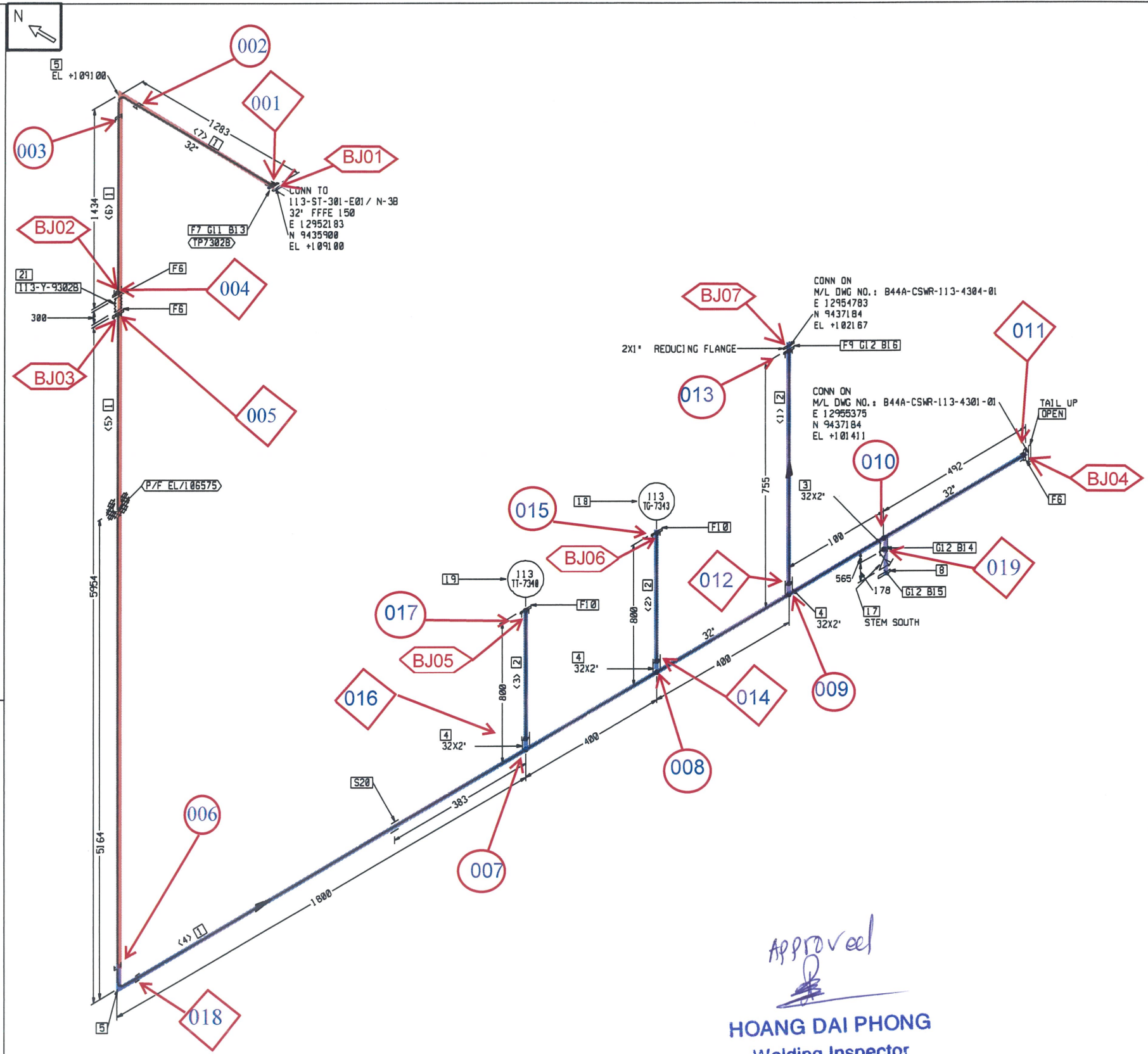


FIELD MATERIALS						
PT NO.	PART & DESCRIPTION	SIZE (IN.)	PART	OPT.	MATL CLASS	SYMBOL
PIPE						
1	GRP SMLS MFR-STD ADHESIVE JT. B AND S FLUID-1	32	P	L	S0CW	P01N-002CK
2	GRP SMLS MFR-STD ADHESIVE JT. B AND S FLUID-1	2	P	L	S0CW	P01N-002AG
FITTINGS						
3	SADDLE GRP SMLS MFR-STD FLANGED FF (BRANCH) FLUID-1	32X2	SD	211	S0CW	P52N-000E6
4	SADDLE GRP SMLS MFR-STD ADHESIVE JT. FLUID-1	32X2	SD	L	S0CW	P52N-000BW
5	90 DEG ELBOW GRP SMLS MFR-STD ADHESIVE JT. FLUID-1	32	9L	L	S0CW	P02N-001PP
FLANGES						
6	ADHS BELL GRP 150" B16.47-A FF FLUID-1	32	F	L	S0CW	P61N-001CC
7	ADHS BELL GRP 150" B16.47-B FF FLUID-1	32	F	2503	S0CW	P61N-001MI
8	BLIND FLANGE GRP 150" B16.5 FF FLUID-1	2	F8	L	S0CW	P67N-00005
9	ADHS BELL GRP 150" B16.5 FF FLUID-1	2	F	L	S0CW	P61N-000WX
10	ADHS BELL GRP 300" B16.5 FF FLUID-1	2	F	773	S0CW	P61N-0019S
GASKETS						
11	SHEET NBR 150" B16.21 B16.47-B FF 3.0MM	32	G	2503	S0CW	P74U-00232
12	SHEET NBR 150" B16.21 B16.5 FF 3.0MM	2	G	L	S0CW	P74U-00212
BOLTS						
13	ERROR READING MATERIAL DESCRIPTION LIBRARY, 440.0MM BOLT LENGTH	3/4	B	L	S0CW	BOLT
14	A307-B/A563-A B1.1 GALV UNC MACHINE W/ 1-HVY HEX NUT/2-GALV CS WASHERS PER ASTM F436 OR EQUIV, 115.0MM BOLT LENGTH	5/8	B	L	S0CW	P80S-01S7P
15	A307-B/A563-A B1.1 GALV UNC MACHINE W/ 1-HVY HEX NUT/2-GALV CS WASHERS PER ASTM F436 OR EQUIV, 90.0MM BOLT LENGTH	5/8	B	L	S0CW	P80S-01S96
16	A307-B/A563-A B1.1 GALV UNC MACHINE W/ 1-HVY HEX NUT/2-GALV CS WASHERS PER ASTM F436 OR EQUIV, 155.0MM BOLT LENGTH	5/8	B	L	S0CW	P80S-01S7Y
VALVES						
17	GATE -V B148-C95800 150" MFR-STD B16.5 FF TRIM AL-BRONZE BB-BG-OS&Y HNDWHL	2	V	L	S0CW	P81R-000G6
INSTRUMENTS						
18	TEMPERATURE GAUGE	2			S0CW	113-TG-7343
19	TEMPERATURE TRANSMITTER	2			S0CW	113-TT-7340
SUPPORTS						
20	GRP CLAMP GUIDE SUPPORT	32			S0CW	113-GCG-0302
MISCELLANEOUS COMPONENTS						
21	EXPANSION JOINT	32			S0CW	113-Y-9302B

CUT PIPE LENGTH					
PIECE NO.	LENGTH (MM)	SIZE (IN.)	REMARKS	PIECE NO.	LENGTH (MM)
<1>	150	2		<2>	195
<3>	145	2		<4>	2358
<5>	5120	32		<6>	600
<7>	449	32			

- █ Replaced (Dismantled)
- █ Reusable (Dismantled)
- █ Reusable (Retained)

WELD LIST				WELD LIST				BOLT LIST		
WELD NO.	SIZE (In)	WELD TYPE	WELD CAT.	WELD NO.	SIZE (In)	WELD TYPE	WELD CAT.	BOLT NO.	SIZE (IN)	LENGTH (MM)
001	32	BD	F	010	2	BR	S	BJ01	3/4	440
002	32	BD	S	011	32	BD	F	BJ02	3/4	440
003	32	BD	S	012	32	BD	F	BJ03	3/4	440
004	32	BD	F	013	2	BD	S	BJ04	3/4	440
005	32	BD	F	014	2	BD	F	BJ05	5/8	115
006	32	BD	S	015	2	BD	S	BJ06	5/8	90
007	2	BR	S	016	2	BD	F	BJ07	5/8	155
008	2	BR	S	017	2	BD	S			
009	2	BR	S	018	32	BD	F			
				019	2	BD	F			



Approved

HOANG DAI PHONG
 Welding Inspector
 25-Feb-2026

CSWR-113-4301-02		S0CW	S0CW	32" 2"	NONE	NONE	NI	NI	NO	NO	N08	N08
LINE NO.		LINE CLASS	LINE SIZE	PAINT	INS. CLASS & THK	PWHT	NDE CODE	P&I D NO.: VS2158-412-A-075		FOR CONSTRUCTION		Contractor JOB Code 0-6495-20
2		03-MAR-2017	AS BUILT	RBS	SDC	JPk	SCALE	NONE		MAIN MATERIAL: GRP		NSRP Complex Project Nghi San, Vietnam
REV		DATE	DESCRIPTION	DRAWN	CHKD.	APPVD.	LINE NO.: 32"-CSWR-113-4301-S0CW-NI		PCWBS NO.: B44A UNIT NO.: 113		JGCS Nghi San Refinery and Petrochemical Limited Liability Company	
							CONTRACTOR DWG NO. B44A-CSWR-113-4301-02		SHT NO. 1/1		SIZE D	
									REV 2			

FILE: B44ACSWR113430102

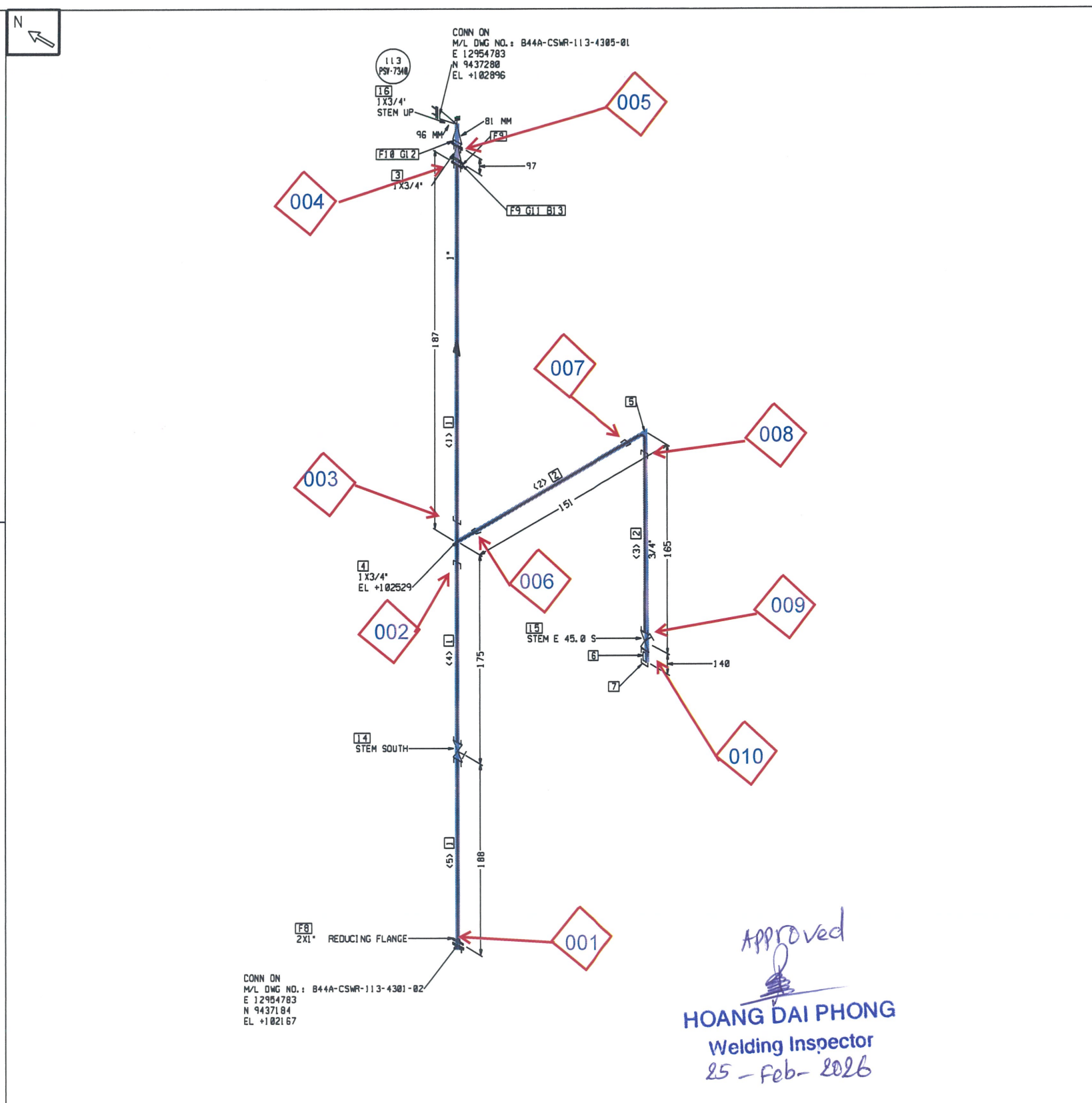
EXTRACTED 12/FEB/2027 4662/5789

FIELD MATERIALS						
PT NO.	PART & DESCRIPTION	SIZE (IN.)	PART	OPT.	MATL CLASS	SYMBOL
PIPE						
1	B466-C70620 SMLS B36.10M/B36.19M NPT S-805	1	P	1	S0CW	P01M-000H3
2	B466-C70620 SMLS B36.10M/B36.19M NPT S-805	3/4	P	1	S0CW	P01M-000H2
FITTINGS						
3	CON SWAGED NIPPLE B151-C70620 SMLS MSS SP-95 NPT(L) - NPT(S) S-805 X S-805	1X3/4	SNC	1	S0CW	P42P-0001Z
4	RED. TEE B151-C70620 3000* B16.11 NPT	1X3/4	TR	1	S0CW	P24P-00015
5	90 DEG ELBOW B151-C70620 3000* B16.11 NPT	3/4	9L	1	S0CW	P02P-0000W
6	STRAIGHT NIPPLE B466-C70620 SMLS B36.10M/B36.19M NPT - NPT L=100MM S-805	3/4	STN	1	S0CW	P41M-000CG
7	CAP B151-C70620 3000* B16.11 NPT	3/4	CA	1	S0CW	P29P-00012
FLANGES						
8	RED. FLANGE NPT GRP 150* B16.5 FF FLUID-I	2X1	FR	1	S0CW	P62N-000SL
9	NPT B151-C70620 150* B16.5 FF	1	F	1	S0CW	P61P-0014N
10	NPT B151-C70620 150* B16.5 FF	3/4	F	1	S0CW	P61P-0014M
GASKETS						
11	SHEET NBR 150* B16.21 B16.5 FF 3.0MM	1	G	1	S0CW	P74U-0020Y
12	SHEET NBR 150* B16.21 B16.5 FF 3.0MM	3/4	G	1	S0CW	P74U-0020X
BOLTS						
13	A307-B/A563-A B1.1 GALV UNC MACHINE W/ 1-HVY HEX NUT/2-GALV CS WASHERS PER ASTM F436 OR EQUIV, 70.0MM BOLT LENGTH	1/2	B	1	S0CW	P80S-0157E
VALVES						
14	GATE -V B148-C95800 150* MFR-STD NPT TRIM AL-BRONZE UB-SG-1SRS HNDWHL	1	V	1	S0CW	P81R-000KR
15	GATE -V B148-C95800 150* MFR-STD NPT TRIM AL-BRONZE UB-SG-1SRS HNDWHL	3/4	V	1	S0CW	P81R-000KP
INSTRUMENTS						
16	PRESSURE RELIEF VALVE	1X3/4			S0CW	113-PSV-7340

CUT PIPE LENGTH							
PIECE NO.	LENGTH (MM)	SIZE (IN.)	REMARKS	PIECE NO.	LENGTH (MM)	SIZE (IN.)	REMARKS
<1>	156	1		<2>	100	3/4	
<3>	100	3/4		<4>	100	1	
<5>	100	1					

WELD LIST			
WELD NO.	SIZE (In)	WELD TYPE	WELD CAT.
001	1.00	TH	F
002	1.00	TH	F
003	1.00	TH	F
004	1.00	TH	F
005	0.75	TH	F
006	0.75	TH	F
007	0.75	TH	F
008	0.75	TH	F
009	0.75	TH	F
010	0.75	TH	F

■ Replaced (Dismantled)
■ Reusable (Dismantled)
■ Reusable (Retained)



CSWR-113-4304-01	S0CW S0CW	1" 3/4"	NONE NONE	NI NI	NO NO	N08 N08	FOR CONSTRUCTION	Contractor JOB Code 0-6495-20	JBCS
LINE NO.	LINE CLASS	LINE SIZE	PAINT	INS. CLASS & THK	PWHT	NDE CODE	P&I D NO.: VS2158-412-A-075	NSRP Complex Project Nghi Son, Vietnam	Nghi Son Refinery and Petrochemical Limited Liability Company
1	03-MAR-2017	AS BUILT	RBS	SDC	JPk	SCALE NONE	MAIN MATERIAL: GRP	PCWBS NO.: B44A	UNIT NO.: 113
REV	DATE	DESCRIPTION	DRAWN	CHKD.	APPVD.	CONTRACTOR DWG NO. B44A-CSWR-113-4304-01	SHT NO. 1/1	SIZE D	REV 1

FILE: B44ACSWR113430401

EXTRACTED FROM 4665/5789

INDRA
 02-JUL-2018
 AS BUILT
 UNCONTROLLED WHEN PRINTED

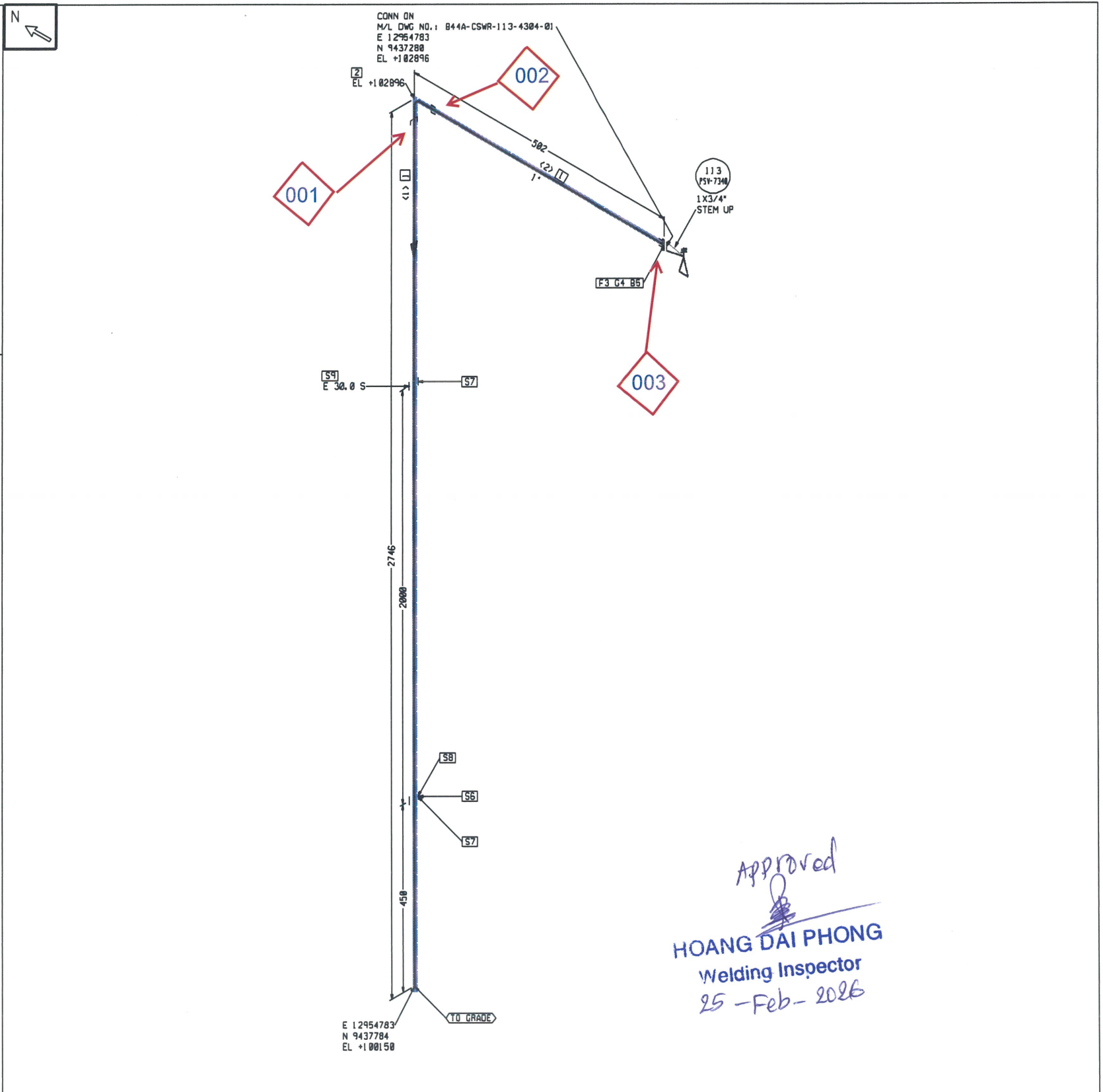
FIELD MATERIALS							
PT NO.	PART & DESCRIPTION	SIZE (IN.)	PART	OPT.	MATL CLASS	SYMBOL	QTY
PIPE							
1	B466-C70620 SMLS B36.10M/B36.19M NPT S-005	1	P	1	S0CW	P01M-000H3	3.2 M
FITTINGS							
2	90 DEG ELBOW B151-C70620 3000* B16.11 NPT	1	9L	1	S0CW	P02P-0000S	1
FLANGES							
3	NPT B151-C70620 150* B16.5 FF	1	F	1	S0CW	P61P-0014N	1
GASKETS							
4	SHEET NBR 150* B16.21 B16.5 FF 3.0MM	1	G	1	S0CW	P74U-0020Y	1
BOLTS							
5	A307-B/A563-A B1.1 GALV UNC MACHINE W/ 1-HYV HEX NUT/2-GALV CS WASHERS PER ASTM F436 OR EQUIV, 70.0MM BOLT LENGTH	1/2	B	1	S0CW	P00S-0157E	4
SUPPORTS							
6	ON PAVE FOUNDATION	1			S0CW	S211B-200	1
7	U-BOLT	1			S0CW	S101B-S01	2
8	ANGLE SUPPORT	1			S0CW	S202L-L50-0300-0500	1
9	ANGLE SUPPORT	1			S0CW	S202A-L10-0900	1

CUT PIPE LENGTH							
PIECE NO.	LENGTH (MM)	SIZE (IN.)	REMARKS	PIECE NO.	LENGTH (MM)	SIZE (IN.)	REMARKS
<1>	271.9	1		<2>	471	1	

- Replaced (Dismantled)
- Reusable (Dismantled)
- Reusable (Retained)

WELD LIST			
WELD NO.	SIZE (In)	WELD TYPE	WELD CAT.
001	1.00	TH	F
002	1.00	TH	F
003	1.00	TH	F

BOLT LIST		
BOLT NO.	SIZE (IN)	LENGTH (MM)



Approved
HOANG DAI PHONG
Welding Inspector
25-Feb-2026

INDRA
02-JUL-2018
AS BUILT
UNCONTROLLED WHEN PRINTED

CSWR-113-4305-01		S0CW	1"	NONE	NI	NO	N0B	FOR CONSTRUCTION	Contractor JOB Code 0-6495-20						
									 NSRP Complex Project Nghi Son, Vietnam		   Nghi Son Refinery and Petrochemical Limited Liability Company				
LINE NO.		LINE CLASS	LINE SIZE	PAINT	INS. CLASS & THK	PWHT	NDE CODE	P&I D NO. : VS2158-412-A-075		LINE NO. : 1'-CSWR-113-4305-S0CW-NI					
FABRICATION								MAIN MATERIAL : CRP		PCWBS NO. : B44A		UNIT NO. : 113			
2	03-MAR-2017	AS BUILT			RBS	SDC	JPk	SCALE NONE		CONTRACTOR DWG NO. B44A-CSWR-113-4305-01		SHT NO. 1/1	SIZE D	REV 2	
REV	DATE	DESCRIPTION			DRAWN	CHKD.	APPVD.								

FILE: 844ACSWR113430501

EXTRACTION: 12 FEB 2017
4666/5789

113-ST-301-E01		
MAIN CONDENSER		
CODE	REF. ASME SEC. VII DIV. 1	MAKERS STD.
TYPE	TEMA AXIAL	
SIZE (DIAMETER/TUBE LENGTH/MT.AREA)	REFER TO VS2158-412-A-243	
DESIGN DUTY		
SIDE	SHELL	TUBE
DESIGN PRESSURE	0.1 MPaG + F.V.	1.0 MPaG
DESIGN TEMPERATURE	95 degC	65 degC
INSULATION TYPE	NI	NI
TRIM SPECIFICATION		

- NOTES
- 1) SCOPE: MES CUSTOMER MES ONLY RAW MATERIAL SUPPLY BY MES
 - 2) DELETED
 - 3) STAND-BY PUMP 113-ST-301-P01B WILL BE STARTED AT HIGH LEVEL OF 113-LV-7342. DUTY PUMP 113-ST-301-P01A WILL BE STOPPED AT LOW LEVEL OF 113-LV-7343.
 - 4) THIS P18 IS DEVELOPED FROM VS2158-412-A-137 REV.6 FOR CONSTRUCTION.
 - 5) 113-LV-7342A/B SHALL BE FAIL LAST WHEN AIR IS FAILED DUE TO KEEP STG RUN BY AIR LOCK UP VALVE.
 - 113-LV-7342A/B SHALL BE FAIL POSITION WHEN SIGNAL IS FAILED DUE TO PROTECT EQUIPMENT.
 - THE STG WILL BE TRIPPED LATER IF SIGNAL IS CONTINUOUSLY FAILED.

SK engineering & construction

AS BUILT

BY: **MECH./J.G.KIM** DATE: **10/FEB/18**

Position to be Replace

REFERENCE DRAWINGS	
VS2158-412-A-019	PIPING CONNECTION & LINE LIST
VS2158-412-A-021	INSTRUMENTATION LIST
VS2158-412-A-050	PIPING MATERIAL SPECIFICATION
VS2158-412-A-058	EQUIPMENT LIST
VS2158-412-A-074	VALVE LIST
VS2158-412-A-084	MAIN CONDENSER
VS2158-412-A-200	P&I DIAGRAM ABBREVIATION

PROJECT (JOB No.: 0-6495-20)	
DOCUMENT CLASS:	Z
ISSUE PURPOSE:	AB
RESULT CODE: A,B,F	(A) (B) (F)
NEXT STATUS: FA,FR,FI,FC,AB	(-)
RESUBMISSION DATE:	(-)
RESPONSIBLE DEPT./PERSON	(-)
Review Date:	(-)

As Approved without Comment; B: Approved with Minor Comment
R: Not Approved; F: Not Subject to Review

Approval or review hereunder shall not be construed to relieve Vendor/Manufacturer of his responsibilities and liability under the Contract.

Purchase No.	DATE	PURCHASE ORDER NO.	REV.
4	Feb.7/18	VS2158-412-A	203
3	Apr.18/17	As-Built	4
2	Nov.26/15	As-Built	
1	Nov.13/15	Issued for Construction	
0	Oct.22/15	Issued for Approval	
Rev.	Date	Description	Prep'd

Contractor JOB Code	0-6495-20	Responsible Company	SK
Prepared by	Kudo	Checked by	Approved by
			Watanabe

NSRP	GS	COMET	WATANABE
Complex Project	Nghi Son Refinery and Petrochemical Limited Liability Company		
Nghi Son, Vietnam			

Plant Location	Nghi Son, Vietnam
Project Name	NSRP Complex Project

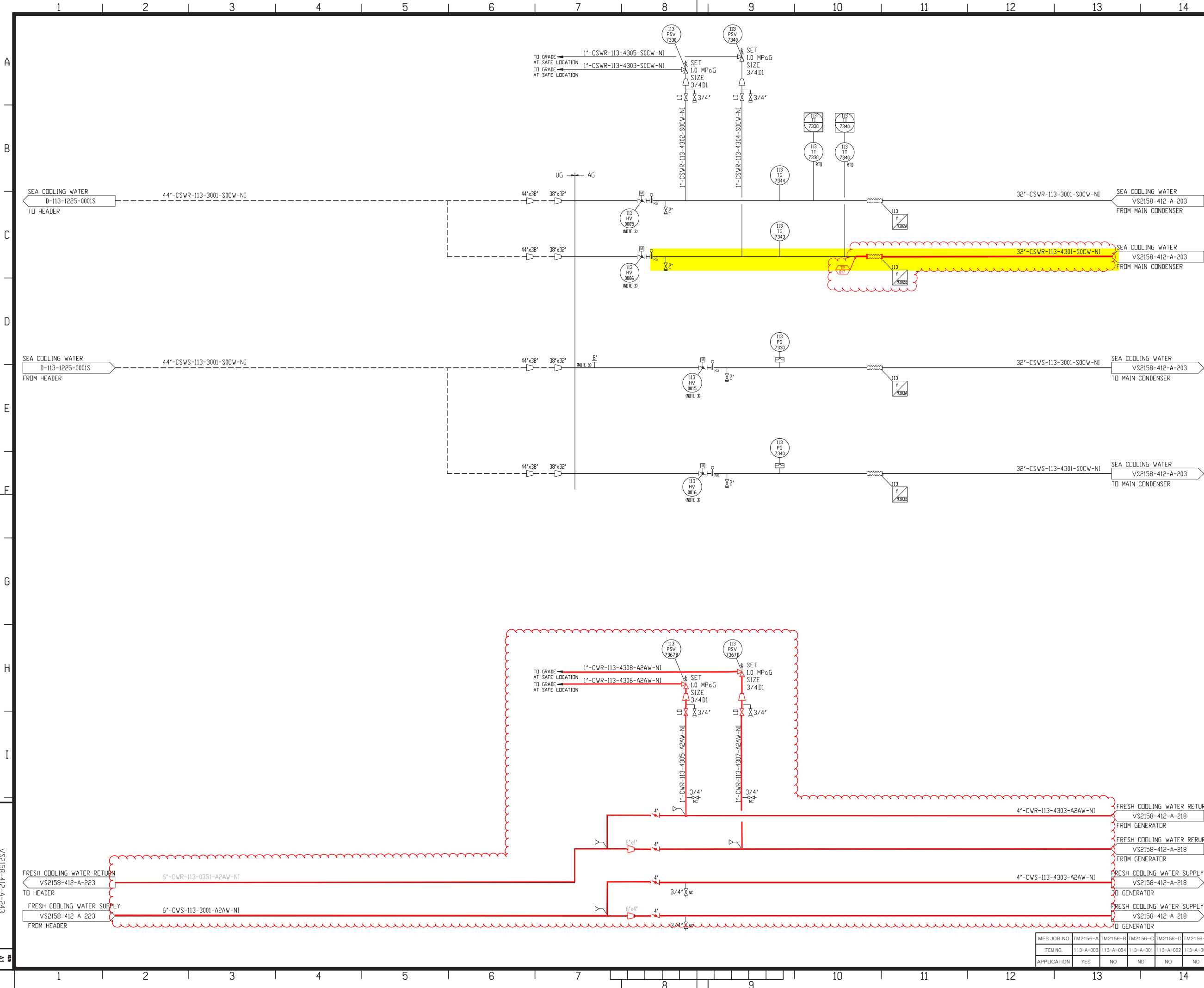
P.O. No.	0-6495-P2158-412-A100	ITEM NO.	113-A-003
Drawing Title	PIPING & INSTRUMENT DIAGRAM MAIN CONDENSER		

Vendor DWG. No.	IS107628	Sheet No.	1	Rev.	4
Contractor DWG. No.	VS2158-412-A-203	Sheet Size	A1	Scale	-

CODE WORD	NHISON-13	Ref No.	A133
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MES JOB NO.	TM2156-A	TM2156-B	TM2156-C	TM2156-D	TM2156-E
ITEM NO.	113-A-003	113-A-004	113-A-001	113-A-002	113-A-005
APPLICATION	YES	NO	NO	NO	NO

NOTE: THIS PRINT IS OF A CONFIDENTIAL NATURE AND IS THE PROPERTY OF JGC, Chiyoda, GS E&C, SK E&C, Technip and SHALL NOT BE TRACED, PHOTOGRAPHED, PHOTOSTATED OR REPRODUCED IN ANY MANNER, NOR USED FOR ANY PURPOSE WHATSOEVER EXCEPT BY WRITTEN PERMISSION OF JGC, Chiyoda, GS E&C, SK E&C, Technip.



NOTES

1) SCOPE

MES CUSTOMER MES ONLY RAW MATERIAL SUPPLY BY MES

2) DELETE

3) INCHING TYPE

4) DELETE

5) DEWATERING CONNECTION ONLY FOR 113-A-001-004.

6) THIS PID IS DEVELOPED FROM VS2158-412-A-075 REV.2 (FOR CONSTRUCTION).

Position to be Replace

REFERENCE DRAWINGS

VS2158-412-A-019 PIPING CONNECTION & LINE LIST

VS2158-412-A-021 INSTRUMENTATION LIST

VS2158-412-A-050 PIPING MATERIAL SPECIFICATION

VS2158-412-A-058 EQUIPMENT LIST

VS2158-412-A-074 VALVE LIST

VS2158-412-A-084 MAIN CONDENSER

VS2158-412-A-200 P&I DIAGRAM ABBREVIATION

PROJECT (JOB No.: 0-6495-20)

DOCUMENT CLASS: Z

ISSUE PURPOSE: AB

RESULT CODE: A, B, R, F

NEXT STATUS: FA, FR, FI, FC, AB

RESUBMISSION DATE:

RESPONSIBLE DEPT./PERSON:

Review Date:

A: Approved without Comment; B: Approved with Minor Comment; R: Not Approved; F: Not Subject to Review

Approval or review hereunder shall not be construed to release the Contractor/Supplier of his responsibilities and liability under the Contract.

Purchase Order No.	DATE	PURCHASE ORDER NO.	SERIAL	REV.
4	Sep.08'18	As-Built	V.D.V	N.T
3	Apr.18'17	As-Built	T.Kudo	K.Yamada
2	Nov.26'15	As-Built	T.Kudo	K.Yamada
1	Nov.13'15	Issued for Construction	T.Kudo	K.Yamada
0	Oct.23'15	Issued for Approval	T.Kudo	K.Yamada

Rev Date Description Prep'd Chk'd App'd

REVISIONS

Contractor JOB Code 0-6495-20 Responsible Company SK

Prepared by Kudo Checked by Approved by Vatanabe

NSRP

Complex Project Nghi Son Refinery and Petrochemical Limited Liability Company

SK engineering & construction

MITSUBI ENGINEERING & SHIPBUILDING CO., LTD. TAMANO WORKS JAPAN

Plant Location Nghi Son, Vietnam

Project Name NSRP Complex Project

P. I. No. 0-6495-PS2158-412-A100 ITEM NO. 113-A-003

Drawing Title PIPING & INSTRUMENT DIAGRAM COOLING WATER LINE

Vendor DWG. No.	Sheet No.	Rev.
1ST07668	1	4

Contractor DWG. No.	Sheet Size	Scale
VS2158-412-A-243	A1	-

MES JOB NO. TM2156-A

ITEM NO. 113-A-003

APPLICATION YES

TM2156-B

113-A-004

NO

TM2156-C

113-A-001

NO

TM2156-D

113-A-002

NO

TM2156-E

113-A-005

NO

CODE WORD

NGHISON-13

Ref No.

A178