FRA Form 4 OMB No. 2130-0505

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DOLLED ODECITICATION CADD

				ION CARD			
Locomotive No.	;Boil	er No		;Date bu	ilt		
Boiler built by:							
Owned by:							
Operated by:							
Type of boiler:		;Dome, where located:					
		BOILER S	HIRVEV	ПАТА			
Where condition is called	ed for, use: New - New 1				Little or no wear and/or corrosion;		
Fair - Obvious wear and				3,	,		
		D 11					
3.5 / 1.1	T CM		Shell She				
Material:	Type of Ma		Ca	arbon Content	Condition		
1 -4 (64)	(wrought from carbon's	teel, of alloy steel)					
1st course (front)							
2nd course			· —				
3rd course			. <u> </u>				
Rivets	D			n/a	n/a		
	Documentation of how	v material was de	etermined sha	ill be attached to this	iorm.		
Measurements:	A	At Seam	Thinnest				
Front flue sheet,	thickness	n/a					
1st course,	thickness	_		,ID	,ID		
2nd course,	thickness				,ID		
3rd course,	thickness			,ID	,ID		
,				, <u> </u>	re not cylindrical give ID at each end		
Is boiler shell circu							
	ttened, state location						
Are all flatte	ened areas of shell sta	ayed adequate	ely for the	pressure allowed	by this form?		
NV. 4 C 4 N/L	1D' C:1	т	4	D1-			
	ad Ring: Sides				F		
width of water spa	ace at sides of fire b	ox measured	i at center	line of boller:	Front,Back		
		Firebox and	l Wrannei	·Sheets			
Firebox sheets:	Thickness	THEOUX and		aterial	Condition		
Rear flue sheet	1 IIICKIICSS		11	acoriui	Condition		
Crown		_		_			
Sides		_					
Door							
Combustion chambe	 er	_					
Inside throat							

Wrapper sho	eets:				
Throat					
Back head					
Roof		<u> </u>		-	
Sides					
			team Dome		
				op opening diameter	
Middle cylind	drical portion - IL), Oper	ning in boiler shell, longitud	dinally	
Dama ahaata		Thiolmaga	Material	Condition	
Dome sheets	•	Thickness	Material	Condition	
Base	4				
	drical portion				
Top					
Lid				·	
Boiler shell l					
steam dome	2			· -	
Is liner part o	f longitudinal sea	m?			
A 1. 7D		1.4 TD1 C!	I THE TOTAL OF THE PARTY OF THE	S I I.D D'	
Arch It	ibes, Flues, Circi	nators, Thermic Sij	onons, water Bar Tubes,	Superheaters, and Dry Pipe	
Arch tubos:	OD	wall thickness	;number	conditions	
AICH tubes.	OD	_ ,wan unexiless _	,number	,conditions	
Flues:					
	wall thickness	length	numher	condition	
OD	wall thickness	,iongui length	:number	;condition	
OD	wall thickness	,iciigui _ length	,number	;condition ;condition	
ОБ	,wall tilless	,iengui	, iluliloci	;condition	
Circulators:	OD	wall thickness	;number	conditions	
Circulators.	OD	_ ,wan thickness _	,number	,0011110113	
Thermic sipl	hons: numbe	er	;Plate thickness	condition:	
»- P -				;condition	
	TOOK	<u> </u>	,neek tinekness	,condition	
Water bar tı	ıbes: OD	, wall thickne	ess		
		, ,			
Superheater	units directly co	nnected to boiler w	ith no intervening valve:		
				;condition	
	<u> </u>				
Dry pipe sub	ject to pressure:				
OD	wall thickness	materi	al :condition	on	

Stay Bolts, Crown Bar Rivets, and Braces

Stay bolts:						
Smallest crown stay						
diameter		,avg. spacing	X	;condition		
Smallest stay bolt diameter		,avg. spacing	X	;condition		
Smallest combustion	1					
		,avg. spacing	X	;condition		
Measurement at smallest	diameter					
C - 1 - 1 - 14 - 0						
Crown bar bolts &			V			
Roof sheet rivets, sn		avg. spacing	X	;condition		
Roof sheet bolts, sm		,avg. spacing		;condition		
Crown sheet rivets, s		, avg. spacing	X	;condition		
Crown sheet bolts, smallest dia.		,avg. spacing	X	;condition		
Braces:			Total Cros	s Sectional Area of Braces		
	NY 1	T . 1		F : 1 . F: G.		
D 11 1	Number	Total Area Stayed	Actual	Equivalent Direct Stay		
Backhead						
Throat sheet						
Front tube sheet						
						
	Safa	tr. Volves Hooting Curl	Case and Custa A	***		
	Sare	ety Valves, Heating Surf	ace, and Grate A	rea		
Safaty valvas. Total	number of safe	ety valves on locomotive				
Valve Size	Manufactur		No. valves of this size and manufacture			
varve Size	Manufactur	CI	No. valves of this size and manufacture			
				·		
Heating Surface:						
9	rt of a circulatin	g system in contact on one	side with water or v	vet steam being heated and on the		
		cooled, shall be measured				
Č	, ,	,				
Firebox and Combus	stion Chamber		S	quare feet		
Flue Sheets (less flue	e ID areas)		square feet			
Flues			square feet			
Circulators			square feet			
Arch Tubes				quare feet		
Thermic Siphons			-	quare feet		
Water Bar Tubes				quare feet		
Superheaters (front	end throttle onl	y)		quare feet		
Other				quare feet		
	Heating Surfa	ace		quare feet		
	. 8 ~ 3.22	-		1		
Grate area:	squar	re feet				

Water Level Indicators, Fusible Plugs, and Low Water Alarms

Height of lowest reading of	gauge glasses ab	ove crown sheet:		
Height of lowest reading of	gauge cocks abo	ve crown sheet:		
Is boiler equipped with fusi	ible plug(s)?	, number		
Is boiler equipped with low	water alarm(s)?	, number		
		Calculations		
Staybolt stresses:				
Stay bolt under greate				psi
Location		bar bolt under greatest load, max. stress		psi
Combustion chamber Location	stay bolt under gr	reatest load, maximum stress		psi
Braces:				
_		est load, maximum stress		psi
Gusset brace under g	reatest load, maxii	mum stress		psi
Shearing stress on rivets:				
Greatest shear stress		udinal seam; Seam Efficiency		psi
Boiler shell plate tension:				
Greatest tension on n				psi
Location (cou	rse #)	; Seam Efficiency		
		kness required @ tensile strength:		
Front tube sheet		Rear flue sheet	@	
1st course at seam		1st course not at seam	@	
2nd course at seam		2nd course not at seam	@	
3rd course at seam		3rd course not at seam	@	
Roof sheet	@	Crown sheet	@	
Side wrapper sheets		Firebox side sheets	@	
Back head		Door sheet	@	
Throat sheet	<u></u>	Inside throat sheet	@	
Combustion chamber		Dome, top	@	
Dome, middle	@	Dome, base		
Arch tubes		Dome, lid Thermic siphons		
Water bar tubes	<u>@</u>			

Dry pipe		<u></u> @	Circulators	@
must be furnished. 2. Any shell di		in thickness may no	t be adequate for support	15,000 psi for wrought iron, supporting documentation t of or by other structures, particularly where threads
Boiler Steam	Generating Capa	acity:		pounds per hour
	nay be used as a guid m Per Hour Per Squ Hand fired Stoker fired Oil, gas or pulveriz	are Foot of Heatin		
		Rec	ord of Alterations	
Description of	f Alteration			Date of Alteration
		Re	ecord of Waivers	
Waiver No.	Section No. Affected		Scope and	Content of Waiver

in this documen	nt and all necessing pressure of _		is, this boiler	of Locomotive (Initial & nun	nber)	is
Data used to ve							
Data was dita wa	rify the foregoir	ng specification	ns is current a	nd accurate. Ba	sed upon the	information of	contained
Calculations do	one by:			Verified by:_			
		_					

Make working sketch here or attach drawing of longitudinal and circumferential seams used in shell of boiler, indicating on which courses used and give calculated efficiency of weakest longitudinal seam.