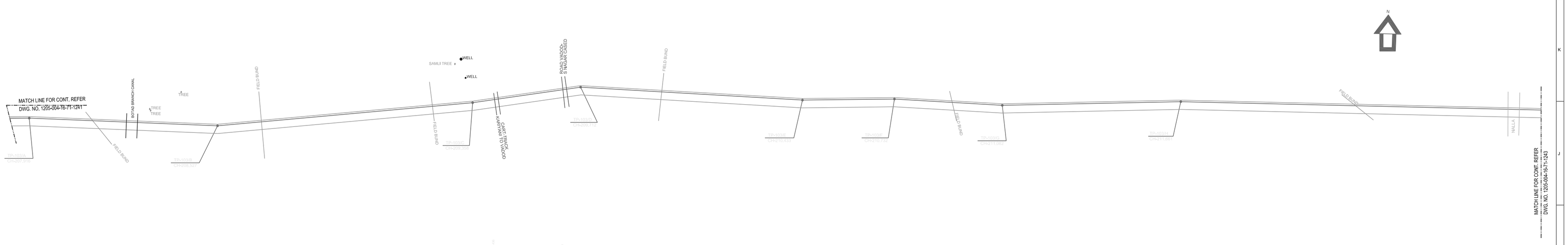
TURNING POINT(TP)	TP-103/A		TP-103/B		TP-103/C		TP-103/D		TP-103/E		TP-103/F		TP-103/G		TP-103/H			
DEFLECTION ANGLE ("_' _")	2°30'00"R		7°30'00"L		3°00'00"L		11°30'00"R		4°00'00"L		4°00'00"R		4°30'00"L		2°30'00"R			
DISTANCE BETWEEN IP's (m)	63.073	611.410		830.990		353.900		720.895		298.385		350.405		579.255		1191.687		
STATE & DISTRICT	GUJARAT													SURENDDRANAGAR				

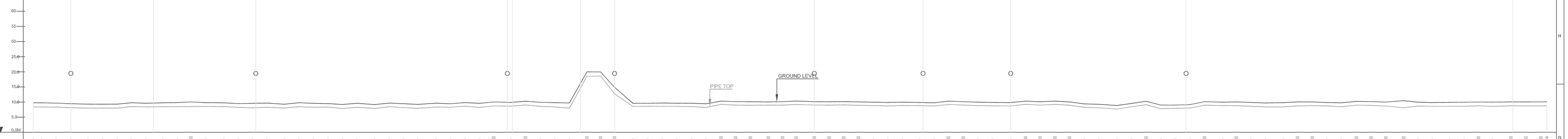
SURVEY DETAILS



PLANIMETRY

SCALE :-

ALONG LINE 1:5000
ACROSS LINE 1:5000



GROUND PROFILE

SCALE :-

HORIZONTAL 1:5000
VERTICAL 1:500

REFERENCE DATUM 0.0M

GROUND LEVELS(m)	0.750, 0.750, 0.650, 0.650, 0.300, 0.250, 0.300, 0.790, 0.600, 0.750, 0.850, 0.030, 0.800, 0.750, 0.500, 0.380, 0.870, 0.250, 0.770, 0.580, 0.490, 0.200, 0.600, 0.160, 0.660, 0.450, 0.220, 0.630, 0.440, 0.850, 0.370, 0.030, 0.870, 0.270, 0.100, 0.050, 0.120, 0.340, 0.140, 0.080, 0.170, 0.050, 0.950, 0.870, 0.950, 0.880, 0.750, 0.300, 0.120, 0.960, 0.870, 0.850, 0.300, 0.110, 0.300, 0.050, 0.400, 0.250, 0.880, 0.350, 0.250, 0.000, 0.000, 0.150, 0.120, 0.950, 0.040, 0.870, 0.700, 0.800, 0.050, 0.040, 0.850, 0.740, 0.230, 0.150, 0.000, 0.400, 0.950, 0.850, 0.890, 0.940, 0.000, 0.970, 0.040, 0.050, 0.060, 0.040
PIPE TOP LEVELS(m)	8.404, 8.370, 8.340, 8.140, 7.990, 7.980, 7.980, 8.510, 8.410, 8.460, 8.490, 8.490, 8.510, 8.540, 8.520, 8.260, 8.080, 8.280, 8.050, 8.470, 8.290, 8.330, 7.880, 8.260, 7.890, 8.450, 8.180, 7.940, 8.350, 8.270, 8.630, 8.230, 8.740, 8.640, 9.040, 8.570, 8.390, 7.990, 18.520, 18.560, 12.740, 8.560, 8.600, 8.590, 8.590, 8.400, 8.230, 9.240, 8.990, 8.940, 8.980, 8.990, 9.200, 9.030, 8.980, 9.070, 8.920, 8.840, 8.720, 8.830, 8.800, 8.700, 9.180, 9.010, 8.820, 8.760, 8.710, 9.260, 9.000, 9.220, 8.950, 8.250, 8.090, 7.880, 8.440, 9.130, 7.800, 7.920, 8.030, 8.960, 8.830, 8.820, 8.610, 8.390, 8.400, 8.720, 8.810, 8.730, 8.450, 8.970, 8.910, 8.880, 8.120, 8.700, 8.590, 8.620, 8.610, 8.760, 8.580, 8.750, 8.749, 8.744, 8.742
DISTANCE BETWEEN LEVEL POINTS (IN METRES)	27.6, 47.0, 49.0, 56.0, 49.0, 49.0, 46.0, 49.0, 55.0, 48.0, 46.0, 48.0, 59.0, 48.0, 47.0, 47.0, 59.0, 47.0, 49.0, 48.0, 48.0, 47.0, 59.0, 48.0, 47.0, 47.0, 60.0, 48.0, 48.0, 48.0, 47.0, 57.0, 48.0, 49.0, 48.0, 48.0, 58.0, 45.0, 46.0, 61.0, 48.0, 48.0, 49.0, 49.0, 48.0, 49.0, 48.0, 49.0, 59.0, 47.0, 45.0, 60.0, 49.0, 48.0, 49.0, 49.0, 48.0, 48.0, 56.0, 49.0, 47.0, 49.0, 49.0, 48.0, 60.0, 49.0, 48.0, 49.0, 48.0, 49.0, 48.0, 60.0, 48.0, 48.0, 49.0, 48.0, 48.0, 48.0, 48.0, 61.0, 44.0, 48.0, 48.0, 60.0, 46.0, 49.0, 48.0, 48.0, 50.0, 48.0, 49.0, 59.0, 47.0, 48.0, 57.0, 48.0, 47.0, 46.0, 61.0, 50.0, 49.0, 20.2
SURFACE /TERRAIN DETAILS	CULTIVATION, SCRUB, CULTIVATION, SCRUB, CULTIVATION, OPEN SCRUB, CULTIVATION, SCRUB, CULTIVATION, SCRUB, CULTIVATION, OPEN SCRUB, CULTIVATION, NALLA, SCRUB

PIPELINE DETAILS

CLASS/ZONE LOCATION	NOT APPLICABLE
DESIGN FACTOR	0.72
LINE PIPE DETAILS – MATERIAL	API 5L Gr. X-70, HSAW
LINE PIPE DETAILS – O.D.X. WALL THICKNESS (mm x mm)	610, 7.1
CUMULATIVE CHAINAGE (KM METRES) (000 + 000)	207.853, 207.881, 207.930, 207.977, 208.033, 208.082, 208.131, 208.177, 208.226, 208.281, 208.329, 208.375, 208.423, 208.482, 208.530, 208.577, 208.624, 208.683, 208.730, 208.779, 208.827, 208.875, 208.922, 208.981, 209.029, 209.076, 209.123, 209.183, 209.231, 209.279, 209.327, 209.374, 209.431, 209.479, 209.528, 209.576, 209.624, 209.682, 209.727, 209.773, 209.854, 209.882, 209.930, 209.979, 210.028, 210.076, 210.125, 210.173, 210.222, 210.281, 210.328, 210.373, 210.433, 210.482, 210.530, 210.579, 210.628, 210.676, 210.724, 210.780, 210.829, 210.876, 210.925, 210.974, 211.022, 211.082, 211.131, 211.179, 211.228, 211.276, 211.325, 211.373, 211.433, 211.481, 211.529, 211.578, 211.626, 211.674, 211.722, 211.783, 211.827, 211.875, 211.923, 211.983, 212.029, 212.078, 212.126, 212.174, 212.224, 212.272, 212.321, 212.380, 212.427, 212.475, 212.532, 212.580, 212.627, 212.673, 212.734, 212.784, 212.833, 212.853
SPECIAL PROVISIONS	
PIPE LINE COVER MINIMUM (METRES)	1.0, 1.2, 1.0, 1.2, 1.0, 1.2, 1.0, 1.2, 1.0
CROSSINGS	80TAD BRANCH CANAL 208.302 – 208.268; CART TRACK KARIYAN TO VADO 209.442 – 209.430; ROAD VADO-S NAGAR CROSSED 209.654 – 209.666; NALLA 212.722 – 212.738
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, 33.09, 15.74, 1.73, 2.11, 10.37, 17.94, 4.71, 2.90, 2.74, 2.01, 3.24
SOIL STRATIFICATION DEPTH IN (m)	2.50, 38.92, 0.6, 2.4; 23.97, 1.30, 1.70; 2.21, 1.0, 2.0; 3.26, 1.30, 1.70; 14.10, 22.56, 1.0, 2.0; 11.00, 1.0, 0.50, 1.50; 2.40, 0.80, 2.20; 3.46, 1.0, 0.50, 1.50; 4.25, 1.20, 1.80; 5.23, 1.50, 1.00, 0.50

REFER GENERAL NOTE-5

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 (RHOD)
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

AEROBIC CLAY WITH HIGH PLASTICITY
AEROBIC CLAY WITH MEDIUM PLASTICITY
CLAYEY SAND
SILTY SAND (ROOT, 1 GRADED SAND IN METURES)
AEROBIC CLAY WITH LOW PLASTICITY
AEROBIC SILTY CLAY WITH MEDIUM PLASTICITY
WELL GRADED SAND
AEROBIC CLAY WITH LOW PLASTICITY
ROCK
WELL GRADED GRAVELS
SOFT ROCK WITH KARROTE
WHITE LAKE WITH KARKARS
POORLY GRADED SAND
CLAY WITH KARKAR BASALT
POORLY GRADED GRAVELS
DELTA GRAVELS,POORLY GRADED
CLAYEY GRAVELS,POORLY GRADED
CLAY WITH KARKAR
WEATHERED BASALT
CLAY
SILTY CLAY
SILTY SAND
SANDY CLAY WITH KARKAR
MORUM WITH BOULDERS
WEATHERED ROCK
MORUM
RED CLAY WITH KARKARS
SANDY MORUM
RED ROCK
HARD ROCK
MORUM WITH GRAVELS
EXPOSED ROCK
GREYISH CLAY
BLACK COTTON SOIL
EXPOSED WEATHERED BASALT
SILTY CLAY WITH MORUM
CLAY WITH MORUM
BLACK COTTON SOIL WITH KARKARS
SANDY GRAVEL
SILTY CLAY WITH SAND
SANDY CLAY
RED ROCK
CLAYEY SILT
SILTY CLAY WITH KARKARS
SOIL WITH KARKARS
SILTY SAND WITH KARKARS
CLAYEY SILT WITH KARKARS
BLACK SILTY CLAY
SANDY SILT
SAND
EXPOSED WEATHERED ROCK
CLAY WITH GRAVELS

GENERAL NOTES :-

1. ALL DIMENSIONS ARE EXACT AS PER FIELD SURVEY.
2. FOR ALL CROSSINGS, THE THICKNESS OF CASING PIPES PROVIDED AS PER SPECIFIC REQUIREMENTS & THE SAME IS TABULATED IN B.O.M. ALL THE CROSSINGS EXECUTED AS PER RELEVANT OIB STANDARD/DRAWINGS.
3. LOCATION OF SLOPE BREAKERS ARE PROVIDED AS PER STANDARD & AS PER INSTRUCTIONS OF ENGINEER-IN-CHARGE.
4. INSTALLATION OF CATHODIC PROTECTION FACILITES 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 DIMENSIONS 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

610	7.1	3LPE	5000	K.M. POST	1
				DIRECTION MARKER	1
				AERIAL MARKER	1
				INSULATING JOINTS	1
			5000	HOT BENDS	2
				NAVIGABLE WATERWAY WARNING MARKER	3
762	6.4		32.7	OFC PIT	4
168.3	6.4		32.7	CP TEST STATION	2

AS BUILT DRAWING

DESCRIPTION	ECIL	EIL	BORL

REFERENCE DRAWINGS

TITLE	NUMBER	
CROSSING	CHAINAGE(m)	
CANAL	208250	
CART TRACK	209436	
ROAD	209660	VBPL/CC/AB/SP II/4
NALLA	212740	

AS BUILT DRAWING

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

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 चेनेज 207.853 से 212.853 कि.मी.

ALIGNMENT SHEET VADINAR TO BINA CHAINAGE 207.853 KM TO 212.853 KM

SCALE	JOB NO.	UNIT	DEPT.	SECT.	DWG. NO.	REV.
AS SHOWN	1205	004	16	71	1242	0