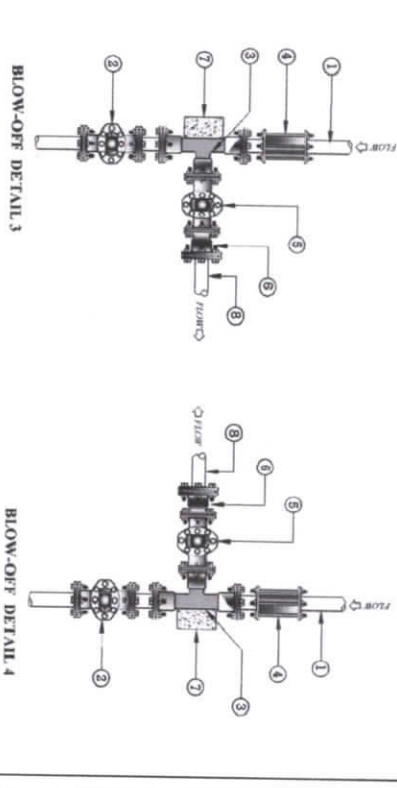
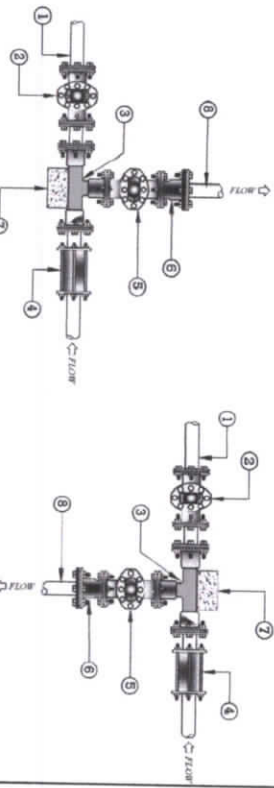


INTERCONNECTION DETAILS

<div><div><div><div><div><div></div><div>LEBAK WATER DISTRICT</div></div></div><div><div><div></div><div>1998</div></div><div><div></div><div>1998</div></div></div></div><div><div>REPUBLIC OF THE PHILIPPINES</div><div>LEBAK WATER DISTRICT</div><div>VICTORY COMMERCIAL BLDG. BRGY.</div><div>AURELIO F. FREIRES SR., LEBAK, SULTAN KUDARAT</div></div></div></div>		<div>PROJECT NAME AND LOCATION:</div> <div>Supply, Delivery and Installation of Various Materials and Filings For Rehabilitation and Expansion of Transmission and Distribution Lines at Brgy. Paandulan, Brgy. Poblacion III, Brgy. Tipunan and Brgy. Salaman</div>		<div>SHEET CONTENTS:</div> <div>INTERCONNECTION DETAILS</div>		<div>DRAWN BY:</div> <div><div><div><div><div></div><div>HENRY JAMES H. GALLETO</div></div></div><div>Engineer A</div></div></div>	<div>APPROVED:</div> <div><div><div><div></div><div>JOSE P. RAMO COL., MBA</div></div></div><div>General Manager D</div></div>
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LEGEND:	
SYMBOL	DESCRIPTION
1	PIPE (UPVC S.B 100mm)
2	GATE VALVE (M/JAL)
3	TEE NUT
4	SLEEVE TYPE COUPLING
5	GATE VALVE F/F
6	ADAPTER NUT
7	CONCRETE THURST BLOCK
8	PIPE (UPVC S.B 100mm)



BLOW-OFF CONNECTIONS			BLOW-OFF CONNECTIONS			BLOW-OFF CONNECTIONS		
CONNECTION	FITTING/PIPE NO.	FITTING/PIPE SIZE	CONNECTION	FITTING/PIPE NO.	FITTING/PIPE SIZE	CONNECTION	FITTING/PIPE NO.	FITTING/PIPE SIZE
TEE 50mm x 50mm	1	50mm	TEE 150mm x 100mm	1	150mm	TEE 200mm x 50mm	1	200mm
	2	50mm		2	150mm		2	200mm
	3	50mm		3	150mm		3	200mm
	4	50mm		4	150mm		4	200mm
	5	50mm		5	150mm		5	200mm
	6	50mm		6	150mm		6	200mm
TEE 75mm x 75mm	1	75mm	TEE 150mm x 75mm	1	150mm	TEE 250mm x 250mm	1	250mm
	2	75mm		2	150mm		2	250mm
	3	75mm		3	150mm		3	250mm
	4	75mm		4	150mm		4	250mm
	5	75mm		5	150mm		5	250mm
	6	75mm		6	150mm		6	250mm
TEE 75mm x 50mm	1	75mm	TEE 150mm x 50mm	1	150mm	TEE 250mm x 200mm	1	250mm
	2	75mm		2	150mm		2	250mm
	3	75mm		3	150mm		3	250mm
	4	75mm		4	150mm		4	250mm
	5	75mm		5	150mm		5	250mm
	6	75mm		6	150mm		6	250mm
TEE 100mm x 100mm	1	100mm	TEE 200mm x 200mm	1	200mm	TEE 250mm x 150mm	1	250mm
	2	100mm		2	200mm		2	250mm
	3	100mm		3	200mm		3	250mm
	4	100mm		4	200mm		4	250mm
	5	100mm		5	200mm		5	250mm
	6	100mm		6	200mm		6	250mm
TEE 100mm x 75mm	1	100mm	TEE 200mm x 150mm	1	200mm	TEE 250mm x 100mm	1	250mm
	2	100mm		2	200mm		2	250mm
	3	100mm		3	200mm		3	250mm
	4	100mm		4	200mm		4	250mm
	5	100mm		5	200mm		5	250mm
	6	100mm		6	200mm		6	250mm
TEE 100mm x 50mm	1	100mm	TEE 200mm x 100mm	1	200mm	TEE 250mm x 75mm	1	250mm
	2	100mm		2	200mm		2	250mm
	3	100mm		3	200mm		3	250mm
	4	100mm		4	200mm		4	250mm
	5	100mm		5	200mm		5	250mm
	6	100mm		6	200mm		6	250mm
TEE 150mm x 150mm	1	150mm	TEE 200mm x 75mm	1	200mm	TEE 250mm x 50mm	1	250mm
	2	150mm		2	200mm		2	250mm
	3	150mm		3	200mm		3	250mm
	4	150mm		4	200mm		4	250mm
	5	150mm		5	200mm		5	250mm
	6	150mm		6	200mm		6	250mm

BLOW-OFF DETAILS



REPUBLIC OF THE PHILIPPINES
LEBAK WATER DISTRICT
 VICTORY COMMERCIAL BLDG. BRGY.
 AURELIO F. FREIRES SR., LEBAK, SULTAN
 KUDANAT

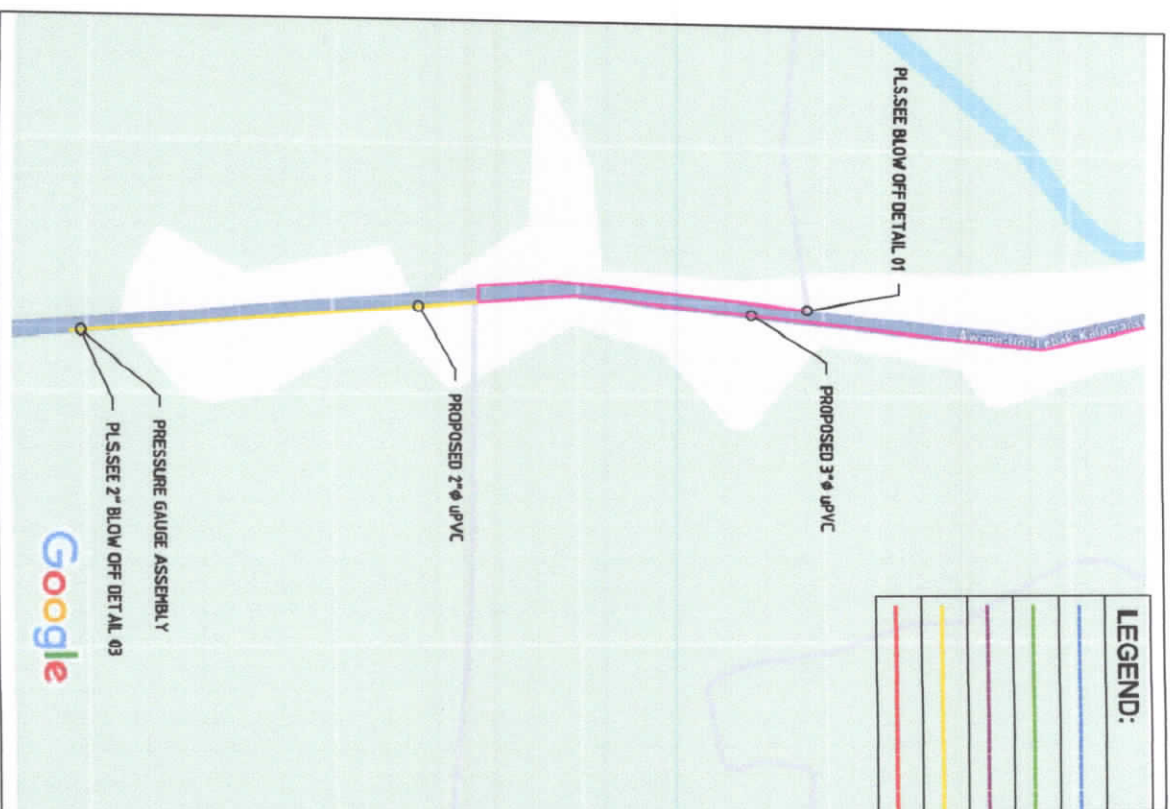
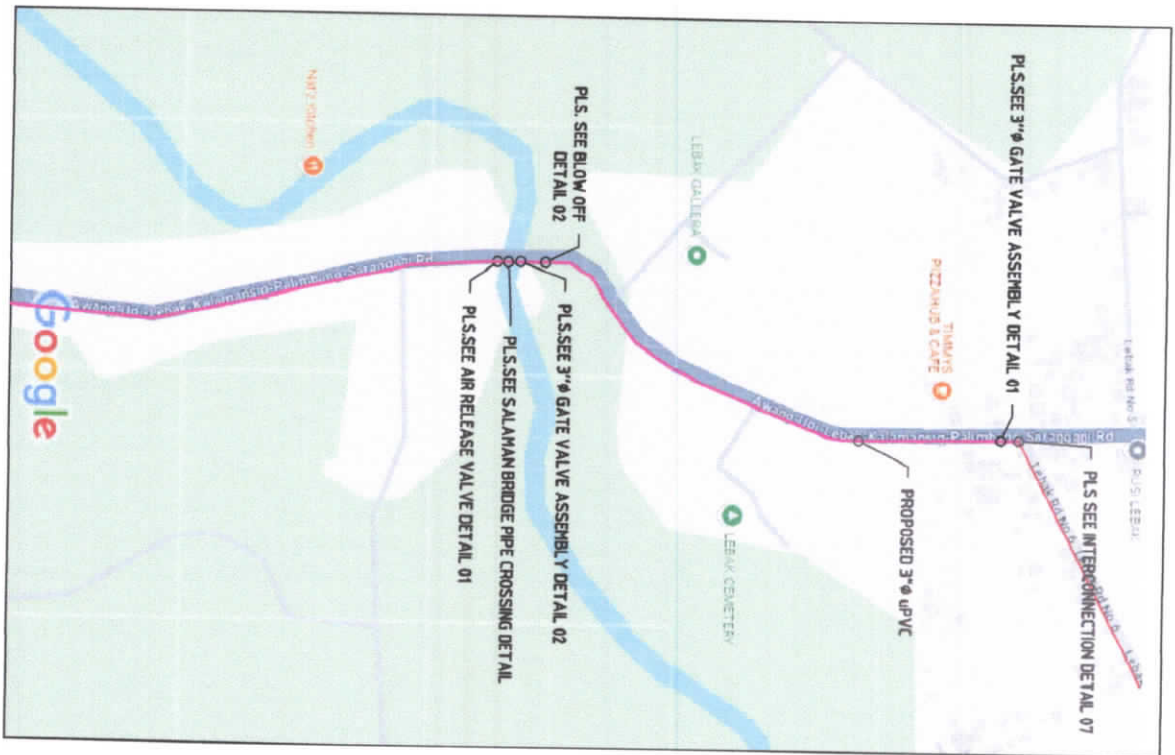
PROJECT NAME AND LOCATION:
 Supply, Delivery and Installation of Various Materials and
 Fittings For Rehabilitation and Expansion of Transmission
 and Distribution Lines at Brgy. Pasandalen, Brgy.
 Poblacion III, Brgy. Tibpuan and Brgy. Salamanan
 LOCATION: LEBAK, SULTAN KUDANAT

SHEET CONTENTS:
 BLOW-OFF STANDARD TECHNICAL
 DETAILS

DRAWN BY:
 HENRY JAMES H. GALLETO
 Engineer A

APPROVED:
 JOSE PABLO COL, MBA
 General Manager D

SHEET NO:
 07/08



LEGEND:	
	PROPOSED 150mmØ UPVC PIPE
	PROPOSED 100mmØ UPVC PIPE
	PROPOSED 75mmØ UPVC PIPE
	PROPOSED 50mmØ UPVC PIPE
	Existing UPVC PIPE LINES

PIPE LAYOUT PLAN



REPUBLIC OF THE PHILIPPINES
LEBAK WATER DISTRICT
VICTORY COMMERCIAL BLDG. BRGY.
AURELIO F. FREIRES SR., LEBAK, SULTAN
KIDARAT

PROJECT NAME AND LOCATION:
Supply, Delivery and Installation of Various Materials and
Fittings For Rehabilitation and Expansion of Transmission
and Distribution Lines at Brgy. Paandalen, Brgy.
Pobicion III, Brgy. Tibpuan and Brgy. Salaman
LOCATION: LEBAK, SULTAN KIDARAT

SHEET CONTENTS:
SUGELCO TO BRGY. SALAMAN
PIPELINES

DRAWN BY:

HENRY JAMES H. GALLETO

Engineer A

APPROVED:

JOSE F. MACOL, MBA

General Manager D

SHEET NO:

06/08



LEGEND:

	PROPOSED 150mmØ uPVC PIPE
	PROPOSED 100mmØ uPVC PIPE
	PROPOSED 75mmØ uPVC PIPE
	PROPOSED 50mmØ uPVC PIPE
	Existing uPVC PIPE LINES

PIPE LAYOUT PLAN



REPUBLIC OF THE PHILIPPINES
LEBAK WATER DISTRICT
VICTORY COMMERCIAL BLDG. BRGY.
AURELIO F. FREIRES SR., LEBAK, SULTAN
KUDARAT

PROJECT NAME AND LOCATION:
Supply, Delivery and Installation of Various Materials and
Fittings For Rehabilitation and Expansion of Transmission
and Distribution Lines at Brgy. Pandan, Brgy.
Pobocan III, Brgy. Tibuan and Brgy. Salaman
LOCATION: LEBAK, SULTAN KUDARAT

SHEET CONTENTS:
CLAVERIA HOTEL TO BRGY.
TIBUPAN VIA LEBAK ROAD NO.5
PIPELINES

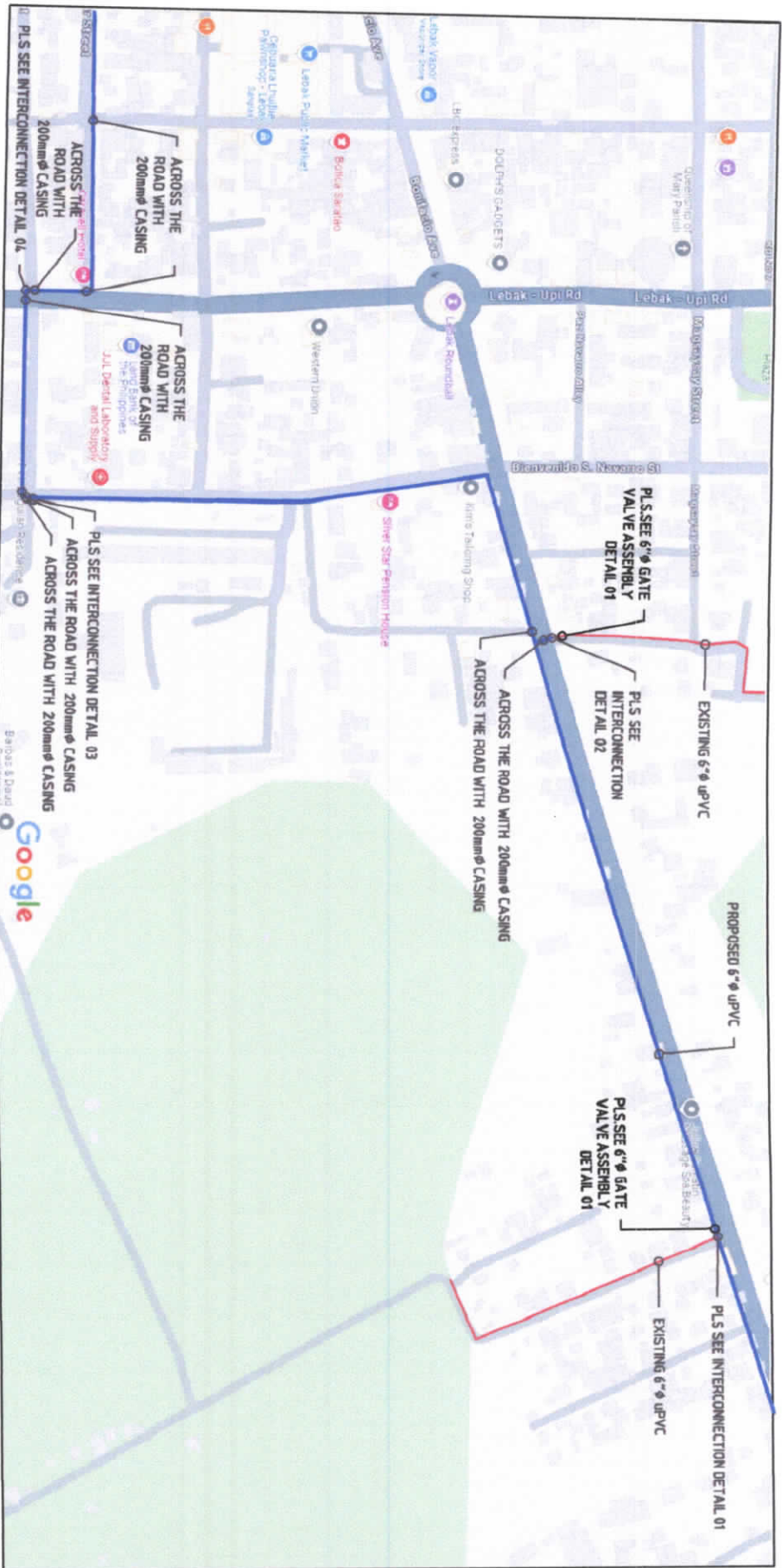
DRAWN BY:

HENRY G. GALLETO
Engineer A

APPROVED:

JOSE P. ANDAL, MBA
General Manager D

SHEET NO:
05/08



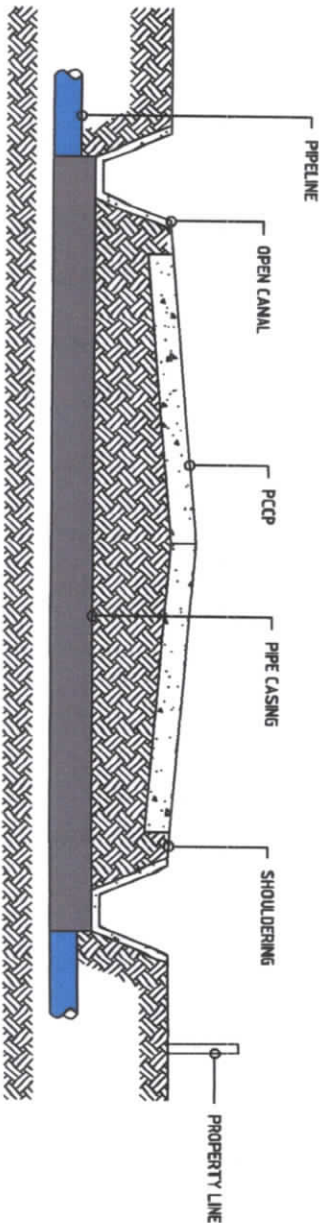
PIPE LAYOUT PLAN

LEGEND:	
<div></div>	PROPOSED 150mmØ UPVC PIPE
<div></div>	PROPOSED 100mmØ UPVC PIPE
<div></div>	PROPOSED 75mmØ UPVC PIPE
<div></div>	PROPOSED 50mmØ UPVC PIPE
<div></div>	Existing UPVC PIPE LINES

<div><div><div><div><div><div></div><div>LEBAK WATER DISTRICT</div></div></div><div><div><div></div><div>1991</div></div><div><div></div><div>1991</div></div></div></div></div><div>REPUBLIC OF THE PHILIPPINES LEBAK WATER DISTRICT VICTORY COMMERCIAL BLDG. BRGY. AURELIO F. FREIRES SR., LEBAK, SULTAN KUDARAT</div></div>		PROJECT NAME AND LOCATION: Supply, Delivery and Installation of Various Materials and Fittings For Rehabilitation and Expansion of Transmission and Distribution Lines at Brgy. Paandulan, Brgy. Poblacion III, Brgy. Tipuan and Brgy. Salsaman		SHEET CONTENTS: BRGY. PASANDULAN TO CLAVERIA HOTEL, PIPELINES		DRAWN BY: HENRI JAMES H. GALLETO Engineer A		APPROVER: JOSE FAMODOL, MBA General Manager ID		SHEET NO.: 03/08
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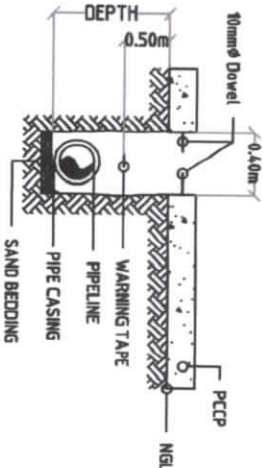
ACROSS THE ROAD DETAILS

NTS



LONGITUDINAL SECTION DETAIL

PIPE TRENCH TABLE	
Pipe Size	Depth
50mm	0.40m
75mm	0.40m
100mm	0.40m
150mm	0.45m
200mm	0.50m
250mm	0.50m



CROSS SECTION DETAILS

GENERAL NOTES:

EXCAVATION / PREPARATION

- Advance written notice should be given to the government agencies concerned, establishments for information.
- Excavation permits, if necessary, should have been secured from the government agencies that have jurisdiction over the project.
- Always refer to the detailed plan for the correct field location, alignment, trench and bedding specifications before mobilization and excavation begins.
- Make sure that all the necessary bollards, barricades and warning devices or whatever is needed are properly placed to protect the safety of the construction crew and the public.
- All asphalt and concrete debris should be hauled away immediately to avoid using them as backfill materials.

ROAD CROSSING

- All roads approved for open cut trenching or pipeline road crossing, shall be well tamped throughout the backfilling operation, and an adequate amount of gravel be spread over the affected area.
- The depth of the road crossing shall be maintained at the same elevation throughout the entire width of the road allowance or proposed road allowance.
- Road crossings under roads which are to be improved may be required to be installed to a greater depth.
- It shall not be a requirement for crossings to be 90 degrees to the road but they shall be properly marked with warning signs.
- Road crossings shall be installed in a manner which will cause the least inconvenience to the traveling public.
- Due to work being performed on a pipeline or integral part thereof, a detour shall be provided and adequately maintained with simple signs. During the hours of darkness, all warning and detour signs and excavations shall be illuminated.

SURFACE RESTORATION

- All damaged and disturbed area due to pipe laying activities must be restored to its original condition.
- Damaged concrete/asphalt pavement restoration is strictly enforced upon the completion of the pipe laying and hydro testing activities.
- All concrete pavement surfaces and all concrete base under an asphaltic mix surfaces to be restored shall be scored concrete cutting equipment into clean straight lines.
- The cases of damaged, adjacent pavements, the damaged area should be included in the surface restoration and inside the perimeter of the scored portion.
- The restored portion should have the same thickness or greater than the existing concrete/asphalt pavement.
- When the concrete is slightly hardened, scrape it using a stick broom.
- Secure the area using the barricades, warning devices and steel plates (if necessary) to protect the newly restored portion until the concrete reaches its maximum strength.
- Barricades, warning devices and steel plates should be removed on the site three (3) to five (5) days, or as approved by the agency covering the area or DPWH.



REPUBLIC OF THE PHILIPPINES
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AURELIO F. FREIRES SR., LEBAK, SULTAN
KUDARAT

PROJECT NAME AND LOCATION:
Supply, Delivery and Installation of Various Materials and
Fittings For Rehabilitation and Expansion of Transmission
and Distribution Lines at Brgy. Pansandian, Brgy.
Pobedon III, Brgy. Tipuan and Brgy. Salaman
LOCATION: LEBAK, SULTAN KUDARAT

SHEET CONTENTS:
ACROSS THE ROAD DETAILS

DRAWN BY:

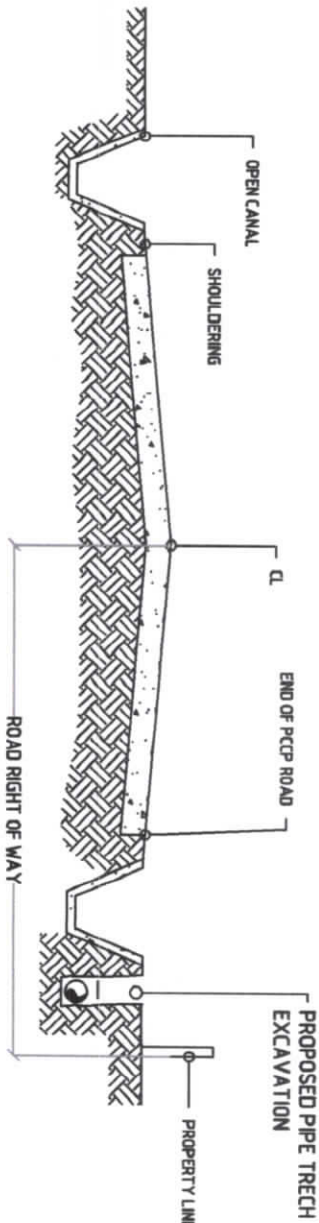
HENRY JAMES H. GALLETO
Engineer A

APPROVED:

JOSE PABLOCOL, MBA
General Manager D

SHEET NO:

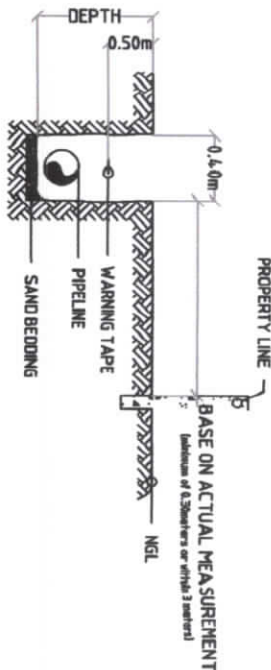
02/08



PIPE TRENCH EXCAVATION DETAILS

SCALE

NTS



PIPE CROSS SECTION DETAILS

SCALE

NTS

GENERAL NOTES:

Alignment of pipeline trench should always be between the property and the existing pipelines or within three (3) meters away from the property line.

All asphalt and concrete debris should be hauled away immediately to avoid using them as backfill materials.

No trenching should be allowed to start and proceed without the required bollards, barricades and warning devices.

Unless otherwise shown or ordered, excavation for pipelines shall be open cut trenches. Trench should be straight, with vertical sides centered on the pipe centerline.

Trench excavation should not extend too far ahead of pipe laying for safety reasons. The maximum amount of open trench permitted at any one time at one location shall be 300 meters, or the length necessary to accommodate the amount of pipe installed in a single day, whichever is greater.

Barricades and warning lights shall be provided and maintained for all trenches left open overnight, except at intersections and driveways in which case of heavy steel plates adequately braced bridges or other type of crossing capable of supporting vehicular traffic shall be furnished as directed by the Engineer. Or, do not leave open trenches overnight at all. An open trench presents a danger to the construction.

The trench walls may have to be "sloping" when the soil is not stable.

For curve alignments, the trench width should be greater than the usual to accommodate the permissible deflection of the joints.

Trench bottom must be uniform, free from humps, abrupt change of direction hard objects, large object for sharp stones, and tree roots.

Trenches shall be over-excavated beyond the desired depth only when ordered by the Engineer such over excavation be to the depth ordered. The trench shall then be refilled to the grade of the bottom of the pipe with sand until the pipe is covered with the specified thickness and then with selected granular materials obtained from the excavation.

In unstable ground, during over-excavation, the trench walls may be shored or sloped.

Except where trees are shown on the drawings to be removed, trees shall be protected from injury during construction operations and no tree is to be removed without written permission or permit if necessary. Tree roots can be trimmed and cut if it is an obstruction only with the permission of the Engineer.

Water must be kept out of the trench during construction so that the pipe will not become contaminated. Dewatering pumps should be used in the trench if necessary, to remove any building up of water.

SURFACE RESTORATION:

All damaged and disturbed areas due to pipe laying activities must be restored to its original condition.

Damaged concrete/asphalt pavement restoration is strictly enforced upon the completion of the pipe laying and hydro testing activities.

All concrete pavement surfaces and all concrete base under an asphaltic mix surfaces to be restored shall be scored concrete cutting equipment into clean straight lines.

Clean the sides of the pavements removing foreign particles using clean tap water.

The cases of damaged, adjacent pavements, the damaged area should be included in the surface restoration and inside the perimeter of the scored portion.

In the cases of damaged, removed or disturbed fences, post, street signs, surface structures, and other properties, whether through failure or deliberately to efficiently perform the repair works shall be replaced.

The prepared concrete mixture for the surface restoration should have a compressive strength of 3000 psi. A concrete mixture ratio of 1part cement, 2 parts sand and 3 parts aggregate will produce a concrete mix of approximately 3000 psi.

The restored portion should have the same thickness or greater than the existing concrete/asphalt pavement.

When the concrete is slightly hardened, scrape it using a stick broom.

Secure the area using the barricades, warning devices and steel plates (if necessary) to protect the newly restored portion until the concrete reaches its maximum strength.

Barricades, warning devices and steel plates should be removed on the site three (3) to five (5) days, or as approved by the agency covering the area or DPWH.

WARNING TAPE:

The Contractor shall furnish for each pipe, above or equal to 75 mm, an Allu foil tape (minimum width is 4 cm)

The warning tape shall be laid into the trench between two backfill layers at 30 cm above the pipe.

SAND BEDDING AND SAND FILL MATERIALS:

GENERAL

The purpose of this standard is to specify minimum requirements for sand used for bedding and sand fill in pipe trenches, which is fit for this purpose and will ensure install adequate support and will achieve their design life.

PIPE TRENCH TABLE		
Pipe Size	Width	Depth
30mm	0.40m	100m
75mm	0.40m	100m
100mm	0.40m	100m
150mm	0.45m	110m
200mm	0.50m	110m
250mm	0.50m	110m

To the satisfaction of the LEVADI representative, the sand shall be free from:

- Cohesive and organic lumps
- Rocks or other sharp particles likely to damage pipes or protective coatings,
- Weeds or other vegetation or their seeds.

APPLICATION

- The trench bottom must be properly leveled and free from large and/or sharp stones and objects so that the full length of the pipe will have continuous, firm support.
- Sand bedding should be spread over the trench bottom to the full width of the trench with the thickness of 150mm.
- Compacted sand shall also serve as a backfill material to the both sides of the pipeline and 150mm. above the outside diameter of the pipe.



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KUDARAT

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Supply, Delivery and Installation of Various Materials and
Fittings for Rehabilitation and Expansion of Transmission
and Distribution Lines at Brgy. Pansandian, Brgy.
Pobocan III, Brgy. Tapan and Brgy. Salaman
LOCATION: LEBAK, SULTAN KUDARAT

SHEET CONTENTS:
PIPE TRENCH EXCAVATION DETAILS
PIPE CROSS SECTION DETAILS
GENERAL NOTES

DRAWN BY:
HENRY JAMES H. GALLETO
Engineer A

APPROVED:
JOSE PAMOLLO, MBA
General Manager D

SHEET NO:
01/08