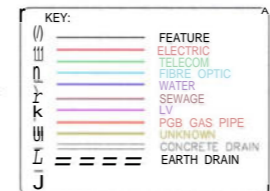


DAERAH KEMAMAN
MUKIM KERTIH
STD SHEET NO: 131C, 138A & B
SCALE : 1 : 500

Test Post 11. KTH2/FCP/005
to be replaced



POINT	CASSINI COORDINATES		RSO COORDINATES	
	NORTH	EAST	NORTH	EAST
P13	-39155.313	61361.461	507713.128	605961.053
P14	-39119.791	61406.984	507748.604	605961.619
P15	-39077.717	61498.720	507790.583	606053.409
P16	-39125.624	61550.143	507742.617	606104.785

LEGEND

1. LP - LAMP POST	19. BT(JBA) - BATU JBA
2. EP - ELECTRIC POST	20. JBA(mh) - JBA MANHOLE
3. TP - TELEPHONE POST	21. BT(JKR) - BATU JKR
4. WP - WATER PIPE	22. TEL(MH) - TELECOM MANHOLE
5. SB - SIGNBOARD	23. MH(MX) - MANHOLE MAXIS
6. SU - SUMP	24. P(GAS) - PAIP GAS
7. IR - IRON RAILING	25. S(BX) - SUS BOX
8. CUL - CULVERT	26. MB(X) - MAL BOX
9. DB - DUBSIN	27. MB(TNB) - TNB MAIN BOX
10. TL - TRAFFIC LIGHT	28. CD - CONCRETE DRAIN
11. SMH - SEWERAGE MANHOLE	29. --- - CHAIN LINK FENCE
12. KMP - KILOMETRE POST	30. --- - ZINC FENCE
13. T(GAS) - TIANG GAS	31. --- - TREE
14. SB(GAS) - SIGNBOARD GAS	32. --- - GATE
15. BT(TNB) - BATU TNB	33. MK(MX) - MAKER MAXIS
16. T(TNB) - TIANG TNB	34. SP - STAND PIPE
17. TNB(BX) - TNB BOX	35. WPV - WATER PIPE VALVE

SURUHANJAYA TENAGA
JAKAAN KUALA LUMPUR GAS
TINGKAT 13, MENARA TH PERDANA,
1001, JALAN SELATAN EKAM,
50250 KUALA LUMPUR,
TEL : 03-26125400 FAX NO : 03-28837791

DESIGN DETAILS

1. DESIGN CODE	ASME B31.8
2. DESIGN PRESSURE	2483 kPa
3. MAX. ALLOWABLE OPERATING PRESSURE	2483 kPa
4. MIN. SPECIFIED TEST PRESSURE	3476 kPa
5. MATERIAL	STEEL
6. CLASS LOCATION	4
7. DESIGN TEMPERATURE	15-55°C
8. FLOWRATE	

MATERIAL SPECIFICATION

PIPE SPECIFICATION	DISTANCE	DIAMETER	WALL THICKNESS (mm)
API 5LX42	300 M	NPS 8	5.6

LEGENDS:

- EXISTING STEEL FEEDER LINE (MFA)
- CONSTRUCTED STEEL FEEDER LINE (MFA)
- CONSTRUCTED STEEL SERVICE LINE (MFA)
- CLOSE VALVE
- OPEN VALVE
- END CAP
- CATHODIC PROTECTION POST (CP)
- PIPELINE WARNING SIGNBOARD (WS)
- PIPELINE CONCRETE MARKER TYPE A / B (CMA/CMB)
- PIPELINE FLUSH TYPE MARKER (FT)
- CP POST (POTENTIAL AND NOTE)

NOTES:
1. ALL MEASUREMENT IN METRIC.
2. PIPE MANUFACTURER AND ORIGIN - HULI DAO CITY STEEL PIPE INDUSTRIAL COMPANY LIMITED CHINA.

REFERENCE DRAWING

NO.	DRAWING TITLE	DRAWING NO.
1	PROPOSED GAS PIPELINE ROUTE	DMB/TP/KERTHFLST1_08/010_27
2	SCHEMATIC DIAGRAM AND VALVE DESIGNATION	DMB/TP/KERTHFLST1_08/020_27

REVISION

NO.	DATE	DESCRIPTION	DESIGN	DRAWN	CHKD	APPR.
0	17.01.2011	AS-BUILT DRAWING	TSF	ZUE/LZA	TSF	TSF
1	21.04.2011	AS-BUILT DRAWING	TSF	ZUE/LZA	TSF	TSF

OWNER:
GAS MALAYSIA SDN. BHD.
NO.5, JALAN SERENDAH 26/17,
SEKSYEN 28,
40732 SHAH ALAM,
SELANGOR DARUL EHSAN.

CONTRACTOR:
DIVERSIFIED ENGINEERING & CONSTRUCTION SDN. BHD.
NO. 7 JLN TPP 6/6
TAMAN PERINDUSTRIAN PUCHONG
SECTION 6, SELANGOR DARUL EHSAN

LICENSED SURVEYOR:
MAHYUDDIN & SIEW
SYARIKAT MAHYUDDIN & SIEW SDN BHD
Wisma Mahyuddin & Siew
79A, Jalan 1/91, Taman Shamelin Perkasa
Cheras, 56100 Kuala Lumpur.
Tel: 603-92831988 Fax: 603-92852000
admin@mahyuddinandsiew.com

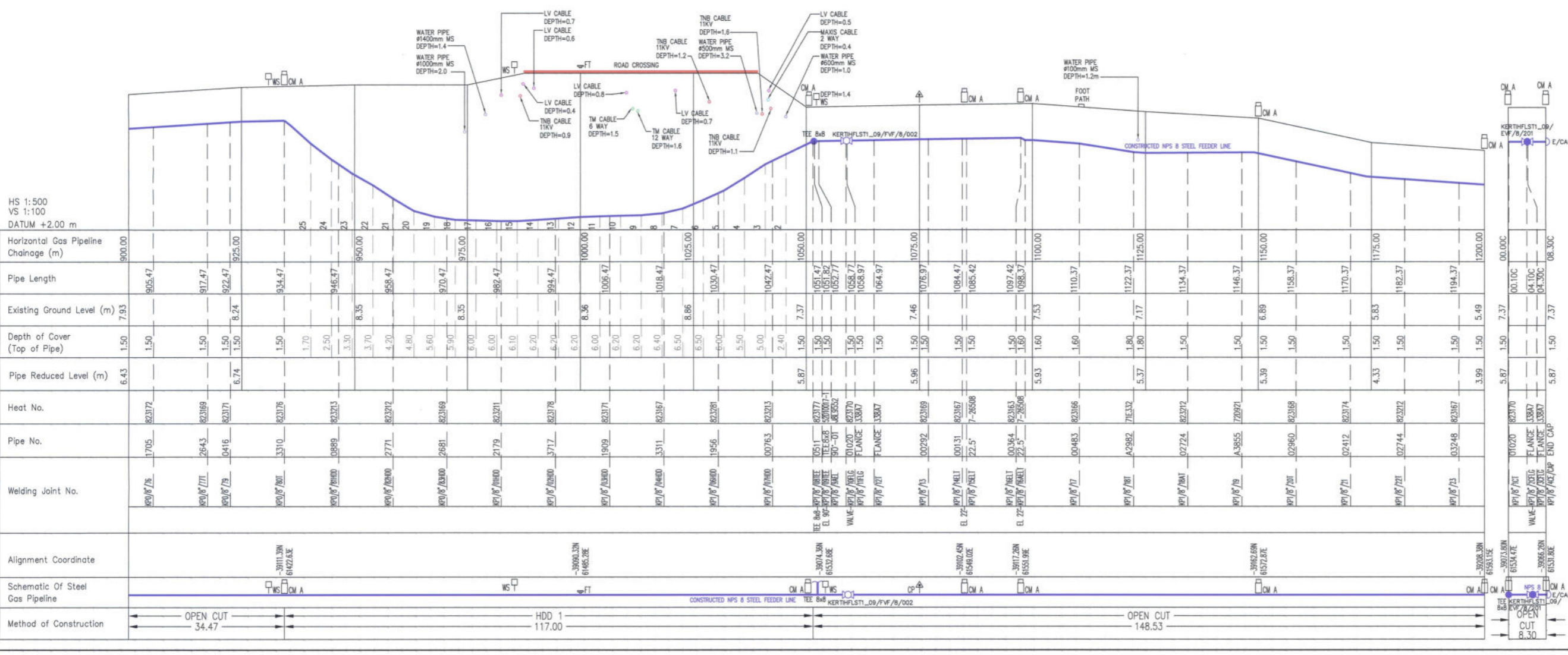
CERTIFIED BY COMPETENT PERSON:
NAME: *[Signature]*
REG. NO.: 004
DATE: _____

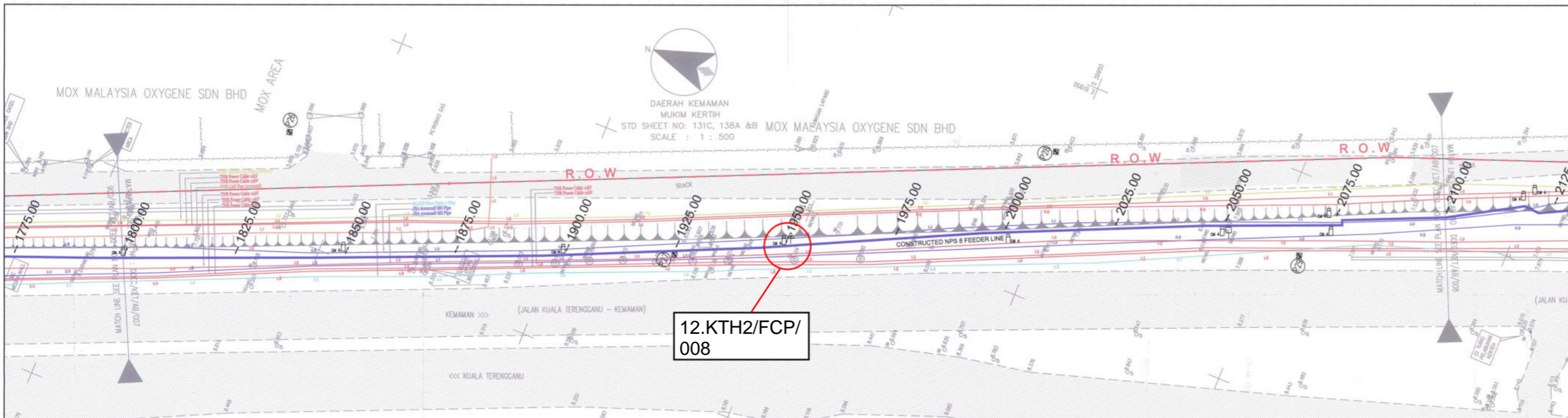
PROJECT TITLE:
EPC NATURAL GAS DISTRIBUTION SYSTEM TO KERTIH FL STAGE 1/09, TERENGGANU DARUL IMAN

DRAWING TITLE:
AS-BUILT DRAWING NPS 8 STEEL FEEDER LINE CH 900.00 TO CH 1200.00

DRAWING NO: DDEC/DWG/KET/AB/004 REV. 1

DESIGNED: TSF	OWNER APPROVAL:
DRAWN: ZUE	<i>[Signature]</i>
CHECKED: TSF	
APPROVED: TSF	
DATE: 21.04.2011	
SCALE: AS-SHOWN	





DESIGN DETAILS	
1	DESIGN CODE ASME B31.8
2	DESIGN PRESSURE 2483 kPa
3	MAX. ALLOWABLE OPERATING PRESSURE 2483 kPa
4	MIN. SPECIFIED TEST PRESSURE 3478 kPa
5	MATERIAL STEEL
6	CLASS LOCATION 4
7	DESIGN TEMPERATURE 15-55°C
8	FLOWRATE

MATERIAL SPECIFICATION			
PIPE SPECIFICATION	DISTANCE	DIAMETER	WALL THICKNESS (mm)
API 5LX42	300 M	NPS 8	5.6

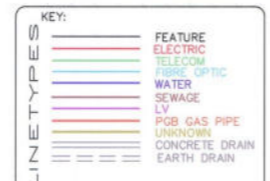
NO.	MATERIAL	SIZE (mm)	QTY
1	ELBOW 90°	203	2

- LEGENDS:**
- EXISTING STEEL FEEDER LINE (MFA)
 - CONSTRUCTED STEEL FEEDER LINE (MFA)
 - CONSTRUCTED STEEL SERVICE LINE (MFA)
 - CLOSE VALVE
 - OPEN VALVE
 - END CAP
 - CATHODIC PROTECTION POST (CP)
 - PIPELINE WARNING SIGNBOARD (WS)
 - PIPELINE CONCRETE MARKER TYPE A/ B (CMA/CMB)
 - PIPELINE FLUSH TYPE MARKER (FT)
 - CP POST (POTENTIAL AND NOTE)

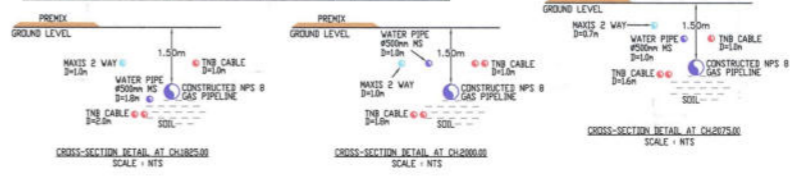


- LEGEND**
- | | | | |
|------------------------|-----------------------------|-------------------------------|----------------------------|
| 1. LP - LAMP POST | 11. SMH - SEWERAGE MANHOLE | 21. 8T(JKR) - BATU JKR | 31. ○ - TREE |
| 2. EP - ELECTRIC POST | 12. KMP - KILOMETRE POST | 22. TEL(MH) - TELECOM MANHOLE | 32. ○x○ - GATE |
| 3. TP - TELEPHONE POST | 13. T(GAS) - HANG GAS | 23. MH(MX) - MANHOLE MAXIS | 33. M(MX) - MAKER MAXIS |
| 4. WP - WATER PIPE | 14. SB(GAS) - SIGNBOARD GAS | 24. P(GAS) - PAIP GAS | 34. SP - STAND PIPE |
| 5. SB - SIGNBOARD | 15. BT(TNB) - BATU TNB | 25. S(BX) - SUIS BOX | 35. WPV - WATER PIPE VALVE |
| 6. SU - SUMP | 16. T(TNB) - TIANG TNB | 26. M(BX) - MAIL BOX | |
| 7. IR - IRON RAILLING | 17. TNB(BX) - TNB BOX | 27. MBX(TNB) - TNB MAIN BOX | |
| 8. CUL - CULVERT | 18. SB(TNB) - SIGNBOARD TNB | 28. CD - CONCRETE DRAIN | |
| 9. DB - OUSBIN | 19. BT(JBA) - BATU JBA | 29. - - CHAIN LINK FENCE | |
| 10. TL - TRAFFIC LIGHT | 20. JBA(mh) - JBA MANHOLE | 30. x-x-x - ZINC FENCE | |

NOTE
 SEMUA ARAS LARAS BERDASARKAN KEPADA BM 1.0739 RL 7.907m DI JALAN PAKA - KEMASEK.
 DI TENGAH PEMBAGAI JALAN, DI KIRI KANAN JALAN, KAWASAN PETRONAS DAN ESSO



POINT	CASSINI COORDINATES		RSO COORDINATES	
	NORTH	EAST	NORTH	EAST
P25	-39719.209	61809.997	507148.702	606364.026
P26	-39783.867	61872.086	507083.972	606426.051
P27	-39875.074	61879.365	506992.749	606433.233
P28	-39946.584	61933.319	506921.175	606487.115



- NOTES:**
- ALL MEASUREMENT IN METRIC.
 - PIPE MANUFACTURER AND ORIGIN - HULU DAO CITY STEEL PIPE INDUSTRIAL COMPANY LIMITED CHINA.

REFERENCE DRAWING	
NO.	DRAWING TITLE
1	PROPOSED GAS PIPELINE ROUTE (DMS/TPS/NET/FLST_20/010_27)
2	SCHEMATIC DIAGRAM AND VALVE LOCATION (DMS/TPS/NET/FLST_06/002_27)

REVISION						
NO.	DATE	DESCRIPTION	DSGND	DRWN	CHKD	APPR.
0	17.01.2011	AS-BUILT DRAWING	TSF	ZUE/LZA	TSF	TSF
1	21.04.2011	AS-BUILT DRAWING	TSF	ZUE/LZA	TSF	TSF

OWNER:
GAS MALAYSIA SDN. BHD.
 NO.5, JALAN SERENDAH 26/17,
 SEKSYEN 26,
 40732 SHAH ALAM,
 SELANGOR DARUL EHSAN.

CONTRACTOR:
3hi DIVERSIFIED ENGINEERING & CONSTRUCTION SDN. BHD.
 NO. 7 JLN TPP 6/8
 TAMAN PERINDUSTRIAN PUCHONG
 SECTION 6, SELANGOR DARUL EHSAN

LICENSED SURVEYOR:
SYARIKAT MAHYUDDIN & SIEW SDN BHD
 Wisma Mahyuddin & Siew
 79A, Jalan 17/91, Taman Shamelin Perkasa
 Cheras, 56100 Kuala Lumpur.
 Tel: 603-92831988 Fax: 603-92832000
 admin@mslonsurvey.com

CERTIFIED BY COMPETENT PERSON:
 NAME: *[Signature]*
 REG. NO.: *[Stamp]*
 DATE:

PROJECT TITLE:
 EPCC NATURAL GAS DISTRIBUTION SYSTEM
 TO KERTIH FL STAGE 1/09,
 TERENGGANU DARUL IMAN

DRAWING TITLE:
 AS-BUILT DRAWING
 NPS 8 STEEL FEEDER LINE
 CH 1800.00 TO CH 2100.00

DRAWING NO.: DSEC/DWG/NET/AB/007 **REV. 1**
DESIGNED: TSF *[Signature]* **POWER APPROVAL:** *[Signature]*
DRAWN: ZUE *[Signature]*
CHECKED: TSF *[Signature]*
APPROVED: TSF *[Signature]*
DATE: 21.04.2011
SCALE: AS-SHOWN

Horizontal Gas Pipeline Chainage (m)	Pipe Length	Existing Ground Level (m)	Depth of Cover (Top of Pipe)	Pipe Reduced Level (m)	Heat No.	Pipe No.	Welding Joint No.	Alignment Coordinate	Schematic Of Steel Gas Pipeline	Method of Construction
1000.00		7.58	1.50	6.07						
1800.00	1800.00	7.58	1.50	6.07						
1885.00	85.00	8.14	1.50	6.64						
1925.00	40.00	8.14	1.50	6.64						
1985.00	60.00	8.14	1.50	6.64						
2000.00	15.00	8.14	1.50	6.64						
2025.00	25.00	8.14	1.50	6.64						
2050.00	25.00	8.14	1.50	6.64						
2075.00	25.00	8.14	1.50	6.64						
2100.00	25.00	8.14	1.50	6.64						

DESIGN DETAILS		
1	DESIGN CODE	ASME B31.8
2	DESIGN PRESSURE	2483 kPa
3	MAX. ALLOWABLE OPERATING PRESSURE	2483 kPa
4	MIN. SPECIFIED TEST PRESSURE	3476 kPa
5	MATERIAL	STEEL
6	CLASS LOCATION	4
7	DESIGN TEMPERATURE	15-55°C
8	FLOWRATE	

MATERIAL SPECIFICATION			
PIPE SPECIFICATION	DISTANCE	DIAMETER	WALL THICKNESS (mm)
API 5LX42	300 M	NPS 8	5.6

NO.	MATERIAL	SIZE (mm)	QTY

- LEGENDS:**
- EXISTING STEEL FEEDER LINE (MPA)
 - CONSTRUCTED STEEL FEEDER LINE (MPA)
 - CONSTRUCTED STEEL SERVICE LINE (MPA)
 - CLOSE VALVE
 - OPEN VALVE
 - END CAP
 - CATHODIC PROTECTION POST (CP)
 - PIPELINE WARNING SIGNBOARD (WS)
 - PIPELINE CONCRETE MARKER TYPE A/ B (CMA/CMB)
 - PIPELINE FLUSH TYPE MARKER (FT)
 - CP POST (POTENTIAL AND NOTE)
 - TAKE-OFF POINT

- NOTES:**
- ALL MEASUREMENT IN METRIC.
 - PIPE MANUFACTURER AND ORIGIN - HULU DAO CITY STEEL PIPE INDUSTRIAL COMPANY LIMITED CHINA.

REFERENCE DRAWING				
NO.	DRAWING TITLE	DRAWING NO.	DATE	BY
1	PROPOSED GAS PIPELINE ROUTE	CHG/TPS/NERH/SL1_09/0010_Z7		TSF
2	SCHEMATIC DIAGRAM AND VALVE DESIGNATION	CHG/TPS/NERH/SL1_09/0010_Z7		TSF

REVISION				
NO.	DATE	DESCRIPTION	ISSUED BY	APPROVED BY
0	17.07.2011	AS-BUILT DRAWING	TSF	ZUE/LUZ/TSF
1	21.04.2011	AS-BUILT DRAWING	TSF	ZUE/LUZ/TSF

OWNER:
GAS MALAYSIA SDN. BHD.
 NO.5, JALAN SERENDAH 28/17,
 SEKSYEN 28
 40732 SHAH ALAM,
 SELANGOR DARUL EHSAN.

CONTRACTOR:
DIVERSIFIED ENGINEERING & CONSTRUCTION SDN. BHD.
 NO. 7 JLN TPP 6/6
 TAMAN PERINDUSTRIAN PUCHONG
 SECTION 6, SELANGOR DARUL EHSAN

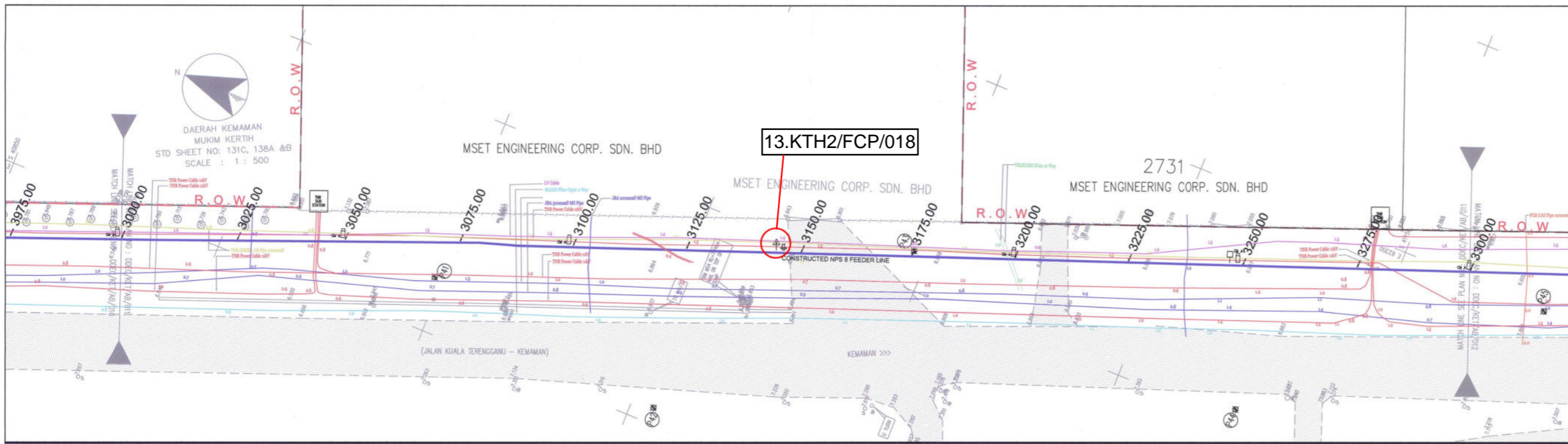
LICENSED SURVEYOR:
SYARIKAT MAHYUDDIN & SEW SDN BHD
 Wisma Mahyuddin & Sew
 79A, Jalan 1/91, Taman Shamelin Perkasa
 Cheras, 56100 Kuala Lumpur.
 Tel: 603-92831988 Fax: 603-92832000
 admin@msiasurvey.com

CERTIFIED BY COMPETENT PERSON:
 NAME: *[Signature]*
 REG. NO.: 004
 DATE: *[Signature]*

PROJECT TITLE:
EPCC NATURAL GAS DISTRIBUTION SYSTEM TO KERTIH FL STAGE 1/09, TERENGGANU DARUL IMAN

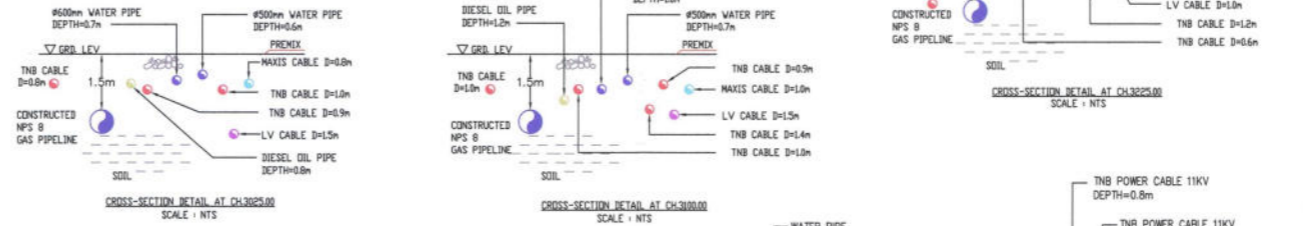
DRAWING TITLE:
**AS-BUILT DRAWING
 NPS 8 STEEL FEEDER LINE
 CH 3000.00 TO CH 3300.00**

DRAWING NO.: DDEC/DWG/NET/18/011 REV. 1
 DESIGNED: TSF
 DRAWN: ZUE
 CHECKED: TSF
 APPROVED: TSF
 DATE: 21.04.2011
 SCALE: AS-SHOWN



- LEGEND:**
- LP - LAMP POST
 - EP - ELECTRIC POST
 - TP - TELEPHONE POST
 - WP - WATER PIPE
 - SB - SIGNBOARD
 - SU - SUMP
 - IR - IRON RAILING
 - CUL - CULVERT
 - DB - DUBBIN
 - TL - TRAFFIC LIGHT
 - SMH - SEWERAGE MANHOLE
 - KMP - KILOMETRE POST
 - T(GAS) - TIANG GAS
 - SB(GAS) - SIGNBOARD GAS
 - BT(TNB) - BATU TNB
 - T(TNB) - TIANG TNB
 - TNB(BX) - TNB BOX
 - SB(TNB) - SIGNBOARD TNB
 - BT(JBA) - BATU JBA
 - JBA(mh) - JBA MANHOLE
 - BT(JKR) - BATU JKR
 - TEL(MH) - TELECOM MANHOLE
 - MH(MX) - MANHOLE MAXIS
 - P(GAS) - PAIP GAS
 - S(BX) - SUIS BOX
 - M(BX) - MAIL BOX
 - MBX(TNB) - TNB MAIN BOX
 - CD - CONCRETE DRAIN
 - CL - CHAIN LINK FENCE
 - ZF - ZINC FENCE
 - TR - TREE
 - GA - GATE
 - MK(MX) - MAKER MAXIS
 - SP - STAND PIPE
 - WPV - WATER PIPE VALVE

POINT	CASSINI COORDINATES		RSO COORDINATES	
	NORTH	EAST	NORTH	EAST
P33	-40301.135	62057.069	506566.461	606610.494
P34	-40372.217	62101.602	506495.325	606654.955
P35	-40458.285	62071.628	506409.282	606624.885
P36	-40567.905	62101.174	506299.621	606654.315



Horizontal Gas Pipeline Chainage (m)	Pipe Length	Existing Ground Level (m)	Depth of Cover (Top of Pipe)	Pipe Reduced Level (m)	Heat No.	Pipe No.	Welding Joint No.	Alignment Coordinate	Schematic Of Steel Gas Pipeline	Method of Construction and Pipe length
3000.00	3000.61	6.71	1.50	5.21	928292	21511	03/18/03	-40975.27N 62281.91E	CM A	
3025.00	3033.61	6.77	1.50	5.27	918254	22675	03/18/01T			
3050.00	3037.61	6.77	1.50	5.27	928295	21997	03/18/02			
3075.00	3049.61	6.77	1.50	5.27	928256	22376	03/18/03T			
3100.00	3061.61	6.86	1.50	5.36	918261	21620	03/18/04			
3125.00	3073.61	6.77	1.50	5.27	918261	21610	03/18/05T			
3150.00	3085.61	6.83	1.50	5.33	928295	21959	03/18/06			
3175.00	3097.61	6.86	1.50	5.36	928294	20809	03/18/07T			
3200.00	3109.61	6.83	1.50	5.33	823169	2600	03/18/08			
3225.00	3121.61	6.83	1.50	5.33	928293	21143	03/18/09			
3250.00	3133.61	6.83	1.50	5.33	928285	22112	03/18/10			
3275.00	3145.61	6.83	1.50	5.33	918253	23089	03/18/11T			
3300.00	3157.61	6.96	1.50	5.46	928295	2921	03/18/12			
3325.00	3169.61	6.96	1.50	5.46	928294	20838	03/18/13T			
3350.00	3181.61	6.92	1.50	5.42	918253	22981	03/18/14			
3375.00	3193.61	6.92	1.50	5.42	918261	0238	03/18/15T			
3400.00	3205.61	6.92	1.50	5.42	918255	21648	03/18/16			
3425.00	3217.61	6.95	1.50	5.45	928286	23277	03/18/17T			
3450.00	3229.61	6.95	1.50	5.45	928294	21316	03/18/18			
3475.00	3241.61	6.94	1.50	5.44	918255	20878	03/18/19T			
3500.00	3253.61	6.94	1.50	5.44	928285	23298	03/18/20			
3525.00	3265.61	6.94	1.50	5.44	928283	22164	03/18/21T			
3550.00	3277.61	6.94	1.50	5.44	918255	23135	03/18/22			
3575.00	3289.61	6.94	1.50	5.44	928292	2333	03/18/23T			
3600.00	3301.61	6.60	1.50	5.10	918255	21490	03/18/24			