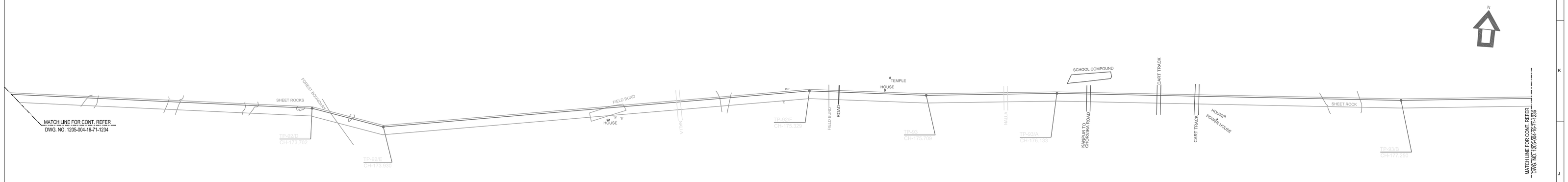
TURNING POINT (TP)	TP-92/D, TP-92/E, TP-92/F, TP-93, TP-93/A, TP-93/B
TP DEFLECTION ANGLE (°_ ' _ ")	12°0'00"R, 19°34'00"L, 7°00'00"R, 3°00'00"L, 2°00'00"R, 2°00'00"L
DISTANCE BETWEEN IP's (m)	899.448, 239.255, 1387.565, 379.355, 424.160, 1117.055, 602.836
STATE & DISTRICT	GUJARAT / SURENDRANAGAR

SURVEY DETAILS

PLANIMETRY

SCALE :-

ALONG LINE 1:5000
ACROSS LINE 1:5000

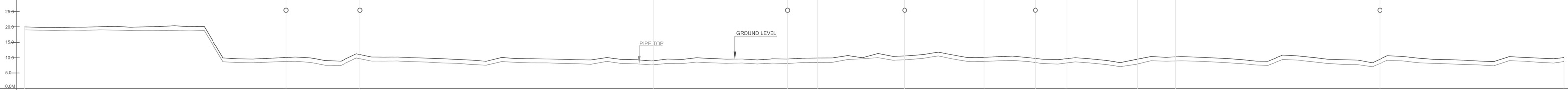


GROUND PROFILE

SCALE :-

HORIZONTAL 1:5000
VERTICAL 1;500

REFERENCE DATUM



GROUND LEVELS(m)	19.868, 19.803, 19.726, 19.874, 19.914, 20.015, 20.154, 19.890, 19.996, 20.138, 20.350, 20.050, 20.150, 18.940, 18.650, 18.590, 18.800, 10.022, 10.250, 10.950, 11.090, 10.930, 11.250, 10.230, 10.220, 10.020, 9.890, 9.680, 9.470, 9.240, 9.880, 10.100, 10.740, 10.700, 10.610, 10.530, 10.350, 10.310, 10.070, 10.490, 10.370, 10.980, 11.000, 10.750, 10.560, 10.610, 10.300, 10.650, 10.650, 10.860, 10.905, 10.950, 10.710, 10.010, 11.380, 10.450, 10.610, 11.020, 11.780, 10.928, 10.100, 10.130, 10.320, 10.530, 10.050, 10.530, 10.390, 10.020, 10.660, 10.980, 10.760, 10.390, 10.930, 10.880, 10.850, 10.580, 10.120, 10.540, 10.360, 10.260, 10.400, 10.640, 10.420, 10.830, 10.490, 10.390, 10.230, 10.950, 10.790, 10.300, 10.130, 10.890, 10.880, 10.071
PIPE TOP LEVELS(m)	19.015, 18.953, 18.860, 18.962, 18.926, 19.028, 18.962, 18.841, 18.765, 18.799, 18.885, 18.960, 18.850, 8.710, 8.670, 8.390, 8.610, 8.786, 8.900, 8.500, 7.600, 7.570, 8.930, 8.940, 8.940, 8.980, 8.750, 8.640, 8.330, 8.250, 8.850, 8.640, 8.790, 8.550, 8.380, 8.370, 8.220, 8.100, 8.340, 8.840, 8.200, 8.060, 7.720, 8.200, 8.150, 8.640, 8.380, 8.340, 8.350, 8.020, 8.310, 8.150, 8.500, 8.522, 8.540, 8.460, 8.670, 10.050, 9.210, 9.390, 8.820, 10.60, 8.641, 8.870, 8.840, 9.020, 9.150, 8.810, 8.170, 7.990, 8.880, 9.340, 7.860, 7.180, 7.898, 9.030, 8.930, 9.000, 8.630, 8.890, 8.430, 8.120, 7.890, 7.590, 9.460, 9.250, 9.130, 9.190, 7.890, 7.800, 7.140, 9.200, 9.000, 9.360, 8.220, 8.040, 8.870, 7.730, 7.440, 9.080, 8.910, 8.540, 9.320, 8.807
DISTANCE BETWEEN LEVEL POINTS (IN METRES)	1, 53, 49, 48, 48, 48, 49, 49, 49, 48, 46, 49, 48, 61, 49, 49, 46, 49, 42, 49, 49, 50, 49, 49, 47, 37, 47, 50, 49, 48, 49, 46, 49, 50, 46, 49, 50, 47, 49, 50, 49, 49, 49, 50, 49, 50, 46, 50, 48, 49, 50, 49, 49, 49, 49, 46, 51, 49, 48, 50, 49, 49, 49, 49, 45, 49, 49, 49, 49, 49, 49, 49, 49, 49, 49, 56, 49, 49, 49, 49, 50, 49, 49, 49, 49, 49, 49, 49, 49, 48, 37, 48, 48, 49, 48, 50, 49, 47, 48, 48, 58, 47, 47, 48, 50, 48, 49, 49, 49, 47, 33

SURFACE /TERRAIN DETAILS	CULTIVATION, NALLA, CULTIVATION, NALLA, CULTIVATION
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

PIPELINE DETAILS

CUMULATIVE CHAINAGE (KM METRES) (000 + 000)

172.853, 172.906, 172.955, 173.003, 173.051, 173.099, 173.148, 173.197, 173.246, 173.294, 173.340, 173.389, 173.437, 173.486, 173.547, 173.596, 173.642, 173.691, 173.733, 173.782, 173.831, 173.881, 173.930, 173.979, 174.026, 174.063, 174.110, 174.160, 174.209, 174.257, 174.306, 174.352, 174.401, 174.451, 174.497, 174.546, 174.596, 174.643, 174.692, 174.742, 174.791, 174.840, 174.889, 174.939, 174.988, 175.034, 175.084, 175.132, 175.181, 175.231, 175.280, 175.329, 175.378, 175.424, 175.475, 175.524, 175.572, 175.622, 175.671, 175.720, 175.769, 175.818, 175.863, 175.912, 175.961, 176.010, 176.059, 176.108, 176.157, 176.206, 176.262, 176.311, 176.360, 176.409, 176.458, 176.508, 176.557, 176.606, 176.655, 176.704, 176.753, 176.802, 176.850, 176.887, 176.935, 176.983, 177.032, 177.080, 177.130, 177.179, 177.226, 177.274, 177.322, 177.380, 177.427, 177.474, 177.522, 177.572, 177.620, 177.669, 177.718, 177.767, 177.814, 177.853

SPECIAL PROVISIONS	
PIPE LINE COVER MINIMUM (METRES)	1.0, 1.5, 1.0, 1.2, 1.0, 1.5, 1.0, 1.2, 1.0, 1.2, 1.0, 1.2, 1.0
CROSSINGS	NALLA TP-91/E TP-91/F; ROAD TP-92/A TP-92/B; NALLA TP-93/E TP-93/F; KAUPUR TO CHORIYA ROAD TP-93/A TP-93/C; CART TRACK TP-93/B TP-93/D; CART TRACK TP-93/G TP-93/H
SPECIAL INSTALLATION FITTING/MARKERS	A, C, K, W, K, W, W, W, W, C
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)	311.39, 72.09, 363.38, 656.45, 12.92, 14.06, 15.32
SOIL STRATIFICATION DEPTH IN (m)	REFER GENERAL NOTE–5: 3.0; 414.69: 0.2, 1.0; 0.5, 2.5; 3.0; 94.81: 0.50, 2.50; 0.50, 2.50; 373.27: 0.3, 2.7; 355.00: 0.30, 2.70; 11.49: 1.0, 2.0; 16.87: 0.30, 2.70; 17.85: 1.0, 1.0, 1.0, 1.0

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 (FHSD)
CS CODUET FOR OFC
OFC 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 PLASTICITY
AEROBIC CLAY WITH MEDIUM PLASTICITY
CLAYEY SAND
SILTY SAND (ROOT) + GRADED SAND IN METRES
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 KANKROTE
WHITE LIME WITH KANKARS
POORLY GRADED SAND
CLAY WITH KANKAR BASALT
POORLY GRADED GRAVELS
DELTA GRAVELS,POORLY GRADED
CLAYEY GRAVELS,POORLY GRADED
CLAY WITH KANKAR
WEATHERED BASALT
CLAY
SILTY CLAY
SILTY SAND
SANDY CLAY WITH KANKAR
MORUM WITH BOULDERS
WEATHERED ROCK
MORUM
RED CLAY WITH KANKARS
SANDY MORUM
RED ROCK
HARD ROCK
MORUM WITH GRAVELS
EXPOSED ROCK
GREY BED CLAY
BLACK COTTON SOIL
EXPOSED WEATHERED BASALT
CLAY WITH MORUM
SILTY CLAY WITH MORUM
SANDY GRAVEL
BLACK COTTON SOIL WITH KANKAR
SILTY CLAY WITH SAND
SANDY CLAY
RED ROCK
CLAYEY SILT
SILTY CLAY WITH KANKARS
SOIL WITH KANKARS
SILTY SAND WITH KANKARS
CLAYEY SILT WITH KANKARS
BLACK SILTY CLAY
SANDY SILT
SAND
EXPOSED WEATHERED ROCK
CLAY WITH GRAVELS

GENERAL NOTES :-

1. LOCATION OF MARKERS 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 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 REQUIRING 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 (BEIGGE THE LOCATION AS SHOWN IN ALIGNMENT SHEET) CASE TO CASE BASIS AND AS PER INSTRUCTION OF ENGINEER–IN–CHARGE.

NOTES :-

1. ALL DATA 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	SLPE	5000	K.M. POST	2
				DIRECTION MARKER	1
				AERIAL MARKER	1
				INSULATING JOINTS	1
			5000	HOT BENDS	2
				NAVIGABLE WATERWAY WARNING MARKER	6
				OFC PIT	2
				CP TEST STATION	5

AS BUILT DRAWING

DESCRIPTION	ECIL	EIL	BORL

REFERENCE DRAWINGS

TITLE	NUMBER
CROSSING	CHAINAGE(m)
NALLA	175370
ROAD	175403
NALLA	175879
ROAD	176217
CART TRACK	176442
CART TRACK	176556

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 172.853 से 177.853 कि.मी.

ALIGNMENT SHEET VADINAR TO BINA CHAINAGE 172.853 KM TO 177.853 KM

SCALE	JOB NO.	UNIT	DEPT.	SECT.	DWG. NO.	REV.
AS SHOWN	12055041671				1235	0