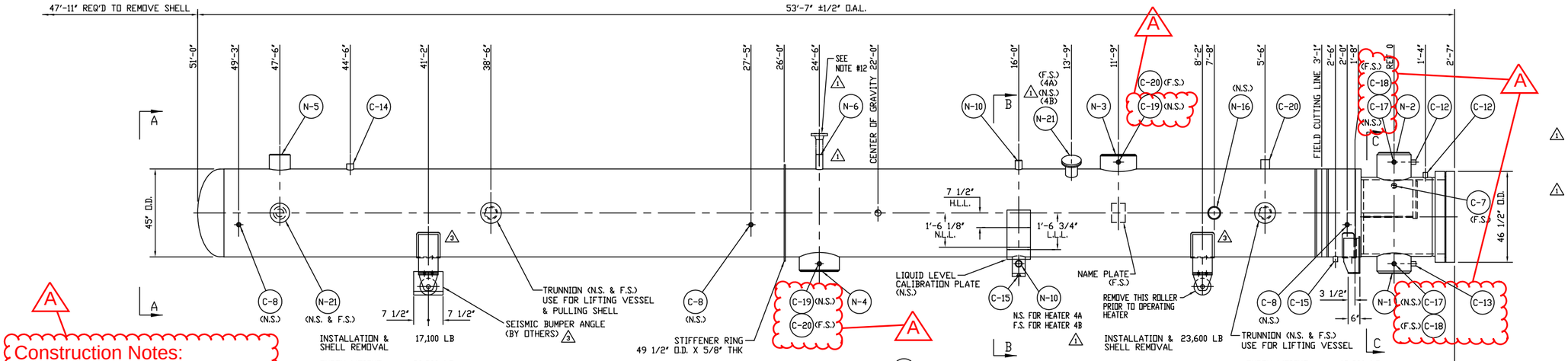
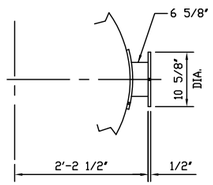
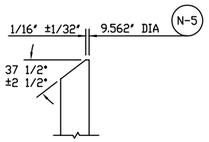


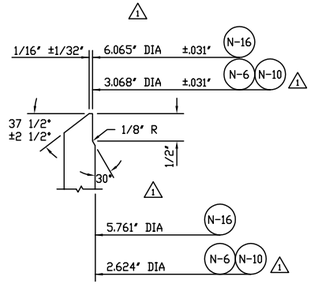
Construction Notes:
1. Seal Weld vendor-installed plugs at locations shown.



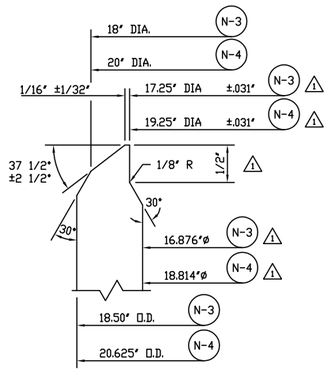
TRUNNION DETAIL



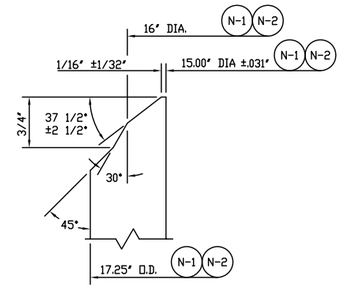
NOZZLE WELD END PREP 1



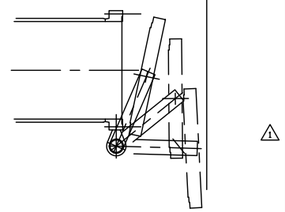
NOZZLE WELD END PREP 1



NOZZLE WELD END PREP



NOZZLE WELD END PREP



PLAN VIEW OF COVER REMOVAL USING COVER DAVIT

'AS SHOWN FOR HEATER 4A ON 'D' SIDE
'OPPOSITE HAND FOR HEATER 4B ON 'B' SIDE

GENERAL NOTES

1. ALL BOLT HOLES ARE TO STRADDLE CENTERLINES.
2. ALL COUPLINGS ARE 6000 LB. AND PLUGGED.
3. TUBES ARE WELDED AND EXPANDED INTO TUBESHEET. TUBES ARE 3/4" O.D. X .035" AVG. WALL. (SA-688-TP304L)
4. BLAST EXTERIOR AND PAINT ONE COAT OF SHOP PRIMER.
5. SHIP UNDER NITROGEN SEAL.
6. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE WITHIN TOLERANCES SPECIFIED BY THE HEAT EXCHANGER INSTITUTE STANDARDS FOR CLOSED FEEDWATER HEATERS.
7. START UP TEST VENT SHOULD NOT BE USED DURING NORMAL OPERATION.
8. SAFETY RELIEF VALVE(S) SHOULD BE INSTALLED IN A VERTICAL POSITION.
9. HEATER MUST BE VENTED THROUGH THE OPERATING AIR OUTLETS DURING OPERATION. THREE CRITICAL FLOW ORIFICE ASSEMBLIES WITH 1"-300 LB RF FLANGES SHIP LOOSE. ORIFICE DIAMETERS ARE 1/4".
10. REACTION LOADS SHOWN ARE THE MAXIMUM POSSIBLE WITH THE WEIGHT OF THE VESSEL SUPPORTED AT TWO POINTS.
11. INSULATION CLIPS WELDED ON 18" CENTERS.
12. 3"-300# R.F. STUB FOR N-6 NOZZLE SUPPLIED AND WELDED AT SITE BY OTHERS.

REV.	DWG.	CK'D.	APPR.	DATE	DESCRIPTION
3		RH	JCB	UGB	9/7/11	REVISED ROLLER SUPPORT AS NOTED
2		RH	UG	UG	8-15-11	REVISED UNIT NUMBER PER CUSTOMER COMMENT
1		BB	RH	UG	7-15-11	REV. PER CUSTOMER COMMENTS

REVISIONS

NOZZLE SCHEDULE

NOZZLE	NO.	SIZE AND RATING	TYPE	APPLICATION
N-1	1	16" FORG	W.E.	FEEDWATER INLET
N-2	1	16" FORG	W.E.	FEEDWATER OUTLET
N-3	1	18" FORG	W.E.	STEAM INLET
N-4	1	20" FORG	W.E.	DRAINS OUTLET
N-5	1	10" PIPE	W.E.	DRAINS INLET
N-6	1	3" PIPE	W.E.	SHELL SAFETY RELIEF VALVE
C-7	1	3/4"	S.W.	CHANNEL SAFETY RELIEF VALVE
C-8	3	1"	S.W.	OPERATING AIR OUTLET
		NONE		GAUGE GLASS CONNECTION
N-10	2	3" PIPE	W.E.	LIQUID LEVEL INSTRUMENT CONN
		NONE		HIGH LIQUID LEVEL CONTROL
C-12	2	1"	S.W.	CHANNEL START UP TEST VENT
C-13	1	1"	S.W.	CHANNEL DRAIN
C-14	1	1"	S.W.	SHELL START UP TEST VENT
C-15	2	1 1/2"	S.W.	SHELL DRAIN
N-16	1	6" PIPE	W.E.	HEATER DRAIN TANK VENT
C-17	2	1"	S.W.	TEMPERATURE CONNECTION
C-18	2	1"	S.W.	PRESSURE GAUGE CONNECTION
C-19	2	1"	S.W.	TEMPERATURE CONNECTION
C-20	3	1"	S.W.	PRESSURE GAUGE CONNECTION
N-21	3	4"- 300 LB	R.F. FLG	INSPECTION PORT

HEI ALLOWABLE NOZZLE LOADS

NOZZLE	MRM (FT-LB)	FRRF (LB)
N-1 N-2	44900	46100
N-3	12500	18900
N-4	14100	23200
N-5	5500	7200
N-16	2200	4500

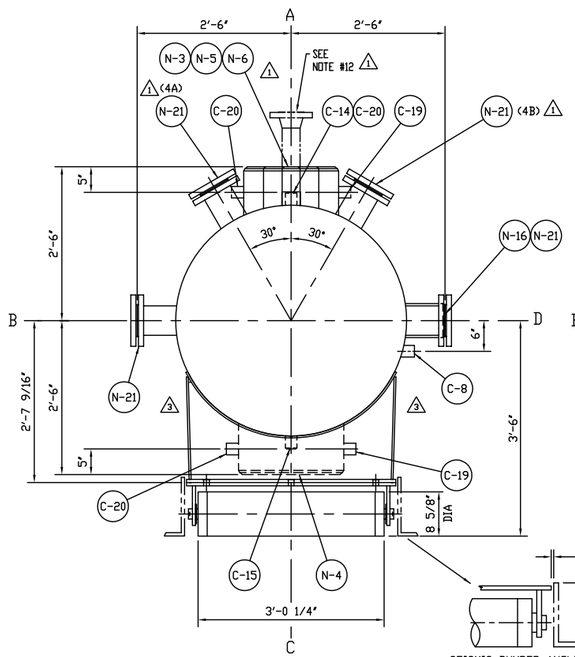
EC ISSUE			
EC	43211		
ISSUE	A		
ISSUED FOR	FINAL DESIGN		
CHK'D	BY AES		
ENG			
DEPT			
C.M.			
DATE			

AUTOMATED ENGINEERING SERVICES CORP.

PREPARED BY:	A. Rehfeld	DATE: 12/22/2011
REVIEWED BY:	P. Stashak	DATE: 12/22/2011
APPROVED BY:	W. Knous	DATE: 12/22/2011

FINAL DESIGN ISSUE A

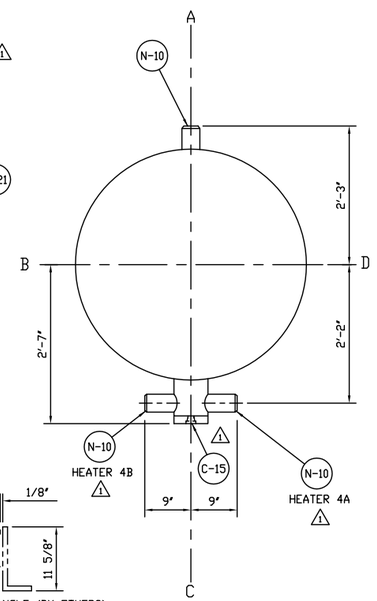
CONSTRUCTION



VIEW A - A

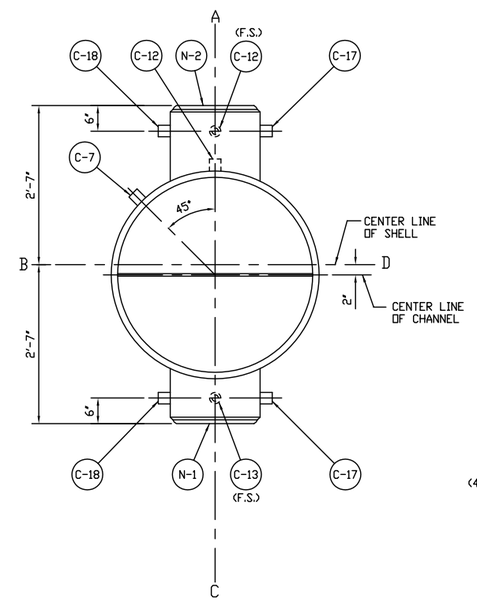
SCALE 2X

3 SEISMIC BUMPER ANGLE (BY OTHERS) BOTH SIDES OF REAR SUPPORT ONLY.



SECTION B - B

SCALE 2X

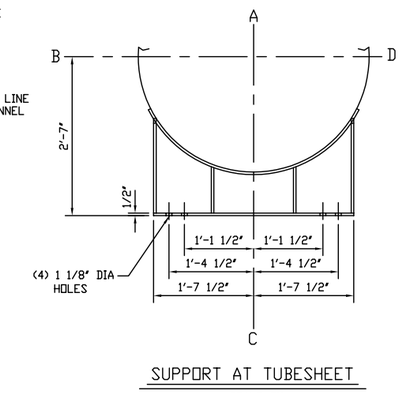


SECTION C - C

SCALE 2X

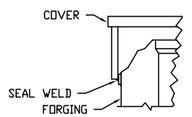
(SHOWING LEVEL INSTRUMENT CONNECTIONS ONLY)

SCALE 2X



SUPPORT AT TUBESHEET

SCALE 2X



SHIPPING COVER ATTACHMENT DETAIL

NORMAL OPERATING RANGE	
1" / 1"	NORMAL LIQUID LEVEL
DO NOT USE FOR ALARM POINTS	
STORED VOLUMES IN SHELL	
STEAM	366 CU. FT.
SATURATED LIQUID	65 CU. FT.
SUB COOLED LIQUID	N/A

CERTIFIED CORRECT FOR FABRICATION

BY: Upendra Gupta

DATE: 9/16/2011

NOTE--This drawing is the property of SPX Heat Transfer Inc., and is not to be reproduced in whole, or in part, nor used for any purpose other than that for which it is specifically furnished, without the approval of SPX Heat Transfer Inc.

CODE: ASME SECTION VIII DIV.1, 2010, CODE STAMP REQD: YES

DESIGN DATA	SHELL SIDE	TUBE SIDE
DESIGN PRESSURE	250 PSI & F.V.	700 PSI
TEST PRESSURE	325 PSI	910 PSI
DESIGN TEMPERATURE	420° F.	420° F.
NUMBER OF PASSES OR ZONES	ONE ZONE	TWO PASS
CORROSION ALLOWANCE	1/16"	1/8"
VESSELS REQUIRED PER UNIT TWO , TOTAL UNITS ONE		
EFFECTIVE SURFACE 10,761SQ. FT. PER VESSEL		
60° F. MIN. DESIGN METAL TEMPERATURE		
POST WELD HEAT TREAT: SHELL AND SKIRT		

RADIOGRAPHY	ESTIMATED WEIGHTS	
SPOT: SHELL, SKIRT AND CHANNEL	EMPTY	40,700 LB
	FULL	77,400 LB
	BUNDLE	28,100 LB
FULL: NONE	OPERATING	59,000 LB

CUSTOMER PURCHASE ORDER NUMBER 159609

Yuba

SPX HEAT TRANSFER INC.

2121 N. 161st E. Ave. TULSA, OKLAHOMA 74116

SETTING PLAN

TITLE

44-574 LOW PRESSURE FEEDWATER HEATER NO. 4A & 4B
HORIZONTAL - ITEM FW-14A & FW-14B
UNIT NO. 1
OMAHA PUBLIC POWER DISTRICT
FORT CALHOUN STATION

SM50

DWN.	CK'D.	APP.	DATE	SCALE:	DWG. NO.	REV.
GNV	RH	UG	5/11/11	NONE	WUH/700.110493/1/1	3

OPPD File No. 64533