

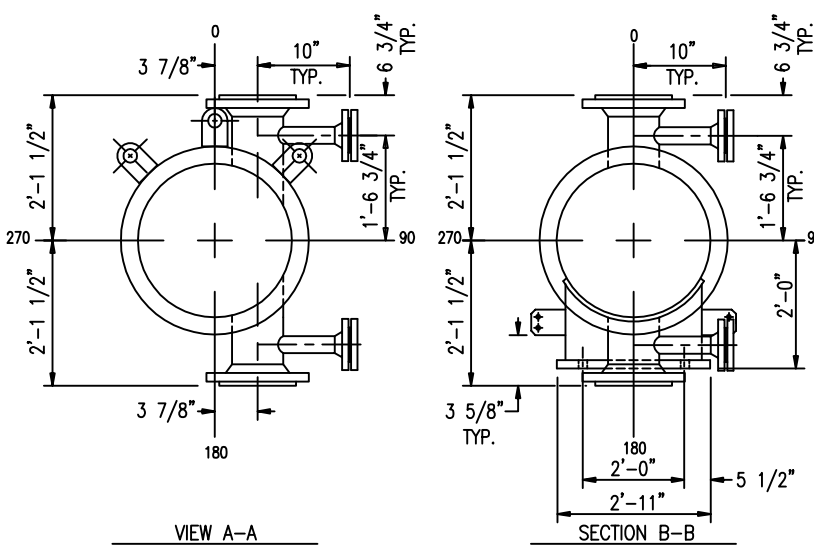
DESIGN DATA	SHELL	TUBE
DESIGN PRESSURE P.S.I.G.	200	225
VACUUM PRESSURE P.S.I.G.	FV	FV
TEST PRESSURE P.S.I.G.	281	293
DESIGN TEMP. Deg.F.	150	150
MDMT Deg. F.	-20	-20
CORROSION ALLOWANCE	1/8"	1/8"
NUMBER OF PASSES	1	4
RADIOGRAPHY	SPOT	SPOT
HEAT TREAT REQUIRED	NONE	YES

ESTIMATED WEIGHTS, LBS.
 DRY: 16350 BUNDLE: 10050 WET: 24550 CHANNEL: 1150 COVER: 1050

SPECIFICATIONS
 ASME CODE SECT. VIII DIV.1, 2015 EDD (STAMP YES)
 TEMA CLASS R and API-660 8TH EDITION APPLIES
 NATIONAL BOARD REGISTRATION REQUIRED
 PRODUCTION IMPACT TESTING NOT REQUIRED PER UG-20(f), UCS-66(a&c)

MATERIAL			
CHANNEL:	SA-516-70	SHELL:	SA-516-70
TUBESHEETS:	SA-516-70	BAFFLES:	SA-240-304
TUBES:	SA-249TP304L		
(362)	3/4" O.D.X .065" AVG	x 20'-0"	LG.
TUBE PITCH	1" \diamond	SURFACE	2943 SQ.FT.

GENERAL NOTES
 MAWP (HOT AND CORRODED):
 SHELLSIDE: 216 P.S.I.G. LIMITED BY SHELL NOZZLE
 TUBESIDE: 225 P.S.I.G. LIMITED BY CHANNEL TO COVER FLANGE
 MAWP (NEW AND COLD):
 SHELLSIDE: 317 P.S.I.G. LIMITED BY SHELL NOZZLE
 TUBESIDE: 265 P.S.I.G. LIMITED BY CHANNEL TO COVER FLANGE
 ALL BOLT HOLES TO STRADDLE NATURAL CENTER LINES.
 TUBE JOINT: EXPANDED & DOUBLE GROOVED
 GASKETS: .125" THK. SIDJNAF - TWO SPARE SETS PROVIDED
 CHANNEL ID & TUBESHEET FACE COATED PER CUSTOMER SPECIFICATIONS
 SURFACE PREP. & PAINT: PER CUSTOMER SPECIFICATION SEE DWG (1203-05-A0)




HOLLY FRONTIER SPECIFICATIONS
 EP 7-1-1 PRESSURE VESSELS REV 1.1
 EP 7-1-4 SUPPLEMENTAL REQUIREMENTS FOR PRESSURE VESSELS REV 1.1
 EP 7-1-5 WELDING REQUIREMENTS FOR PRESSURE VESSELS REV 2.1
 EP 7-1-7 PRESSURE VESSEL DETAILS REV 1.1
 EP 8-1-1 TEMA SHELL AND TUBE HEAT EXCHANGERS REV 1.1
 EP 8-1-8 TUBE-TO-TUBESHEET JOINTS REV 1.0
 EP 9-1-9 TUBE MATERIAL AND SELECTION REV 2.0
 EP 10-3-1 SHOP PAINTING REV 1.1 TULSA DEVIATION
 EP 10-3-4 PROTECTIVE COATINGS FOR HEAT EXCHANGERS REV 1.0
 EP 10-3-5 CATHODIC PROTECTION FOR HEAT EXCHANGERS - ANODE - INSTALLATION REV 1.0
 EP 11-3-3 INSULATION APPLICATION - VESSELS AND EQUIPMENT REV 1.1

NOZZLE SCHEDULE				
MK	QT	DESCRIPTION	PROCESS	AUXILIARIES
S1	1	6" 150#RF WN	INLET	1"-300#RF WN W/BLIND
S2	1	6" 150#RF WN	OUTLET	1"-300#RF WN W/BLIND
T1	1	6" 150#RF WN	INLET	1"-300#RF WN W/BLIND
T2	1	6" 150#RF WN	OUTLET	1"-300#RF WN W/BLIND

REV.	DATE	DESCRIPTION	BY	CK./APP.
5	04/22/16	REV'D ADDED HEAT TREATMENT TO DESIGN DATA.	JWP	KAD
4	03/11/16	REV. PAINT NOTE, CODE YEAR & SPEC. REFERENCE.	JWP	KAD
3	02/22/16	ADDED HOLLY SPECS AND API EDITION	JWP	KAD
2	01/29/16	REV. TEST PRES. 1.3 X MAWP, TITLE BLOCK SERV., ADDED CHANNEL & TUBESHEET COATING NOTE, ANODE NOTE.	JWP	KAD
1	01/04/16	REV. PER CUSTOMER COMMENTS, AS MARKED.	JWP	KAD

INSULATION: (NONE)
 BUNDLE REMOVAL CLEARANCE: 21'-5"
 MAGNESIUM ANODES (CHANNEL) PROVIDED
 SEE DRAWING 1203-05-A0 FOR ADDITIONAL NOTES.

CUST: KP ENGINEERING / HOLLY FRONTIER
 P.O. NO.: J1422-B-007
 ITEM NO.: 022-E-500
 SERVICE: TANK 12 VS CHILLED WATER EXCHANGER
 SHIP TO: TULSA, OK

CODE		ASSEMBLY AND SPECIFICATIONS FOR	
		ONE	34-240 A E U
DRAWN BY	KAD	 TAYLOR FORGE ENGINEERED SYSTEMS, INC. 6333 N. ERIE AVE. TULSA, OK 74117 Traditionally Dependable	
DATE	12/03/15		
CK./APP. BY	ADR	DRAWING NUMBER	1203-05-A1
REV.	5		