u>-</u>
	V <sub>s</sub> <u>150</u>	M <sub>g</sub> <u>2.03</u>

CLASSIFICATION Very soft, gray sandy silty clay with shell fragments.

CLASSIFICATION Very soft, clayey sand with shell fragments.

CLASSIFICATION Very soft, gray silty clay with organics.



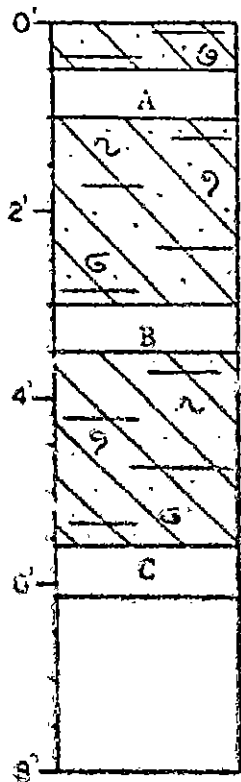
# CORE LOG

CORE NO. 29

DATE TAKEN: 8/24/81

CORE LENGTH 75"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 69" Very soft, gray sandy silty clay with shell fragments.

69" - 75" Very soft, gray clayey silty sand with organics.

## LEGEND



CLAY



SILT



SAND



SHELL FG



ROCK FG



ORGANICS



SOIL CHANGE



SEDIMENT CHANGE

## SAMPLES

<b>A</b>	Tw. <u>2086</u>	Th. <u>2084</u>
	Mc. <u>2088</u>	Gc. <u>2087</u>
	Vs. <u>2080</u>	Wg. <u>2089</u>
<b>B</b>	Tw. <u>2087</u>	Th. <u>2085</u>
	Mc. <u>2089</u>	Gc. <u>2086</u>
	Vs. <u>2081</u>	Wg. <u>2088</u>
<b>C</b>	Tw. <u>2082</u>	Th. <u>2083</u>
	Mc. <u>2085</u>	Gc. <u>2084</u>
	Vs. <u>2083</u>	Wg. <u>2086</u>

CLASSIFICATION Very soft, gray, sandy silty clay with shell fragments.

CLASSIFICATION Very soft, gray sandy silty clay with shell fragments.

CLASSIFICATION Very soft, gray clayey silty sand with organics.

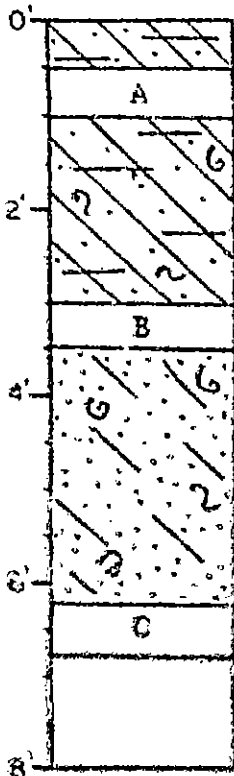
# CORE LOG

CORE NO. 30

DATE TAKEN: 8/24/81

CORE LENGTH 81"

TUBE DIAMETER: 1.75"



## DESCRIPTION








0" - 36" Very soft, gray sandy silty clay.

36" - 42" Same as above with shell fragments.

42" - 76" Very soft, gray clayey sand with shell fragments.

76" - 81" Very soft gray sandy silty clay with organics.

## LEGEND

-  CLAY
-  SILTY
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  SEDIMENT CHANGE

## SAMPLES

A	DU <u>105.4</u>	DU <u>105.9</u>	CLASSIFICATION	Very soft, gray sandy silty clay.
	MC <u>47</u>	MC <u>47</u>		
	VE <u>110</u>	VE <u>110</u>		
B	DU <u>116.2</u>	DU <u>116.0</u>	CLASSIFICATION	Very soft, gray sandy silty clay with shell fragments.
	MC <u>93</u>	MC <u>93</u>		
	VE <u>121</u>	VE <u>121</u>		
C	DU <u>123.0</u>	DU <u>123.0</u>	CLASSIFICATION	Very soft, gray sandy silty clay with organics.
	MC <u>84</u>	MC <u>84</u>		
	VE <u>125</u>	VE <u>125</u>		

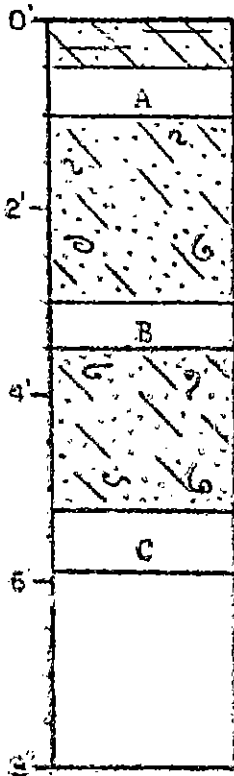
# CORE LOG

CORE NO. 31

DATE TAKEN: 8/24/81

CORE LENGTH 70"

TUBE DIAMETER: 1.75"











## DESCRIPTION

0" - 12" Very soft, gray sandy silty clay.

12" - 64" Very soft, gray clayey sand with shell fragments.

64" - 70" Very soft, gray sandy silty clay with shell fragments.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dr. <u>100.1</u>	Gc. <u>21.2</u>
	Gc. <u>62</u>	Gc. <u>7</u>
	Vs. <u>119</u>	Mg. <u>2.12</u>
B	Dr. <u>209.8</u>	Gc. <u>92.8</u>
	Gc. <u>27</u>	Gc. <u>112.650</u>
	Vs. <u>220</u>	Mg. <u>3.02</u>
C	Dr. <u>110.1</u>	Gc. <u>98.2</u>
	Gc. <u>20</u>	Gc. <u>7</u>
	Vs. <u>112</u>	Mg. <u>3.20</u>

CLASSIFICATION Very soft, gray sandy silty clay.

CLASSIFICATION Very soft, gray clayey sand with shell fragments.

CLASSIFICATION Very soft, gray sandy silty clay with shell fragments.

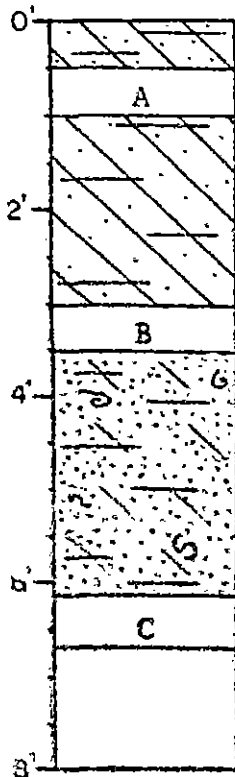
# CORE LOG

CORE NO. 32

DATE TAKEN: 8/24/81

CORE LENGTH 80"

TUBE DIAMETER: 1.75"











## DESCRIPTION

0" - 36" Soft, gray sandy silty clay.

36" - 74" Very soft, gray clayey silty sand with shell fragments.

74" - 80" Well-packed sand with shell fragments and organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG
-  ROCK FG
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	D <sub>s</sub> <u>109.2</u>	D <sub>v</sub> <u>76.4</u>
	M <sub>c</sub> <u>43</u>	U <sub>c</sub> <u>58</u>
	V <sub>s</sub> <u>214</u>	M <sub>10</sub> <u>1.02</u>
B	D <sub>s</sub> <u>119.0</u>	D <sub>v</sub> <u>87.6</u>
	M <sub>c</sub> <u>36</u>	U <sub>c</sub> <u>50.0</u>
	V <sub>s</sub> <u>68</u>	M <sub>10</sub> <u>1.01</u>
C	D <sub>s</sub> <u>111.4</u>	D <sub>v</sub> <u>81.2</u>
	M <sub>c</sub> <u>36</u>	U <sub>c</sub> <u>-</u>
	V <sub>s</sub> <u>143</u>	M <sub>10</sub> <u>1.78</u>

CLASSIFICATION: Soft, gray sandy silty clay.

CLASSIFICATION: Very soft, gray clayey sand with shell fragments.

CLASSIFICATION: Very soft, gray sandy silty clay with shell fragments.

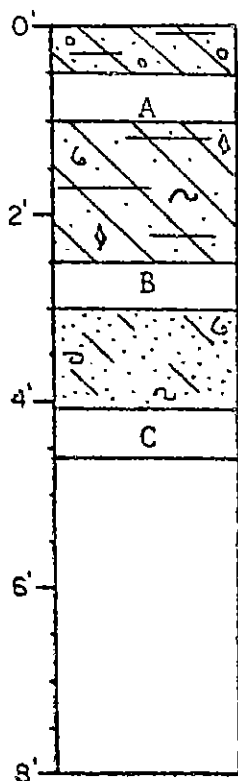
# CORE LOG

CORE NO. 33

DATE TAKEN: 8/24/81

CORE LENGTH 55"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 6"	Very soft, gray sandy silty clay with organics.
6" - 12"	Same as above with organics.
12" - 30"	Very soft, gray sandy silty clay with shell fragments and several rock fragments.
30" - 36"	Very soft, gray clayey silty sand with shell fragments.
36" - 49"	Soft gray clayey sand and shell fragments.
49" - 55"	Well-packed sand with shell fragments and organics.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

<b>A</b>	D <sub>w</sub> <u>106.7</u>	D <sub>s</sub> <u>76.8</u>
	M <sub>c</sub> <u>39</u>	U <sub>c</sub> <u>-</u>
	V <sub>s</sub> <u>130</u>	M <sub>sq</sub> <u>1.71</u>
<b>B</b>	D <sub>w</sub> <u>114.0</u>	D <sub>s</sub> <u>86.3</u>
	M <sub>c</sub> <u>33</u>	U <sub>c</sub> <u>too soft</u>
	V <sub>s</sub> <u>100</u>	M <sub>sq</sub> <u>1.84</u>
<b>C</b>	D <sub>w</sub> <u>128.5</u>	D <sub>s</sub> <u>106.2</u>
	M <sub>c</sub> <u>21</u>	U <sub>c</sub> <u>Sand</u>
	V <sub>s</sub> <u>Sand</u>	M <sub>sq</sub> <u>2.06</u>

CLASSIFICATION: Very soft, gray, sandy silty clay.

CLASSIFICATION: Very soft, gray clayey silty sand with shell fragments.

CLASSIFICATION: Well packed sand with shell fragments and organics.

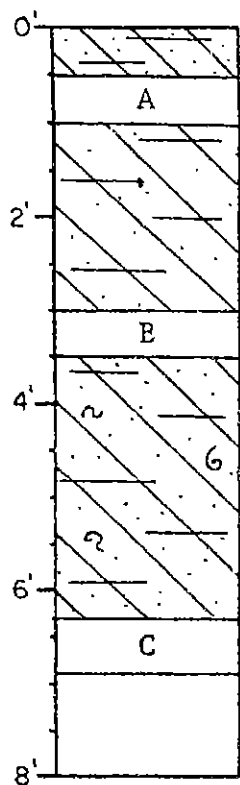
# CORE LOG

CORE NO. 34

DATE TAKEN: 8/24/81

CORE LENGTH 83"

TUBE DIAMETER:



## DESCRIPTION

0" - 12" Very soft, gray, sandy silty clay.  
 12" - 42" Soft gray sandy silty clay  
 42" - 77" Same as above with shell fragments.  
 77" - 83" Soft gray silty clay.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>110.4</u>	Dd. <u>75.1</u>
	Mc. <u>47</u>	Uc. <u>68</u>
	Vs. <u>179</u>	Msg. <u>1.77</u>
B	Dw. <u>108.6</u>	Dd. <u>72.4</u>
	Mc. <u>50</u>	Uc. <u>75</u>
	Vs. <u>214</u>	Msg. <u>1.74</u>
C	Dw. <u>91.7</u>	Dd. <u>53.9</u>
	Mc. <u>70</u>	Uc. <u>90</u>
	Vs. <u>293</u>	Msg. <u>1.47</u>

CLASSIFICATION: Very soft, gray sandy silty clay.

CLASSIFICATION: Soft, gray sandy silty clay.

CLASSIFICATION: Soft, gray silty clay.

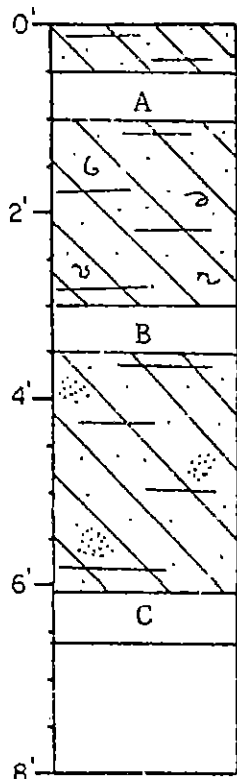
# CORE LOG

CORE NO. 35

DATE TAKEN: 8/24/81

CORE LENGTH 79"

TUBE DIAMETER: 1.75"



## DESCRIPTION









0" - 12" Very soft, gray sandy silty clay.

12" - 42" Same as above with shell fragments.

42" - 73" Soft gray sandy silty clay with sand pockets.

73" - 79" Very soft, gray sandy silty clay with organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>111.1</u>	Dd. <u>77.2</u>
	Mc. <u>44</u>	Uc. <u>59</u>
	Vs. <u>143</u>	Msg. <u>1.78</u>
B	Dw. <u>117.9</u>	Dd. <u>85.4</u>
	Mc. <u>38</u>	Uc. <u>79</u>
	Vs. <u>200</u>	Msg. <u>1.89</u>
C	Dw. <u>103.6</u>	Dd. <u>65.2</u>
	Mc. <u>59</u>	Uc. <u>-</u>
	Vs. <u>136</u>	Msg. <u>1.66</u>

CLASSIFICATION: Very soft, gray sandy silty clay.

CLASSIFICATION: Very soft, gray sandy silty clay with shell fragments.

CLASSIFICATION: Very soft, gray sandy silty clay with organics.

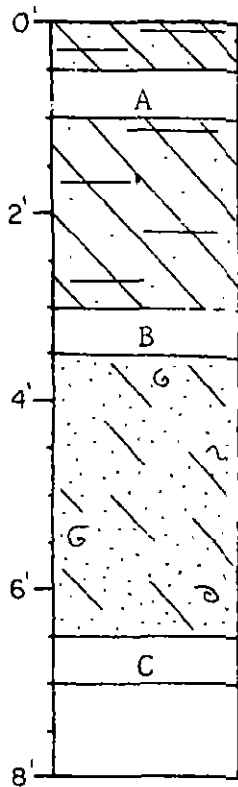
# CORE LOG

CORE NO. 36

DATE TAKEN: 8/24/81

CORE LENGTH 84"

TUBE DIAMETER: 1.75"



## DESCRIPTION









0" - 6" Very soft, gray sandy silty clay.

6" - 12" Same as above with shell fragments.

12" - 42" Soft, gray sandy silty clay.

42" - 84" Very soft, gray clayey sand with shell fragments and organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>107.9</u>	Dd. <u>74.9</u>
	Mc. <u>46</u>	Uc. <u>-</u>
	Vs. <u>136</u>	Msg. <u>1.73</u>
B	Dw. <u>112.9</u>	Dd. <u>77.3</u>
	Mc. <u>46</u>	Uc. <u>90</u>
	Vs. <u>321</u>	Msg. <u>1.81</u>
C	Dw. <u>116.1</u>	Dd. <u>82.9</u>
	Mc. <u>40</u>	Uc. <u>-</u>
	Vs. <u>143</u>	Msg. <u>1.83</u>

CLASSIFICATION: Very soft, gray sandy silty clay with shell fragments.

CLASSIFICATION: Soft, gray sandy silty clay.

CLASSIFICATION: Very soft, gray clayey sand with shell fragments and organics.



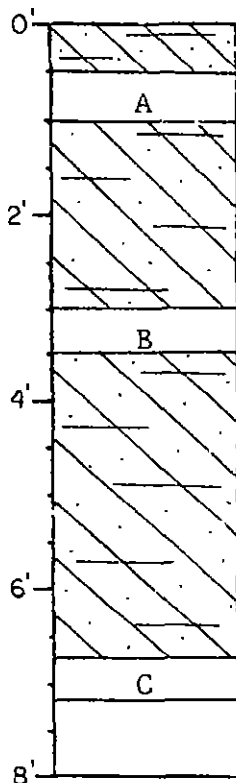
# CORE LOG

CORE NO. 37

DATE TAKEN: 8/24/81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"



## DESCRIPTION

0" - 12" Very soft, gray sandy silty clay.  
 12" - 80" Soft gray sandy silty clay  
 80" - 86" Very soft, gray sandy silty clay.

## LEGEND

- CLAY
- SILT
- SAND
- SHELL FG.
- ROCK FG.
- ORGANICS
- COLOR CHANGE
- SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>107.9</u>	Dd. <u>75.9</u>
	Mc. <u>44</u>	Uc. <u>60</u>
	Vs. <u>179</u>	M <sub>sq</sub> . <u>1.73</u>
B	Dw. <u>111.7</u>	Dd. <u>81.5</u>
	Mc. <u>37</u>	Uc. <u>84</u>
	Vs. <u>286</u>	M <sub>sq</sub> . <u>1.79</u>
C	Dw. <u>106.7</u>	Dd. <u>74.1</u>
	Mc. <u>44</u>	Uc. <u>too soft</u>
	Vs. <u>132</u>	M <sub>sq</sub> . <u>1.71</u>

CLASSIFICATION: Very soft, gray sandy silty clay.

CLASSIFICATION: Soft, gray sandy silty clay.

CLASSIFICATION: Very soft, gray sandy silty clay.

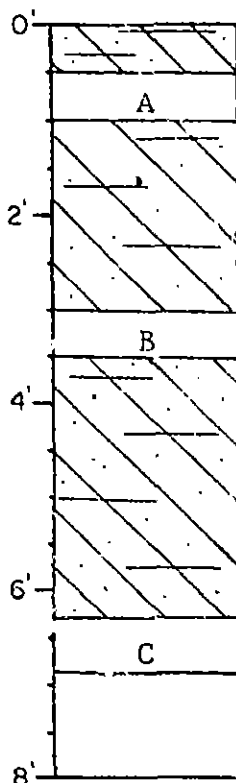
# CORE LOG

CORE NO. 38

DATE TAKEN: 8/24/81

CORE LENGTH 81"

TUBE DIAMETER: 1.75"











## DESCRIPTION

0" - 36" Very soft, gray sandy silty clay.

36" - 81" Soft, gray sandy silty clay.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>110.4</u>	Dd. <u>76.7</u>	CLASSIFICATION Very soft, gray sandy, silty clay.
	Mc. <u>44</u>	Uc. <u>59</u>	
	Vs. <u>143</u>	Msg. <u>1.77</u>	
B	Dw. <u>112.3</u>	Dd. <u>78.5</u>	CLASSIFICATION Soft, gray, sandy silty clay.
	Mc. <u>43</u>	Uc. <u>78</u>	
	Vs. <u>239</u>	Msg. <u>1.80</u>	
C	Dw. <u>111.7</u>	Dd. <u>82.7</u>	CLASSIFICATION Soft, gray sandy silty clay.
	Mc. <u>35</u>	Uc. altered sample	
	Vs. <u>214</u>	Msg. <u>1.79</u>	

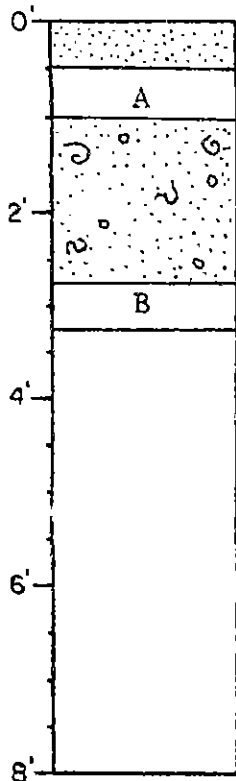
# CORE LOG

CORE NO. 39

DATE TAKEN: 8/24/81

CORE LENGTH 40"

TUBE DIAMETER: 1.75"











## DESCRIPTION

0" - 34" Well-packed sand.

34" - 40" Same as above with shell fragments and organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	Dw. <u>117.9</u>	Dd. <u>95.1</u>
	Mc. <u>24</u>	Uc. <u>Sand</u>
	Vs. <u>Sand</u>	M <sub>sp</sub> . <u>1.89</u>
B	Dw. <u>126.0</u>	Dd. <u>102.4</u>
	Mc. <u>23</u>	Uc. <u>Sand</u>
	Vs. <u>Sand</u>	M <sub>sp</sub> . <u>2.02</u>
C	Dw. _____	Dd. _____
	Mc. _____	Uc. _____
	Vs. _____	M <sub>sp</sub> . _____

CLASSIFICATION Well-packed sand.

CLASSIFICATION Well-packed sand with shell fragments and organics.

CLASSIFICATION :

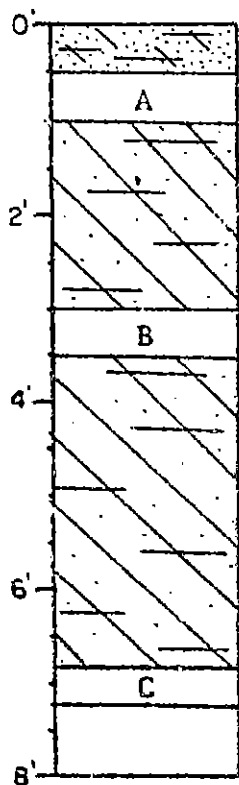
# CORE LOG

CORE NO. 40

DATE TAKEN: 8/24/81

CORE LENGTH 86"

TUBE DIAMETER: 1.75"



## DESCRIPTION









0" - 6" Very soft, gray, clayey silty sand.

6" - 36" Very soft, gray sandy silty clay.

36" - 80" Soft gray sandy silty clay.

80" - 86" Same as above with organics.

## LEGEND

-  CLAY
-  SILT
-  SAND
-  SHELL FG.
-  ROCK FG.
-  ORGANICS
-  COLOR CHANGE
-  SEDIMENT CHANGE

## SAMPLES

A	D <sub>w</sub> <u>112.9</u>	D <sub>s</sub> <u>83.6</u>
	M <sub>c</sub> <u>35</u>	U <sub>c</sub> <u>600 SOFT</u>
	V <sub>s</sub> <u>125</u>	M <sub>eq</sub> <u>1.81</u>
B	D <sub>w</sub> <u>104.8</u>	D <sub>s</sub> <u>70.3</u>
	M <sub>c</sub> <u>49</u>	U <sub>c</sub> <u>76</u>
	V <sub>s</sub> <u>268</u>	M <sub>eq</sub> <u>1.68</u>
C	D <sub>w</sub> <u>109.8</u>	D <sub>s</sub> <u>78.4</u>
	M <sub>c</sub> <u>40</u>	U <sub>c</sub> <u>67</u>
	V <sub>s</sub> <u>239</u>	M <sub>eq</sub> <u>1.76</u>

CLASSIFICATION Very soft, gray sandy silty clay.

CLASSIFICATION Soft, gray sandy silty clay.

CLASSIFICATION Soft, gray sandy silty clay with organics.

REMOLDED VANE SHEAR (lbs./ sq. ft.)

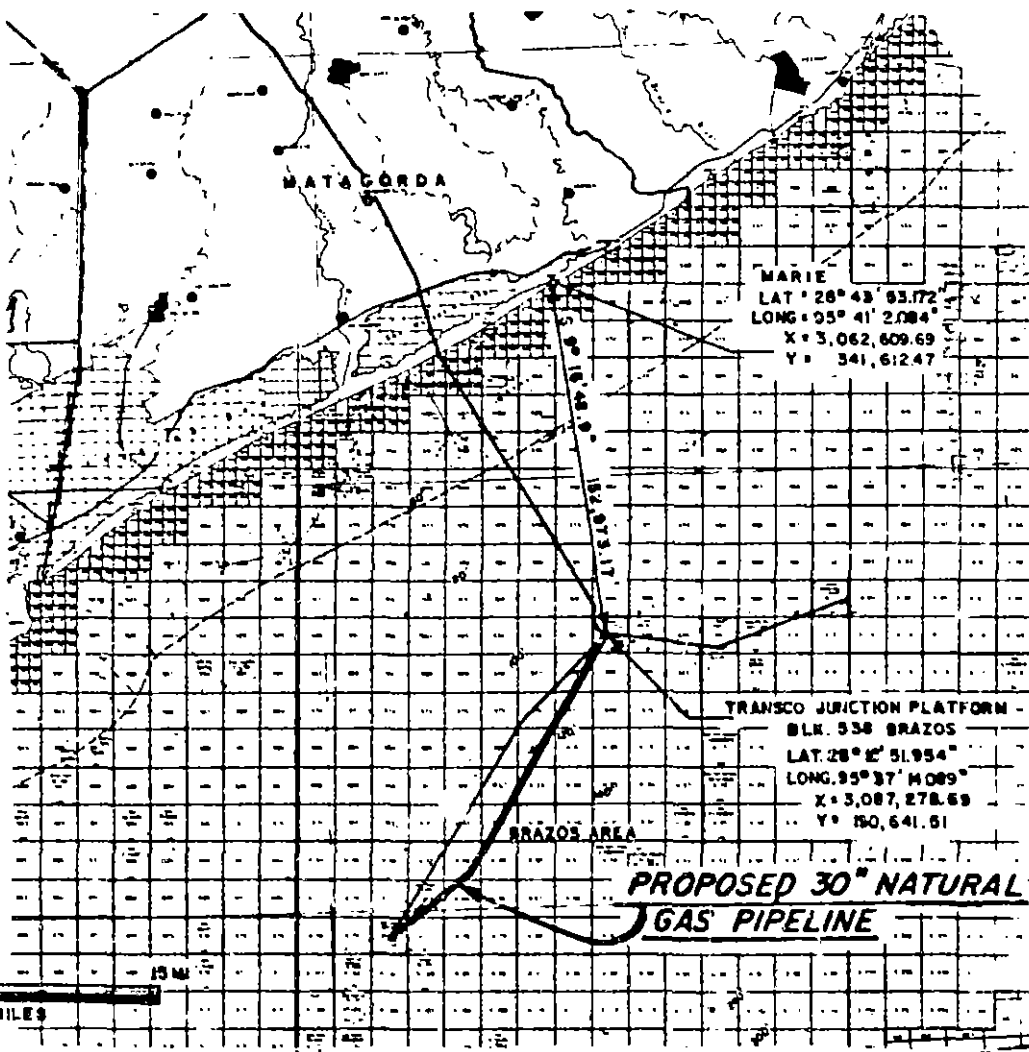
	<u>Sample A</u>	<u>Sample B</u>	<u>Sample C</u>
Core # 1	93	71	64
Core # 2	68	93	71
Core # 3	86	61	64
Core # 4	75	57	50
Core # 5	46	93	143
Core # 6	100	118	243
Core # 7	71	75	79
Core # 8	79	100	107
Core # 9	54	43	57
Core # 10	96	57	54
Core # 11	96	64	71
Core # 12	93	89	54
Core # 13	50	100	100
Core # 14	46	21	64
Core # 15	43	57	64
Core # 16	132	132	379
Core # 17	61	111	154
Core # 18	89	104	421
Core # 19	82	96	143
Core # 20	121	129	79
Core # 21	86	104	279
Core # 22	89	139	107
Core # 23	93	79	307

REMOULDED VANE SHEAR (lbs./ sq. ft.) (cont'd.).

	<u>Sample A</u>	<u>Sample B</u>	<u>Sample C</u>
Core # 24	107	57	721
Core # 25	71	111	168
Core # 26	82	57	75
Core # 27	68	100	82
Core # 28	104	50	68
Core # 29	129	79	104
Core # 30	75	114	79
Core # 31	100	29	107
Core # 32	129	61	68
Core # 33	89	54	Sand
Core # 34	129	89	186
Core # 35	114	107	68
Core # 36	75	118	71
Core # 37	82	114	68
Core # 38	93	136	121
Core # 39	Sand	Sand	-
Core # 40	100	89	104

"Best Available Copy"

OFFSHORE TEXAS  
GULF OF MEXICO



MARIE  
LAT. 28° 43' 53.72"  
LONG. 95° 41' 2.084"  
X = 3,062,609.69  
Y = 341,612.47

TRANSCO JURUCTION PLATFORM -  
BLK. 538 BRAZOS  
LAT. 28° 42' 51.954"  
LONG. 95° 37' 40.089"  
X = 3,087,278.69  
Y = 150,641.51

**PROPOSED 30" NATURAL  
GAS PIPELINE**

15 MI 0 15 MI  
SCALE IN MILES

I hereby certify that the design of the Pipeline complies with Department of transportation Regulation Part 192, Title 49, and that this map accurately reflects the center line of the proposed Pipeline right-of-way.



*Handwritten signature/initials*

		Engineering Department Houston, Texas <small>A Subsidiary of Western Company Inc.</small>	
<b>PROPOSED 30" NATURAL GAS PIPELINE</b> <b>BLOCK A-76 TO BLOCK 538</b> <b>BRAZOS AREA, OFFSHORE TEXAS</b> <b>GULF OF MEXICO</b>			
Drawn By: M.J.U. Checked By: <i>EMD</i> App. and B. Drafting: E.W.	Date: 10-13-81 Date: 10-16-81 Date: 10-21-81	Approved By: <i>(Signature)</i> Approved By: <i>James M. Hines</i> Engineer	Date: 10-13-81 Date: 10-12-81 Date: 10-22-81
W.J. No. 5248.14 No. <i>10-28-81</i>	Scale: SHOWN Sheet 1 of 1	General Order & Contract Number: 22-12-3011 Date: 10-28-81	Draw No. DI-3A-001

27 OCT '81 *R. J. Judah* 18284  
DATE GENERAL MANAGER, CONSTRUCTION NUMBER

RECEIVED

JAN 25 12 17 PM '82

"Best Available Copy"

SCHEMATIC  
OUTLET FROM P/L  
NEW ORLEANS, LA.

T.G.P.L. PIPELINE  
JUNCTION PLATFORM  
BLK. 538 BRAZOS

30" PIPE SPECIFICATIONS

- 0.812" W.T. A.P.I. 5LX-60
- 0.688" W.T. A.P.I. 5LX-60
- 0.562" W.T. A.P.I. 5LX-60

NOTES

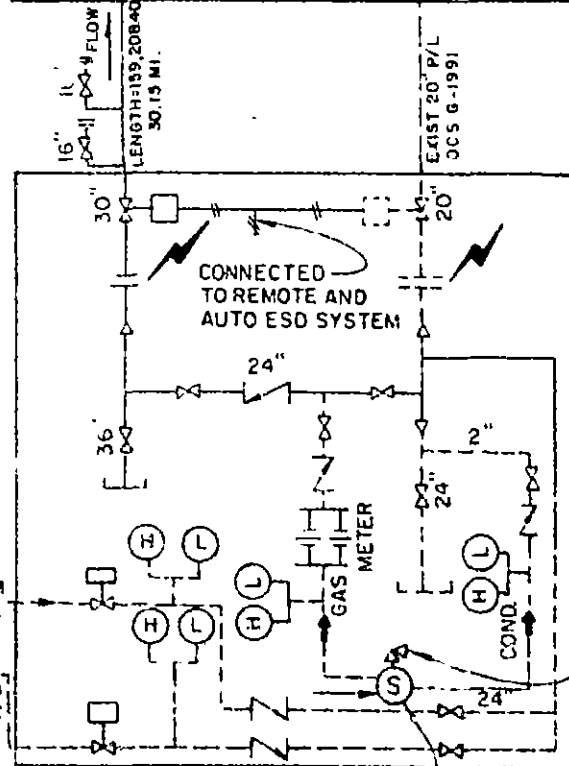
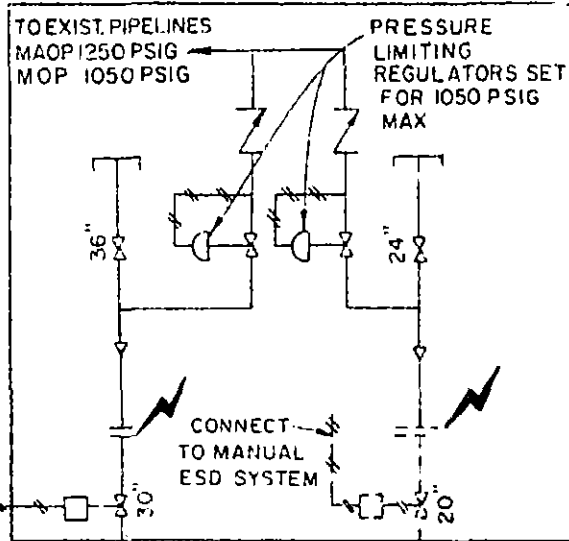
1. PROPOSED PIPELINE MAOP=1440 PSIG  
B MOP= 1250 PSIG
2. ALL UNDERWATER VALVES ARE ANSI 900
3. ALL ABOVE WATER VALVES ARE ANSI 600
4. PIPELINE IS CATHODICALLY PROTECTED WITH SACRIFICIAL ANODES.
5. HI PILOT SET FOR 1,250 PSIG MAX
6. LO PILOT SET FOR 500 PSIG MIN

CITIES SERVICE  
PLATFORM "A"  
BLK. A-76 BRAZOS

OCS G-3351  
EXIST. 20" P/L FROM  
BRAZOS A-133

EXIST. 16" P/L  
FROM BRAZOS A-70  
OCS G-1991-C

I hereby certify that the design of the Pipeline complies with Department of Transportation Regulation Part 192, Title 49.



PRODUCERS SEPARATOR 1440  
DESIGN PRESSURE 1300 PSIG OUTLET PRESSURE

<p>Transcontinental Gas Pipe Line Corporation A Subsidiary of Panhandle Corporation Inc.</p>			
<p><b>SCHEMATIC FLOW DIAGRAM</b>  <b>PROPOSED 30" PIPELINE FROM BLOCK 538</b>  <b>TO BLOCK A-76, BRAZOS AREA</b>  <b>OFFSHORE, TEXAS.</b></p>			
Drawn By	V.M.G	Date	1-14-82
Checked By	7771	Date	1-14-82
Approved By	C.W.V.	Date	1-14-82
W.C. No.	5249.14	Scale	NONE
Sheet	1 of 1	Design Group & Out Number	22-3011
Jug. No.		D1-A-002	

OCS-G-4976

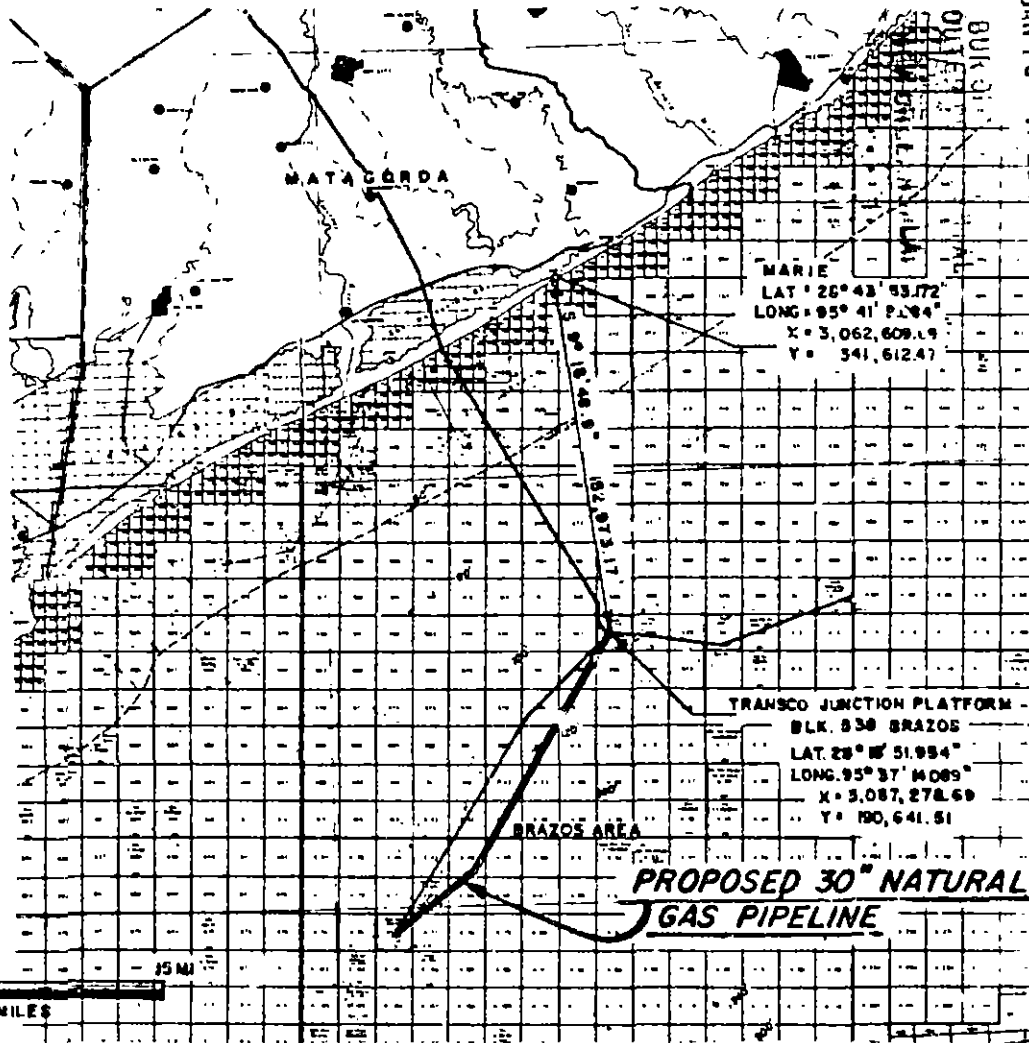
P. J. Prossmeyer  
ENGINEER  
DATE 1-14-82 NUMBER 9001



"Best Available Copy"

OFFSHORE TEXAS  
GULF OF MEXICO

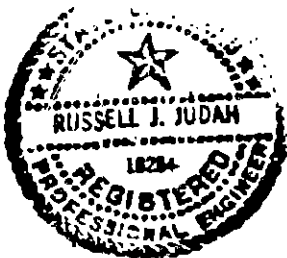
RECORDED  
JAN 25 11 15 AM '92



0 15 MI  
SCALE IN MILES

I hereby certify that the design of the Pipeline complies with Department of transportation Regulation Part 192, Title 49, and that this map accurately reflects the center line of the proposed Pipeline right-of-way.

MS 4976



FILE COPY

By	Transcontinental Gas Pipe Line Corporation A Subsidiary of Texas Company Inc.		Engineering Department Houston, Texas	
	<b>PROPOSED 30" NATURAL GAS PIPELINE BLOCK A-76 TO BLOCK 538 BRAZOS AREA, OFFSHORE TEXAS GULF OF MEXICO</b>			
Revision	Drawn By: B.J.U.	Date: 10-15-81	Approved By: T.W.H.	Date: 10-21-81
	Checked By: <i>W.W.</i>	Date: 10-16-81	Approved By: <i>James M. Hines</i>	Date: 10-23-81
Date	Approved & Dated: <i>E.W.W.</i>	Date: 10-23-81	Engineer	
	Project No: 5249.14	Scale: SHOWN	Case No. & Sub No.	22-12-3011
Sheet	1 of 1	Drawn No	DI-3A-OQI	

27 OCT '81  
DATE

*R. J. Judah*  
GENERAL MANAGER CONSTRUCTION

18284  
NUMBER

"Best Available Copy"

T.G.P.L. PIPE LINE  
JUNCTION PLATFORM  
BLK. 538 BRAZOS

30" PIPE SPECIFICATIONS

- 0.812" W.T. A.P.I. 5LX-60
- 0.688" W.T. A.P.I. 5LX-60
- 0.562" W.T. A.P.I. 5LX-60

NOTES

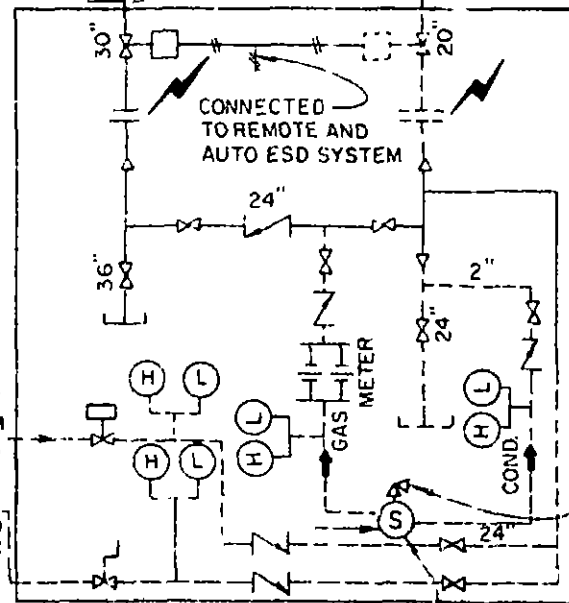
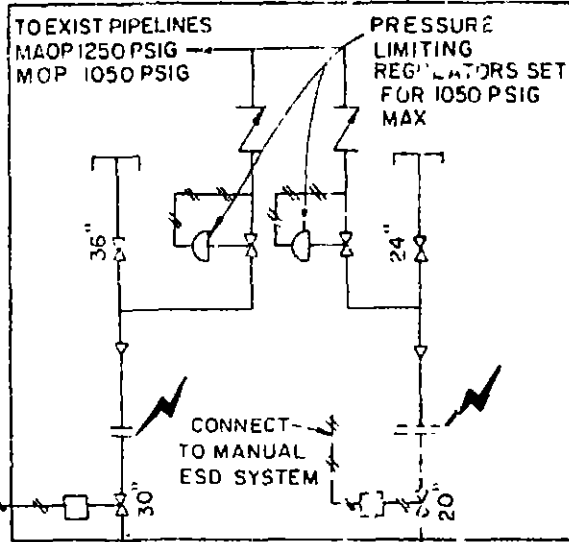
1. PROPOSED PIPELINE MAOP=1440 PSIG & MOP= 1250 PSIG
2. ALL UNDERWATER VALVES ARE ANSI 900
3. ALL ABOVE WATER VALVES ARE ANSI 600
4. PIPELINE IS CATHODICALLY PROTECTED WITH SACRIFICIAL ANODES.
5. HI PILOT SET FOR 1,250 PSIG MAX
6. LO PILOT SET FOR 500 PSIG MIN

CITIES SERVICE  
PLATFORM "A"  
BLK. A-76 BRAZOS

OCS G-335I  
EXIST 20" P/L FROM  
BRAZOS A-133

EXIST. 16" P/L  
FROM BRAZOS A-70  
OCS 3-1991-C

I hereby certify that the design of the Pipeline complies with Department of Transportation Regulation Part 192, Title 49.



PRODUCERS SEPARATOR 1440' DESIGN PRESSURE 1300 PSIG OUTLET PRESSURE.

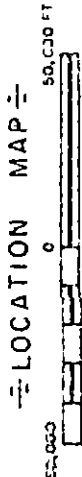
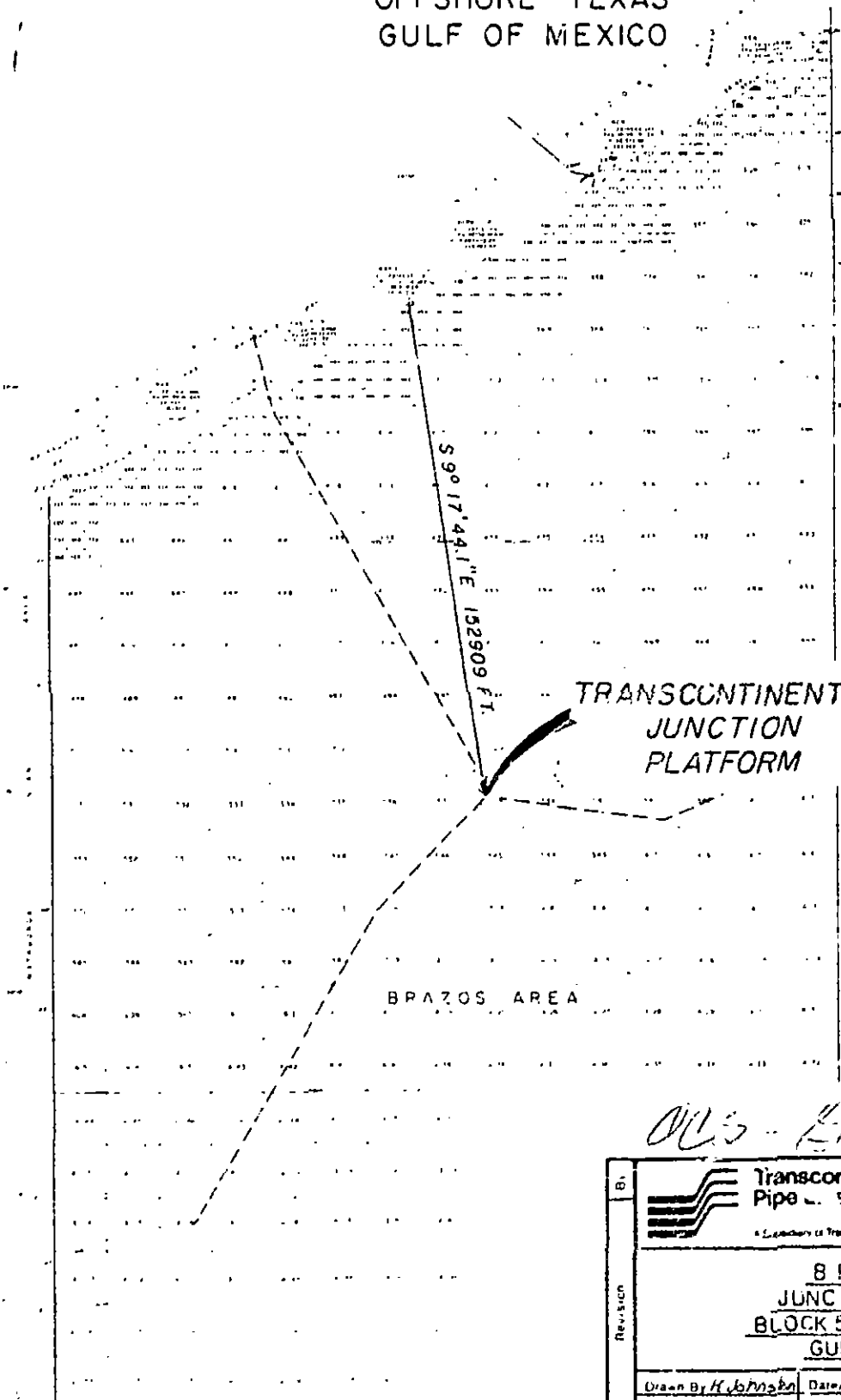
By		Transcontinental Gas Pipe Line Corporation Engineering Department Houston, Texas <small>A Subsidiary of Tronaco Companies Inc.</small>	
<b>SCHEMATIC FLOW DIAGRAM</b> <b>PROPOSED 30" PIPELINE FROM BLOCK 538</b> <b>TO BLOCK A-76, BRAZOS AREA</b> <b>OFFSHORE, TEXAS</b>			
Drawn By	V.M.G.	Date	1-14-82
Checked By	MLL	Date	1-14-82
Approved By	C.V.M.	Date	1-14-82
Approved By	Paul J. Prossmeyer	Date	1-14-82
W. D. No.	5249.14	Scale	NONE
Sheet	1 of 1	General Order	22-3011
Date		1-14-82	
ENGINEER		9001	
DATE		NUMBER	
		Sheet 1 of 1	
		Dwg. No. 01-A-002	

*OCS-G 4976*

*P. J. Prossmeyer*


"Best Available Copy"

OFFSHORE TEXAS  
GULF OF MEXICO



*OLG - 29 4976*

--- EXISTING TRANSCO FACILITIES

Revision	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>a subsidiary of Transco Companies Inc.</small>		Engineering Department Houston, Texas	
	<b>8 PILE PIPELINE JUNCTION PLATFORM BLOCK 53E BRAZOS AREA GULF OF MEXICO</b>			
Date	Drawn By <i>H. Johnson</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Date <i>12-22-78</i>
	Checked By <i>[Signature]</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Date <i>12-22-78</i>
	<i>5030.45</i>	Scale <i>SCALE</i>	Project Draw & Title Number <i>22-0300</i>	
		Sheet <i>1 of 3</i>	Dwg. No. <i>B-A-538-1</i>	



537

538

BRAZOS AREA

7289'

N 40° W.

8327'

JUNCTION PLATFORM LOCATION

X = 3,087,308.81  
Y = 190,711.00  
LAT. 28° 18' 53"  
LONG. 95° 37' 14"

546

545

GULF OF MEXICO



NOTES

1. Location coordinates based on Texas (Lambert) Plane Coordinate System, South Central Zone taken from Texaco Inc. drawings.



*R. J. Brown*

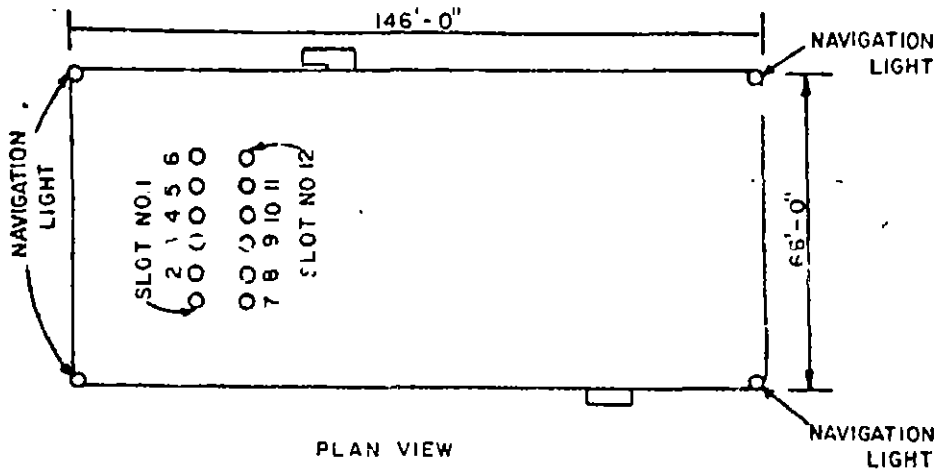
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12-22-78

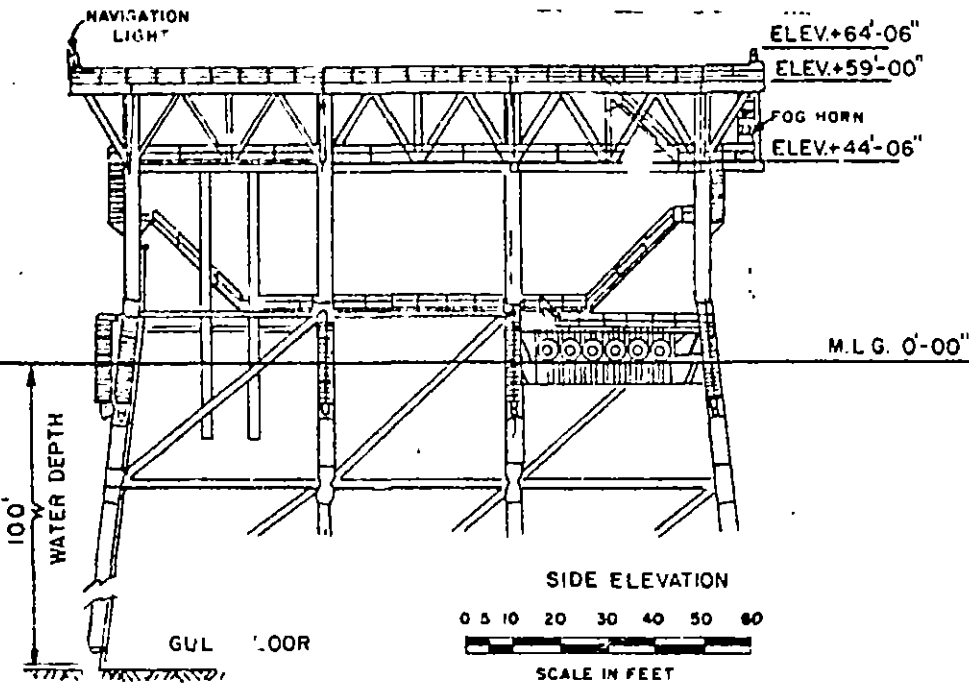
NO.

DATE

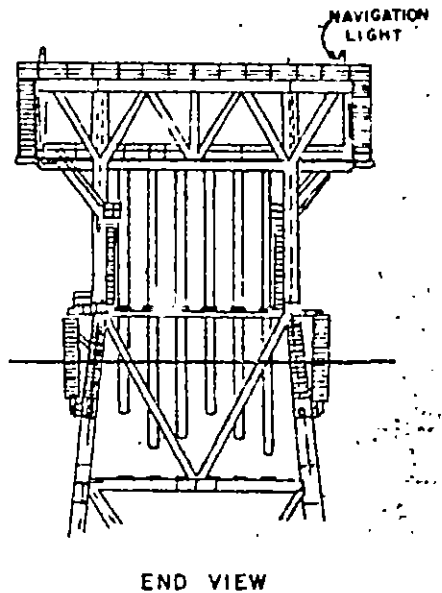
		Engineering Department Houston, Texas <small>A Subsidiary of Texaco Companies Inc.</small>	
<b>B PILE PIPELINE</b> <b>JUNCTION PLATFORM</b> <b>FEDERAL BLOCK 538 BRAZOS AREA OFFSHORE</b> <b>GULF OF MEXICO</b>			
Drawn By: <i>K. Johnson</i>	Date: 12-22-78	Approved By: <i>[Signature]</i>	Date: 12-22-78
Checked By: <i>[Signature]</i>	Date: 12-22-78	<i>[Signature]</i> Engineer	
Approved By (Sealing): <i>[Signature]</i>	Date: 12-22-78		
H. O. No. 2030.42	Scale: <i>Shown</i>	Project No. 22-0300	Sheet 2 of 3
		Day No. B-A-538-1	



PLAN VIEW  
 0 5 10 20 30 40 50 60  
 SCALE IN FEET


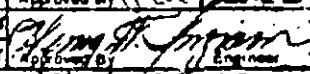


SIDE ELEVATION  
 0 5 10 20 30 40 50 60  
 SCALE IN FEET



END VIEW

- NOTES:
1. Dimensions taken from Texaco, Inc. previous permit drawings.
  2. Lights and Fog Signals Comply with Coast Guard Regulations (Title 33 CFR Parts 140 to 147; Subpart 67.05-1 and 67.0-1).

D.	 <b>Transcontinental Gas Pipe Line Corporation</b>		Engineering Department Houston, Texas
	A Subsidiary of Transco Companies Inc.		
Revision	<b>8 PILE PIPELINE JUNCTION PLATFORM</b> <b>BLCK 538 BRAZOS AREA</b> <b>GULF OF MEXICO</b>		
	Drawn By <i>K. Johnson</i>	Date <i>12-22-78</i>	Approved By <i>CPCA</i> Date <i>12-22-78</i>
Date	Checked By <i>CPA</i>	Date <i>12-22-78</i>	 Approved By Date <i>12-22-78</i> Checked By Date <i>12-22-78</i>
	W. O. No. <i>5020.43</i>	Scale <i>Shown</i>	

THE STATE OF TEXAS    I  
                          I  
COUNTY OF MATAGORDA   I

9- 003 18755

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, TEXACO INC. (Texaco) owns an interest in an eight-pile platform designated as Texaco Brazos A-538 "A" Platform and located on OCS lease No. 1730, Block 538, Brazos Area, Offshore Matagorda County, State of Texas, at Latitude 28° 18' 52.801" and Longitude 95° 37' 13.891", along with certain related equipment as more fully described on Exhibit "A" which is attached hereto and incorporated herein for all purposes, and Texaco desires to sell and convey its interest in the platform and the related equipment shown on said Exhibit "A" to Transcontinental Gas Pipe Line Corporation (Transco).

NOW, THEREFORE, for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged and subject to the following terms and conditions, Texaco does hereby sell, transfer, assign and convey all of its right, title and interest in and to the platform, and the related equipment, unto Transcontinental Gas Pipe Line Corporation (Transco) here present and accepting the same and acknowledge delivery and possession thereof.

This sale and conveyance is made without warranty of title, either express or implied other than that there are no liens or encumbrances on said platform or the equipment, and conveys same only as is and where is and no warranty is made herein as to the fitness of said property for any particular purpose. Texaco will remove its equipment which is not listed on Exhibit "A" and not herein expressly conveyed to Transco.

As of the effective date hereinafter provided, Transco does hereby expressly assume all liability and responsibility for the above-described platform and related equipment incident to the ownership thereof, including, without limitation, the costs of abandonment, clearing and removal of said structure and equipment; and said party does hereby further bind and obligate itself to fully defend, protect, indemnify and hold harmless Texaco, its employes and agents from and against each and every claim, demand or cause of action and any liability, cost, expense (including but not limited to reasonable attorneys' fees and expenses incurred in defense of Texaco), damage or loss in connection therewith which may be made or asserted by Transco, Transco's employes or agents, subcontractors, or any third parties on account of personal injury or death or property damage caused by, arising out of, or in any way incidental to, or in connection with this bill of sale, or any use, operation or incident in connection with said platform and equipment, or the

abandonment, clearing and removal thereof. Transco further agrees to obtain any necessary easements or permits required by the United States Department of the Interior, Geological Survey, or any other governmental agency having jurisdiction thereof, for the continued use, operation and maintenance of said platform and equipment thereon by Transco, and Transco agrees to indemnify and hold harmless Texaco from all claims, expenses, fines, penalties and liabilities, if any, arising, directly or indirectly, in connection therewith. Without limiting the foregoing in any respect, Texaco, to the extent and only to the extent which it is authorized to do so under applicable laws and regulations and subject to approval, if necessary, of any governmental authority having jurisdiction in the premises, which approval Transco hereby assumes the responsibility of obtaining, does hereby assign to Transco, the following: (1) Permit-8842 dated February 9, 1972, as authorized by the Secretary of the Army and issued by the U.S. Corps of Engineers, Galveston District, as amended by letter dated November 15, 1977, authorized and issued in the same manner as stated above; (2) U.S. Coast Guard Approval of Texaco's Application for Class 1 Private Aids to Navigation on Artificial Islands and Fixed Structures, such Approval dated November 10, 1970. Transco agrees to assume and comply with all of the



terms, conditions and obligations stated in the above-described permit dated February 9, 1972, as amended, as binding upon Permittee therein and with all of the terms, conditions and obligations stated in the above-described Coast Guard Approval dated November 10, 1970, as binding upon applicant therein, and Transco further agrees to indemnify and hold harmless Texaco from all claims, expenses, fines, penalties, and liabilities, if any, arising, directly or indirectly, from the aforesaid assignment of and/or use by Transco of said permit and approval and/or operations conducted by Transco pursuant thereto.

It is understood that Texaco agrees to plug (to the satisfaction of the appropriate regulatory authorities) all wells located on said platform and to remove all production equipment therefrom, except that equipment listed on Exhibit "A", and that on the date Texaco has completed such abandonment and removal, including the necessary equipment to complete the work (which date shall be established in writing by Texaco and Transco), this Agreement shall become effective and thereafter Transco shall be fully responsible for said platform. Texaco agrees to furnish Transco a minimum of two copies of the approval from the proper government agency that the well plugging has been satisfactorily completed. Transco agrees to

furnish Texaco with copies of approval from the proper governmental agency or agencies that the platform has been satisfactorily abandoned, cleared and removed.

IN WITNESS WHEREOF, this instrument is executed on this the 12<sup>th</sup> day of October, 1978, but effective as hereinabove provided.

TEXACO INC.

By

[Signature]  
Attorney-in-Fact

ATTEST:

TRANSCONTINENTAL GAS PIPE  
LINE CORPORATION

W. A. Holcomb  
Secretary

By

James E. Covert  
Vice President

[Signature]

EXHIBIT "A"

Attached to and made a part of that certain  
 "Bill of Sale dated 7/12, 1978,  
 by and between Texaco Inc. (Texaco) and  
Transcontinental Gas Pipe Line Corporation (Transco).

RELATED PLATFORM EQUIPMENT

Description

Crew Quarters (20' x 20' Six-man quarters building with 24'  
 x 24' heliport)

Fresh water tank (7' x 14' 1" portable skid tank)

Lantern, Auto Power FA (2)

Sewage Disposal (Automatic Bio-Pure 600 gal/day treatment  
 plant)

Fog Signal Auto Power 2-Mile SA-3C Stacked Array

Generators (Two 100 KW engine/generator sets with Waukesha  
 Model F1197 GU engines with motor control and distribution  
 center)

Lantern Auto Power FA-250

Crane (Lima Model 700 pedestal mount crane with 90' of boom  
 and engine with steel base)

Personnel Transfer Net

Fire pumps (Two 2' fire pumps)

Miscellaneous Piping

Life rafts (Two life rafts)



DEPARTMENT OF THE ARMY  
GALVESTON DISTRICT CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON, TEXAS 77553

REPLY TO  
ATTENTION OF.

SWGCO-RP, PERMIT -13347

30 MAR 1979

Mr. Paul E. Newton  
Senior Permit Engineer  
Transcontinental Gas Pipe  
Line Corporation  
P. O. Box 1396  
Houston, Texas 77001

Dear Mr. Newton:

The permit numbered above has been approved and a signed copy is inclosed for your retention.

Also inclosed is a copy of "Notice to Permittees" which provides important information for permit administration. Construction or work under the permit should be coordinated with the Area Engineer indicated below.

Sincerely yours,

MARCOS DE LA ROSA  
Chief, Permit Branch

3 Incl

1. Copy of Permit
2. Notice to Permittees
3. ENG Form 4336

Copies furnished:

Commander, Eighth Coast Guard District (oan), Room 1330, Hale Boggs Federal Building, 500 Camp Street, New Orleans, Louisiana 70130 w/incl 1

Director, Atlantic Marine Center, National Ocean Survey, Attn: CAM04, 439 West York Street, Norfolk, Virginia 23510

Area Oil and Gas Supervisor for Field Operations, Gulf of Mexico Area, U.S. Geological Survey, P. O. Box 7944, Metairie, Louisiana 70011 w/incl 1

Area Engineer, Fort Point Area Office, P. O. Box 1229, Galveston, Texas 77553 w/incl 1

SWG FL 278  
13 Aug 73

RECEIVED

APR 2 1979

P. E. NEWTON

Name of Applicant Transcontinental Gas Pipe Line Corporation

Effective Date 30 MAR 1979

Expiration Date (if applicable) \_\_\_\_\_

DEPARTMENT OF THE ARMY  
PERMIT

Referring to written request dated 2 January 1979 for a permit to

1. Perform work in or affecting navigable waters of the United States upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403).

1. Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500);

1. Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052, P.L. 92-532).

Transcontinental Gas Pipe Line Corporation  
P. O. Box 1396  
Houston, Texas 77001

is hereby authorized by the Secretary of the Army

~~(1) maintain an existing platform to use as a pipeline junction platform~~

~~in the Gulf of Mexico, Federal Block 533-L~~

~~in Brazos Area, central to a point 48 miles southwest from Freeport, Texas,~~

~~in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings give file number or other definite identification marks.)~~

~~in 3 sheets entitled "3 PILE PIPELINE  
JUNCTION PLATFORM BLOCK 538 BRAZOS AREA GULF OF MEXICO,"~~

Subject to the following conditions

I. General Conditions.

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

That the activity authorized herein shall be conducted in accordance with the provisions of the Federal Water Pollution Control Act of 1972 (P.L. 92-50) 26 Stat. 869; the Marine Protection, Research and Conservation Act of 1972 (P.L. 92-52) 26 Stat. 1073; or pursuant to applicable State and local laws.

That when the activity authorized herein involves a discharge during its construction or operation of any pollutant (including dredged or fill material) into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 60 days of the effective date of any revision or modification of water quality standards, or as directed by an implemental plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges, and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30 day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit, or (2) within the aforesaid 30 day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

That any modification, suspension or revocation of this permit shall not be the basis for any claim for damages against the United States.

That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

It is hereby stated that the permittee shall be held responsible for the safety of the work authorized herein and shall be liable for any damage to property or injury to persons which may result from the date of issuance of this permit until such time as the work is completed or specifically authorized by the permittee to be discontinued or specifically authorized by the permittee to be discontinued.

6. That this permit does not authorize or approve the construction of particular structures, the authorization or approval of which may require authorization by the Congress or other agencies of the Federal Government.

7. That if and when the permittee desires to abandon the activity authorized herein, unless such an abandonment is accomplished in the procedure by which the permittee is transferred his interests herein to a third party pursuant to Federal Condition precedent, he may restrict the area to a condition satisfactory to the District Engineer.

8. That if the recording of this permit is possible under applicable State or local law, the permittee shall take such action as may be necessary to record this permit with the Register of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

9. That there shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.

10. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit in the space provided below and thereby agreeing to comply with all terms and conditions of this permit. In addition, if the permittee transfers the interests authorized herein by conveyance of realty, the deed shall reference this permit and the terms and conditions specified herein and this permit shall be recorded along with and filed with the Register of Deeds or other appropriate official.

11. Special Conditions Herein set conditions relating specifically to the proposed structure or work authorized. (11)

a. That the removal of any and all structures and other work which may be erected or otherwise installed in the waterway, or any part or parts thereof, at any time that they may become obstructive to navigation or after they have ceased to be used for the purpose for which they were constructed, or upon revocation of this permit, is insured by the blanket permit bond dated 26 January 1979 in the penal sum of one hundred thousand dollars (\$100,000.00), heretofore furnished by the permittee.

b. That when, in the opinion of the Chief of Engineers, the bond required by condition a. shall be insufficient for the purpose set forth therein, the permittee shall, on demand, furnish such additional bond satisfactory to the said Chief of Engineers as he may require.

c. That the permittee shall promptly comply with any future regulations or instructions affecting the work hereby authorized if and when issued in accordance with law by any department of the Federal Government for the aid or protection of aerial navigation.

DEPARTMENT OF THE ARMY  
STATE (LINE) OF COAST WATERS OF THE UNITED STATES

That this permit is issued in accordance with any existing or proposed Federal project and that the permittee shall be held responsible for damage or injury to the structure or work authorized herein which may be caused by or result from maintenance or operation and authorized by the United States in the public interest.

That the permittee shall be held responsible to prevent the fall and break up by the public of all navigable waters at or adjacent to the structure authorized by this permit.

That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.

That the permittee shall, in case of revocation of this permit or upon its expiration, before completion of the structure or structure or work shall, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the waterway to its former condition. If the permittee fails to comply with the direction of the Secretary of the Army or his authorized representative, the Secretary or his designee may restore the waterway to its former condition, by contract or otherwise, and recover the cost thereof from the permittee.

Structure for Small Boats. This permittee hereby recognizes the possibility that the structure authorized herein may be subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the permittee from taking all proper steps to make the structure of the structure permitted herein and the safety of lives and property of the United States liable for any such damage.

**MAINTENANCE OBLIGATIONS**

That when the work authorized herein includes periodic maintenance dredging, it may be performed under this permit for a period of            years from the date of issuance of this permit, unless otherwise indicated.

That the permittee will advise the District Engineer in writing at least two weeks before by written to undertake any maintenance dredging.

**DISCHARGE OF DEBRIS OR FILL MATERIAL INTO WATERS OF THE UNITED STATES**

That the discharge will be carried out in conformity with the goals and objectives of the EPA Guidelines established pursuant to Section 303(d) of the FWPCA and published in 40 CFR 220.

That the discharge will consist of suitable material free from toxic pollutants, in other than trace quantities.

That the fill created by the discharge will be properly maintained to prevent erosion and other non-point sources of pollution, and

That the discharge will not occur in a component of the National Wild and Scenic River System or in a component of a State wild and scenic river system.

**DUMPING OF DEBRIS MATERIAL INTO OCEAN WATERS**

That the dumping will be carried out in conformity with the goals, objectives, and requirements of the EPA criteria established pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, published in 40 CFR 220-229.

That the permittee shall place a copy of this permit in a conspicuous place in the vessel to be used for the transportation and/or discharge of the dredged material as authorized herein.

This permit shall become effective on the date of the District Engineer's signature.

Permittee hereby agrees and agrees to comply with the terms and conditions of this permit.

*R. J. Grubbs*  
PERMITTEE

January 26, 1979

DATE

TRINATIONAL GAS PIPE LINE CORPORATION

BY AUTHORITY OF THE SECRETARY OF THE ARMY

*Mano De La Rosa*

30 MAR 1979

MANO DE LA ROSA, Chief, Permit Branch  
FOR COLONEL JON C. VANDER BOSCH

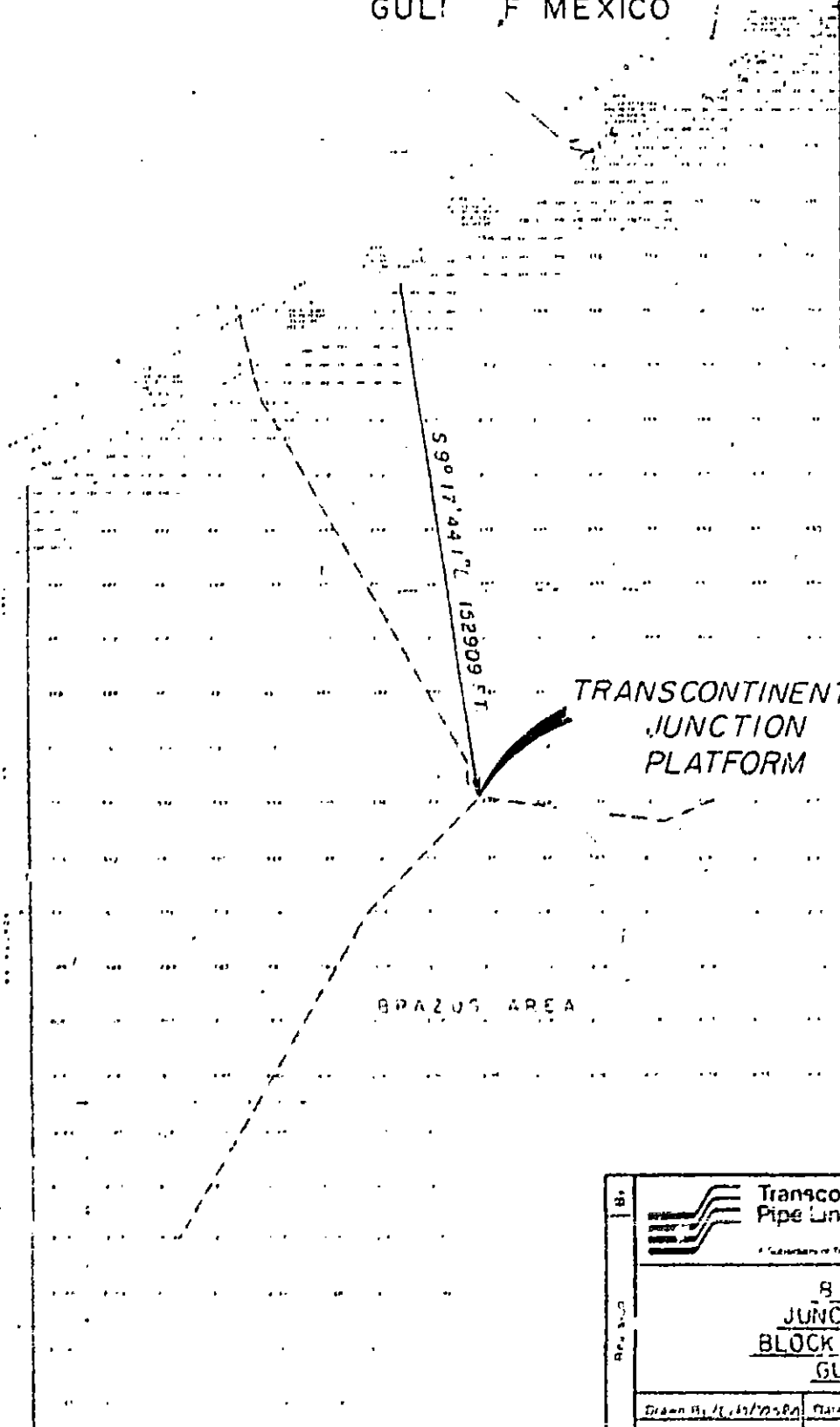
DATE

FOR THE ENGINEERS  
U.S. ARMY CORPS OF ENGINEERS

Permittee hereby agrees to comply with the terms and conditions of this permit.

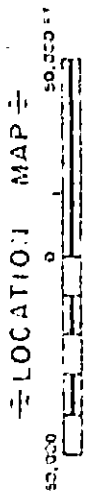


OFFSHORE TEXAS  
GULF OF MEXICO



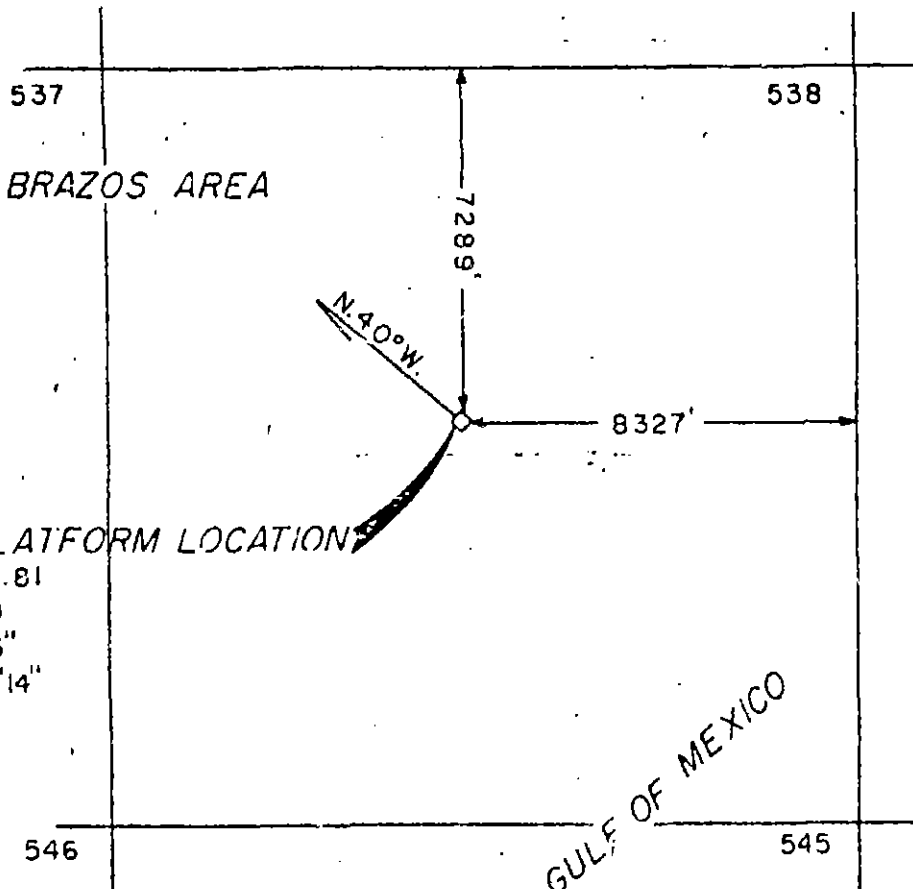
TRANSCONTINENTAL  
JUNCTION  
PLATFORM

BRAZOS AREA



No. Date Rev. 3-1-75	Transcontinental Gas Pipe Line Corporation <small>A Subsidiary of Transco Companies, Inc.</small>		Engineering Department Houston, Texas	
	8 PILE PIPELINE JUNCTION PLATFORM BLOCK 538 BRAZOS AREA GULF OF MEXICO			
Drawn By: J. H. [unclear]	Date: 12-22-74	Approved By: [unclear]	Date: 12-22-74	
Checked By: [unclear]	Date: 12-22-74	Approved By: [unclear]	Date: 12-22-74	
Project No. 5050-43	Scale: 1/4" = 100'	Sheet No. 2-0300	Block: B-A-538-1	

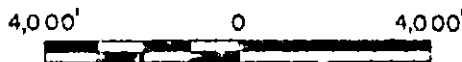
--- EXISTING TRANSCO FACILITIES



**JUNCTION PLATFORM LOCATION**

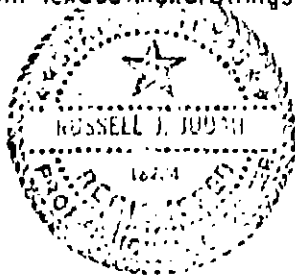
X = 3,087,308.81  
 Y = 190,711.00  
 LAT. 28°18'53"  
 LONG. 95°37'14"

GULF OF MEXICO



**NOTES**


- 1. Location coordinates based on Texas (Lambert) Plane Coordinate System, South Central Zone taken from Texaco Inc. drawings.

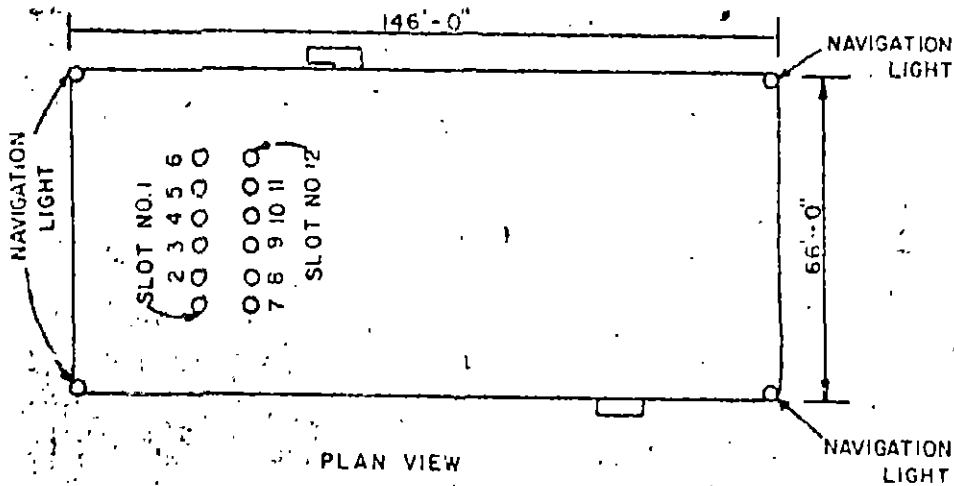


*R. J. Jordan*

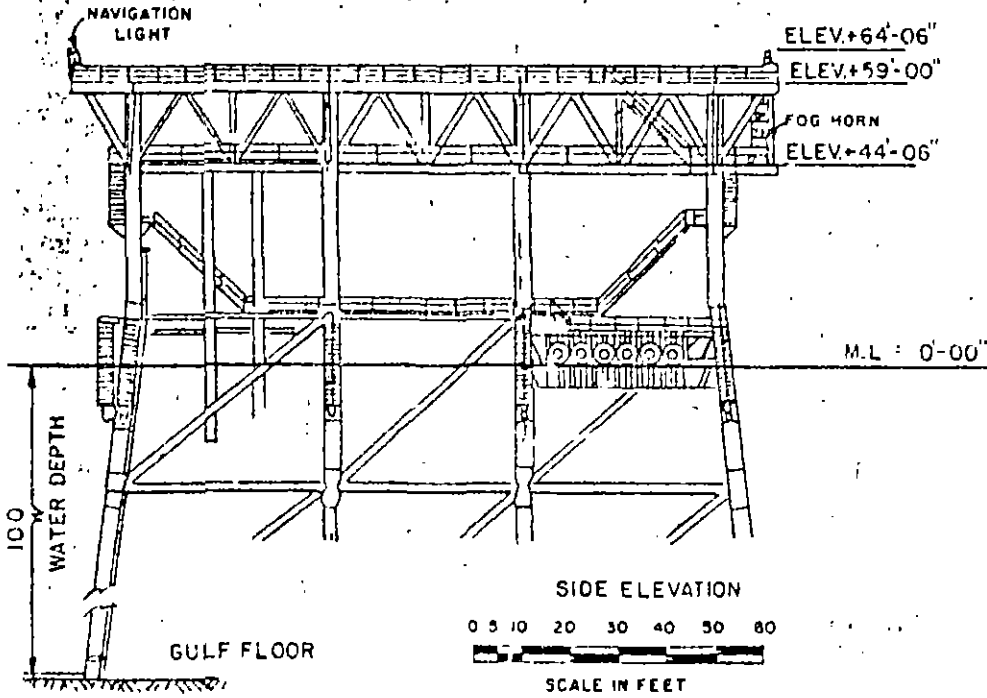
19284

12-22-78

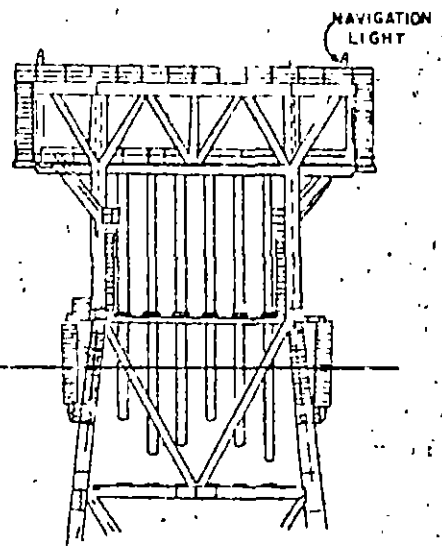
By	 <b>Transcontinental Gas Pipe Line Corporation</b> Engineering Department Houston, Texas <small>A Subsidiary of Texaco Companies Inc.</small>		
	<b>8" PIPE PIPELINE</b> <b>JUNCTION PLATFORM</b> <b>FEDERAL BLOCK 538 BRAZOS AREA OFFSHORE</b> <b>GULF OF MEXICO</b>		
Revision	Drawn By: <i>N. Johnston</i>	Date: 12-22-78	Appr.-ed By: <i>RCM</i> Date: 12-31-78
	Checked By: <i>RSK</i>	Date: 12-22-78	Approved By: <i>[Signature]</i>
By	Approved By: <i>JS</i>	Date: 12-22-78	Approved By: <i>[Signature]</i>
	W. O. No. 5030.43	Scale: <i>Shown</i>	PROJECT NO. <b>2c-0300</b>



PLAN VIEW  
 0 5 10 20 30 40 50 60  
 SCALE IN FEET




SIDE ELEVATION  
 0 5 10 20 30 40 50 80  
 SCALE IN FEET



END VIEW

NOTES:  
 Dimensions taken from Texaco, Inc. previous permit drawings  
 Lights and Fog Signals Comply with Coast Guard Regulations (Title 33 CFR Parts 140 to 147; Subpart 67.05-1 and 67.10-1).

By	 <b>Transcontinental Gas Pipe Line Corporation</b>		Engineering Department Houston, Texas	
	A Subsidiary of Panaco Companies Inc.			
Revision	<b>8 PILE PIPELINE JUNCTION PLATFORM</b> <b>BLCC 538 BRAZOS AREA</b> <b>GULF OF MEXICO</b>			
	Drawn By <i>R. Johnston</i> Checked By <i>SPW</i> Approved By <i>J.S.</i> Date 12-22-78	Date 12-22-78	Approved By <i>[Signature]</i> Date 12-22-79	Date 12-22-79
Date	W. O. No. 5022.43		Kips Shown	22-0300

NOTICE TO PERMITTEES

Department of the Army Permits for Work in Navigable Waters require attention to administration and policies which are often misunderstood or disregarded. To avoid possible misinterpretations and to expedite procedures, permit post-authorization requirements and pertinent information are outlined as follows:

1. Permits remain in effect until revoked, relinquished, or the structures are removed. An extension of time for completion of structures or work may be granted provided that a public notice is issued and that evidence is furnished of the bona fide intention of the permittee to complete the work within a reasonable time. If work or structures are not completed within the time provided in the permit, it is the permittee's responsibility to request an extension of time at least four months before the expiration date.

2. Maintenance of authorized completed structures may be done at any time without extending the completion period. It is, however, required that the District Engineer be notified prior to commencement of maintenance.

3. SPECIAL REGULATIONS GOVERN MAINTENANCE WORK INVOLVING DREDGING OR FILL. This maintenance is not authorized by the original permit and specific prior approval is required before such work is commenced in navigable waters. Your request for authorization should be submitted in time for public notice requirements and coordination with other agencies. ....

4. If ownership of structures or work covered by a permit is transferred, the District Engineer must be notified immediately. The notification will provide information so that permit responsibilities can be changed to the new owner or assignee.

5. Permittees are reminded that the Area Engineer must be notified as soon as possible of the time for commencement of construction or work, and immediately upon completion. If pipelines across Federal project channels are covered by the permit, the Area Engineer should be informed of the date the pipeline is to be placed in time for him to arrange for an inspector to be present.

6. All material changes in location or plans must be submitted promptly to the District Engineer for approval before construction is begun.

7. Permits should not be considered as an approval of design features of any structure authorized or an implication that such structure is adequate for the purpose intended.

DISTRICT ENGINEER  
GALVESTON DISTRICT  
CORPS OF ENGINEERS



**DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS**

**NOTICE OF AUTHORIZATION**

30 MAR 1979 19

A PERMIT TO maintain an existing platform to use as a pipeline junction platform in the Gulf of Mexico, Federal Block 533-L

AT Brazos Area, central to a point 48 miles southwest from Freeport, Texas.

HAS BEEN ISSUED TO Transcontinental Gas Pipe Line Company

ADDRESS OF PERMITTEE P. O. Box 1396  
Houston, Texas 77001

PERMIT NUMBER 13347

ON 30 MAR 1979 19  
*Marcos De La Rosa*  
MARCOS DE LA ROSA  
Chief, Permit Branch  
FOR COLONEL JON C. WARDEN FOSCH  
District Engineer

ENG Form 4336  
Jul 70

**THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF WORK.**

GPO: 1976 204-377

(Please read instructions on reverse)

1. NAME AND ADDRESS (including zip code) OF CORPORATION OR PERSON MAKING APPLICATION <b>Transcontinental Gas Pipe Line Corporation P. O. Box 1396 Houston, Texas 77001</b>		2. ACTION REQUESTED FOR PRIVATE AIDS TO NAVIGATION A. <input checked="" type="checkbox"/> ESTABLISH AND MAINTAIN B. <input checked="" type="checkbox"/> CHANGE OWNERSHIP C. <input type="checkbox"/> CHANGE EQUIPMENT D. <input type="checkbox"/> MOVE E. <input type="checkbox"/> DISCONTINUE F. DATE OF ACTION <b>15 Nov. 1978</b>	
---	--	---	--

3 POSITION			
A. GENERAL LOCALITY AND GRID AREA <b>Brazos Area, Gulf of Mexico</b>		B. LATITUDE <b>28°18' 53"</b>	C. LONGITUDE <b>95°37' 14"</b>
D. BLOCK NUMBER <b>538</b>	E. SIGN <b>Transco Brazos 538</b>	F. LEASE NUMBER <b>---</b>	G. WELL NUMBER <b>---</b>

4 LIGHT					
A. CHARACTERISTICS <b>FLASH 3 SECONDS</b>		COLOR <b>WHITE</b> <input checked="" type="checkbox"/> <b>RED</b> <input type="checkbox"/>	B. NUMBER INSTALLED <b>4</b>	C. ILLUMINANT (Check) <input checked="" type="checkbox"/> ELECTRICITY <input type="checkbox"/> GAS <input type="checkbox"/> OIL <input type="checkbox"/> OTHER (Specify)	
D. HEIGHT ABOVE MEAN HIGH WATER <b>64'6"</b>	E. VOLTS <b>12</b>	F. AMPERES <b>.77</b>	G. INSIDE DIAMETER LENS <b>250mm</b> GLOBE		H. CANOPOWER (If known) <b>270</b>

5. FOG SIGNAL (Characteristic will be one two-second blast every twenty seconds)		
A. CLASS <input checked="" type="checkbox"/> A (2-Mile) <input type="checkbox"/> B (1/2-Mile)	B. MANUFACTURED BY <b>Automatic Power Inc. 213 Hutcheson St., Houston, TX</b>	C. MODEL NUMBER <b>SA-3</b>

6. STRUCTURE		
A. COLOR <b>Gray</b>	B. HEIGHT ABOVE MEAN HIGH WATER <b>59'0"</b>	C. DEPTH OF WATER BELOW MEAN LOW WATER <b>100'</b>

7. AUTHORIZED BY CORPS OF ENGINEERS, U. S. ARMY, PERMIT NO. **SWCC AP-13347**

8. PERSON IN DIRECT CHARGE OF AID	
A. NAME <b>R. G. Coker, Superintendent</b>	C. ADDRESS <b>Transcontinental Gas Pipe Line Corp. 12501 Stuebner Airline Road Houston, Texas 77014</b>
B. TELEPHONE NUMBER <b>(713)444-6441</b>	

9. The applicant agrees to save the Coast Guard harmless with respect to any claim or claims that may result arising from the alleged negligence of the operation of the approved aids.

Attached to this application are:

A.  LOCATION PLAT      B.  PRINT OF STRUCTURE      C.  AIDS TO NAVIGATION EQUIPMENT LIST  
D.  CERTIFICATE REQUIRED BY 33 CFR 87.10-114

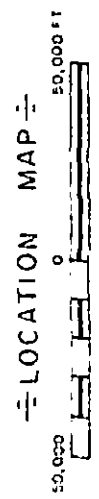
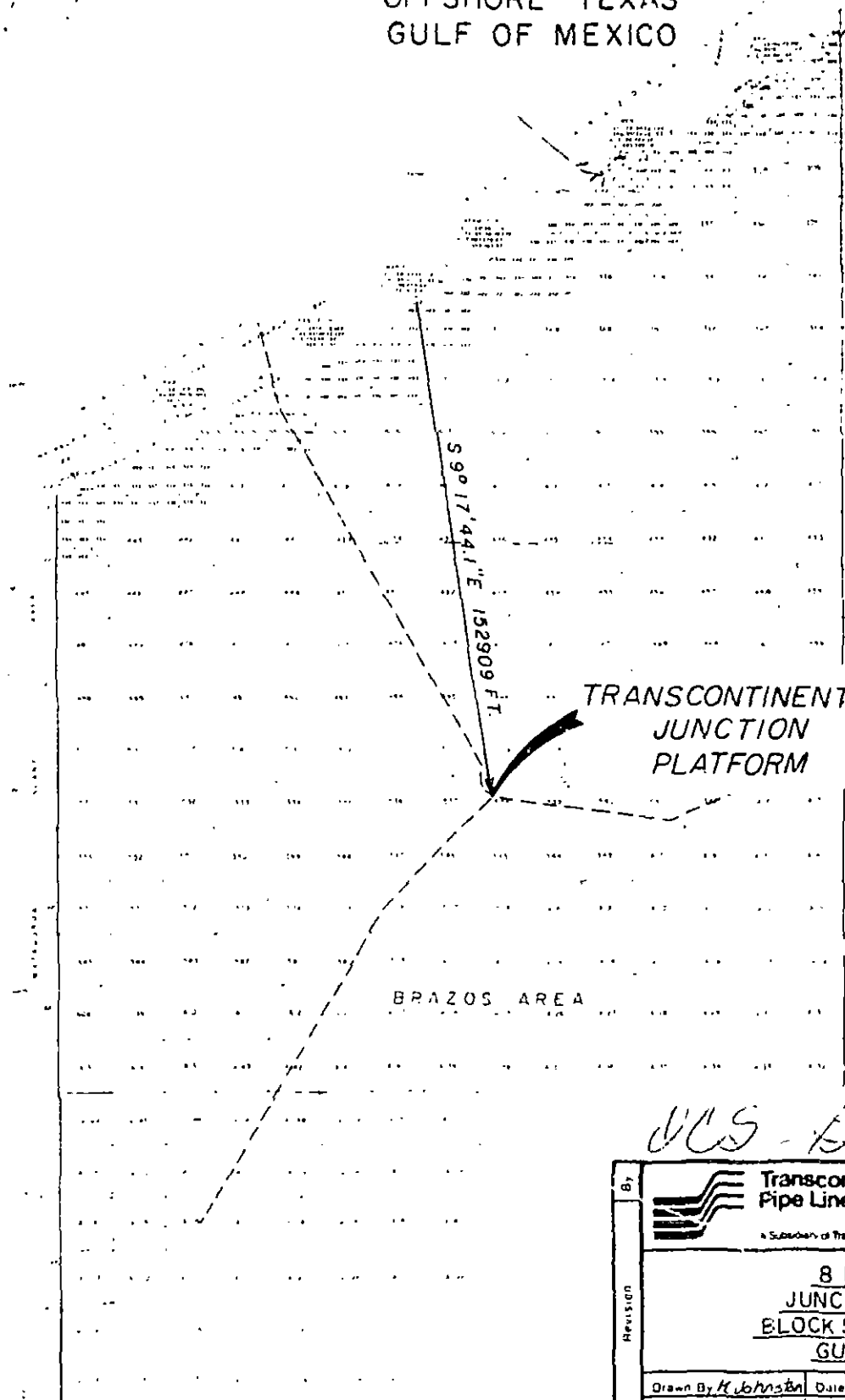
DATE <b>January 2, 1979</b>	SIGNATURE <i>R. J. Jordan</i>
	TITLE <b>R. J. Jordan Manager of Construction</b>

FOR COAST GUARD USE

10. FROM: <b>Commander Eighth Coast Guard District (oan)</b>	
A. THE ACTION DESCRIBED ABOVE IS <input type="checkbox"/> APPROVED <input checked="" type="checkbox"/> APPROVED SUBJECT TO THE COMMENTS IN BLOCK 11 ON REVERSE	B. NOTICE TO MARINERS <input checked="" type="checkbox"/> WILL BE ISSUED <input type="checkbox"/> WILL NOT BE ISSUED
C. CHARTS AFFECTED <b>11300</b>	D. NAME OF AID(S) <b>TRANSCONTINENTAL 116-1 LTS &amp; FS</b>
E. DATE <b>11 January 1979</b>	F. SIGNATURE (By direction in accordance with 33 CFR 87) <b>R. N. HARRISON, JR., CWO, USCG</b>


"Best Available Copy"

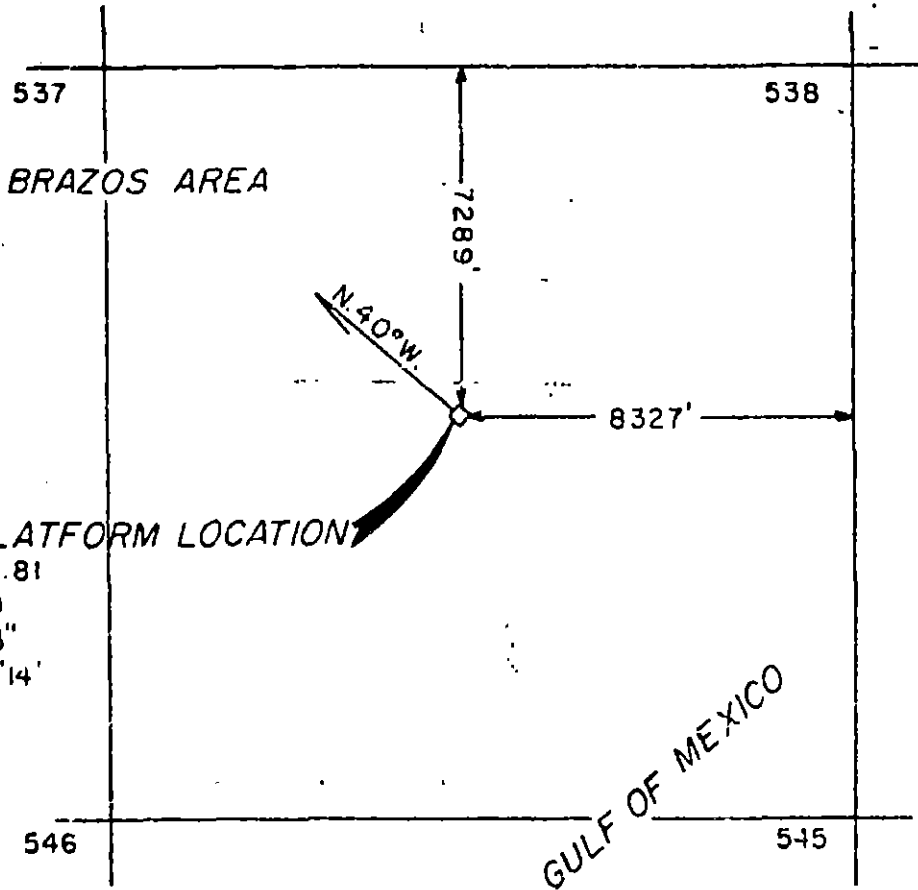
OFFSHORE TEXAS  
GULF OF MEXICO



*NCS - B 4976*

--- EXISTING TRANSCO FACILITIES

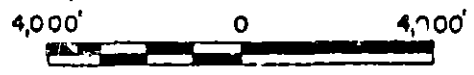
By	 <b>Transcontinental Gas Pipe Line Corporation</b>		Engineering Department Houston, Texas	
	a Subsidiary of Transco Company Inc.			
Revision	<b>8 PILE PIPELINE JUNCTION PLATFORM BLOCK 538 BRAZOS AREA GULF OF MEXICO</b>			
	Drawn By <i>H. Johnson</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Date <i>12-22-78</i>
Date	Checked By <i>[Signature]</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Engineer
	Drilling <i>-S</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Engineer
	No. <i>5030.43</i>	Scale <i>Shown</i>	Control Group & Control Number <i>22-0300</i>	Engineer
NO.	Sheet <i>1 of 3</i>	Proj. No. <i>B-A-538-1</i>		



**JUNCTION PLATFORM LOCATION**

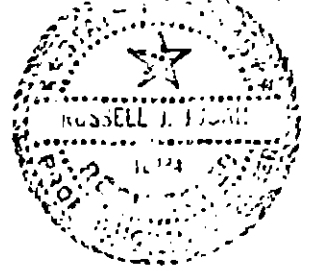
X = 3,087,308.81  
 Y = 190,711.00  
 LAT. 29° 18' 53"  
 LONG. 95° 37' 14"

GULF OF MEXICO



**NOTES**

1. Location coordinates based on Texas (Lambert) Plane Coordinate System, South Central Zone taken from Texaco Inc. drawings.



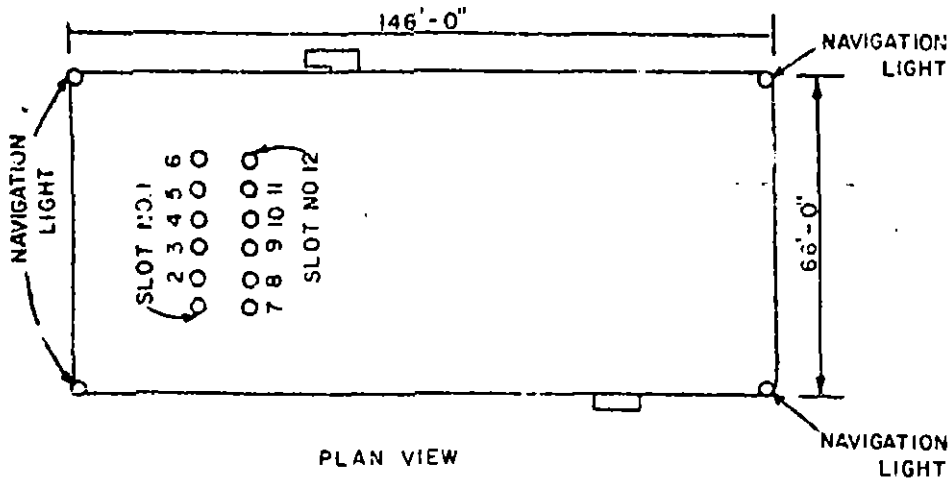
*R. J. Brown*

18284  
 NO.

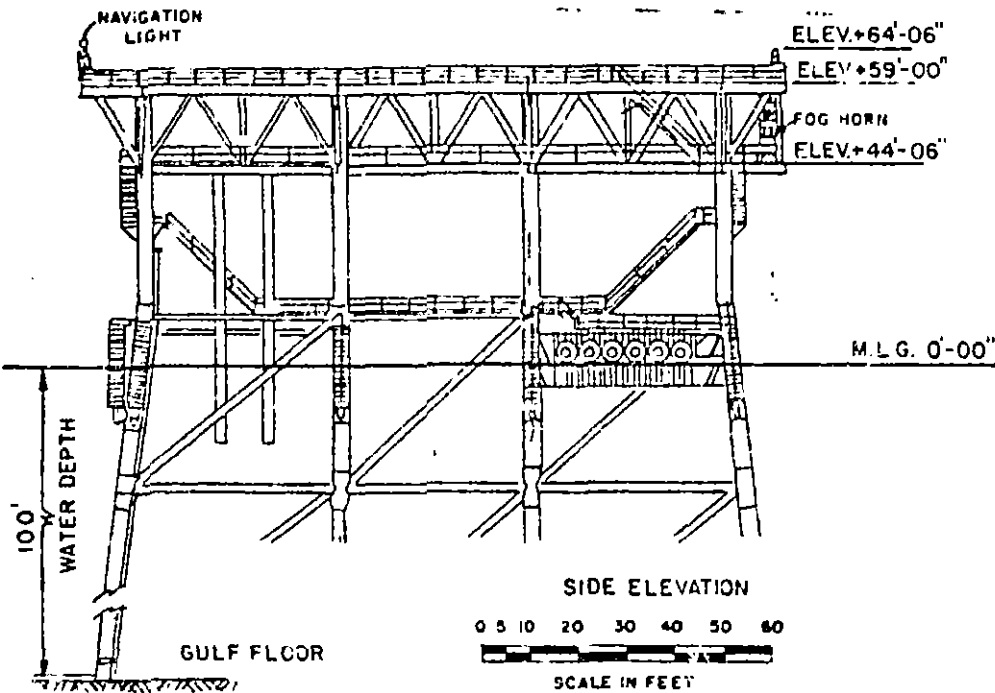
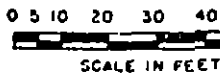
12-22-78  
 DATE

By	<b>Transcontinental Gas Pipe Line Corporation</b> Engineering Department Houston, Texas <small>A Subsidiary of Texaco Companies Inc.</small>		
	<b>8 PILE PIPELINE          JUNCTION PLATFORM          FEDERAL BLOCK 538 BRAZOS AREA OFFSHORE          GULF OF MEXICO</b>		
Checked By	Drawn By: <i>K. Johnson</i> Date: 12-22-78	Approved By: <i>PC</i> Date: 12-31-78	Date: 12-22-78 Approved By: <i>[Signature]</i> Date: 12-22-78
	Checked By: <i>JS</i> Date: 12-22-78	Date: 12-22-78	
W. P. No. 5030.43 Sheet 2 of 3	Scale: <i>Shown</i>	Project No. 22-0300	Draw. No. B-A-538-1

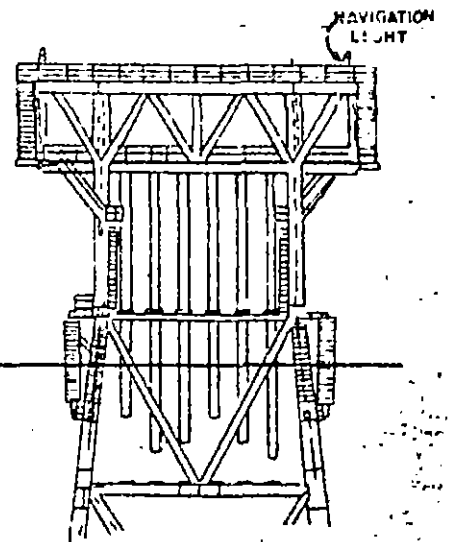




PLAN VIEW



SIDE ELEVATION



END VIEW

**NOTES:**

1. Dimensions taken from Texaco, Inc. previous permit drawings.
2. Lights and Fog Signals Comply with Coast Guard Regulations (Title 33 CFR Parts 140 to 147; Subpart 67.05-1 and 67.10-1).

By	<b>Transcontinental Gas Pipe Line Corporation</b>		Engineering Department Houston, Texas
	A Subsidiary of Transco Companies Inc.		
Revision	<b>8 PILE PIPELINE JUNCTION PLATFORM</b> <b>BLCK 538 BRAZOS AREA</b> <b>GULF OF MEXICO</b>		
	Drawn By: <i>K. Johnson</i> Date: 12-22-78	Approved By: <i>PCU</i> Date: 12-22-78	Date: 12-22-78
Checked By: <i>PCU</i> Date: 12-22-78	Approved By: <i>J.S.</i> Date: 12-22-78	<i>[Signature]</i> Date: 12-22-78	
No. 9.0 No. 5020.43	Scale: <i>Shown</i>	Drawing No. 22-0300	Sheet 5 of 5
		Dog. No. B-A-538-1	

THE STATE OF TEXAS  
COUNTY OF MATAGORDA

003 18755

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, TEXACO INC. (Texaco) owns an interest in an eight-pile platform designated as Texaco Brazos A-538 "A" Platform and located on OCS lease No. 1730, Block 538, Brazos Area, Offshore Matagorda County, State of Texas, at Latitude 28° 18' 52.801" and Longitude 95° 37' 13.891", along with certain related equipment as more fully described on Exhibit "A" which is attached hereto and incorporated herein for all purposes, and Texaco desires to sell and convey its interest in the platform and the related equipment shown on said Exhibit "A" to Transcontinental Gas Pipe Line Corporation (Transco).

NOW, THEREFORE, for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged and subject to the following terms and conditions, Texaco does hereby sell, transfer, assign and convey all of its right, title and interest in and to the platform, and the related equipment, unto Transcontinental Gas Pipe Line Corporation (Transco) here present and accepting the same and acknowledge delivery and possession thereof.

RECEIVED  
FEB 2 2 37 PM '63  
COMMERCIAL  
RECORDS  
SECTION

This sale and conveyance is made without warranty of title, either express or implied other than that there are no liens or encumbrances on said platform or the equipment, and conveys same only as is and where is and no warranty is made herein as to the fitness of said property for any particular purpose. Texaco will remove its equipment which is not listed on Exhibit "A" and not herein expressly conveyed to Transco.

As of the effective date hereinafter provided, Transco does hereby expressly assume all liability and responsibility for the above-described platform and related equipment incident to the ownership thereof, including, without limitation, the costs of abandonment, clearing and removal of said structure and equipment, and said party does hereby further bind and obligate itself to fully defend, protect, indemnify and hold harmless Texaco, its employees and agents from and against each and every claim, demand or cause of action and any liability, cost, expense (including but not limited to reasonable attorneys' fees and expenses incurred in defense of Texaco), damage or loss in connection therewith which may be made or asserted by Transco, Transco's employees or agents, subcontractors, or any third parties on account of personal injury or death or property damage caused by, arising out of, or in any way incidental to or in connection with this bill of sale, or any use, operation or incident in connection with said platform and equipment, or the

abandonment, clearing and removal thereof. Transco further agrees to obtain any necessary easements or permits required by the United States Department of the Interior, Geological Survey, or any other governmental agency having jurisdiction thereof, for the continued use, operation and maintenance of said platform and equipment thereon by Transco, and Transco agrees to indemnify and hold harmless Texaco from all claims, expenses, fines, penalties and liabilities, if any, arising, directly or indirectly, in connection therewith. Without limiting the foregoing in any respect, Texaco, to the extent and only to the extent which it is authorized to do so under applicable laws and regulations and subject to approval, if necessary, of any governmental authority having jurisdiction in the premises, which approval Transco hereby assumes the responsibility of obtaining, does hereby assign to Transco, the following: (1) Permit-8842 dated February 9, 1972, as authorized by the Secretary of the Army and issued by the U.S. Corps of Engineers, Galveston District, as amended by letter dated November 15, 1977, authorized and issued in the same manner as stated above; (2) U.S. Coast Guard Approval of Texaco's Application for Class 1 Private Aids to Navigation on Artificial Islands and Fixed Structures, such Approval dated November 10, 1979. Transco agrees to assume and comply with all of the

terms, conditions and obligations stated in the above-described permit dated February 9, 1972, as amended, as binding upon Permittee therein and with all of the terms, conditions and obligations stated in the above-described Coast Guard Approval dated November 10, 1970, as binding upon applicant therein, and Transco further agrees to indemnify and hold harmless Texaco from all claims, expenses, fines, penalties, and liabilities, if any, arising, directly or indirectly, from the aforesaid assignment of and/or use by Transco of said permit and approval and/or operations conducted by Transco pursuant thereto.

It is understood that Texaco agrees to plug (to the satisfaction of the appropriate regulatory authorities) all wells located on said platform and to remove all production equipment therefrom, except that equipment listed on Exhibit "A", and that on the date Texaco has completed such abandonment and removal including the necessary equipment to complete the work (which date shall be established in writing by Texaco and Transco), this Agreement shall become effective and thereafter Transco shall be fully responsible for said platform. Texaco agrees to furnish Transco a minimum of two copies of the approval from the proper government agency that the well plugging has been satisfactorily completed. Transco agrees to

furnish Texaco with copies of approval from the proper governmental agency or agencies that the platform has been satisfactorily abandoned, cleared and removed.

IN WITNESS WHEREOF, this instrument is executed on this the 12<sup>th</sup> day of October, 1978, but effective as hereinabove provided.

TEXACO INC.

By [Signature]  
Attorney-in-Fact

ATTEST:

TRANSCONTINENTAL GAS PIPE  
LINE CORPORATION

[Signature]  
Secretary

By [Signature]  
Vice President

*[Handwritten initials]*

"Best Available Copy"

003 18755

EXHIBIT "A"

Attached to and made a part of that certain  
"Bill of Sale dated 7/12, 1978,  
by and between Texaco Inc. (Texaco) and  
Transcontinental Gas Pipe Line Corporation (Transco).

RELATED PLATFORM EQUIPMENT

Description

Crew Quarters (20' x 20' Six-man quarters building with 24'  
x 24' heliport)

Fresh water tank (7' x 14' 1" portable skid tank)

Lantern, Auto Power FA (2)

Sewage Disposal (Automatic Bio-Pure 600 gal/day treatment  
plant)

Fog Signal Auto Power 2-Mile SA-3C Stacked Array

Generators (Two 100 KW engine/generator sets with Waukesha  
Model F1197 GU engines with motor control and distribution  
center)

Lantern Auto Power FA-250

Crane (Lima Model 700 pedestal mount crane with 90' of boom  
and engine with steel base)

Personnel Transfer Net

Fire pumps (Two 2' fire pumps)

Miscellaneous Piping

Life rafts (Two life rafts)

RECEIVED  
FEB 11 1978  
OFFICE OF THE  
ATTORNEY GENERAL  
STATE OF TEXAS



DEPARTMENT OF THE ARMY  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON, TEXAS 77553

REPLY TO  
ATTENTION OF,

SWGCO-RP, PERMIT -13347

30 MAR 1979

Mr. Paul E. Newton  
Senior Permit Engineer  
Transcontinental Gas Pipe  
Line Corporation  
P. O. Box 1396  
Houston, Texas 77001

Dear Mr. Newton:

The permit numbered above has been approved and a signed copy is inclosed for your retention.

Also inclosed is a copy of "Notice to Permittees" which provides important information for permit administration. Construction or work under the permit should be coordinated with the Area Engineer indicated below.

Sincerely yours,

MARCOS DE LA ROSA  
Chief, Permit Branch

- 3 Incl  
1. Copy of Permit  
2. Notice to Permittees  
3. ENG Form 4336

Copies furnished:

Commander, Eighth Coast Guard District (oan), Room 1330, Hale Boggs Federal Building, 500 Camp Street, New Orleans, Louisiana 70130 w/incl 1

Director, Atlantic Marine Center, National Ocean Survey, Attn: CAM04, 430 West York Street, Norfolk, Virginia 23510

Area Oil and Gas Supervisor for Field Operations, Gulf of Mexico Area, U.S. Geological Survey, P. O. Box 7944, Metairie, Louisiana 70011 w/incl 1

Area Engineer, Fort Point Area Office, P. O. Box 1229, Galveston, Texas 77553 w/incl 1

SWG FL 278  
13 Aug 73

RECEIVED

APR 2 1979

P. E. NEWTON



Application No. \_\_\_\_\_

Name of Applicant Transcontinental Gas Pipe Line Corporation

Effective Date 30 MAR 1979

Expiration Date (If applicable) \_\_\_\_\_

DEPARTMENT OF THE ARMY  
PERMIT

Referring to written request dated 2 January 1979 for a permit to:

Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403).

Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 402 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500).

Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052, P.L. 92-532).

Transcontinental Gas Pipe Line Corporation  
P. O. Box 1396  
Houston, Texas 77001

is hereby authorized by the Secretary of the Army:

to ~~maintain an existing platform to use as a pipeline junction platform~~

~~in the Gulf of Mexico, Federal Block 538-L~~

~~in Brazos Area, central to a point 48 miles southwest from Freeport, Texas,~~

~~in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (see drawings give file number or other definite identification marks.)~~

~~in 3 sheets entitled "3 FILE PIPELINE  
JUNCTION PLATFORM BLOCK 538 BRAZOS AREA GULF OF MEXICO,"~~

Subject to the following conditions:

1. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions 1 or 4 hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibition of discharge standards and management practices established pursuant to the Federal Water Pollution Control Act of 1972 (P.L. 92-500, 86 Stat. 816), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532, 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation of any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementation plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges, and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit, or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period or more than one week, resumption of work and its completion.

Three years from the date of issuance of this permit (unless otherwise specified) and is not completed or otherwise terminated on or before \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_ three years from the date of issuance of this permit (unless otherwise specified) this permit, if not previously revoked or specifically extended, shall automatically expire.

p. That this permit does not authorize or approve the construction of particular structures, the authorization or approval of which may require authorization by the Congress or other agencies of the Federal Government.

q. That if and when the permittee desires to abandon the activity authorized herein, unless such abandonment is part of a transfer procedure by which the permittee is transferring his interests herein to a third party pursuant to General Condition 1 hereof, he must restore the area to a condition satisfactory to the District Engineer.

r. That if the recording of this permit is possible under applicable State or local law, the permittee shall take such action as may be necessary to record this permit with the Register of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

s. That there shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.

t. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit in the space provided below and thereby agreeing to comply with all terms and conditions of this permit. In addition, if the permittee transfers the interests authorized herein by conveyance of realty, the deed shall reference this permit and the terms and conditions specified herein and this permit shall be recorded along with the deed with the Register of Deeds or other appropriate official.

II. Special Conditions: (Here list conditions relating specifically to the proposed structure or work authorized by this permit)

a. That the removal of any and all structures and other work which may be erected or otherwise installed in the waterway, or any part or parts thereof, at any time that they may become obstructive to navigation or after they have ceased to be used for the purpose for which they were constructed, or upon revocation of this permit, is insured by the blanket permit bond dated 26 January 1979 in the penal sum of one hundred thousand dollars (\$100,000.00), heretofore furnished by the permittee.

b. That when, in the opinion of the Chief of Engineers, the bond required by condition a. shall be insufficient for the purpose set forth therein, the permittee shall, on demand, furnish such additional bond satisfactory to the said Chief of Engineers as he may require.

c. That the permittee shall promptly comply with any future regulations or instructions affecting the work hereby authorized if and when issued in accordance with law by any department of the Federal Government for the aid or protection of aerial navigation.

The failure of special conditions will be applicable when appropriate.

**STRUCTURES IN OR AFFECTING NAVIGABLE WATERS OF THE UNITED STATES**

a. That this permit does not authorize the interference with any existing or proposed Federal project and that the permittee shall not be entitled to compensation or damage or injury to the structures or work authorized herein which may be caused by or result from existing or future operations undertaken by the United States in the public interest.

b. That no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized by this permit.

c. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.

d. That the permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the authorized structure or work, shall, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the waterway to its former conditions. If the permittee fails to comply with the direction of the Secretary of the Army or his authorized representative, the Secretary or his designer may restore the waterway to its former condition, by contract or otherwise, and recover the cost thereof from the permittee.

e. Structures for Small Boats. That permittee hereby recognizes the possibility that the structure permitted herein may be subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the permittee from taking all proper steps to insure the integrity of the structure permitted herein and the safety of boats moored thereto from damage by wave wash and the permittee shall not hold the United States liable for any such damage.

**MAINTENANCE DREDGING**

a. That when the work authorized herein includes periodic maintenance dredging, it may be performed under this permit                      years from the date of issuance of this permit (ten years unless otherwise indicated).

b. That the permittee will advise the District Engineer in writing at least two weeks before he intends to undertake any maintenance dredging.

**DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES**

a. That the discharge will be carried out in conformity with the goals and objectives of the EPA Guidelines established pursuant to Section 404(b) of the FWPCA and published in 40 CFR 230.

b. That the discharge will consist of suitable material free from toxic pollutants in other than trace quantities.

c. That the fill created by the discharge will be properly maintained to prevent erosion and other non point sources of pollution and

d. That the discharge will not occur in a component of the National Wild and Scenic River System or in a component of a State wild and scenic river system.

**DUMPING OF DREDGED MATERIAL INTO OCEAN WATERS**

a. That the dumping will be carried out in conformity with the goals, objectives, and requirements of the EPA criteria established pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, published in 40 CFR 220.228.

b. That the permittee shall place a copy of this permit in a conspicuous place in the vessel to be used for the transportation and/or dumping of the dredged material as authorized herein.

This permit shall become effective on the date of the District Engineer's signature.

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit.

*R. J. [Signature]*

PERMITTEE

TRANSCONTINENTAL GAS PIPE LINE CORPORATION

BY AUTHORITY OF THE SECRETARY OF THE ARMY

*Marcos De la Rosa*

MARCOS DE LA ROSA, Chief, Permit Branch  
FOR COLONEL JON C. VANDER BOSCH

DISTRICT ENGINEER,  
U.S. ARMY CORPS OF ENGINEERS

Transferee hereby agrees to comply with the terms and conditions of this permit.

January 26, 1979

DATE

30 MAR 1979

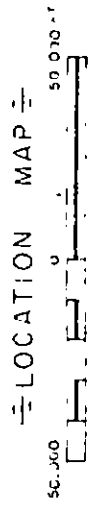
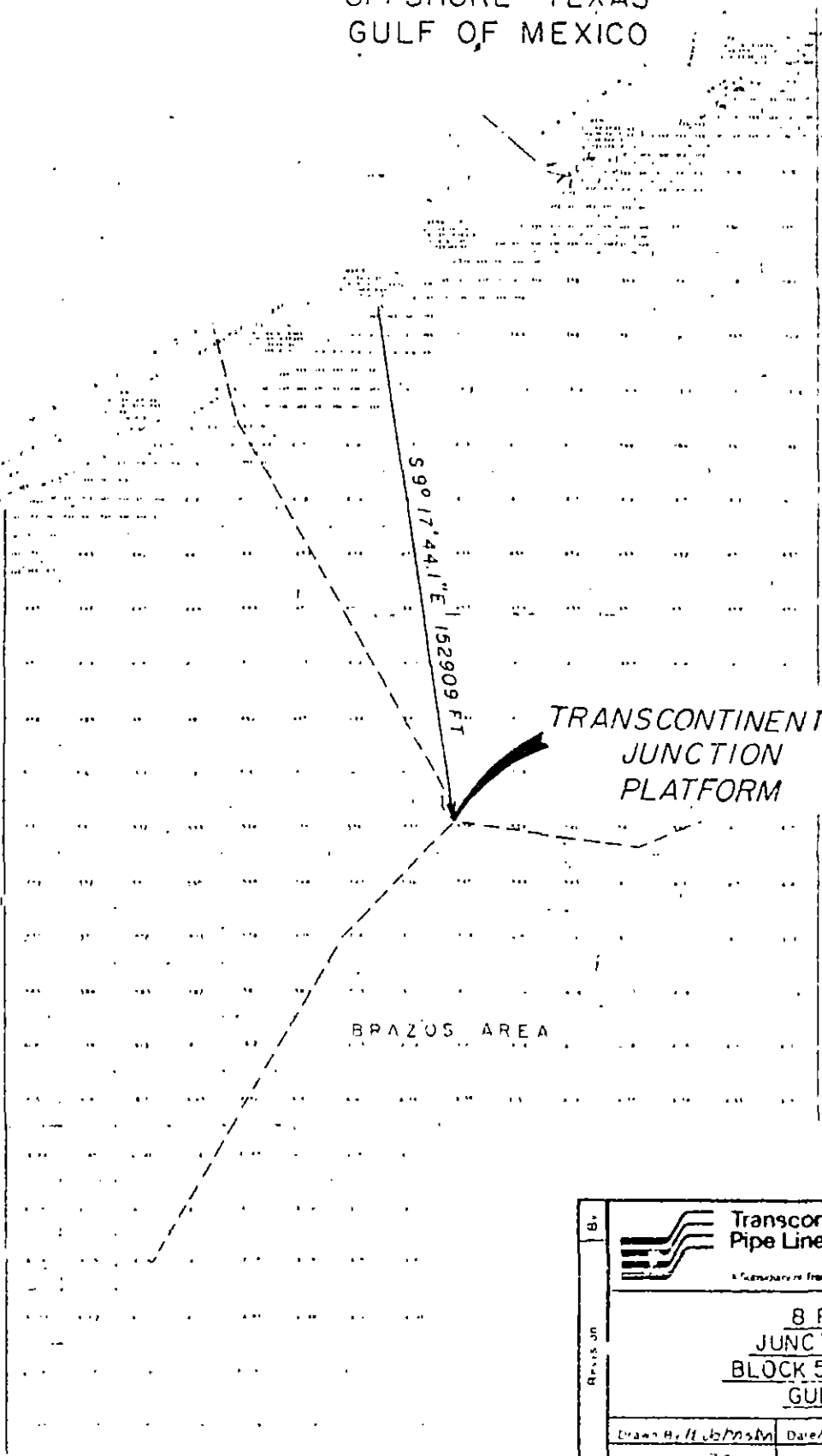
DATE

TRANSFEEE


DATE

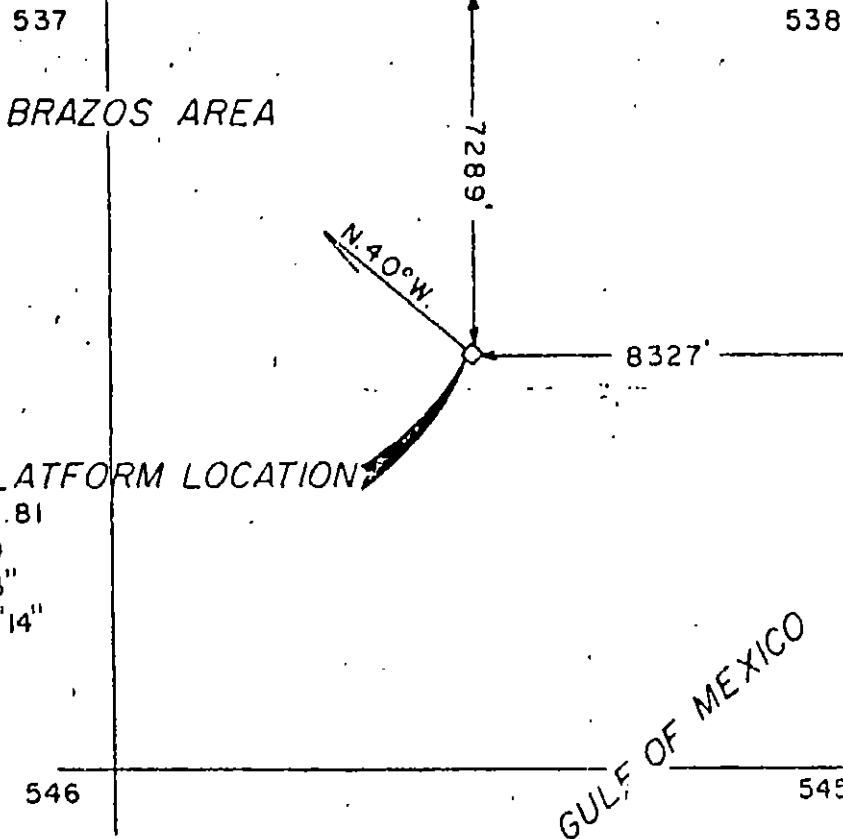
FILED  
MAR 27 1979

OFFSHORE TEXAS  
GULF OF MEXICO



--- EXISTING TRANSCO FACILITIES

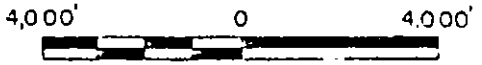
By	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>A Subsidiary of Franco Companies Inc.</small>		Engineering Department Houston, Texas	
	<b>8 PILE PIPELINE                  JUNCTION PLATFORM                  BLOCK 538 BRAZOS AREA                  GULF OF MEXICO</b>			
Revised	Drawn By: H. J. Johnson Date: 12-22-78	Approved By: _____ Date: _____		
	Checked By: P. S. A. Date: 12-22-78	Approved By: _____ Date: 12-22-78		
Date	No. 5030-43	Scale: Shown	Drawing No. 2-0300	Eng. No.
		Sheet 1 of 3	Draw. No. B-A-538-1	



**JUNCTION PLATFORM LOCATION**

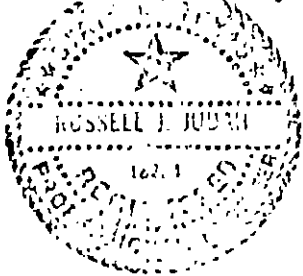
X = 3,087,308.81  
 Y = 190,711.00  
 LAT. 28° 18' 53"  
 LONG. 95° 37' 14"

GULF OF MEXICO



**NOTES**


1. Location coordinates based on Texas (Lambert) Plane Coordinate System, South Central Zone taken from Texaco Inc. drawings.

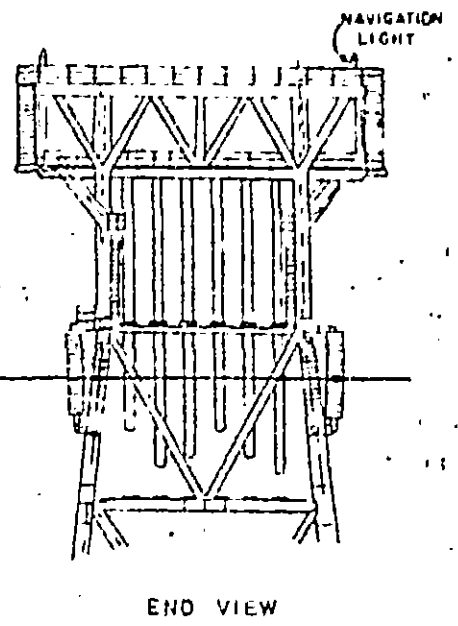
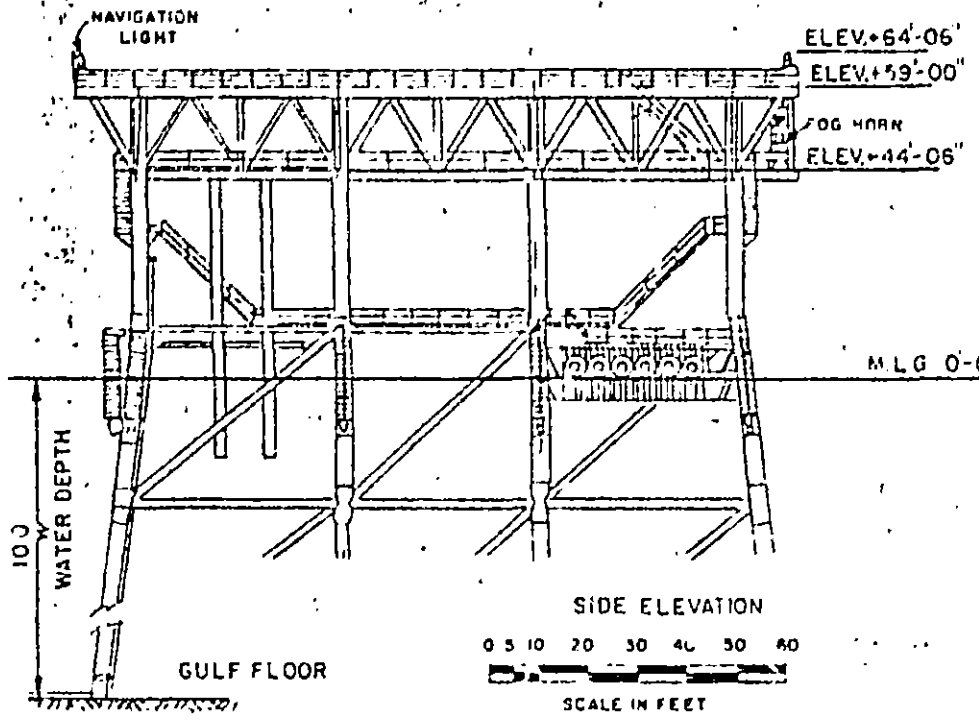
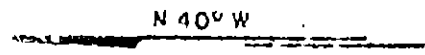
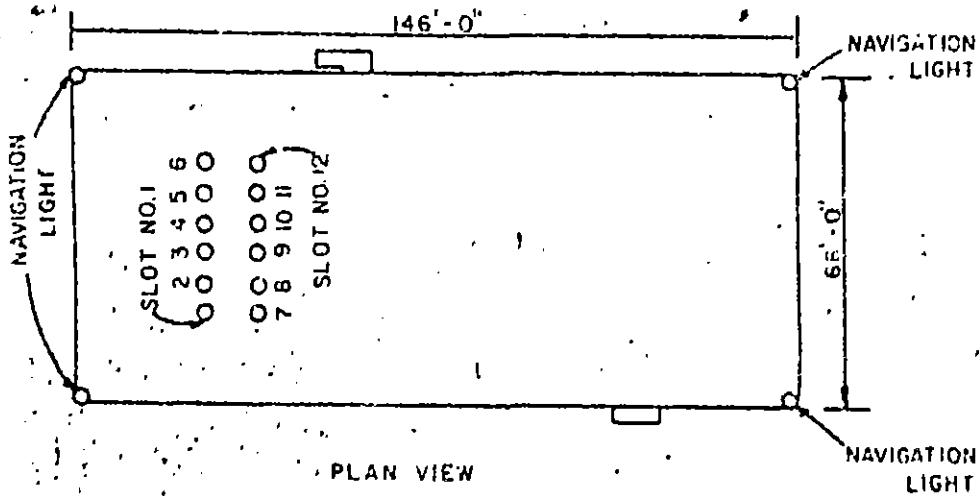


*R. J. Judd*

18284

12-22-78

Date	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>Engineering Department Houston, Texas</small> <small>a subsidiary of Panaco Companies Inc.</small>		
	<b>8 PILE PIPELINE        JUNCTION PLATFORM        FEDERAL BLOCK 538 BRAZOS AREA, OFFSHORE        GULF OF MEXICO</b>		
By	Drawn By: <i>K Johnson</i> Date: 12-22-78    Approved By: <i>(PC)</i> Date: 12-31-78 Checked By: <i>RLA</i> Date: 12-22-78	Approved By: <i>(Signature)</i> Date: 12-22-78    Approved By: <i>(Signature)</i> Date:	
	No. O. NO. 5030.43    Scale: <i>Shown</i>		Project No. 22-0300



NOTES:  
 Dimensions taken from Texaco, Inc. previous permit drawings  
 Lights and Fog Signals Comply with Coast Guard Regulations (Title 33 CFR Parts 140 to 147; Subpart 67.05-1 and 67.10-1).

By	Transcontinental Gas Pipe Line Corporation <small>A Subsidiary of Amoco Corporation Inc.</small>		Engineering Department Houston, Texas	
	<b>8 PILE PIPELINE          JUNCTION PLATFORM          BLOCK 538 BRAZOS AREA          GULF OF MEXICO</b>			
Date	Drawn By <i>A. Vornstein</i>	Date <i>12-22-78</i>	Approved By <i>C. A.</i>	Date <i>12-22-78</i>
	Checked By <i>S. S.</i>	Date <i>12-22-78</i>	Supervised By <i>[Signature]</i>	Date <i>12-22-78</i>
No. <i>5020.43</i>		Spec. Shown		Plot No. <i>22-0300</i>

## NOTICE TO PERMITTEES

Department of the Army Permits for Work in Navigable Waters require attention to administration and policies which are often misunderstood or disregarded. To avoid possible misinterpretations and to expedite procedures, permit post-authorization requirements and pertinent information are outlined as follows:

1. Permits remain in effect until revoked, relinquished, or the structures are removed. An extension of time for completion of structures or work may be granted provided that a public notice is issued and that evidence is furnished of the bona fide intention of the permittee to complete the work within a reasonable time. If work or structures are not completed within the time provided in the permit, it is the permittee's responsibility to request an extension of time at least four months before the expiration date.

2. Maintenance of authorized completed structures may be done at any time without extending the completion period. It is, however, required that the District Engineer be notified prior to commencement of maintenance.

3. SPECIAL REGULATIONS GOVERN MAINTENANCE WORK INVOLVING DREDGING OR FILL. This maintenance is not authorized by the original permit and specific prior approval is required before such work is commenced in navigable waters. Your request for authorization should be submitted in time for public notice requirements and coordination with other agencies. ....

4. If ownership of structures or work covered by a permit is transferred, the District Engineer must be notified immediately. The notification will provide information so that permit responsibilities can be changed to the new owner or assignee.

5. Permittees are reminded that the Area Engineer must be notified as soon as possible of the time for commencement of construction or work, and immediately upon completion. If pipelines across Federal project channels are covered by the permit, the Area Engineer should be informed of the date the pipeline is to be placed in time for him to arrange for an inspector to be present.

6. All material changes in location or plans must be submitted promptly to the District Engineer for approval before construction is begun.

7. Permits should not be considered as an approval of design features of any structure authorized or an implication that such structure is adequate for the purpose intended.

DISTRICT ENGINEER  
GALVESTON DISTRICT  
CORPS OF ENGINEERS





**DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS**

**NOTICE OF AUTHORIZATION**

30 Mar 1979 19

**A PERMIT TO** maintain an existing platform to use as a pipeline  
junction platform in the Gulf of Mexico, Federal Block 538-L

**AT** Brazos Area, central to a point 48 miles southwest from Freeport,  
Texas.

**HAS BEEN ISSUED TO** Transcontinental Gas Pipe  
Line Company

**ADDRESS OF PERMITTEE** P. O. Box 1396  
Houston, Texas 77001

**PERMIT NUMBER** 13347

ON 30 MAR 1979 19  
*Marcos De La Rosa*  
MARCOS DE LA ROSA  
Chief, Permit Branch  
FOR COLONEL NON C. VANDEN BOSCH  
District Engineer

ENG Form 4336  
Jul 70

**THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF WORK.**

\*\* GPO: 1976 204-377

TRANSPORTATION  
U. S. COAST GUARD  
CG-4143 (Rev. 4-70)

NAVIGATION ON ARTIFICIAL ISLANDS AND FIXED  
STRUCTURES

Form Approved Budget Bureau

NO. 04-R3002

(Please read instructions on reverse)

1. NAME AND ADDRESS (including zip code) OF CORPORATION  
OR PERSON MAKING APPLICATION

Transcontinental Gas Pipe Line Corpora-  
tion  
P. O. Box 1396  
Houston, Texas 77001

2. ACTION REQUESTED FOR PRIVATE AIDS TO NAVIGATION

- A.  ESTABLISH AND MAINTAIN E.  DISCONTINUE  
B.  CHANGE OWNERSHIP F. DATE OF ACTION  
C.  CHANGE EQUIPMENT 15 Nov. 1978  
D.  MOVE

3. POSITION

A. GENERAL LOCALITY AND GRID AREA

Brazos Area, Gulf of Mexico

B. LATITUDE

28°18' 53"

C. LONGITUDE

95°37' 14"

D. BLOCK NUMBER

538

E. SIGN

Transco Brazos 538

F. LEASE NUMBER

---

G. WELL NUMBER

---

4. LIGHT

A. CHARACTERISTICS

COLOR

WHITE

RED

B. NUMBER INSTALLED

4

C. ILLUMINANT (Check)

ELECTRICITY

GAS

OIL

FLASH 3 SECONDS

ECLIPSE 7 SECONDS

OTHER (Specify)

D. HEIGHT ABOVE MEAN  
HIGH WATER

64'6"

E. VOLT

12

F. AMPERES

.77

G. INSIDE DIAMETER

LENS

250mm

GLOBE

H. CANDLEPOWER (If known)

270

5. FOG SIGNAL (Characteristic will be one two-second blast every twenty seconds)

A. CLASS

- A (2-MHz)  
 B (1/2-MHz)

B. MANUFACTURED BY Automatic Power Inc.

213 Hutcheson St., Houston, TX

C. MODEL NUMBER

SA-3

6. STRUCTURE

A. COLOR

Gray

B. HEIGHT ABOVE MEAN HIGH WATER

59'0"

C. DEPTH OF WATER BELOW MEAN LOW WATER

100'

7. AUTHORIZED BY CORPS OF ENGINEERS, U. S. ARMY, PERMIT NO.

SWEET RID-13347

8. PERSON IN DIRECT CHARGE OF AID

A. NAME

R. G. Coker, Superintendent

C. ADDRESS

Transcontinental Gas Pipe Line Corp.  
12501 Stuebner Airline Road  
Houston, Texas 77014

B. TELEPHONE NUMBER

(713)444-6441

9. The applicant agrees to save the Coast Guard harmless with respect to any claim or claims that may result arising from the alleged negligence of the operation of the approved aids.

Attached to this application are:

- A.  LOCATION PLAT B.  PRINT OF STRUCTURE C.  AIDS TO NAVIGATION EQUIPMENT LIST  
D.  CERTIFICATE REQUIRED BY 33 CFR 67.10-114

DATE

January 2, 1979

SIGNATURE

*R. J. Harrison* SIGN

TITLE

R. J. Harrison  
Manager Construction

FOR COAST GUARD USE

10. FROM:

Commander Eighth Coast Guard District (oan)

A. THE ACTION DESCRIBED ABOVE IS

- APPROVED  
 APPROVED SUBJECT TO THE COMMENTS IN BLOCK 11 ON  
REVISION

B. NOTICE TO MARINERS

- WILL BE ISSUED  
 WILL NOT BE ISSUED

C. CHART AFFECTED

11300

D. NAME OF AID(S)

TRANSCONTINENTAL 116-1 LTS & FS

E. DATE

11 January 1979

F. SIGNATURE (By direction in accordance with 33 CFR 67)

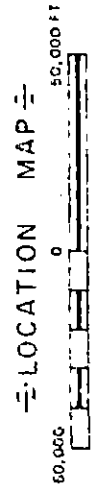
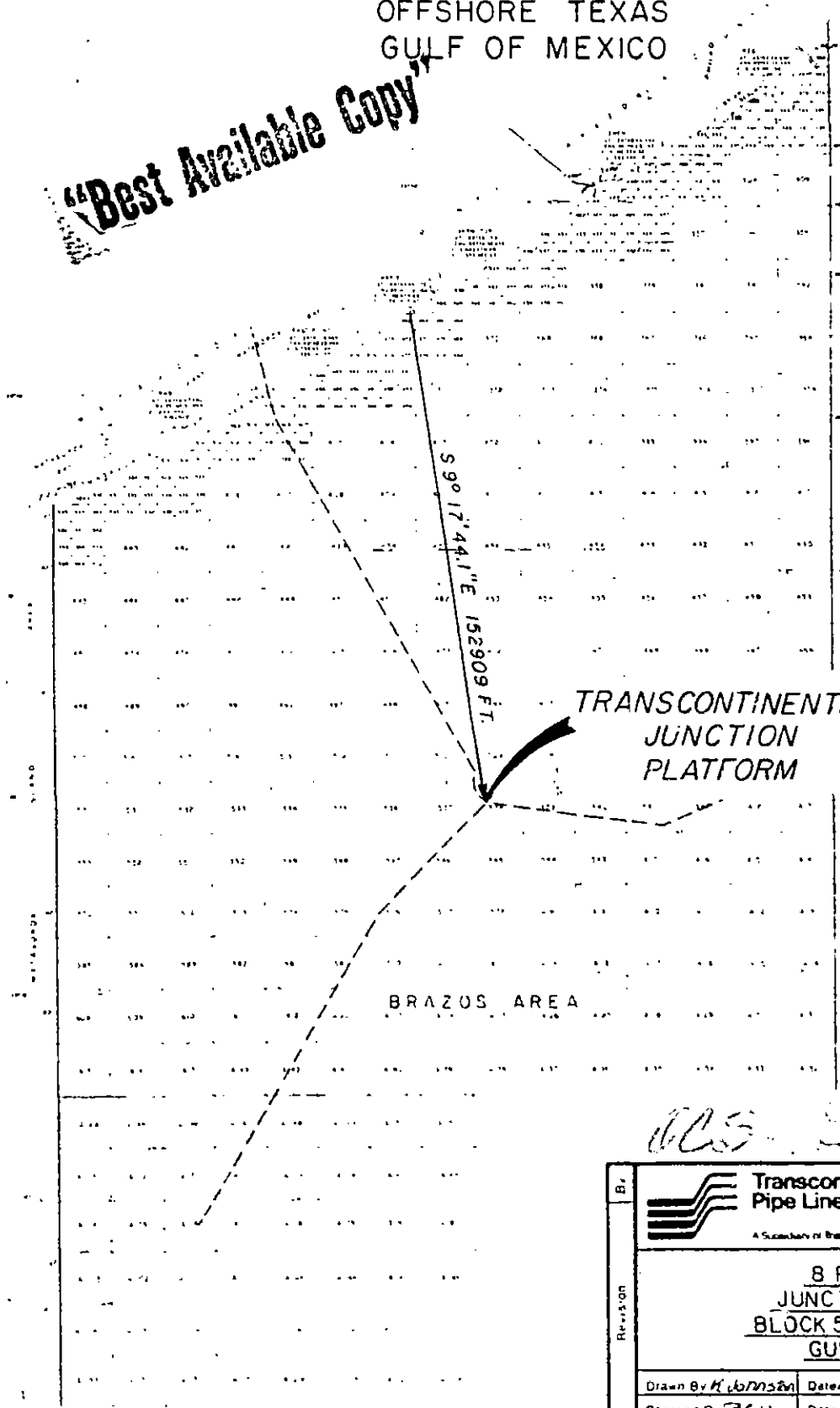
R. N. HARRISON, JR., CH. USCG

PREVIOUS EDITIONS MAY BE USED

Chief, Private Aids Section

OFFSHORE TEXAS  
GULF OF MEXICO


"Best Available Copy"



BRAZOS AREA

*005-2 4976*

--- EXISTING TRANSOCO FACILITIES

By	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>A Subsidiary of Transco Companies Inc.</small>		Engineering Department Houston, Texas	
	<b>8 PILE PIPELINE                  JUNCTION PLATFORM                  BLOCK 538 BRAZOS AREA                  GULF OF MEXICO</b>			
Date	Drawn By <i>H. Johnson</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Date <i>12-22-78</i>
	Checked By <i>[Signature]</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>	Engineer
Rev.	No. <i>5030-43</i> Scale <i>Shown</i>		General Order & Line Number <i>22-0300</i>	
	Sheet <i>1</i> of <i>3</i>		Draw No. <i>B-A-538-1</i>	



537

538

BRAZOS AREA

7289'

N.40°W.

8327'

**JUNCTION PLATFORM LOCATION**

X = 3,087,308.81  
Y = 190,711.00  
LAT. 28°18'53"  
LONG. 95°37'14"

546

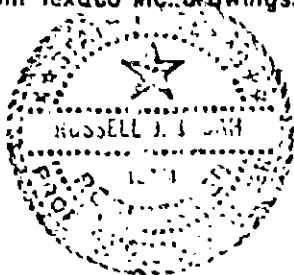
545

GULF OF MEXICO



**NOTES**


- 1. Location coordinates based on Texas (Lambert) Plane Coordinate System, South Central Zone taken from Texaco Inc. drawings.

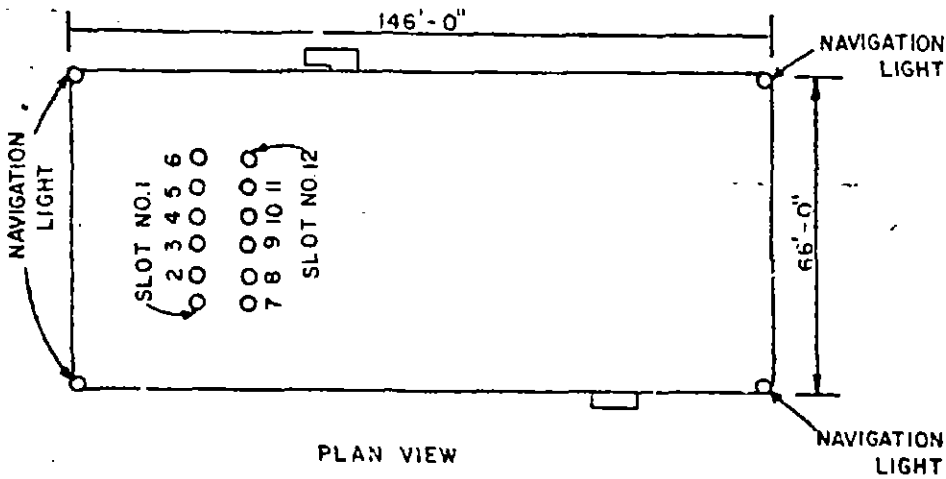


*R. J. Smith*

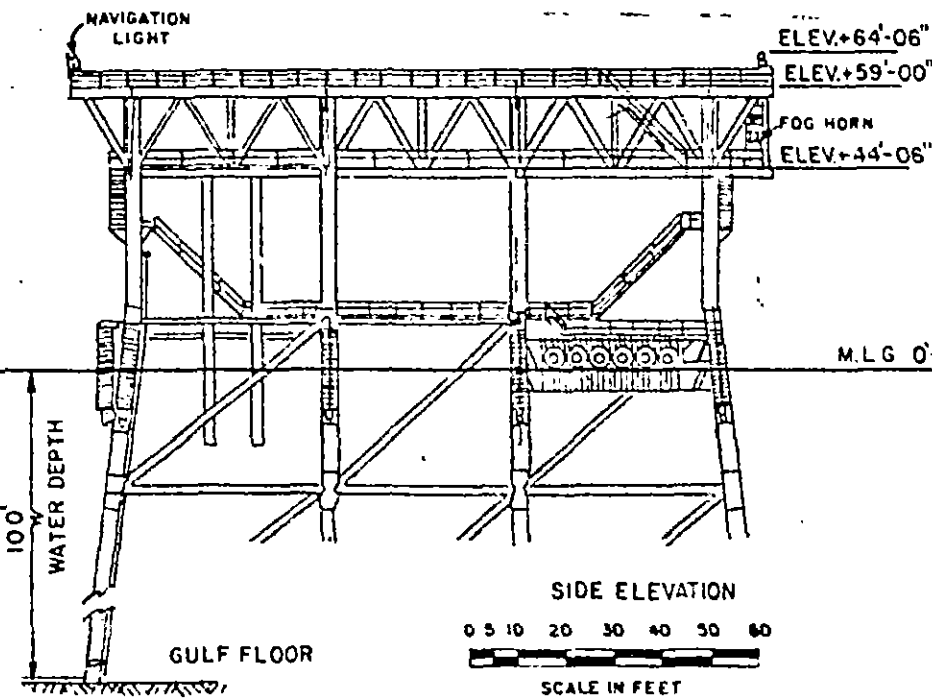
18284  
NO.

12-22-78  
DATE

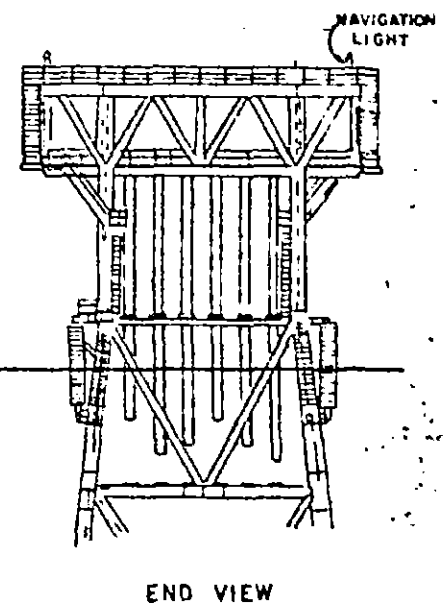
By	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>Engineering Department Houston, Texas</small> <small>A Subsidiary of Panaco Companies Inc.</small>		
	<p align="center"><b>8 PILE PIPELINE</b> <b>JUNCTION PLATFORM</b> <b>FEDERAL BLOCK 538 BRAZOS AREA OFFSHORE</b> <b>GULF OF MEXICO</b></p>		
Revision	Drawn By <i>K. Johnson</i>	Date <i>12-22-78</i>	Approved By <i>PC</i>
	Checked By <i>RS LA</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>
Date	Approved By <i>JS</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>
	W. O. No. <i>5030.43</i>	Scale <i>5/8" = 1'</i>	Sheet No. <i>22-0300</i>
Sheet	Sheet <i>2</i> of <i>5</i>		Draw. No. <i>B-A-538-1</i>



PLAN VIEW  
0 5 10 20 30 40 50 60  
SCALE IN FEET



SIDE ELEVATION  
0 5 10 20 30 40 50 60  
SCALE IN FEET



END VIEW

- NOTES:
1. Dimensions taken from Texaco, Inc. previous permit drawings.
  2. Lights and Fog Signals Comply with Coast Guard Regulations (Title 33 CFR Parts 140 to 147; Subpart 67.05-1 and 67.10-1).

By	<b>Transcontinental Gas Pipe Line Corporation</b>		Engineering Department Houston, Texas
	A Subsidiary of Transco Companies Inc.		
Revision	<b>8 PILE PIPELINE JUNCTION PLATFORM</b> <b>BLOCK 538 BRAZOS AREA</b> <b>GULF OF MEXICO</b>		
	Drawn By <i>A. Johnson</i>	Date <i>12-22-75</i>	Approved By <i>PCA</i>
Checked By <i>PCA</i>	Date <i>12-22-75</i>	<i>William H. Johnson</i> Approved By Date <i>12-22-75</i>	
No. <i>5020.43</i>	Scale <i>Shown</i>	Office Group & Job Number <i>22-0300</i>	Eng. No. <i>B-A-538-1</i>
Sheet <i>3</i> of <i>3</i>			

THE STATE OF TEXAS     I  
                                  I  
COUNTY OF MATAGORDA   I

9-003 18755

BILL OF SALE

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, TEXACO INC. (Texaco) owns an interest in an eight-pile platform designated as Texaco Brazos A-538 "A" Platform and located on OCS lease No. 1730, Block 538, Brazos Area, Offshore Matagorda County, State of Texas, at Latitude 28° 18' 52.801" and Longitude 95° 37' 13.891", along with certain related equipment as more fully described on Exhibit "A" which is attached hereto and incorporated herein for all purposes, and Texaco desires to sell and convey its interest in the platform and the related equipment shown on said Exhibit "A" to Transcontinental Gas Pipe Line Corporation (Transco).

NOW, THEREFORE, for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged and subject to the following terms and conditions, Texaco does hereby sell, transfer, assign and convey all of its right, title and interest in and to the platform, and the related equipment, unto Transcontinental Gas Pipe Line Corporation (Transco) here present and accepting the same and acknowledge delivery and possession thereof.

This sale and conveyance is made without warranty of title, either express or implied other than that there are no liens or encumbrances on said platform or the equipment, and conveys same only as is and where is and no warranty is made herein as to the fitness of said property for any particular purpose. Texaco will remove its equipment which is not listed on Exhibit "A" and not herein expressly conveyed to Transco.

As of the effective date hereinafter provided, Transco does hereby expressly assume all liability and responsibility for the above-described platform and related equipment incident to the ownership thereof, including, without limitation, the costs of abandonment, clearing and removal of said structure and equipment; and said party does hereby further bind and obligate itself to fully defend, protect, indemnify and hold harmless Texaco, its employes and agents from and against each and every claim, demand or cause of action and any liability, cost, expense (including but not limited to reasonable attorneys' fees and expenses incurred in defense of Texaco), damage or loss in connection therewith which may be made or asserted by Transco, Transco's employes or agents, subcontractors, or any third parties on account of personal injury or death or property damage caused by, arising out of, or in any way incidental to, or in connection with this bill of sale, or any use, operation or incident in connection with said platform and equipment, or the

abandonment, clearing and removal thereof. Transco further agrees to obtain any necessary easements or permits required by the United States Department of the Interior, Geological Survey, or any other governmental agency having jurisdiction thereof for the continued use, operation and maintenance of said platform and equipment thereon by Transco, and Transco agrees to indemnify and hold harmless Texaco from all claims, expenses, fines, penalties and liabilities, if any, arising, directly or indirectly, in connection therewith. Without limiting the foregoing in any respect, Texaco, to the extent and only to the extent which it is authorized to do so under applicable laws and regulations and subject to approval, if necessary, of any governmental authority having jurisdiction in the premises, which approval Transco hereby assumes the responsibility of obtaining, does hereby assign to Transco, the following: (1) Permit-8842 dated February 9, 1972, as authorized by the Secretary of the Army and issued by the U.S. Corps of Engineers, Galveston District, as amended by letter dated November 15, 1977, authorized and issued in the same manner as stated above; (2) U.S. Coast Guard Approval of Texaco's Application for Class 1 Private Aids to Navigation on Artificial Islands and Fixed Structures, such Approval dated November 10, 1970. Transco agrees to assume and comply, with all of the



terms, conditions and obligations stated in the above-described permit dated February 9, 1972, as amended, as binding upon Permittee therein and with all of the terms, conditions and obligations stated in the above-described Coast Guard Approval dated November 10, 1970, as binding upon applicant therein, and Transco further agrees to indemnify and hold harmless Texaco from all claims, expenses, fines, penalties, and liabilities, if any, arising, directly or indirectly, from the aforesaid assignment of and/or use by Transco of said permit and approval and/or operations conducted by Transco pursuant thereto.

It is understood that Texaco agrees to plug (to the satisfaction of the appropriate regulatory authorities) all wells located on said platform and to remove all production equipment therefrom, except that equipment listed on Exhibit "A", and that on the date Texaco has completed such abandonment and removal, including the necessary equipment to complete the work (which date shall be established in writing by Texaco and Transco), this Agreement shall become effective and thereafter Transco shall be fully responsible for said platform. Texaco agrees to furnish Transco a minimum of two copies of the approval from the proper government agency that the well plugging has been satisfactorily completed. Transco agrees to

furnish Texaco with copies of approval from the proper governmental agency or agencies that the platform has been satisfactorily abandoned, cleared and removed.

IN WITNESS WHEREOF, this instrument is executed on this the 11<sup>th</sup> day of October, 1978, but effective as hereinabove provided.

TEXACO INC.

By [Signature]  
Attorney-in-Fact

ATTEST:

TRANSCONTINENTAL GAS PIPE  
LINE CORPORATION

[Signature]  
Secretary

By [Signature]  
Vice President

[Handwritten initials]

EXHIBIT "A"

Attached to and made a part of that certain  
"Bill of Sale dated 12/7/78, 1978,  
by and between Texaco Inc. (Texaco) and  
Transcontinental Gas Pipe Line Corporation (Transco).

RELATED PLATFORM EQUIPMENTDescription

Crew Quarters (20' x 20' Six-man quarters building with 24'  
x 24' heliport)

Fresh water tank (7' x 14' 1" portable skid tank)

Lantern, Auto Power FA (2)

Sewage Disposal (Automatic Bio-Pure 600 gal/day treatment  
plant)

Fog Signal Auto Power 2-Mile SA-3C Stacked Array

Generators (Two 100 KW engine/generator sets with Waukesha  
Model F1197 GU engines with motor control and distribution  
center)

Lantern Auto Power FA-250

Crane (Lima Model 700 pedestal mount crane with 90' of boom  
and engine with steel base)

Personnel Transfer Net

Fire pumps (Two 2' fire pumps)

Miscellaneous Piping

Life rafts (Two life rafts)



DEPARTMENT OF THE ARMY  
GALVESTON DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 1229  
GALVESTON, TEXAS 77553

REPLY TO  
ATTENTION OF:

SWGCO-RP, PERMIT -13347

30 MAR 1979

Mr. Paul E. Newton  
Senior Permit Engineer  
Transcontinental Gas Pipe  
Line Corporation  
P. O. Box 1396  
Houston, Texas 77001

Dear Mr. Newton:

The permit numbered above has been approved and a signed copy is inclosed for your retention.

Also inclosed is a copy of "Notice to Permittees" which provides important information for permit administration. Construction or work under the permit should be coordinated with the Area Engineer indicated below.

Sincerely yours,

MARCOS DE LA ROSA  
Chief, Permit Branch

- 3 Incl  
1. Copy of Permit  
2. Notice to Permittees  
3. ENG Form 4336

Copies furnished:

Commander, Eighth Coast Guard District (loan), Room 1300, Hale Boggs Federal Building, 500 Camp Street, New Orleans, Louisiana 70130 w/incl 1

Director, Atlantic Marine Center, National Ocean Survey, Attn: CAM04, 439 West York Street, Norfolk, Virginia 23510

Area Oil and Gas Supervisor for Field Operations, Gulf of Mexico Area, U.S. Geological Survey, P. O. Box 7944, Metairie, Louisiana 70011 w/incl 1

Area Engineer, Fort Point Area Office, P. O. Box 1229, Galveston, Texas 77553 w/incl 1

SWG FL 278  
13 Aug 73

RECEIVED

APR 2 1979

P. E. NEWTON

Application No. 1330  
Name of Applicant Transcontinental Gas Pipe Line Corporation  
Effective Date 30 MAR 1979  
Expiration Date (If applicable) \_\_\_\_\_

DEPARTMENT OF THE ARMY  
PERMIT

Referring to written request dated 2 January 1979 for a permit to:

Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);

Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500);

Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052, P.L. 92-532).

Transcontinental Gas Pipe Line Corporation  
P. O. Box 1396  
Houston, Texas 77001

is hereby authorized by the Secretary of the Army:

~~to maintain an existing platform to use as a pipeline junction platform~~

~~in the Gulf of Mexico, Federal Block 538-L~~

~~in the Brazos Area, central to a point 48 miles southwest from Freeport, Texas,~~

~~in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings give file number or other definite identification marks.)~~

~~in 3 sheets entitled "8 PIPE PIPELINE  
JUNCTION PLATFORM BLOCK 538 BRAZOS AREA GULF OF MEXICO,"~~

Subject to the following conditions:

I. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit, and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions i or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibition of pretreatment standards and management practices established pursuant to the Federal Water Pollution Control Act of 1972 (P.L. 92-500; 86 Stat. 816), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532; 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation, of any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementation plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized hereon would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for his action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit; or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

(one year from the date of issuance of this permit unless otherwise specified) and is not completed on or before \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, three years from the date of issuance of this permit unless otherwise specified) this permit, if not previously revoked or specifically extended, shall automatically expire.

p. That this permit does not authorize or approve the construction of particular structures, the authorization or approval of which may require authorization by the Congress or other agencies of the Federal Government.

q. That if and when the permittee desires to abandon the activity authorized herein, unless such abandonment is part of a transfer procedure by which the permittee is transferring his interests herein to a third party pursuant to General Condition t hereof, he must restore the area to a condition satisfactory to the District Engineer.

r. That if the recording of this permit is possible under applicable State or local law, the permittee shall take such action as may be necessary to record this permit with the Register of Deeds or other appropriate official charged with the responsibility for maintaining records of title to and interests in real property.

s. That there shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.

t. That this permit may not be transferred to a third party without prior written notice to the District Engineer, either by the transferee's written agreement to comply with all terms and conditions of this permit or by the transferee subscribing to this permit in the space provided below and thereby agreeing to comply with all terms and conditions of this permit. In addition, if the permittee transfers the interests authorized herein by conveyance of realty, the deed shall reference this permit and the terms and conditions specified herein and this permit shall be recorded along with the deed with the Register of Deeds or other appropriate official.

11. Special Conditions: (Here list conditions relating specifically to the proposed structure or work authorized by this permit).

a. That the removal of any and all structures and other work which may be erected or otherwise installed in the waterway, or any part or parts thereof, at any time that they may become obstructive to navigation or after they have ceased to be used for the purpose for which they were constructed, or upon revocation of this permit, is insured by the blanket permit bond dated 26 January 1979 in the penal sum of one hundred thousand dollars (\$100,000.00), heretofore furnished by the permittee.

b. That when, in the opinion of the Chief of Engineers, the bond required by condition a. shall be insufficient for the purpose set forth therein, the permittee shall, on demand, furnish such additional bond satisfactory to the said Chief of Engineers as he may require.

c. That the permittee shall promptly comply with any future regulations or instructions affecting the work hereby authorized if and when issued in accordance with law by any department of the Federal Government for the aid or protection of aerial navigation.

The following Special Conditions will be applicable when appropriate

**STRUCTURES IN OR AFFECTING NAVIGABLE WATERS OF THE UNITED STATES.**

a. That this permit does not authorize the interference with any existing or proposed Federal project and that the permittee shall not be entitled to compensation for damage or injury to the structures or work authorized herein which may be caused by or result from existing or future operations undertaken by the United States in the public interest.

b. That no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized by this permit.

c. That if the display of lights and signals on any structure or work authorized herein is not otherwise provided for by law, such lights and signals as may be prescribed by the United States Coast Guard shall be installed and maintained by and at the expense of the permittee.

d. That the permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the authorized structure or work, shall, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the waterway to its former conditions. If the permittee fails to comply with the direction of the Secretary of the Army or his authorized representative, the Secretary or his designee may restore the waterway to its former condition, by contract or otherwise, and recover the cost thereof from the permittee.

e. Structures for Small Boats. That permittee hereby recognizes the possibility that the structure permitted herein may be subject to damage by wave wash from passing vessels. The issuance of this permit does not relieve the permitter from taking all proper steps to insure the integrity of the structure permitted herein and the safety of boats moored thereto from damage by wave wash and the permittee shall not hold the United States liable for any such damage.

**MAINTENANCE DREDGING**

a. That when the work authorized herein includes periodic maintenance dredging, it may be performed under this permit for \_\_\_\_\_ years from the date of issuance of this permit (ten years unless otherwise indicated).

b. That the permittee will advise the District Engineer in writing at least two weeks before he intends to undertake any maintenance dredging.

**DISCHARGES OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES.**

a. That the discharge will be carried out in conformity with the goals and objectives of the EPA Guidelines established pursuant to Section 404(b) of the FWPCA and published in 40 CFR 230.

b. That the discharge will consist of suitable material free from toxic pollutants in other than trace quantities;

c. That the fill created by the discharge will be properly maintained to prevent erosion and other non-point sources of pollution; and

d. That the discharge will not occur in a component of the National Wild and Scenic River System or in a component of a State wild and scenic river system.

**DUMPING OF DREDGED MATERIAL INTO OCEAN WATERS**

a. That the dumping will be carried out in conformity with the goals, objectives, and requirements of the EPA criteria established pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act of 1972, published in 40 CFR 220.228.

b. That the permittee shall place a copy of this permit in a conspicuous place in the vessel to be used for the transportation and/or dumping of the dredged material as authorized herein.

This permit shall become effective on the date of the District Engineer's signature

Permittee hereby accepts and agrees to comply with the terms and conditions of this permit

*R. J. Jordan*

January 26, 1979

PERMITTEE

DATE

TRANSCONTINENTAL GAS PIPE LINE CORPORATION

BY AUTHORITY OF THE SECRETARY OF THE ARMY

*Marcos De La Rosa*

30 MAR 1979

MARCOS DE LA ROSA, Chief, Permit Branch  
FOR COLONEL JON C. VANDEN BOSCH

DATE

DISTRICT ENGINEER,  
U.S. ARMY CORPS OF ENGINEERS

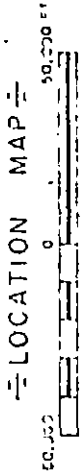
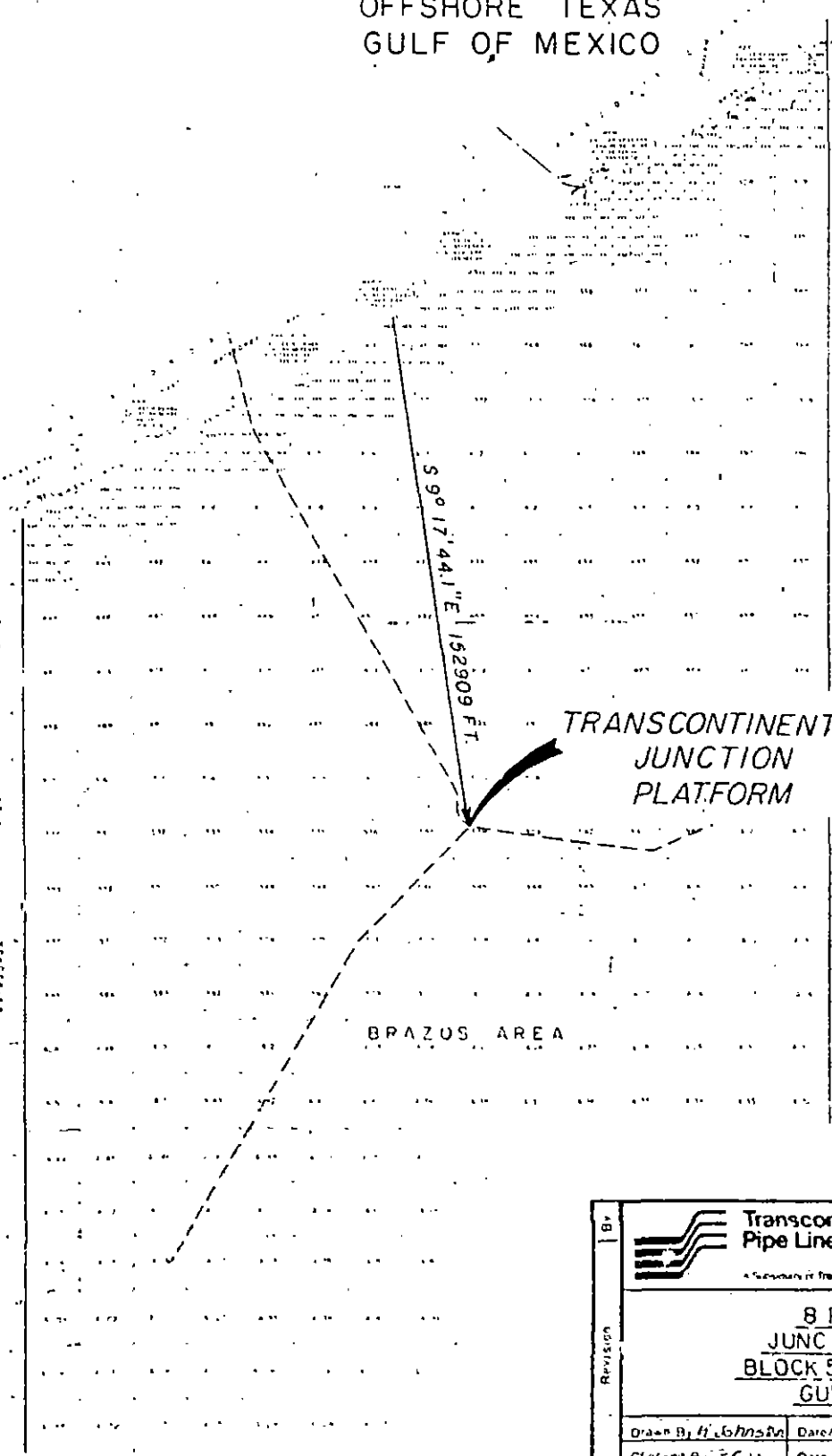
Transferee hereby agrees to comply with the terms and conditions of this permit

TRANSFEREE

DATE




OFFSHORE TEXAS  
GULF OF MEXICO



BRAZOS AREA

TRANSCONTINENTAL  
JUNCTION  
PLATFORM

--- EXISTING TRANSCO FACILITIES

Revision	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>A subsidiary of Transco Companies Inc.</small>		Engineering Department Houston, Texas	
	<b>8 PILE PIPELINE JUNCTION PLATFORM BLOCK 538 BRAZOS AREA GULF OF MEXICO</b>			
	Drawn By: <i>H. Johnson</i>	Date: <i>2-22-78</i>	Approved By: _____	Date: _____
	Checked By: <i>[Signature]</i>	Date: <i>2-22-78</i>	Approved By: _____	Date: _____
Project No: <i>538-45</i>	Scale: <i>3/8"=1'</i>	Drawing No: <i>22-0300</i> Sheet <i>1</i> of <i>3</i> Draw No: <i>B-A-538-1</i>		



537

538

BRAZOS AREA

7289'

N.40°W.

8327'

JUNCTION PLATFORM LOCATION

X = 3,087,308.81

Y = 190,711.00

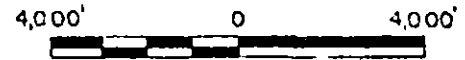
LAT. 28°18'53"

LONG. 95°37'14"

546

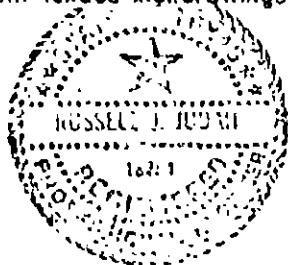
545

GULF OF MEXICO



NOTES


- 1. Location coordinates based on Texas (Lambert) Plane Coordinate System, South Central Zone taken from Texaco inc. drawings.

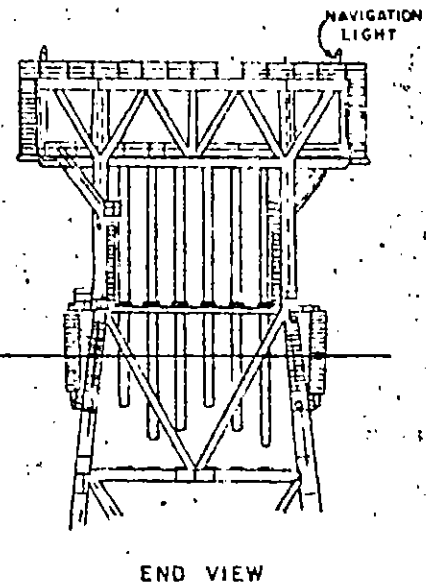
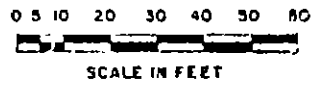
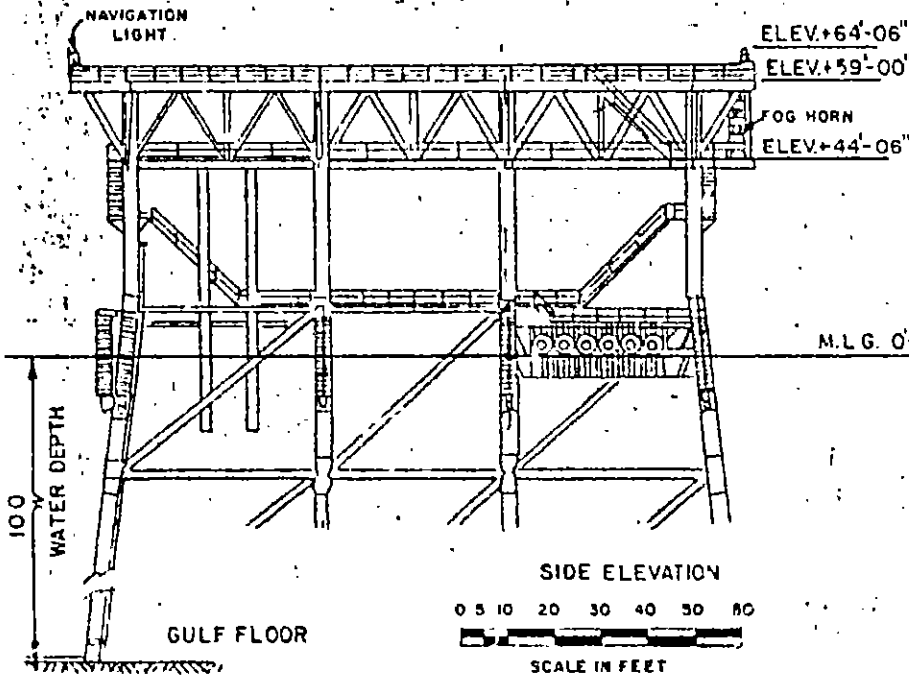
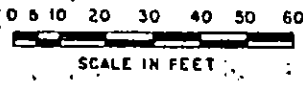
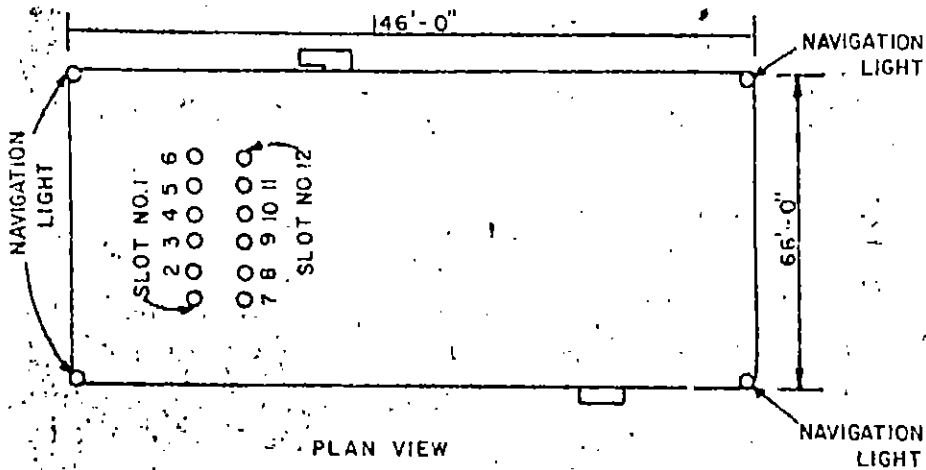


*R. J. Russell*


18284

12-22-78

By	 <b>Transcontinental Gas Pipe Line Corporation</b> <small>Engineering Department Houston, Texas</small> <small>A Subsidiary of Texaco Companies Inc.</small>		
	<p align="center"><b>8 PILE PIPELINE</b>  <b>JUNCTION PLATFORM</b>  <b>FEDERAL BLOCK 538 BRAZOS AREA, OFFSHORE</b>  <b>GULF OF MEXICO</b></p>		
Date	Drawn By <i>K. Johnson</i>	Date <i>2-22-78</i>	Approved By <i>RC</i>
	Checked By <i>SEA</i>	Date <i>2-22-78</i>	Approved By <i>[Signature]</i>
Revision	Drafting <i>JS</i>	Date <i>12-22-78</i>	Approved By <i>[Signature]</i>
P. O. No. <i>5030.43</i>		Scale <i>Shown</i>	Sheet No. <i>22-0300</i>



NOTES:  
 Dimensions taken from Texaco, Inc. previous permit drawings.  
 Lights and Fog Signals Comply with Coast Guard Regulations (Title 33 CFR Parts 140 to 147; Subpart 67.05-1 and 67.10-1).

By	 <b>Transcontinental Gas Pipe Line Corporation</b>		Engineering Department Houston, Texas	
	A subsidiary of Shell Companies Inc.			
Revision	<b>8 PILE PIPELINE JUNCTION PLATFORM</b> <b>BLOCK 538 BRAZOS AREA</b> <b>GULF OF MEXICO</b>			
	Drawn By <i>R. Ushakov</i> Date <i>12-22-78</i>	Approved By <i>[Signature]</i> Date <i>12-22-78</i>	Checked By <i>[Signature]</i> Date <i>12-22-78</i>	Approved By <i>[Signature]</i> Date <i>12-22-78</i>
Date	B. O. No. <b>5020.43</b>		Scale <b>Shown</b>	Drawing No. <b>22-0300</b>

NOTICE TO PERMITTEES

Department of the Army Permits for Work in Navigable Waters require attention to administration and policies which are often misunderstood or disregarded. To avoid possible misinterpretations and to expedite procedures, permit post-authorization requirements and pertinent information are outlined as follows:

1. Permits remain in effect until revoked, relinquished, or the structures are removed. An extension of time for completion of structures or work may be granted provided that a public notice is issued and that evidence is furnished of the bona fide intention of the permittee to complete the work within a reasonable time. If work or structures are not completed within the time provided in the permit, it is the permittee's responsibility to request an extension of time at least four months before the expiration date.

2. Maintenance of authorized completed structures may be done at any time without extending the completion period. It is, however, required that the District Engineer be notified prior to commencement of maintenance.

3. SPECIAL REGULATIONS GOVERN MAINTENANCE WORK INVOLVING DREDGING OR FILL. This maintenance is not authorized by the original permit and specific prior approval is required before such work is commenced in navigable waters. Your request for authorization should be submitted in time for public notice requirements and coordination with other agencies.

4. If ownership of structures or work covered by a permit is transferred, the District Engineer must be notified immediately. The notification will provide information so that permit responsibilities can be changed to the new owner or assignee.

5. Permittees are reminded that the Area Engineer must be notified as soon as possible of the time for commencement of construction or work, and immediately upon completion. If pipelines across Federal project channels are covered by the permit, the Area Engineer should be informed of the date the pipeline is to be placed in time for him to arrange for an inspector to be present.

6. All material changes in location or plans must be submitted promptly to the District Engineer for approval before construction is begun.

7. Permits should not be considered as an approval of design features of any structure authorized or an implication that such structure is adequate for the purpose intended.

DISTRICT ENGINEER  
GALVESTON DISTRICT  
CORPS OF ENGINEERS



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS

NOTICE OF AUTHORIZATION

30 MAR 1979 19

A PERMIT TO maintain an existing platform to use as a pipeline  
junction platform in the Gulf of Mexico, Federal Block 538-L

AT Brazos Area, central to a point 48 miles southwest from Freeport,  
Texas,

HAS BEEN ISSUED TO Transcontinental Gas Pipe  
Line Company

ADDRESS OF PERMITTEE P. O. Box 1396  
Houston, Texas 77001

PERMIT NUMBER 13347

ON 30 MAR 1979  
*Marcos de la Rosa*  
MARCOS DE LA ROSA  
Chief, Permit Branch  
FOR COLONEL JON C. WARDEN BOSCH  
District Engineer

ENG Form 4336  
Jul 70

THIS NOTICE MUST BE CONSPICUOUSLY DISPLAYED AT THE SITE OF WORK.

GPO: 1975 204-377

RECEIVED  
MAR 29 1979

(Please read instructions on reverse)

<p>1. NAME AND ADDRESS (including zip code) OF CORPORATION OR PERSON MAKING APPLICATION</p> <p>Transcontinental Gas Pipe Line Corporation P. O. Box 1396 Houston, Texas 77001</p>	<p>2. ACTION REQUESTED FOR PRIVATE AIDS TO NAVIGATION</p> <p>A. <input checked="" type="checkbox"/> ESTABLISH AND MAINTAIN B. <input checked="" type="checkbox"/> CHANGE OWNERSHIP C. <input type="checkbox"/> CHANGE EQUIPMENT D. <input type="checkbox"/> MOVE</p> <p>E. <input type="checkbox"/> DISCONTINUE F. DATE OF ACTION 15 Nov. 1978</p>
---	--

3. POSITION			
A. GENERAL LOCALITY AND GRID AREA Brazos Area, Gulf of Mexico	B. LATITUDE 28° 18' 53"	C. LONGITUDE 95° 37' 14"	
D. BLOCK NUMBER 538	E. SIGN Transco Brazos 538	F. LEASL NUMBER ---	G. WELL NUMBER ---

4. LIGHT					
A. CHARACTERISTICS FLASH 3 SECONDS ECLIPSE 7 SECONDS	COLOR WHITE <input checked="" type="checkbox"/> RED <input type="checkbox"/>	B. NUMBER INSTALLED 4	C. ILLUMINANT (Check) <input checked="" type="checkbox"/> ELECTRICITY <input type="checkbox"/> GAS <input type="checkbox"/> OIL <input type="checkbox"/> OTHER (Specify)		
D. HEIGHT ABOVE MEAN HIGH WATER 64' 6"	E. VOLTS 12	F. AMPERES .77	G. INSIDE DIAMETER LENS 250mm GLOBE		H. CANDLEPOWER (If known) 270

5. FOG SIGNAL (Characteristic will be one two-second blast every twenty seconds)		
A. CLASS <input checked="" type="checkbox"/> A (2-Mile) <input type="checkbox"/> B (1/2-Mile)	B. MANUFACTURED BY Automatic Power Inc. 213 Hutcheson St., Houston, TX	C. MODEL NUMBER SA-3

6. STRUCTURE		
A. COLOR Gray	B. HEIGHT ABOVE MEAN HIGH WATER 59' 0"	C. DEPTH OF WATER BELOW MEAN LOW WATER 100'

7. AUTHORIZED BY CORPS OF ENGINEERS, U. S. ARMY, PERMIT NO. SUCC RP-13347

8. PERSON IN DIRECT CHARGE OF AID		
A. NAME R. G. Coker, Superintendent	C. ADDRESS Transcontinental Gas Pipe Line Corp. 12501 Stuebner Airline Road Houston, Texas 77014	
B. TELEPHONE NUMBER (713)444-6441		

9. The applicant agrees to save the Coast Guard harmless with respect to any claim or claims that may result arising from the alleged negligence of the operation of the approved aids.

Attached to this application are:

A.  LOCATION PLAT      B.  PRINT OF STRUCTURE      C.  AIDS TO NAVIGATION EQUIPMENT LIST  
D.  CERTIFICATE REQUIRED BY 33 CFR 07.10-1(4)

DATE January 2, 1979	SIGNATURE <i>R. J. Jada</i> TITLE R. J. Jada Manager of Construction
-------------------------	---

FOR COAST GUARD USE

10. FROM: Commander Eighth Coast Guard District (oan)

A. THE ACTION DESCRIBED ABOVE IS <input type="checkbox"/> APPROVED <input checked="" type="checkbox"/> APPROVED SUBJECT TO THE COMMENTS IN BLOCK 11 ON REVERSE	B. NOTICE TO MARINERS <input checked="" type="checkbox"/> WILL BE ISSUED <input type="checkbox"/> WILL NOT BE ISSUED
--	--

C. CHARTS AFFECTED 11300	D. NAME OF AID(S) TRANSCONTINENTAL 116-1 LTS & FS
-----------------------------	--

E. DATE 11 January 1979	F. SIGNATURE (By direction in accordance with 33 CFR 67) <i>R. N. HARRISON, JR.</i> Chief, Private Aids Section
----------------------------	---

Account No. <i>5249-11</i>	Contract No. (Prime)
Prime Contractor <i>W. P. DERMOTT, INC.</i>	Test Contractor <i>W. P. DERMOTT, INC.</i>
Description and Location of Pipeline or Appurtenance Being Tested <i>TEST 1-30" RISER FOR EILING SERVICE TO 19" DIA. A-76 @ 1-30" RISER FOR T.G. E.L. JUNE 13, 1976, 235'</i> <i>2-1/2" DIA. RISER FOR DIA. A-76 @ DIA. 77 U.T. 11" RISER FOR DIA. A-72 FROM DIA. 76 TO 13-5' 28'</i> <i>BN 205 11077</i>	

**LINE DATA**

Description of Pipe O.D. 30" W.T. 812 Yld. X 60	Length of Test Section <i>200.48'</i>	From (M.P. or Blk.)	To (M.P. or Blk.)	Survey Station No. From: To
O.D. 16" W.T. 500 Yld. A 52	Test Section No.	Elevation of High Point		Elevation of Low Point
O.D. W.T. Yld.	Drawing No. (Alignment or Fabrication) <i>CONCRETE PIPING 85 5325 &amp; DUG. HOF. SP-10 &amp; OF-SP-10</i>			Pipe Manufacturer
O.D. W.T. Yld.	Pipe Manufacturer			Purchase Order No.

**TEST DATA**

Type of Test Gas <input type="checkbox"/> Air <input type="checkbox"/> Water <input checked="" type="checkbox"/>	Date Fill Started <i>7-21-1982</i>	Date Fill Completed <i>7-21-1982</i>	Water Treatment Chem. <input type="checkbox"/> Filter <input type="checkbox"/>	Avg. Temp. Water, Air or Gas Fill
General Weather Conditions <i>partly cloudy</i>	Location and Elevation Where Dead Weight Readings Taken: M.P. or Block Location: Elevation:			
Minimum Test Pressure Specified: (High Point) <i>2985</i> PSI ( % of Sp. Yld. Min. Yield)	Maximum Allowable Test Pressure: (Low Point) <i>3053</i> PSI ( % of Specified Min. Yield)			

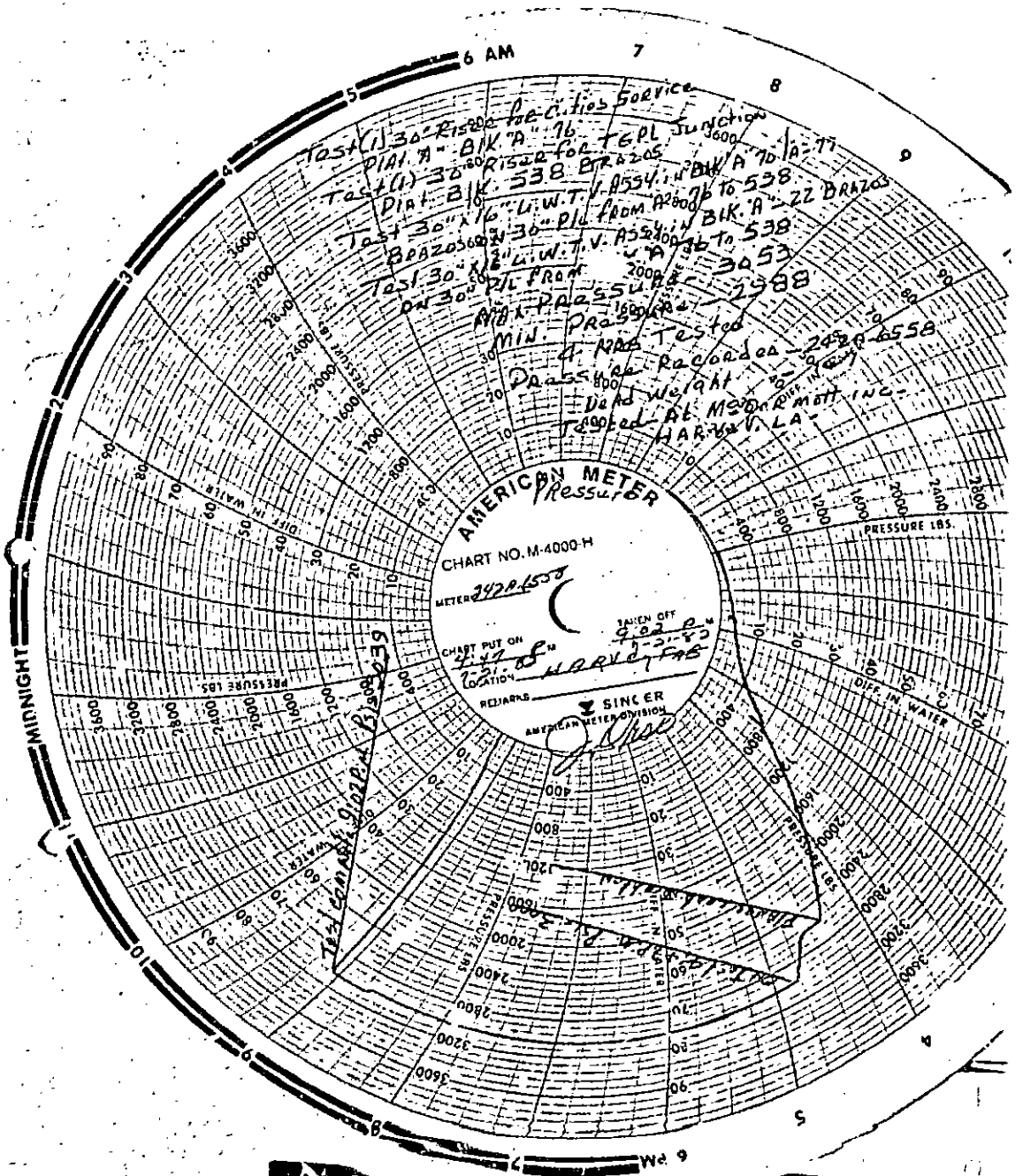
**TEST WATER AND LEAK DATA**

Fill Water	Source: <i>City Water</i>	Location: <i>Halley Ln.</i>	Survey Sta.	M.P. or Block
Test Water Deposit Point	Location: <i>Halley Ln.</i>		Survey Sta.	M.P. or Block
Leak or Test Failures During Test	Location:		Survey Sta.	M.P. or Block
Acidity (pH) of Fill Water	During Fill:	During Disposal:		
Chemicals Added to Fill Water	Type:	Quantity:		

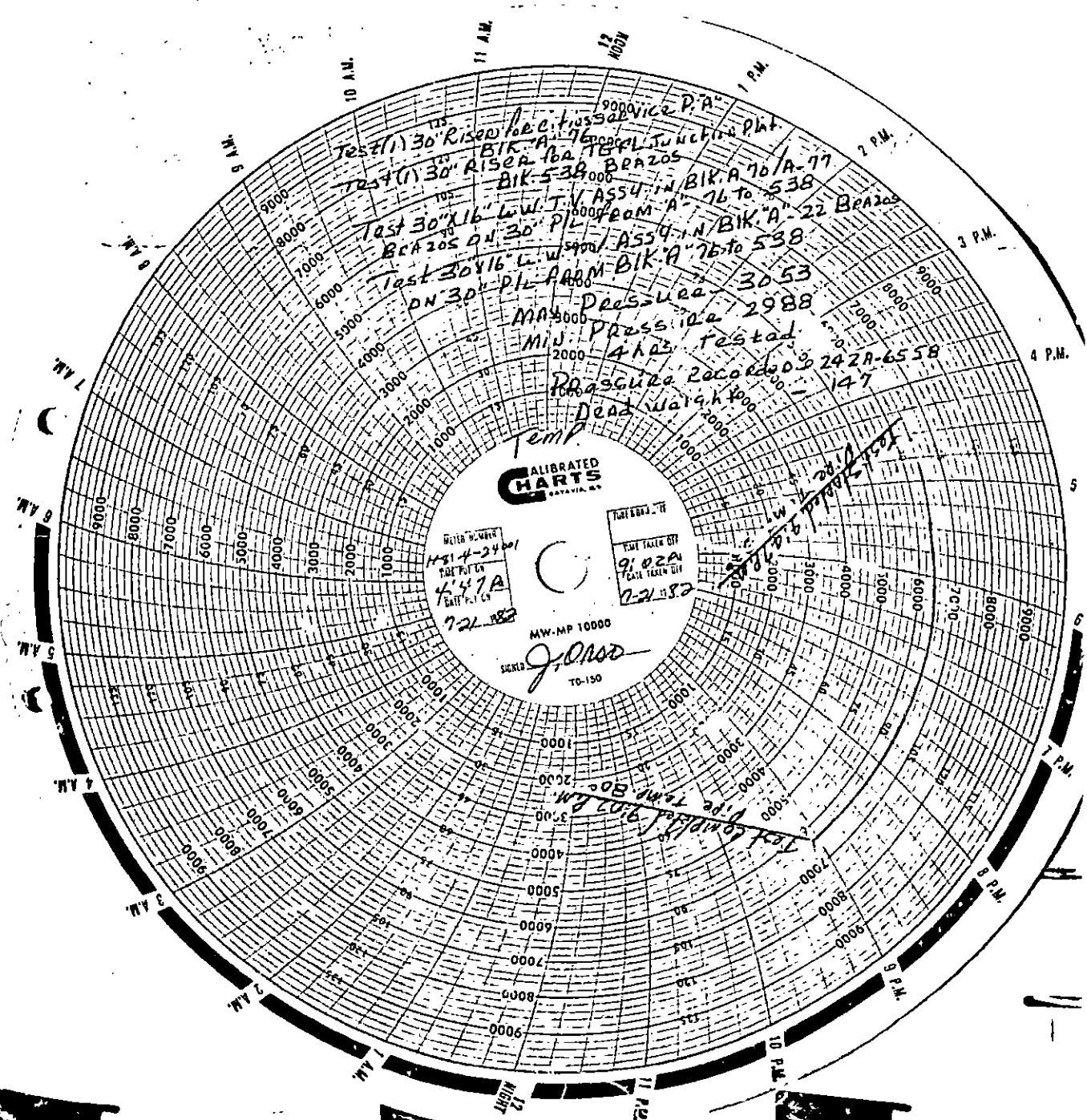
**DEAD WEIGHT PRESSURE AND TEMPERATURE LOG**

Date of Readings	Time of Readings	Pressure P.S.I.G.	Temperature of			Remarks
			Ambient	Ground	Pipe	
7-21-82	4:47	3000	96°		92°	ON TEST
11	5:15	3012	96°		92°	PARTLY CLOUDY
11	5:45	3027	96°		92°	
11	6:15	3040	97°		90°	
11	6:45	3046	97°		88°	
11	7:15	3035	97°		84°	
11	7:45	3022	96°		82°	
11	8:15	3009	96°		82°	
11	8:43	3000	96°		80°	POUR UP TO 3050
11	9:02	3039	96°		80°	TEST COMPLETED

Report Prepared By: <i>Joseph Fontana</i>	Date: <i>7-21-1982</i>	Test Supervisor By: <i>Joseph Fontana</i>
Test Witnessed By: <i>Max Brent Brown</i>	(1) Date: <i>7-21-1982</i>	(2) Date: <i>7-21-1982</i>
Test Accepted By: <i>S. B. Douglas</i>	Remarks: <i>11 Hr. Test</i>	







Test (1) 30" Riser for electric service P.A.  
 BIK-A-76  
 Test (1) 30" Riser for junction plant  
 BIK-A-76  
 BIK-538  
 Test 30" x 16" L.W. T.V. ASSY IN BIK-A-76/A-77  
 BRAZOS ON 30" PL. ASSY IN BIK-A-76 to 538  
 Test 30" x 16" L.W. ASSY IN BIK-A-22 BRAZOS  
 ON 30" PL. ASSY IN BIK-A-76 to 538  
 Pressure 3053  
 Min. Pressure 2988  
 Max. Pressure 3053  
 Dead weight 147  
 Record 242A-6558  
 Date 7-2-58

Meter No. 4-2401  
 Date 7-2-58  
 4:47A  
 72  
 MW-MP 10000  
 TO-150  
 G. O. ROSS  
 SIGNED

CALIBRATED  
**CHARTS**  
 ASTORIA, OR

DATE TAKEN 7-2-58  
 TIME TAKEN 9:02A  
 DATE TAKEN 7-2-58

Test 30" x 16" L.W. T.V. ASSY IN BIK-A-76/A-77  
 BRAZOS ON 30" PL. ASSY IN BIK-A-76 to 538  
 Pressure 3053  
 Min. Pressure 2988  
 Max. Pressure 3053  
 Dead weight 147  
 Record 242A-6558  
 Date 7-2-58

Account No. <b>5249.14</b>	Contract No. (Prime) <b>82-1092</b>
Prime Contractor <b>McDERMOTT, INC.</b>	Test Contractor <b>C.S.I. HYDROSTATIC TESTERS</b>
Description and Location of Pipeline or Appliance Being Tested <b>30 MILES OF 30" PIPELINE FROM CITIES SERVICE PLATFORM "A" BLOCK A-76 TO TRANSOCO JUNCTION PLATFORM IN BLOCK 538 BRAZOS AREA OFFSHORE TEX.</b>	

LINE DATA

Description of Pipe O.D. <b>30"</b> W.T. <b>.812</b> Yld. <b>X-60</b>	Length of Test Section <b>30.15 Miles</b>	From (M.P. or Blk.) <b>A-76 BRAZOS</b>	To (M.P. or Blk.) <b>538 BRAZOS</b>	Survey Station No. From: <b>0.00</b> To: <b>30.15</b>
O.D. <b>30"</b> W.T. <b>.688</b> Yld. <b>X-60</b>	Test Section No. <b>1</b>	Elevation of High Point <b>MINUS 90 FT.</b>		Elevation of Low Point <b>MINUS 170 FT.</b>
O.D. <b>30"</b> W.T. <b>.562</b> Yld. <b>X-60</b>	Drawing No. (Alignment or Fabrication)			
O.D. W.T. Yld.	Pipe Manufacturer <b>* KAISER</b>	Purchase Order No. <b>* 253685</b>		
	<b>UNITED STATES STEEL</b>			
		<b>257617</b>		

TEST DATA

Type of Test Gas <input type="checkbox"/> Air <input type="checkbox"/> Water <input checked="" type="checkbox"/>	Date Fill Started <b>10-4-82</b>	Date Fill Completed <b>10-13-82</b>	Water Treatment Chem. <input checked="" type="checkbox"/> Filter <input type="checkbox"/>	Avg. Temp. Water, Air or Gas Fill <b>N/A</b>
General Weather Conditions: <b>CLOUDY WINDY, CON.</b>	Location and Elevation Where Dead Weight Readings Taken: M.P. or Block Location: <b>TRANSOCO BRAZOS 538 PLAT.</b> Elevation: <b>SEA LEVEL</b>			
Minimum Test Pressure Specified: (High Point) <b>2068</b> PSI ( % of Specified Min. Yield)	Maximum Allowable Test Pressure: (Low Point) <b>2113</b> PSI ( % of Specified Min. Yield)			

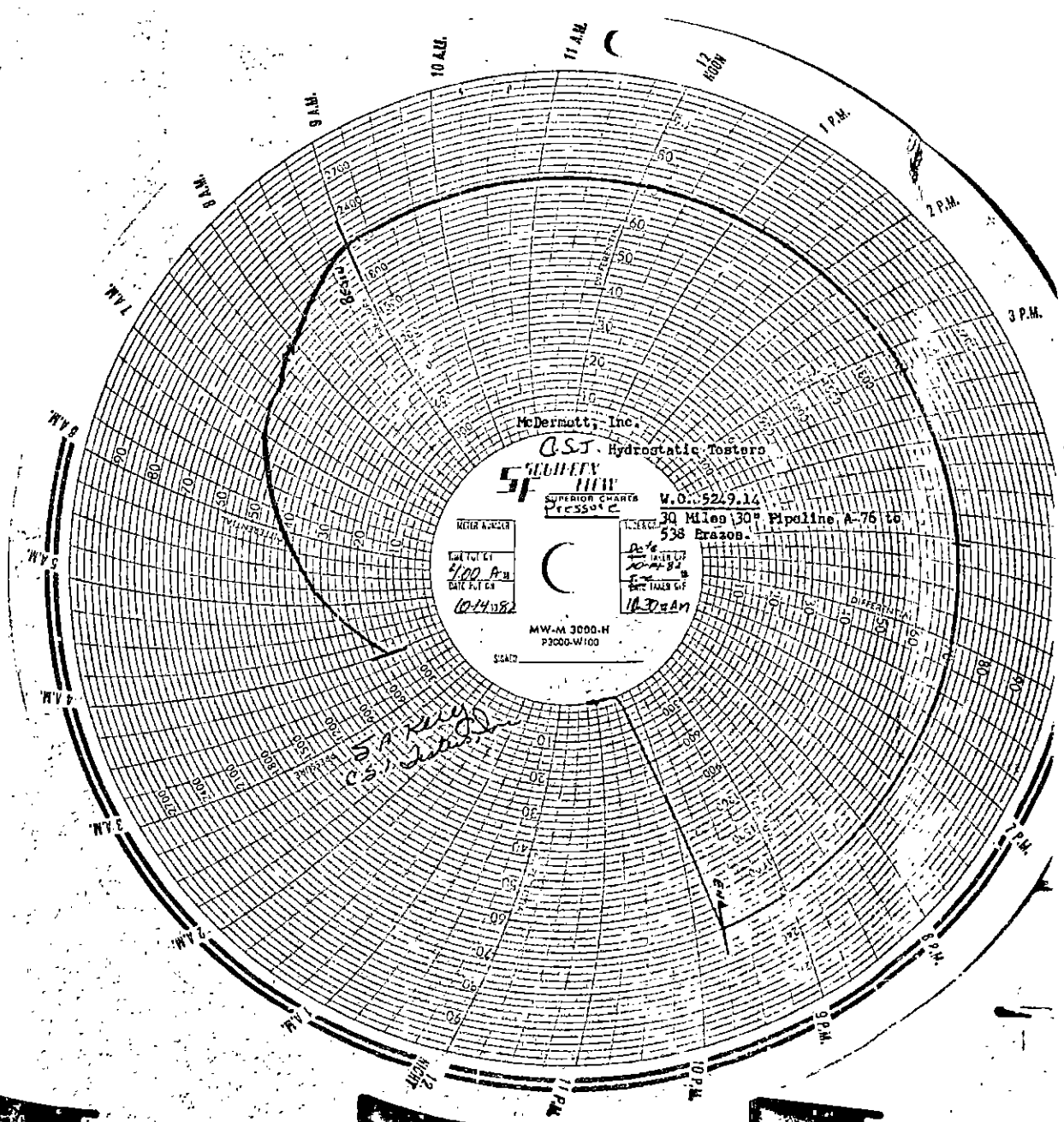
TEST WATER AND LEAK DATA

Fill Water	Source: <b>GULF OF MEXICO</b>	Location: <b>BRAZOS AREA</b>	Survey Sta.	M.P. or Block
Test Water Disposal Point	Location: <b>GULF OF MEXICO - BRAZOS AREA</b>		Survey Sta.	M.P. or Block
Leak or Test Failures During Test	Location: <b>N/A</b>			
Acidity (pH) of Fill Water	During Fill: <b>N/A</b>	During Disposal: <b>N/A</b>		
Chemicals Added to Fill Water	Type: <b>SUPERIOR CHEMICAL CO. INHIBITOR, SCAVENGER AND SURFACTANT</b>	Quantity: <b>1925 GALLONS</b>		

DEAD WEIGHT PRESSURE AND TEMPERATURE LOG

Date of Readings	Time of Readings	Pressure P.S.I.G.	Temperature of			Remarks
			Ambient	Ground	Pipe	
10-14-82	9:00 AM.	2113	74		76	ON TEST
	9:15	2112	74		76	
	9:30	2112	74		76	
	9:45	2111	74		77	
	10:00	2110	75		78	
	10:30	2109	75		78	
	11:00	2108	75		78	
	11:30	2107	75		78	
	12:00	2107	76		78	
	12:30 P.M.	2107	76		78	
	1:00	2106	76		78	
	2:00	2106	77		78	
	3:00	2106	78		78	
	4:00	2105	80		78	
	5:00	2105	81		78	
	6:00	2104	78		79	
	7:00	2103	75		79	
	8:00	2102	74		79	
	9:00	2102	74		79	TEST COMPLETE
	9:30	2102	74		79	
	9:45	2102	74		79	STARTED BLOWING DOWN PIPELINE

Report Prepared By: <b>Kelley Robinson</b>	Date: <b>10-14-82</b>	Test Supervised By: <b>Kelley Robinson</b>
Test Witnessed By: <b>S.A. Kelly C.S.I.</b>	(1) <b>S.A. Kelly</b>	(2) <b>May 3 Hamble</b>
Test Accepted By: <b>[Signature]</b>	Date: <b>10-14-82</b>	Hour: <b>9:00 P.M.</b>



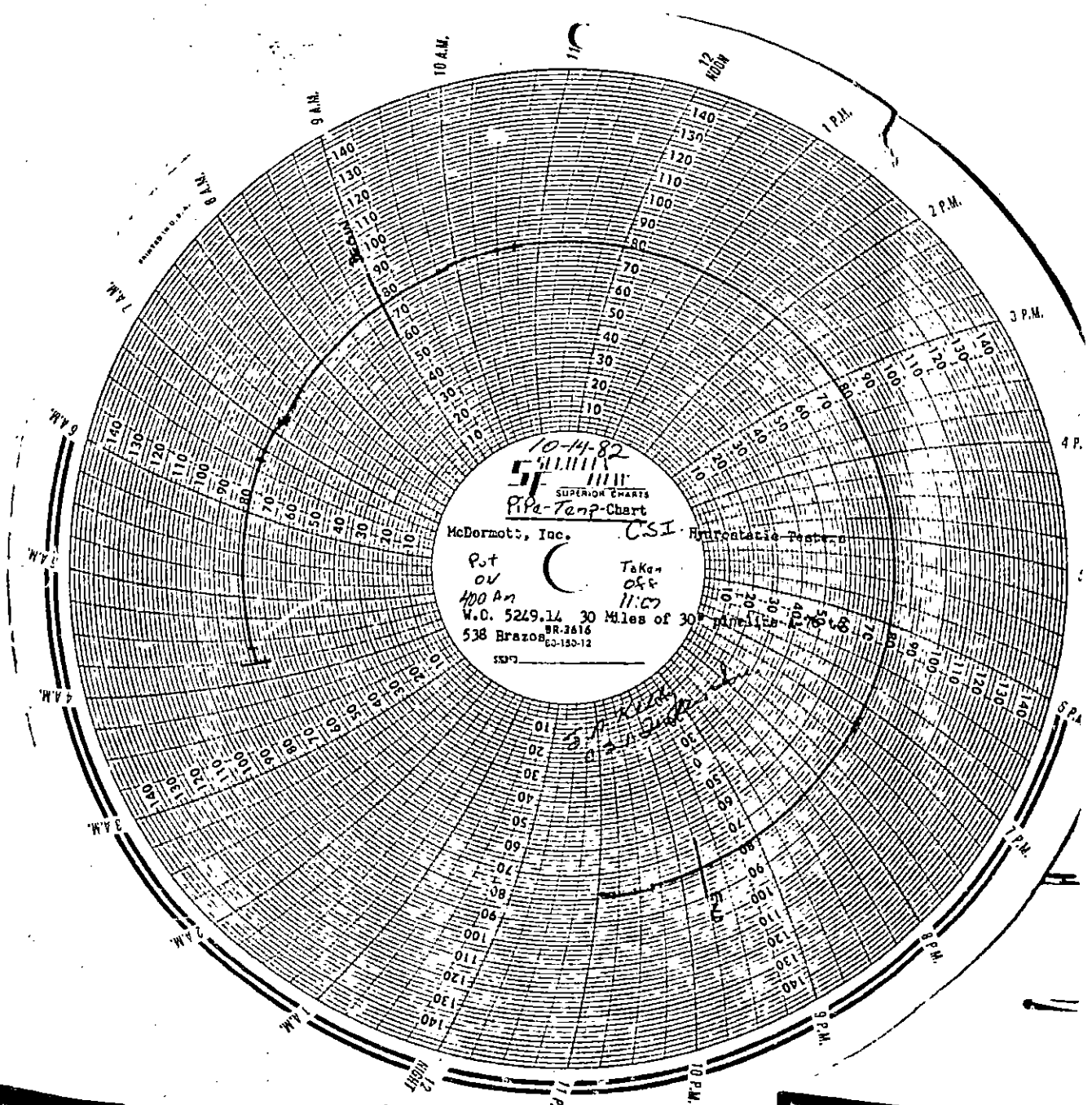
McDermott, Inc.  
**CST** Hydrostatic Testers  
**SUPERIOR CHARTS**  
 Pressure

MEASUREMENT  
 TEST TIME  
 DATE TESTED  
 10-14-82

W.O. 5229.14  
 30 Miles 30" Pipeline A-75 to  
 538 Brazos  
 DATE TESTED  
 10-14-82

MW-M 3000-H  
 P3000-W100  
 SERIAL

*Handwritten:*  
 S.A. Kelly  
 CST Hydrostatic Testers



10-14-82  
**SI**  
 SUPERIOR EMERTS  
 Pipe-Temp-Chart

McDermott, Inc. CSI Hydraulic Test

Put on 400 Am  
 W.O. 5249.14 30 Miles of 30" pipeline  
 538 Brazos BR-3616 CS-150-12

Taken off 11:00

CLASS

# UPDATE

*June, 1990*

G-4976

MAR 28 1990

In Reply Refer To: FO-2-2 (OCS-G 4976)

Transcontinental Gas Pipe  
Line Corporation  
Attention: Mr. Charles G. Pittman  
Post Office Box 1396  
Houston, Texas 77251-1396

Gentlemen:

Pursuant to the authority granted by 43 U.S.C. 1334(e) and 30 CFR 250.150(d), your amended application dated February 27, 1990, for a pipeline right-of-way two-hundred feet (200') in width for the operation, maintenance and partial abandonment of an existing 30-inch pipeline is hereby approved, as proposed.

The modification will include an abandonment of 58.66 feet and a salvage of 30 feet of existing pipe, creating a relinquishment of 88.66 feet of the existing pipeline right-of-way. This pipeline will now transport natural gas from a 30-inch pipeline (OCS-G 7559) at coordinates X = 2,994,335.87 and Y = 63,401.55 in Block A-76, Brazos Area, to Junction platform in Block 533, Brazos Area.

The total length of this pipeline will be 30.15 miles.

Sincerely,

**(Orig. Sgd.) A. Donald Giroir**

D. J. Bourgeois  
Regional Supervisor  
Field Operations

bec: 1502-01 (P/L OCS-G 4976) (FO-2-2)  
1502-01 (P/L OCS-G 4976) (microfilm) (FO-2-2)  
LE-3-1  
FO-2-2 Carto (w/plat)

CWilliams:ds:3/26/90

**Transcontinental Gas  
Pipe Line Corporation**  
A Transco Energy company

2800 Post Oak Boulevard  
P. O. Box 1396  
Houston, Texas 77251-1396  
713-439-2000

February 27, 1990

Mr. D. J. Bourgeois, Regional Supervisor  
U. S. Dept. of the Interior  
Minerals Management Service  
1201 Elmwood Park Blvd.  
New Orleans, Louisiana 70123-2394

Attn: Ms. Carol Williams  
70-2-2

Re: Application to Amend Existing Right-of-Way OCS-G 4976 to Connect a  
Realignment of an Existing 30" Diameter Pipeline in Block A-76, Brazos  
Area, South Addition, Offshore Texas, Gulf of Mexico, W.O. 5249.37, Line  
No. 1-210-1, R/W No. 87

Dear Mr. Bourgeois:

Pursuant to the authority granted in 43 U.S.C. 1334 (e) and in compliance with  
the regulations contained in Title 30 CFR 250, Subpart J, Transcontinental Gas  
Pipe Line Corporation (Transco) hereby applies, in quadruplicate, for an  
amendment to the referenced right-of-way in order to construct, maintain and  
operate a tie-in of an existing 30" natural gas pipeline realignment as shown  
on the following drawings and documents.

Vicinity, Route, Profile and Corrosion Protection Drawing No.  
22-3042/DI-3E-002 (4 copies enclosed).  
Schematic Drawing No. PLTFA76RR (4 copies enclosed).

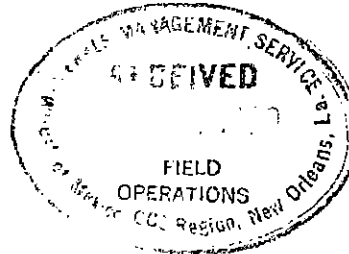
Applicant agrees that said right-of-way, if approved, will be subject to the  
terms and conditions of said regulations.

The tie-in will be used to connect Transco's existing 30" pipeline which has  
been assigned OCS-G 4976 to Transco's realignment of its existing 30" pipeline  
(OCS-G 7559), all in Block A-76, Brazos Area, South Addition, Offshore Texas,  
Gulf of Mexico.

In accordance with applicable regulations, the applicant agrees it will mail  
to each lessee or operator of record and right-of-way holder whose lease or  
right-of-way is affected by this application, by registered mail, return  
receipt requested, a copy of the maps attached to the application.

A list of such lessees or operators of record and right-of-way holders is  
attached and copies of the return receipts showing service upon such lessees  
or operators of record and right-of-way holders will be forwarded to your  
office when received.

OCS-G 4976  
Microfilm



Design criteria is as follows:

1. **WATER DEPTH** is 164.9 feet at the tie-in of Transco's 30" pipelines.
2. **CATHODIC PROTECTION SYSTEM** will be the existing aluminum alloy bracelet anodes on each pipeline.
3. **PRODUCTS** to be transported by the pipeline are natural gas and condensate, neither of which is corrosive to carbon steel pipe interior. However, the analysis of the transported products will be monitored and preventive measures such as pigging and/or inhibiting will be employed as necessary.
4. **ANTICIPATED SPECIFIC GRAVITY** of the natural gas is 0.60 and the condensate is 0.80.
5. **DESIGN WORKING PRESSURE** of the system is as follows:  
  
    **Maximum Allowable Operating Pressure Based on Valves and Flanges** will be 1,440 psig (maximum working pressure of ANSI 900 underwater valves and flanges).  
  
    **Maximum Allowable Operating Pressure Based on the Existing Pipelines** is 1,248 psig.  
  
    Therefore, **Maximum Allowable Operating Pressure of the Pipeline** is 1,248 psig based on the existing pipelines.
6. **ANTICIPATED OPERATING PRESSURES** will range from 500 psig to 1,250 psig.
7. **DESIGN CAPACITY** of the line is 230 MMCFD.
8. **DESIGN BURIAL DEPTH** is shown on Drawing No. 22-3042/DI-3E-002.
9. **ALL PIPING, FITTINGS, RISER AND COMPONENTS OF THE PIPELINE ARE DESIGNED IN COMPLIANCE WITH 49 CFR 192.**
10. **CONSTRUCTION INFORMATION:**
  - A. Estimated Starting Date: May 14, 1990
  - B. Method of Construction: Lay Barge
  - C. Method of Burial: Jet Bury Barge
  - D. Estimated Time Required to Lay Pipe: 2 weeks
  - E. Estimated Time to Complete Project: 5 weeks
  - F. Applicant's Base of Operations: Ingleside, Texas



11. COMPANY CONTACT:

Transcontinental Gas Pipe Line Corporation  
P. O. Box 1396, Houston, Texas 77251  
Telephone: (713) 439-2628  
Charles G. Pittman  
Senior Permits Engineer

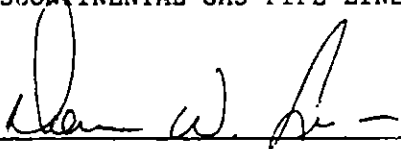
A certified copy of the articles of incorporation and certificate of the Assistant Secretary, under seal, certifying that the corporate officer executing the application has the authority to do so have already been submitted to your office. These documents have been placed on record in a file identified as New Orleans Miscellaneous File No. 011.

Please find enclosed a Nondiscrimination in Employment statement executed by a vice president of Transcontinental Gas Pipe Line Corporation.

If the above and attached information meets with your approval, we would appreciate your issuing the necessary right-of-way at your earliest convenience. Inquiries concerning this application may be directed to the applicant at P. O. Box 1396, Houston, Texas 77251.

Very truly yours,

TRANSCONTINENTAL GAS PIPE LINE CORPORATION

By:   
Donn W. Leva  
Vice President, Operating Services

CGP  
AAK  


Attachments

OPERATORS OF RECORD AND RIGHT-OF-WAY HOLDERS INTERSECTED  
BRAZOS AREA

BLOCK A-76

Pipelines

None

Oil & Gas

None

NOTE: This form must be executed as an original.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
MINERALS MANAGEMENT SERVICE

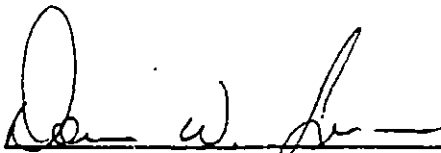
NONDISCRIMINATION IN EMPLOYMENT

As a condition precedent to the approval of the granting of the subject pipeline right-of-way, the grantee Transcontinental Gas Pipe Line Corporation hereby agrees and consents to the following stipulation which is to be incorporated into the application for said right-of-way.

During the performance of this grant the grantee agrees as follows:

During the performance under this grant, the grantee shall fully comply with paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended, (reprinted in 41 CFR 60-1.4 (a)), which are for the purpose of preventing discrimination against persons on the basis of race, color, religion, sex or national origin. Paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended, are incorporated in this grant by reference.

Transcontinental Gas Pipe Line Corporation

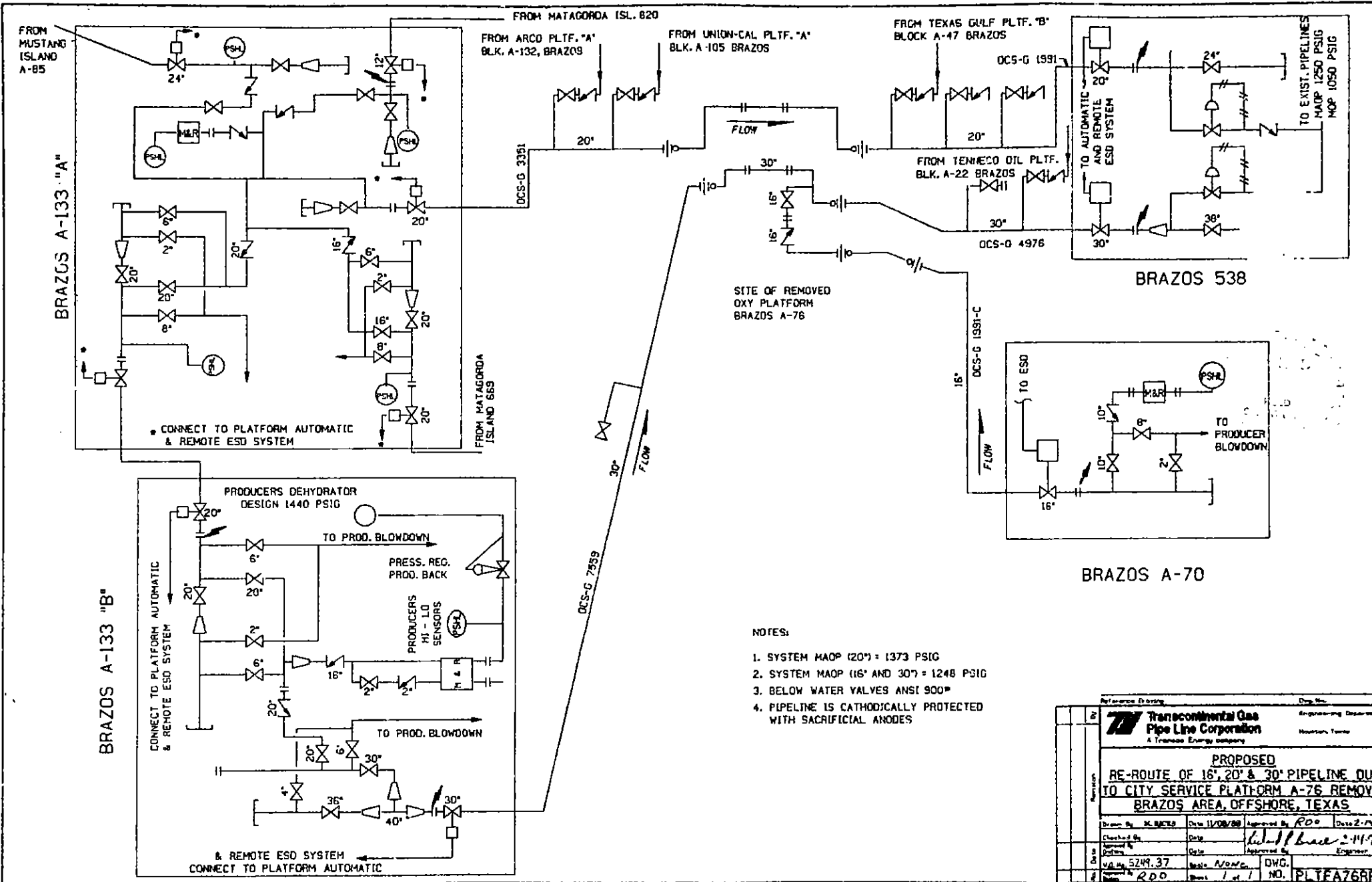


Signature of Grantee  
Vice-President

CGP

RAK  
EJA

Date: 2/27/90



- NOTES:
1. SYSTEM MAOP (20") = 1373 PSIG
  2. SYSTEM MAOP (16" AND 30") = 1248 PSIG
  3. BELOW WATER VALVES ANSI 900"
  4. PIPELINE IS CATHODICALLY PROTECTED WITH SACRIFICIAL ANODES

Reference Drawing		Dwg. No.	
 <b>Transcontinental Gas Pipe Line Corporation</b> A Transco Energy Company		Engineering Department	
		Houston, Texas	
<b>PROPOSED</b> <b>RE-ROUTE OF 16", 20" &amp; 30" PIPELINE DUE TO CITY SERVICE PLATFORM A-76 REMOVAL BRAZOS AREA, OFFSHORE, TEXAS</b>			
Drawn By	MLB/CS	Date	11/08/98
Checked By		Date	
Approved By		Date	
Scale	5249.37	Scale	None
Sheet	RDD	Sheet	1 of 1
DWG. NO.		PLTFA76BR	

**END**

**UPDATE**

*June, 1990*