

TUBES						
REV.	POS.N	QTY	DESCRIPTION	LENGTH	EXTRA LENGTH	TOTAL LENGTH
0	001	204	PIPE $\phi=26$ (MIN.) 8mm MSW $\phi=44.5$	7030	320	7350
A	002	6	PIPE 4" SCH.80	500	-	500
A	003	6	CENTRIC PIPE $\phi=152$ (MIN.) 25mm MSW	5088.8	-	5088.8

FITTINGS (BENDS, ELBOWS, CAPS, REDUCTIONS, TEES)						
REV.	POS.N	QTY	DESCRIPTION	MATERIAL	REMARKS	
A	101	3	TEE $\phi=152$ x $\phi=278$ LENGTH=570	20 Cr 32 Ni	(11)	
A	102	6	CAP $\phi=152$ 25mm MSW	20 Cr 32 Ni	(11)	
A	103	3	REDUCTION	20 Cr 32 Ni	SEE DETAIL "6" (11)	

FORGED FITTINGS (FLANGES, WELDOLETS, ELBOWS, ETC.)						
REV.	POS.N	QTY	DESCRIPTION	MATERIAL	REMARKS	
D	201	204	WELDOLET #202 25mm MSW x 1 1/4" 8mm MSW (FULL COMPENSATION)	UNS N08811	(4) (5) (1)	
A	202	3	SOCKET 1" #0000	UNS N08811	FULL COMPENSATION SEE DETAIL "3"	

MISCELLANEOUS (GASKETS, STUD BOLTS, NUTS, ETC.)						
REV.	POS.N	QTY	DESCRIPTION	MATERIAL	REMARKS	
A	301	6	PLATE $\phi 114 \times 5$ THK	UNS N08811		
A	302	3	THERMOWELL	UNS N08811	SEE DETAIL "3"	
A	303	12	SPACER 3mm THK. x 40mm	UNS N08810		
A	304	3	SLEEVE 2mm THK. x $\phi 278$ L=824.5	UNS N08810	(DIA. BY VENDOR)	
A	305	3	CERAMIC PAPER 1mm THK.		BY REFRACTORY VENDOR	
A	306	3	175mm THK. KAOITE 2800 OR EQUIVALENT		BY REFRACTORY VENDOR	
I	307	12	ROD $\phi=9$ L=162	UNS N08810	SEE DETAIL "7"	

GENERAL NOTES FOR MATERIAL

a) FOR BENDS, ONLY IF MADE FROM BENT PIPES, THE THK. AFTER BENDING SHALL BE NOT LESS THAN THE SCHEDULE OR MINIMUM INDICATED.

b) ALL MATERIAL CERTIFICATES SHALL BE IN ACCORDANCE WITH PERTINENT ASTM STD'S AND FURNISHED AS PER EN 10204-3.1

c) P.M.I. REQUESTED ON ALLOY STEEL & S.S. ACC. TO SPEC. MN-PC-1020 (FOR NOT CAST PARTS), FOR CAST PARTS AT LEAST ONE P.M.I. FOR EACH HEAT TO BE CARRIED OUT.

d) FULL COMPENSATION: TO BE CALCULATED FOR $P_{max} = 33$ barg, $T_{des} = 880^\circ C$ AND TAKING IN NO CONSIDERATION THE CONTRIBUTE OF THE RUN PIPE. THE FULL AREA REQUIRED FOR COMPENSATION SHALL BE PROVIDED BY WELDOLET.

e) WELDOLETS SHALL BE FORGED BLIND THE TUBE PREFABRICATOR MUST DRILL WELDOLETS AFTER EXECUTION OF HYDROTEST.

f) VENDOR SHALL PROVIDE MECHANICAL CALCULATIONS FOR FULL COMPENSATION COMPONENTS (TEE, CONE & WELDOLET) ACCORDING TO CODE.

g) THE MATERIAL SHALL HAVE GRAIN SIZE CORRESPONDING TO ASTM N° 5 OR COARSER AS SPECIFIED IN ASTM E112.

h) THE PROPERTIES OF THE FINISHED TUBE SHALL CORRESPOND TO ASTM B407 ALLOY UNS N08811 SOLUTION ANNEALED MATERIAL.

DESIGN DATA			
PART	PIGTAILS	SUBHEADER	
FLUID	HC+STEAM	HC+STEAM	
FLUID PHASE	GAS	GAS	
FLUID GROUP/EQUIP. CATEGORY	I/V	I/V	
MODULE	B + F	B + F	
DESIGN-PRESSURE	bar g	33	33
DESIGN-TEMP.	$^\circ C$	880	880
CORROSION ALLOWANCE	mm	-	-
HYD.-TEST PRESS. (SHOP)	bar g	359.3	
PNEUMATIC TEST PRESS. (FIELD) (6)	bar g	4.3	
EMPTY WEIGHT	kg	10850	5754
OPERATION WEIGHT	kg	10850	5754
WEIGHT FULL OF WATER	kg	11810	6669
VOLUME	m ³	0.96	0.83
POST WELD HEAT TREATMENT		N.A.	
RADIOG. SHOP WELD PERC.	%	100	
RADIOG. FIELD WELD PERC.	%	100	
DYE PENETRANT	%	100	
PMI	%	100 (c)	
ULTRASONIC EXAMINATION	%	(8)	
MAGNETIC EXAMINATION	%	(8)	
DESIGN AS PER	97/23/CE(PED)/KTI MR/ASME B31.3		
CONSTRUCTION AS PER	97/23/CE(PED)/KTI MR/ASME B31.3		
INSPECTION BY	NOTIFIED BODY/KTI/CLIENT		

INSULATION QUANTITY	
INSULATION	mc 37.3
EXTERNAL SHEET S.S. 304: 0.4mm THK. UP TO 6" DIA.	mq 747.1
0.5mm THK. ABOVE 6" DIA.	

TAIP PASTATYTA

Technip KTI




MAZEIKIU NAFTA

LITHUANIA

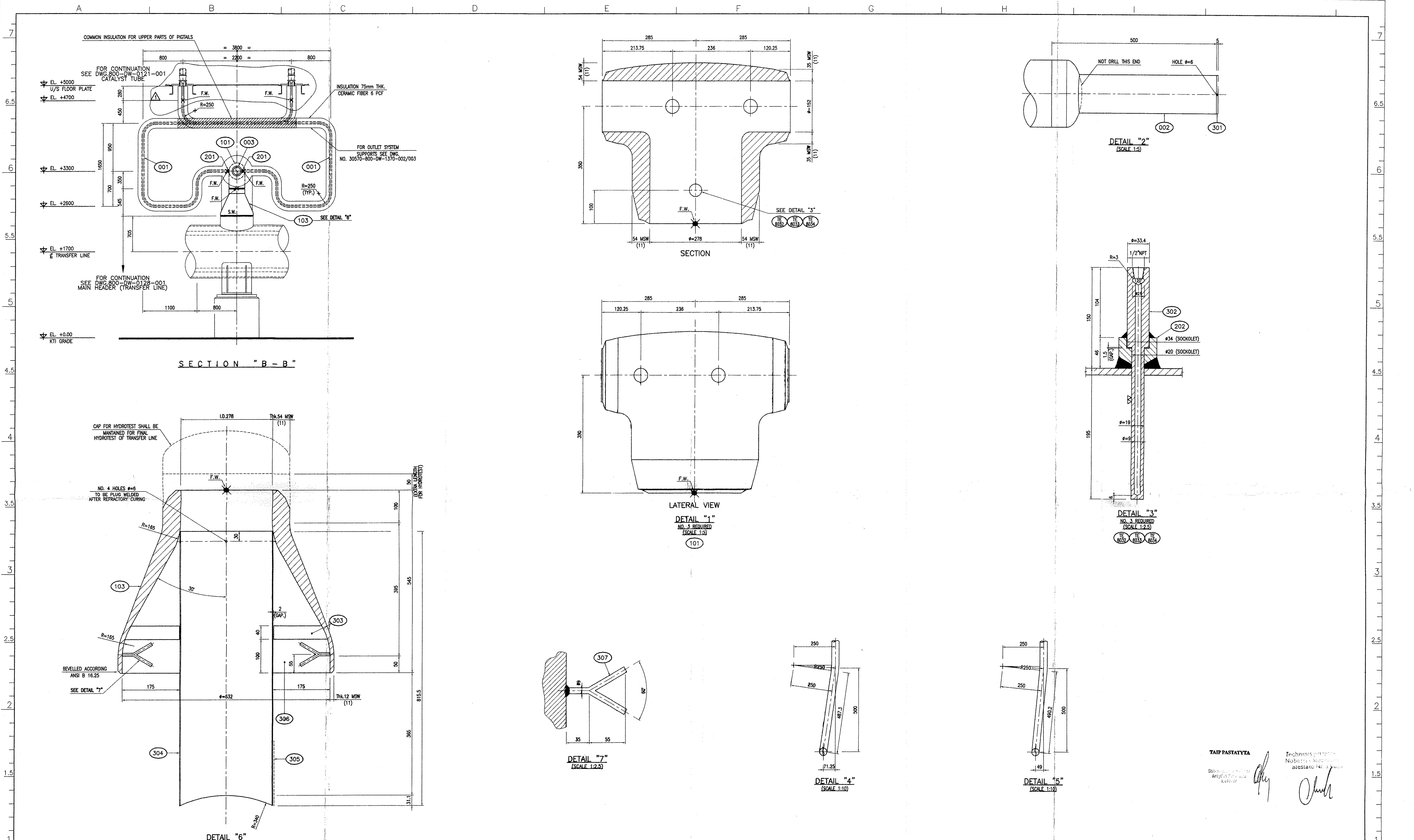
REFERENCE DRAWINGS	
- KTI DWG. NO. 30570-800-DW-0131-005 GENERAL NOTES AND INFORMATION	
- KTI DWG. NO. 30570-800-DW-0131-002 SH.1 REFORMER GENERAL ARRANGEMENT "CROSS SECTION"	
- KTI DWG. NO. 30570-800-DW-0131-002 SH.2 REFORMER GENERAL ARRANGEMENT "LONGITUDINAL SECTION"	
- KTI DWG. NO. 30570-800-DW-0121-001 CATALYST TUBE	
- KTI DWG. NO. 30570-800-DW-0121-003 SH.2 OUTLET SYSTEM DETAILS	
- KTI DWG. NO. 30570-800-DW-0128-001 MAIN HEADER (TRANSFER LINE)	

HOLD LIST	
ON ITEM I-006 AND 16" LINE WILL BE EXECUTED PNEUMATIC TEST ONLY AT SITE	

NOTES FOR FABRICATION	
1 - DESIGN, CONSTRUCTION, INSPECTION AND TESTING ACC. TO THE PERTINENT MR. 30570-800-MR-0121-001 AND APPLICABLE CODES. IN CASE OF CONTRADICTION BETWEEN BILL OF MATERIAL AND DRAWINGS, THE DRAWING SHALL GOVERN AND KTI SHALL DIRECTLY BE INFORMED.	
2 - WELD PREPARATION TO CONFORM TO ASME B16.25/31.3 & WPS-WPR-PQR ACCORDING TO APPLICABLE RULES OF CODE & ASME SECT. IX	
3 - X = F.W. = FIELD WELD / * = S.W. = SHOP WELD	
4 - ALL DIMENSIONS ARE IN mm. EXCEPT OTHERWISE INDICATED.	
5 - ALL THE ELEVATIONS ARE REFERRED TO THE HIGHEST PAVING POINT (HPP) +0.00 WHICH CORRESPONDS TO ELEVATION 64.75 IN ABOVE SEA LEVEL.	
6 - TO BE TESTED TOGETHER WITH INLET SYSTEM & CATALYST TUBE, TRANSFERLINE, PGR.	
7 - SUBHEADER ASSEMBLIES AND TEE TO BE SUPPLIED COMPLETELY SHOP FABRICATED AND TESTED.	
8 - FOR NOT RADIOGRAPHABLE JOINTS OR WHERE X-RAY EXAMINATION IS DIFFICULT TO INTERPRET, ULTRASONIC OR DYE PENETRANT TEST MAY BE SUBSTITUTED.	
9 - WELDOLETS BRANCH SIDE SHALL BE FORGED BLIND. THE TUBE PREFABRICATOR MUST DRILL WELDOLETS AFTER EXECUTION OF HYDROTEST. TUBE SHALL BE PREDRILLED BEFORE HYDROTEST (i.e. $\phi=6$ mm HOLE). HYDROTEST TO BE IN ACCORDANCE WITH PED.	
10 - WATER USED FOR SHOP HYDROTEST SHALL HAVE LESS THAN 25ppm CHLORIDES. ALL ITEMS SHALL BE CAREFULLY FLUSHED TO REMOVE ANY FORGON MATERIAL AND DRIED.	
ON ITEM 001 WILL BE EXECUTED PNEUMATIC TEST ONLY AT SITE.	
11 - THICKNESS MUST BE CALCULATED BY VENDOR ON THE BASE OF SPECIFIED DESIGN CONDITIONS	
12 - MIN. THK AT EXTRADOS AFTER BENDING = 6.28 mm / MIN. THK. AT INTRADOS AFTER BENDING = 6.74 mm.	
13 - U.S. = UNDER STEEL ELEVATION.	
14 - T.O.S. = TOP STEEL ELEVATION.	
15 - LIQUID PENETRANT EXAMINATION TO BE PERFORMED ON EACH FINAL WELD. EXAMINATION SHALL BE IN ACCORDANCE WITH ASME EN 571-1.	
16 - 100% WELDOLET WELDS HAVE TO BE DYE PENETRANT INSPECTED ROOT-FINAL.	
17 - ALL WELDS SHALL BE FULL PENETRATION (FOR PRESSURE RETAINING PARTS)	
18 - ALL BUTT WELDS SHALL BE 100% RADIOGRAPHED.	
19 - WPS, PQR, AND WELDER QUALIFICATION SHALL BE IN ACCORDANCE WITH ASME IX LATEST EDITION.	
20 - THE INSIDE SURFACE OF CAS SUBS AND FITTINGS SHALL BE 125 OLA OR BETTER.	
21 - TUBE WALL THICKNESS TO BE CALCULATED BY KTI AND VERIFIED BY SUPPLIER ON THE BASE OF SPECIFIED DESIGN CONDITIONS.	
22 - BEND ARC SURFACE SHALL BE FREE OF CRACKS AND BUCKLES.	

					INTERNAL REVISION		 <div>HQU AB MAZEIKIU NAFTA MAZEIKIAI, LITHUANIA</div>							
														
					CAD CODE:DW-0121-003-1-2		PROJ. NO: 30570		PROPERTY OF TECHNIP KTI S.P.A. TO BE RETURNED UPON REQUEST AND USED ONLY IN REFERENCE TO THE PROJECT FOR WHICH IT WAS ISSUED. ANY COMPANY REPRODUCTION OF THIS PRINT OR UNAUTHORIZED USE OF OR INTERESTED OR PATENTABLE INVENTION DERIVED THEREFROM IS PROHIBITED.					
2	REVISED AS INDICATED				PERSONAL MURRO	22-09-2008	HYDROGEN GENERATION UNIT OUTLET SYSTEM – GENERAL ARRANGEMENT							
1	REVISED AS INDICATED				PERSONAL MURRO	28-03-2007								
0	ISSUED FOR EXECUTION				CAMPANA MURRO	03-07-2007								
A	ISSUED FOR APPROVAL				CAMPANA MURRO	13-03-2007								
REV.	DESCRIPTION	ISS.	CHK.	APP.	AUTH.	DATE	1:33 Scale	30570 Project	800 Unit	DW Doc. Code & Serial No.	0121 - 003	1 of 2	2 Page	Rev.

HYDROGEN GENERATION UNIT	
OUTLET SYSTEM - GENERAL ARRANGEMENT	
1:33.3	30570 800 DW 0121 - 003 1 of 2 2
Scale	Project Unit Doc. Code & Serial No. Page Rev.
TECHNIP KTI S.p.A. - 00148 ROMA - Viale Costello della Magliana, 75	



<div>REDUCTION NO. 3 REQUIRED (SCALE 1:3)</div>										<div>MAZEIKIU NAFTA T-108-R LITHUANIA</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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