

United States Nuclear Regulatory Commission Official Hearing Exhibit

In the Matter of:

Entergy Nuclear Operations, Inc.
(Indian Point Nuclear Generating Units 2 and 3)

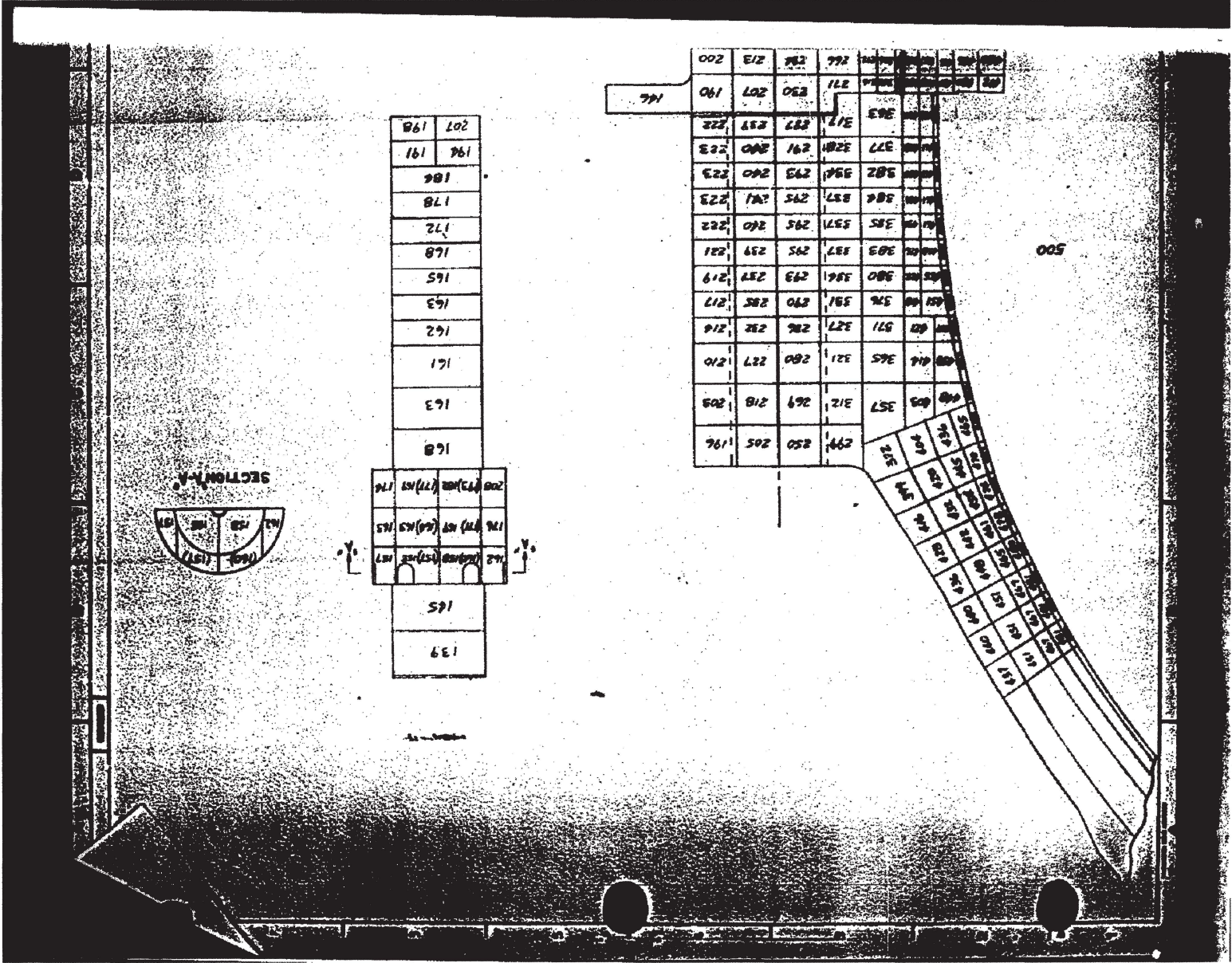


ASLBP #: 07-858-03-LR-BD01
Docket #: 05000247 | 05000286
Exhibit #: RIV00053M-00-BD01
Admitted: 10/15/2012
Rejected:
Other:

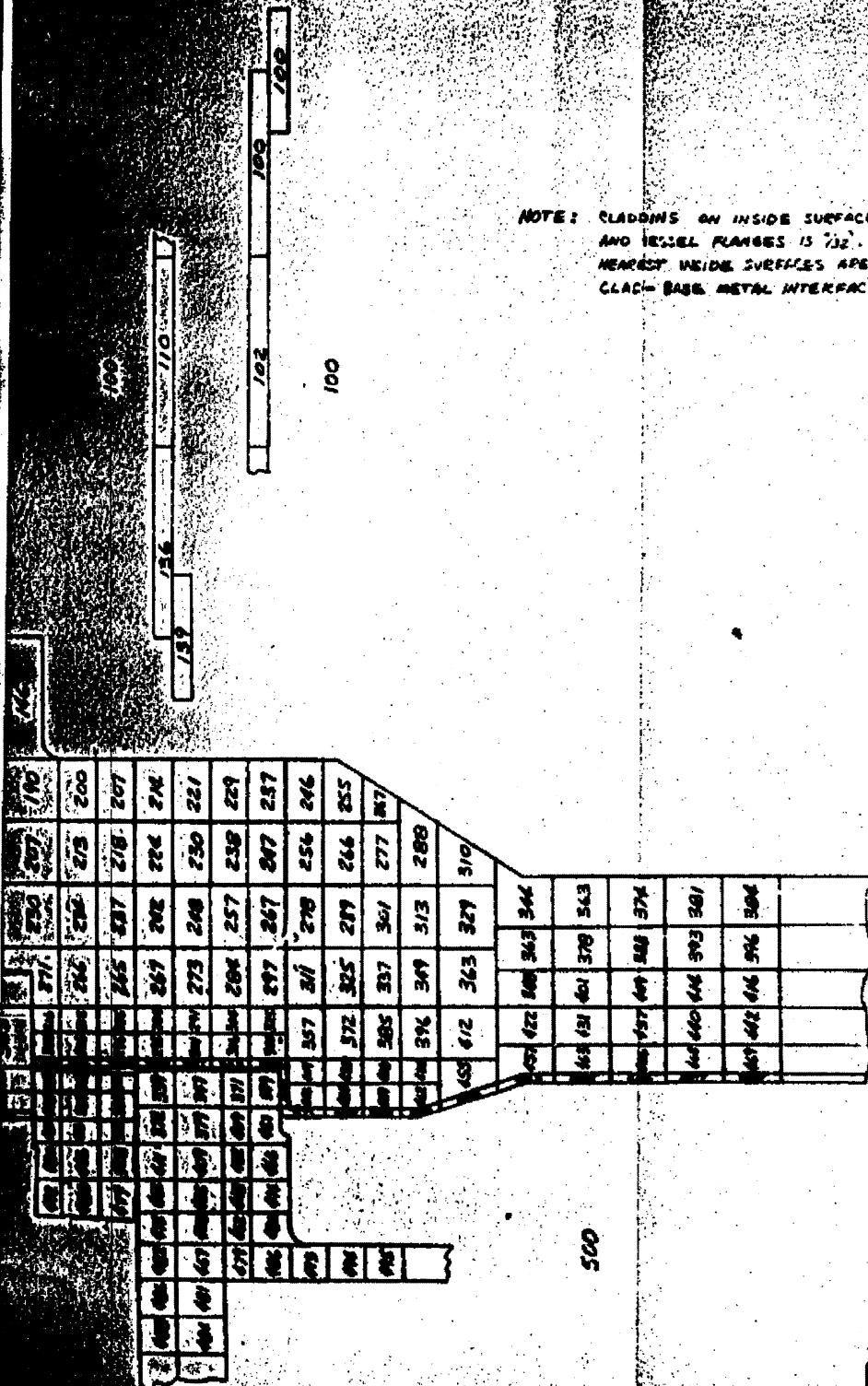
Identified: 10/15/2012
Withdrawn:
Stricken:

RIV00053M

Submitted: December 27, 2011



NOTE: CLADDING ON INSIDE SURFACES OF HEAD AND VESSEL FLANGES IS 732. TEMPERATURES NEAREST INSIDE SURFACES ARE AT THE CLAD-BASE METAL INTERFACE.





147	153	171	172	173	175	179	183	189	196	207	203	221	211
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317	265	218	208
330	285	232	216
300	297	201	223
346	304	247	228
357	307	250	231
356	310	253	234
356	312	254	235
357	313	256	237
356	313	256	237
353	311	256	238
348	309	255	238
335	304	254	237
297	244	220	203
283	249	227	214
282	253	232	221
284	258	239	229

460	464	468	472	476	480	484	488	492	496	500	504	508	512	516	520	524	528	532	536	540	544	548	552	556	560	564	568	572	576	580	584	588	592	596	600	604	608	612	616	620	624	628	632	636	640	644	648	652	656	660	664	668	672	676	680	684	688	692	696	700	704	708	712	716	720	724	728	732	736	740	744	748	752	756	760	764	768	772	776	780	784	788	792	796	800	804	808	812	816	820	824	828	832	836	840	844	848	852	856	860	864	868	872	876	880	884	888	892	896	900	904	908	912	916	920	924	928	932	936	940	944	948	952	956	960	964	968	972	976	980	984	988	992	996	1000
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SECTION A-A

174	208 (202/198/194) 185	182	221 (216/213/208) 204	206	208	211	216	221	228	237	250	265
	220 (214/207/100) 214		221	213	207	205	206	208	211	216	221	228
											266	255

370	313	261	250
389	337	278	260
395	350	289	269
402	357	296	275
406	362	300	279
407	365	303	282
411	367	305	284
412	368	307	286
411	367	307	287
408	365	307	288
402	363	307	288
389	358	306	287
360	293	266	245
336	299	274	259

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518	523	527	534	537	549	478
519	524	528	535	538	547	478
511	514	517	522	529	535	478
517	522	528	533	539	545	478
511	514	517	522	529	535	478
517	522	528	533	539	545	478

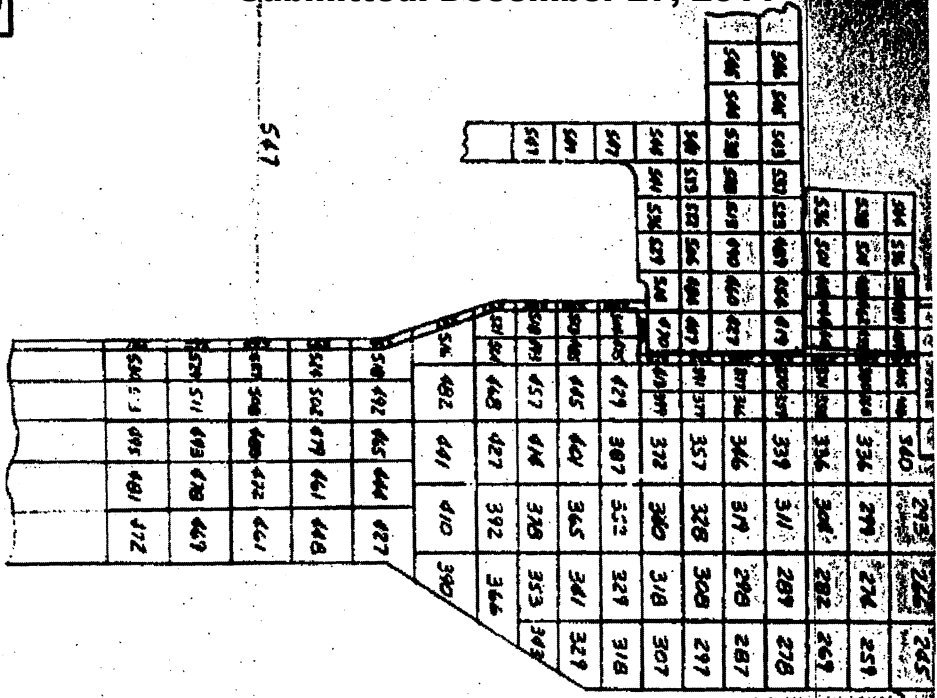
547

Submitted: December 27, 2011

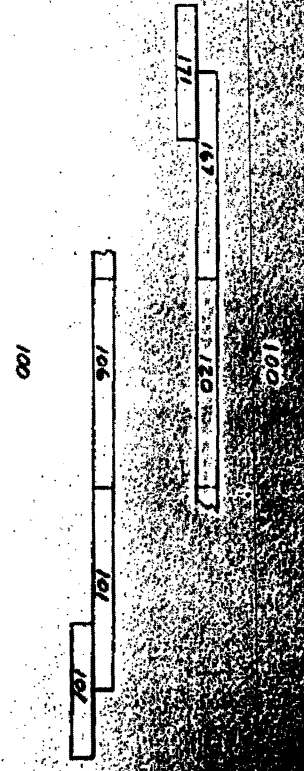
DRAWING NO. 50-17765-40
 CONSTRUCTION ENGINEERING, INC. WINDSOR, CANADA
 THE DRAWING IS THE PROPERTY OF
 CONSTRUCTION ENGINEERING, INC.
 IT IS TO BE USED ONLY FOR THE PROJECT
 AND VESSEL RANGES - 100 TO 177
 TEMPERATURE DISTRIBUTION AT HEAD
 TIME - 5.0 HRS.
 WESTINGHOUSE - APD
 DRAWN BY J.C.L.
 CHECKED BY J.C.L.
 DATE 1-16-11

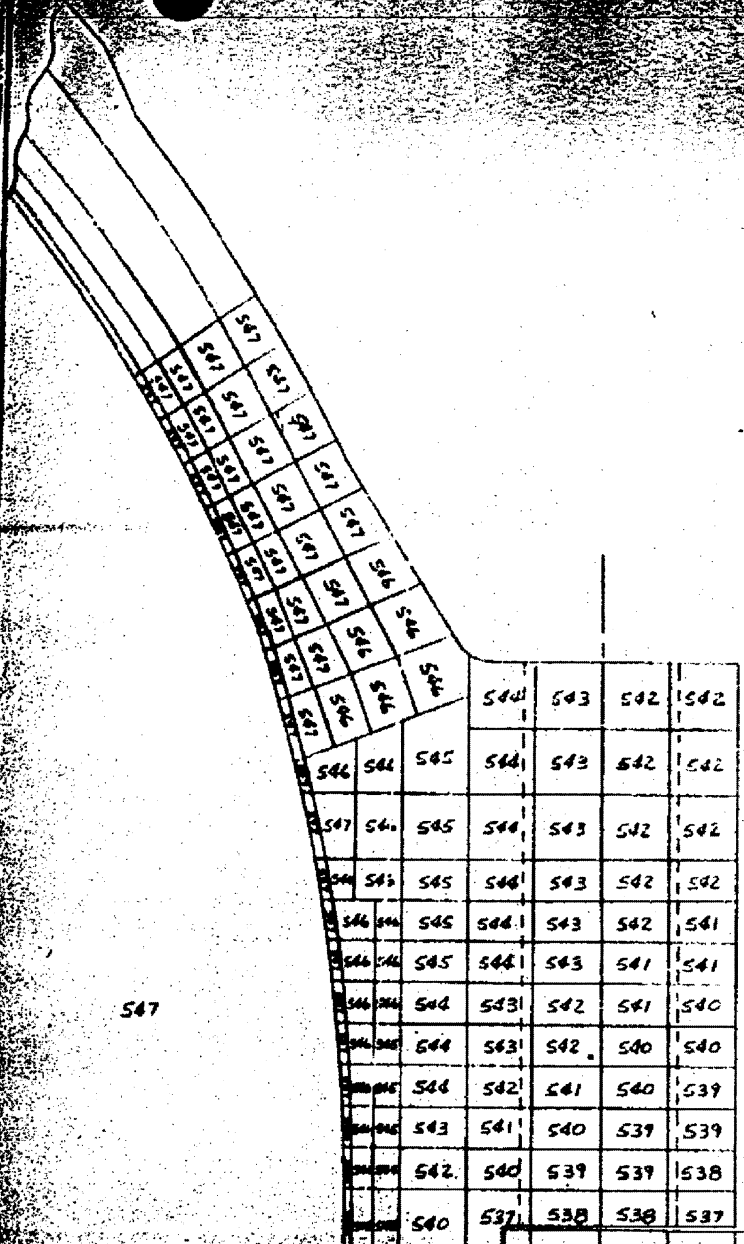


FIGURE B-4



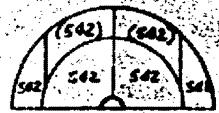
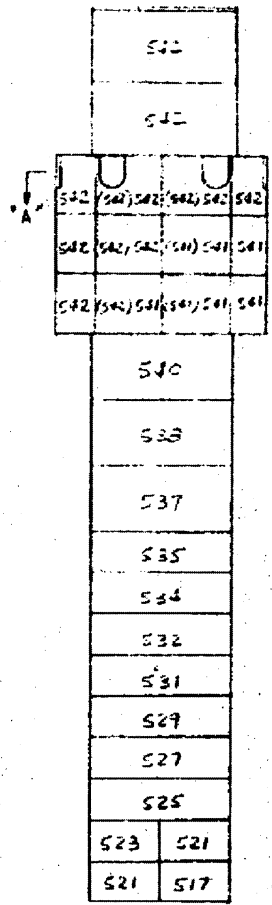
NOTE: LADING ON INSIDE SURFACES OF LAD
 AND VESSEL RANGES IS 1/2". TEMPERATURES
 NEAREST INSIDE SURFACES ARE AT THE
 LAD-BASE METAL INTERFACE



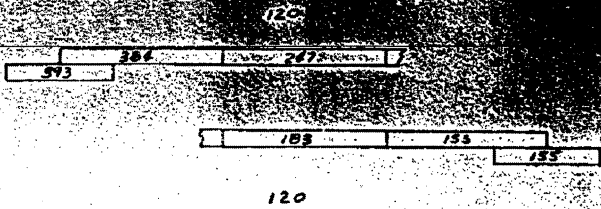
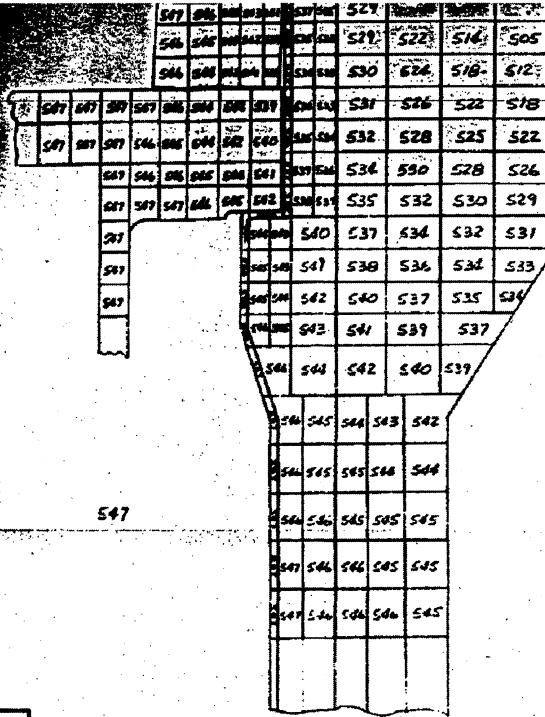


547

547	546	545	544	543	542	529	521	511	491	410
546	545	544	543	542	541	529	522	514	505	
546	545	544	543	542	541	530	524	518	512	



SECTION A-A



NOTE: CLAMPING ON INSIDE SURFACES OF HEAD AND VESSEL FLANGES IS 1/2" TEMPERATURES MEASURED UNDER SQUARES ARE AT THE CLAD-BASE METAL INTERFACE.

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FIGURE B-5

THE INFORMATION CONTAINED HEREIN IS UNCLASSIFIED
 DATE 08-14-2010 BY 60322 UCBAW/SJS
 AUTHORITY: 50 USC 1702 (a) (5)

THIS DOCUMENT IS UNCLASSIFIED
 DATE 08-14-2010 BY 60322 UCBAW/SJS
 AUTHORITY: 50 USC 1702 (a) (5)

THIS DOCUMENT IS UNCLASSIFIED
 DATE 08-14-2010 BY 60322 UCBAW/SJS
 AUTHORITY: 50 USC 1702 (a) (5)



SECTION A-A

502	496	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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210	207	204	201	198	195	192	189	186	183	180	177	174	171	168	165	162	159	156	153	150	147	144	141	138	135	132	129	126	123	120	117	114	111	108	105	102	99	96	93	90	87	84	81	78	75	72	69	66	63	60	57	54	51	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3	0	364																																													
345	342	339	336	333	330	327	324	321	318	315	312	309	306	303	300	297	294	291	288	285	282	279	276	273	270	267	264	261	258	255	252	249	246	243	240	237	234	231	228	225	222	219	216	213	210	207	204	201	198	195	192	189	186	183	180	177	174	171	168	165	162	159	156	153	150	147	144	141	138	135	132	129	126	123	120	117	114	111	108	105	102	99	96	93	90	87	84	81	78	75	72	69	66	63	60	57	54	51	48	45	42	39	36	33	30	27	24	21	18	15	12	9	6	3	0	364

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NOTE: CLADDING ON INSIDE SURFACES OF HEAD AND VESSEL FLANGES IS 7/16". TEMPERATURES NEAREST INSIDE SURFACES ARE AT THE CLAD-BASE METAL INTERFACE

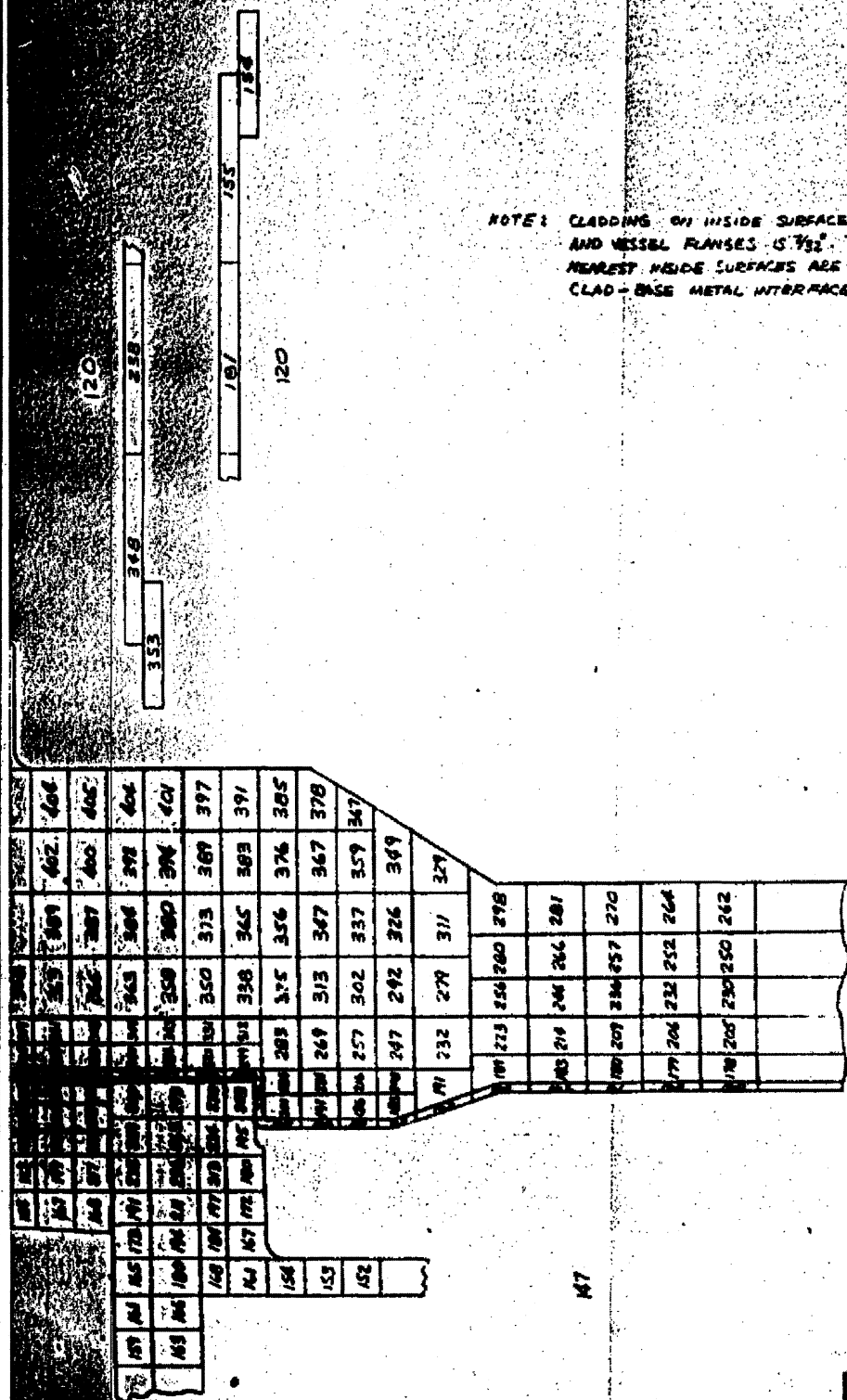


FIGURE B-6

THE DRAWING MADE BY EASTMAN-KODAK DIVISION

TEMPERATURE DISTRIBUTION IN HEAD AND VESSEL FLANGES - 100% OF COLLISION
 TIME - 4.0 MS
 BRESTING HOUSE - APH

SCALE: 1/4" = 1'-0" (AS SHOWN)
 DRAWN BY: JCL
 CHECKED BY: [blank]



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DRAWING NO. SD-17765-42

NOTE: LADING ON INSIDE SURFACES OF HEAD AND JESSEL FLANGES IS 7/32" TEMPERATURE. HIGHEST INSIDE SURFACES ARE AT THE CLAD-BASE METAL INTERFACE

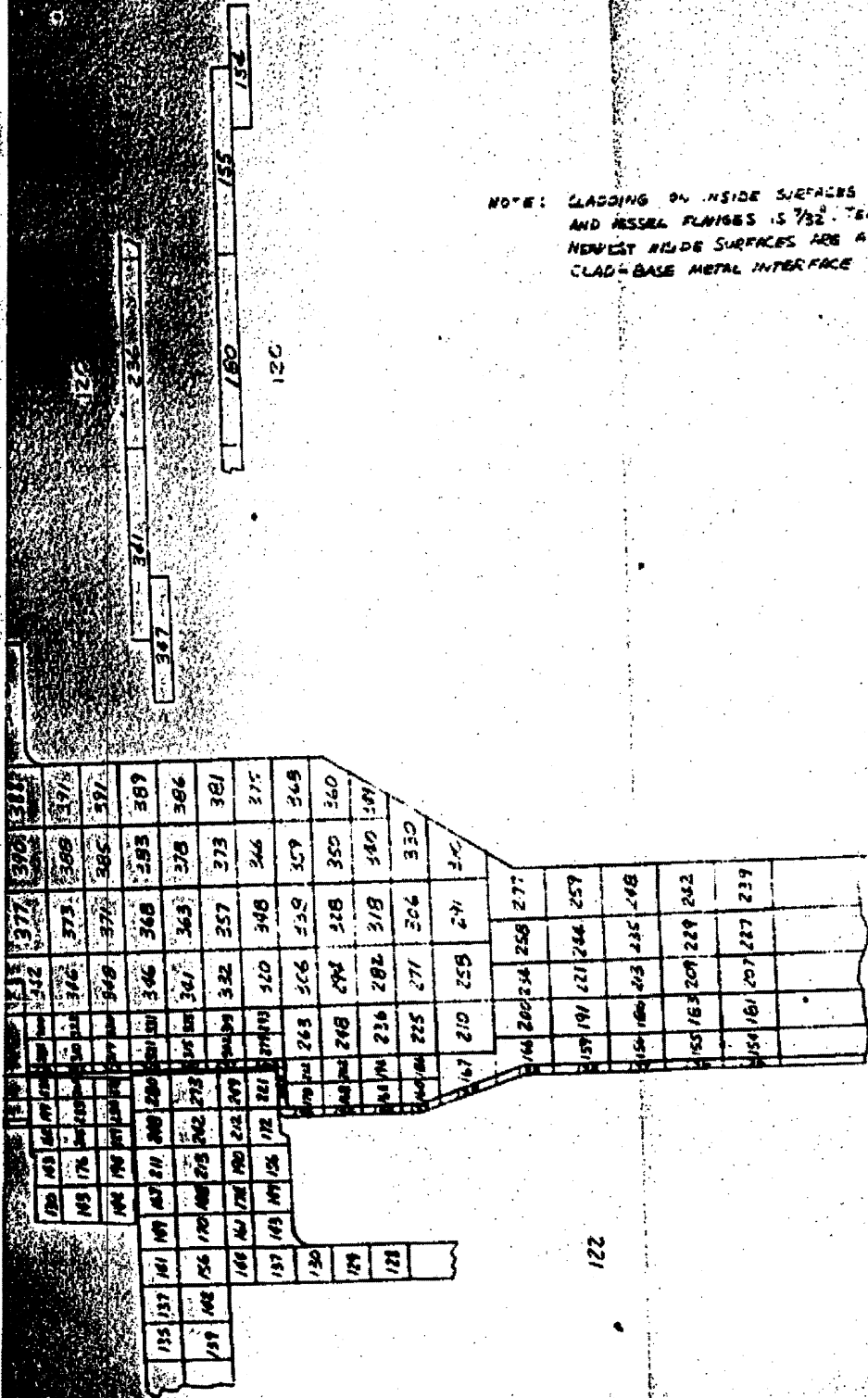


FIGURE B-7

TEMPERATURE DISTRIBUTION
 AND JESSEL FLANGES - 100% OF COOLING
 TIME = 3.15 HRS
 RESTRICTION = 0.05

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 LIABILITY FOR ANY DAMAGE OR LOSS OF ANY KIND OR FOR ANY
 CONSEQUENCES OF ANY KIND.

SD-1065-15

REVISED



467	460 (465) (468) 464	452
460	462 (465) (468) 457 454	455
	460 (465) (468) 454 444	455
		453
		450
		446
		441
		434
		426
		416
		403
		366
		393

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107	117	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355	360	365	370	375	380	385	390	395	400	405	410	415	420	425	430	435	440	445	450	455	460	465	470	475	480	485	490	495	500	505	510	515	520	525	530	535	540	545	550	555	560	565	570	575	580	585	590	595	600	605	610	615	620	625	630	635	640	645	650	655	660	665	670	675	680	685	690	695	700	705	710	715	720	725	730	735	740	745	750	755	760	765	770	775	780	785	790	795	800	805	810	815	820	825	830	835	840	845	850	855	860	865	870	875	880	885	890	895	900	905	910	915	920	925	930	935	940	945	950	955	960	965	970	975	980	985	990	995	1000
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NOTE: CLADDING ON INSIDE SURFACES OF HEAD AND VESSEL FLANGES IS 7/32". TEMPERATURES NEAREST INSIDE SURFACES ARE AT THE CLAD-BASE METAL INTERFACE

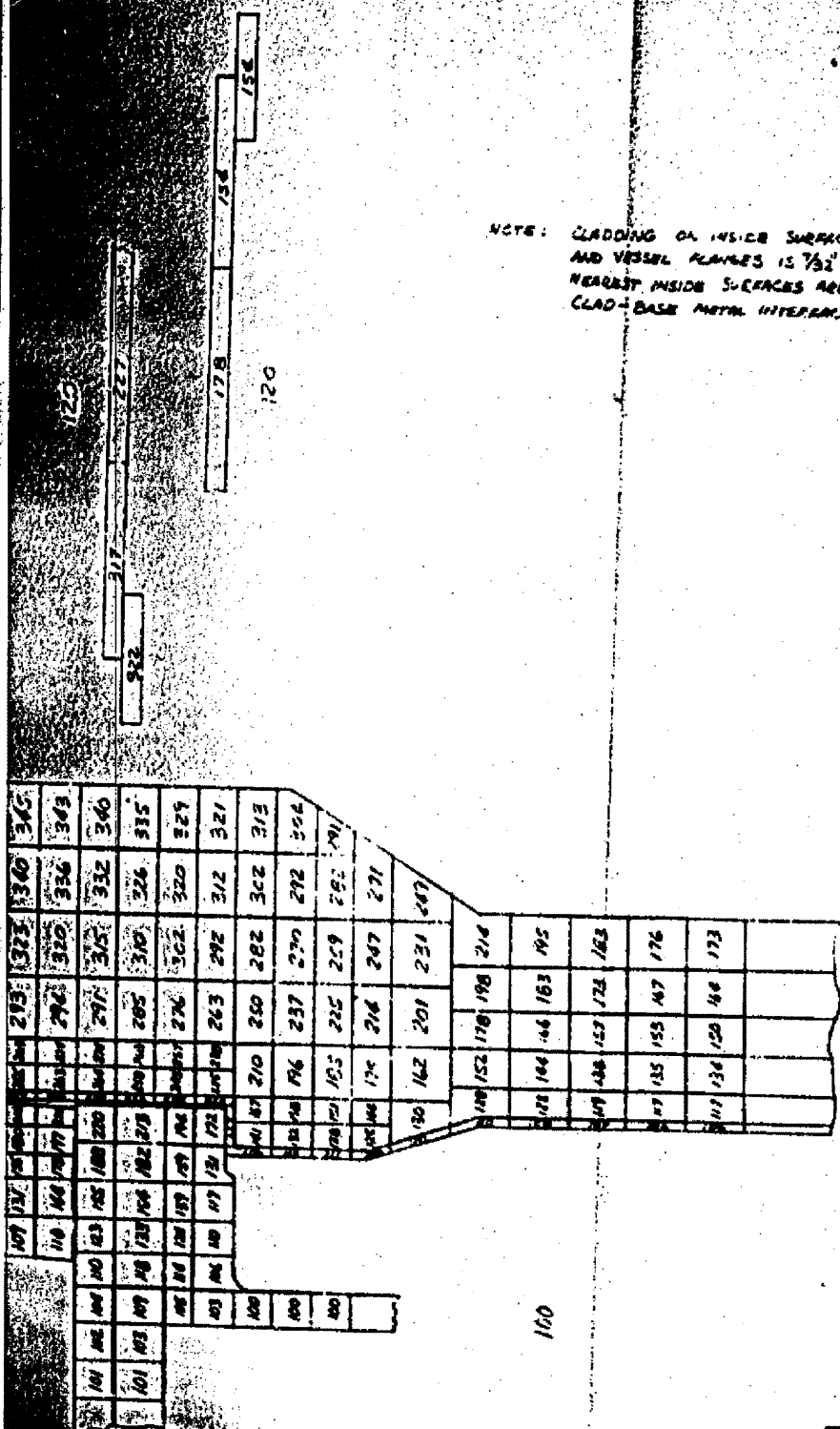


FIGURE B-9

THE DRAWING MADE BY CHEMICAL DIVISION

TEMPERATURE DISTRIBUTION OF HEAD AND VESSEL FLANGES - 450°F. COOLING FLAME - 2.0 MS. DESIGNER - APD

DATE: 2-15-50
 DRAWN BY: J. L. [unclear]
 CHECKED BY: [unclear]

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DRAWING NO. SD-17765-45

B-39

NOTE: CLEARANCE ON INSIDE SURFACES OF
NOZZLE AND HEISSA SHALL BE 3/16".
TEMPERATURES NEAREST HEISSA
SURFACES ARE AT THE CLAD-BASE
METAL INTERFACE.

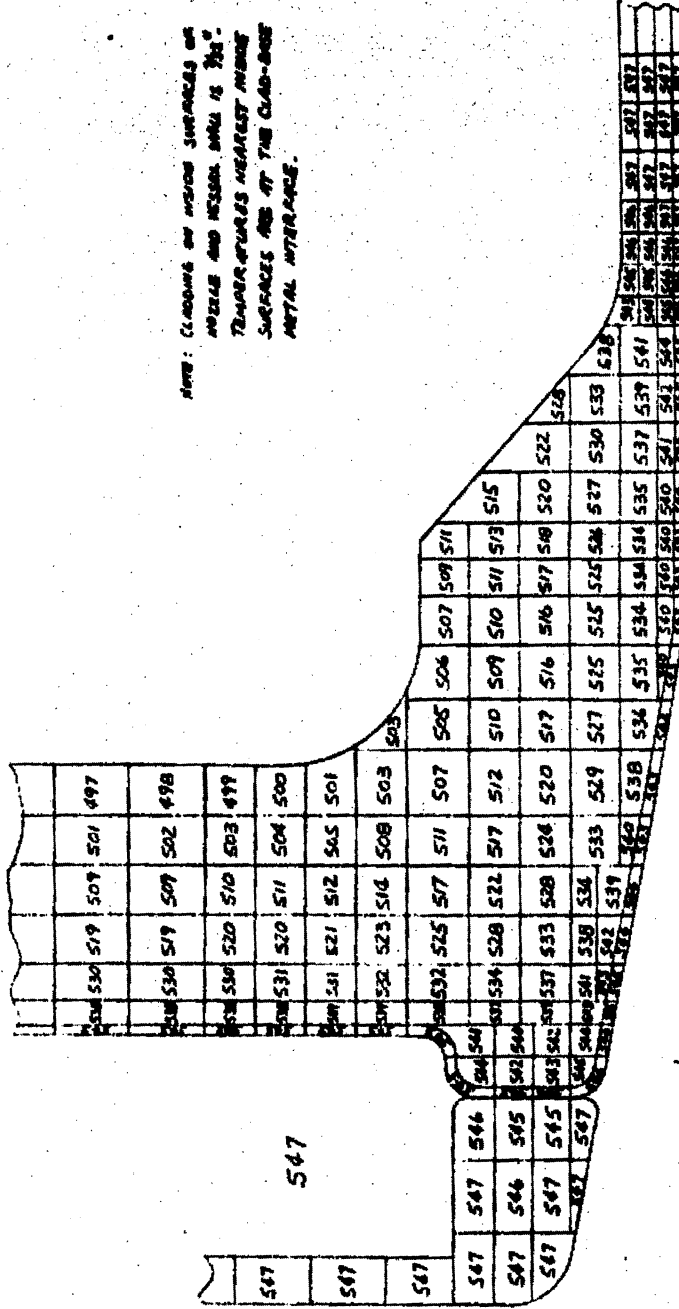


FIGURE B-17

TECHNICAL DRAWING INFORMATION

1/16" - 5/8" DIA.

RESISTANCE WELDING

DATE: 12/27/11

BY: [Signature]

APPROVED: [Signature]

PROJECT NO. SB-17765-54

547

SECTION B-4074

NOTE: CLIPPING ON INSIDE SURFACES OF
WHEELS AND RIGGING SHALL BE 7/8"
THICKNESSES NEAREST MOUNTING
SURFACES ARE AT THE CLIP-ON
METAL MOUNTAGE.

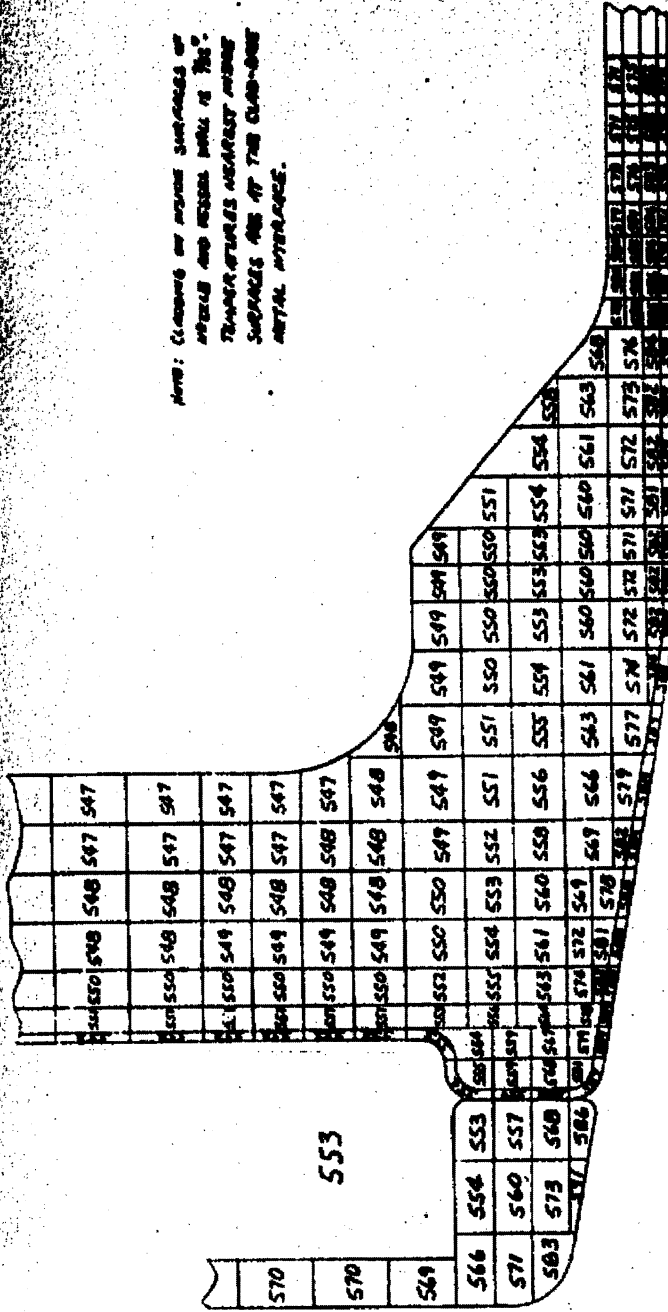
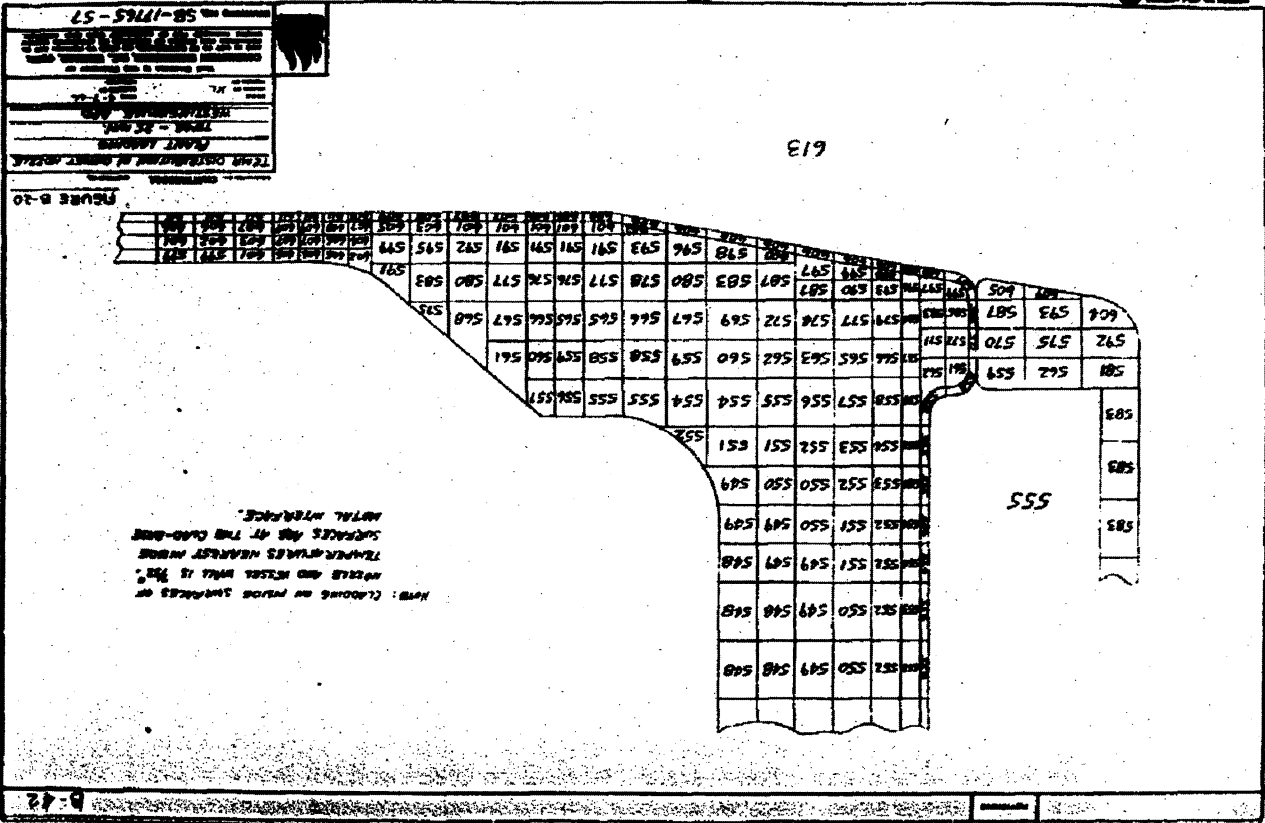


FIGURE B-10

THIS DRAWING IS UNDER
 CLASS JURISDICTION
 THIS IS A COPY
 OF THE ORIGINAL
 DRAWING
 NO. 58-17765-55

597



B-43

NOTE: Locations on various surfaces of
 PRESSURE AND METAL WALLS AT 100"
 TEMPERATURES NEAREST METAL
 SURFACES ARE AT THE CLAD-TO-METAL
 INTERFACES.

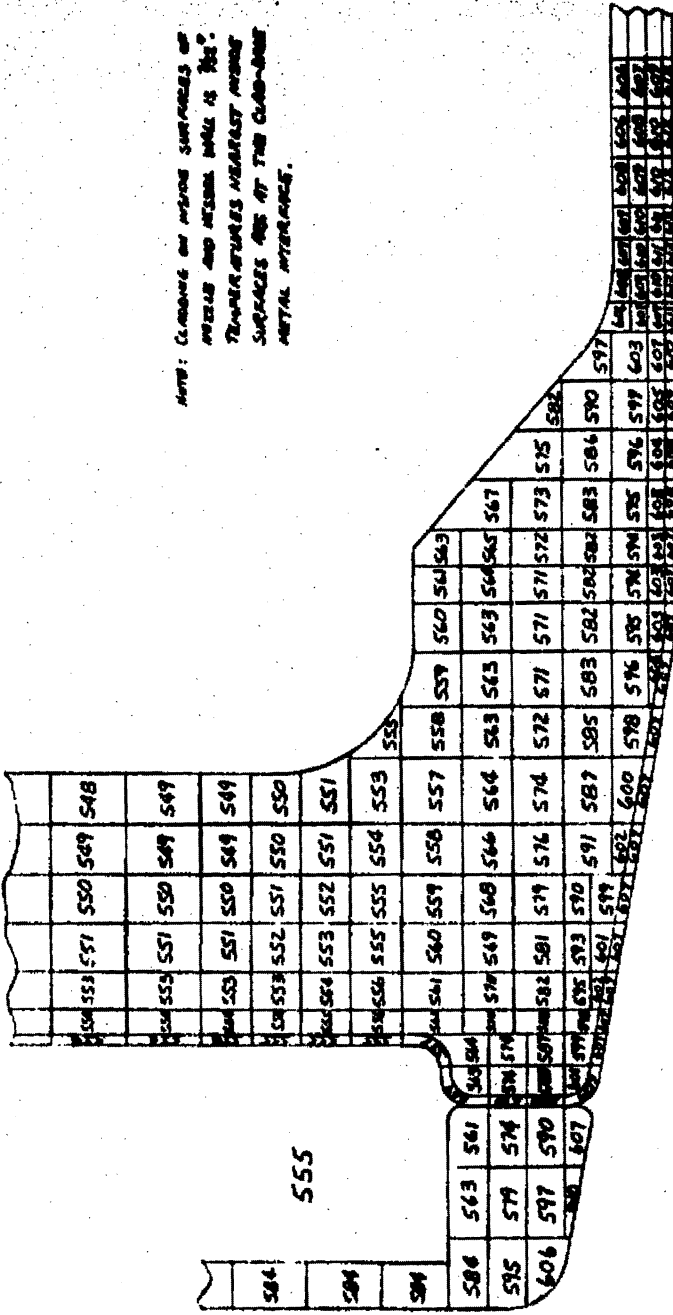


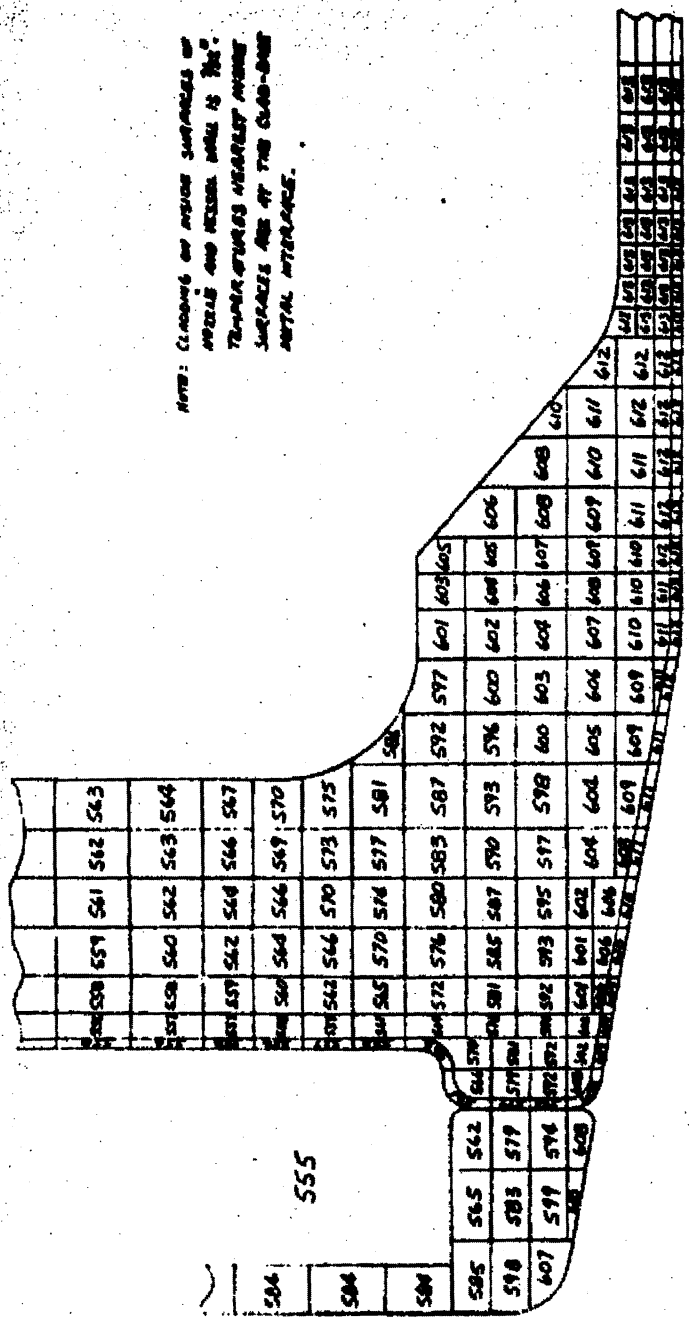
FIGURE B-21

CONTINUED
TRAMP DISTRIBUTION IN PRESSURE AREA
PLANT NUMBER
TIME - 30 AM
WESTINGHOUSE
UNIT NO.
DATE
BY
APPROVED BY
REVISION NO. SB-17765-59

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NOTE: CROSSING ON THESE SURFACES OF
 AVIATION AND RECORD SHALL BE THE
 TEMPORARILY NEARBY AVIATION
 SURFACES ARE OF THE QUAD-ONE
 INITIAL INTERFERENCE.



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 AIRPORTS DIVISION
 AIRPORT DEVELOPMENT
 PROJECT NO. SB-177LS-57

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NOTE: Computations are based on average of
measured and recorded data. The
temperatures nearest to the
surfaces are at the 1/4" and 1/2"
depths.

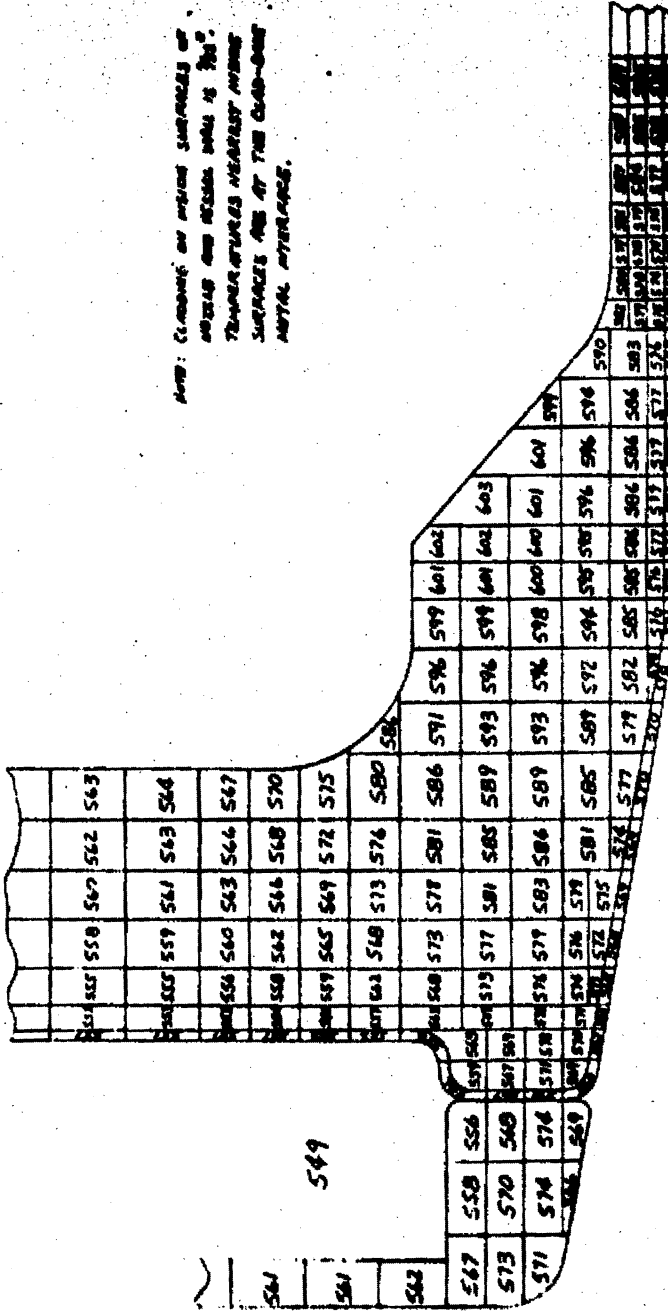


FIGURE B-29

TEMPERATURE MEASUREMENTS
 ENGINE - 17765 - 60
 TEST - 17765 - 60
 DATE - 12/27/11
 TIME - 14:00
 OPERATOR - [REDACTED]
 TEST ENGINEER - [REDACTED]
 APPROVED - [REDACTED]

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