

OFFICE OF THE BUILDING OFFICIAL



VICINITY MAP
SCALE: NTS

LAND USE & ZONING

LINE AND GRADE

ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

ELECTRONICS



PIPE DISTRIBUTION LAYOUT
SCALE: 1:1000

GENERAL SANTOS CITY WATER DISTRICT
E. FERNANDEZ STREET, BRGY. LABAO, GEN. SANTOS CITY
ENGINEERING & CONSTRUCTION DEPARTMENT
PLANNING AND DESIGN DIVISION
TEL. NO.: (083) 632-3624

[Signature]
ENGR. ROLLY A. GUNDAY
CIVIL ENGINEER

REG. NO. 78446 TIN NO. 928-928-033
PTR. NO. 9516826 DATE: 02/22/2021

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

National Highway, Brgy. Labao & Katangawan, OSC

CHECKED:
[Signature]
ENGR. ROLLY A. GUNDAY
O/C - Planning & Design Division

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

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

CONTENTS:
AS PER PLAN

DRAWN BY: ESA REV. NO.
CHECKED BY: RAS DATE: 03/23/2021

SHEET NO.
2



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) 552-3624	 ENGR. ROLLY A. GUNDAY CIVIL ENGINEER		TITLE:	CHECKED:	REVIEWED:	APPROVED:	CONTENTS:	SHEET NO.
	REG. NO. 78446	TIN. NO. 609-628-093	INSTALLATION OF 300MM Ø STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES	 ENGR. ROLLY A. GUNDAY OIC - Planning & Design Division	 ENGR. ROGELIO A. BESANA, JR. ASM - Operations & Technical Services	 ENGR. ARN B. GELLANGARIN General Manager A	AS PER PLAN	3
	PTR. NO. 9610656	DATE: 02/22/2021	National Highway, Brgy. Lagao & Bintangayan, GSC	AS PER PLAN	DRAWN BY: ESA	REV. NO.	CHECKED BY: RAD	



PIPE DISTRIBUTION LAYOUT
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

Rolly A. Gunday
ENGR. ROLLY A. GUNDAY
CIVIL ENGINEER
REG. NO. 78445 TIN. NO. 909-828-003
PTR. NO. 0616058 DATE: 02/22/2021

TITLE:
**INSTALLATION OF 300MM STEEL
TRANSMISSION PIPELINES AND
OTHER APPURTENANCES**
National Highway, Brgy. Lagao & Katangayen, GSC

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

REVIEWED:
Rdgelio A. Besana, Jr.
ENGR. RDGELIO A. BESANA, JR.
AGM - Operations & Technical Services



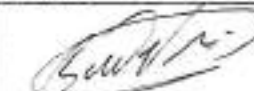
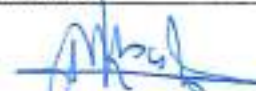

APPROVED:
Arn B. Gellangarin
ENGR. ARN B. GELLANGARIN
General Manager A

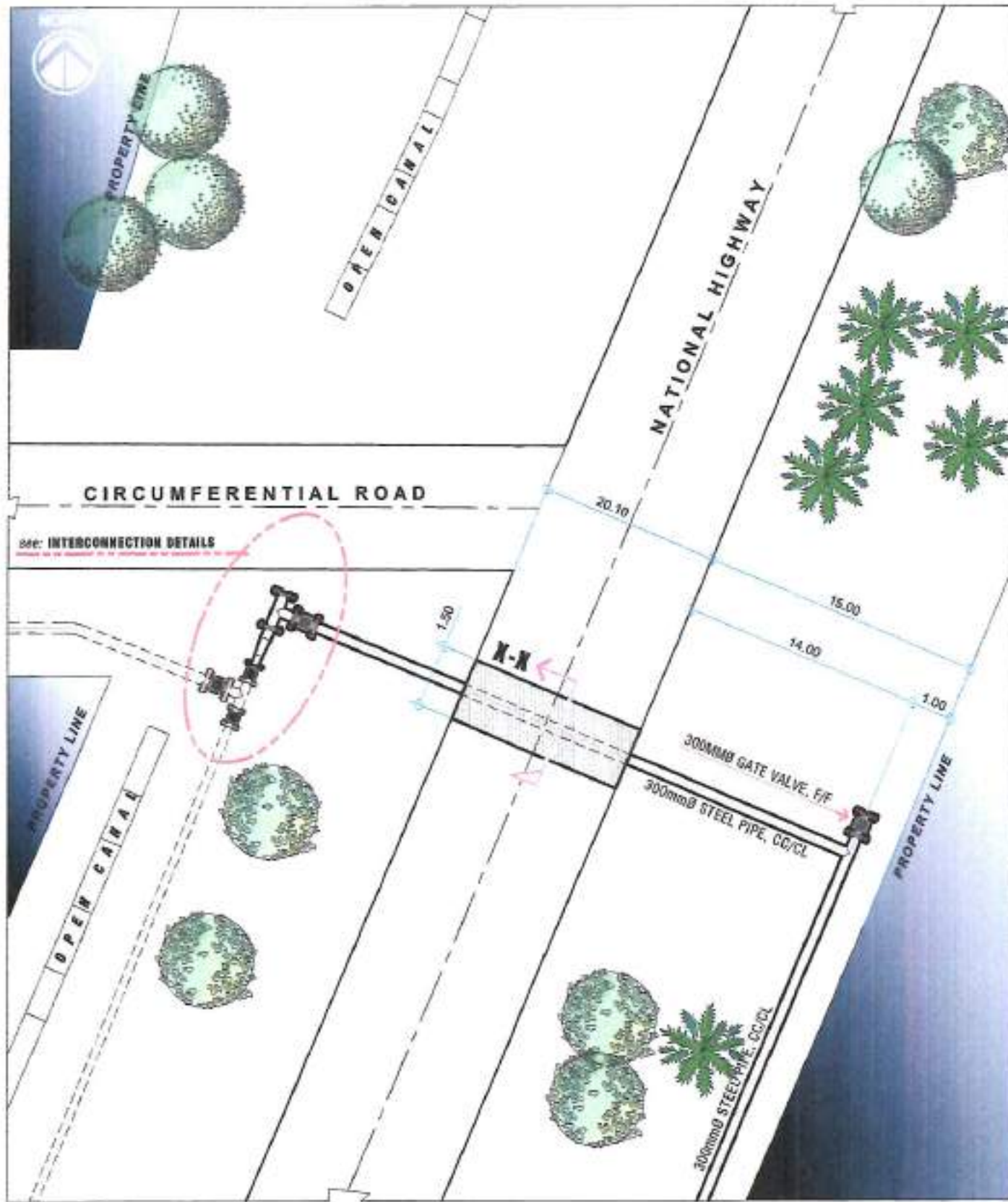
CONTENTS:
AS PER PLAN
DRAWN BY: JS4 REV. NO.
CHECKED BY: RA9 DATE: 03/22/2021

SHEET NO.
4

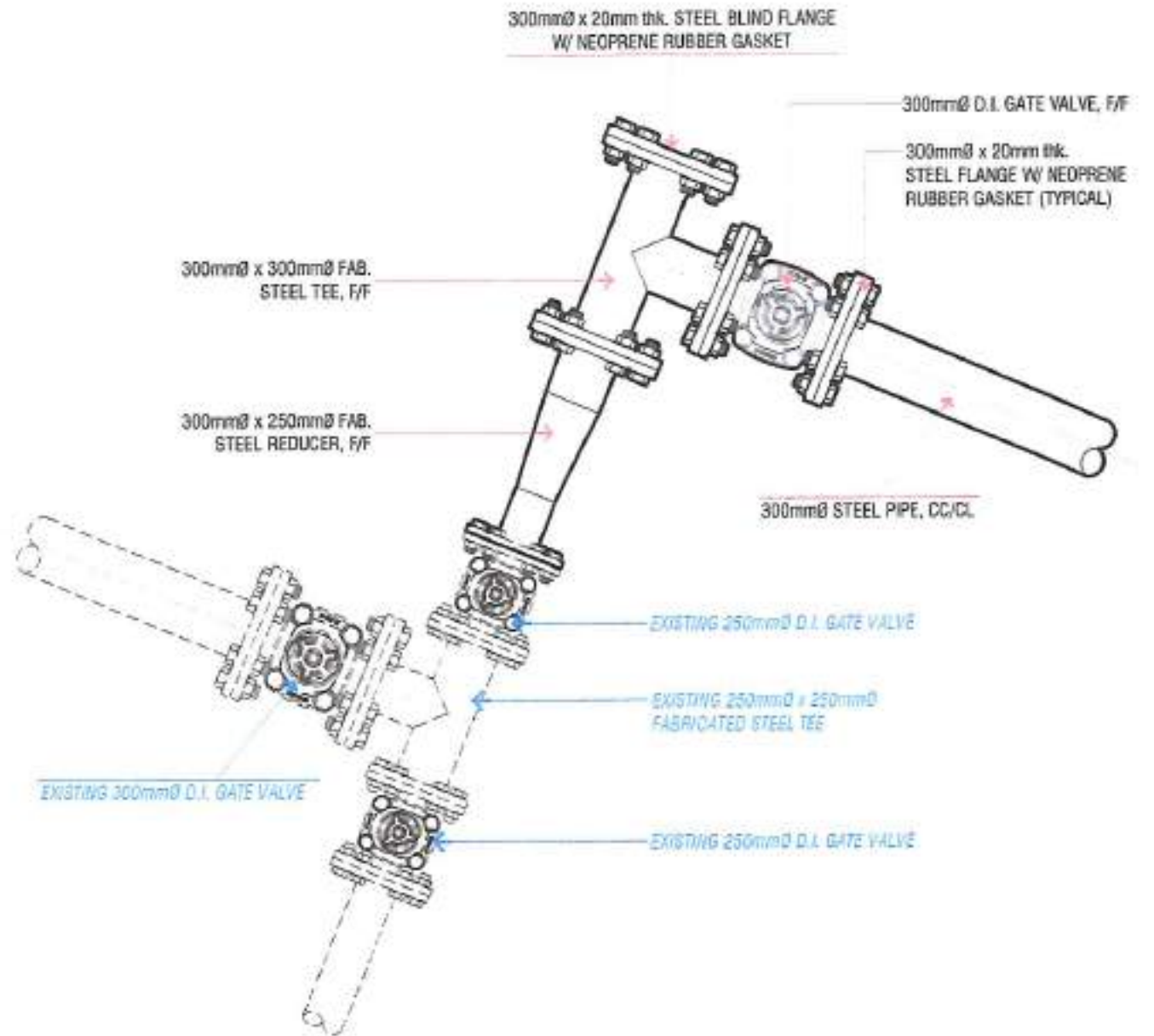


PIPE DISTRIBUTION LAYOUT
SCALE: N.T.S.

 GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824	 ENGR. ROLLY A. GUNDAY CIVIL ENGINEER		TITLE:	CHECKED:	REVIEWED:	APPROVED:	CONTENTS:	SHEET NO.
	REG. NO. 78446 PTR. NO. 961635		INSTALLATION OF 300MM STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES	 ENGR. ROLLY A. GUNDAY OIC - Planning & Design Division	 ENGR. ROGELIO A. BESANA, JR. AGM - Operations & Technical Services	 ENGR. ARN B. GELLANGARIN General Manager A.	AS PER PLAN	5
	TEL. NO. 909-828-033 DATE: 02/22/2021		National Highway, Brgy. Lagro & Katangayan, OSC	ENGR. ROLLY A. GUNDAY OIC - Planning & Design Division	ENGR. ROGELIO A. BESANA, JR. AGM - Operations & Technical Services	ENGR. ARN B. GELLANGARIN General Manager A.	DRAWN BY: ESA CHECKED BY: RAG REV. NO.: DATE: 02/23/2021	



TAPPING POINT DETAILS
SCALE: NTS



INTERCONNECTION DETAILS
SCALE: NTS



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

Rolly A. Gunday
ENGR. ROLLY A. GUNDAY
CIVIL ENGINEER
REG. NO: 78449 TIN. NO: 909-828-033
PTR. NO: 9516886 DATE: 10/22/2021

TITLE:
INSTALLATION OF 300MM STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES
National Highway, Brgy. Lagad & Katangawan, GSC

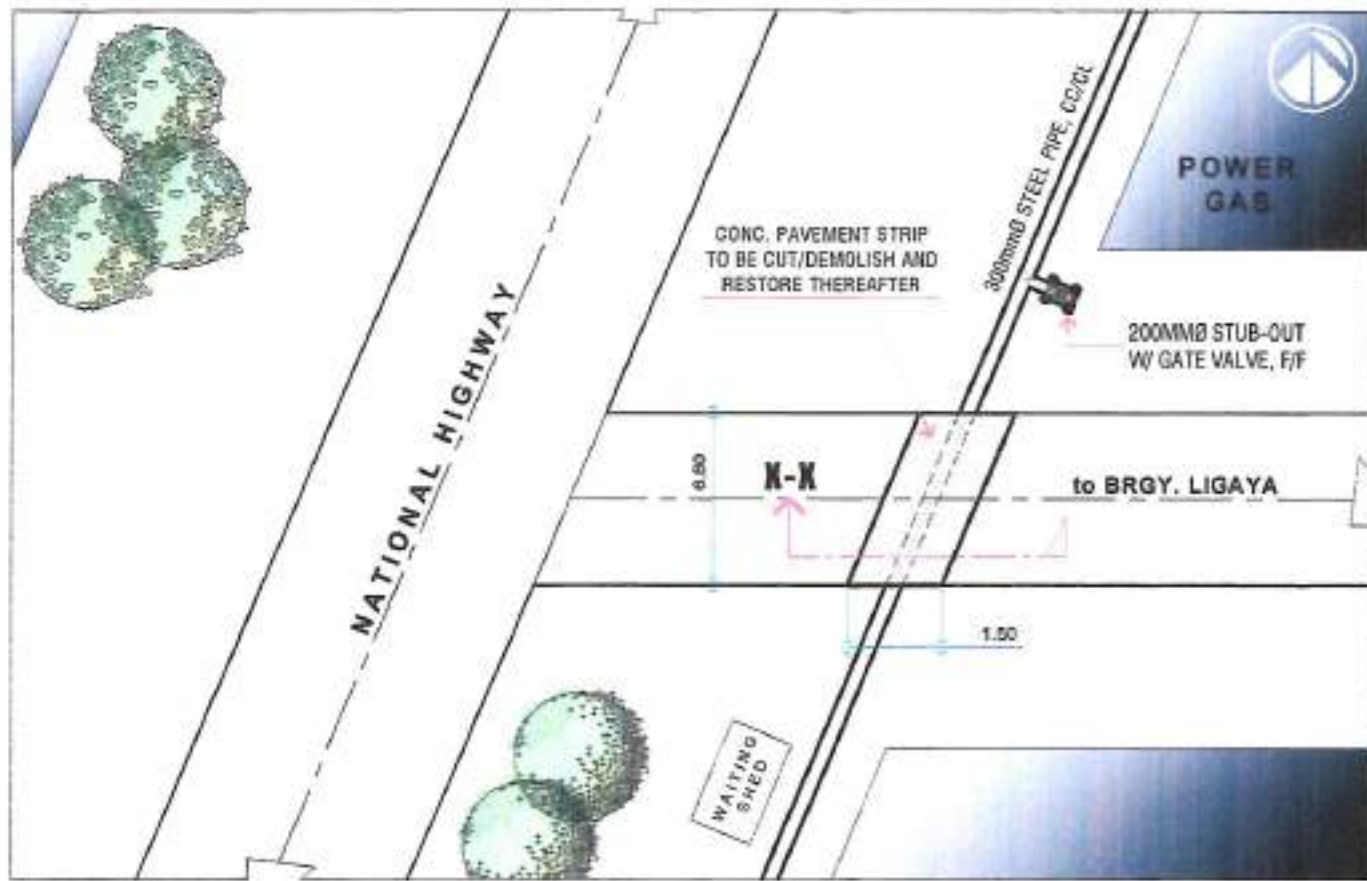
CHECKED:
Rolly A. Gunday
ENGR. ROLLY A. GUNDAY
CIC - Planning & Design Division

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

APPROVED:
Arn B. Gellangarn
ENGR. ARN B. GELLANGARN
General Manager A

CONTENTS:
AS PER PLAN
DRAWN BY: ESA REV. NO.:
CHECKED BY: RAG DATE: 03/23/2021

SHEET NO.
6



DETAIL - A
SCALE: NTS



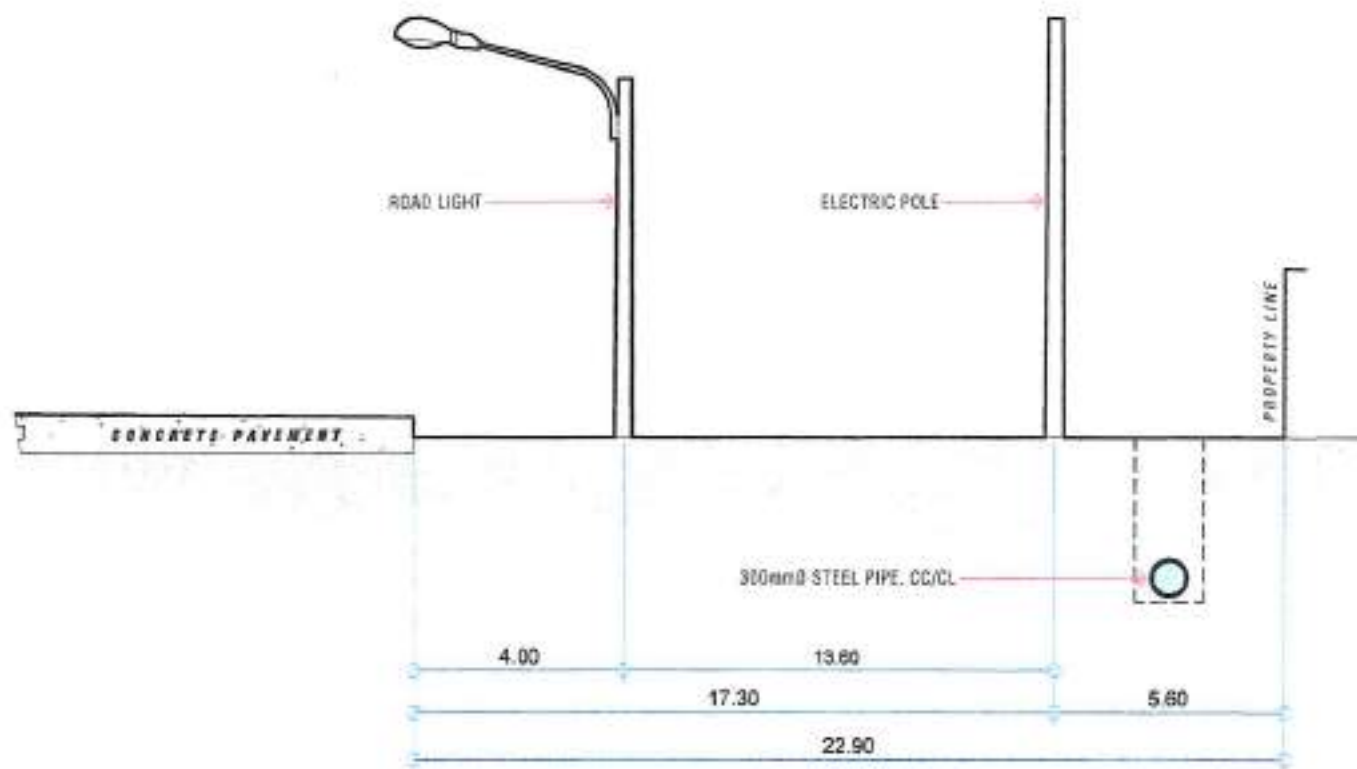
DETAIL - C
SCALE: NTS



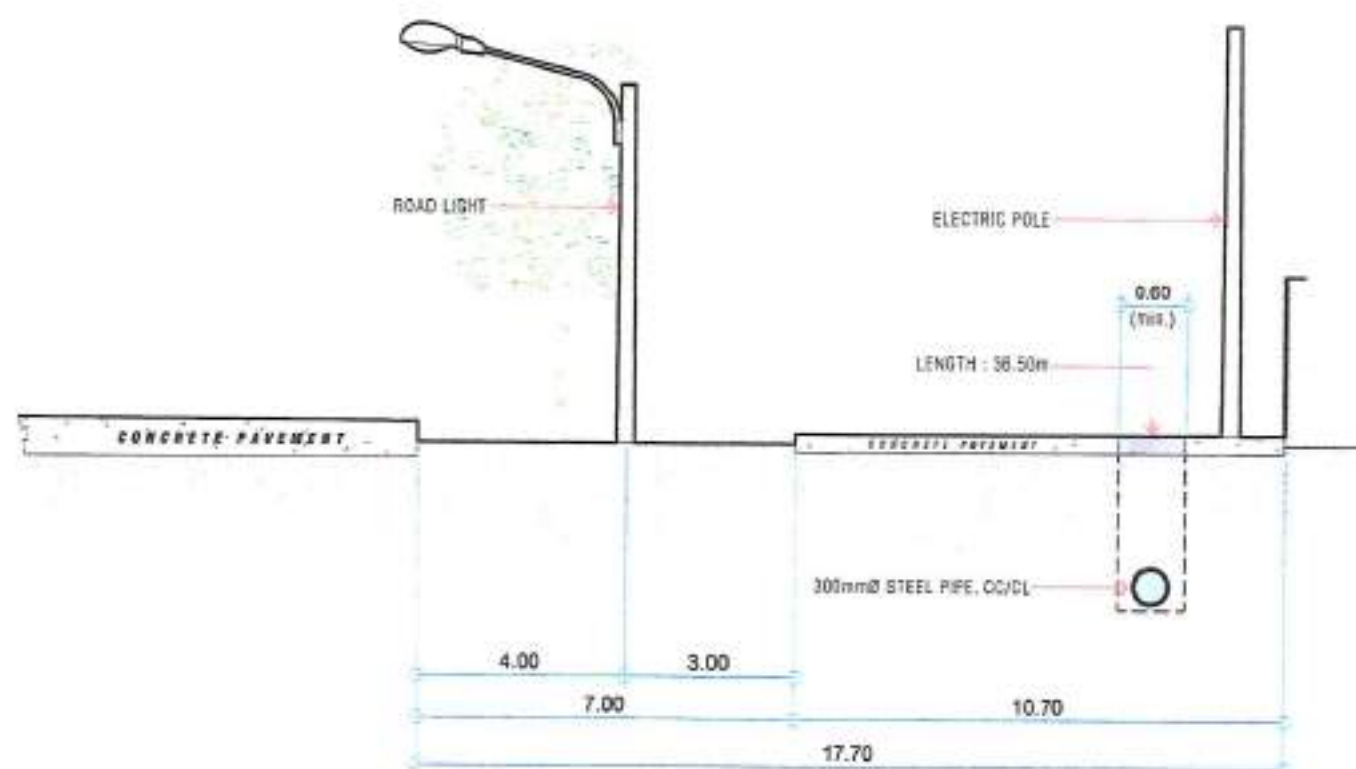
DETAIL - B
SCALE: NTS



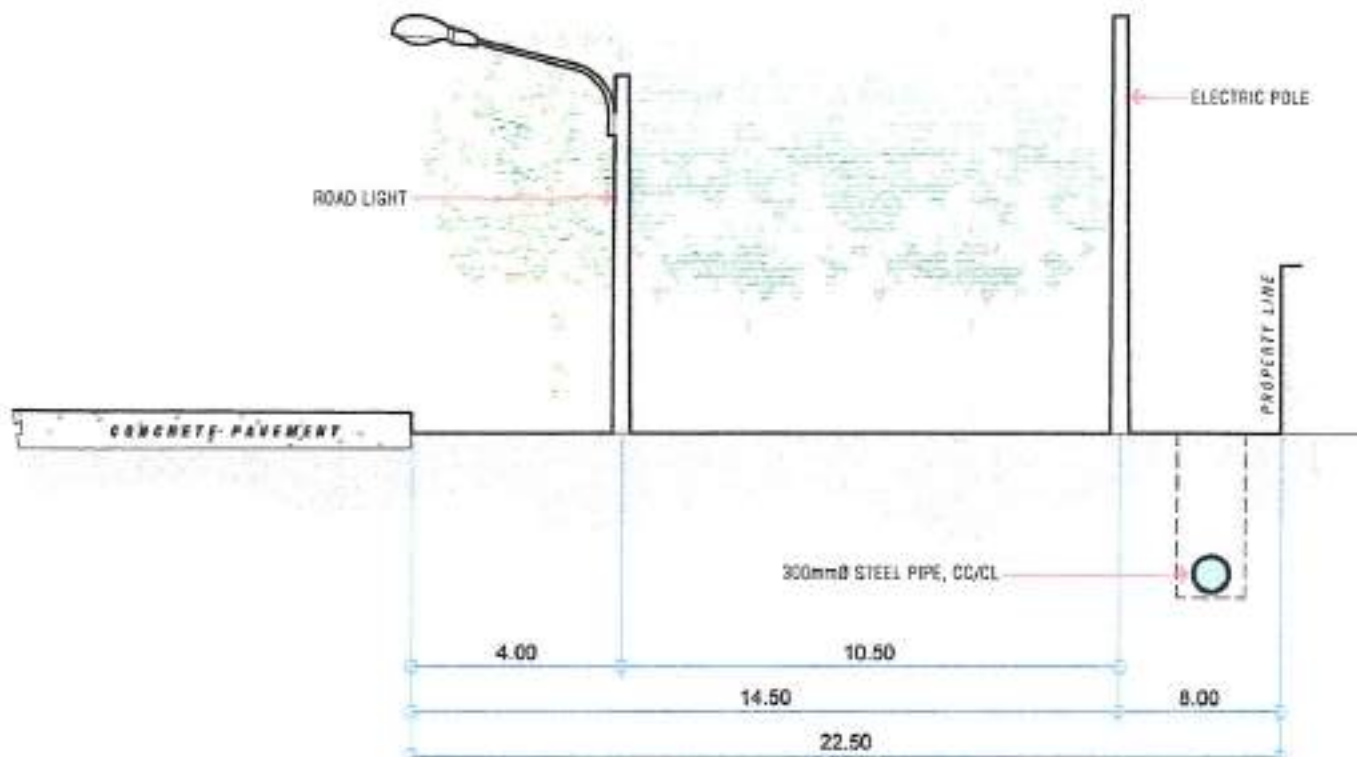
DETAIL - D
SCALE: NTS



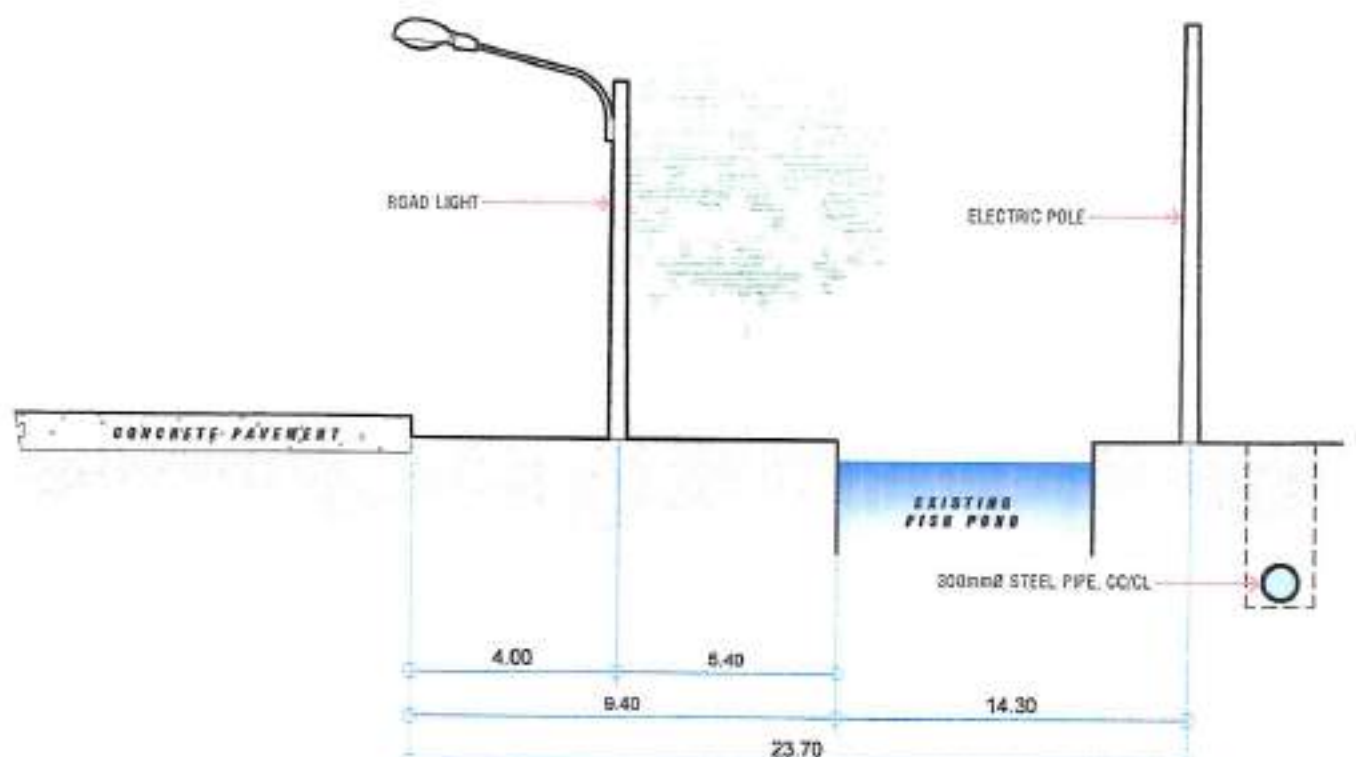
SECTION THRU A-A
SCALE: NTS




SECTION THRU C-C
SCALE: NTS

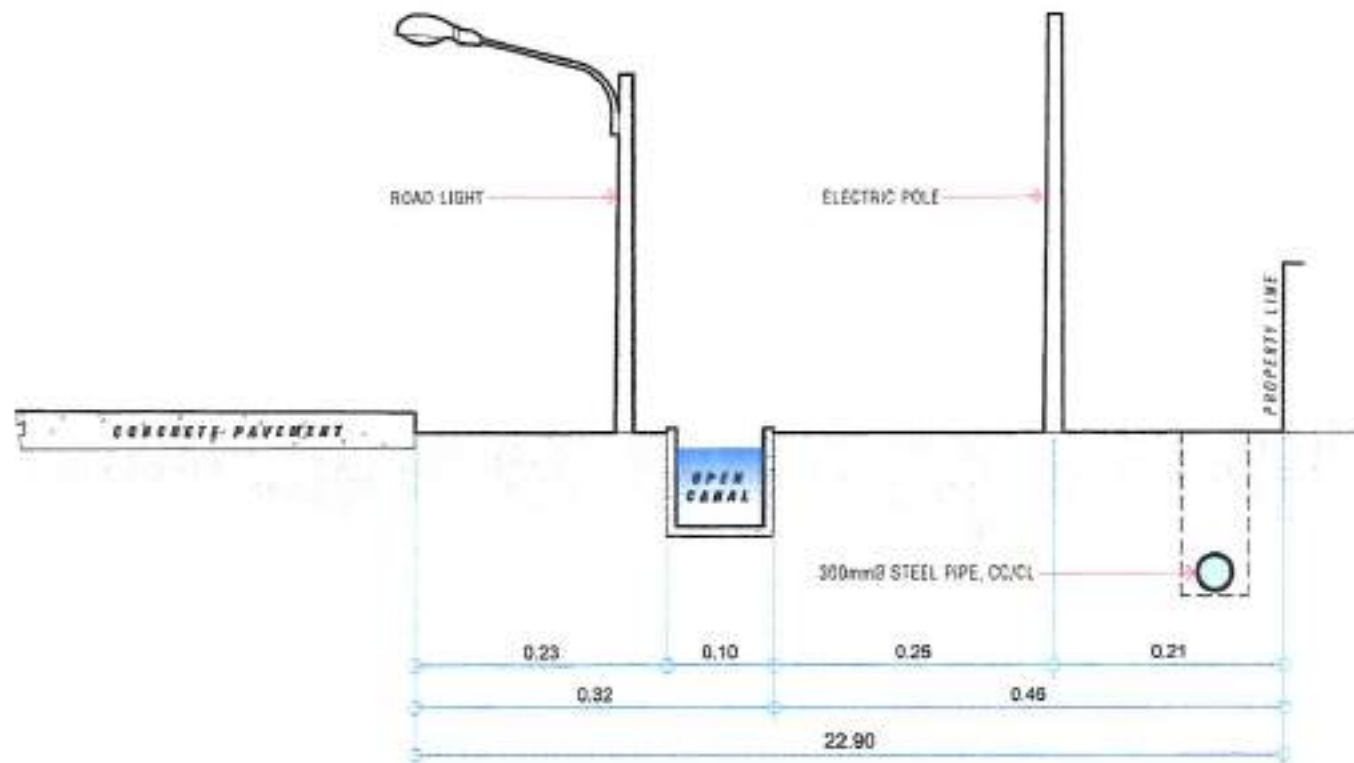


SECTION THRU B-B
SCALE: NTS

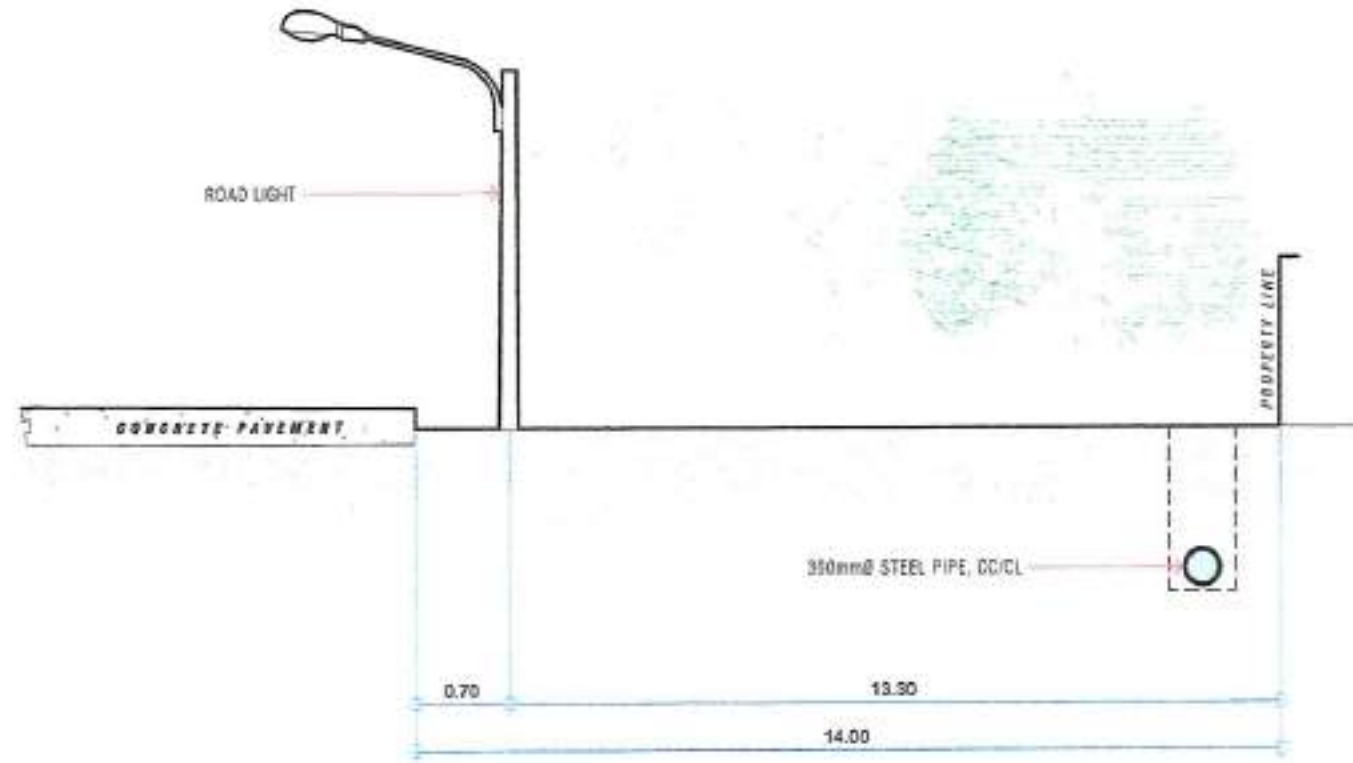


SECTION THRU D-D
SCALE: NTS

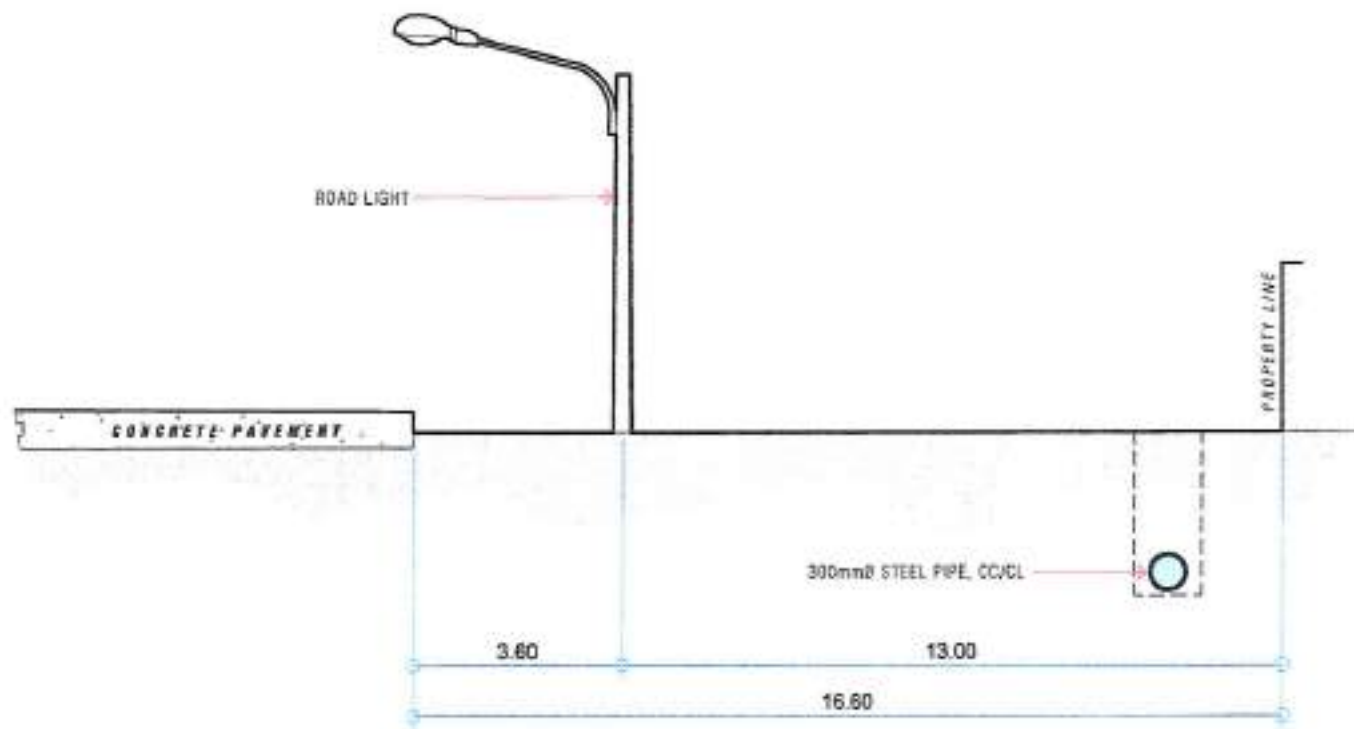
 <p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 532-3824</p>	<p><i>[Signature]</i> ENGR. ROLLY A. GUNDAY CIVIL ENGINEER</p>		TITLE:	CHECKED:	REVIEWED:	APPROVED:	CONTENTS:	SHEET NO.
	<p>REG. NO. 78445 TRN. NO. 909-828-033</p> <p>PTR. NO. 9616050 DATE: 02/22/2021</p>		<p>INSTALLATION OF 300MMØ STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES</p> <p>National Highway, Brgy. Lagao & Katangaran, GSC</p>	<p><i>[Signature]</i> ENGR. ROLLY A. GUNDAY CIC - Planning & Design Division</p>	<p><i>[Signature]</i> ENGR. ROGELIO A. BESANA, JR. AGM - Operations & Technical Services</p>	<p><i>[Signature]</i> ENGR. ARN B. GELLANGARAN General Manager A</p>	<p>AS PER PLAN</p> <p>DRAWN BY: FSA REV. NO. CHECKED BY: RAB DATE: 09/23/2021</p>	<p>8</p>
	<p>GENERAL SANTOS CITY WATER DISTRICT</p>							



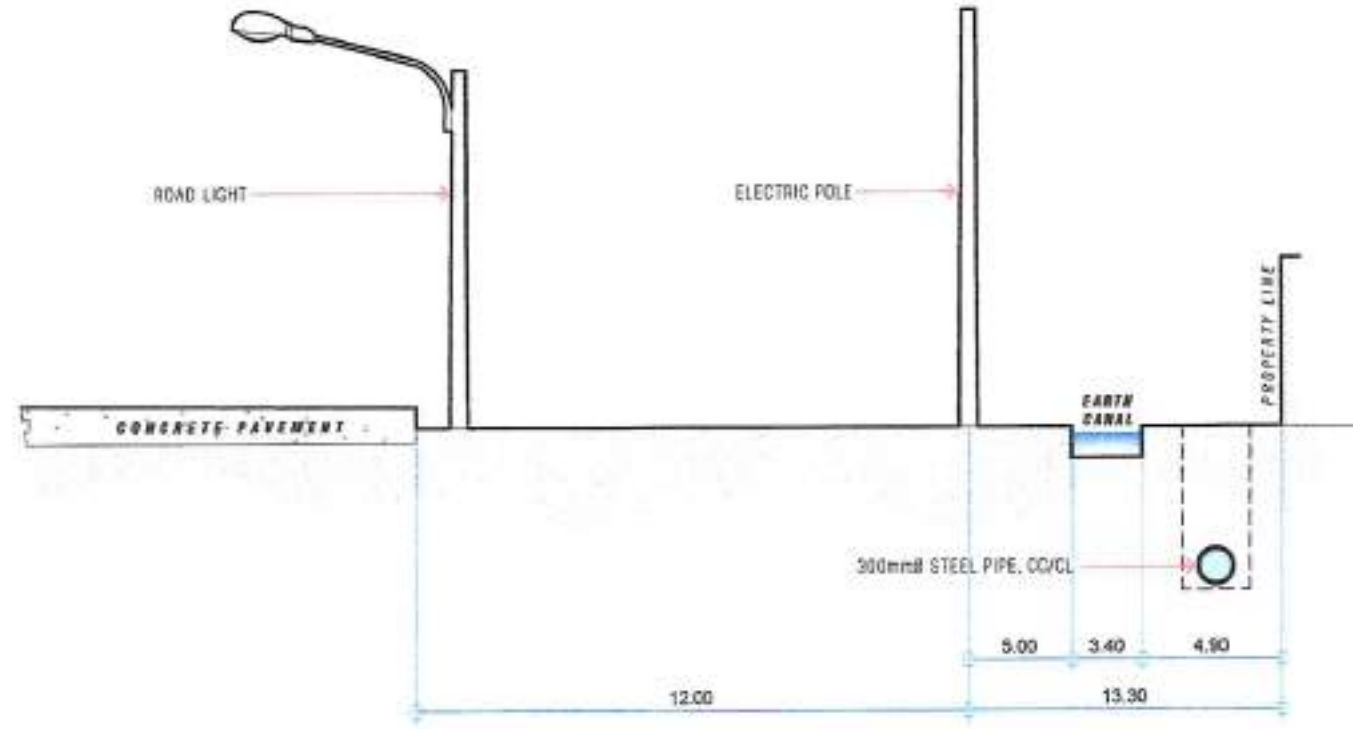
SECTION THRU E-E
SCALE: NTS



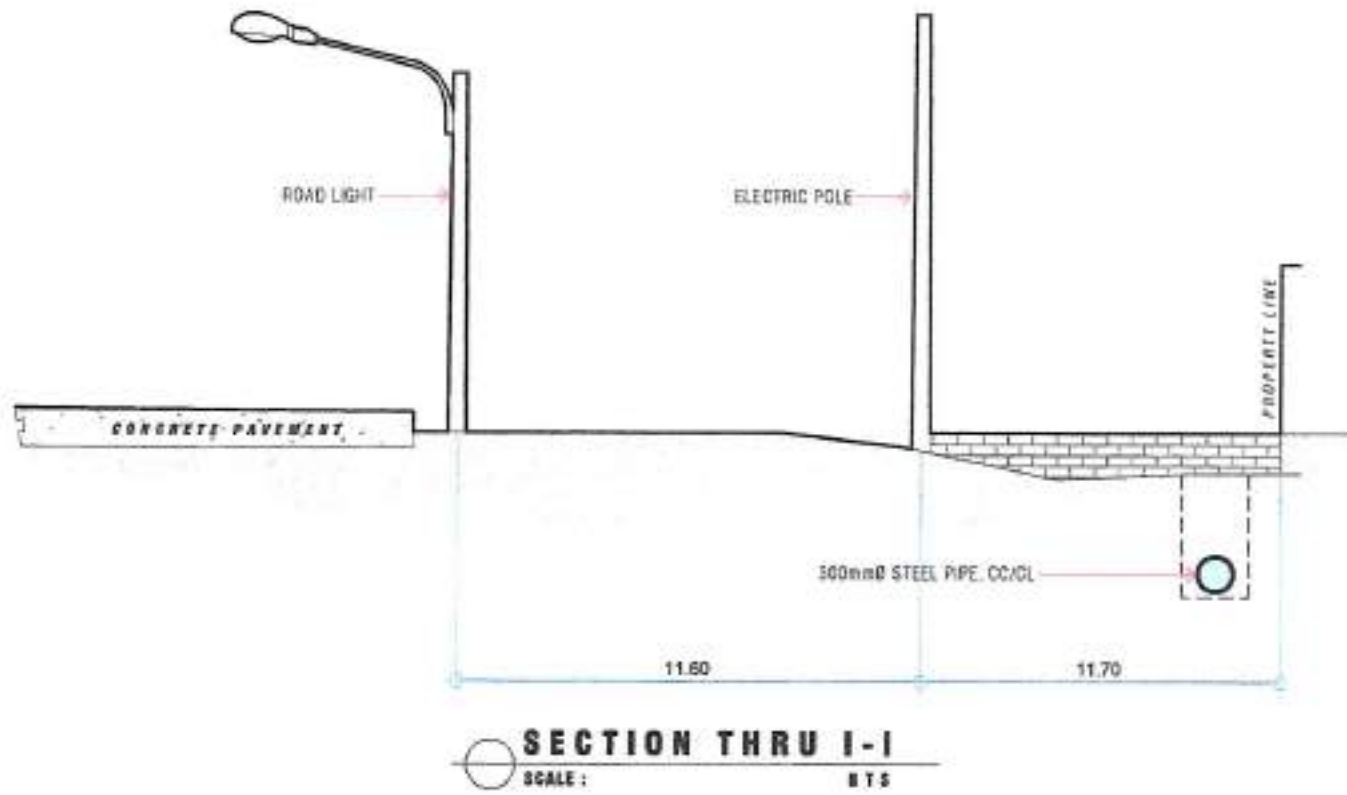
SECTION THRU G-G
SCALE: NTS



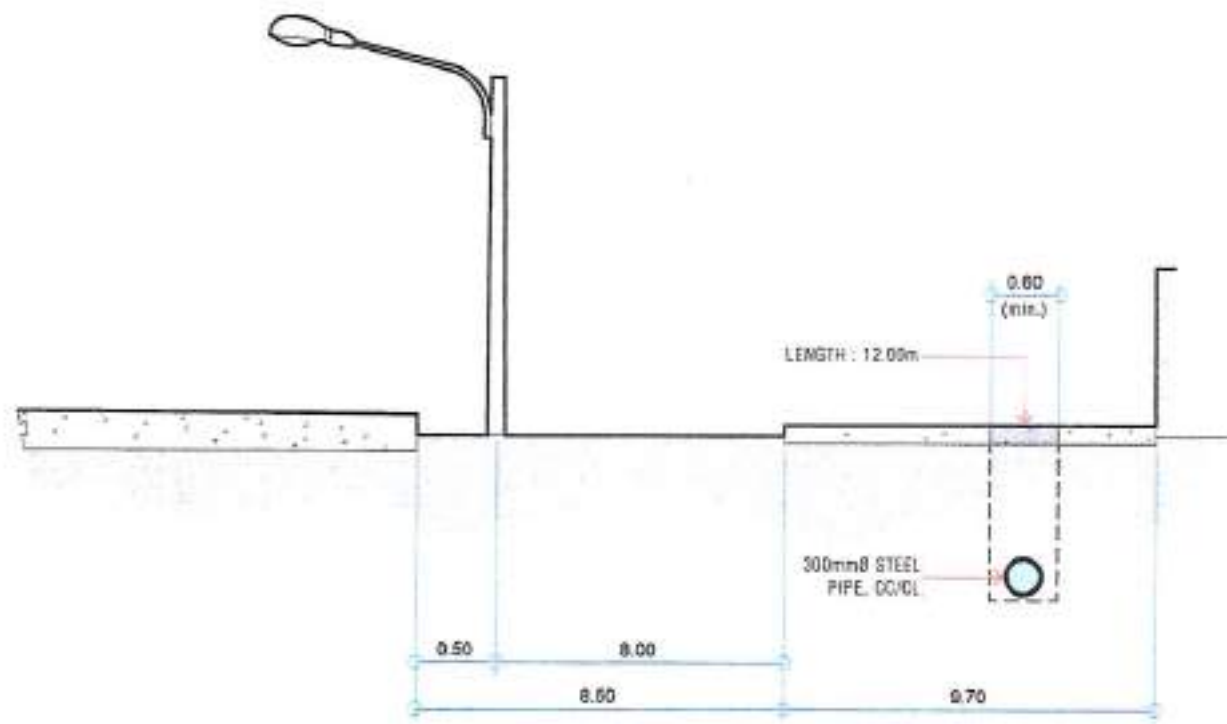
SECTION THRU F-F
SCALE: NTS



SECTION THRU H-H
SCALE: NTS




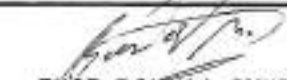



SECTION THRU I-I
SCALE: N T S

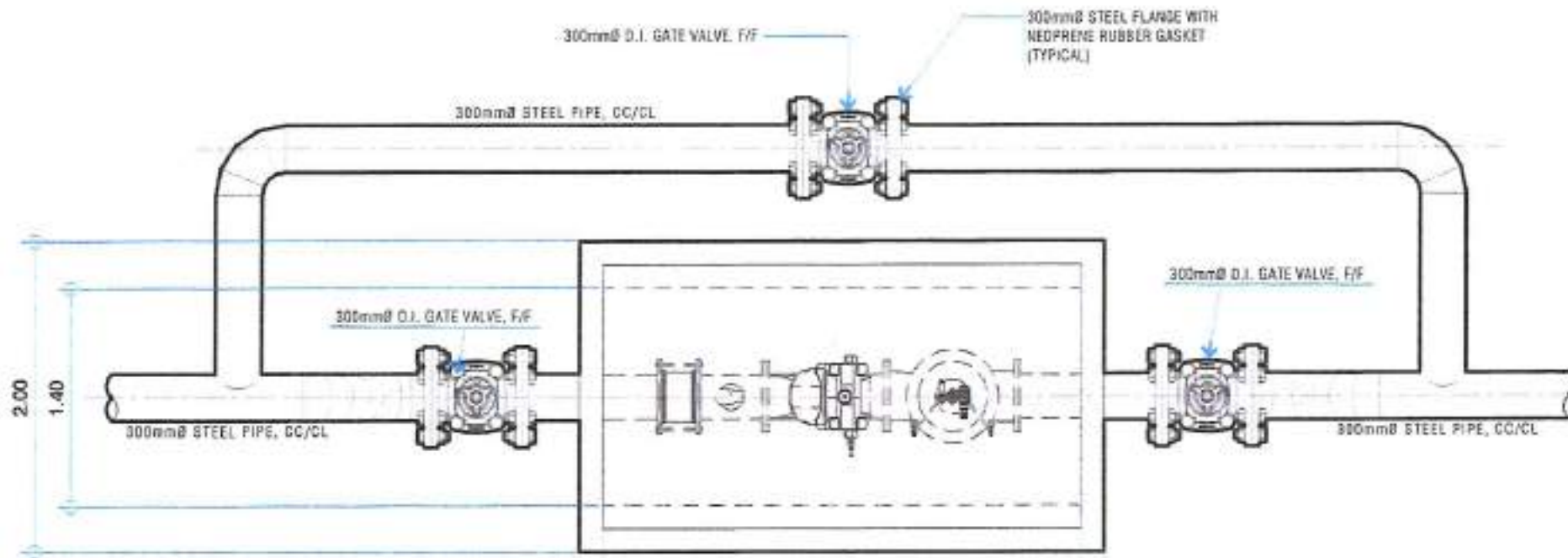


SECTION THRU J-J
SCALE: N T S

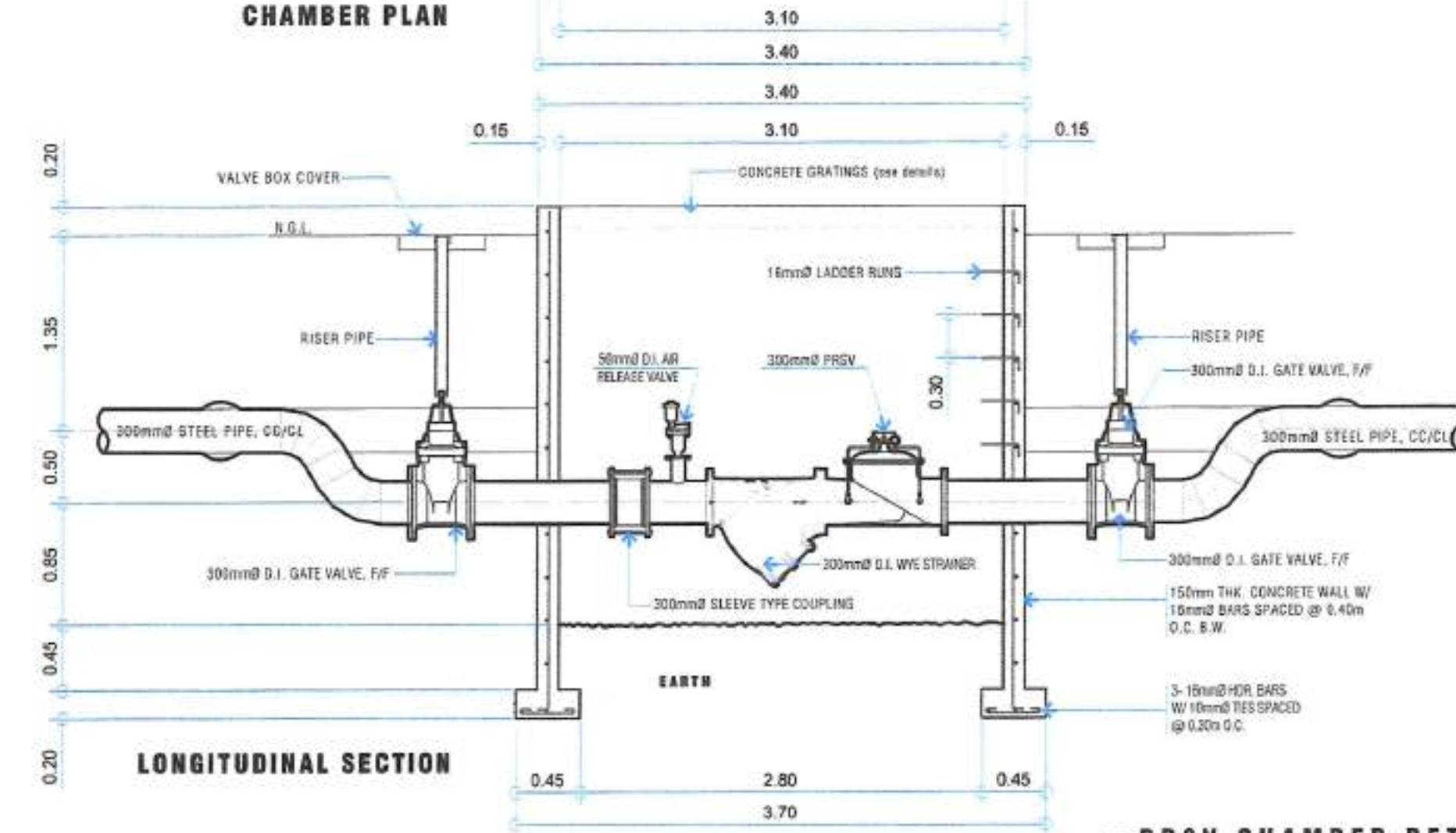
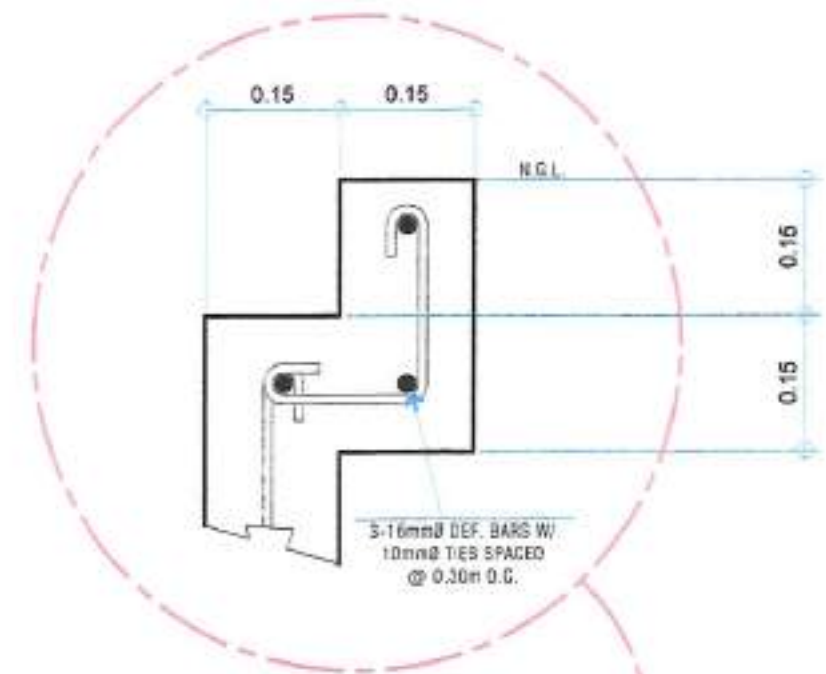


DETAIL - E
SCALE: N T S

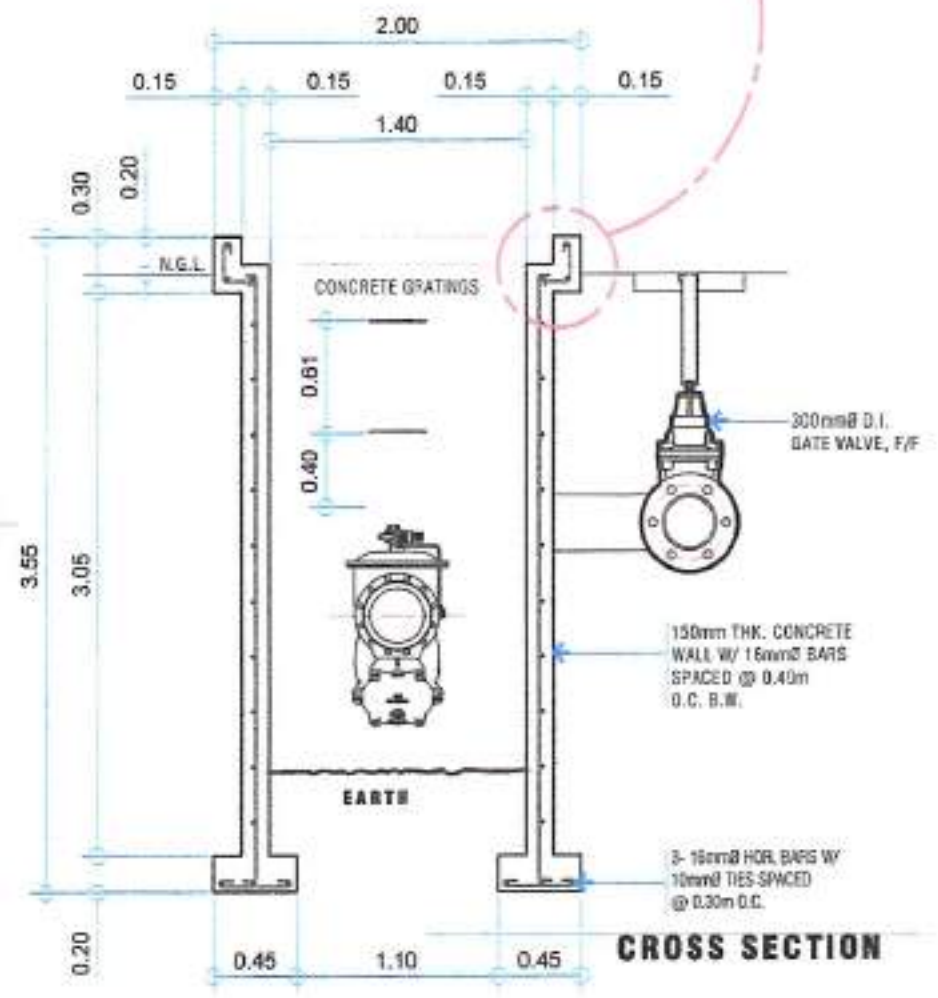
 <p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BINGY, LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 532-3824</p>	 ENGR. ROLLY A. GUNDAY CIVIL ENGINEER	TITLE:	CHECKED:	REVIEWED:	APPROVED:	CONTENTS:	SHEET NO.
		INSTALLATION OF 300MM STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES	 ENGR. ROLLY A. GUNDAY CIC - Planning & Design Division	 ENGR. ROGELIO A. BESANA, JR. AGM - Operations & Technical Services	 ENGR. ARN B. GELLANGARIN General Manager A	AS PER PLAN	10
REG. NO. 78448 PTR. NO. 0018888	TIN. NO. 909-828-023 DATE: 02/22/2021	National Highway, Bingy, Lagao & Katangwan, GSC	OIC - Planning & Design Division	AGM - Operations & Technical Services	General Manager A	DRAWN BY: ESA CHECKED BY: RAG	REV. NO. DATE: 03/23/2021



CHAMBER PLAN



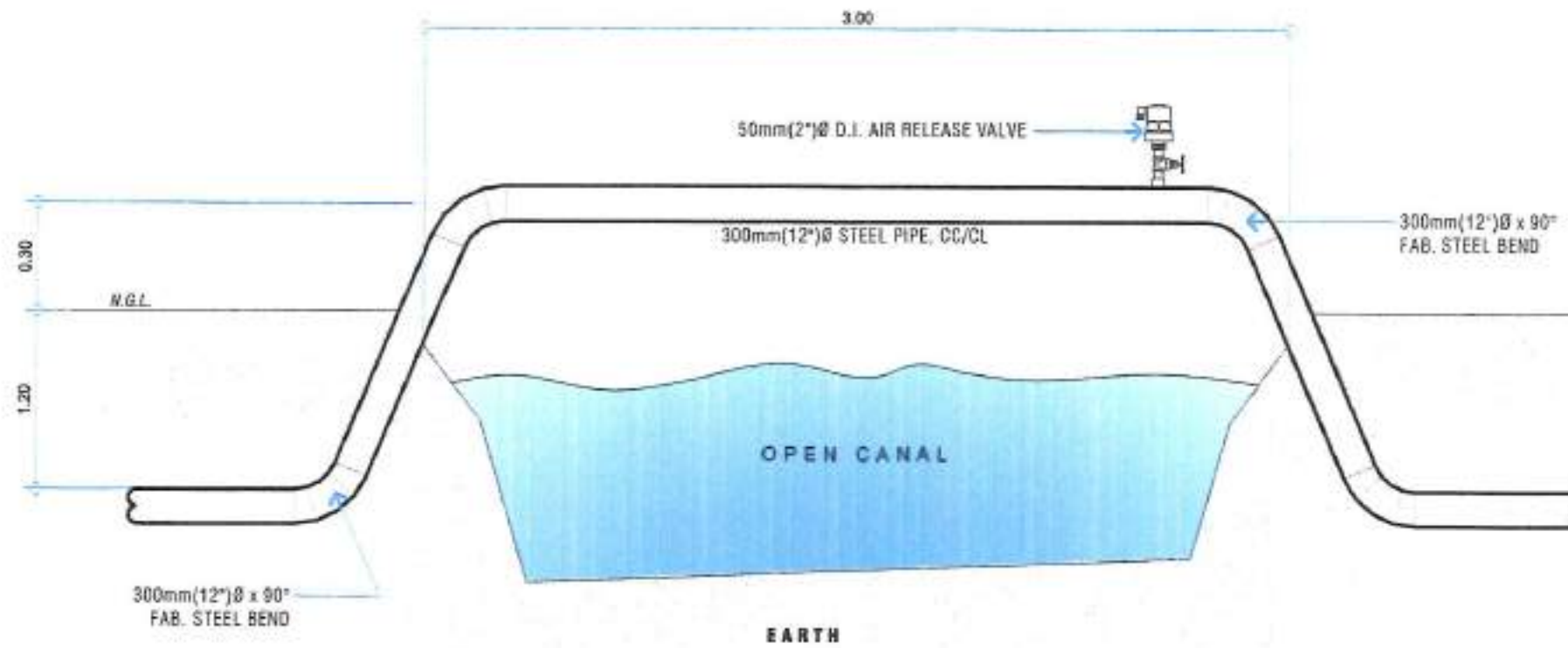
LONGITUDINAL SECTION



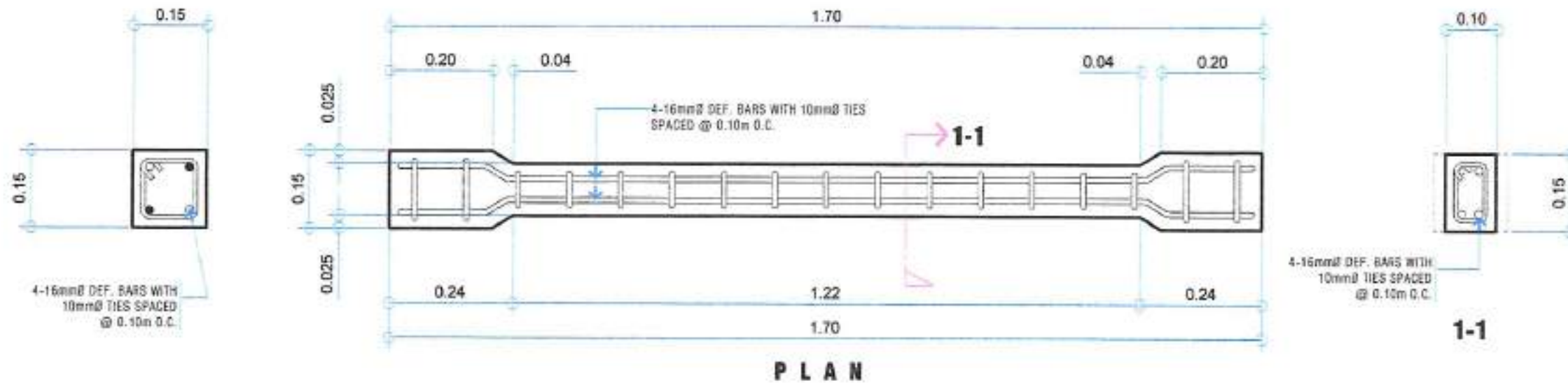
CROSS SECTION

PRSV CHAMBER DETAILS
SCALE: HTS

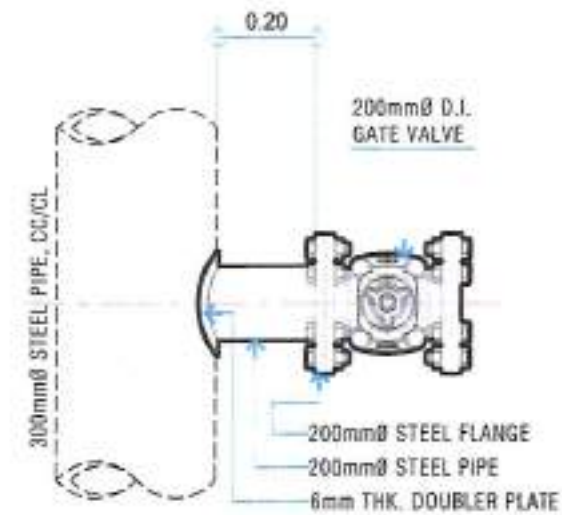
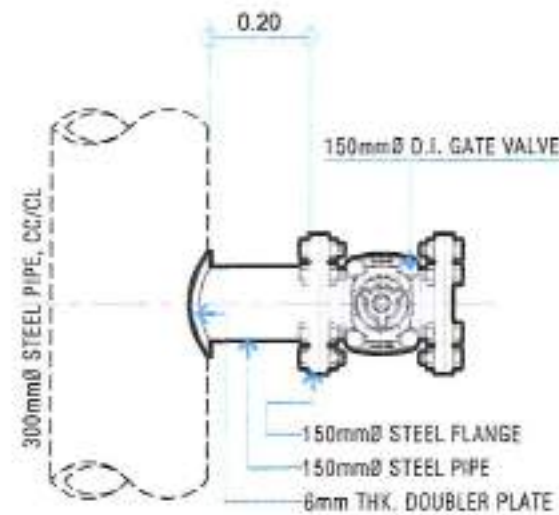
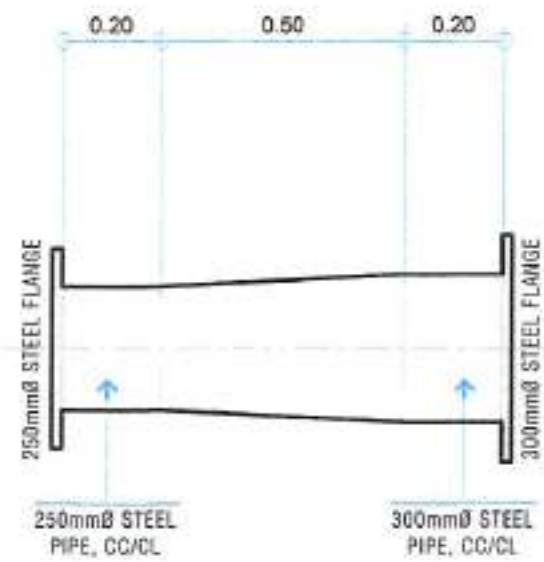
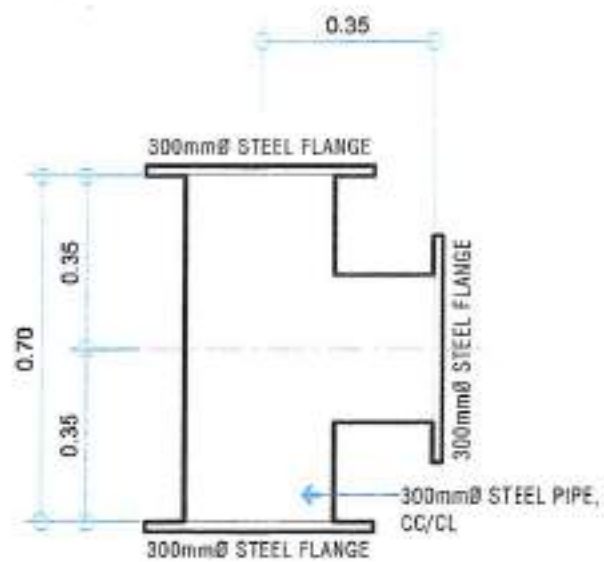
<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 502-3824</p>	<p>ENGR. ROLLY A. GUNDAY CIVIL ENGINEER</p>	TITLE:	CHECKED:	REVIEWED:	APPROVED:	CONTENTS:	SHEET NO.	
	<p>REG. NO. 78445</p> <p>PTR. NO. 9516856</p>	<p>T.M. NO. 909-828-033</p> <p>DATE: 02/22/2021</p>	<p>INSTALLATION OF 300MMØ STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES</p> <p>National Highway, Brgy. Lagao & Katsigawan, GSC</p>	<p>ENGR. ROLLY A. GUNDAY CIC - Planning & Design Division</p>	<p>ENGR. ROGELIO A. BESANA, JR. ACM - Operations & Technical Services</p>	<p>ENGR. ARN B. GELLANGARIN General Manager A</p>	<p>AS PER PLAN</p> <p>DRAWN BY: SSA</p> <p>CHECKED BY: RAG</p> <p>REV. NO.</p> <p>DATE: 03/23/2021</p>	<p>11</p>
	<p>REG. NO. 78445</p> <p>PTR. NO. 9516856</p> <p>T.M. NO. 909-828-033</p> <p>DATE: 02/22/2021</p> <p>National Highway, Brgy. Lagao & Katsigawan, GSC</p> <p>ENGR. ROLLY A. GUNDAY CIC - Planning & Design Division</p> <p>ENGR. ROGELIO A. BESANA, JR. ACM - Operations & Technical Services</p> <p>ENGR. ARN B. GELLANGARIN General Manager A</p> <p>AS PER PLAN</p> <p>DRAWN BY: SSA</p> <p>CHECKED BY: RAG</p> <p>REV. NO.</p> <p>DATE: 03/23/2021</p>							



CROSSING DETAILS
SCALE : **BTS**



CONCRETE GRATINGS DETAILS
SCALE : **1 : 10 M**



300MMØ x 300MMØ TEE DETAILS

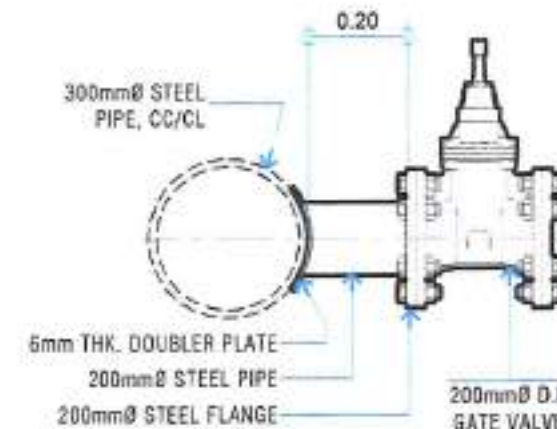
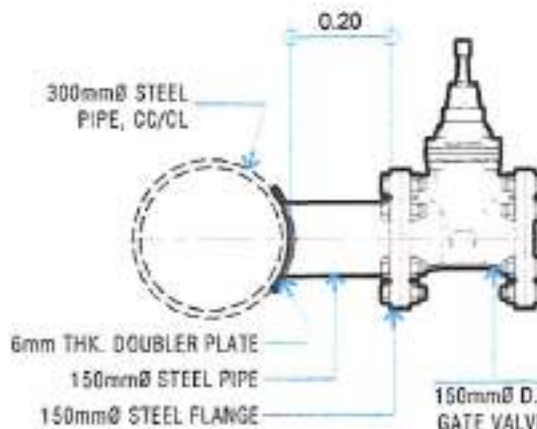
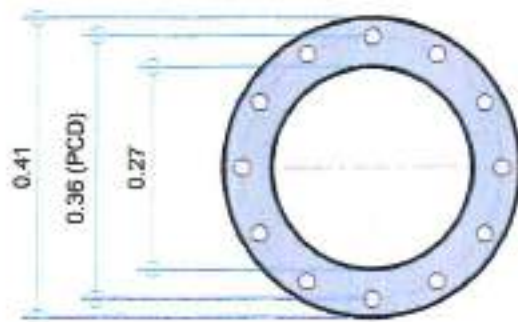
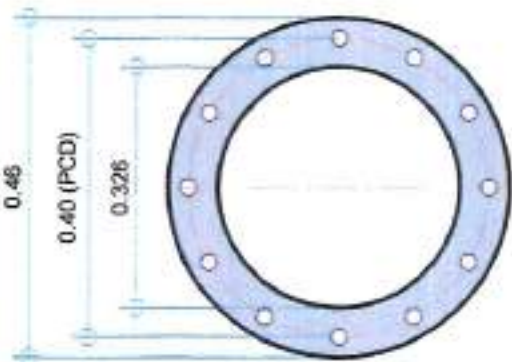
SCALE: 1:10 M

300MMØ x 250MMØ REDUCER DET.

SCALE: 1:10 M

PLAN

PLAN



300MMØ FLANGE DETAILS

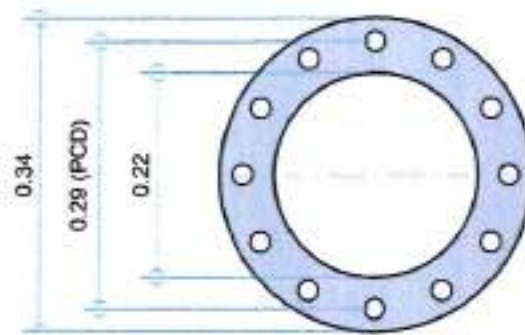
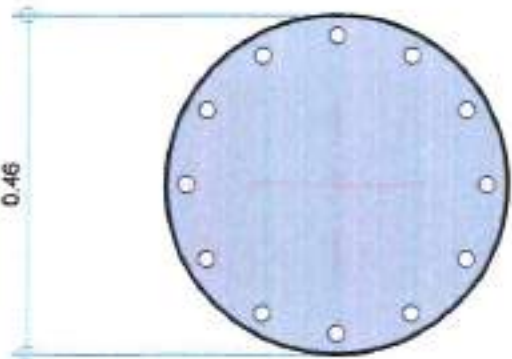
SCALE: 1:10 M

250MMØ FLANGE DETAILS

SCALE: 1:10 M

SECTION

SECTION



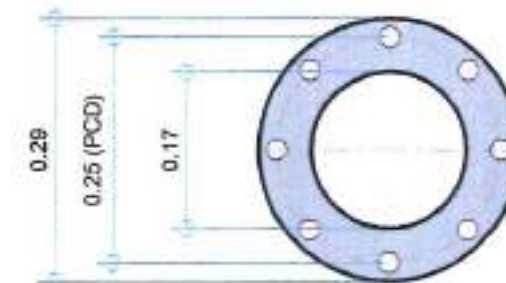
150MMØ STUB-OUT DETAILS

SCALE: 1:15 M

200MMØ STUB-OUT DETAILS

SCALE: 1:15 M

NOTE:
• PROVIDE NEOPRENE RUBBER GASKET FOR INSTALLATION OF GATE VALVES AND STEEL FLANGES.



150MMØ FLANGE DETAILS

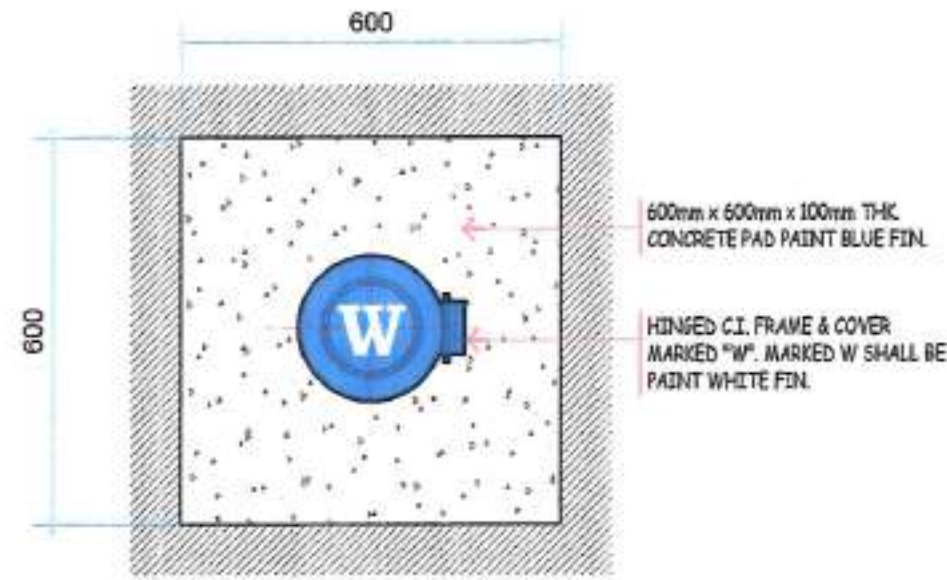
SCALE: 1:10 M

300MMØ BLIND FLANGE DETAILS

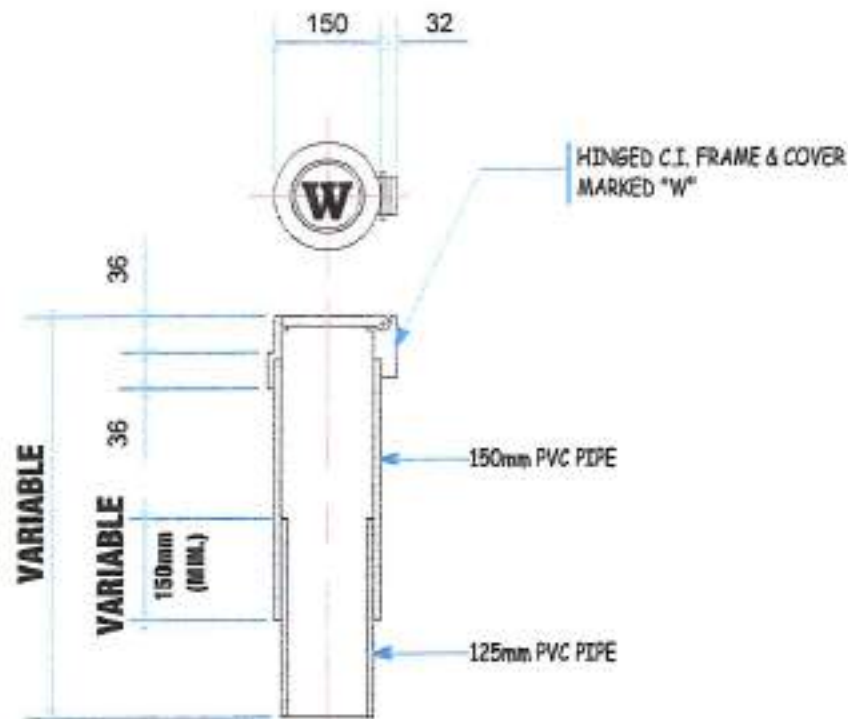
SCALE: 1:10 M

NOTES:

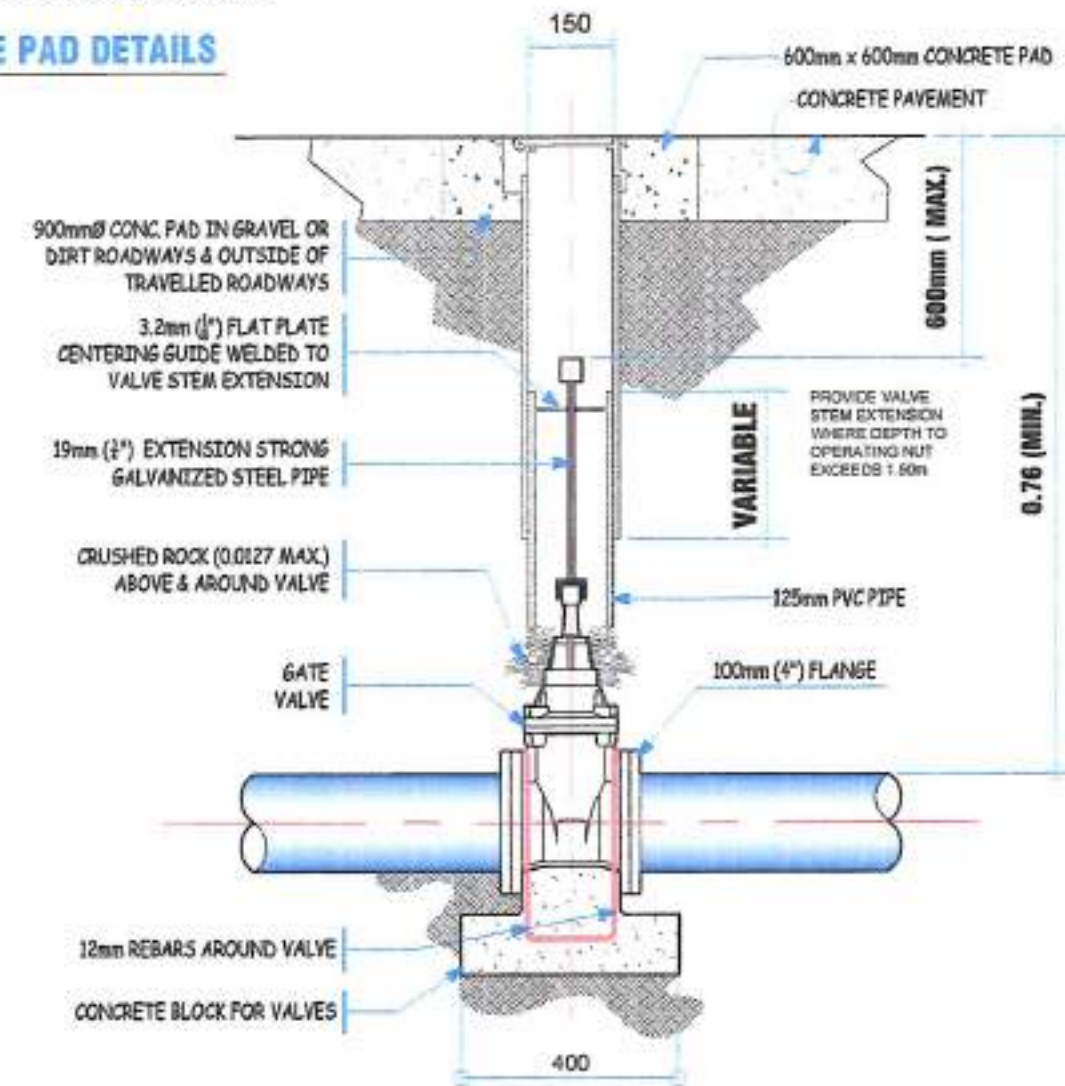
- ALL DIMENSIONS IN METERS UNLESS SHOWN.
- VALVES SHALL HAVE A MINIMUM COVER OF 0.30m MEASURED TO THE TOP OF THE OPERATING NUT.
- VALVES SHALL BE INSTALLED ON EXTENSION OF PROPERTY LINES EXCEPT WHERE THERWISE SHOWN OR SPECIFIED.
- USE FLANGED END GATE VALVE ON STEEL AND PVC PIPELINE INSTALLATIONS.
-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



CONCRETE PAD DETAILS



VALVE BOX & COVER DETAILS



INSTALLATION OF VALVE DETAILS
SCALE: N.T.S.



GENERAL SANTOS CITY WATER DISTRICT
E. FERNANDEZ STREET, BRBY, LAGAD, GEN. SANTOS CITY
ENGINEERING & CONSTRUCTION DEPARTMENT
PLANNING AND DESIGN DIVISION
TEL. NO.: (063) 552 - 3824

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

REQ. NO. 78446
PTR. NO. 9916856

TIN. NO. 929-628-033
DATE: 02/22/2021

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

National Highway, Brgy. Lagas & Kasangawan, GGC

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

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

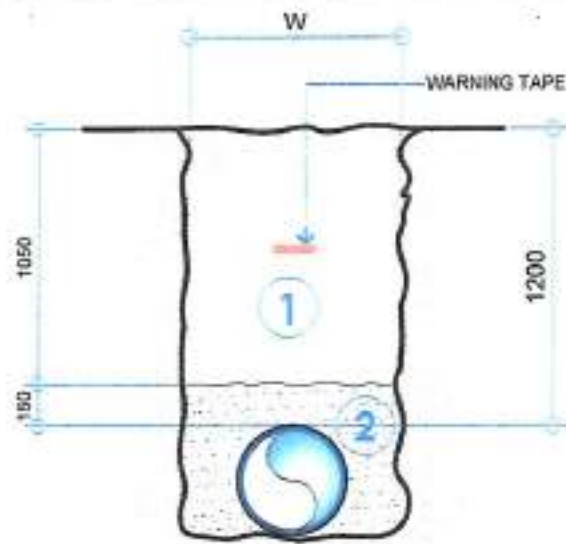
APPROVED:
Engr. Arn B. Gellangarin
ENGR. ARN B. GELLANGARIN
General Manager A

CONTENTS:
AS PER PLAN

DRAWN BY: ESA
CHECKED BY: RAO

REV. NO.
DATE: 03/23/2021

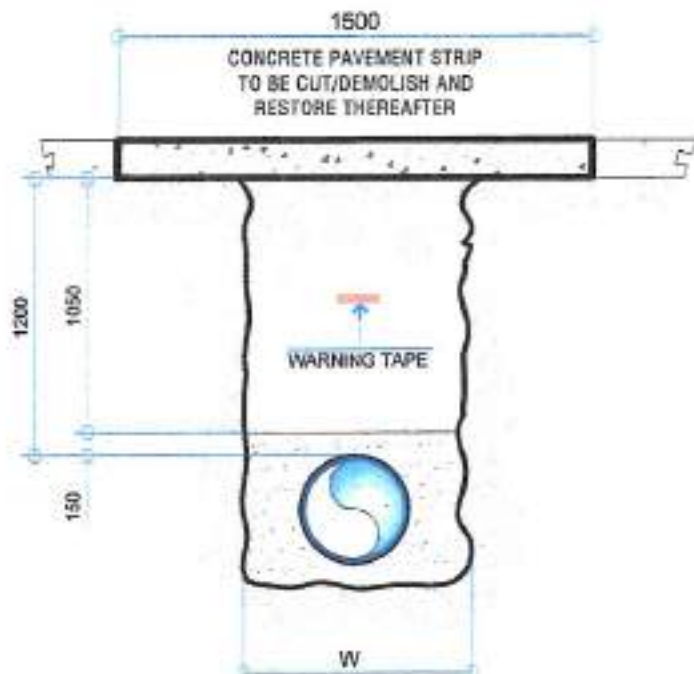
SHEET NO.
14



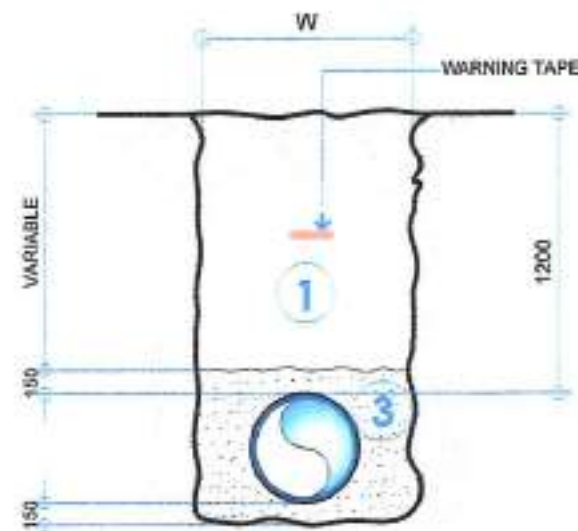
NORMAL INSTALLATION WHERE SAND BEDDING/ BACKFILL NOT REQUIRED



IN ROCK OR WHEN ORDERED BY ENGINEER



SECTION THRU X-X

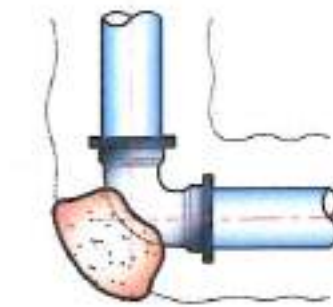


INSTALLATIONS IN NON-GRANULAR SOIL AS DETERMINED BY ENGINEER

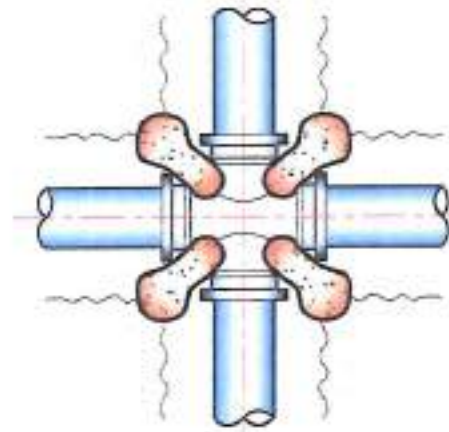
TABLE OF TRENCH DIMENSION (mm)

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

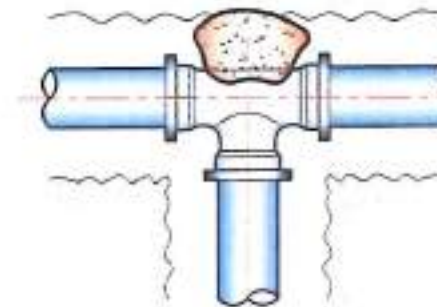
TRENCH DETAILS



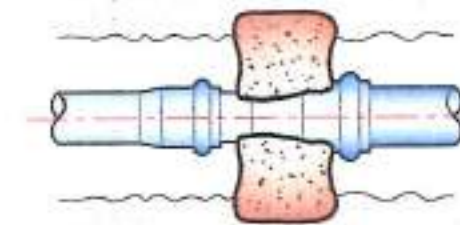
90° ELBOW or BEND



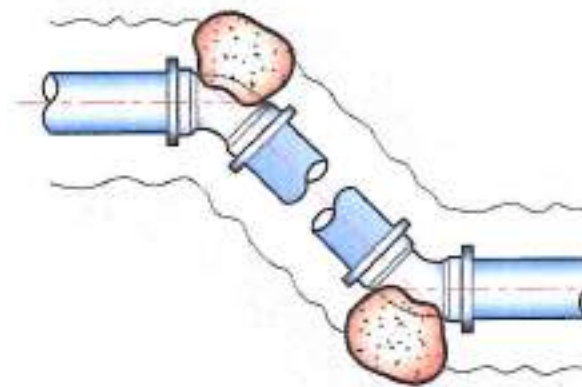
CROSS TEE



TEE



REDUCER



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:

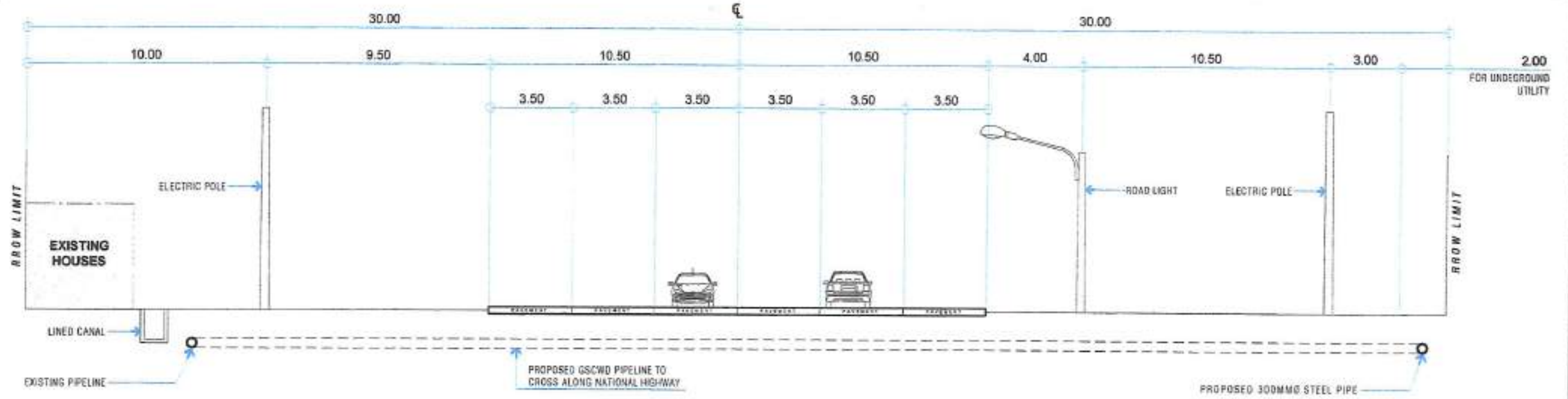
1. ABOVE AREAS BASED ON AN ASSUMED SOIL BEARING PRESSURE OF 90 KPA.
2. REDUCE OR INCREASE AREAS PROPORTIONATELY TO SUIT ACTUAL FIELD CONDITIONS UPON APPROVAL.
3. CONCRETE FOR THRUST BLOCK SHALL BE 12.80 MPa (2500 psi).
4. ALL CONCRETE SHALL BE POLURED TO AVOID INTERFERENCE WITH JOINTS.
5. THRUST BLOCK NOT REQUIRED ON STEEL PIPELINE WITH WELDED OR FLANGED JOINTS OR ON SOLVENT WELDED PVC PIPE.
6. WHERE PIPE CONDUITS TO A FITTING IN A STEEL PIPELINE, THE STEEL PIPELINE SHALL BE BLOTTED AS SHOWN HEREON.
7. BEARING AREAS BASED ON INTERNAL PRESSURE OF 100m (150 psi).

THRUST BLOCK DET.

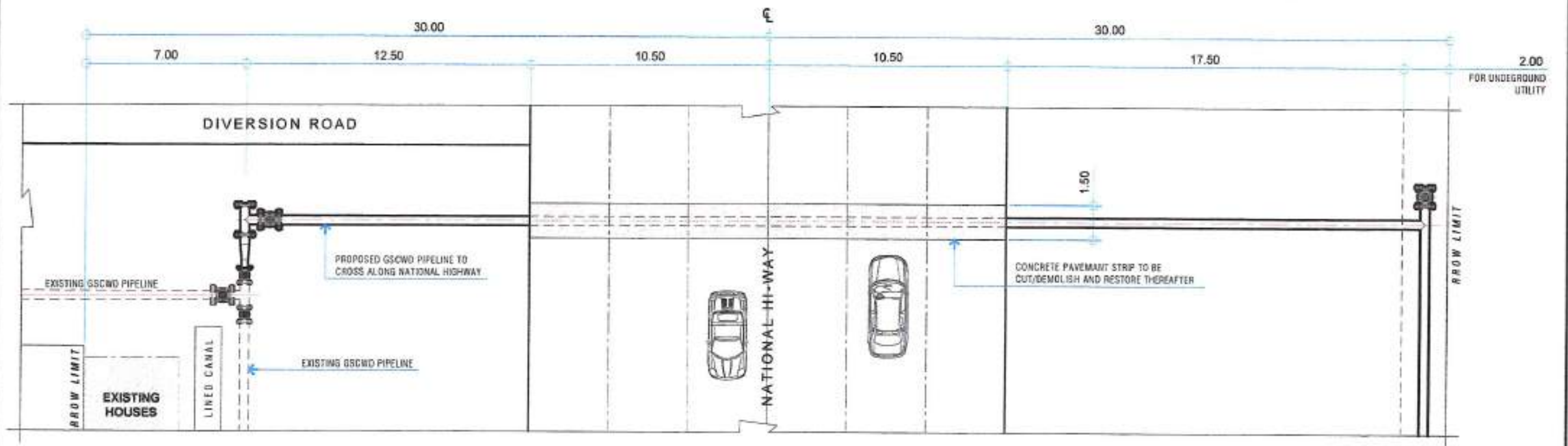
LEGEND :

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.

<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO. : (063) 552 - 3824</p>	 ENGR. ROLLY A. GUNDAY CIVIL ENGINEER REG. NO. 78446 TIN. NO. 909-628-033 PTR. NO. 9816699 DATE: 02/22/2021	TITLE:	CHECKED:	REVIEWED:	APPROVED:	CONTENTS:	SHEET NO.
		INSTALLATION OF 300MMØ STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES National Highway, Brgy. Lagao & Katinginan, GSC	 ENGR. ROLLY A. GUNDAY O/C - Planning & Design Division	 ENGR. ROGELIO A. BESANA, JR. ADM - Operations & Technical Services	 ENGR. ARN B. GELLANGARN General Manager A	AS PER PLAN	15
						DRAWN BY: EDA REV. NO.: CHECKED BY: RAG DATE: 03/25/2021	



EXISTING ROADWAY SECTION OF 60.0M ROAD RIGHT OF WAY (BROW)
SCALE: 1 : 175 M



EXISTING ROADWAY PLAN OF 60.0M ROAD RIGHT OF WAY (BROW)
SCALE: 1 : 175 M

GENERAL SANTOS CITY WATER DISTRICT
E. FERNANDEZ STREET, BRGY. LAGA, GEN. 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. 809-828-033
PTR. NO. 9816805 | DATE: 02/22/2021

TITLE:
INSTALLATION OF 300MMØ STEEL TRANSMISSION PIPELINES AND OTHER APPURTENANCES
National Highway, Brgy. Laga & Katigawan, GSC

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

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

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

CONTENTS:
AS PER PLAN
DRAWN BY: ZSA | REV. NO.
CHECKED BY: RAG | DATE: 02/23/2021

SHEET NO.
16