



MEG ENERGY

CHRISTINA LAKE REGIONAL PROJECT  
Phase 3A EPC for Central Plant Facilities

SLI Project No. 511036



SNC-LAVALIN



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Vendor's drawing review for  
conformity with specifications  
and design drawing.

This review does not relieve  
the vendor of his responsibility  
for errors in design and detailing  
as detailed in his contract.

- ☐ A1 Not suitable to initiate fabrication. modify as noted, resubmit for review
- ☐ B1 Suitable to initiate fabrication as noted. modify as noted, resubmit for review
- ☐ C1 Suitable to fabricate to completion as noted. submit final documents including as-builts as required
- ☒ D1 Suitable to fabricate to completion. submit final documents including as-built documents as required
- ☐ E1 Not suitable as final documents as noted. modify as noted and resubmit.
- ☐ F1 Suitable as final documents. no further resubmittal required (unless revised by vendor)
- ☐ VX Vendor document cancelled.

Vendor: Sewon Cellontech Co. Ltd. - P00007

No.: E0351-3AE105-D-01

Rev: 4

Doc. Title: H00.01 - GENERAL ASSEMBLY (1/3) - Tag: 3A-E-105A/B

Client Code:

Project No: 511036

Date Rec'd: 2014/05/30

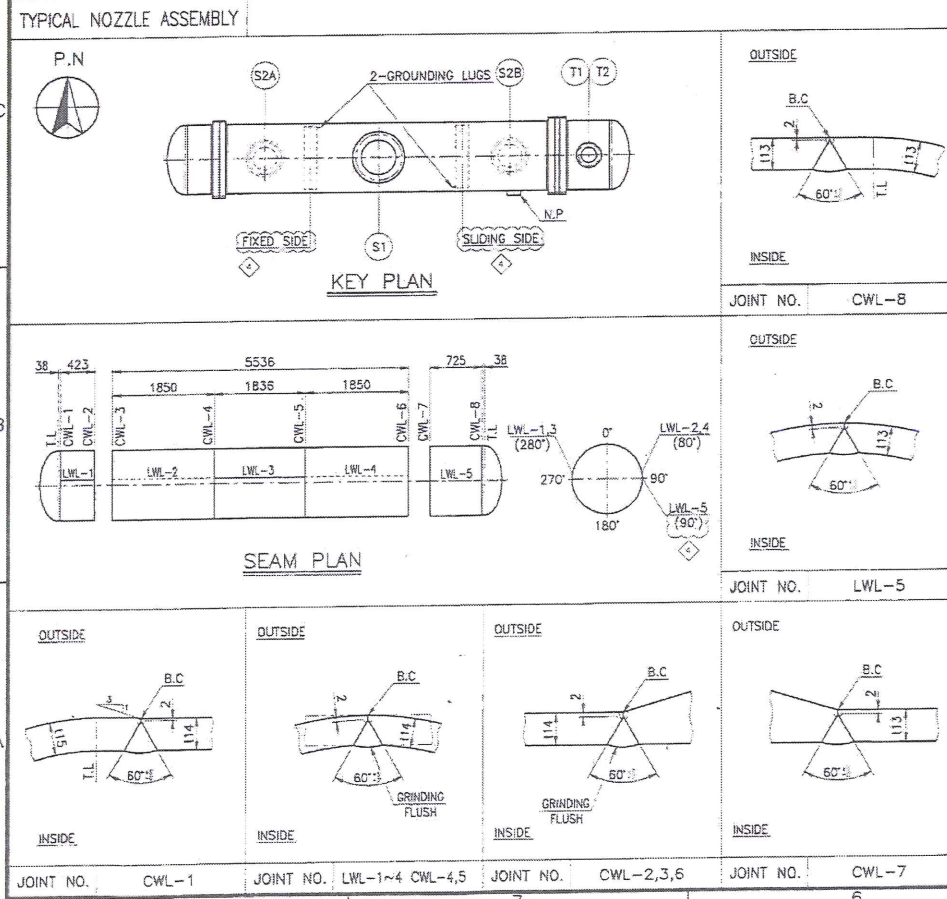
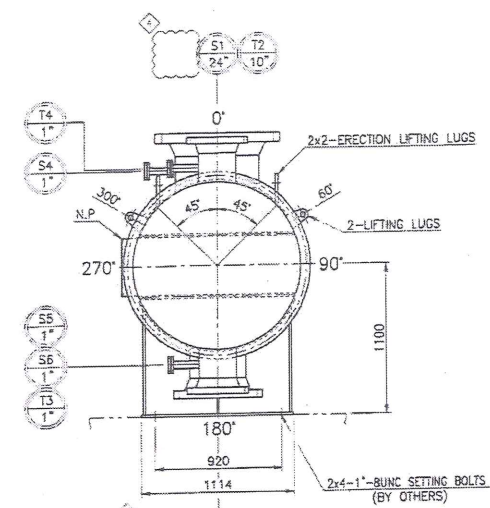
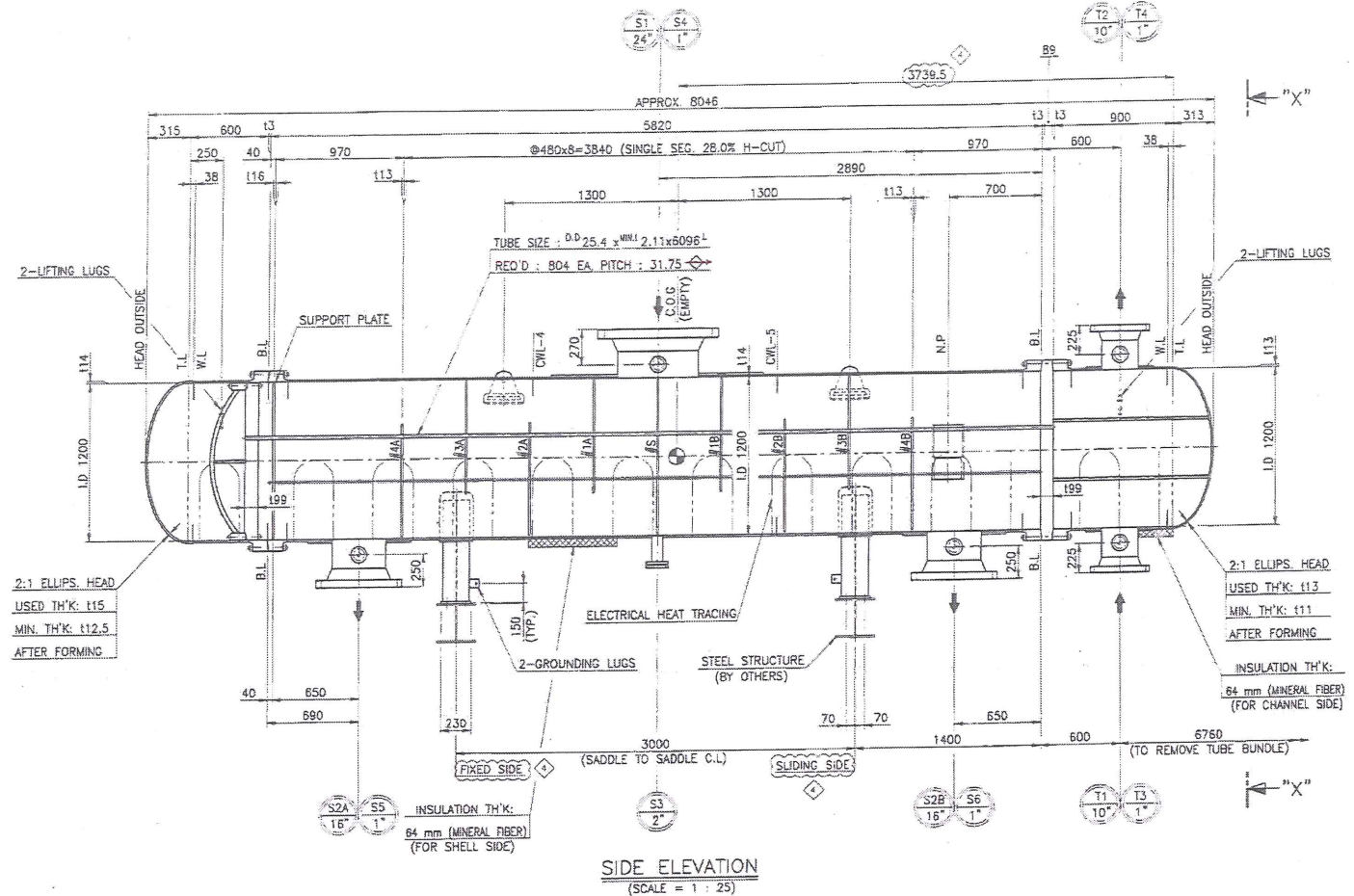
Reviewed by: SS

Date: 4-June-2014

Document No:  
P-5310-01-0008

Submittal:  
05





**REFERENCE DRAWINGS**

1. GENERAL ASSEMBLY (2/3) [FOR 3A-E-105B]	E0351-3AE105-D-02
2. GENERAL ASSEMBLY (3/3)	E0351-3AE105-D-03
3. DETAIL OF BODY (1/2)	E0351-3AE105-D-04
4. DETAIL OF BODY (2/2)	E0351-3AE105-D-05
5. DETAIL OF TUBE BUNDLE (1/2)	E0351-3AE105-D-06
6. DETAIL OF TUBE BUNDLE (2/2)	E0351-3AE105-D-07
7. DETAIL OF SUP'T SADDLE	E0351-3AE105-D-08
8. DETAIL OF INSUL. SUP'T (1/2)	E0351-3AE105-D-09
9. NOZZLE DETAIL "S1, S2"	E0351-3AE105-D-10
10. NOZZLE DETAIL "S1A, S1B, S2A, S2B"	E0351-3AE105-D-11
11. NOZZLE DETAIL "S3"	E0351-3AE105-D-12
12. NOZZLE DETAIL "T1, T2"	E0351-3AE105-D-13
13. NOZZLE DETAIL "S4-S6, T3, T4"	E0351-3AE105-D-14
14. DETAIL OF TEST RING	E0351-3AE105-D-15
15. DETAIL OF EHT GENERAL ASSEMBLY	E0351-3AE105-D-16
16. DETAIL OF NAME PLATE	E0351-3AE105-D-17
17. DETAIL OF EHT WIRING (1/2)	E0351-3AE105-D-18
18. DETAIL OF EHT WIRING (2/2)	E0351-3AE105-D-19
19. DETAIL OF INSUL. SUP'T (2/2)	E0351-3AE105-D-20

**NOZZLE SCHEDULE**

MARK	NO.	SIZE	NO.	FLANGE	NOZZLE	REIN. PAD	SERVICE & REMARKS
T3, T4	1"	2	ASME	L.W.N.	R.F.	-	340 - FIELD HYDROTEST (W/B.F)
S5, S6	1"	2	ASME	L.W.N.	R.F.	-	410 - FIELD HYDROTEST (W/B.F)
S4	1"	1	ASME	L.W.N.	R.F.	-	510 - FIELD HYDROTEST (W/B.F)
T2	10"	1	ASME	W.N.	R.F.	SC 80	940 113x9510 TUBE SIDE OUTLET
T1	10"	1	ASME	W.N.	R.F.	SC 80	940 113x9510 TUBE SIDE INLET
S3	2"	1	ASME	L.W.N.	R.F.	-	820 - DRAIN (W/B.F)
S2A, B	16"	2	ASME	W.N.	R.F.	113	970 114x6780 SHELL SIDE OUTLET
S1	24"	1	ASME	W.N.	R.F.	114	970 114x6780 SHELL SIDE INLET

**ASME STAMP**

**DESIGN & TEST DATA**

QTY TO BE MANUFACTURED	1 (ONE)
CODE	ASME SEC. VIII DIV. 1 2010 ED. + 2011 ADD. & TEMA CLASS "R" 9TH ED. - 2007 + AP. 880 8TH ED.
ASME CODE STAMP	YES
CRN. NO.	TBD
NATIONAL BOARD REGISTRATION	YES
TYPE	H-BJ12T
EFFECTIVE SURFACE AREA (TUB. SHELL)	370.6
SPECIAL SERVICE	NO
FLUID CIRCULATED	EMULSION
DENSITY (LIQ./VAP.) kg/m <sup>3</sup> (LBS./CU. FT.)	928/- / 945.9/- 1078.4/- / 1003.2/-
NO. OF PASS	1 (ONE) 4 (FOUR)
PRESSURE (Kpa)	DESIGN 2010/F.V. 1550/F.V. OPERATING 925 900
TEMPERATURE (°C)	DESIGN 210 210 OPERATING 144/121.4 40/130
TEST PRESS. (Kpa)	HYDRO. 2840 2169 PNEUM. 1000 1000
M.A.W.P. (HOT&CORRODED) (Kpa)	2031 1669
M.A.W.P. LIMITING COMPONENT	SHELL COVER FLANGE TUBE SHEET
M.A.P. (NEW&COLD) (Kpa)	2042 1669
M.A.E.W.P. (Kpa)	F.V. F.V.
P.W.H.T.	NO
RADIOGRAPHY (S/H)	SPOT/FULL SPOT/FULL
JOINT EFFICIENCY	0.85 0.85
CORR. ALLOW. (MM)	3.2 3.2
M.D.M.T. (°C)	-29 -29
IMPACT TEST	SEE NOTE 14. SEE NOTE 14.
INSULATION (MM)	64 64
FIRE PROOFING (MM)	NONE
PAINTING SPECIFICATION	SEE NOTE 26.
TOLERANCE	SEE NOTE 13.
TUBE TO TUBE SHEET JOINT	ROLLED (TWO GROOVES) AND EXPANDED
WIND CODE	NBC 2005, IMPORTANCE FACTOR = 1.15 WIND SPEED = 113km/Hr
SEISMIC CODE	NBC 2005, IMPORTANCE FACTOR = 1.3 SITE CLASS = 0. SA(0.2)=0.12 SA(0.5)=0.056 SA(1.0)=0.023 SA(2.0)=0.008
WEIGHT (KG)	FABRICATION 15090 ERECTION 15520 EMPTY 15520 OPERATING 22030 TEST (SHOP/FIELD) 23230/22900 BUNDLE 8480

**MATERIAL SPECIFICATION**

	SA516-70N	STUD BOLTS AND NUTS	
SHELL HEAD	SA516-70N	-SHELL COVER	SA193-B7/SA194-2H
CHANNEL HEAD	SA516-70N	-STATIONARY	SA193-B7/SA194-2H
COVER FLANGE	-	-CHANNEL COVER	-
CHANNEL FLANGE	SA266-2N	-FLOATING	SA193-B7/SA194-2H
TUBE SHEET	SA266-2N	-SHELL SIDE NOZZ.	SA193-B7/SA194-2H
FLOATING HEAD COVER	SA516-70N	-TUBE SIDE NOZZ.	SA193-B7/SA194-2H
FLOATING HEAD FLANGE	SA266-2N	-GASKETS	-
BACKING DEVICE	-	-SHELL COVER	SEE *1)
TUBES	SA179 (SEAMLESS)	-SHELL CHMEL END	SEE *1)
BAFFLES or SUPPORT	SA516-70	-CHANNEL SHELL END	SEE *1)
IMPINGEMENT BAFFLE	-	-CHANNEL COVER	-
TIE ROD / SPACER	SA36 / SA53-B	-FLOATING	SEE *1)
PASS PARTITION PLATE	SA516-70N	-SHELL SIDE NOZZ.	SEE *2)
SHELL NOZZLE -NECK	SA106-B	-TUBE SIDE NOZZ.	SEE *2)
-FLANGE	SA105N	SUPPORT SADDLES / PAD	SA516-70N/SA516-70N
CHANNEL NOZZLE -NECK	SA106-B	EARTH LUG & NAME PLATE	SA240-304
-FLANGE	SA105N	SETTING BOLT/NUT	SA325 (BY OTHERS)

\*1) GASKET MATERIAL : DOUBLE METAL JACKET GASKET  
- FILLER : GRAPHITE  
- JACKET : C.S.  
\*2) SPIRAL WOUND (14.5) : FILLER : GRAPHITE  
- HOOP : 316 S.S.  
- OUTER RING : C.S.

**FOR APPROVAL**

REV.	DATE	DESCRIPTIONS FOR REVISION	DRWN	CHK'D	REV'D	APP'D
2014	04.12	REVISED AS MARKED	B.C.CHIN	J.W.KIM		
2013	11.08	REVISED AS MARKED	B.C.CHIN	J.W.KIM		
2013	10.17	REVISED AS MARKED	B.C.CHIN	J.W.KIM		
2013	08.21	REVISED AS MARKED	B.C.CHIN	J.W.KIM		
2013	07.08	FOR APPROVAL	B.C.CHIN	J.W.KIM		

**CLRP PHASE 3A CENTRAL PLANT FACILITY: EPC**

**ASME-MEC ENERGY CORP.**

**SNC • LAVALIN INC.**

**SEWON CELLONTECH CO., LTD.**  
CHANGWON, KOREA

OWNER JOB NO. 511036  
PROJECTION METHOD THIRD ANGLE PROJECTION  
SCALE SEE DWG.

P-5310-01  
OWNER DWG. NO. -

SEWON JOB NO. E-0351  
SEWON DWG. NO. E0351-3AE105-D-01