



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 8-1-9 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	QTY.	DESCRIPTION	AUXILIARIES
S1	1	6" 300#RF WN	INLET 1"-300# RF WN W/BLIND
S2	1	6" 300#RF WN	OUTLET 1"-300# RF WN W/BLIND
T1	1	6" 300#RF WN	INLET 1"-300# RF WN W/BLIND
T2	1	6" 300#RF WN	OUTLET 1"-300# RF WN W/BLIND

REV.	DATE	DESCRIPTION	BY	CHK./APP.
5	04/22/16	REV'D ADDED HEAT TREATMENT TO DESIGN DATA.	JWP	KAD
4	03/14/16	REV. PAINT NOTE, CODE YEAR & SPEC. REFERENCE.	JWP	KAD
3	02/26/16	REV. PER CUSTOMER COMMENTS, AS MARKED.	JWP	KAD
2	01-28-16	REV'D SERVICE PER CUST. COMMENT; REMOVED SHELL COURSE LINES; REV'D TEST PRESSURES; CORRECTED LINETYPE & REV'D SUPPORTS	ADR	KAD
1	12/31/15	REV. PER CUSTOMER COMMENTS, AS MARKED.	JWP	KAD

DESIGN DATA	SHELL	TUBE
DESIGN PRESSURE P.S.I.G.	350	270
VACUUM PRESSURE P.S.I.G.	FV	FV
TEST PRESSURE P.S.I.G.	474	363
DESIGN TEMP. Deg.F.	150	200
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: 12200 WET: 16700 BUNDLE: 7200 CHANNEL: 880 COVER: 600

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-36
TUBES:	SA-214		
	(202) 3/4" O.D. X 0.109" M.W. X 20'-0" LG.		
TUBE PITCH	1" \diamond	SURFACE	1572 SQ.FT.

GENERAL NOTES
 MAWP (HOT AND CORRODED):
 SHELLSIDE: 364 P.S.I.G. LIMITED BY SHELL NOZZLE
 TUBESIDE: 279 P.S.I.G. LIMITED BY CHANNEL TO COVER FLANGE
 MAWP (NEW AND COLD):
 SHELLSIDE: 432 P.S.I.G. LIMITED BY BODY FLANGE
 TUBESIDE: 293 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
 SURFACE PREP. & PAINT: PER CUSTOMER SPECIFICATIONS SEE DWG (1203-03-A0)

INSULATION: (NONE)
 BUNDLE REMOVAL CLEARANCE: 21'-1"
 SEE DRAWING 1203-03-A0 FOR ADDITIONAL NOTES.

CUST: KP ENGINEERING / HOLLY FRONTIER
 P.O. NO.: J1422-B-007
 ITEM NO.: 010-E-505
 SERVICE: TANK 12 PRODUCT PREHEAT EXCHANGER
 SHIP TO: TULSA, OK

CODE		ASSEMBLY AND SPECIFICATIONS FOR	
		ONE	26-240 A E U
DRAWN BY	KAD	DATE	12-03-15
CK./APP. BY	ADR	DRAWING NUMBER	1203-03-A1
REV.	5	REV.	5

