



اَوْبُوْرَسِيْتِي تِي كُونُوْمِي مَارَا
UNIVERSITI
TEKNOLOGI
MARA

DEPARTMENT OF BUILDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA
(PERAK)

APRIL 2015

It is recommended that the report of this practical training provided

BY

Siti Aminah Binti Misman

2012587605

High Density Polyethylene (HDPE)

Accepted in partial fulfilment of requirement has for obtaining Diploma in Building.

Report Supervisor

Madam Siti Jamiah Binti Tun Jamil

Practical Training Coordinator

Madam Wan Nordiana Binti Wan Ali

Faculty Coordinator

Dr. Mohd Rofdzı Bin Abdullah

**DEPARTMENT OF BUILDING
FACULTY OF ARCHITECTURE, PLANNING AND SURVEYING
UNIVERSITI TEKNOLOGI MARA
(PERAK)**

APRIL 2015

STUDENT'S DECLARATION

I hereby declare that this report is my own work, except for extract and summaries for which the original references stated herein, prepared during a practical training session that I underwent at msn construction for duration 5 months starting from 17 November until 3 April 2015. It is submitted as one of prerequisite requirements of DBN307 and accepted as a partial fulfillment of the requirements for obtaining the diploma in building.

NAME : SITI AMINAH BINTI MISMAN
UITM ID NO : 2012587605
DATE : 07 APRIL 2015

ABSTRACT

This report covers about High density polyethylene pipe (HDPE). The explaining about the advantages and disadvantages, size and connection HDPE pipes, however HDPE is important for reticulation pipes.so for this report also explain about importance of HDPE reticulation pipes and function HDPE reticulation pipes. All this information get by MSN Construction and addition gained through almost 5 months at LOT, Jalan Jambu, Meru, 42000 Kapar, Bandar Di Raja Klang, Selangor Darul Ehsan. This content has been explained about HDPE pipes and HDPE pipes for water reticulation. This report also explained about step for installing HDPE pipes at site project 24 units semi-D.

ACKNOWLEDGEMENT

Alhamdulillah, all praises to Allah for the strengths and His blessing in completing this thesis. Special appreciation goes to my project coordinator, Mr. Ikhwan bin Ariffin, for his supervision and constant support. His invaluable help of constructive comments and suggestions through the experimental and thesis works have contributed to the success of this research. Not forgotten, my appreciations to my site engineer, Mr. Ikhwan bin Ariffin, for his support and knowledge regarding this topic. I would like to express my appreciation to the project manager at MSN Construction Sdn.Bhd Selangor Malaysia, Mr Zunnasri bin Muhyiddin for their support and help towards my postgraduate affairs. My acknowledgement also goes to all the technicians and office staffs of MSN Construction Sdn.Bhd. for their co-operations. Sincere thanks to my lecture supervisor Pn. Jamiah Binti Tun Jamil for their guidance, advice and moral support during do this report in successfully. Thanks for their concern in ensure to being success at training time. Not forget, great appreciation go the rest practical training coordinator Pn Nurul Nuda Binti Abdul Hadi. And faculty's coordinator Dr. Mohd Rofdzi bin Abdullah. Last but not least, my deepest gratitude goes to my siblings for their endless love, prayers and encouragement. To those who indirectly contributed in this report, your kindness means a lot to me. Thank you very much.

TABLE OF CONTENTS

PAGE NO

Acknowledgement	i
Abstract	ii
Table of Contents	iii
List of Tables	iv
List of Figure	v
List of Photos	vi
List of Appendix	vii

CHAPTER 1.0 PREFACE

1.1	Introduction	1
1.2	Objectives	2
1.3	Scope of study	3
1.4	Method of study	4

CHAPTER 2.0 COMPANY BACKGROUNDS

2.1	Introduction of company	5
2.2	Company profile	7
2.3	Organization chart	9
2.4	List of project	
	2.4.1 Completed projects	10
	2.4.2 Projects in progress	12

CHAPTER 3.0	CASE STUDY	
3.1	Introduction of project	15
3.2	Project Background	17
3.3	Advantages HDPE Pipes	19
3.4	Disadvantages HDPE pipes	20
3.5	Type of connection and size	21
3.6	Importance of HDPE water reticulation	22
3.7	Function of HDPE water reticulation	24
3.8	Method statement	25
CHAPTER 4.0	CONCLUSION	
4.1	Conclusion	29
REFERENCES		30
APPENDIX		31

LIST OF TABLES

Tables 2.0 Company Profile	7
Tables 2.1 Description about msn development SDN BHD	8
Tables 2.2 List complete project	10
Tables 2.3 List projects on progress	12
Tables 3.0 Advantages HDPE pipes	19
Tables 3.1 Disadvantages HDPE pipes	20

List of figure

Figure 2.0 Logo of MSN Group of companies	5
Figure 2.1 Chart group of companies	9

LIST OF PHOTO

Photo 3.1 logo d'green	17
Photo 3.2 semi-D 24 units	17
Photo 3.3 HDPE pipes	19
Photo 3.4 connection HDPE pipes	21
Photo 3.5 Saddle pipes	22
Photo 3.6 HDPE pipes	24

LIST OF APPENDIX

Appendix A: plan alignment

Appendix B: quotation HDPE pipe

CHAPTER 1.0: PREFACE

1.1 Introduction

High Density Polyethylene Pipe (HDPE) is one of important element in construction housing. There are best preferred for Potable water supply, irrigation schemes, chemicals and edibles transportation, effluent or slurry collection and disposal system, submarine and underwater pipe lines, hydro transport system, gas or compressed air system or cable ducting.

Other than that, HDPE Pipes is high corrosion resistance and resulting into a longer life. This pipes also high impact strength, HDPE pipes is extremely light weight and hence easy to handle. However, HDPE pipes can uses for a long time period.

HDPE materials were first seen in Germany in early 1950 and have progressively been used in the pipeline industry since then. The physical properties of the HDPE pipe materials have been continually improved with increases in resistance to slow and rapid crack propagation, increased hydrostatic pressure and performance at elevated temperature.

1.2 Objective

Objective of the study is a very important thing. From the objectives, it will guide us to achieve our aim based on scope of study.

The objective for this study was as follows:

- i) To determine method statement HDPE works.
- ii) To identify advantages and disadvantages.
- iii) To determine the size and connection HDPE pipes.

1.3 Scope of study

This study has been determined, the scope of these studies focused on advantages and disadvantages on HDPE pipes. And then, to determine method statement HDPE works. And lastly determine the size and connection HDPE pipes.

1.4 Method of study

A) Observation

The first method is observation, on collecting information and data regarding the installation of the HDPE pipes reticulation, the first method was performed under observation. By using observation, can see more clearly how this method of installation of the HDPE pipes o sites.

B) Interview

The second method is interview. This method to be used in preparing in practical report with interview the person in related on site. They can give information about HDPE water reticulation. Example is project manager and site supervisor.

C) Internet

The third method is from internet, that can got any information about the HDPE pipes reticulation. This information probably can help to complete this report.

CHAPTER 2: COMPANY BACKGROUND

2.1 Introduction Of Company



Figure 2.0 Logo of MSN Group of Companies SDN BHD

MSN Group of Companies SDN BHD was established on 25 September 2004. The company consists of three departments, which is MSN Development SDN BHD, MSN Property SDN BHD, and lastly MSN construction SDN BHD. General Manager for MSN construction is Mr Masnawi bin Ariffin. And all project at MSN construction handle by Zunnasri bin Muhyiddin as a Project Manager at MSN construction.

2.1.1 MSN Group of Companies:

- i. MSN Development Sdn. Bhd. (667265-T)
- ii. MSN Construction Sdn. Bhd. (759006-H)
- iii. MSN Property Sdn. Bhd. (744480-K)
- iv. BD Land & Properties Sdn. Bhd. (917518-P)
- v. Bumi Harta Plantation Sdn. Bhd. (940356-V)
- vi. Bumi Harta Development Sdn. Bhd. (951680-U)
- vii. Hijauan Emas Sdn. Bhd. (1044648-V)
- viii. Masnawi Trading (002156669-W)

2.2 Company Profile

Table 2.0 Company Profile

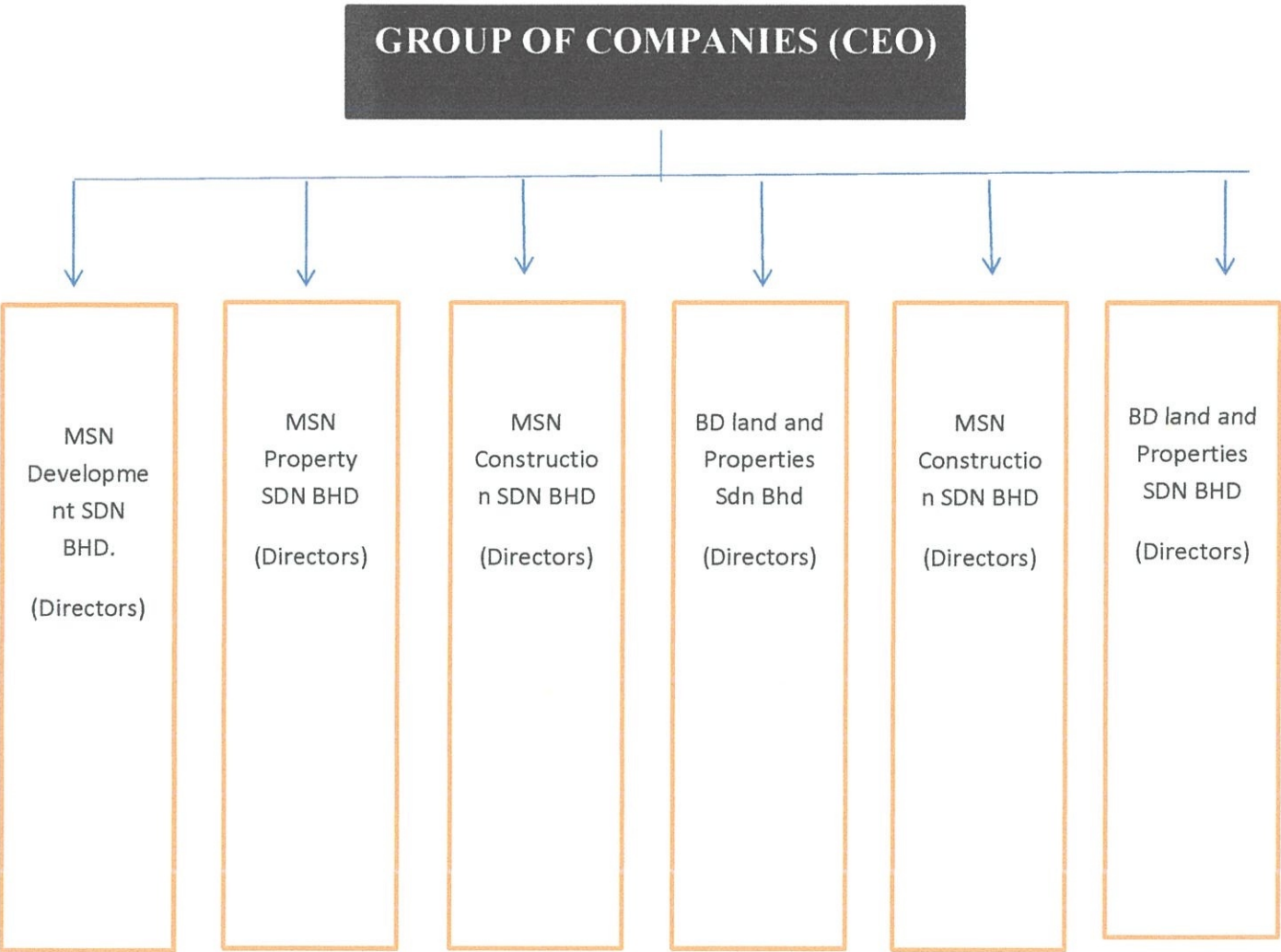
Company Name	MSN CONSTRUCTION SDN. BHD.
No Company Registration	759006-H
Date Established	11 January 2007
Address Registration	25C, Jalan Tengku Ampuan Zabedah J 9/J, Seksyen 9, 40100 Shah Alam, Selangor Darul Ehsan.
Business Forms	Building Contractor
CIDB	No. registration: 0120081031-SL120626 Grade: G4
Paid-up Capital	No. registration: 357-02095383 Field: 020101, 020201, 020300, 130100, 140100, 140200, 180100, 180300, 200100, 200400
Authorized Capital	RM 2,000,000.00
Bank	RHB Bank, Branch Meru. Lot 31 & 33, Jalan Batu 6, Pekan Meru, 41050 Klang, Selangor. No. accounts: 21229600006168

Table 2.1: Description about MSN DEVELOPMENT SDN BHD

Company Name	MSN DEVELOPMENT SDN.BHD.
No. Company Registration	667265-T
Date Established	25 September 2004
Address Registration	25C, Jalan Tengku Ampuan Zabedah J 9/J, Seksyen 9, 40100 Shah Alam, Selangor Darul Ehsan.
Business Forms	25C, Jalan Tengku Ampuan Zabedah J 9/J, Seksyen 9, 40100 Shah Alam, Selangor Darul Ehsan.
Business Forms	Housing Development
CIDB	No. registration: 0120060823-SL110487 Grade:G3
Ministry of Finance	No. registration: 357-02094727 Field: 020101, 020201, 020300, 130100, 140100, 140200, 180100, 180300, 200100, 200400
Paid-up Capital	RM 5,000,000.00
Bank	Bank Islam Malaysia Berhad, Branch Klang. Lot 336, Kompleks MAIS Seksyen 23, Jalan Kapar 41400 Klang, Selangor. No. accounts: 12010010069140

2.3 Organization Chart

Figure 2.1 Chart Group of companies



SOURCE: MSN Construction

2.4 List of projects

2.4.1 Complete project

Table 2.2 List complete project

Project	Capacity building	Value
Proposed Construction and Completion of One (1) Residential Unit 1 Level above Lot 2089, Jalan Kassim, Off Persiaran Hamzah Alang, Mukim Kapar, Daerah Klang, Selangor.	28' x 40'	RM 78,500.00
Proposed Construction and Completion of Two (2) Detached Residential Unit 1 Level above Lot 2000, Meru, Daerah Klang, Selangor	2,000 kps	RM 200,000.00
Construction and Completion of One (1) Unit Reserves 1 The above residence Lot 2166, Jalan Khamis, Mukim Kapar, Daerah Klang, Selangor	1,202 kps	RM 120,000.00
Proposed Construction and completion of one (1) Unit Residential Buildings on site Endowments Masjid As-Syarif Meru Lot 2169, Jalan Khamis,	1,042 kps	RM 85,000.00

Proposed Construction and Completion of One (1) Residential Unit 1 Level above Lot 2089, Jalan Kassim, Off Persiaran Hamzah Alang, Mukim Kapar, Daerah Klang, Selangor	28' x 40'	RM 78,500.00
Proposed Construction and Completion of Two (2) Detached Residential Unit 1 Level above Lot 2000, Meru, Daerah Klang, Selangor	2,000 kps	RM 200,000.00
Proposed Construction and Completion of One (1) Residential Unit 1 Level above Lot 2166, Jalan Khamis, Mukim Kapar, Daerah Klang, Selangor	1,202 kps	RM 120,000.00
Proposed Construction and Completion of One (1) Unit Residential 1 The above site Endowments Masjid As-Syarif Meru, Lot 2171, Jalan Khamis, Mukim Kapar, Daerah Klang, Selangor	43' x 45'	RM 158,000.00
Proposed Construction and Completion of One (1) Residential Unit 1 Level above Lot 33187. Jalan Jambu, Mukim Kapar, Daerah Klang, Selangor	35' x 45'	RM 128,800.00

2.4.2 Project on progress

Table 2.3 List project on progress

Project	Capacity building	Value
Proposed Construction and Completion of 18 units of one level of Lot PT 48115 – PT 48132 And 6 Unit Detached Houses Of Two Levels Lot PT 48109 – PT 48114 (Lot Asal 2005) Jalan Jambu, Taman Meru Permai, Mukim Kapar Daerah Klang Selangor D.Ehsan.		RM 15,000,000.00
Proposed Construction and Completion of Residential Buildings above Lot 4029, Plot 11, Kampung Melayu Jalan Kebun, Shah Alam, Selangor	1,192 kps	RM 159,000.00
Proposed Construction and Completion of Residential Buildings above Lot 1876 Kampung Meru, Klang, Selangor	1,253 kps	RM 155,000.00
Proposed Construction and Completion of Residential Houses Bungalow 1 Unit Two Levels Above Lot PT-9 Jentayu @ Enstek Bandar	2,396 kps	RM 297,000.00

Baru Enstek Daerah Seremban, Negeri Sembilan		
Proposed Construction and Completion of Residential One Level Above Plot 2, Lot 4029 Kampung Melayu Jalan Kebun, Shah Alam, Selangor	1,351 kps	RM 183,615.00
Proposed Construction and Completion of Unit 1 Bungalow One Level Above Lot 2867, Plot 2, Batu 7 ¼, Jalan Meru, Klang, Selangor	1,271 kps	RM 155,600.00

2.5.1 Vision

Make MSN Group of Companies as a viable and sustainable comparable to other multinational companies

2.5.2 Mission

- i. Developing the potential land for residential equipped with basic amenities, high-tech line with the needs of modern society.
- ii. Provide an opportunity for landowners to develop and increase the value of the property.
- iii. Implement development with an environmentally friendly concept.
- iv. Ensure that every project at the highest level at all times through a planned investment.
- v. To provide "one stop center" to customers.
- vi. Provide quality services to customers.

CHAPTER 3: 3.0 CASE STUDY

3.1 INTRODUCTION

One of the first decisions to be made in the design of a system for potable water or natural gas reticulation is the choice of material. High-density polythene (HDPE PIPE) provides a safe and low-whole of life cost solution in a wide range of applications. High density polythene is a ductile, durable inert thermoplastics made from polymerized ethylene. So, because of these factors it is mostly use for water reticulation.

HDPE pipes are used in buried in underground in front of 24 unit semi-D house for distributed water to a user's. The arrangement for the HDPE pipes can refer *appendix A*. Every length of pipes has a saddle pipes as the connection to the standard steel at every single of semi-D houses.so that have 24 pieces saddle pipes. HDPE pipes are buried in 4 feet. HDPE pipes installation for public sewer.

The installation of the pipes is done by Syarikat Bekalan Air Selangor (SYABAS). The specification of requirement consider by SYABAS .Three workers are required for installation of the pipes. SYABAS has to make sure the installation are followed the requirement. Price for the materials follows by construction drawing. If the installation of the pipes followed the requirement and approval letter will be issued by SYABAS.

HDPE pipes can bend and curve at angles that would exceed manufacturer specifications and cause more rigid types of pipe materials to break. This is helpful both in new construction and in exposed crossings.

The characteristics HDPE pipes for housing construction is light weight for ease of installation and handling, immunity to corrosion, chemical and micro-biological resistance ,flexible ,high impact strength and toughness and alternative installation techniques possible.

3.2 Project Background



Photo 3.1: Logo D'GREEN



Photo 3.2: Semi-d 24 units

The project site is located on Jalan Jambu Batu, Taman Meru Permai, Klang, Selangor Darul Ehsan. The name for this project is given as D'green by our company. The project's mission is to construct 24 semi-D units. That includes 6 units semi-D for double storey and 18 units semi-D for single storey. Specification for this building for structure is reinforcement concrete. And wall that use clay bricks and sand bricks.

And then for the roof, this project purpose structural lightweight trusses and roof tile concrete. Cost for this project is RM 15,000,000.00. This project will be hand over on October 2015, however this project is delay, because actually this project that will be hand over on December 2013.

Project D'green construct with a stage. Starting with a semi-D double storey. When the 6 units for double storey is completed then single storey as follows. This project uses many Sub-contractors, that different task as given, example for structure building is given to sub-contractor Waji and eddy. Waji having are 15 workers for this project. And eddy has 20 workers. Their do a work with differentiate building.

However, for plaster ceiling has given to sub-contractor Rahmat and HT Dynamic. Plaster ceiling also different building gives to sub-Contractor. Installation tiles by sub-contractor MR selamat.

3.3 The advantages



Photo 3.3 HDPE Pipes.

TABLE 3.0 Advantages HDPE pipes

NO	Advantages	Explanation
1	Flexibility	This pipe can be wound up. This pipe allows simple handling and installation.
2	Light in weight	This pipes is light because is easy to change position. Easy to portability.
3	Chemical/corrosion resistance	This pipe is not easy to damage because that have strong resistance.
4	Coefficient of friction/smooth surface inside	Inside surface is very smooth due to which pressure losses are minimal.
5	Weld ability	HDPE pipes have excellent weld ability. Because are very simple and most reliable welding techniques used.

3.4 The disadvantages

Table 3.1 Disadvantages HDPE pipes

No	Disadvantages	Explanation
1	Easy to fragile	When backhoe or excavator through the HDPE pipes then HDPE will be fragile.
2	Cannot paste or threading	This is not easy to connect because that has special connection.
3	Low at high temperature	At higher temperature the strength of the pipes are reduce
4	The end tend to close	Especially in large diameter the mouth of the tube tend to close because by uneven cooling as the tube exist the extruder.

3.5 Type of connection and the size.



Photo 3.4 connection HDPE pipes

Projects semi-D 24 unit at Jalan Jambu that used 110mm for size HDPE. HDPE pipes will be installing at stainless steel pipe. The location for stainless steel is at underground. After that HDPE pipes will be installing along a semi-D 24 units. The cost for HDPE pipes is RM 13,140.00 can refer *appendix b*. for the quotation.

Every semi-D that have one saddle pipes as a connector. Through a saddle pipes users can get water. Water is channeled through HDPE pipes.so saddle pipes required by 24 pieces. All the materials about installation HDPE pipes prepare by MSN construction. Then installation work by contractor (Syarikat Bekalan Air Selangor) SYABAS

3.6 Importance HDPE reticulation pipes



Photo 3.5 saddle HDPE pipes



HDPE pipes are important for water reticulation water .because for contributed water from main point to every house need a strength pipes. HDPE pipes are the best choice for the reticulation. It's give strength for the reticulation water. And the easy for installing, and this pipe is suitable for the all types of project.


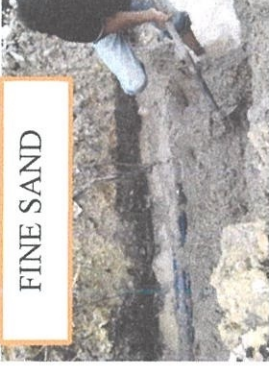
HDPE pipes that use as connector. So this pipes to important for the water reticulation. However, this pipe also uses in municipal and industrial water and sewer piping system. Our HDPE pipe is recognized in the industry for its zero leak rate, high performance, and long life expectancy. The may be manufactured with color striping to identify their application, such as blue stripe for potable water, green stripe for sewer application, and purple stripe for reclaimed water.

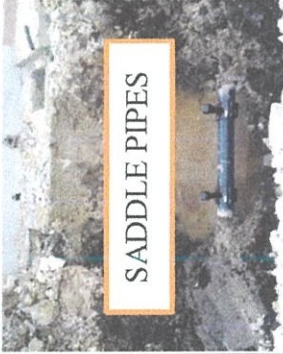

Within have HDPE reticulation pipe, that is easier to know about problems in system reticulation. Then it was easy for users also. Because it's easy for consumer can uses water. Without HDPE reticulation pipe user hard to get water for their house.


This HDPE reticulation pipes is also for prevent water clogging and froods. Then, pipe HDPE live a hygienic life that will be free from germs and diseases. HDPE is weather resistant and non-corrosive withstand.

3.8 Method Statement

NO	TASK	SEQUENTIAL DIAGRAM	MACHINERY/ TOOL	MANPOWER/LABOUR	DURATION
1	<p>Setting out</p> <p>Start by taking soil level to ensure HDPE pipes well planted. HDPE pipe will be planted throughout the house semi-d.</p>	 <p>Workers SYABAS</p>	<p>-levelling -staff</p>	<p>-1 project manager -1 site supervisor -1 contractor SYABAS</p>	<p>-1 hour 30 minutes.</p>
2	<p>Excavation work</p> <p>Excavation shall be made in throughout the house semi-D. HDPE planted in depth of 4 feet. And width 8 feet from the wall.</p>	 <p>BACKHOE HDPE PIPES</p>	<p>-backhoe</p>	<p>-1 driver backhoe -2 workers</p>	<p>-2 days (for 12 units semi-D)</p>

NO	TASK	SEQUENTIAL DIAGRAM	MACHINERY/ TOOL	MANPOWER/LABOUR	DURATION
3.	<p>Apply HDPE pipes After excavate, HDPE pipes should be laid throughout the semi-D house. The size HDPE pipes will be used is 110mm.</p>		<p>-1 backhoe</p>	<p>-1 driver backhoe -2 workers</p>	<p>-3 hours</p>
4.	<p>Put the fine sand After the HDPE pipes will be planted .then, put the fine sand above all HDPE pipes. The workers is required to smooth the fine sand.</p>		<p>-1 backhoe -fine sand -hoe</p>	<p>-1 driver backhoe -2 workers</p>	<p>-3 hours</p>

NO	TASK	SEQUENTIAL DIAGRAM	MACHINERY/TOOL	MANPOWER/LABOUR	DURATION
5.	<p>Install the connector</p> <p>For connector that used saddle pipes. The saddle pipes will be laid along HDPE pipes. One saddle pipes for 1 units semi-D. but this saddle pipes placed in two.</p>	 <p style="text-align: center;">SADDLE PIPES</p>	-24 saddle pipes	-3 labours SYABAS	-2 hours(4 units semi-D)
6.	<p>Install the standard steel</p> <p>Standard steel that will be used for reticulation. From HDPE pipes then into the standard steel. For uses get the water.</p>	 <p style="text-align: center;">STANDARD STEEL PIPES</p>	-standard steel pipe(15mm) -elbow standard steel(25mm) -stop cock(15mm) -nipple standard steel(15mm)	-3 labours SYABAS	-2 hours(4 units semi-D)

NO	TASK	SEQUENTIAL DIAGRAM	MACHINERY/TOO	MANPOWER/LABOUR	DURATION
7	<p>BURIED HDPE PIPE After the installing standard steel, then can required to buried the HDPE pipes. Deeper into 4 feet.</p>		<p>-1 backhoe</p>	<p>-1 driver backhoe</p>	<p>-3 hours</p>

CHAPTER 4.0: CONCLUSION

In conclusion, HDPE PIPES mostly important for reticulation pipes and these pipes is deserved to uses because that has high resistance. HDPE pipe is also not easy to crack because HDPE pipes had been smooth and flexible.

Besides that, HDPE pipe has been easy to install in site construction, mostly HDPE pipes will be used in housing construction. HDPE pipes is suitable will be uses for water reticulation. HDPE pipes had been low price. Mostly, HDPE are located in underground.

However, when in installation HDPE pipes get any problems. But every problem must have solution. The problem become is about weather. So take a long time for install and excavation. But HDPE pipes is suitable uses a water reticulation.

REFERENCES

Introduction HDPE pipes (N.D). Available from <http://www.shreedarshanpipes.com>.

High density polyethylene (N.D). Available from <http://www.plasticpipe.org.com>.

Water reticulation (2000). Available from <http://www.narrabri.nsw.gov.com>.



PERNIAGAAN AWALLUDDIN B HAYON
(000494002-D)
No.2 PERSIARAN HAMZAH ALANG
MERU 41050 KLANG SELANGOR D.E.
No.Tel: Fax:0333926318 (H/P)

Our ref : PAH/MSNCSB/JLN JAMBU/QUO

QUOTATION

Date : 14 OGOS 2014

MSN CONSTRUCTION SDN BHD

Unit 13-4, No.2, Setia Avenue, jalan Setia Prima S U13/S
Setia Alam, Seksyen U13,
40170 Shah Alam,
Selangor D.E

Tel :
Fax : 03 - 3344 6637

Dear Sir,

Cadangan Pembangunan Yang Mengandungi 24 Unit Rumah Semi D Satu Tingkat Dan Dua Tingkat Di Atas Lot ,Jalan Jambu, Meru, 42000 Kapar, Bandar Di Raja Klang, Selangor D.E.
Untuk Tetuan: MSN CONSTRUCTION **SDN BHD**

We refer to the above matter and are pleased to submit our quotation for your kind consideration:

Supply And Lay.

Item	Description	Unit	Qty.	Rate (RM)	Amount (RM)
1	Excavation	M	292	10.00	2,920.00
2	110mm HDPE Pipe	M	292	90.00	26,280.00
3	S-Bend 150mm (Double Flange)	Set	1	2,800.00	2,800.00
4	Coupler 110mm (E.F)	Nos	50	150.00	7,500.00
5	Stud End 110mm	Nos	2	120.00	240.00
6	Scour Valve (Full Bore)	Set	2	1,800.00	3,600.00
7	Meter Stand 25mm	Set	24	300.00	7,200.00
8	Tapping Main Pipe With Saddle (E.F)	Set	24	650.00	15,600.00
9	Maker Post	Set	5	100.00	500.00
10	Testing	L.S	L.S	1,000.00	1,000.00
11	Hot Tapping to existing 150mm x 150mm (Including Chamber, Sluive Valve And Fitting)	Set	1	5,500.00	5,500.00
12	Water Quality (LAB)	L.S	L.S	1,500.00	1,500.00
13	Local Authority (Form EPS,As-Built And C.F)	L.S	L.S	5,000.00	5,000.00
14	Culvert Pipe Sleeve	Set	30	120.00	3,600.00

RM **83,240.00**

Note :The Above Are Excluding a) All Syabas billing b) Site Inspection Deposit c) All JKR Or Majlis Permit d)Surveyor
(Price Follow Constructin Drawing)

PROGRESS CLAIM: 50%(RM41,620.00) 25%(RM20,810.00) 25%(RM20,810.00)

We hope the said quotation meets with your requirements and look forward to your kind acceptance in due course.

Yours faithfully,

PERNIAGAAN AWALLUDDIN B HAYON

WAN FAZLI SHAH B AWALLUDDIN
Project Manager



PERNIAGAAN A WALLUDDIN B HAYON
(000494002-D)
No.2 PERSIARAN HAMZAH ALANG
MERU 41050 KLANG SELANGOR D.E.
No.Tel: Fax:0333926318 (H/P)

Our ref : PAH/MSNCSB/JLN JAMBU/QUO

QUOTATION

Date : 14 OGOS 2014

MSN CONSTRUCTION SDN BHD

Unit 13-4, No.2, Setia Evenue, jalan Setia Prima S U13/S
Setia Alam, Seksyen U13,
40170 Shah Alam,
Selangor D.E

Tel :
Fax : 03 - 3344 6637

Dear Sir,

Cadangan Pembangunan Yang Mengandungi 24 Unit Rumah Semi D Satu Tingkat Dan Dua Tingkat Di Atas Lot ,Jalan Jambu, Meru, 42000 Kapar, Bandar Di Raja Klang, Selangor D.E.
Untuk Tetuan: MSN CONSTRUCTION **SDN BHD**

We refer to the above matter and are pleased to submit our quotation for your kind consideration:

Labour.

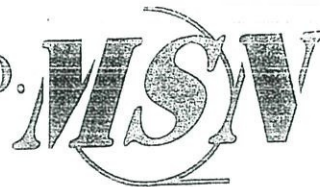
Item	Description	Unit	Qty.	Rate (RM)	Amount (RM)
1	Excavation - <i>Sewa dgn MSN</i>	M	292	10.00	2,920.00
2	110mm HDPE Pipe	M	292	45.00	13,140.00
3	S-Bend 150mm (Double Flange)	Set	1	500.00	500.00
4	Coupler 110mm (E.F)	Nos	50	15.00	750.00
5	Stud End 110mm	Nos	2	15.00	30.00
6	Scour Valve (Full Bore)	Set	1	400.00	400.00
7	Meter Stand 25mm	Set	24	50.00	1,200.00
8	Tapping Main Pipe With Saddle (E.F)	Set	24	80.00	1,920.00
9	Maker Post	Set	5	100.00	500.00
10	Testing	LS	LS	1,000.00	1,000.00
11	Hot Tapping to existing 150mm x 150mm (Including Chamber, Sluive Valve And Fitting)	Set	1	4,000.00	4,000.00
12	Water Quality (LAB)	LS	LS	1,500.00	1,500.00
13	Local Authority (Form EPS, <u>As-Built</u> And C.F)	LS	LS	5,000.00	5,000.00
14	Culvert Pipe Sleeve	Set	30	20.00	600.00

RM 33,460.00

Note :The Above Are Excluding a) All Syabas billing b) Site Inspection Deposit c) All JKR Or Majlis Permit d) Surveyor
(Price Follow Constructin Drawing)

MSN DEVELOPMENT SDN. BHD.

(667265-T)



Your Complete Solution

Ruj. Kami : MSNC / SBASSB / TMP / 14-01
Tarikh : 23hb Oktober 2014

SYARIKAT BEKALAN AIR SELANGOR SDN. BHD.
Jalan Kota
41000 Klang
Selangor Darul Ehsan.

Group of Companies

- ☆ MSN Development Sdn. Bhd. (667265-T)
- ☆ MSN Construction Sdn. Bhd. (759006-H)
- ☆ MSN Property Sdn. Bhd. (744480-K)
- ☆ BD Land & Properties Sdn. Bhd. (017518-P)
- ☆ Bumi Harta Plantation Sdn. Bhd. (940258-M)
- ☆ Bumi Harta Development Sdn. Bhd. (951660-U)
- ☆ Masnawi Trading (002156669-W)

Tuan,

KERJA-KERJA PAIP AIR LUARAN BAGI CADANGAN MEMBINA DAN MENYIAPKAN 18 UNIT RUMAH BERKEMBAR 1 TINGKAT DAN 6 UNIT RUMAH BERKEMBAR 2 TINGKAT DI ATAS LOT PT 48109 HINGGA PT 48132, JALAN JAMBU BATU, TAMAN MERU PERMAI, KLANG, SELANGOR DARUL EHSAN UNTUK TETUAN MSN DEVELOPMENT SDN. BHD.

- *Surat Lantikan Kontraktor*

Pihak kami merujuk kepada perkara tersebut di atas.

Dengan sukacitanya, ingin dimaklumkan bahawa kami bersetuju melantik Perniagaan Awalluddin B Hayon (No. Permit: SPAN/EKS/(PT)/800-2C/1/10/789) sebagai Kontraktor bagi kerja-kerja paip air luaran bagi projek yang dinyatakan di atas. Bersama-sama ini di lampirkan sesalinan permit sebagai rujukan.

Kerjasama daripada pihak tuan amat kami hargai.

Sekian dimaklumkan.

Terima Kasih.

Yang benar,
MSN DEVELOPMENT SDN. BHD.

ZUNNASRI BIN MUHYIDDIN
PENGURUS PROJEK

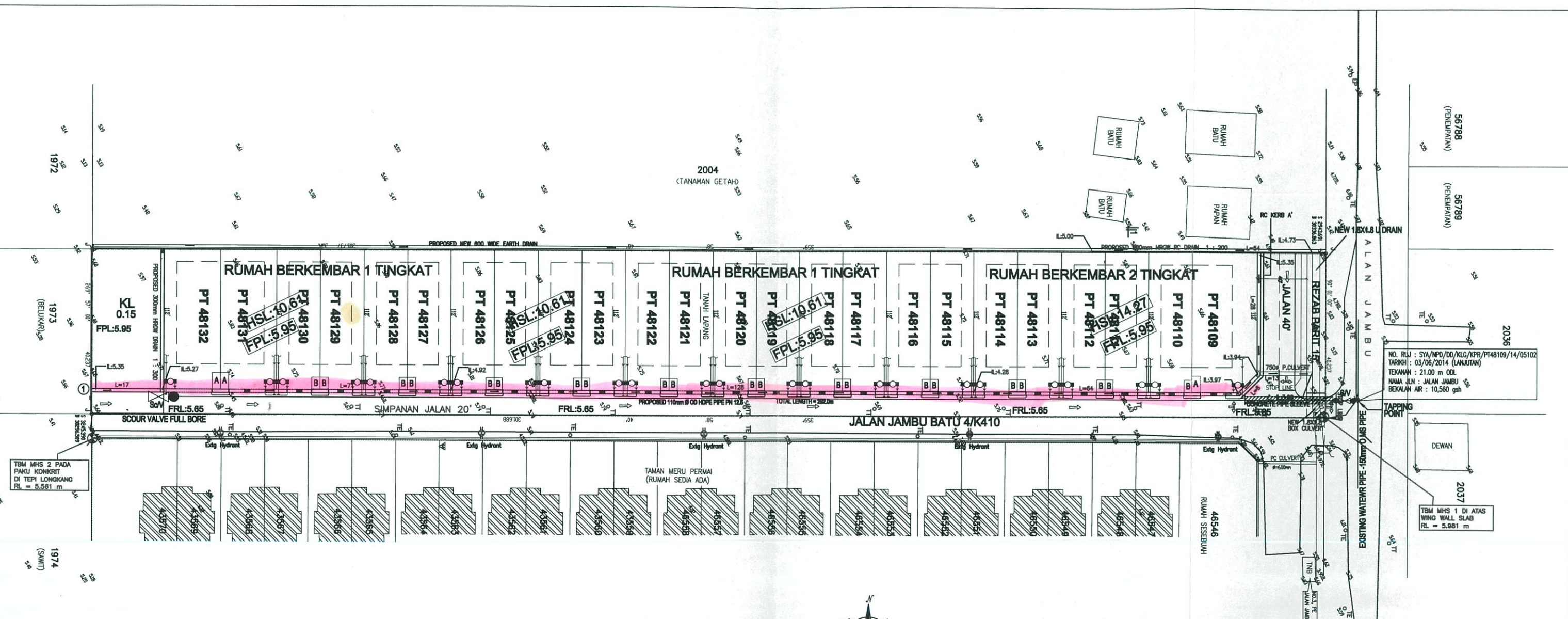


I/We hereby acknowledge the receipt

Name : _____

Date : _____

Time : _____



NO. R/L : SYA/NPD/DD/KLG/KPR/PT48109/14/05102
 TARIKH : 03/06/2014 (LANJUTAN)
 TEKAMAN : 21.00 m OOL
 NAMA JLN : JALAN JAMBU
 BEKALAN AIR : 10,560 gph

WATER SUPPLY LAYOUT PLAN
 Skala 1 : 500
 PA 117740 & PA 8724



TBM MHS 2 PADA
 PAKU KONKRIT
 DI TEPI LONGKANG
 RL = 5.561 m

TBM MHS 1 DI ATAS
 WING WALL SLAB
 RL = 5.981 m