F-1251

MISTRAS A World of NDT Solutions — Services Division

3985 Teal Ct. Benicia CA. 94510 (707) 746-5870 Fax: (707) 746-8664

Sheet	1	of	3	PO #	N/A						
Client	Chevron/			Job Number #				Date	10/14/11		
Plate		Piping - Tubing	X	Casting	N/A	Forging	N/A	Extrusion	N/A	Weldment-	X
Instrument	Niton					Precision Standard		5	2	3	
Model	X13+ CB 11-10-11					Technician Signature:				Hrs:	
Calibration Std:	S/N-35HN ~~316 Stainless Steel~~ 1¼ Cr ½ Moly					Witness Inspector:					

Date	Weld #	Mode	Best Match	Cr	Cr +/-	Mn	Mn +/-	Fe	Fe +/-	Mo	Mo +/-	Ni	Ni +/-
10/14	St-01B		1.25 CR	1.32	0.11	.443	.136	96.76	.41	.683	.037		
	Weld		↓	1.16	.12	.580	.158	96.48	.46	.557	.037		
	St-01A		↓	1.45	.11	.588	.135	96.33	.38	.655	.033		
	St-03		1.25 CR										
	W/P		↓	1.09	.11	.712	.156	96.39	.44	.637	.038		
	W/W		↓	1.21	.10	.659	.127	97.16	.34	.607	.030		
	W/U		↓	1.22	.09	.506	.106	97.15	.31	.504	.024		
	E/U		↓	1.25	.10	.537	.130	97.09	.33	.523	.030		
	E/W		↓	1.27	.11	.695	.144	96.74	.39	.571	.032		
	E/P		↓	1.33	.17	.422	.200	96.99	.59	.620	.052		
	St-05		1.25 CR										
	W/P		↓	1.23	.14	.675	.183	96.75	.50	.621	.043		
	W/W		↓	1.03	.08	.532	.104	97.28	.29	.537	.025		
	W/V		↓	1.32	.10	.478	.121	97.11	.35	.592	.030		
	E/U		↓	1.23	.10	.475	.127	97.32	.36	.501	.029		
	E/W		↓	1.10	.08	.608	.113	97.30	.31	.518	.026		
	E/P		↓	1.13	.10	.570	.121	96.85	.34	.595	.029		

10/04

#	Base Mat.	CR	+/-	Mn	+/-	Fe	+/-	Mo	+/-		
St-07	1.25 CR										
w/p		1.28	.10	.414	.119	97.34	.35	.583	.030		
w/w		1.22	.10	.607	.131	97.08	.36	.571	.031		
w/u		1.20	.10	.483	.118	97.01	.35	.625	.031		
E/u		1.22	.09	.492	.115	97.31	.33	.517	.027		
E/w		1.06	.09	.625	.121	97.05	.33	.626	.030		
E/p		1.46	.10	.585	.126	96.51	.34	.619	.030	.218	.094
St-09A	1.25 CR	1.20	.10	.600	.133	96.62	.38	.614	.032		
weld		1.16	.10	.485	.119	97.01	.34	.591	.030		
St-09B		1.26	.11	.482	.132	96.78	.38	.587	.033		
St-08	1.25 CR										
E/p		1.20	.16	.714	.211	96.20	.61	.680	.052		
E/w		1.43	.11	.499	.132	95.34	.41	.526	.030		
E/u		1.57	.13	.494	.153	95.90	.46	.653	.038		
w/u		1.41	.12	.454	.154	96.32	.43	.714	.039		
w/w		1.27	.11	.831	.145	96.64	.37	.561	.031		
w/p		1.38	.12	.567	.144	96.46	.41	.612	.035		
St-06	1.25 CR										
E/p		1.33	.12	.596	.154	97.03	.42	.605	.037		
E/w		1.16	.12	.695	.156	96.90	.42	.560	.035		
E/u		1.19	.12	.542	.151	96.52	.45	.584	.036		
w/u		.991	.114	.609	.155	96.82	.45	.560	.037		
w/w		1.14	.12	.581	.163	97.01	.46	.543	.038		
w/p		1.19	.12	.668	.165	96.14	.45	.577	.038		
St-04	1.25 CR										
E/p		1.47	.14	.402	.162	96.99	.47	.604	.041		
E/w		1.21	.13	.629	.172	96.93	.47	.505	.038		
E/u		1.15	.15	.497	.194	96.95	.57	.511	.045		
w/u		1.23	.10	.445	.123	97.22	.36	.536	.030		
w/w		1.35	.12	.556	.143	96.41	.41	.582	.034		
w/p		1.44	.11	.523	.132	96.83	.37	.596	.032		

	#		Best Match	CR	+/-	M/N	+/-	Fe	+/-	Mo	+/-		
10/14													
	St-02		1.25CR										
	E/P			1.39	0.11	.602	.142	96.66	.39	.633	.034		
	E/W			1.36	0.11	.663	.136	96.49	.37	.591	.031		
	E/U			1.33	0.12	.557	.143	96.90	.40	.562	.033		
	W/U			1.26	0.10	.564	.132	97.16	.37	.501	.029		
	W/W			1.45	0.10	.637	.127	96.38	.35	.589	.029		
	W/P			1.41	0.14	.521	.163	96.55	.47	.658	.041		

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F-1251

STEAM SUPERHEATER - CONVECTION SECTION

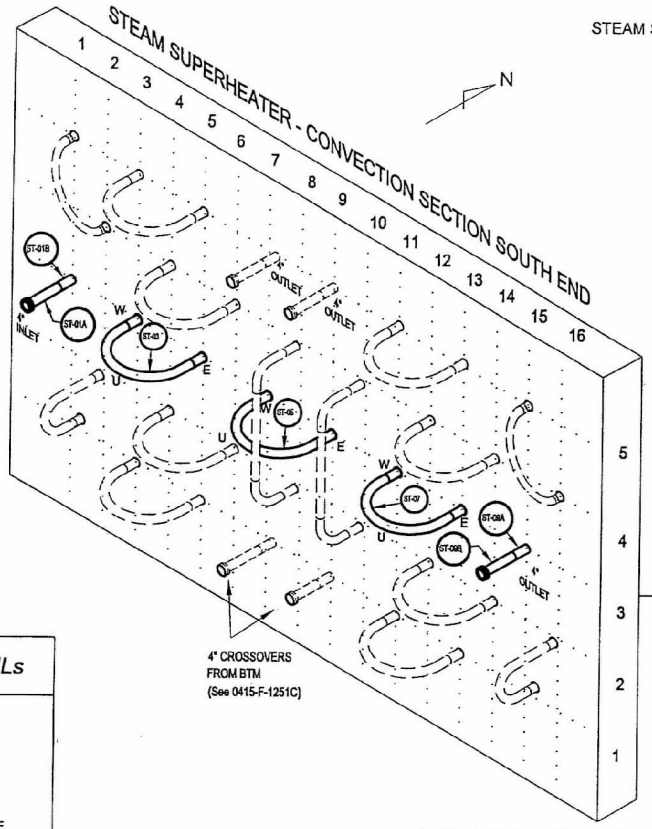
(D-324562)

1551

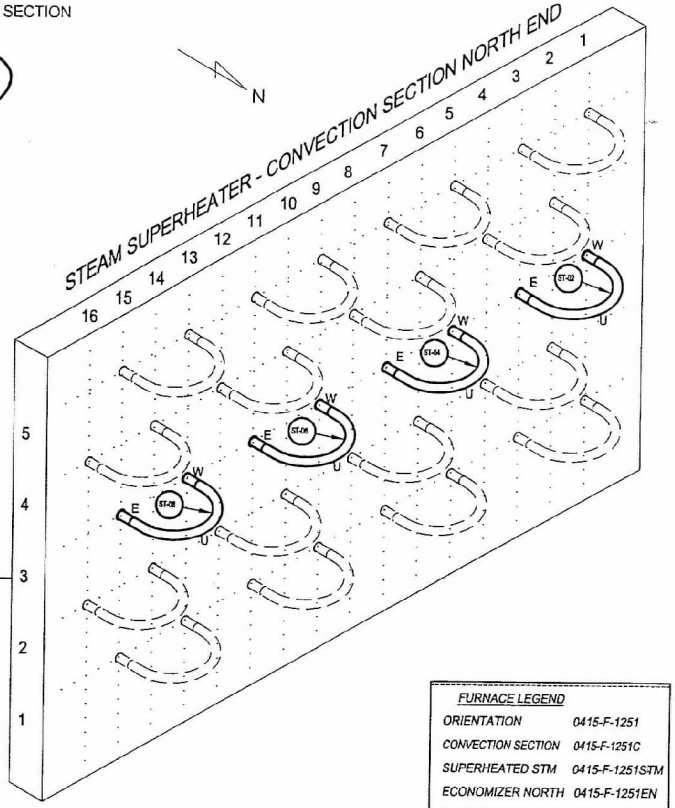
NOTE #1:

The following are used as State Reportable TMLs:

- ST-01
- ST-02-E
- ST-02-U
- ST-02-W
- ST-03-E
- ST-03-U
- ST-03-W
- ST-04-E
- ST-04-U
- ST-04-W
- ST-05-E
- ST-05-U
- ST-05-W
- ST-06-E
- ST-06-U
- ST-06-W
- ST-07-E
- ST-07-U
- ST-07-W
- ST-08-E
- ST-08-U
- ST-08-W
- ST-09



NOTE:
THIS ROW IS THE 85# SUPERHEATED STEAM PIPING.



Tmin = 0.10 for all TMLs

NOTES:

(1) NOZZLES ARE TO BE MEASURED ON STRAIGHT TUBE PRIOR TO FLANGE.

(2) ALL OTHER STRAIGHT TUBE SECTIONS PROTRUDING FROM THE FIREBOX ARE LABELED AS "E" (EAST) OR "W" (WEST). U-BENDS ARE LABELED "U".

(3) EACH SEPARATE "U"-BEND WITH CONNECTING STRAIGHT PIPE IS IDENTIFIED BY THE LABEL:

"ST- 05"

PASS LETTER — PIPE EXTENSION NUMBER

(4) TML NUMBERING FOLLOWS FLOW DIRECTION FOR EACH PASS.

(5) TML LABELING BUILDS ON THE PIPE EXTENSION LABELING AS FOLLOWS:

- The "U-Bend" proper = "ST-05-U"
- The straight pipe on the East side = "ST-05-E"
- The straight pipe on the West side = "ST-05-W"

NOTE 2:

- The TMLs are all state reportable.
- Do not modify these TMLs as to Labels or Locations.
- The Jurisdictional Number for this equipment is: B041251-01

FURNACE LEGEND

ORIENTATION	0415-F-1251
CONVECTION SECTION	0415-F-1251C
SUPERHEATED STM	0415-F-1251STM
ECONOMIZER NORTH	0415-F-1251EN
ECONOMIZER SOUTH	0415-F-1251ES

NEW DRAWING 2007

CROSSOVERS MODIFIED BY TURBO PROJECT 1Q2007 SHUTDOWN

STEAM SUPERHEATER

STATUS: ISO570 COMPLETE — INSULATED? ☐

EQUIPMENT NO: F-1251 STEAM SUPERHEATER

EQUIPMENT SERVICE: STEAM

EQUIPMENT ID: A-16246

12/18/2008 MHEE

INSPECTION EQUIPMENT DRAWING

STEAM SUPERHEATER - CONVECTION SECTION

LNC HYDROCRACKER DISTILLATION (PLANT 12)

RLOP AREA BUSINESS UNIT

Z 0415-F-1251STM — REV 4 — SHT 1

CUSA-EPA-0007311