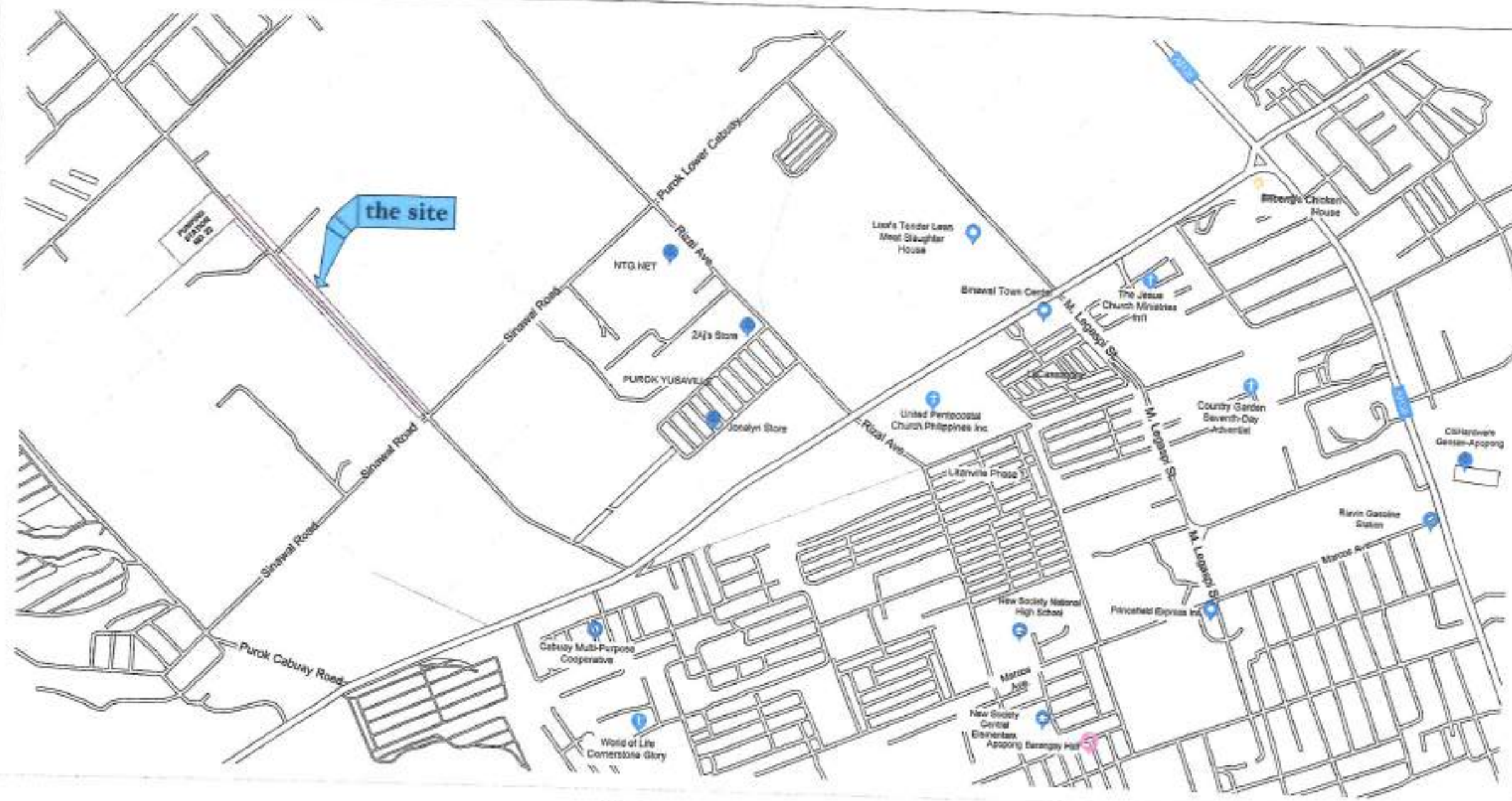


OFFICE OF THE BUILDING OFFICIAL



**LOCATION PLAN**  
NOT TO SCALE

LAND USE & ZONING

LINE AND GRADE

ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

ELECTRONICS

**GENERAL SANTOS CITY WATER DISTRICT**  
E. FERNANDEZ STREET, BRGY. LAGAO, BEN. SANTOS CITY  
ENGINEERING & CONSTRUCTION DEPARTMENT  
PLANNING AND DESIGN DIVISION  
TEL. NO.: (083) 552-3824

*[Signature]*  
**ENGR. ROLLY A. GUNDAY**  
CIVIL ENGINEER

REG. NO. 78448      TIN. NO. 809-825-033  
PTR. NO. 8616956      DATE: 02/22/2021

TITLE:  
**INSTALLATION OF 500MMØ STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES**

CHECKED:  
*[Signature]*  
**ENGR. ROLLY A. GUNDAY**  
CIC - Planning & Design Division

REVIEWED:  
*[Signature]*  
**ENGR. ROGELIO A. BESANA, JR.**  
ADM - Operations & Technical Services

APPROVED:  
*[Signature]*  
**ENGR. ARN B. GELLANGARIN**  
General Manager A

CONTENTS:  
AS PER PLAN

DRAWN BY: NFR      REV. NO. 07/08/2021  
CHECKED BY: RAG      DATE: 02/23/2021

SHEET NO.  
**1**



NORTH



**PIPE DISTRIBUTION LAYOUT**  
SCALE: N.T.S.

**GENERAL SANTOS CITY WATER DISTRICT**  
E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY  
ENGINEERING & CONSTRUCTION DEPARTMENT  
PLANNING AND DESIGN DIVISION  
TEL. NO.: (083) 532-3824

*Rolly A. Gunday*  
**ENGR. ROLLY A. GUNDAY**  
CIVIL ENGINEER

REG. NO. 76448      TIN. NO. 909-828-833  
PTR. NO. 9616959      DATE: 02/22/2021

TITLE:  
**INSTALLATION OF 500MM STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES**

PURCH. CASURY, BRGY. SINAWAL GENERAL SANTOS CITY

CHECKED:  
*Rolly A. Gunday*  
**ENGR. ROLLY A. GUNDAY**  
CIC - Planning & Design Division

REVIEWED:  
*Rogelio A. Besana, Jr.*  
**ENGR. ROGELIO A. BESANA, JR.**  
AGM - Operations & Technical Services

APPROVED:  
*Arn B. Gellangarin*  
**ENGR. ARN B. GELLANGARIN**  
General Manager A

CONTENTS:  
**AS PER PLAN**

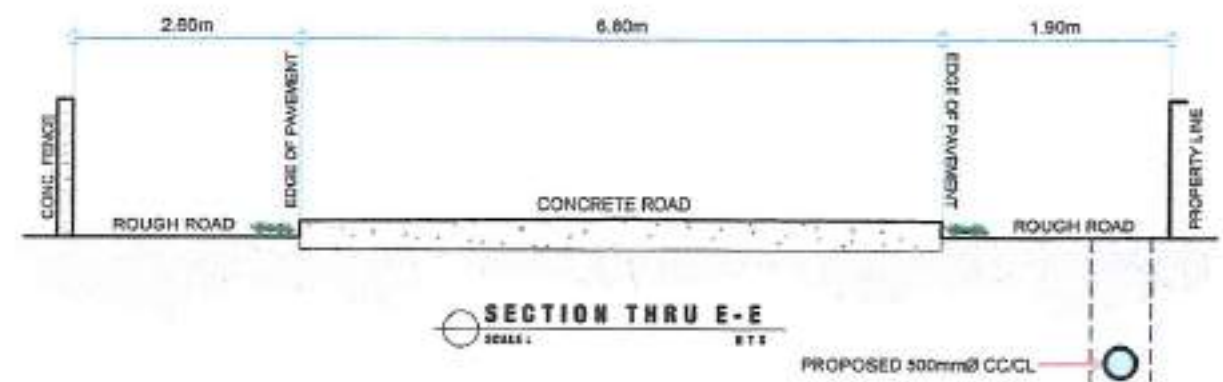
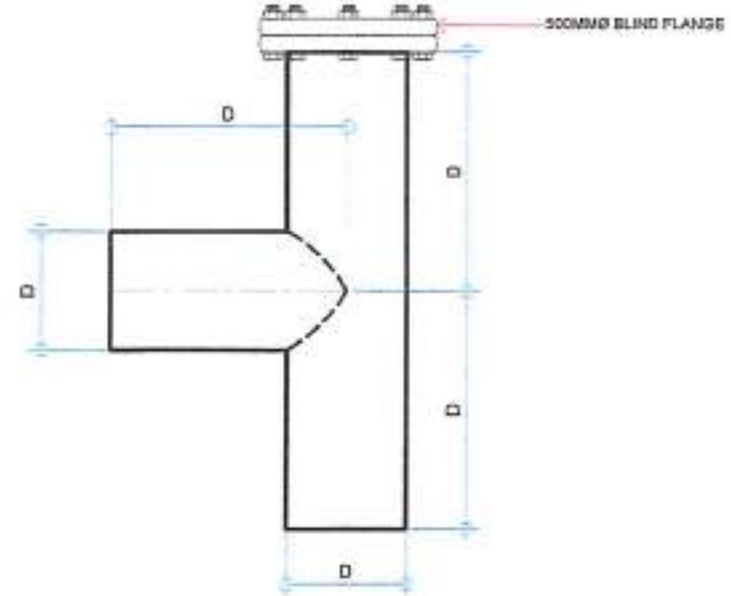
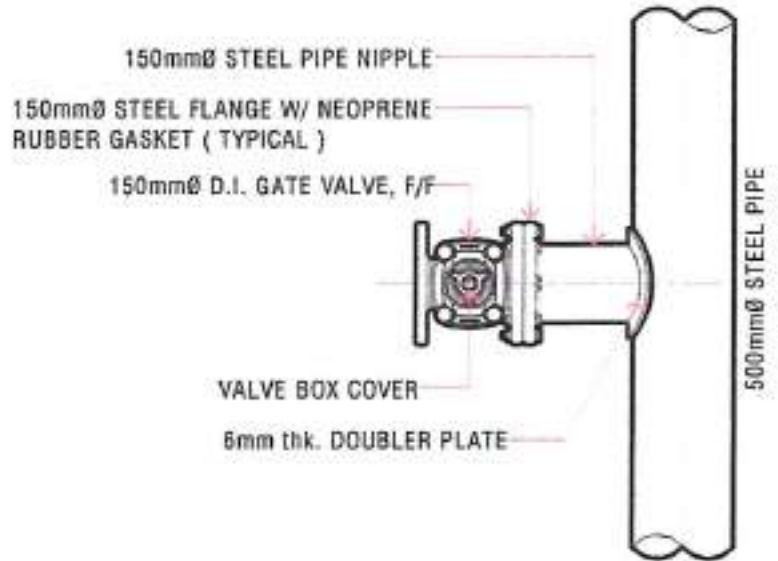
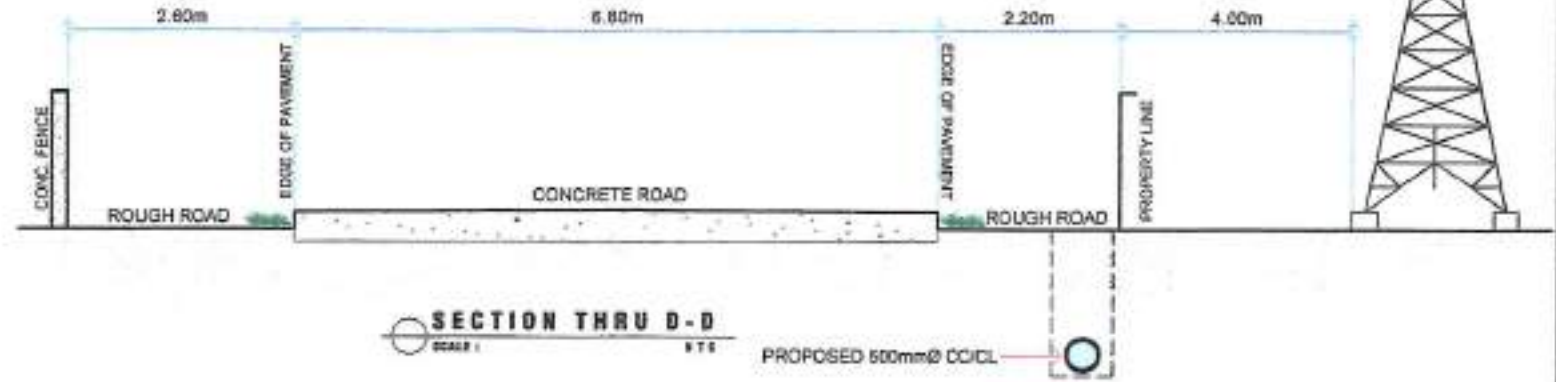
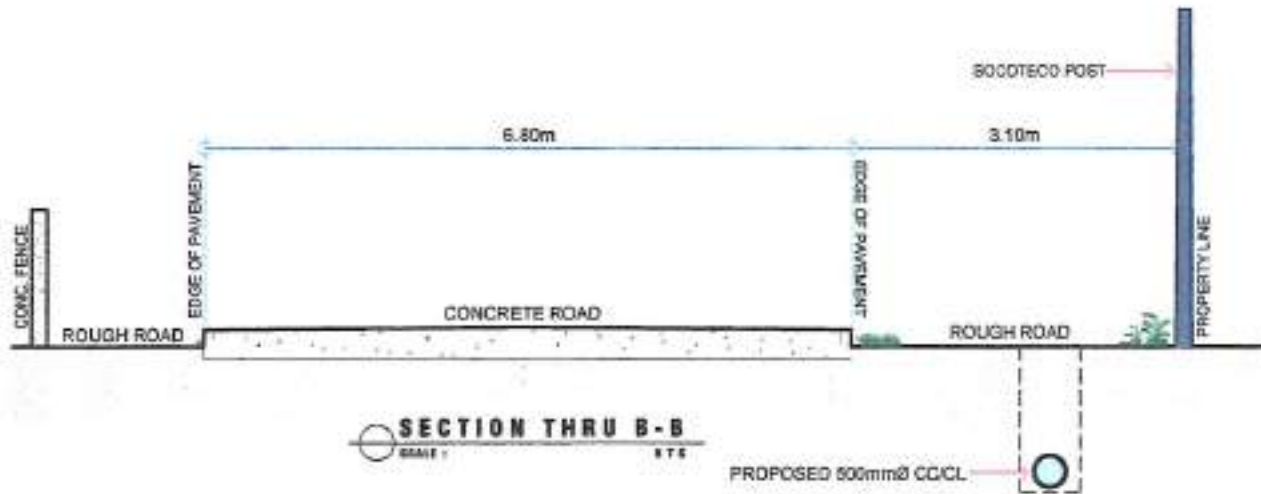
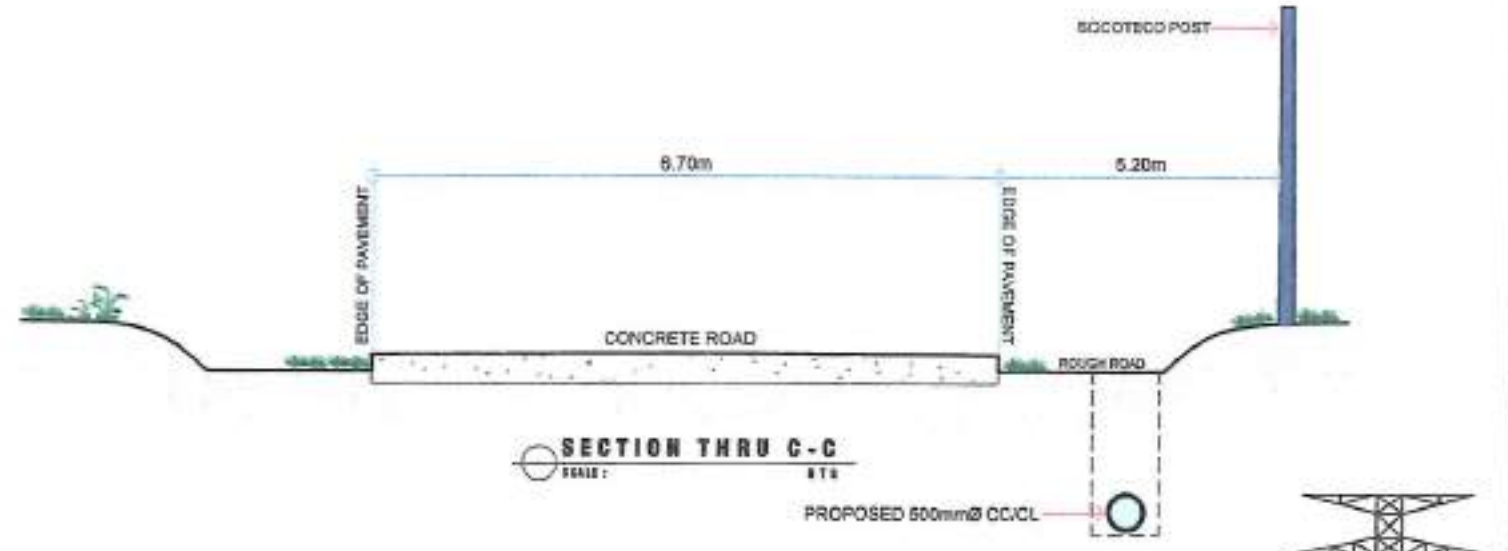
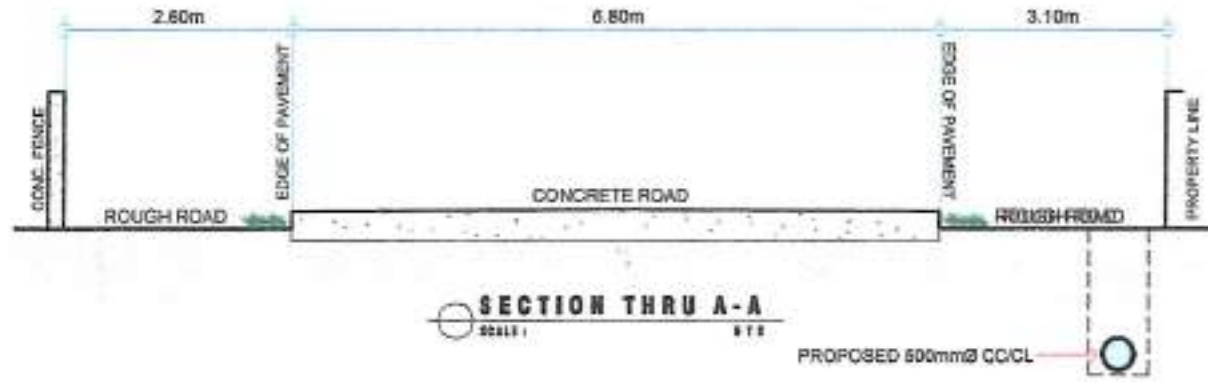
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SHEET NO.  
**2**




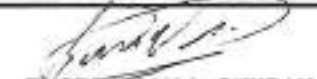

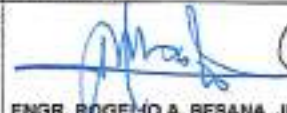



**NOTE:**  
TRENCH EXCAVATION SHALL BE  
1.00 MTR. OFFSET FROM PROPERTY LINE,



**150MM $\varnothing$  STUB-OUT DETAILS ( 3PCS )**

**500MM $\varnothing$  x 500MM $\varnothing$  FAB.TEE**

 <p><b>GENERAL SANTOS CITY WATER DISTRICT</b> E. FERNANDEZ STREET, BRGY. LAGAD, GEN. SANTOS CITY ENGINEERING &amp; CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	 <b>ENGR. ROLLY A. GUNDAY</b> CIVIL ENGINEER		TITLE: <b>INSTALLATION OF 500MM<math>\varnothing</math> STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES</b>	CHECKED:  <b>ENGR. ROLLY A. GUNDAY</b> C/C - Planning & Design Division	REVIEWED:  <b>ENGR. ROGELIO A. BESANA, JR.</b> AGM - Operations & Technical Services	APPROVED:  <b>ENGR. ARN B. GELLANGARIN</b> General Manager A	CONTENTS: AS PER PLAN	SHEET NO. <b>4</b>	
	REG. NO. 79445 PTR. NO. 0010555	TR. NO. 009-020-003 DATE: 02/23/2021	PLURAK CABUYAN, BRGY. SINAVAL GENERAL SANTOS CITY	ENGR. ROLLY A. GUNDAY C/C - Planning & Design Division	ENGR. ROGELIO A. BESANA, JR. AGM - Operations & Technical Services	ENGR. ARN B. GELLANGARIN General Manager A	DRAWN BY: NPY CHECKED BY: RAG	REV. NO. 07 / 05 / 2021 DATE: 02 / 23 / 2021	

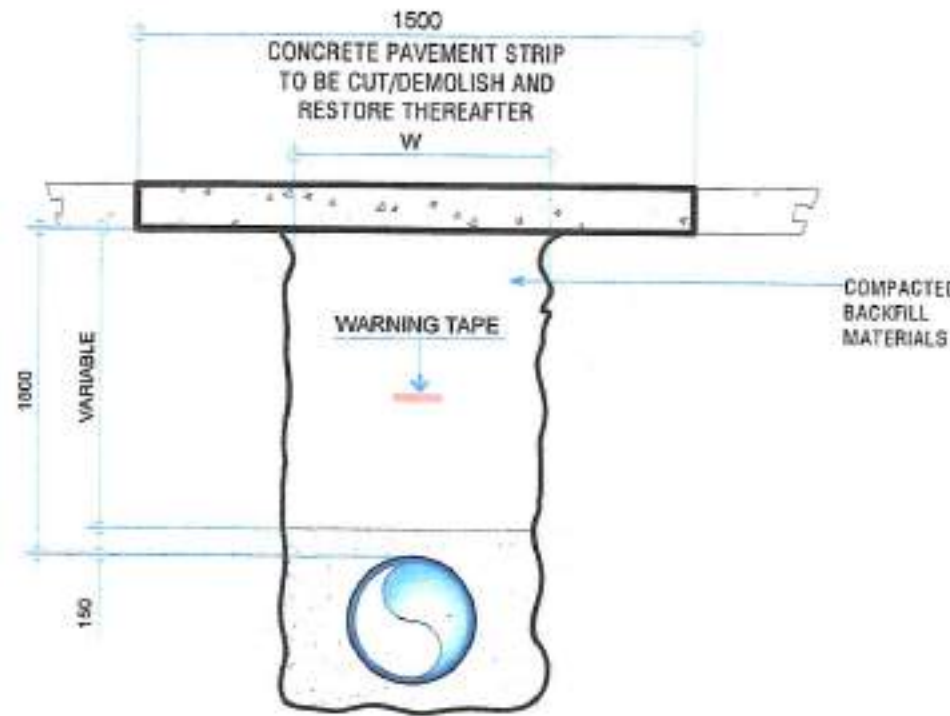


**TABLE OF TRENCH DIMENSION (mm)**

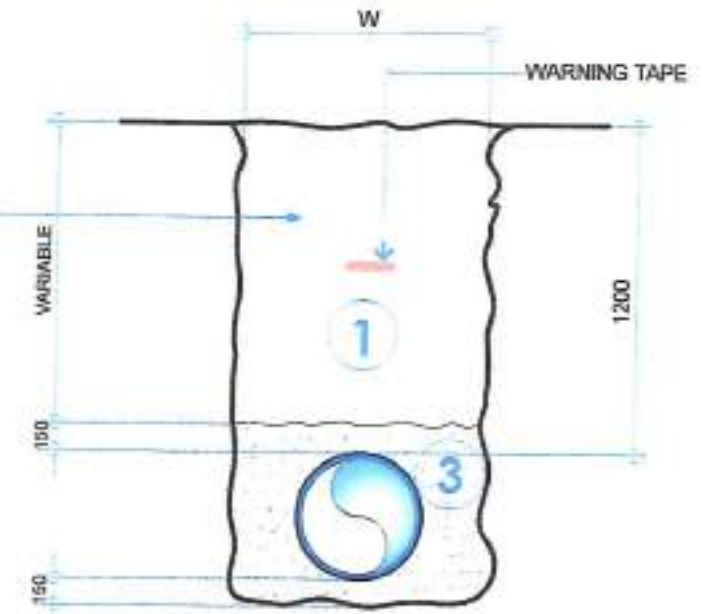
PIPE DIAMETER	75mm & UNDER	150mm	200mm	300mm	500mm
	3" & UNDER	6"	8"	12"	20"
MINIMUM "W"	200	450	500	600	800
MAXIMUM "W"	300	750	800	900	1100

**LEGEND :**

1. COMPACTED SELECTED NATIVE MATERIAL BACKFILL.
2. COMPACTED SELECTED NATIVE MATERIAL IN 150MM LAYERS.
3. APPROVED SAND BEDDING AND BACKFILL HAND PLACED AND COMPACTED.
4. PAYMENT FOR ANY RESURFACING WILL BE BASED ON MAXIMUM TRENCH WIDTHS PER SIZE PIPE. SHOWN BELOW
4. PAYMENT FOR ANY RESURFACING WILL BE BASED ON MAXIMUM TRENCH WIDTHS PER SIZE PIPE. SHOWN BELOW
5. TRENCH EXCAVATION SHALL BE 1.00 M. OFFSET FROM PROPERTY LINE



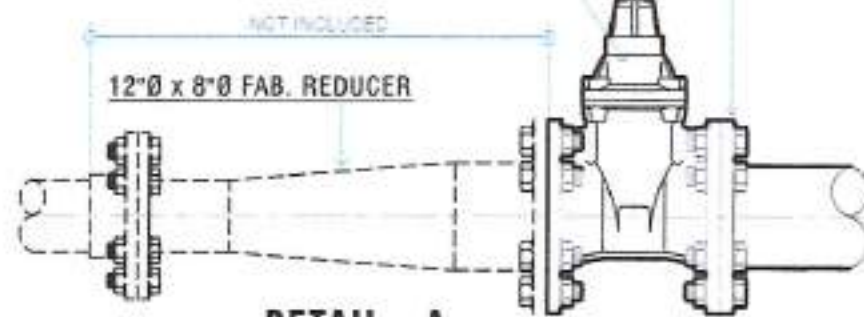
**CONCRETE PAVEMENT STRIP**  
SCALE: NTS



**INSTALLATIONS IN NON-GRANULAR SOIL AS DETERMINED BY ENGINEER**

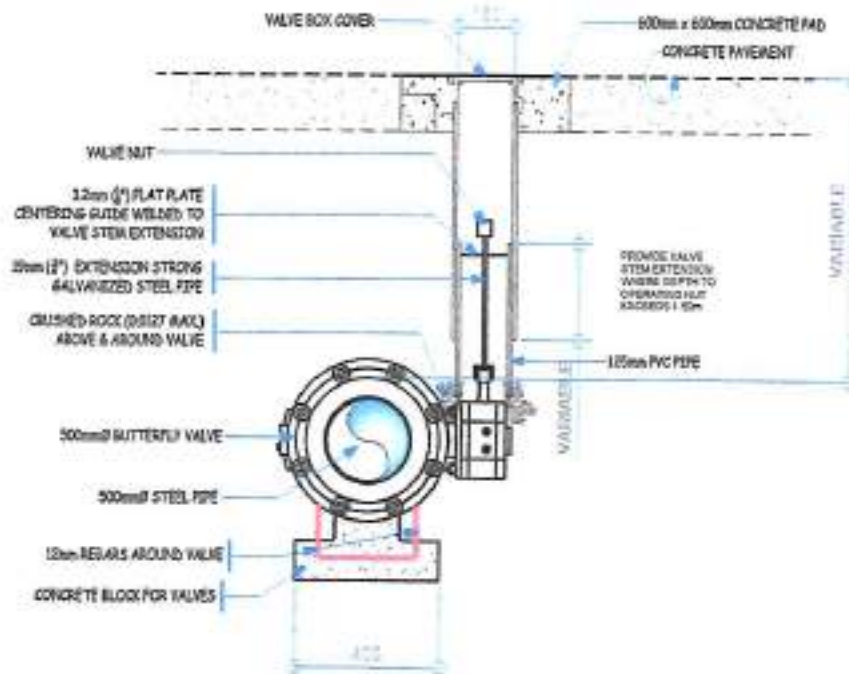
300mmØ STEEL FLANGE W/ NEOPRENE RUBBER GASKET ( TYPICAL )

300mmØ D.I. GATE VALVE F/F



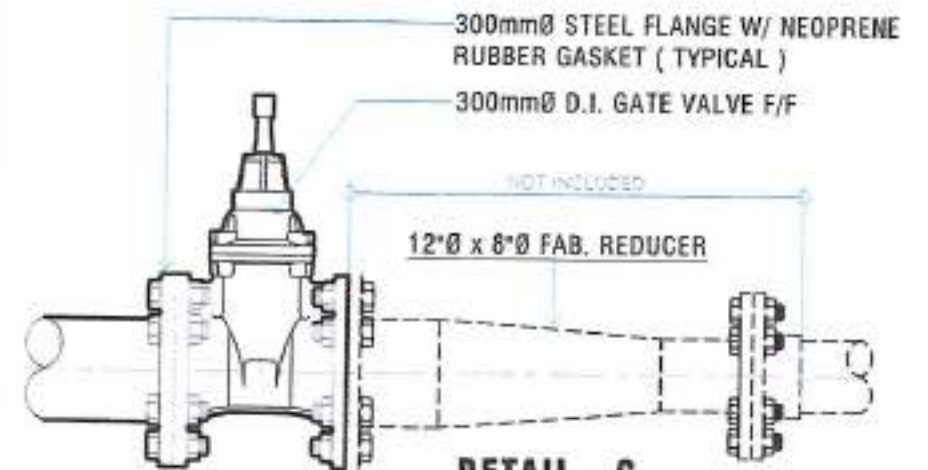
**DETAIL - A**

SCALE: NTS



**INSTALLATION 500MMØ BUTTERFLY VALVE ( DETAIL-B )**

SCALE: NTS



**DETAIL - C**

SCALE: NTS

**GENERAL SANTOS CITY WATER DISTRICT**  
E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY  
ENGINEERING & CONSTRUCTION DEPARTMENT  
PLANNING AND DESIGN DIVISION  
TEL. NO.: (083) 552 - 3824

**ENGR. ROLLY A. GUNDAY**  
CIVIL ENGINEER

REG. NO. 78445      TIN. NO. 959-039-033  
PTR. NO. 8616805      DATE: 02/22/2021

**TITLE:**  
INSTALLATION OF 300MMØ STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES

National Highway, Brgy. Lagao & Katarigawan, GRC

**CHECKED:**

**ENGR. ROLLY A. GUNDAY**  
CIC - Planning & Design Division

**REVIEWED:**

**ENGR. ROGELIO A. BESANA, JR.**  
ACM - Operations & Technical Services

**APPROVED:**

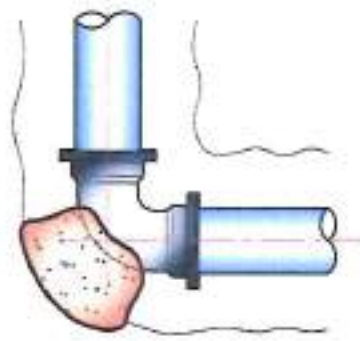
**ENGR. ARN B. GELLANGARIN**  
General Manager A

**CONTENTS:**  
AS PER PLAN

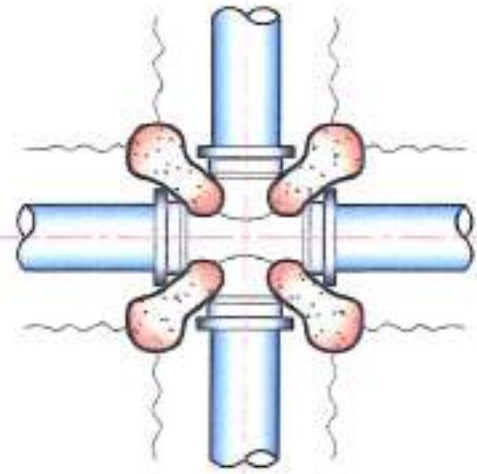
DRAWN BY: BSA      REV. NO. 07 / 06 / 2021  
CHECKED BY: RAG      DATE: 09 / 23 / 2021

**SHEET NO.**  
**5**

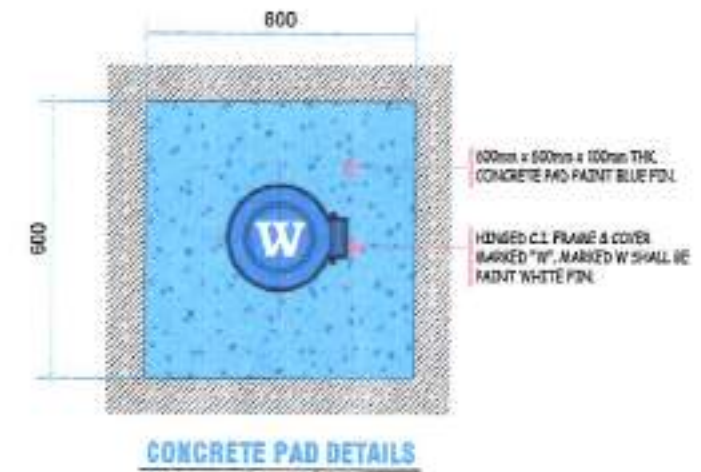




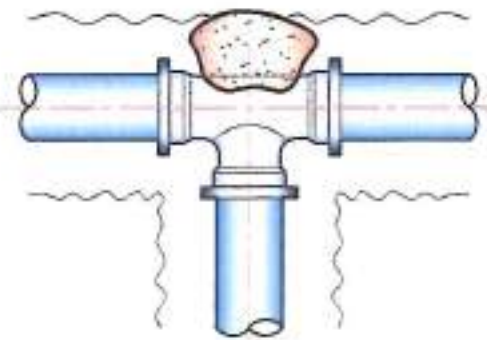
**90° ELBOW or BEND**



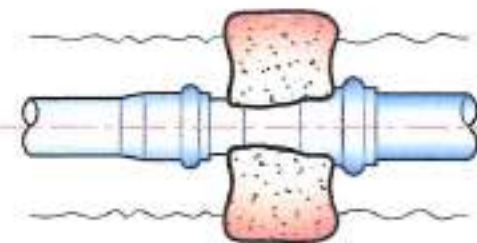
**CROSS TEE**



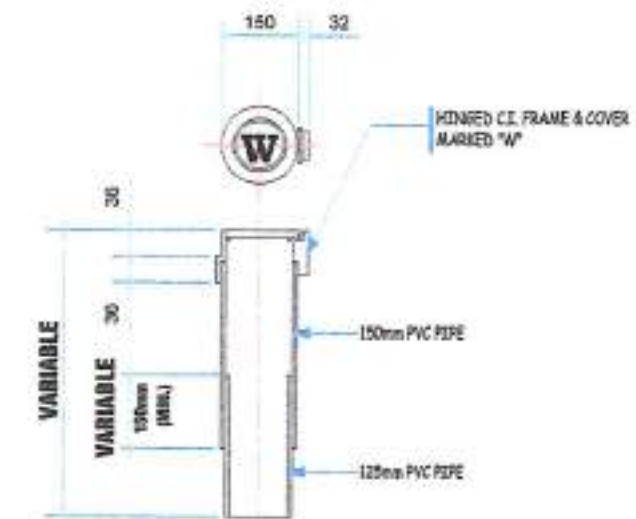
**CONCRETE PAD DETAILS**



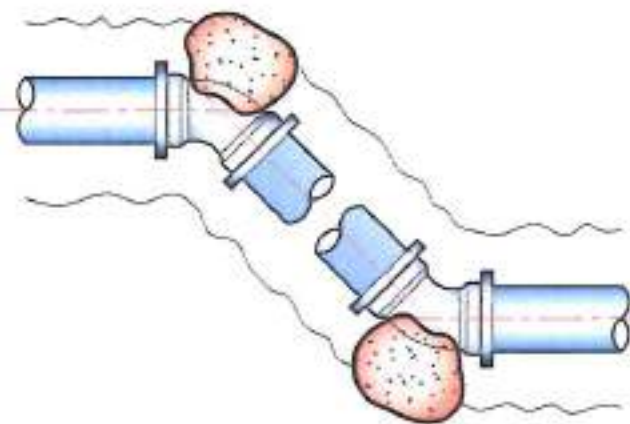
**TEE**



**REDUCER**



**VALVE BOX & COVER DETAILS**



**OFFSET & BEND**

**TABLE OF MINIMUM THRUST BLOCK BEARING AREA IN SQUARE METERS FOR PIPE SIZES**

PIPE SIZE (mm)	TEE & DEAD END	90° BEND	45° BEND	22.5° BEND
150 (6")	0.20	0.28	0.15	0.08
200 (8")	0.35	0.50	0.27	0.14
250 (10")	0.55	0.77	0.42	0.21
300 (12")	0.79	1.11	0.60	0.31

**NOTES:**

1. ABOVE AREAS BASED ON AN ASSUMED SOIL BEARING PRESSURE OF 98
2. REDUCE OR INCREASE AREAS PROPORTIONATELY TO SUIT ACTUAL FIELD CONDITIONS UPON APPROVAL.
3. CONCRETE FOR THRUST BLOCK SHALL BE 13.80 MPa (2000 psi).
4. ALL CONCRETE SHALL BE POURED TO AVOID INTERFERENCE WITH JOINTS.
5. THRUST BLOCK NOT REQUIRED ON STEEL PIPELINE WITH WELDED OR FLANGED JOINTS OR ON SOLVENT WELDED PVC PIPE.
6. WHERE PIPE CONNECTS TO A FITTING IN A STEEL PIPELINE, THE STEEL PIPELINE SHALL BE BLOCKED AS SHOWN HEREON.
7. BEARING AREAS BASED ON INTERNAL PRESSURE OF 106n (150 psi).

**NOTES:**

- ALL DIMENSIONS IN METERS UNLESS SHOWN.  
 VALVES SHALL HAVE A MINIMUM COVER OF 0.30m MEASURED TO THE TOP OF THE OPERATING NUT.  
 VALVES SHALL BE INSTALLED ON EXTENSION OF PROPERTY LINES EXCEPT WHERE OTHERWISE SHOWN OR SPECIFIED.  
 USE FLANGED END GATE VALVE ON STEEL AND PVC PIPELINE INSTALLATIONS.  
 CAST IRON OR STEEL COVERS SHALL BE ADEQUATELY TO CARRY TRAFFIC LOADS.  
 CONCRETE BLOCK MAYBE OMITTED ON WELDED STEEL PIPELINES AT OPTION OF CONTRACTOR.

**THRUST BLOCK DET.**  
SCALE: NTS