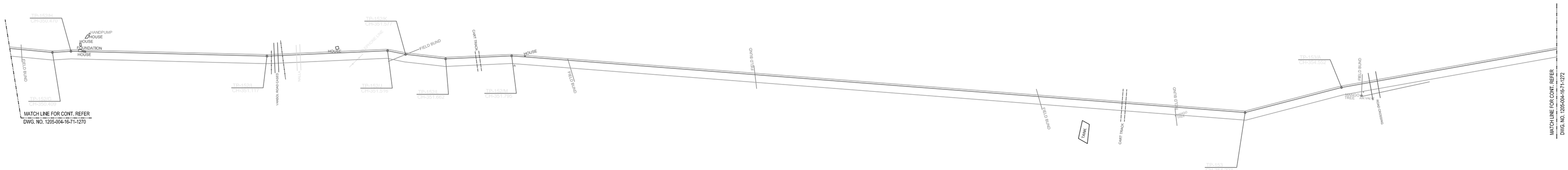
TURNING POINT (TP)	TP-152/G, TP-152/H, TP-152/I, TP-152/J, TP-152/K, TP-152/L, TP-152/M, TP-153, TP-153/A
DEFLECTION ANGLE (°_' _")	9°0'0"L 5°0'0"R 4°0'0"L 14°0'0"R 14°0'0"L 5°0'0"L 7°0'0"R 19°0'0"L 4°30'0"R
DISTANCE BETWEEN TP's (m)	141.620 61.145 647.325 398.535 60.655 218.240 2428.595 328.800 721.797
STATE & DISTRICT	ANAND KHEDA GUJARAT

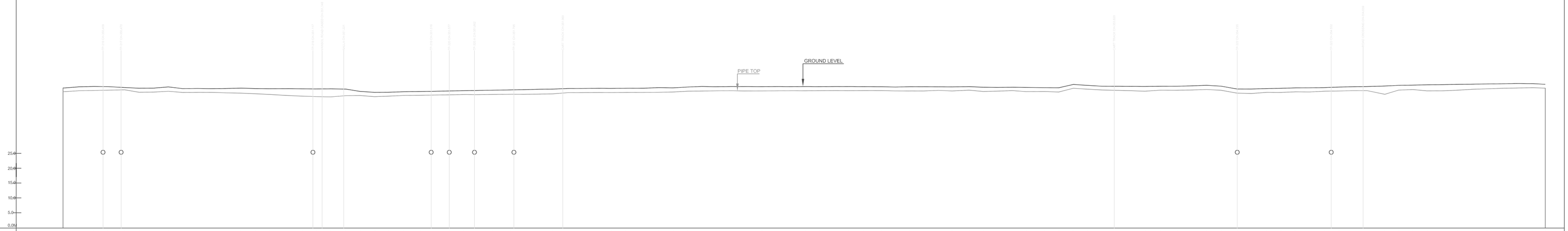
SURVEY DETAILS



PLANIMETRY

SCALE :-

ALONG LINE 1:5000
ACROSS LINE 1:5000



GROUND PROFILE

SCALE :-

HORIZONTAL 1:5000
VERTICAL 1:500

REFERENCE DATUM

GROUND LEVELS(m)	47.172 47.560 47.880 47.835 47.320 47.085 47.110 47.535 48.065 47.015 46.938 46.990 47.120 46.960 46.910 46.940 46.890 46.850 46.880 46.800 46.020 45.700 45.720 45.900 45.990 46.060 46.170 46.250 46.350 46.420 46.530 46.610 46.720 46.800 46.990 47.010 47.050 47.030 47.070 47.090 47.290 47.210 47.460 47.660 47.590 47.640 47.640 47.660 47.660 47.630 47.650 47.630 47.640 47.660 47.620 47.590 47.460 47.580 47.580 47.550 47.530 47.618 47.410 47.350 47.415 47.350 47.280 47.230 48.330 48.030 47.750 47.732 47.710 47.685 47.745 47.750 47.885 48.060 47.785 46.820 46.820 46.970 47.060 47.210 47.220 47.290 47.460 47.560 47.660 47.830 48.050 48.120 48.240 48.310 48.380 48.450 48.520 48.580 48.650 48.620 48.405
PIPE TOP LEVELS(m)	45.913 46.240 46.330 46.420 46.560 45.730 45.790 46.065 45.965 45.895 45.985 45.530 45.420 45.310 44.980 44.630 44.410 44.280 44.170 44.380 44.620 44.240 44.420 44.640 44.710 44.790 44.880 44.950 44.920 44.990 45.060 45.040 45.110 45.200 45.590 45.610 45.640 45.620 45.660 45.680 45.710 45.810 46.090 46.140 46.210 46.240 46.160 46.180 46.210 46.240 46.220 46.250 46.280 46.280 46.285 46.290 46.180 46.160 46.160 46.190 46.360 46.190 46.425 46.600 46.100 46.285 45.945 45.990 45.820 47.070 46.770 46.490 46.380 46.250 46.085 46.420 46.400 46.500 46.660 46.415 45.420 45.310 45.700 45.660 45.870 45.830 46.090 46.150 46.270 46.270 45.030 46.450 46.190 46.230 46.440 46.720 46.890 47.050 47.150 47.270 47.109
DISTANCE BETWEEN LEVEL POINTS (IN METRES)	54.0 48.0 47.0 59.0 49.0 49.0 49.0 49.0 48.0 50.0 49.0 49.0 50.0 47.0 62.0 48.0 49.0 48.0 50.0 48.0 49.0 48.0 48.0 60.0 47.0 49.0 48.0 49.0 49.0 60.0 48.0 49.0 48.0 50.0 50.0 47.0 47.0 62.0 49.0 49.0 48.0 48.0 48.0 48.0 48.0 60.0 48.0 49.0 47.0 50.0 48.0 49.0 49.0 61.0 49.0 46.0 49.0 49.0 47.0 56.0 49.0 49.0 48.0 47.0 61.0 49.0 49.0 49.0 49.0 46.0 49.0 49.0 49.0 60.0 49.0 49.0 49.0 49.0 55.0 49.0 49.0 49.0 49.0 48.0 49.0 49.0 48.0 48.0 60.0 46.0 48.0 48.0 58.0 47.0 49.0 49.0 48.0 47.0 59.0 42.0
SURFACE /TERRAIN DETAILS	

PIPELINE DETAILS

CLASS/ZONE LOCATION	NOT APPLICABLE
DESIGN FACTOR	0.72
LINE PIPE DETAILS — MATERIAL	API 5L Gr. X-70, HSAW/ LSAW
LINE PIPE DETAILS — O.D.X. WALL THICKNESS (mm x mm)	610, 7.1
CUMULATIVE CHAINAGE (KM METRES) (000 + 000)	350.274 350.328 350.376 350.403 350.484 350.531 350.580 350.629 350.678 350.726 350.776 350.825 350.874 350.924 350.971 351.033 351.081 351.130 351.178 351.228 351.276 351.325 351.373 351.421 351.481 351.528 351.577 351.625 351.674 351.723 351.783 351.831 351.879 351.927 351.976 352.028 352.074 352.125 352.172 352.234 352.283 352.332 352.380 352.428 352.477 352.525 352.573 352.633 352.681 352.726 352.777 352.825 352.875 352.924 352.973 353.034 353.083 353.129 353.178 353.227 353.272 353.330 353.379 353.428 353.476 353.523 353.584 353.633 353.682 353.731 353.780 353.828 353.875 353.924 353.973 354.033 354.082 354.131 354.168 354.225 354.284 354.333 354.382 354.431 354.479 354.528 354.577 354.625 354.673 354.733 354.779 354.827 354.875 354.933 354.980 355.029 355.078 355.126 355.173 355.232 355.274
SPECIAL PROVISIONS	350.274KM 351.0KM 352.0KM 353.0KM 354.0KM 355.0KM 355.274KM
PIPE LINE COVER MINIMUM (METRES)	1.5 1.0 1.5 1.0 1.2 1.0 1.2 1.0 1.5 1.0
CROSSINGS	VARDA ROAD CASED 350.403 350.484; CART TRACK 351.960 352.074; CART TRACK 353.820 353.882; NALA CROSSING 351.221 351.282
SPECIAL INSTALLATION FITTING/MARKERS	
COATING SCHEME	LINE PIPE: THREE LAYER POLYETHYLENE COATING (3LPE) (MIN. 2.5 mm THK) AS PER SPEC. No. 6-71-0041 AND FIELD JOINT COATING HEAT SHRINK SLEEVE AS PER SPEC. NO. 6-71-0044
CATHODIC PROTECTION INSTALLATIONS	REFER GENERAL NOTE-4

SUB-SOIL DETAILS

SOIL RESISTIVITY (OHM-M)	1.50 2.50 12.015 14.330 16.020 19.790 16.780 23.380 26.000 18.600 17.810 16.880
SOIL STRATIFICATION DEPTH IN (m)	REFER GENERAL NOTE-5

TOPOGRAPHIC SYMBOLS

PROPOSED PIPE LINE
EXISTING PIPE LINE
TURNING POINT
INTERMEDIATE POINT
METALLED ROAD
UNMETALLED ROAD
RAILWAY LINE
STREAM < 5m WIDTH
STREAM <5m WIDTH (DRY)
STREAM (PERENNIAL) > 5 m
CANAL (DESCRIBED)
BRIDGE
POWER LINE
TELEPHONE LINE
FENCES
GROUND PROFILE
DAM (DESCRIBED)
WATER TANK, LAKE OR RESERVOIR
QUARRY
SWAMP OR MARSH
MUD
WELL (DESCRIBED)/TUBEWELL
PLACE OF WORSHIP
MONUMENT
HUTS (TEMPORARY)
HUTS (PERMANENT)
GRAVES
TREE

PIPELINE SYMBOLS

CATHODIC PROTECTION TEST STATION
POTENTIAL GRADIENT CONTROL MAT (PGCM)
TRANSFORMER RECTIFIER
AC INTERFERANCE MITIGATION
Zn RIBBON PARALLEL TO PIPE
ANODE GROUND BED
EXISTING CABLE/ PIPELINE CROSSING
HOT BEND (R=6D)
CS CODUIT FOR OFC
OFC PULLING PIT
UNCASED CROSSING
CASED CROSSING
CONTINUOUS CONCERETE WEIGHTING
GEOTEXTILE BAGS
INTERMEDIATE SCRAPER STATION
INSULATING JOINT
SCRAPER TRAP
KM MARKER
PIPE LINE WARNING SIGN
AERIAL MARKER
NAVIGABLE WATER WAY PIPE LINE WARNING SIGN
DIRECTION MARKER
HDPE DUCT FOR OFC
SECTIONALISING VALVES
ZINC GROUNDING CELL
SLOPE BREAKER

SOIL SYMBOLS

CH PEORGAMIC CLAY WITH HIGH PLASTICITY
CI PEORGAMIC CLAY WITH MEDIUM PLASTICITY
ML PLAYEY SAND
SM SILTY SAND POORLY GRADED SAND IL MIXTURES
CLML PEORGAMIC CLAY WITH LOW PLASTICITY
SW PEORGAMIC SILTY CLAY WITH MEDIUM CLASTICITY
SP WELL GRADED SAND
CL PEORGAMIC CLAY WITH LOW PLASTICITY
ROCK ROCK
GW WELL GRADED GRAVELS
SM SOFT ROCK WITH KANKRES
SCLML WHITE LIME WITH KANKARS
SP POORLY GRADED SAND
CLAY CLAY WITH KANKAR BASALT
GP POORLY GRADED GRAVELS
GM SILTY GRAVELS,POORLY GRADED
GC CLAYEY GRAVELS,POORLY GRADED
CLMS SILT WITH KANKAR
SM WEATHERED BASALT
CL CLAY
SC SILTY CLAY
SS SILTY SAND
SCMS SANDY CLAY WITH KANKAR
MGRM MOORUM WITH BOULDERS
WR WEATHERED ROCK
M MOORUM
KCLMS RED CLAY WITH KANKARS
SM SANDY MOORUM
BR RED ROCK
HR HARD ROCK
MGRM MOORUM WITH GRAVELS
ER EXPOSED ROCK
GC GRIZSH CLAY
BLCR BLACK COTTON SOIL
EWB EXPOSED WEATHERED BASALT
SLMM SILTY CLAY WITH MOORUM
CLMM CLAY WITH MOORUM
BLCM BLACK COTTON SOIL WITH KANKAR
SG SANDY GRAVEL
BCSM BLACK COTTON SOIL WITH KANKARS
SCMS SILTY CLAY WITH SAND
SC SANDY CLAY
RR RED ROCK
CLSL CLAYEY SILT
CLMS SILTY CLAY WITH KANKARS
SSK SILTY SAND WITH KANKARS
CSKM SILTY SILT WITH KANKARS
BSC BLACK SILTY CLAY
SS SANDY SILT
SMD
EWR EXPOSED WEATHERED ROCK
CLRG CLAY WITH GRAVELS

GENERAL NOTES :-

1. LOCATION OF MARKERS ARE EXACT AS PER FIELD SURVEY.
2. FOR ALL CROSSINGS, THE THICKNESS OF CASING PIPES PROVIED AS PER SPECIFIC REQUIREMENTS & THE SAME IS TABULATED IN B.O.M. ALL THE CROSSINGS EXECUTED AS PER RELEVANT OB STANDARD/DRAWINGS.
3. LOCATION OF SLOPE BREAKERS ARE PROVIDED AS PER STANDARD & AS PER INSTRUCTIONS OF ENGINEER-IN-CHARGE.
4. INSTALLATION OF CATHODIC PROTECTION FACILITIES PROVIDED AS PER DRAWINGS/ DOCUMENTS SUBMITTED BY CONTRACTOR AND APPROVED BY COMPANY.
5. FOR DETAILS REGARDING SOIL STRATIFICATION AND SOIL RESISTIVITY ALONG THE ROUTE, REFER M/S PETRO IT'S SOIL INVESTIGATION & RESISTIVITY REPORT.
6. ANTI BUOYANCY CONTROL (CONCRETE WEIGHT COATING) AND GEOTEXTILE BAGS, IF REQUIRE, SHALL BE DECIDED AT SITE (BESIDE THE LOCATION AS SHOWN IN ALIGNMENT SHEET) CASE TO CASE BASIS AND AS PER INSTRUCTION OF ENGINEER-IN-CHARGE.

NOTES :-

1. ALL LEVELS ARE IN "METERS" AND CORRESPOND TO MEAN SEA LEVEL (MSL).
2. 0.00 CHAINAGE CORRESPONDS TO INSULATING JOINT AT VADINAR.
3. ANTI BUOYANCY MEASURES, IF REQUIRED, SHALL BE DECIDED AT SITE IN CONSULTATION WITH ENGINEER-IN-CHARGE.
4. THE EXTENT OF CASED CROSSING PROVIDED AS PER INSTRUCTION OF ENGINEER-IN-CHARGE.

BILL OF MATERIAL FOR THIS DRAWING

DESCRIPTION	ECIL	EIL	BORL
610 7.1 3LPE 5000	K.M. POST		
	DIRECTION MARKER		
	AERIAL MARKER		1
5000	INSULATING JOINTS		
	HOT BENDS		
	NAVIGABLE WATERWAY		
782 6.4 24	WARNING MARKER		10
168.3 6.4 24	CPG JOINT PIT		3
	CP TEST STATION		6

REFERENCE DRAWINGS

TITLE	NUMBER
CROSSING	CHAINAGE(m)
ROAD	351148
NALLA	351221
CART TRACK	351960
CART TRACK	353820
ROAD	354659

AS BUILT DRAWING

इंजीनियर्स इंडिया लिमिटेड (A Govt. of India Undertaking) ENGINEERS INDIA LIMITE

BHARAT OMAN REFINERIES LIMITED

ESSAR ESSAR CONSTRUCTIONS (INDIA) LIMITED

बीना रिफायनरी परियोजना (वाडीनार बीना पाइपलाइन) — BINA REFINERY PROJECT (VADINAR-BINA PIPELINE)

एलाइनमेन्ट शीट वाडीनार से बीना — ALIGNMENT SHEET VADINAR TO BINA

चैनेज 350.274 से 355.274 कि.मी. — CHAINAGE 350.274 KM TO 355.274 KM

SCALE	JOB NO.	UNIT	DEPT.	SECT.	DWG. NO.	REV.
AS SHOWN	1205	04	16	71	1271	0