

LAYING OF MDPE NETWORK AND GI/Cu INSTALLATION WORK FOR DOMESTIC, COMMERCIAL AND INDUSTRIAL CUSTOMERS FOR CUGL GA'S IN KANPUR, UNNAO, AND BAREILLY IN THE STATE OF UTTAR PRADESH

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CENTRAL UP GAS LIMITED (CUGL)
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- For the test assembly due consideration should be taken regarding the fabrication tolerances and the variation of the outside ambient temperature.
- The welding of the assembly will comply with TBL 70000/740/GTS/0013.

6.2. DESIGN

- The valves will be designed for a maximum operating pressure (MOP) equal to 10 bar.
- The wall thickness of the PE valve body shall be equal or greater than the minimum wall thickness of the corresponding SDR 11 series pipes.
- Valves body and valves ends form an indivisible whole.
- Except otherwise stated in the Owner purchase order, all valves will be "ball valve" type.
- The operating cap shall be designed in a way that it cannot be ejected "non blow out" type.
- The design of the extension spindle and the spindle protection sleeve will be such that they will never, in any case, even due to soil settlement, lay on the non reinforced part of the valve body or the valve ends. The spindle protection sleeve cannot turn during valve turning operation.
- The owner will specify if the spindle protection sleeve is a ventilated or non-ventilated type.
- The spindle protection sleeve ventilated type will have holes (min. diameter 10 mm) or slot type holes (min. width 1 mm) all around the sleeve in sufficient number in order to assure a maximum permeability for the gas.
- The sleeve will be covered by a non-waved geo-textile fabric (90 µm). The geo-textile fabric with a 50 mm overlap will be well secured on the sleeve;
- The valves should be equipped with a base plate. In order to achieve this, the valve body will be design with a flat base (model 1) or with an attached base plate or an integrated one (model 2). The Owner or his representative will specify the model.
- The operating mechanism and the stop wedges will be protected against water intrusion.
- The valve body is completely sealed except a passage for the spindle mechanism.

6.3. APPEARANCE AND COLOUR

- The internal and external surfaces of valves shall be smooth clean and shall have no scoring, cavities or other defects to an extend that would prevent non-conformity to the present GTS or to the standard prEN 1555-4.

- The colour of the PE valves shall be either yellow, black or orange.
- The colour of the valve shall be specify by the Owner or his representative in the purchase order;

6.4. DIMENSIONS

- The dimensions will be in conformity with the standard prEN1555-3 and prEN1555-4.
- The dimensions of the extensions spindle are detailed in appendix A.
- The operating cap will be design as per appendix B, C or D.
- The type of the operating cap will be specified by the Owner or his representative in the purchase order.
- The design of the extension spindle is such that the extension can be turn easily at
- any time to suit the site conditions.

7. MECHANICAL CHARACTERISTICS FOR ASSEMBLED VALVES

7.1. GENERAL

The valve shall have mechanical characteristics and be tested as specified in the standard prEN 1555-4.

7.2. RUNNING TORQUE

The running torque and the concept of the valve shall prevent the valve from being easily operated (by hand) without an operating key. To operate the valve designed with running torque as specified I the standard prEN 1555-4, the use of an operating key is requested. Neither the operating cap nor the spindle shall be damaged when operating at maximum operating torque as specified in the standard prEN 1555-4;

7.3. INDIVIDUAL TEST (BATCH RELEASE TEST)

Before delivery each valves will be individually tested for mechanical strength and leaktightness as per standard prEN1555-4.

A combined mechanic resistance and leak-tightness test shall be performed in conformity with the prEN1555-4.

By batch of valves a supplementary leak-tightness test (25 mbar) shall be performed in conformity with the prEN 1555-4 on 3 valves taken at random.

7.4. PRESSURE DROP AT LOW PRESSURE

The drop of pressure is measured with natural gas as a medium and according to the diagram specified in the standard EN 12117 (fig.1).

The maximum drop of pressure measured with natural gas (inlet pressure 25 mbar) will be limited to 0,2 mbar for a nominal gas flow as per table below.

d_n	Flow m³/h
32	10
40	15
63	60
90	180
110	250
160	600
200	1000

8. MARKING

At least the information given below shall be printed or formed directly on the valve :

- a) Manufacturer's name and/or trademark;
- b) Material and designation (e.g. PE 100);
- c) Design application series (e.g. SDR 11);
- d) Nominal diameter;
- e) Internal fluid "gas";
- f) Traceability code (valve and component) as per standard ISO/FDIS 12176-4;
- g) Number of the system standard (e.g. prEN 1555-4) this information can be printed/formed directly on the valve or on a label associated with the valve or on an individual bag.
- h) Production period, year and month;

The marking shall stay legible during normal manipulation, storage and installation.

The marking shall not adversely influence the performance of the valve and prevent the non-conformity of the valve.

Tractebel Engineering	GENERAL TECHNICAL SPECIFICATION	70000 740 GTS/0015
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No marking will be accepted at the valve spigot ends.

9. PACKAGING AND DELIVERY

The valve and its accessories shall be packaged individually in plastic bags in order to prevent them from deterioration. The valves ends shall be protected with external caps.

The cartons and/or individual bags shall bear at least one label with the manufacturer's name, type and dimensions of the part number, number of units in the box and, any special storage conditions and storage time limits.

10. GUARANTEE

The manufacturer will extend his guarantee for each part for 10 years after production. This guarantee period is valid if the parts are kept in proper conditions and in the original packaging.

The valves equipped with electrofusion sockets will be supply with a magnetic card and a code bar tag containing the welding parameters. The coding of the parameters shall be in conformity with the standard ISO TR 13950.

The operating manual (in English) will be inserted in the individual part package.

11. QUALITY CONTROL

11.1. GENERAL RULINGS

11.1.1. Manufacturer's responsibility

The manufacturer is entirely responsible for the quality of the PE valves manufactured by his firm.

All control checks prescribed above do not relieve him of this responsibility.

To ensure that all PE valves are in compliance with the specification in all aspects, they must be controlled by the plant control service, which must be independent from the manufacturing department.

All PE valves supplied are guaranteed for 10 years after the date of production.

11.1.2. Quality assurance

The manufacturer must have some form of quality control to ensure that products comply with EN standards 29001 or 29002. The quality assurance manual must be made available to the Owner Control Service or an external Control laboratory appointed by him.

The system of quality assurance must be certified by an authorised body.

11.2. CONTROLS

11.2.1. Control testing by the manufacturer

11.2.1.1. *By material batch.*

The manufacturer demands a certificate from the raw material manufacturer including the following :

- Fluid index
- Water content
- Volume mass
- Carbon black or yellow stabilising agent content
- Carbon black or yellow stabilising agent quality
- OIT value (thermal stability)

11.2.1.2. *By accessory batch*

The manufacturer must run control checks as specified in the standard prEN 1555-4 and prEN 1555-7:

Control checks and the number of tests must be carried out according to the prescriptions of the EN standard 1555-4.

Also refer to table N° 8, paragraph 4.2.3. "Lot release tests" of standard prEN 1555-7.

The results must be written out in documents that contain the complete identification of the accessory batch.

These documents must be made immediately available for the Owner representative.

11.2.2. Plant Reception by the Owner Control Service representative

11.2.2.1. *General information*

All quality controls must be run in the presence of the Owner Control Service representative.

All tests and control checks must comply with appropriate standard prescriptions and with the specific specifications established with the order.

At each visit by the Owner representative, the manufacturer must provide, free of charge, all means and personnel necessary for running the established control checks.

While the order is under production, the Owner representative must have access to stocking installations of all raw materials before manufacturing, manufacturing and

control installations, as well as the accessory stocking areas for any control checks he is responsible for.

During his visits, the Owner representative will receive a certificate as soon as he reaches the plant for each batch of accessories presented for reception.

Each time this is requested by the Owner representative, the manufacturer must provide recent reports of all control checks and measuring instrument results and testing results.

11.2.2.2. *Convocation for reception*

Convocation instructions for reception are to be defined with the order.

11.2.2.3. *Reception control checks*

For each accessory batch or any fractions of the batch, minimal batch sampling is established in annexed enclosure 3. These control checks and tests are to be run according to the prescriptions of standard prEN 1555-4.

11.3. ACCEPTANCE OR REFUSAL

11.3.1. Appearance, measurements and marking

Any requirements not supplied will lead to the refusal of the complete batch. However in the case where a batch is refused, it can be presented for approval again after a control check, on agreement with the Owner Control Service.

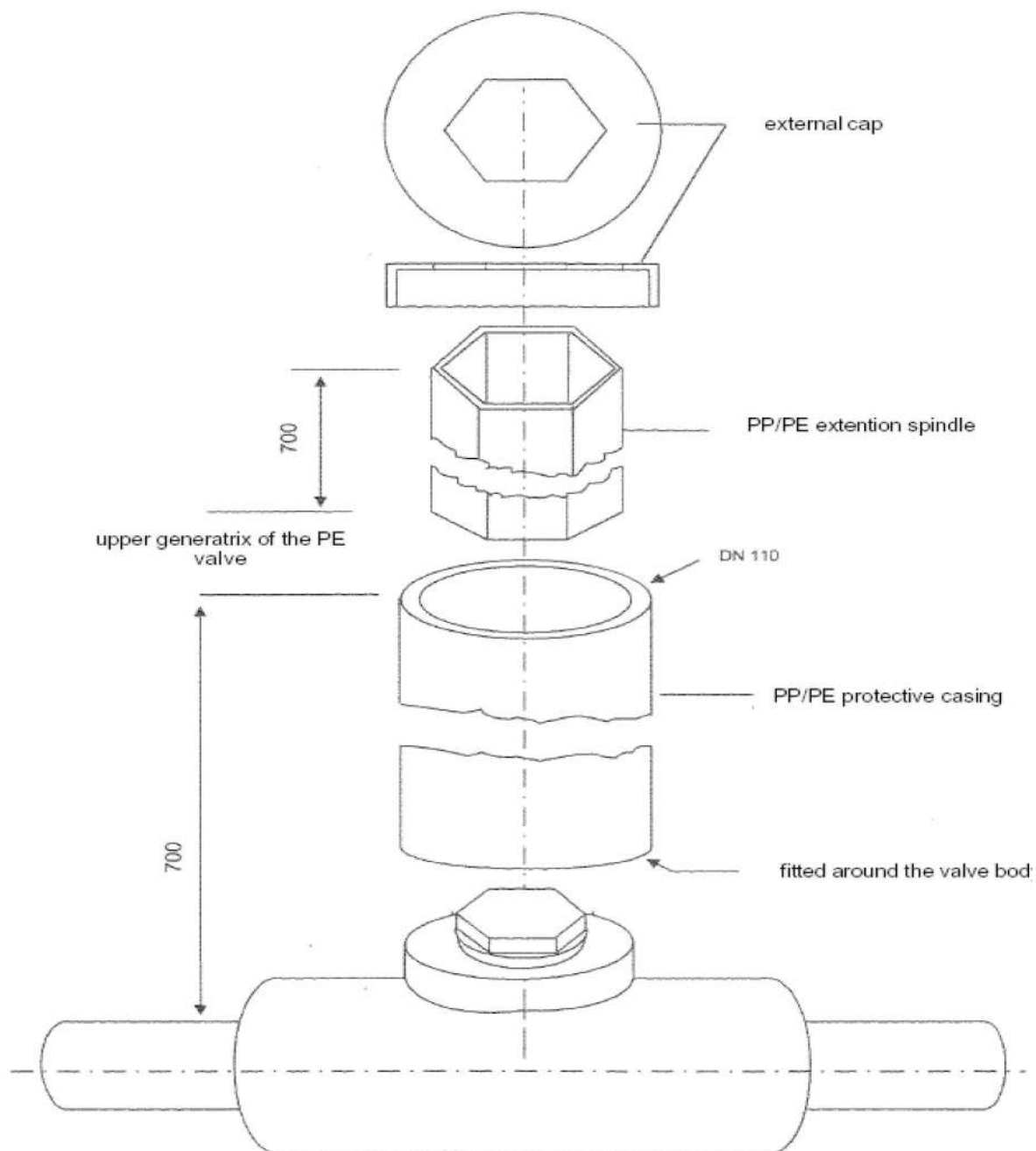
11.3.2. Control check on characteristics

All results that do not comply with the specification prescriptions and the particular specifications requested with the order, demand counter-testing on at least double the number of the samples previously tested. If the undesirable result is confirmed, then the batch is refused permanently. If the result is positive, then the batch will be accepted.

As a complementary control check, other analyses and/or tests can be run after common agreement, and at the manufacturer's cost.

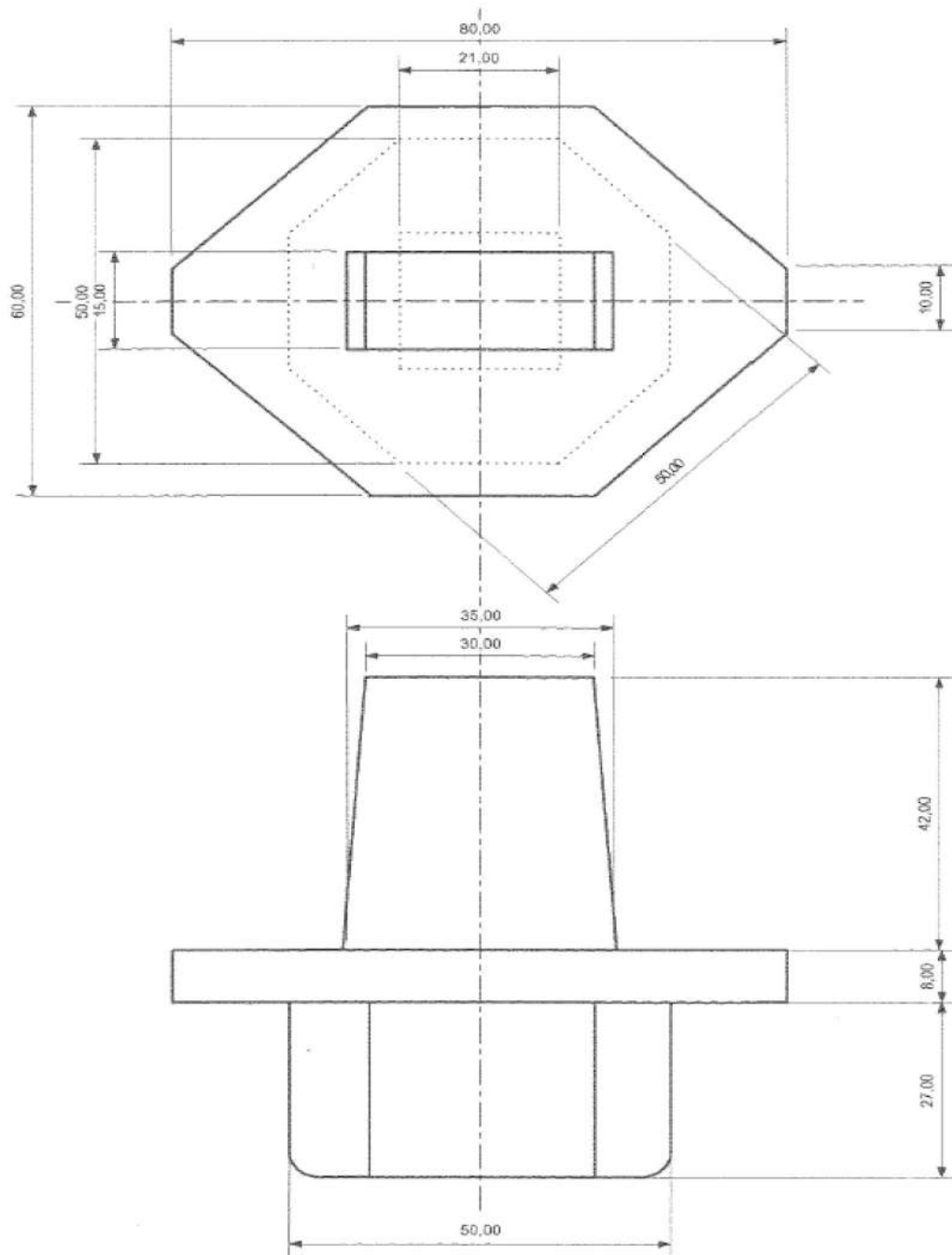
ANNEXE A

Dimensions of the extension spindle



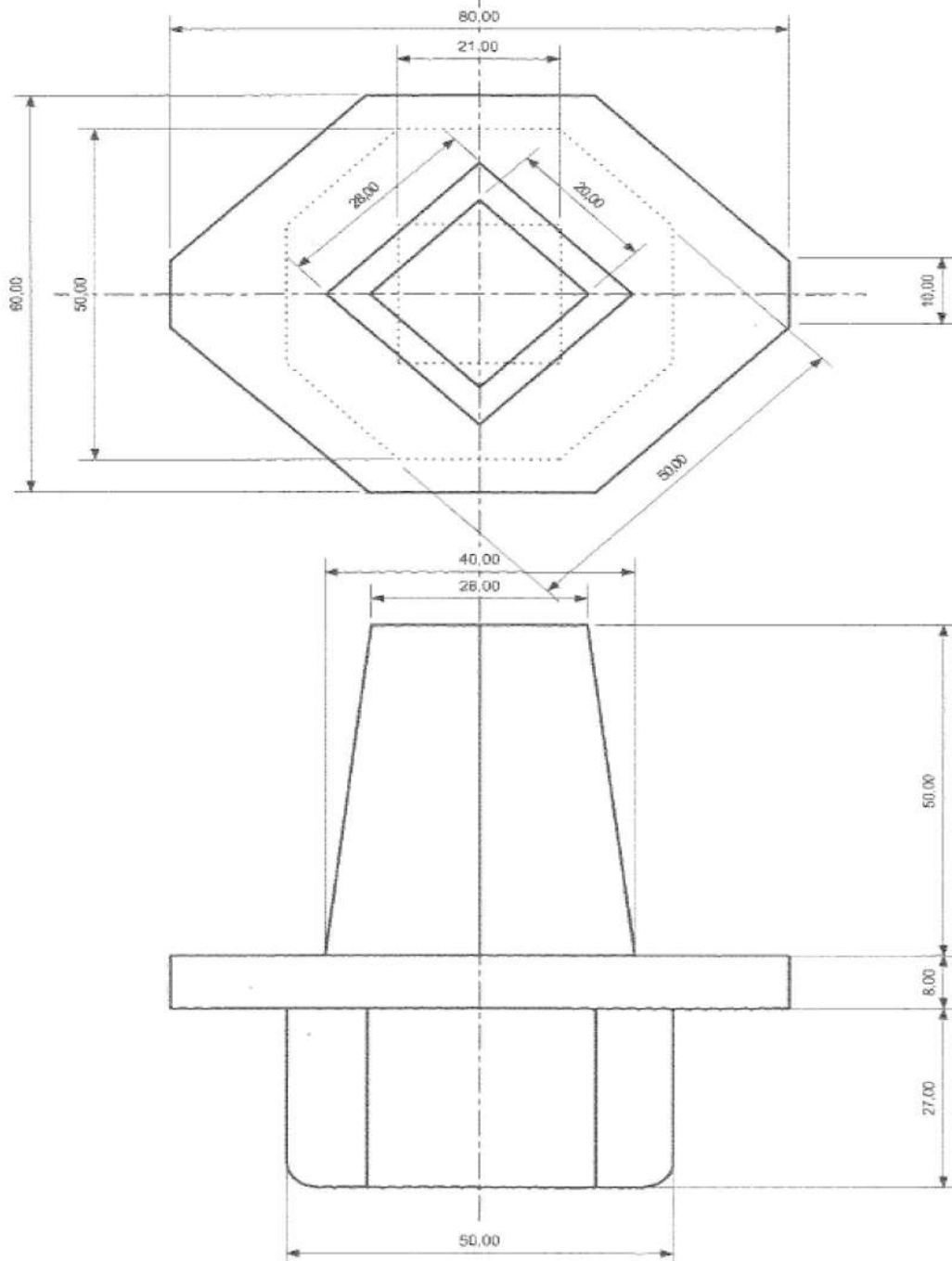
ANNEX B

Dimensions of the operating cap Type A



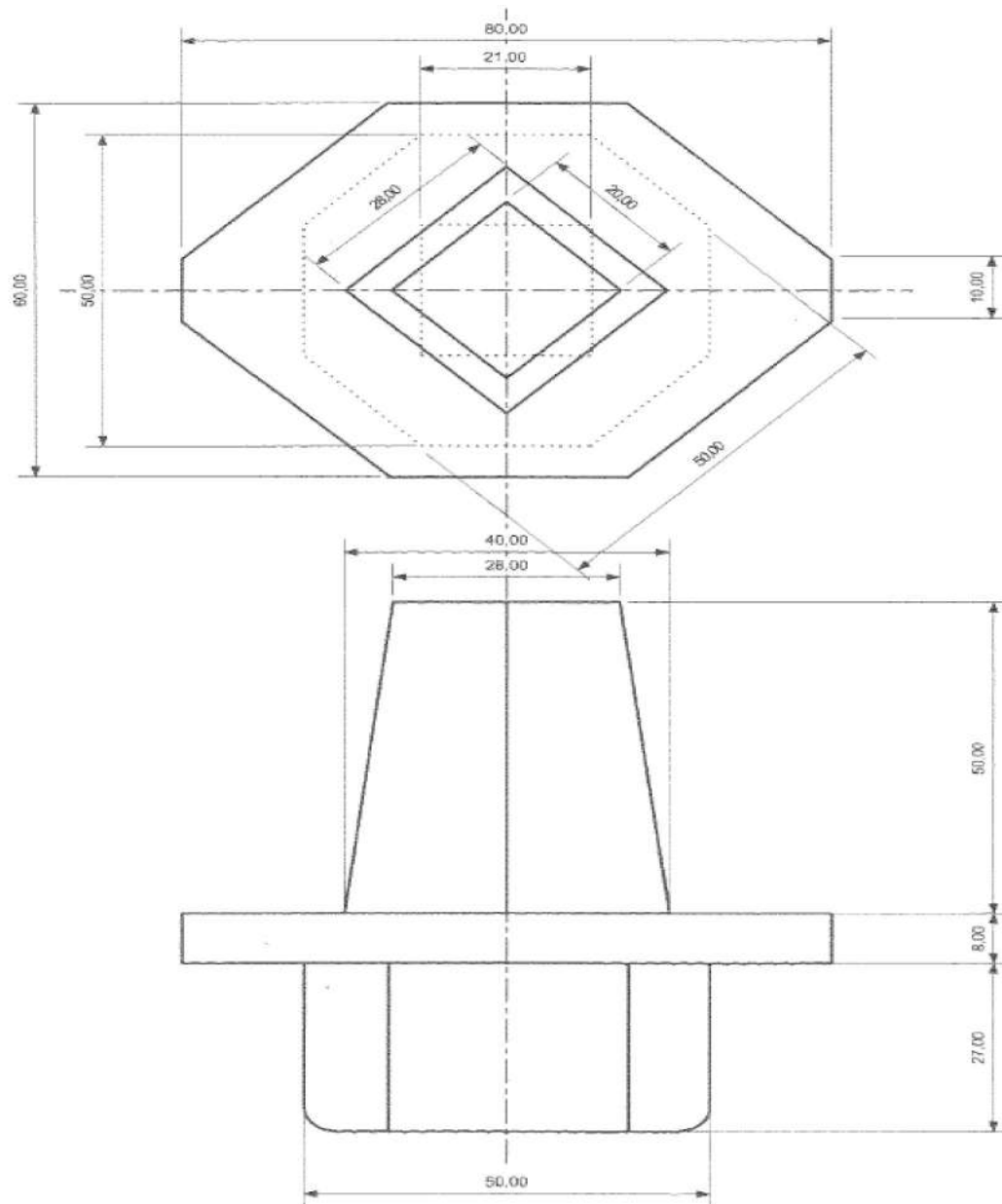
ANNEX C

Dimensions of the operating cap Type B







ANNEX D



Dimensions of the operating cap Type C





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 Central U.P. Gas Limited	QUALITY CONTROL TABLE PE FITTINGS					QAP NO :P.014714 G 11031 056			
						Date:- 26.05.2021			
						TENDER NO. - P.014714 G11031 R006			
S.No.	COMPONENTS/OPERATIONS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD	VENDOR	CA/TPI	REMARKS
1	Review of test certificate for Raw material		Each Batch certificate	Raw Material manufacturer's test certificate	Raw Material manufacturer's test certificate	Test Certificate	R	R	
2	Hydrostatic strength								
2.1	At 20° C	Strength test	As per EN 1555-7	EN 1555 - 3/ EN 921 / PTS / GTS	No leakage through the fittings during the test	Inspection report	P	W	
2.2	At 80° C	Strength test	As per EN 1555-7	EN 1555 - 3/ EN 921 / PTS / GTS	No leakage through the fittings during the test	Inspection report	P	W	
3	Cohesive Resistance								
3.1	Length of Initial rupture ≤ L2/3 in brittle failure	Mechanical properties	As per EN 1555-7	ISO 13954 / ISO 13955 / PTS / GTS	EN 1555 - 3	Inspection report	P	R	This test is applicable only for Electrofusion socket fittings
3.2	Surface of rupture ≤ 25% brittle failure	Mechanical properties	As per EN 1555-7	ISO / DIS 13956 / PTS / GTS	EN 1555 - 3	Inspection report	P	R	This test is applicable only for Electrofusion saddle fittings
4	Tensile strength for butt fusion	Mechanical properties	As per EN 1555-7	ISO / DS 13953/PTS	ISO / DS 13953/PTS		P	R	This test is applicable only for Spigot end fittings
5	Impact strength	Mechanical properties	As per EN 1555-7	EN 1716 / PTS / GTS	EN 1716 / PTS / GTS	Inspection report	P	R	This test is applicable only for Electrofusion saddle fittings
6	Pressure Drop	Air flow rate	As per EN 1555-7	EN 12117 / PTS	EN 12117 / PTS	Inspection report	P	R	This test is applicable only for Electrofusion saddle fittings
7	Electrical Resistance test		As per EN 1555-7	EN 1555 - 3 / PTS / GTS	EN 1555 - 3 / PTS	Inspection report	P	W	
8	Oxidation induction time(Thermal stability)		As per EN 1555-7	EN 1555 - 3 / EN 728 / PTS / GTS	> 20 min	Inspection report	P	W	
9	Meltmass/ Flow rate (MFR)		As per EN 1555-7	EN 1555 - 3 / ISO 4440 / GTS / PTS	(0.2 ≤ MFR ≤ 1.4) g / 10 min and after processing maximum deviation of ± 20 % of the nominated value declared by manufacturer.	Inspection report	P	W	
10	Dimensional Check	Dimensions	100%	As per EN 1555 -3 / PTS / GTS	As per EN 1555 -3 / PTS / GTS	Inspection report	P	RW	
11	Storage	Visual	All materials	-	Manufacturer Recommendation	Stock register	H	M	
12	Marking	Visual	100%	EN 1555 / PTS / GTS	EN 1555 -3	Inspection report	P	RW	
13	Documentation	All Inspection Reports and Certificates	-	EN 1555	All Inspection Reports and Certificates	Inspection Report	P	R	
LEGENDS:		H-HOLD, P-PERFORMANCE, W-WITNESS, RW - RANDOM WITNESS, TC-TEST CERTIFICATE, MTR-MANUFACTURER TEST REPORT, TPIA-THIRD PARTY INSPECTION AGENCY, CA - OWNER/OWNER'S REPRESENTATIVE							
Notes :									
1 The Above Testing and acceptance criteria are minimum requirements, however, manufacturer shall ensure that the product shall also comply to the additional requirements as per Particular Technical specifications(PTS)									
2 Vendor shall in coordination with supplier/ sub vendor issue detailed Production and inspection schedule indicating the dates and the locations to facilitate Owner/ Owner's representative and TPIA to organize inspection.									
3 Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.									
4 All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/CA at the time of Inspection									
5 Only calibrated instruments shall be used for inspection.									
6 Before dispatch of the materials to the contractors, manufacturer shall submit copy of all related document of inspection along with release note and MTC to the owner /PMC for the dispatch clearance.									
7 Sampling Frequency of the testing shall be done as per EN 1555-7									



 CUGL Central U.P. Gas Limited	STANDARD QUALITY ASSURANCE PLAN MDPE Valve						QAP NO : P.014714 G 11031 057		 TRACTEBEL ENGINE
							Date:- 26.05.2021		
							TENDER NO. - P.014714 G11031		
SL No.	Test Description	Type Of Check	Quantum Of Check	Ref. Document	Acceptance Norms	Format of Records	Inspection		Remarks
							Vendor	TPIA	
1	Raw Materials	Test Certificate for Raw Materials	Each Batch	EN 1555-1/ PTS	EN 1555-1/PTS	MTR	P	R	
2	Test of raw material inspection	Raw material Characteristics check	Each Batch	Test Certificate for Raw Materials	As per material test cert.	MTR	P	R	
3	Hydrostatic Strength (PE100) (At 20 °c and 80 °c)	Strength Test	100%	EN 1555- 4 & ISO 1167-1/4/PTS	As per EN 1555- 4 & ISO 1167-1/4/PTS (No failure and no leak during test period of any test piece)	Hydrotest Report	P	R	
4	Leak Tightness test	Mechanical Characteristics	100%	EN 1555- 4/ PTS	As per Table-1, EN 1555-4/ PTS (No Leakage)	MTR	P	R	
5	Operating Torque	Mechanical Characteristics	100%	EN 1555- 4/ PTS	As per Table-1, EN 1555-4/EN28233/ PTS	MTR	P	R	
6	Pressure Drop.	Mechanical Characteristics (Air flow rate)	100%	ISO 17778/ EN 1555-3/ PTS	ISO 17778/ EN 1555-3/ PTS	IR	P	R	
7	Oxidation Induction Time (Thermal Stability)	Physical Characteristics	Each Batch	EN 1555-3/ EN 728/ ISO 11357-6/ PTS	As per EN 1555-3/ EN 728/ ISO 11357-6/ PTS	MTR	P	R	
8	Melt mass flow Rate	Physical Characteristics	Each Batch	EN 1553-3/ EN ISO 1133/ PTS	As per EN 1553-3/ EN ISO 1133/ PTS	MTR	P	R	
9	Dimensional Check	Dimensional	Each Batch	EN 1555-3/PTS	As per EN 1555-3/ PTS	IR	P	RW	Min. 10 % by TPIA
10	Density	Physical Characteristics	100%	ISO 1183/PTS	0.926 to 0.94 g/cm3	MTR	P	R	
11	Volatile Content	Physical Characteristics	Each Batch	EN 12099/PTS	≤350mg/Kg	MTR	P	R	
12	Content Carbon Black	Physical Characteristics	Each Batch	ISO 6964/PTS	2.50 ± 0.5%	MTR	P	R	
13	Appearance, Color	General Characteristics	100%	EN 1555- 4/PTS	EN 1555- 4/PTS	IR	P	R	
14	Marking	Physical Characteristics	100%	EN 1555- 3/ PTS	EN 1555- 3/ PTS	IR	P	RW	Min. 10 % by TPIA
15	Visual	General Characteristics	Each Lot	EN 1555-7/PTS	EN 1555-7/PTS	IR	P	RW	Min. 10 % by TPIA
Legends:									
R Review H Hold TPIA Third Party Inspection Agency PTS Particular Technical Specification P Perform W Witness MTR Material Test Report SS Standard Specification									
Note:									
1. The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the additional requirements as per PTS/ SS.									
2. The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved.									
3. Special manufacturing procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.									
4. Owner / Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.									
5. All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA at the time of Inspection									
6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note & MTC.									

 CUGL Central U.P. Gas Limited	STANDARD QUALITY ASSURANCE PLAN Electrofusion Fittings and Transition Fittings					QAP NO :P.014714 G 11031 058			
						Date:- 26.05.2021			
						TENDER NO. - P.014714 G11031			
						R006			
Sr. No	Test Description	Type of Check	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	Format of Record	INSPECTION BY		REMARKS
							Manufacturer	TPIA	
1	Raw Material	Review of test certificate	Each batch	EN 1555-1/ PTS	EN 1555-1/ PTS	MTR	P	R	
2	Hydrostatic Strength (PE100) (At 20 °c and 80 °c)	Strength Test	As per EN 1555-7	EN 1555-3 / ISO 1167 / PTS	As per EN 1555-3 / ISO 1167 / PTS (No failure and no leak during test period of any test piece)	Hydro test Report	P	R	
3	Decohesive resistance for Electrofusion Socket fittings	Length of initiation of rupture ≤ L2/3 in brittle failure	As per EN 1555-7	ISO 13954 / ISO 13955/ PTS	As per EN 1555-3	IR	P	R	
4	Decohesive Strength for Electrofusion Saddle fittings	Surface of rupture ≤ 25% brittle failure	As per EN 1555-7	ISO 13956 / PTS	As per EN 1555-3	IR	P	R	
5	Impact Resistance for Electrofusion Saddle fittings	Mechanical Properties	As per EN 1555-7	EN 1716/PTS	EN 1716/PTS	IR	P	R	
6	Tensile Strength for butt fusion	Mechanical Properties	As per EN 1555-7	ISO DS 13953 / PTS	ISO DS 13953 / PTS	IR	P	R	Applicable for spigot end fittings
7	Pressure Drop.	Mechanical Characteristics (Air flow rate)	As per EN 1555-7	ISO 17778 / EN 12117/ PTS	EN 12117/ EN 1555-3	IR	P	R	
8	Electrical Resistance Test	Electrical Characteristics	As per EN 1555-7	EN 1555-3	EN 1555-3	IR	P	R	
9	Oxidation Induction Time (Thermal Stability)	Physical Characteristics	As per EN 1555-7	EN 1555-3/ EN 728/ ISO 11357-6/ PTS	OIT > 20 Min./ 200°C	MTR	P	R	
10	Melt mass flow rate (MFR)	Physical Characteristics	As per EN 1555-7	EN 1553-3/ EN ISO 1133/ PTS	MFR 190°/5kg.0.20 – 1.20 gm./10 min. and after processing maximum deviation of ± 20% of the value measured on the batch used to manufacture the fitting	MTR	P	R	
11	Density	Physical Characteristics	1	ISO 1183	0.926 to 0.94 g/cm ³	MTR	P	R	
12	Dimensional check	Dimensions	As per EN 1555-7	As per EN 1555-3/PTS	As per EN 1555-3/PTS	IR	P	R	
13	Appearance, Color	Visual	As per EN 1555-7	EN 1555- 3/ PTS	EN 1555- 3/ PTS	MTR	P	R	
14	Marking	Physical Characteristics	As per EN 1555-7	EN 1555- 3/ PTS	EN 1555-3 / PTS	IR	P	RW	Min. 10% by TPIA
15	Visual	Visual	As per EN 1555-7	EN 1555- 3/ PTS	EN 1555-3 / PTS	IR	P	RW	Min. 10% by TPIA
16	Documentation	All Inspection Reports and Certificates	-	EN 1555	All Inspection Reports and Certificates	IR	P	R	
Legends: R Review H Hold TPIA Third Party Inspection Agency PTS Particular Technical Specification P Perform W Witness MTR Material Test Report SS Standard Specification									
Note: 1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the additional requirements as per SS/ PTS along with applicable Codes & 2. The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved. 3. Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable. 4.Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time. 5.All reference Codes / Standards documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA at the time of inspection. 6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.									

 Central U.P. Gas Limited		STANDARD QUALITY ASSURANCE PLAN GI PIPES POWDER COATED CONFORMING TO IS:1239 (PART-1):2004 (Latest edition)							QAP NO : P.014714 G 11031 059				
									Date:- 26.05.2021				
									TENDER NO. - P.014714 G11031 R006				
											INSPECTION BY		
SR. No	COMPONENTS /OPERATIONS	CHARACTERISTICS	CLASSIFICATION	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENTS	ACCEPTANCE NORMS	FORMAT OF RECORD	Manufacturer	TPIA	REMARKS		
1	Raw Material Inspection												
1.1	RAW MATERIAL (Steel tube Heavy Duty Class C)	IDENTIFICATION	Major	Co-relation with MTC.	100%	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	T.C.	P	R	REMARKS		
		CHEMICAL COMPOSITION	Major	Chem. Analysis	One per Heat	IS: 1239 / P.O./ PTS	IS:1239/P.O. Spec./PTS	T.C.	P	R			
		PHYSICAL PROPERTIES (T.S., Y.S., % Elongation)	Major	Lab. Test	One per Heat	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	T.C.	P	R			
		VISUAL & DIMENSIONS	Major	Visual & Measurement	100%	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	T.C.	P	R			
2	IN PROCESS INSPECTION												
2.1	PIPE MANUFACTURING	SURFACE DEFECT	Major	Visual	100%	IS:1239/P.O.	IS:1239/P.O. Spec./PTS	IIR	P	R			
		DIMENSIONS (O.D., THK. LENGTH etc.)	Major	Measurement	As Per Relevant Std.	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	IIR	P	R			
		MASS (Kg/Mtr)	Major	Measure.	As Per Relevant Std.	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	IIR	P	R			
2.2	END PREPARATION	END TYPE & DIMENSIONS	Major	Visual & Measurement	100%	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	IIR	P	R			
2.3	PHYSICAL PROPERTIES	TENSILE Strength, ELONGATION & BEND Test/FLATTENING TEST AS APPLICABLE	Major	Lab. Test	As Per Relevant Std.	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	IIR	P	R			
2.4	LEAK TEST	HYDRAULIC	Critical	Leak Test	100%	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	IIR	P	R			
2.5	GALVANIZING	ZINC COATING UNIFORMITY & MASS	Major	Galv. Test (Mass of Zinc Coating & Uniformity)	As per STD.	IS: 4736	IS: 4736 & IS: 2633	IIR	P	R			
2.6	FINISH, PAINTING & MARKING	OVERALL FINISH, PAINTING & MARKING	Major	Visual	100%	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	IIR	P	R			
3	POWDER COATING TEST												
3.1	POWDER COATING TEST	SALT SPRAY RESISTANCE	Major	Visual	1000 Hrs (MIN.)	IS: 13871	IS: 13871	IIR	P	R			
3.2		POROSITY	Major	Visual	-	IS: 13871	IS: 13871	IIR	P	R			
3.3		HUMIDITY RESISTANCE	Major	Visual	1000 Hrs (MIN.)	IS: 13871	IS: 13871	IIR	P	R			
3.4		WEATHERING GLOSS RETENTION AFTER 1000 Hrs.(Sun Test with Water Impression , Xenon 150 K lux)	Major	Visual	60 - 70%	IS: 13871	IS: 13871	IIR	P	R			
3.5		COLOUR	Major	Visual	CANARY YELLOW	IS: 13871	IS: 13871	IIR	P	R			
4	FINAL INSPECTION												

4.1	FINISHED PRODUCT	FINISH DIMENSIONS	Critical	Visual & Measurement.	Random As Per IS:4711	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	Dimensional IR	P	W	
		PHYSICAL PROPERTIES (TENSILE STRENGTH, ELONGATION & BEND TEST/ FLATTENING TEST AS APPLICABLE)	Critical	Lab.Test	Random As Per IS 4711	IS:1239/P.O. Spec./PTS	IS:1239/P.O. Spec./PTS	Physical IR	P	W	
		MASS OF ZINC COATING, UNIFORMITY & ADHESION TEST	Critical	GALV. TEST(LAB Test)	AS PER IS: 4736	IS 4736	IS 4736	GALV. REPORT	P	W	
		LEAK TEST (HYDRAULIC TEST)	Critical	Leak Test	100% by MFR.	IS:1239/P.O. Spec./Tender Spec	IS:1239/P.O. Spec./Tender Spec	IR	P	RW	(Min. 10% per lot by TPIA)
		REVIEW OF ALL TEST CERTIFICATE / REPORTS & VENDOR'S IIR	Major	Review	All TC	IS:1239/P.O. Spec./Tender Spec, EN 10204	IS:1239/P.O. Spec./Tender Spec, EN 10204	R	P	R	
		Coating Thickness	Major	Visual	Random as per IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IIR	P	W	
4.2	POWDER COATING TEST	GLOSS 60 DEG.	Major	VISUAL	AS PER IS: 4711/ IS:13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
		CROSS HATCH ADHESION	Major	VISUAL	AS PER IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
		CYLINDRICAL BENDING TEST	Major	VISUAL	AS PER IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
		ENRICHSEN CUPPING	Major	VISUAL	AS PER IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
		PENCIL HARDNESS	Major	VISUAL	AS PER IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
		SCRATCH RESISTANCE	Major	VISUAL	AS PER IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
		IMPACT RESISTANCE	Major	VISUAL	AS PER IS: 13871	IS: 13871/ PTS	IS: 13871/ PTS	IR	P	W	
4.3	-	IDENTIFICATION & MARKING	Major	VISUAL	IS: 4711	IS: 1239 / P.O. Spec./PTS	IS: 1239 / P.O. Spec./PTS	-	P	W	
4.4	-	WORKMANSHIP	Major	VISUAL	IS: 4711	IS: 1239 / P.O. Spec./PTS	IS: 1239 / P.O. Spec./PTS	-	P	R	
4.5	-	PERFORMANCE OF INSTRUMENTS	Major	CALIBERATION	EACH INSTRUMENT	IS: 1239 / P.O. Spec./PTS	IS: 1239 / P.O. Spec./PTS	CALIBERATION CERTIFICATE	P	R	
4.6	-	Documentation	Major		As per the terms and conditions of the PO & PTS	As per the terms and conditions of the PO & PTS	Compliance certificate & TC		P	H	
LEGENDS: R - Review, W - Witness, H - Hold, P - Perform, TPIA - Third Party Inspection Agency, RW - Random witness, PTS- Particular Technical Specification, TR- Test Report, MTC- Material Test Certificate, T.C.- Test Certificate, IR- Inspection Report											
Notes: -											
1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the applicable codes.											
2.The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved.											
3.Mechanical & Chemical Testing shall be done in NABL Accredited Lab.											
4.Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications.											
5.Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.											
6.All reference Codes / Standards documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA / IOCL at the time of inspection.											
7.At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.											

 Central U.P. Gas Limited	STANDARD QUALITY ASSURANCE PLAN GI FITTINGS						QAP NO : P.014714 G 11031 060			
							Date:- 26.05.2021			
							TENDER NO. - P.014714 G11031 R006			
								INSPECTION BY		
SR. No	Item / Description	COMPONENT	CHARACTERISTICS	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	RECORD	Manufacturer	TPIA	REMARKS
1	Chemical composition of material	Test Bar	Marking and correlation with TC	As per IS: 14329 Grade BM 300	IS: 14329 Grade BM 300, PO, PTS, Material specification	IS 14329/ PO, PTS Material specifications	Mill T.C.	R	R	
2	Chemical composition of Final product	Fitting	Chemical properties	As per IS: 14329 Grade BM 300	IS: 14329 Grade BM 300, PO, PTS, Material specification	IS 14329, PO, PTS, Material specifications	T.C.	P	R	
3	Cleaning and Finishing	Fitting	Descaling/ Peel Off	100% by Manufacturer	IS 14329	IS 14329	Inspection Report	P	RW	As per sampling procedure of IS 1879 Table no.29
4	Destructive Testing (Tensile, Elongation & Hardness)	Fitting	Mechanical Properties	As per IS 14329	IS 14329	IS 14329	Lab Report	P	W	
5	Compression Test	Fitting	Malleability	Three samples per Heat Treatment Batch	IS 1879	IS 1879	Inspection Report	P	W	As per sampling procedure of IS 1879
6	Pressure Test	Fitting	Pneumatic	IS 1879	IS 1879	IS 1879	Inspection Report	P	W	As per sampling procedure of IS 1879
7	Alignments of Thread	Fitting	ASME B1.20.1/NPT	IS 1879	IS 1879	IS 1879	Inspection Report	P	W	As per sampling procedure of IS 1879
8	Galvanizing	Fitting	Integrity of galvanized coating	As listed in IS 4759	IS 4759	IS 4759	Inspection / Lab Report	P	W	As per sampling procedure of IS 4759
9	Final inspection	Fitting	Visual, Dimensions, Thread Gauge Alignment, Finish, weld bevel, Bore, Marking, Coating thickness*	IS 1879	IS 1879	IS 1879/ PTS	Inspection Report	P	W	
10	Marking	Fitting	Size, Owner & Manufacturer Logo	100%	IS 1879/PTS	IS 1879/ PTS	Inspection Report	P	R	
11	Documentation	-	-		As per the terms and conditions of the PO & PTS	As per the terms and conditions of the PO & PTS	Compliance certificate & TC	P	R	
* Minimum 60 microns										
LEGENDS: R - Review, W - Witness, H - Hold, P - Perform, TPJA - Third Party Inspection Agency, RW - Random witness, PTS- Particular Technical Specification, TR- Test Report, MTC- Material Test Certificate, T.C.- Test Certificate, IR- Inspection Report										
Notes: -										
1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the applicable codes.										
2.The TPJA shall use this QAP for inspection against subject tender and may consider this document as approved.										
3.Mechanical & Chemical Testing shall be done in NABL Accredited Lab.										
4.Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications.										
5.Owner/ Owner's representative including TPJA will have the right to inspect any activity of manufacturing at any time.										
6.All reference Codes / Standards documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPJA / IOCL at the time of inspection.										
7.At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.										

 Central U.P. Gas Limited		STANDARD QUALITY ASSURANCE PLAN WARNING MAT					QAP NO :P.014714 G 11031 061			
							Date:- 26.05.2021			
							TENDER NO. - P.014714 G11031 R006			
							INSPECTION BY			
Sr. No	Test Description	Type of Check	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	Format of Record	Manufacturer	TPIA	REMARKS	
	Test on Warning Mat:									
1	Raw Material	Review of material test certificate	Each Batch	PTS	As per material test certificate / PTS	MTR	R	R		
2	Dimension & Tolerance Width & Thickness	Measurement	Four Samples From Each Lot / Batch	PTS	As per PTS Width:300mm_+5mm Thick:1mm(minimum)	TEST REPORT	P	W		
3	Test of Laying Characteristics (Flatness test)	Visual	Four Samples From Each Lot / Batch	PTS / EN 12613	Deflection ≤ Wo/4	TEST REPORT	P	W		
4	Material Identification by chemical method.	Measurement	One Samples To be tested from each Lot	Perform at Alekh Plastic Testing Centre (APTC) Ahmedabad	Test sample shall be tested & to be Confirmed PE / HDPE	TEST REPORT	W	R		
5	Text legend printing on Mat	Visual	Four Samples To be tested from each Lot.	PTS	Black & Red colour. Ink shall not be Removed	TEST REPORT	W	W		
6	Tensile strength at break	Measurement	Four samples from each lot.	PTS	Min. 200 kg/cm ²	TEST REPORT	P	W		
7	Test of Virginity	Measurement	Four Samples To be tested from each Lot.	PTS	As PTS	TEST REPORT	P	R		
8	Colour Fastness test after 15 day at 15° C in 20% Ammonium sulphite solution.	Review of TC	(Type Test)	Performed at APTC Lab/NABL Lab	Satisfactory, while comparing the test specimen with a sample specimen in cool light.	TEST REPORT	R	R		
9	Colour Fastness test for 24 Hrs	Visual	Four Sample per Lot	PTS	No Colour change by immersion in 10 % nitric acid solution by mass	TEST REPORT	P	W		
10	Colour Fastness test for 24 Hrs	Visual	Four Sample per Lot	PTS	No Colour change by immersion in 20 % sodium carbonate solution by mass	TEST REPORT	P	W		
11	Colour Fastness test for 24 Hrs	Visual	Four Sample per Lot	PTS	No Colour change by immersion in 20 % ammonium sulphide solution by mass	TEST REPORT	P	W		
12	Performance of printing stability	Visual	Four samples from each lot. Lot.	PTS/ EN 12613 & IEC 60898:1995	Pass. Marking shall be easily Legible after the test	TEST REPORT	P	W		
13	Visual Warning Characteristics	Visual	Four samples from each lot. Lot.	PTS/ EN 12613	As per EN 12613	TEST REPORT	P	W		



14	Anti-Rodent Test Non-Toxic, Non- Hazardous, Non- Biodegradable	Review of TC	Type Test	Testing at any independent Laboratory	5 days / 30 days' attack test should pass.Document /certificate issued by supplier for anti-Rodent master batch as per PTS- Toxicology data, RoHS Compliance & Non- biocidal product	TEST REPORT	R	R	
15	Colour	Each	PTS	As per PTS	Bright Yellow Colour	TEST REPORT	P	W	
16	Identification, Marking Art Work & Packing	Visual	Three samples from each Lot.	PTS	The warning mat shall be marked at intervals not exceeding 1 meter. The marking shall be legible and durable. The warning mat must be printed with "Caution: High Pressure Gas Pipeline Below" in both English and Hindi, marking shall include client name & logo, client's 24 Hours Emergency number, Warning Symbols with Safety Message. In addition, name or trademark of the manufacturer, year of manufacture, lot/batch no. and reference of code of manufacture of warning mat shall be included in the marking. Each roll of 100 meter long be packed in plastic woven sack.	TEST REPORT	W	W	
17	Documentation			PTS	PTS	Compliance Certificate, Test reports, MTC	P	R	

Legends:

R Review	H Hold	TPIA Third Party Inspection Agency	PTS Particular Technical Specification
P Perform	W Witness	MTR Material Test Report	SS Standard Specification

Note:

- 1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the additional requirements as per SS/ PTS along with applicable Codes & Standards.
2. The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved.
3. Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.
- 4.Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
- 5.All reference Codes / Standards documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA at the time of inspection.
6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.

 Central U.P. Gas Limited		STANDARD QUALITY ASSURANCE PLAN COPPER TUBING				QAP NO :P.014714 G 11031 062			
						Date:- 26.05.2021			
						TENDER NO. - P.014714 G11031 R006			
						INSPECTION BY			
Sr. No	DESCRIPTION	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	FORMAT OF RECORD	Manufacturer	TPIA	REMARKS	
1	Raw material: Chemical Requirement	As per EN 1057	As per EN 1057/PTS	Material grade Cu-DHP/ CW 024A Cu + Ag: Min 99.9% P: 0.0015% TO 0.040%	MTC	P	R		
2	Final product: Chemical Requirement	As per EN 1057	As per EN 1057/PTS	Material grade Cu-DHP/ CW 024A Cu + Ag: Min 99.9% P: 0.0015% TO 0.040%	Inspection Report				
3	Physical test (Tensile, Elongation, Hardness etc.)	As per EN 1057	As per EN 1057/PTS	UTS- Min. 235 N/ Sq.mm Elongation - Min 30% Hardness- 75 TO 100 HV scale	Inspection Report	P	W		
4	Carbon film test	As per EN 1057	As per EN 1057/PTS	As per EN 1057/ PTS (Maximum Residual carbon- 0.20 mm/ sq. dm)	Inspection Report	P	W		
5	Carbon content test	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	W		
6	Drift expanding test	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	W		
7	Hydrostatic test	As per EN 1057	As per EN 1057	Min 35 bar/ 10 second	Inspection Report	P	RW	Min 10 % by TPIA	
8	Eddy current test	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	RW	Min 10 % by TPIA	
9	Dimensional Inspection (O.D, Wall thk, Length etc.)	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	RW	Min 10 % by TPIA	
10	Visual Inspection (Free from defect)	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	RW	Min 10 % by TPIA	
11	Marking	As per EN 1057	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	RW	Min 10 % by TPIA	
12	Documentation	-	As per EN 1057	As per EN 1057/ PTS	Inspection Report	P	R		
Legends:									
R Review		H Hold		TPIA Third Party Inspection Agency		PTS Particular Technical Specification			
P Perform		W Witness		MTR Material Test Report		SS Standard Specification			

Note:
1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the additional requirements as per SS/ PTS along with applicable Codes & Standards.
2. The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved.
3. Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.
4.Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
5.All reference Codes / Standards documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA at the time of inspection.
6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.



STANDARD QUALITY ASSURANCE PLAN COPPER FITTINGS

QAP NO :P.014714 G
11031 063

Date:- 26.05.2021

TENDER NO. - P.014714
G11031 R006









						INSPECTION BY		
SR. No	DESCRIPTION	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	FORMAT OF RECORD	Manufacturer	TPIA	REMARKS
1	Raw material: Chemical Requirement	One in each heat	As per EN 1254/ PTS	Material grade Cu-DHP/ CW 024A Cu + Ag: Min 99.9% P: 0.0015% to 0.040%	MTC	P	R	
2	Final product: Chemical Requirement	One in each heat	As per EN 1254/ PTS	Material grade Cu-DHP/ CW 024A Cu + Ag: Min 99.9% P: 0.0015% to 0.040%	Test Report	P	W	
3	Carbon in bore tests (Carbon film test, carbon content test)	One in each heat	As per EN 1254/ PTS	As per EN 1254/ PTS	Test Report	P	W	
4	Stress corrosion resistance test	One in each heat	As per EN 1254/ PTS	As per ISO 6957/ PTS	Test Report	P	W	Min. 10% by TPIA
5	Hydrostatic pressure test	100%	As per EN 1254/ PTS	Min 37.5 bar @ 15 min.	Test Report	P	RW	Min. 10% by TPIA
6	Pneumatic pressure test	100%	As per EN 1254/ PTS	Min 6 bar @ 10 second	Test Report	P	RW	Min. 10% by TPIA
7	Dimensional Inspection (O.D, Wall thk., Min. Length of engagement etc.)	100%	As per EN 1254/ PTS	As per EN 1254/ PTS	Test Report	P	RW	Min. 10% by TPIA
8	Visual Inspection (Free from defect)	100%	As per EN 1254/ PTS	As per EN 1254/ PTS	Test Report	P	RW	Min. 10% by TPIA
9	Marking	100%	As per EN 1254/ PTS	As per EN 1254/ PTS	-	P	RW	Min. 10% by TPIA
10	Documentation		As per EN 1254/ PTS	As per EN 1254/ PTS	Inspection Report	P	H	



LEGEND: R - Review, W - Witness, H - Hold, P - Perform, TPIA - Third Party Inspection Agency, MTC – MATERIAL TEST CERTIFICATE, PTS- PARTICULAR TECHNICAL SPECIFICATION

Notes: -

- 1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the applicable codes along with additional requirement of PTS.
2. The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved.
3. Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.
4. Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
5. All reference Codes / Standards documents, PTS shall be arranged by vendor / supplier for reference of TPIA at the time of inspection.
6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.

 Central U.P. Gas Limited		STANDARD QUALITY ASSURANCE PLAN Brass Fittings				QAP NO : P.014714 G 11031 064		 
						Date:- 26.05.2021		
						TENDER NO. - P.014714 G11031 R006		
						INSPECTION BY		
SR. No	DESCRIPTION	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA (As per EN 1057/ PTS)	FORMAT OF RECORD	Manufacturer	TPIA	REMARKS
1	Raw material: Chemical/ Physical Requirement	one in each heat	As per EN 12164 / PTS	As per EN 12164/ PTS	MTC	P	W	
2	Final product					P	W	
2.1	Resistance dezincification	one in each heat	As per EN 6509 / PTS	As per EN 6509 / PTS	Test Report	P	W	
2.2	Carbon bore test	one in each heat	As per ISO 6957 / PTS	As per ISO 6957 / PTS	Test Report	P	W	
2.3	Stress corrosion resistance test	one in each heat	As per ISO 6957 / PTS	As per ISO 6957 / PTS	Test Report	P	W	
2.4	Hydrostatic pressure test	100%	As per EN 1254/EN 12164	Min 37.5 bar @ 15 min.	Test Report	P	RW	Min 10 % by TPIA
2.5	Pneumatic pressure test		As per EN 1254/ EN 12164/ PTS	Min 6 bar @ 15 second	Test Report	P	RW	Min 10 % by TPIA
2.6	Visual Inspection (Free from defect)	100%	As per EN 12164/ EN 1254/PTS	As per EN 1254/ PTS	Test Report	P	RW	Min 10% by TPIA
2.7	Dimensional Inspection (O.D, Wall thk., Length etc.)	100%	As per EN 12164/EN 1254/PTS	As per EN 1254/ PTS	Test Report	P	RW	Min 10 % by TPIA
3	Marking	100%	EN 12164/ EN 1254	As per EN 1254		P	RW	Min. 10% by TPIA
4	Documentation	-	PTS	PTS	Test Report	P	H	
LEGEND: R - Review, W - Witness, H - Hold, P - Perform, TPIA - Third Party Inspection Agency, MTC – MATERIAL TEST CERTIFICATE								
Notes: -								
1. The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the applicable codes.								
2. The TPIA shall use this QAP for inspection against subject tender and may consider this document as approved.								
3. Procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.								
4. Owner/ Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.								
5. All reference Codes / Standards documents, PTS shall be arranged by vendor / supplier for reference of TPIA at the time of inspection.								
6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, dispatch clearance note & MTC.								

		STANDARD QUALITY ASSURANCE PLAN CORRUGATED FLEXIBLE METAL HOSE (ANACONDA)				QAP NO : P.014714 G 11031 065 Date:- 26.05.2021 TENDER NO. - P.014714 G11031 R006		 	
						INSPECTION BY			
SR. No	Item/Description	Test Parameters	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA/ FORMAT OF RECORD	Manufacturer	TPIA	REMARKS	
1	Raw Material								
1.1		Chemical & Mech. Test of material of SS hose	100%	SS316 BS: 1449 PART -2	SS316 BS: 1449 PART -2/ MTC	P	W		
1.2		Chemical & Mech. Test of material of end fittings (Adaptors, Nuts, Washer)	100%	As per PTS	As per PTS / MTC	P	W		
1.3		Heat treatment	100%	As per BS: 6501 PART 1	As per BS: 6501 PART 1/ MTC	P	R		
2	Final Product								
2.1	Type test	Cyclic life/ static bend test at 1.5 x design pressure	One (1) per batch	As per Cl. No. 14 of BS: 6501 PART 1	As per BS: 6501 PART 1 No cracks permissible/ T.C.	P	W		
2.2	Type test	Yield and Burst test	One (1) per batch	As per Cl. No. 14 of BS: 6501 PART 1	As per BS: 6501 PART 1 / T.C.	P	W		
2.3	Production test	Pressure test (Pneumatic Test)	100%	As per Cl. No. 15 of BS: 6501 PART 1	As per BS: 6501 PART 1 / T.C	P	RW	Min. 10% by TPIA	
2.4	Production test	Visual Inspection	100%	As per BS: 6501 PART 1	As per BS: 6501 PART 1/ TC	P	R		
2.5	Production test	Dimension	100%	As per PTS	As per PTS/ IR	P	RW	Min. 10% by TPIA	
3	End fittings (Adaptors, nuts, washer)	Visual & dimensional check	100%	As per PTS	As per PTS/ IR	P	RW	Min. 10% by TPIA	
4	Marking	-	100%	As per BS: 6501 PART 1/ PTS	As per BS: 6501 PART 1/ PTS/ TR	P	RW	Min. 10% by TPIA	
5	Final Documentation	-	-	As per the term & conditions of P.O. & PTS	As per the term & conditions of P.O. & PTS / IR	P	H		
LEGENDS: R - Review, W - Witness, H - Hold, P - Perform, TPIA - Third Party Inspection Agency, RW - Random witness, PTS- Particular Technical Specification, TR- Test Report, MTC- Material Test Certificate, T.C.- Test Certificate, IR- Inspection Report									
Notes: -									
1.The above testing and acceptance criteria are minimum requirements; however, manufacturer shall ensure that the product shall also comply to the applicable codes along with additional requirement of PTS.									
2. Mechanical & Chemical testing shall be done in NABL accredited lab.									
3. Special manufacturing procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.									
4. Owner / Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time									
5. All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/GGL at the time of Inspection									
6. At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, despatch clearance note & MTC.									
7. TPIA shall mention clause wise observations in IRN & IR.									

 TRACTEBEL 			QUALITY CONTROL TABLE STEEL REINFORCED RUBBER HOSE				QAP NO : P.014714 G 11031 066 Date:- 26.05.2021 TENDER NO. - P.014714 G11031 R006		
S. NO.	Item/Description	Test Parameters	QUANTUM OF CHECK	PROCEDURE	ACCEPTANCE CRITERIA	CERTIFICATE	INSPECTION		Remarks
							Vendor	TPIA	
1.1	Raw Material	Chemical & Mech. Test of material of Steel Reinforced Rubber Hose (Lining, Reinforcement material & Cover)	100%	IS 9573	IS 9573	MTC	P	R	
2	Final Product								
2.1	Final Inspection	Mechanical Properties	one (1) per batch	Tensile Strength = 10 Mpa (Min.) EI (Lining & Cover) is 200 & 250 resp. (Min.)	PTS & IS 9573	Inspection Report	P	W	
2.2		Resistance of Lining to n-pentane	one (1) per batch	Shall not exceed 10% absorbed & 5 % extractable as per Cl.no. 5.2 of PTS	Cl 5.4.3.2 of IS 9573	Inspection Report	P	W	
2.3		Adhesion Test	one (1) per batch	Min. Adhesion shall be 2 KN/m as per Cl. No. 5.3 of PTS	Cl. no. 5.5.1 of IS 9573	Inspection Report	P	W	
2.4		Low Temperature Flexibility Test	one (1) per batch	Conditioned at -40°C for 5 hrs. & bent at 180° around mandrel of dia 12 times the Nominal Bore of hose as per Cl no. 5.4 of PTS	Cl. No. 5.5.2 of IS 9573	Inspection Report	P	W	
2.5		Flexibilty of hose at 1.5 x design pressure	one (1) per batch	Bent empty to radius 95 mm without flattening & suffering structural damages.	Cl. No. 5.5.3 of IS 9573	Inspection Report	P	W	Witness by CA
2.6		Ozone Resistance Test	one (1) per batch	Cl no. 5.9 of PTS	Cl. No. 5.5.4 of IS 9573	Inspection Report	P	W	
2.7		Hydrostatic Test / Proof Pr. Test	100%	2 Mpa for 1 min. as per Cl. No. 5.7 of PTS	Cl. No. 5.5.5.1 of IS 9573	Inspection Report	P	W	Witness by CA
2.8		Burst test	one (1) per batch	Min Pressure shall be 5 MPA as per Cl. 5.8 of PTS	Cl. No. 5.5.5.2 of IS 9573	Inspection Report	P	W	Witness by CA
2.9		Grip Strength Test	4 specimen / Batch	Cl no. 5.9 of PTS	Cl no. 5.5.7 & Annex. A of IS 9573	Inspection Report	P	W	
2.10		Burning Test	one (1) per batch	Shall not burn till 45 sec. as per Cl. No. 5.10 of PTS	Cl no. 5.5.8 of IS 9573	Inspection Report	P	W	
2.11		Visual & Dimensional Inspection	100%	Cl. No. 4.0 of PTS & IS 9573	IS 9573	Inspection Report	P	R	
2.12		Cover Color - Orange	100%	Cl no. 5.2.3 of PTS	PTS & IS 9573	Inspection Report	P	R	
3	Marking	-	100%	As per Cl. No. 6.0 of PTS	PTS / IS 9573	Inspection Report	P	R	
4	Packaging	-	100%	As per Cl. No. 7.0 of PTS	PTS / IS 9573	Inspection Report	P	R	

5	Final Documentation	-	-	As per the term & conditions of P.O. & PTS	As per the term & conditions of P.O. & PTS	3.2 Certificate as per EN 10204	P	H	
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LEGENDS: R - Review, W - Witness, H - Hold, P - Perform, TPIA - Third Party Inspection Agency, CA - Control Authority (Owner / Owner's representative)

Notes: -

- 1 The Above Testing and acceptance criteria are minimum requirements, however, manufacturer shall ensure that the product shall also comply to the additional requirements as per Particular Technical specifications(PTS)
- 2 The supplier shall submit their own detailed ITP prepared on the basis of above / Technical specification for approval of Owner/Owner's representative.
- 3 Owner/Owner representative shall review/approve all the documents related to ITP/Quality manuals/Drawings etc.submitted by supplier.
- 4 Contractor shall in coordination with Supplier/Sub vendor shall issue detailed Production and Inspection schedule indicating the dates and the locations to facilitate Owner/Owner's representative and TPIA to organise Inspection.
- 5 Special manufacturing procedures have to be specially approved or only previously approved procedures have to be used, in case of conflict between specifications more stringent condition shall be applicable.
- 6 Owner / Owner's representative including TPIA will have the right to inspect any activity of manufacturing at any time.
- 7 All reference Codes/ Standards, Documents, P.O. Copies shall be arranged by vendor / supplier for reference of TPIA/Owner at the time of Inspection.
- 8 At the time of delivery of material in stores, vendor will submit copy of all related document of inspection along with release note, despatch clearance note & MTC.

  	RECOMMENDED VENDOR LIST	P.014714 G 11031 067
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CENTRAL U.P. GAS LIMITED (CUGL)

LAYING OF MDPE NETWORK AND GI / Cu INSTALLATION WORK FOR DOMESTIC, COMMERCIAL & INDUSTRIAL CUSTOMERS" FOR CUGL GA's IN KANPUR, UNNAO, BAREILLY & JHANSI IN THE STATE OF U.P

RECOMMENDED VENDOR LIST

0	26.05.2020	Issued for Tender	Pulkit Mishra	Nitish Nandi	Nitish Nandi
Rev.	Date	Description	Prepared By	Checked By	Approved By

		RECOMMENDED VENDOR LIST	P.014714 G 11031 067
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RECOMMENDED VENDOR LIST

ITEM CODE / DESCRIPTION	GI Pipe
VENDOR NAME	REMARKS
M/s Swastik Pipe Ltd.	
M/s Jindal Industries Ltd.	
M/s Vishal Pipes Ltd.	
M/s Indus Tubes Ltd.	
M/s Advance steel Tubes Ltd.	
M/s Surya Roshni Limited	
M/s. Rama Steel Tubes	
M/s P S Steel Tubes	
ITEM CODE / DESCRIPTION	GI Fittings
VENDOR NAME	REMARKS
M/s Sarin Industries Ltd.	
M/s Jupiter Metal Industries Ltd.	
M/s Jainsons Industries Ltd.	
M/s Jinan Meide	
M/s Green Malleable Pvt Ltd	
M/s Rajnesh Malleable Ltd., Delhi	
M/s Industrial Valves & Components, Delhi	
M/s Excel Metal & Engineering Industries, Mumbai	
M/s Modern Stores & Engineering Concern, Kolkata	
M/s Chokhawala Distributors (For Jinan Meide)	
ITEM CODE / DESCRIPTION	Forged fittings
VENDOR NAME	REMARKS
M/s Jainsons Industries Ltd Jalandhar	
M/s Modern Stores & Engineering Concern Kolkata	
M/s Bharat Forge & Press Industries Baroda	
M/s B M Meters Pvt Ltd, Jalandhar	
ITEM CODE / DESCRIPTION	CS Pipe (ASTM A106 Gr B)
Maharashtra Seamless Limited (MSL)	
Indian Seamless & Metal Tubes (ISMT)	

 	 <small>Central U.P. Gas Limited</small>	RECOMMENDED VENDOR LIST	P.014714 G 11031 067
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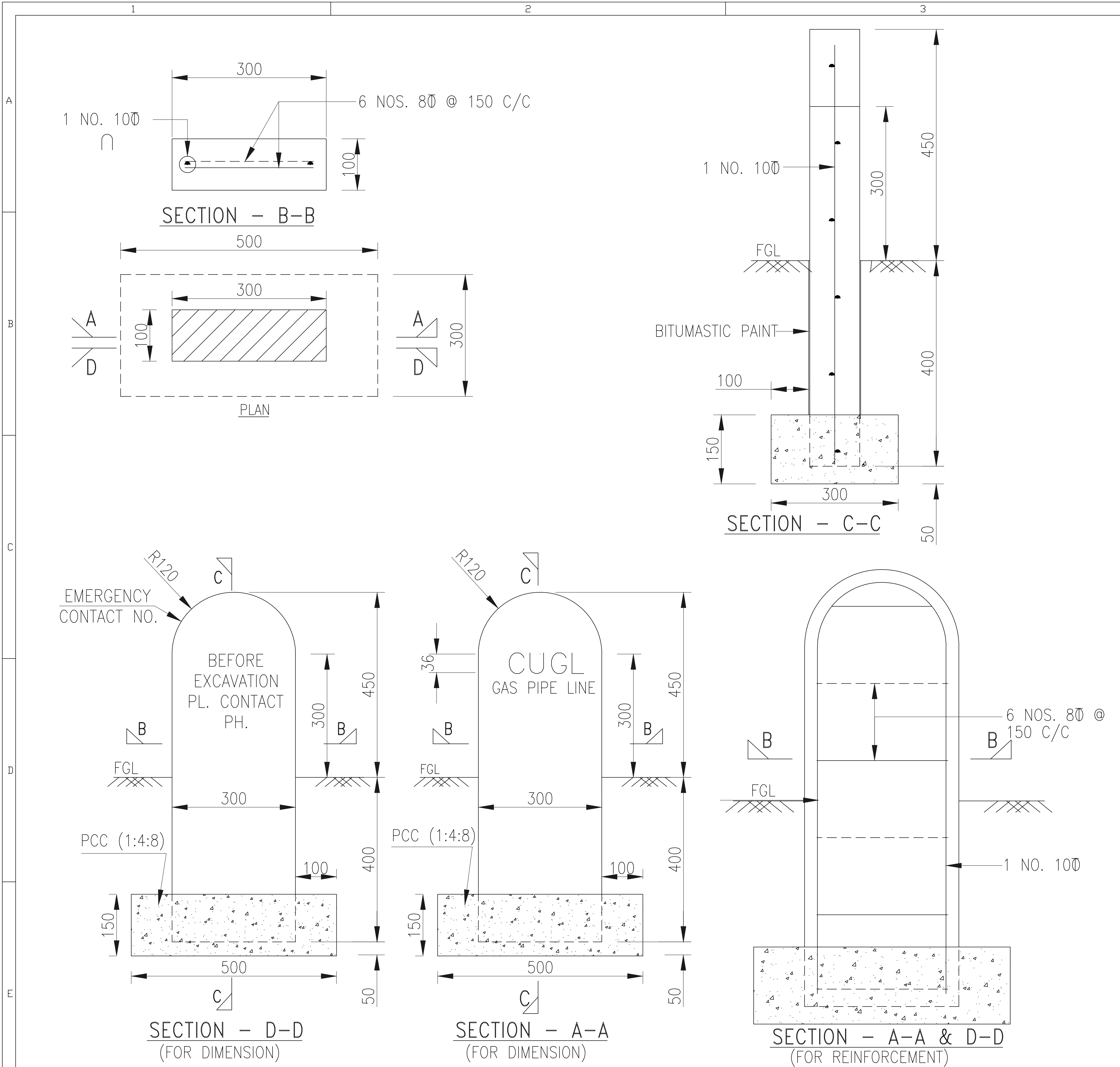
ITEM CODE / DESCRIPTION	CS Fittings
VENDOR NAME	REMARKS
M/s Commercial Supplying Agency, Mumbai	
M/s Dee Development Engineers Ltd	
M/s Eby Industries, Mumbai	
M/s Gujarat Infra Pipes Pvt Ltd, Vadodara	
M/s M S Fittings Mfg. Co. Pvt Ltd, Kolkata	
M/s Teekay Tubes Pvt. Ltd, Mumbai	
M/s Pipe Fit, Baroda	
M/s Sawan Engineers, Baroda	
M/s Sky Forge Pvt. Ltd., Palwal	
ITEM CODE / DESCRIPTION	Isolation Ball Valve & Appliance Valve
VENDOR NAME	REMARKS
M/s Enologas Bonomi S.P.A.	
M/s Ningbo Zhiqing Industrial Co. Limited	
M/s Zhejiang Valogin Technology Co. Ltd.	
M/s Umesh Enterprises	
M/s Parker Hannifin S.P.A.	
M/s Chandan Enterprises	
ITEM CODE/DESCRIPTION	Warning Mat
VENDOR NAME	REMARKS
M/s. Sparco Multi Plast	
M/s. Sri Vijay Wire & Cable	
M/s Singhal Industries, Ahmedabad	
M/s Raychem RPG Ltd.	
M/s BINA Enterprises	
ITEM CODE/DESCRIPTION	HDPE Pipe
VENDOR NAME	REMARKS
M/s. Duraline India	
M/s. Jain Irrigation Systems Limited	
M/s. Kriti Industries India Ltd.	
M/s. Oriplast Ltd.	
M/s Vee kay Plast	
M/s Vishakha Irrigation Pvt. Ltd.	
M/s Hari Plast	

 	 <small>Central U.P. Gas Limited</small>	RECOMMENDED VENDOR LIST	P.014714 G 11031 067
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M/s Climax Synthetics (P) Ltd., Vadodara	
M/s Sangir Plastics (P) Ltd., Mumbai	
M/s Himalyan pipe industries, Solan	
M/s Dutron Polymers Ltd.	
M/s Parixit Irrigation Limited	
M/s M/s Veekay Plast	
ITEM CODE/DESCRIPTION	PE (Fitting/Valves/Transition Fittings)
VENDOR NAME	REMARKS
M/s. Georg Fischer Piping System	
M/s. Kimplas piping Systems	
M/s Innogaz & M/s Frialen of M/s Aliaxis Utilities & Industry Pvt. Ltd. (formerly Glynwed pipe systems)	
M/s. RMG Autometers gas technologies	
M/s Friatech AG, Germany (represented by M/s Sherman Sales in India)	
M/s Al-Aziz Plastics Pvt. Ltd.	
M/s Sangir Plastics (P) Ltd., Mumbai	
ITEM CODE / DESCRIPTION	Steel Reinforced Rubber Hose (Type-4)
VENDOR NAME	REMARKS
M/s Super Seal Flexible Hose Ltd.	
M/s Suraksha Products Pvt. Ltd.	
M/s Vansh Industries	
M/s T & L Gases	
ITEM CODE / DESCRIPTION	Corrugated Flexible Metal Hose (Anaconda)
VENDOR NAME	REMARKS
M/s KPC Flex Tubes	
M/s Vestas Hose Division	
M/s Alpha Flexi Tubes	
M/s Chandan Enterprises	
M/s Vikram & co.	
ITEM CODE / DESCRIPTION	MDPE Pipe
VENDOR NAME	REMARKS
M/s Hari Udyog Pvt. Ltd	
M/s Jain Irrigation Systems Ltd.	
M/s Ori Plast Ltd.	

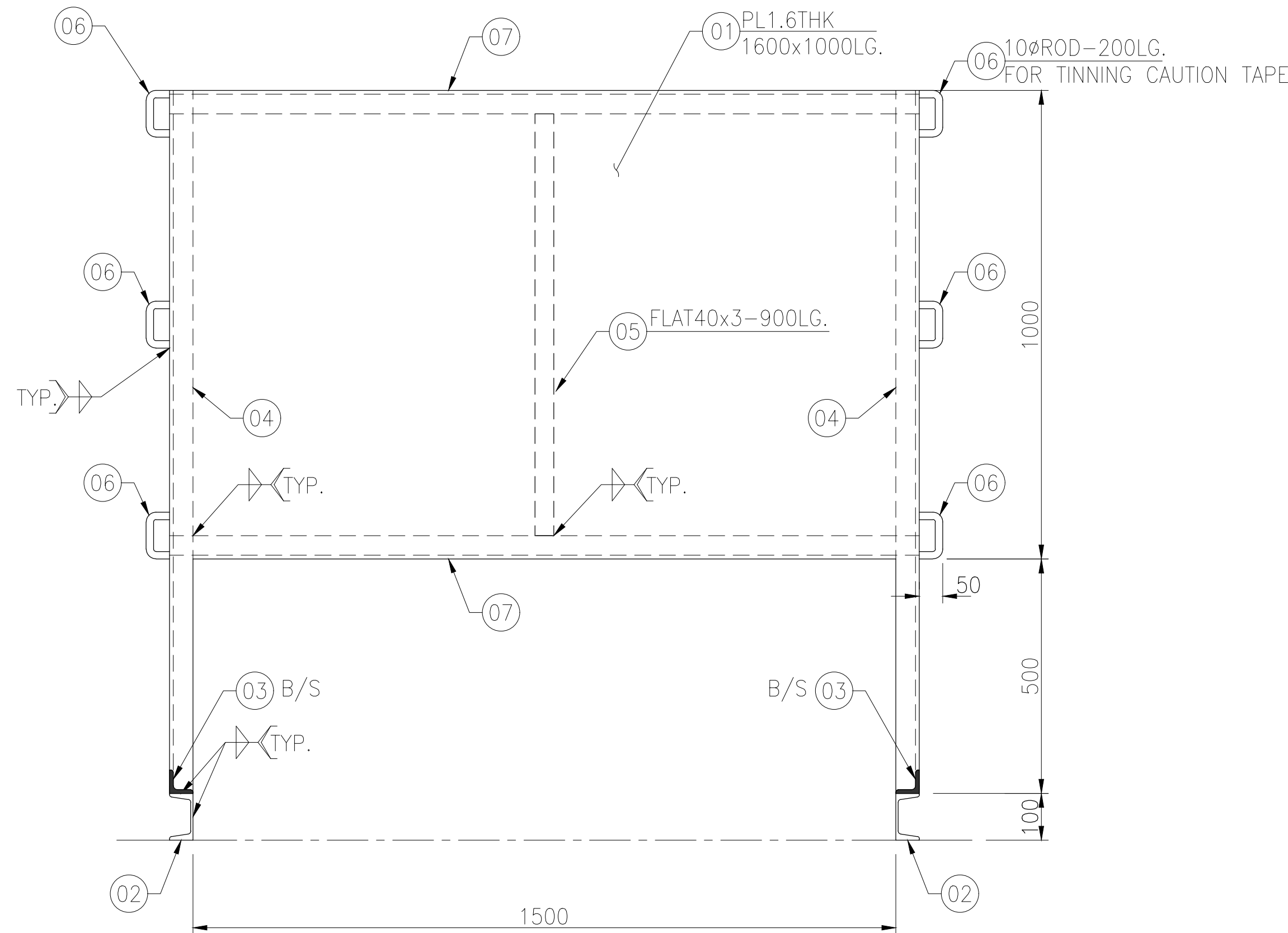
 	 Central U.P. Gas Limited	RECOMMENDED VENDOR LIST	P.014714 G 11031 067
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M/s. Vishakha Irrigation Pvt. Ltd.	
M/s Duraline Indian Pvt. Ltd.	
M/s Kriti Industries (I) Ltd., Indore	
M/s M/s Veekay Plast	
ITEM CODE / DESCRIPTION	Copper Tubes & Fittings
VENDOR NAME	REMARKS
M/s Rajco metal	
M/s Mehta tubes	
M/s Jay Banas Metals Pvt. Ltd	
M/s Paras Industries Ltd.	
M/s Chandan Enterprises	
M/s Paras Industries Ltd.	
ITEM CODE / DESCRIPTION	Brass Fittings
VENDOR NAME	REMARKS
M/s Chandan Enterprises	
M/s Paras Industries Ltd.	
M/s Om brass Enterprises	
M/s Chokhawala Distributors	
ITEM CODE / DESCRIPTION	Third Party Inspection Agency
VENDOR NAME	REMARKS
M/s American Bureau Services	
M/s Bureau Veritas	
M/s Certification Engineers International Limited (CEIL)	
M/s Lloyd Register of Industrial services	
M/s Meenaar Global Consultants LLP	
M/s SGS	
M/s TUV India Pvt. Ltd. (TUV - NORD)	
M/s TUV-SUD South Asia	
Notes: <ol style="list-style-type: none"> 1. Above vendor list is indicative only and any other vendor(s) apart from as mentioned above may be accepted subject to approval by Owner/Owners representative based on past track record. 2. For the vendors of items not covered in above vendor list, but required for completion of project successfully, supplier shall take approval from Owner/Owners representative for the same during project execution. Bidder shall submit the required certifications, documents, PTR and Performance letters from clients for the same. 	

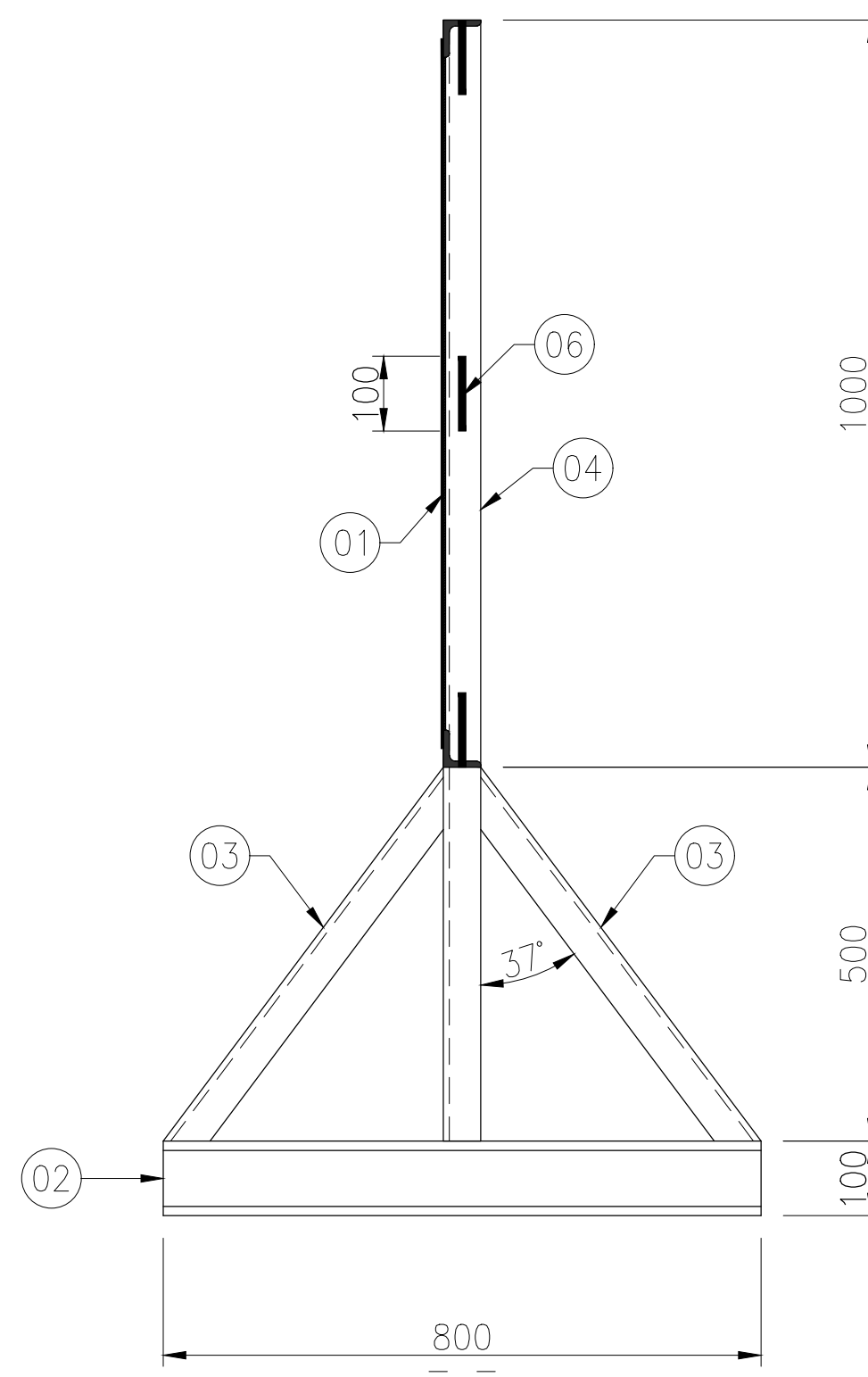


- NOTES
1. DRAWING IS NOT TO SCALE.
 2. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
 3. MARKERS SHALL BE INSTALLED IN EVERY 50 METER INTERVAL AS PER INSTRUCTIONS OF ENGINEER-IN-CHARGE.
 4. ALL BOUNDARY MARKERS SHALL BE PRECAST & INSCRIPTIONS SHALL BE ENGRAVED 5mm DEEP IN THE MOULD ON BOTH FACE.
 5. CONCRETE FOR BOUNDARY MARKER SHALL BE M - 20.

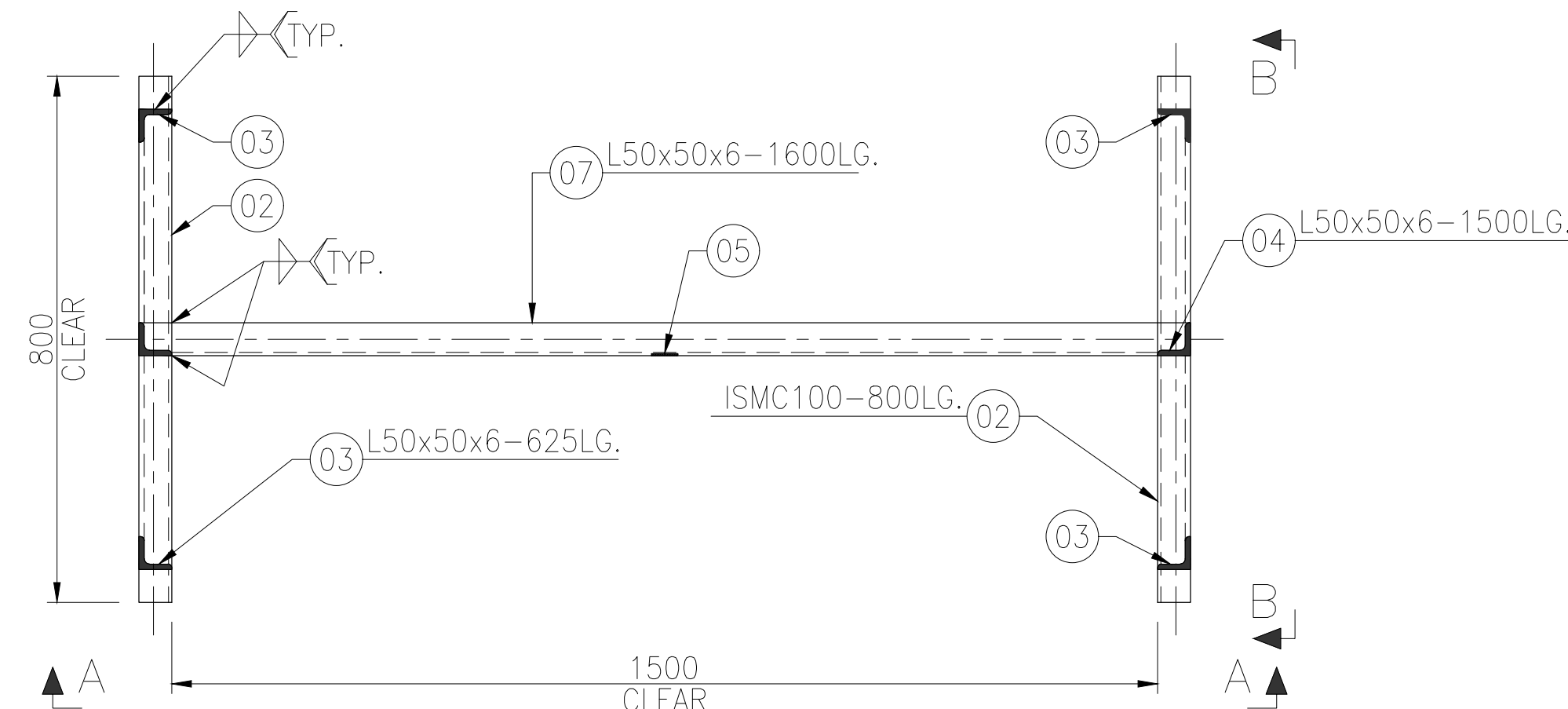
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Rev.	D M Y	Modifications				Drawn By	Checked By	Approved By									
CUSTOMER																	
				CENTRAL UP GAS LIMITED													
PROJECT																	
		CITY GAS DISTRIBUTION PROJECT															
SUBJECT																	
		TYPICAL DETAIL OF CAUTION BOARD															
						Size		Scale		Sheet		Rev.					
						A1		NTS		01		of		01		0	
						Project No.		Discipline		Code System		Code		Serial No.			
						P.014714		C		21028				007			



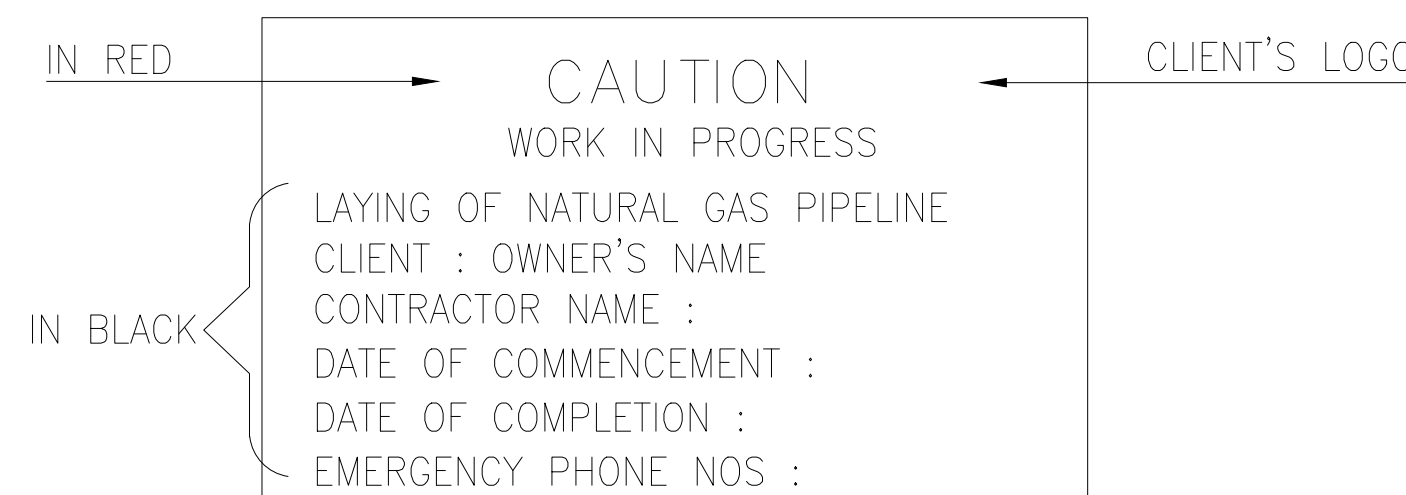
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(SCALE 1:100)



ELEVATION B-B
(SCALE 1:100)



PLAN VIEW
(SCALE 1:100)



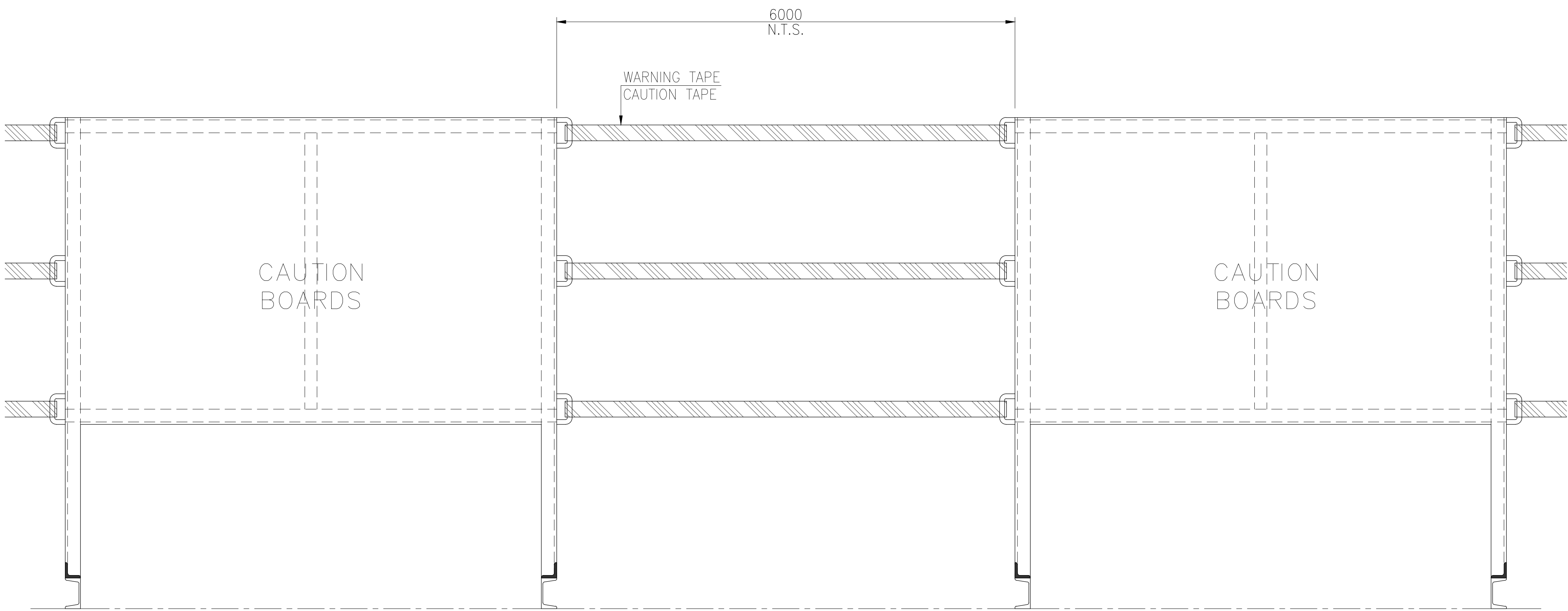
(TO BE PRINTED ON BOTH SIDE
OF ITEM NO. 01)

BILL OF MATERIAL						
Item Mkd.	Section	Width	Length	item Qty.	Weight	In Kgs
				(All Marks)	Kgs./M, M2	Total Weight
1	PL 1.6 Thk.	1600	1000	1	12.56	20.10
2	ISMC 100	--	800	2	9.20	14.72
3	L50x50x6	--	625	4	4.50	11.25
4	L50x50x6	--	1500	2	4.50	13.50
5	Flat 3 Thk.	40	900	1	0.94	0.03
6	10Ø Rod	--	200	6	0.62	0.74
7	L50x50x6	--	1600	2	4.50	14.40
Grand Total (Kg)						74.74

NOTES

- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
- FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.

0	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
Rev.	D M Y	Modifications	Drawn By	Checked By	Approved By
CUSTOMER					
CENTRAL UP GAS LIMITED					
PROJECT					
CITY GAS DISTRIBUTION PROJECT					
SUBJECT					
TYPICAL DETAIL OF CAUTION BOARD					
TRACTEBEL		Size	Scale	Sheet	Rev.
Project No.		A1	NTS	01 of 01	0
Discipline Code		System Code		Serial No.	
TRACTEBEL Engineering pvt. Ltd.		P.014714		C 21028	
008					

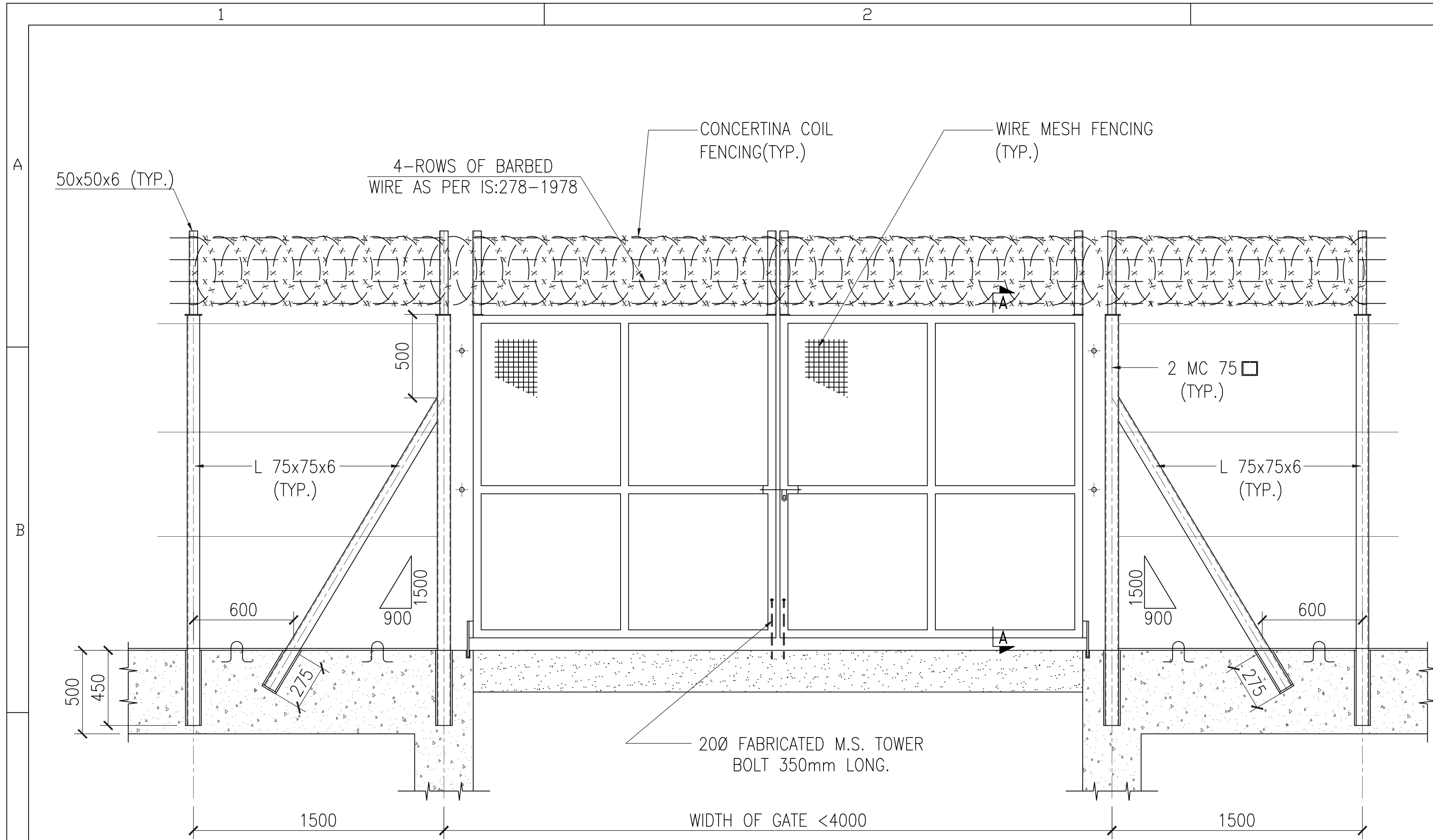


SCHEMATIC LAYOUT OF CAUTION BOARDS AND BARRICADDING

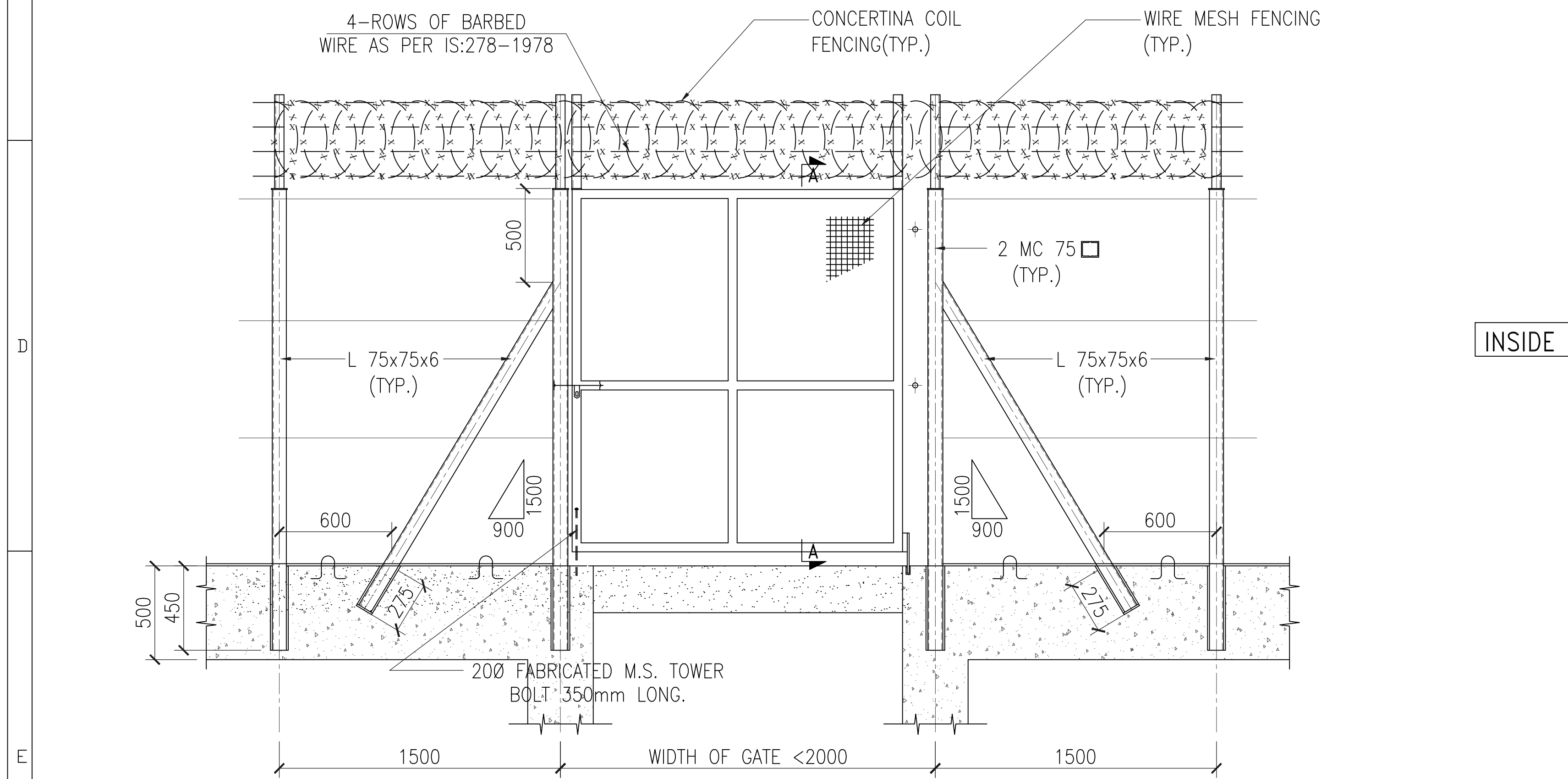
NOTES

- 1. ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
- 2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE.

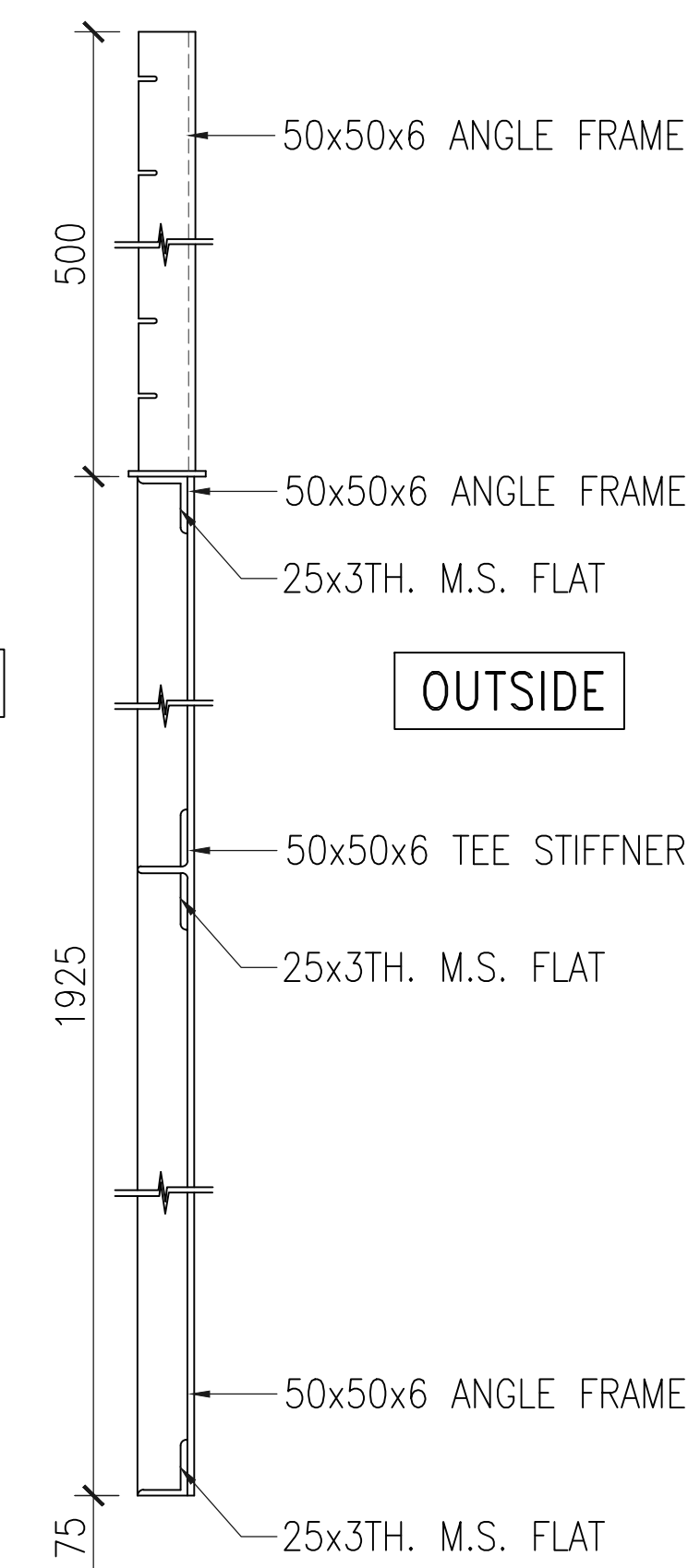
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Rev.	D M Y	Modifications	Drawn By	Checked By	Approved By
CUSTOMER			CENTRAL UP GAS LIMITED		
PROJECT			CITY GAS DISTRIBUTION PROJECT		
SUBJECT			TYPICAL DETAIL OF BARRICADING		
TRACTEBEL			Size	Scale	Sheet
Project No.			A1	NTS	01 of 01
TRACTEBEL Engineering pvt. Ltd.			Discipline	Code	System Code
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					009
					Rev.
					0



GATE DETAIL



GATE DETAIL



SECTION A-A

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DIMENSIONS.

0	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
Rev	D M Y	Modifications	Drawn By	Checked By	Approved By
CUSTOMER			CENTRAL UP GAS LIMITED		
PROJECT			CITY GAS DISTRIBUTION PROJECT		
SUBJECT			TYPICAL DETAILS OF GATE		
Size		Scale	Sheet	Rev.	
A1		NTS	01 of 01	O	
Project No.		Discipline Code	System Code	Serial No.	
P.014714		C	21028	011	

TRACTEBEL

TRACTEBEL Engineering pvt. Ltd.

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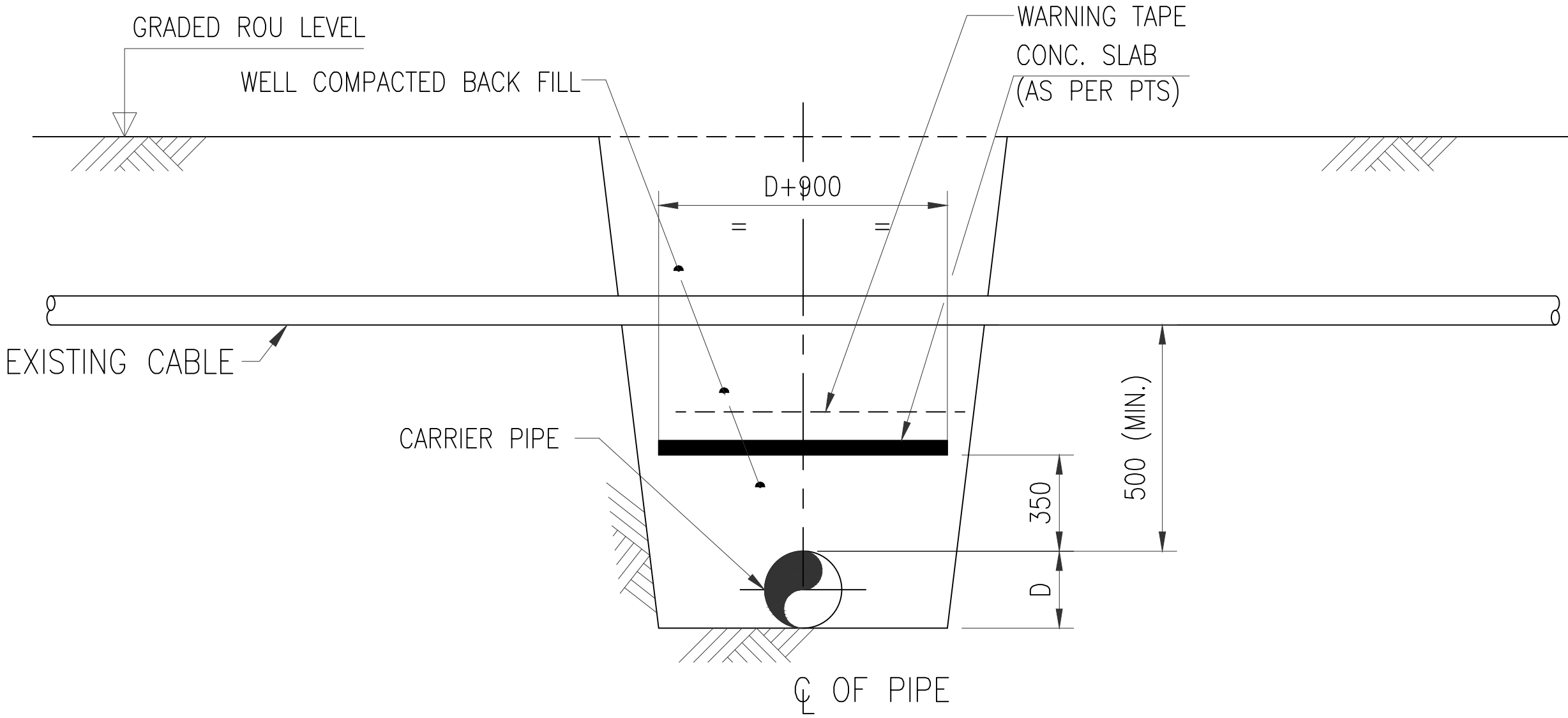
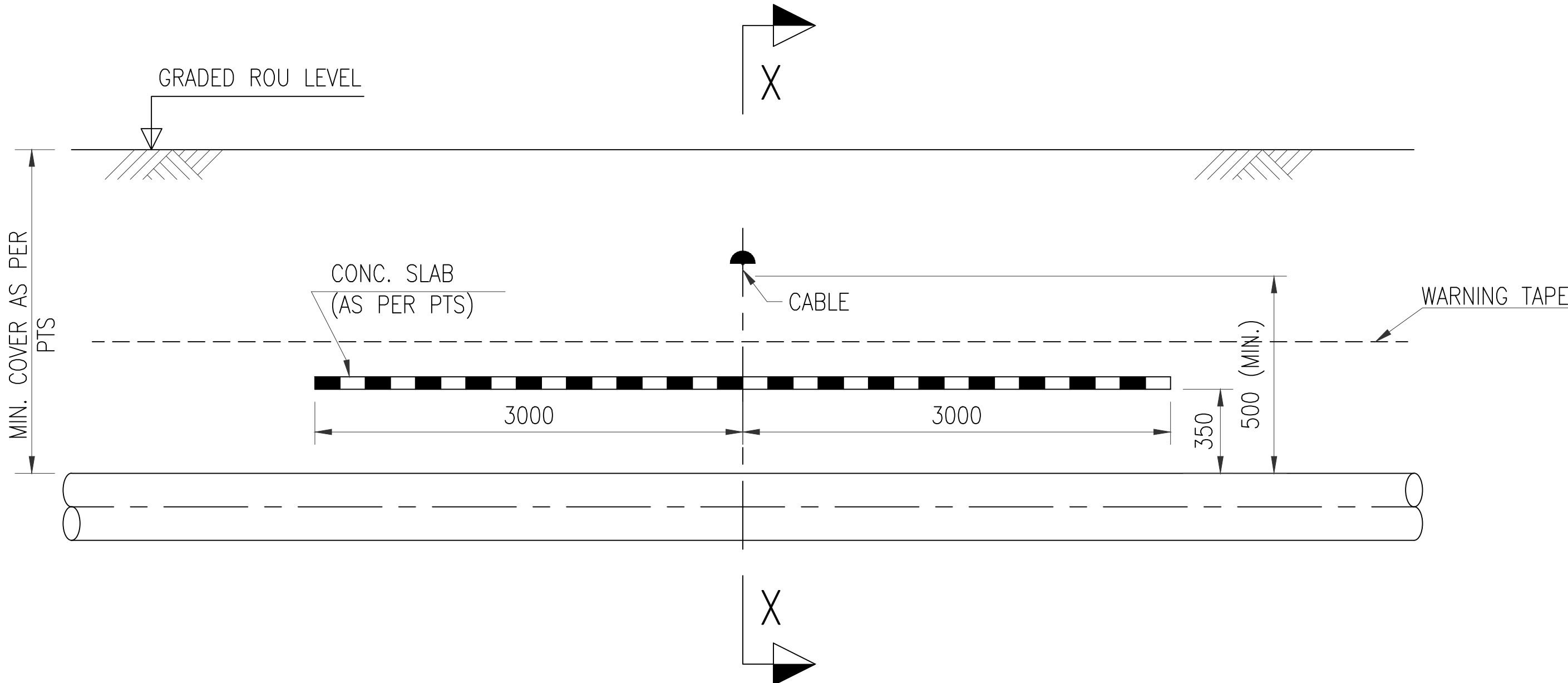
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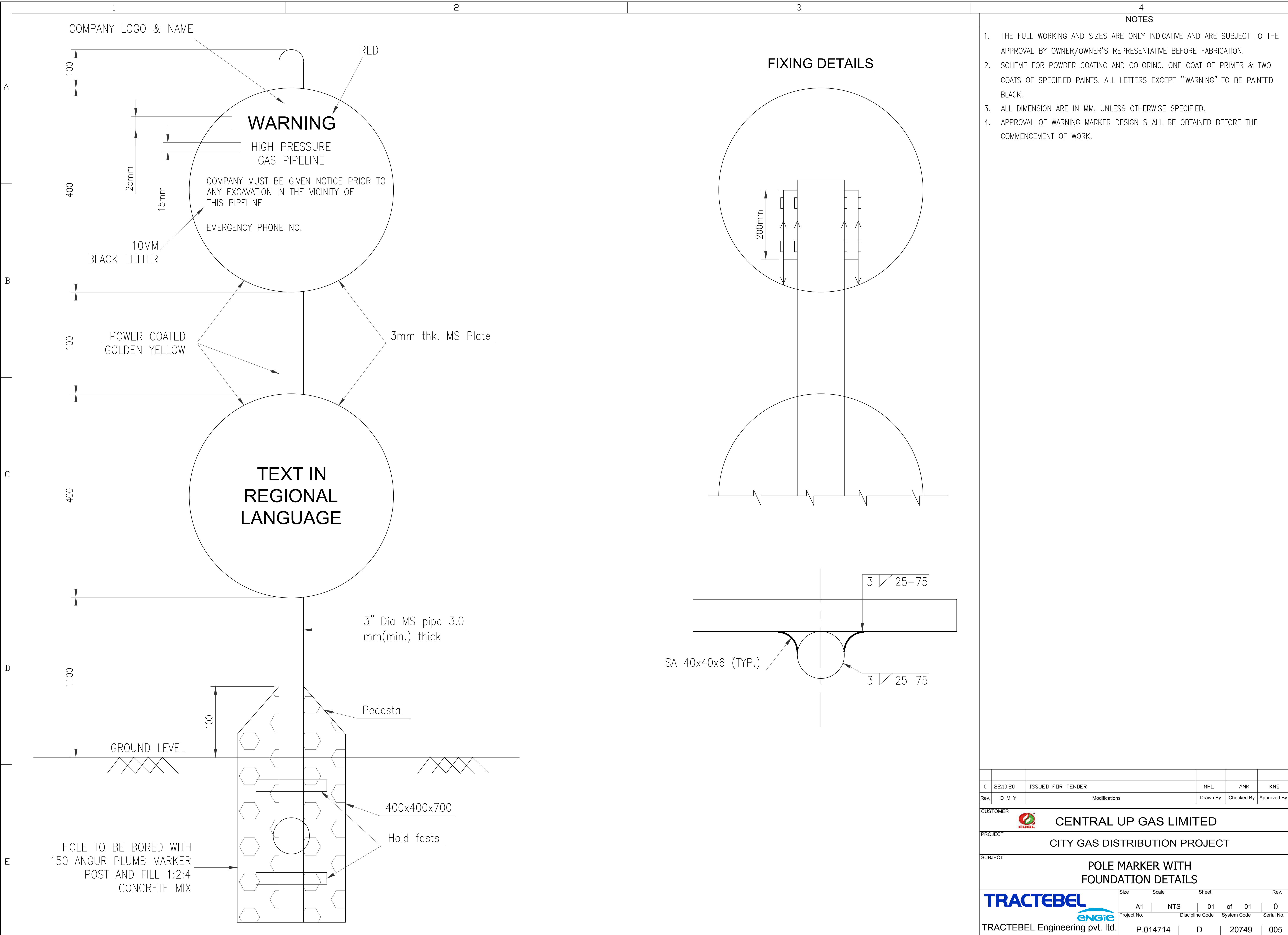
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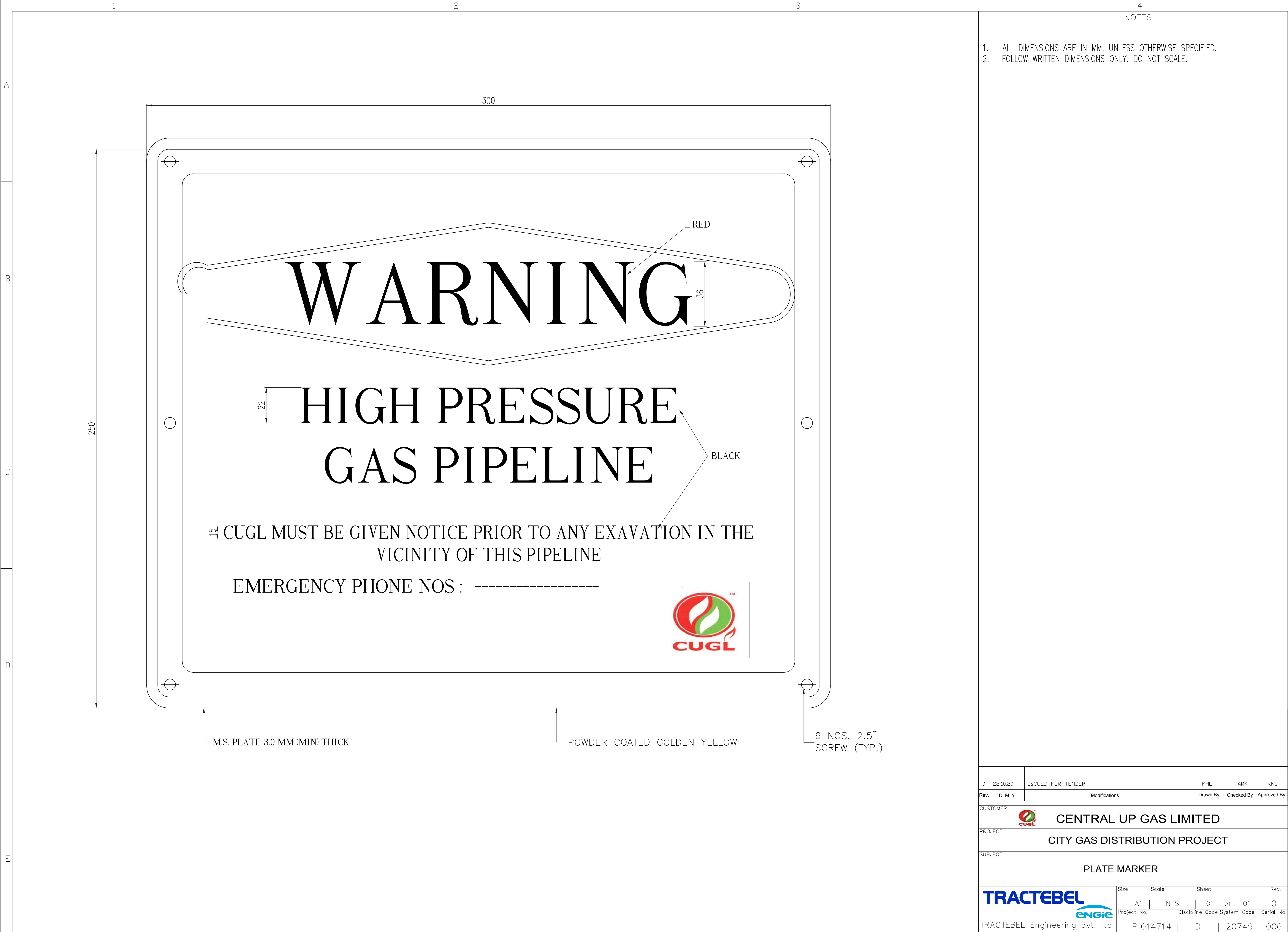
1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. A MODIFIED PIPELINE WARNING SIGN SHALL BE INSTALLED CLOSE TO THE CROSSING.
3. APPROVAL OF THE CROSSING SHALL BE OBTAINED FROM CONCERNED AUTHORITIES.

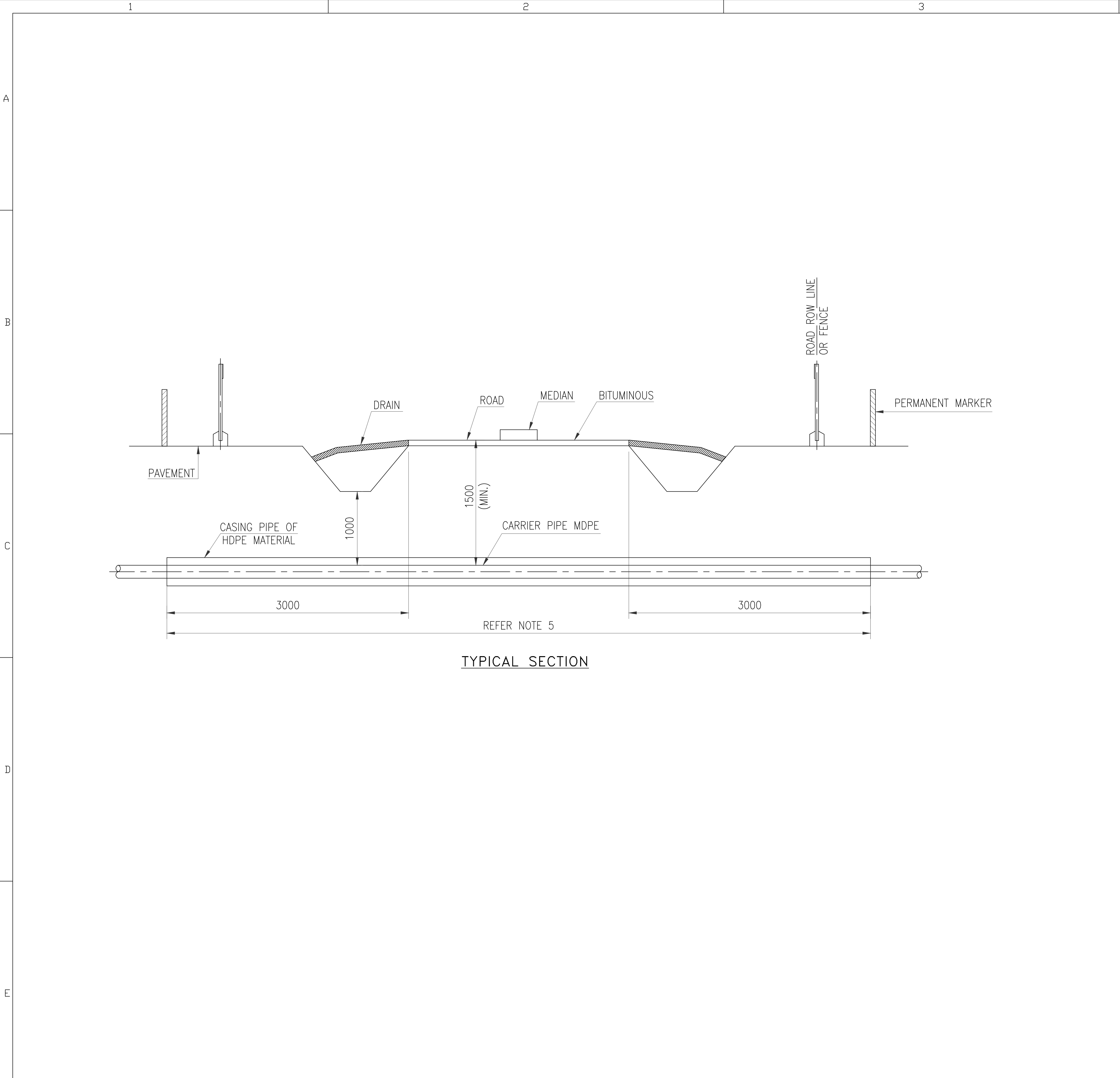


SECTION X-X

O	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
Rev.	D M Y	Modifications	Drawn By	Checked By	Approved By
CUSTOMER			CENTRAL UP GAS LIMITED		
PROJECT			CITY GAS DISTRIBUTION PROJECT		
SUBJECT			TYPICAL UNDERGROUND CABLE CROSSING DETAILS		
<div>TRACTEBEL</div> <div>TRACTEBEL Engineering pvt. Ltd.</div>			Size	Scale	Sheet
			A1	NTS	01 of 01
			Project No.	Discipline Code	System Code
			P.014714	D	20749
			Serial No.		
			014		







NOTES

1.

ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.

2.

ROAD HIGHWAY CROSSING SHALL BE RESTORED TO ORIGINAL CONDITION TO THE ENTIRE SATISFACTION OF OWNER AND CONCERNED AUTHORITIES HAVING JURISDICTION.

3.

REFER API RP 1102 FOR OTHER DESIGN AND INSTALLATION REQUIREMENTS.

4.

ANGLE OF INTERSECTION BETWEEN PIPELINE AND THE ROAD/HIGHWAY SHALL BE AS CLOSE TO 90° AS POSSIBLE BUT IN CASE LESS THAN 30°.

5.

CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSION WITH RESPECT TO SURVEY DETAIL FOR EACH ROAD/HIGHWAY CROSSING AND PREPARE DETAILED DRAWING FOR INDIVIDUAL CROSSING ENGINEER-IN CHARGE APPROVAL BEFORE COMMENCEMENT OF CONSTRUCTION.

6.

THE CASING PIPE SHALL BE OF SIZES MENTIONED AT CLAUSE NO.19 OF TECHNICAL SPECIFICATION FOR PE LAYING.

O	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
Rev.	D M Y	Modifications	Drawn By	Checked By	Approved By

CUSTOMER



CENTRAL UP GAS LIMITED

PROJECT

CITY GAS DISTRIBUTION PROJECT

SUBJECT

ROAD / HIGHWAY CASED CROSSING
FOR MDPE PIPE

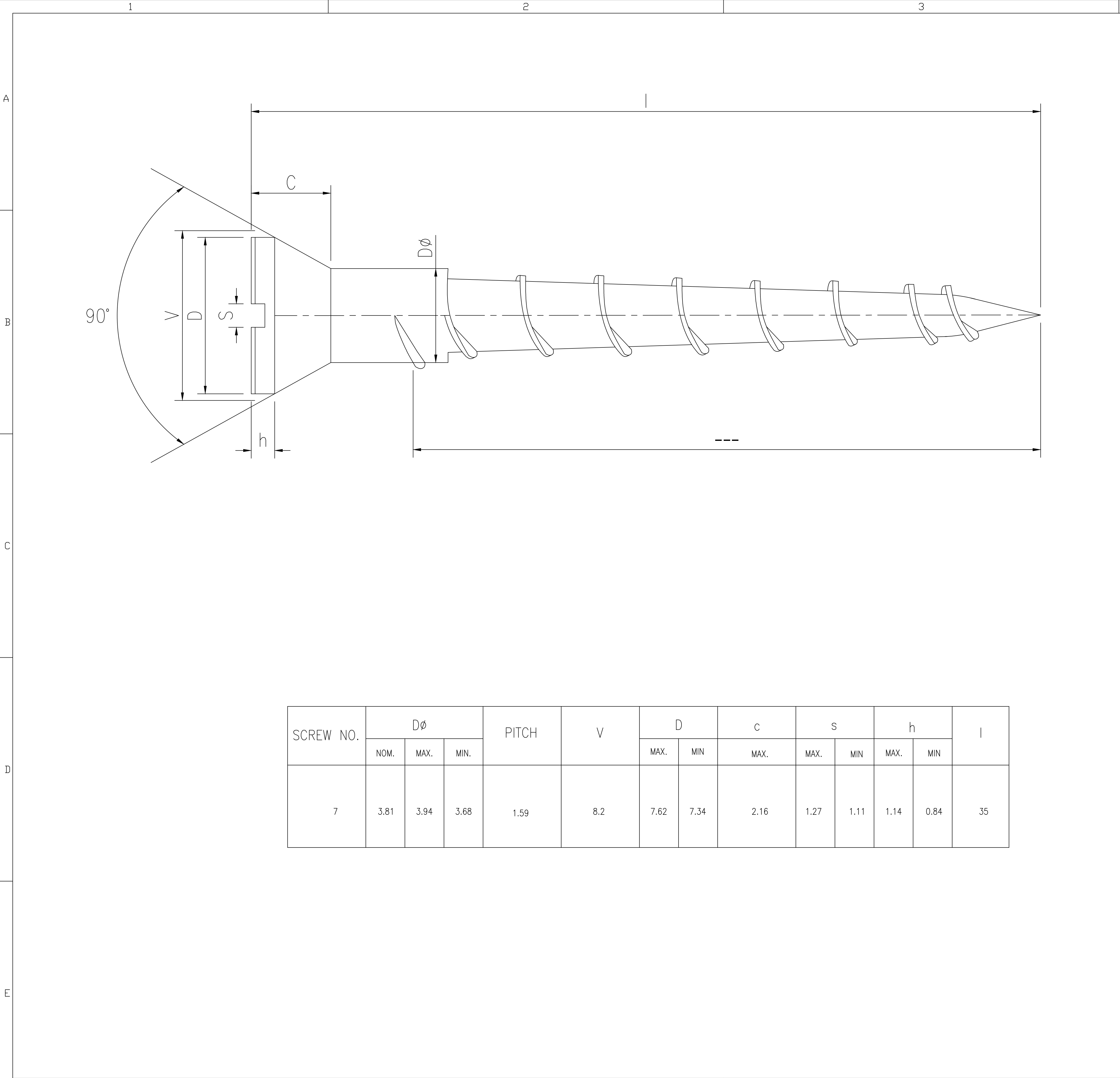
TRACTEBEL



TRACTEBEL Engineering pvt. Ltd.

Size	Scale	Sheet	Rev.
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P.014714	D	20749	007

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NOTES

1. THE DIMENSIONS FOR 'V' ARE THEORETICAL DIAMETER OF HEAD TO SHARP CORNERS & ARE GIVEN FOR DESIGN PURPOSE ONLY.

2. DIMENSIONS TOLERANCES WILL BE AS SPECIFIED IN IS : 6760–1972.

3. ALL DIMENSIONS ARE IN MILLIMETERS.

0	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
Rev.	D M Y	Modifications	Drawn By	Checked By	Approved By

CUSTOMER


CENTRAL UP GAS LIMITED

PROJECT

CITY GAS DISTRIBUTION PROJECT

SUBJECT

SPECIFICATION FOR WOOD SCREWS



TRACTEBEL Engineering pvt. Ltd.

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P.014714	D	20749	008

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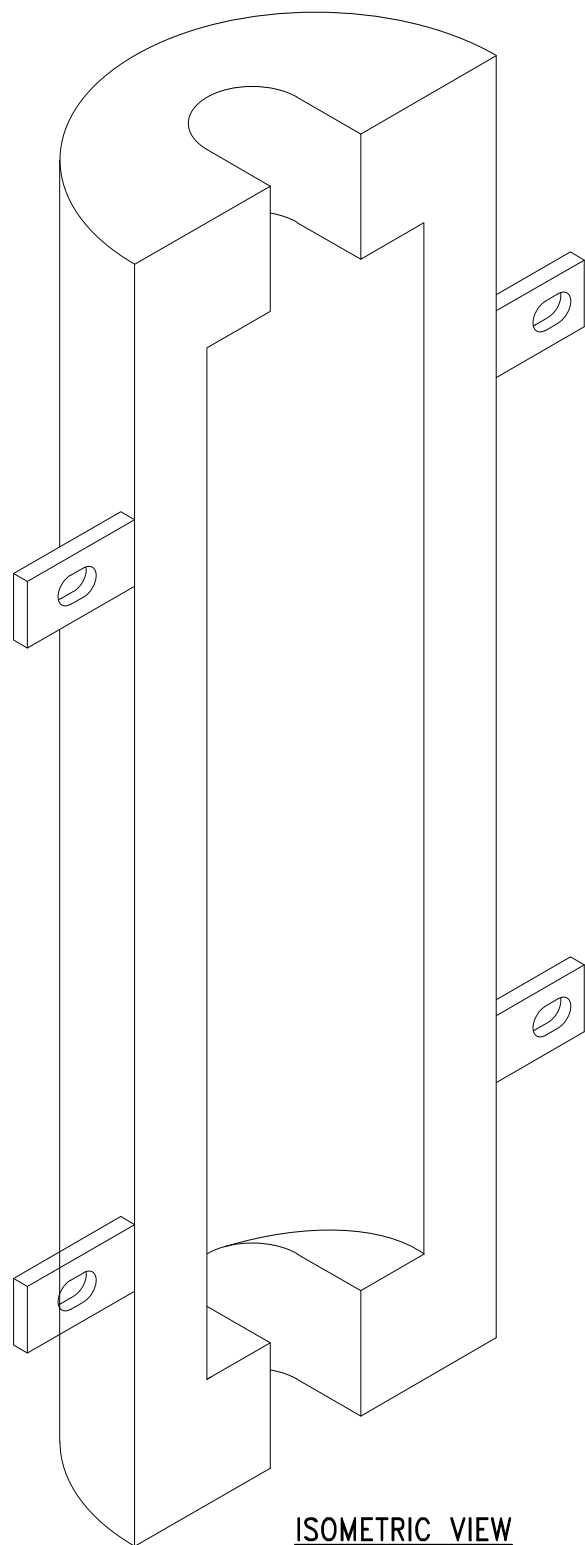
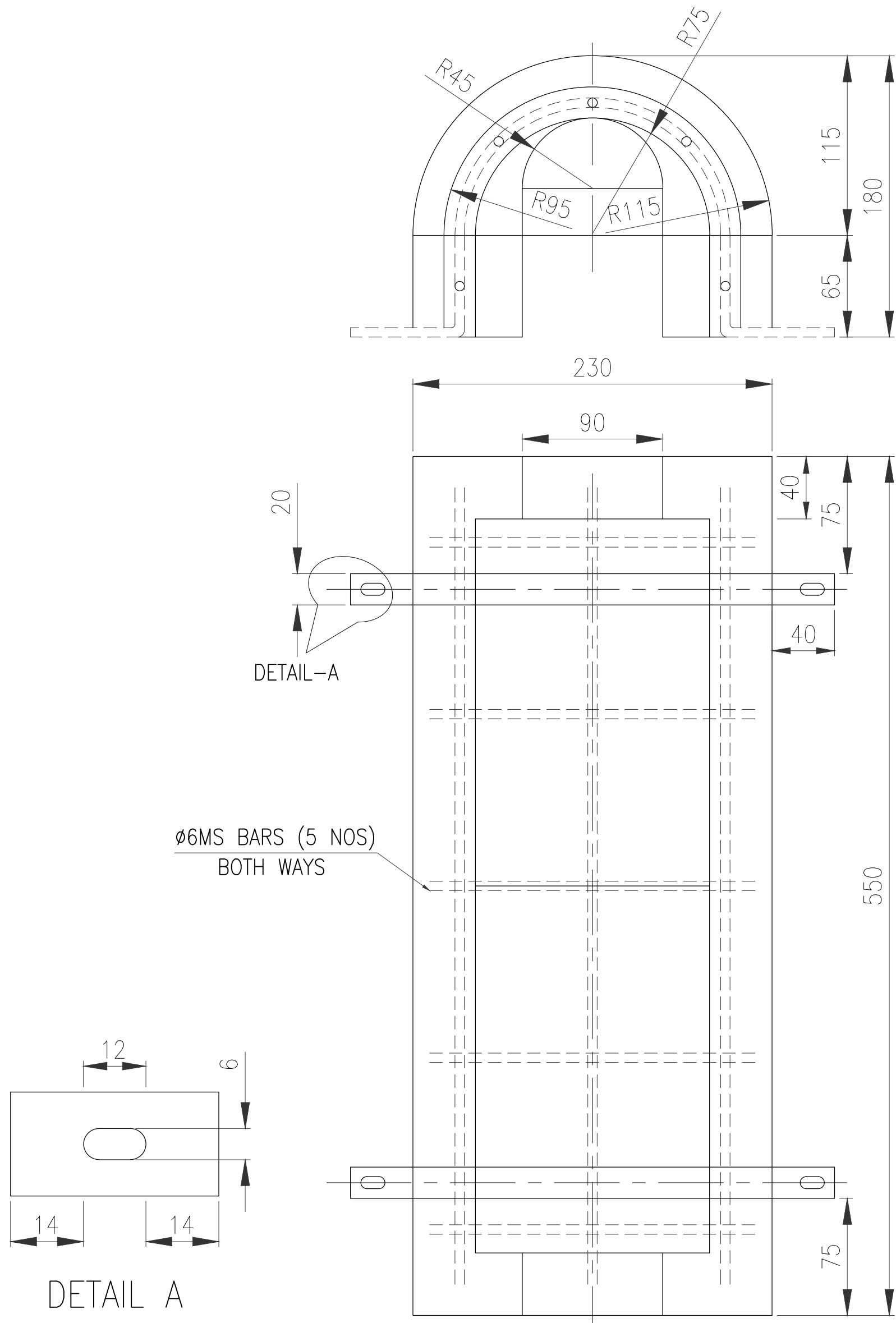
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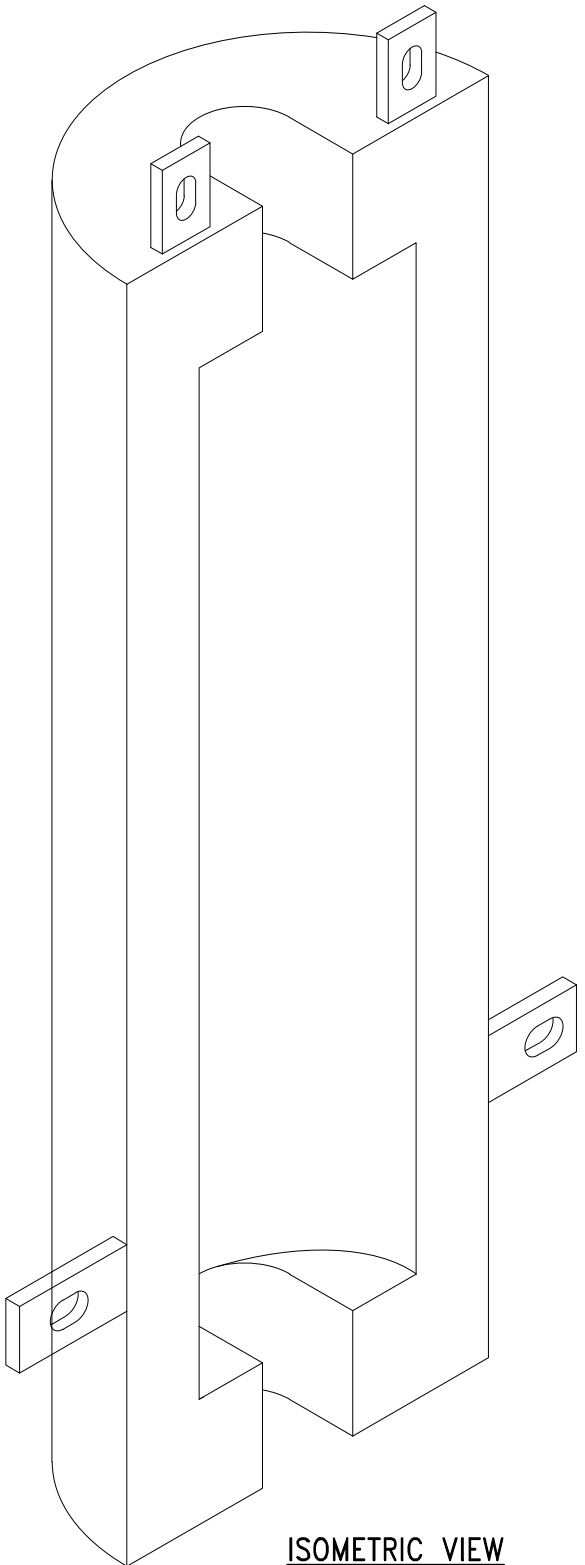
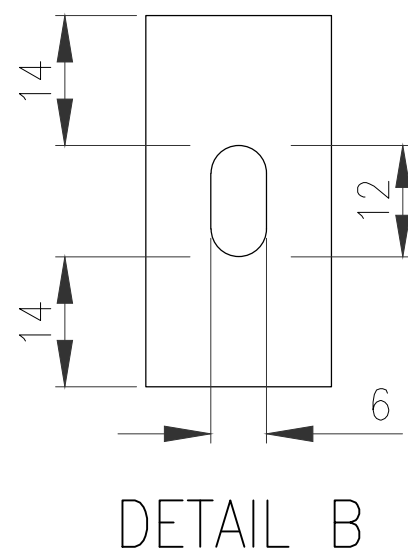
3

4
NOTES




1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
2. IT SHALL BE TAKEN APPROVAL FROM OWNER/OWNER'S REPRESENTATIVE BEFORE STARTING THE PROCUREMENT.
3. SIZES ARE SHOWN AS A TENTATIVE ONLY.

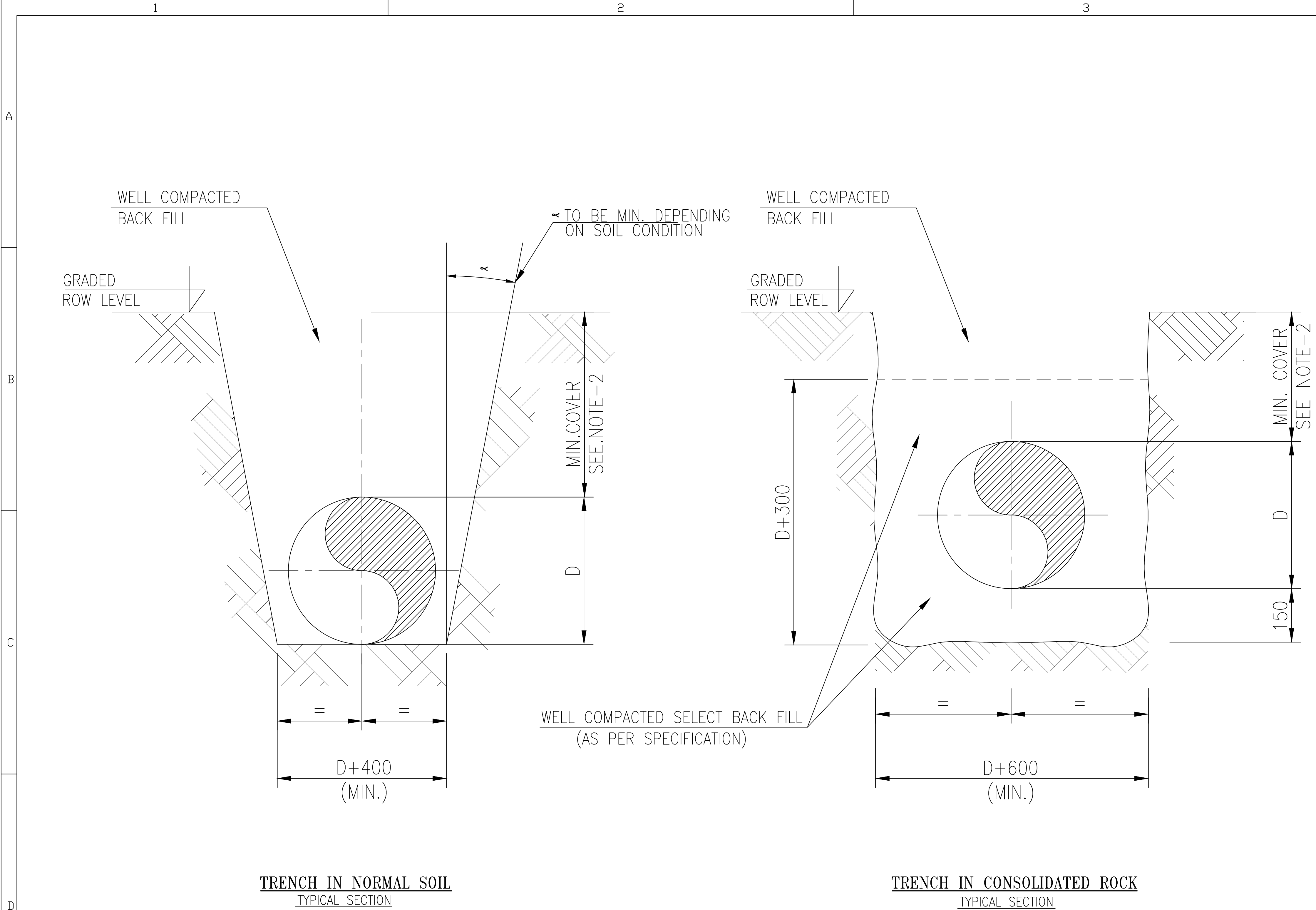


TYPE-1





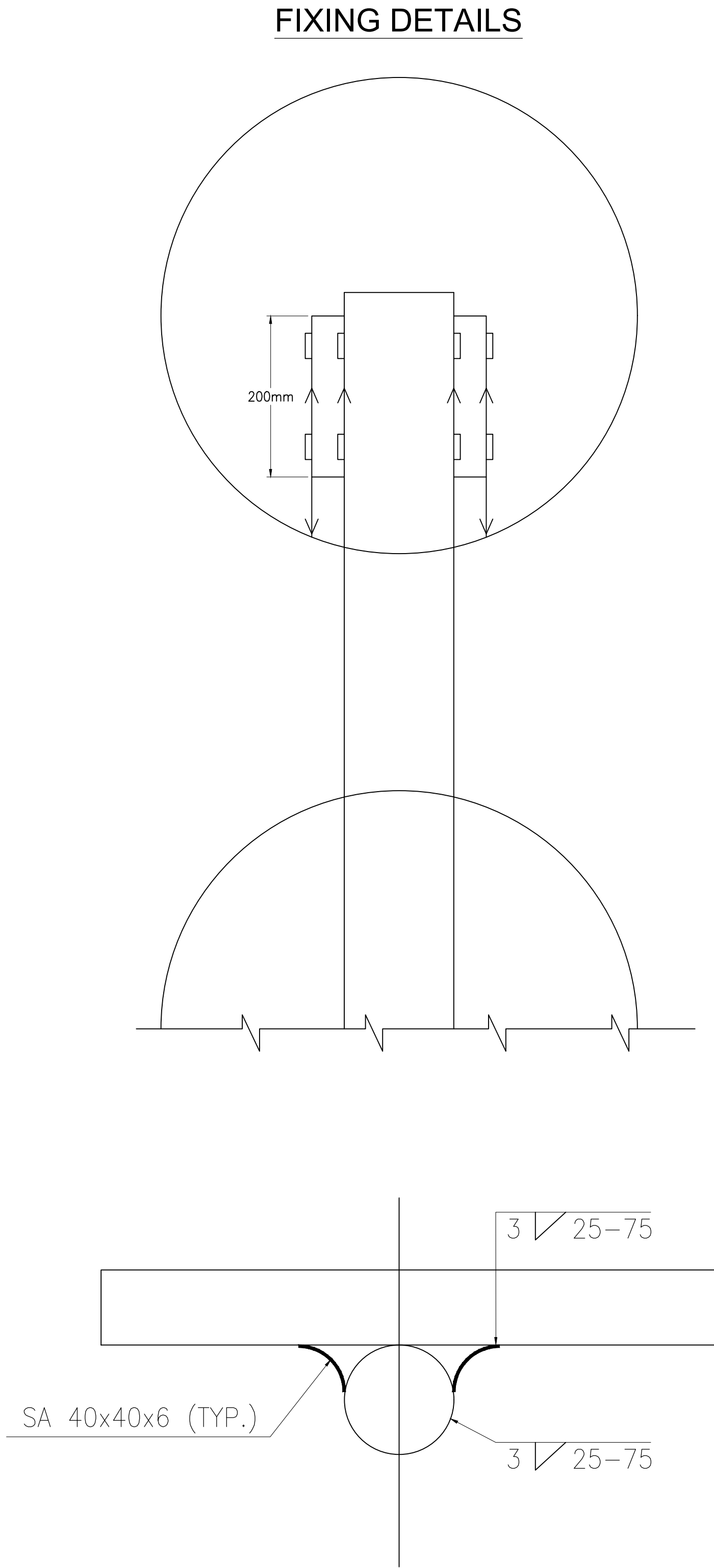
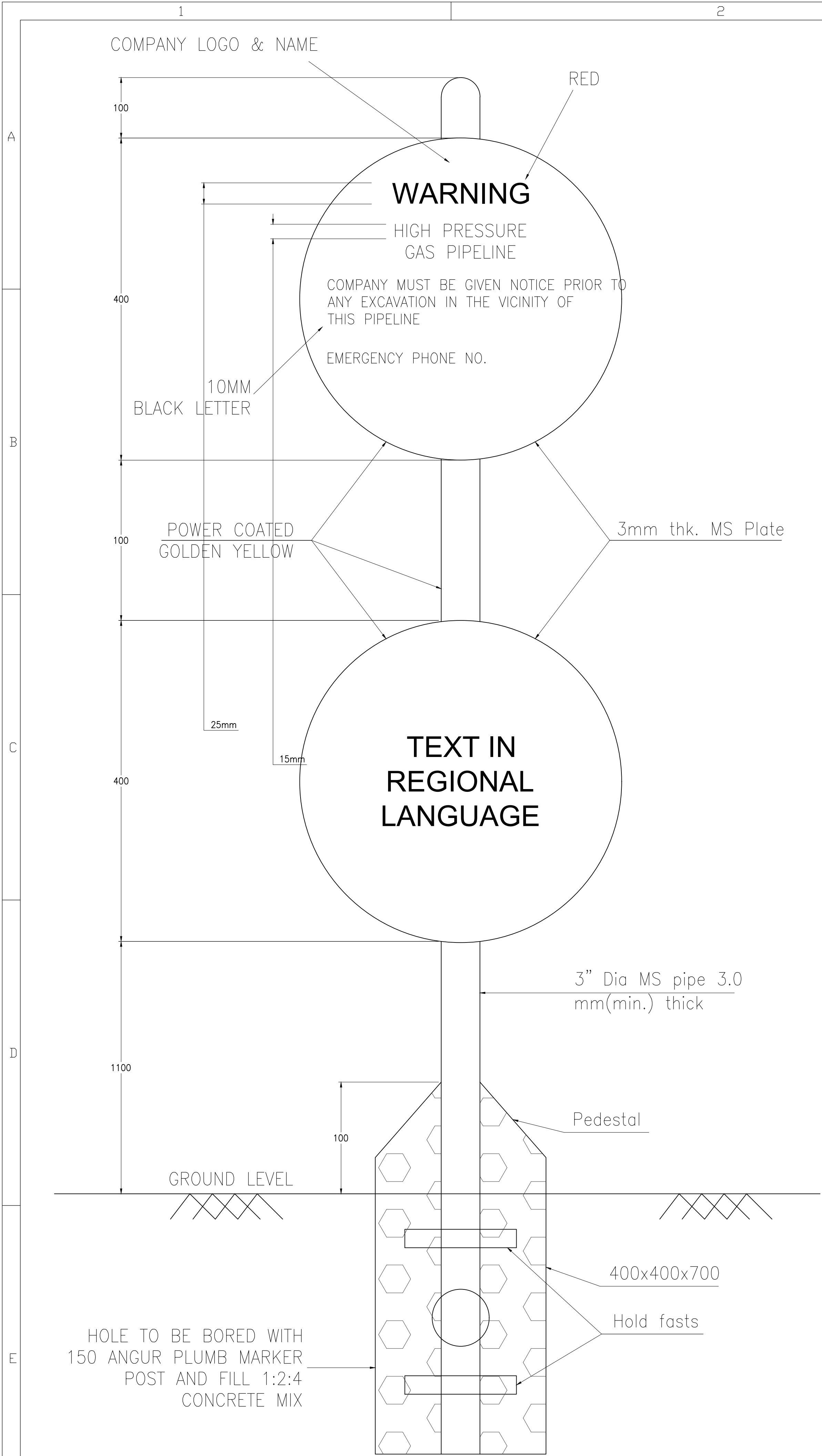
TYPE-2

O	22.10.20	ISSUED FOR TENDER			MHL	AMK	KNS
Rev.	D M Y	Modifications			Drawn By	Checked By	Approved By
CUSTOMER							
 CENTRAL UP GAS LIMITED							
PROJECT							
CITY GAS DISTRIBUTION PROJECT							
SUBJECT							
HALF ROUND CONCRETE SLEEVE							
  TRACTEBEL Engineering pvt. Ltd.				Size	Scale	Sheet	Rev.
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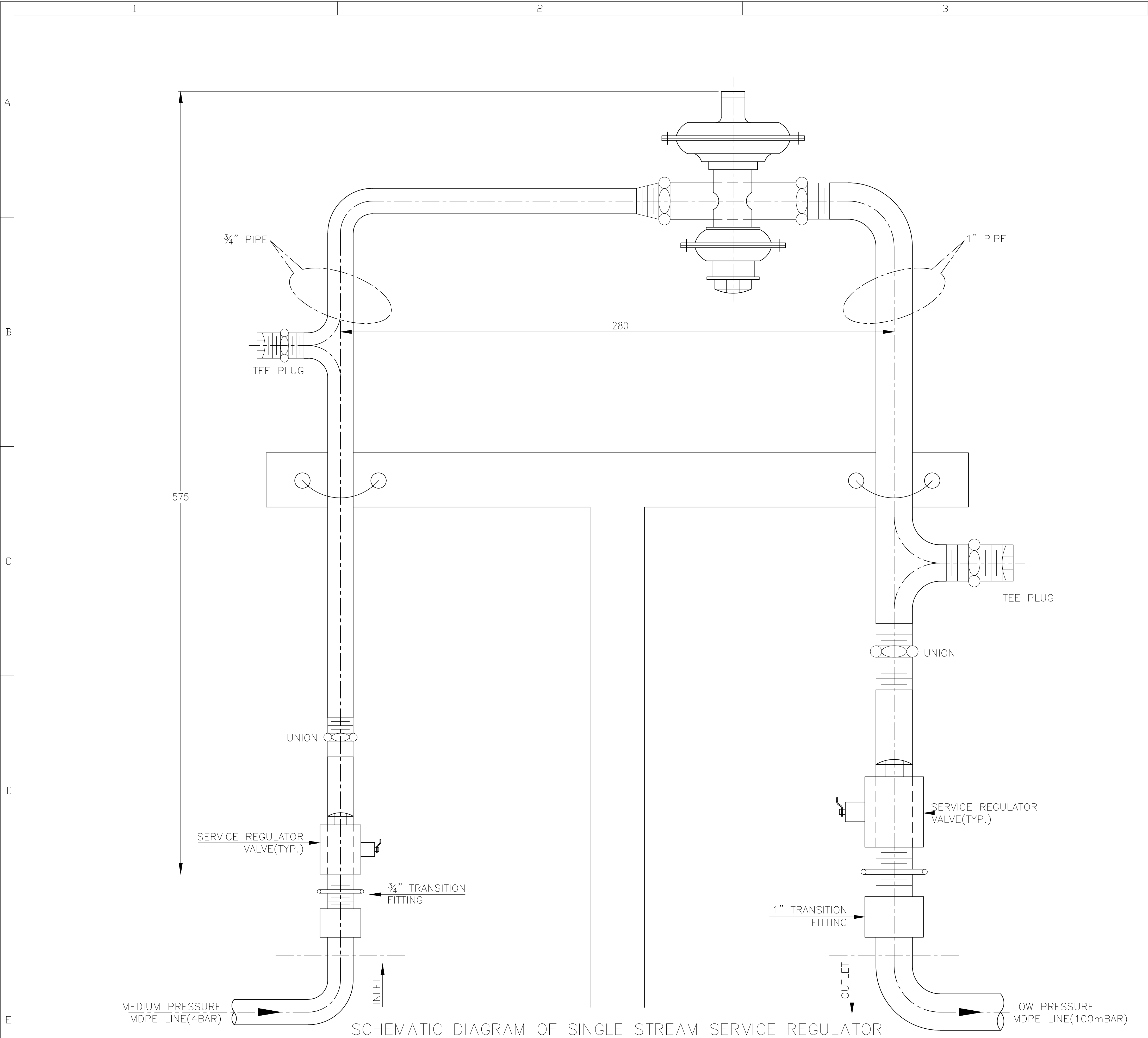
- NOTES
1. ALL DIMENSIONS ARE IN MILLIMETERS.
 2. FOR ALL PIPELINE TO BE CONSTRUCTED IN THE LAND UNDER JURISDICTION OF GOVT. OF INDIA THE MIN. COVER TO BE ADOPTED SHALL BE 1000 MM IN ACCORDANCE WITH GOVT. OF INDIA PETROLEUM PIPELINE (ACQUISITION OF RIGHT OF USER IN LAND) ACT NO. 50, 1962 AND AMENDMENT ACT. NO.13 OF 1977. ANY EXTRA COVER REQUIREMENT SHALL BE IN ACCORDANCE WITH SPECIFICATIONS.
 3. MIN. COVER REQUIREMENT SHALL BE SUBJECT TO APPROVAL OF CONCERNED AUTHORITIES WHEREVER REQUIRED.
 4. EXTRA COVER REQUIREMENT SHALL BE ESTABLISHED AT ALL OVER BENDS AND HORIZONTAL BENDS WHEREVER NECESSARY.
 5. FOR MIN. COVER REQUIREMENT AT PIPELINE CROSSING ROADS, RAILWAY TRACKS, RIVERS MARSHY AREAS ETC REFER RELEVANT STANDARDS.

O	22.10.20	ISSUED FOR TENDER		MHL	AMK	KNS	
Rev.	D M Y	Modifications		Drawn By	Checked By	Approved By	
CUSTOMER							
		CENTRAL UP GAS LIMITED					
PROJECT							
CITY GAS DISTRIBUTION PROJECT							
SUBJECT							
TYPICAL TRENCH DIMENSIONS FOR PIPE LINE							
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- NOTES
1. THE FULL WORKING AND SIZES ARE ONLY INDICATIVE AND ARE SUBJECT TO THE APPROVAL BY OWNER/OWNER'S REPRESENTATIVE BEFORE FABRICATION.
 2. SCHEME FOR POWDER COATING AND COLORING. ONE COAT OF PRIMER & TWO COATS OF SPECIFIED PAINTS. ALL LETTERS EXCEPT "WARNING" TO BE PAINTED BLACK.
 3. ALL DIMENSION ARE IN MM. UNLESS OTHERWISE SPECIFIED.
 4. APPROVAL OF WARNING MARKER DESIGN SHALL BE OBTAINED BEFORE THE COMMENCEMENT OF WORK.

0	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
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CUSTOMER					
CENTRAL UP GAS LIMITED					
PROJECT					
CITY GAS DISTRIBUTION PROJECT					
SUBJECT					
POLE MARKER WITH FOUNDATION (INDIVIDUAL SOCIETIES & AREAS)					
TRACTEBEL		Size	Scale	Sheet	Rev.
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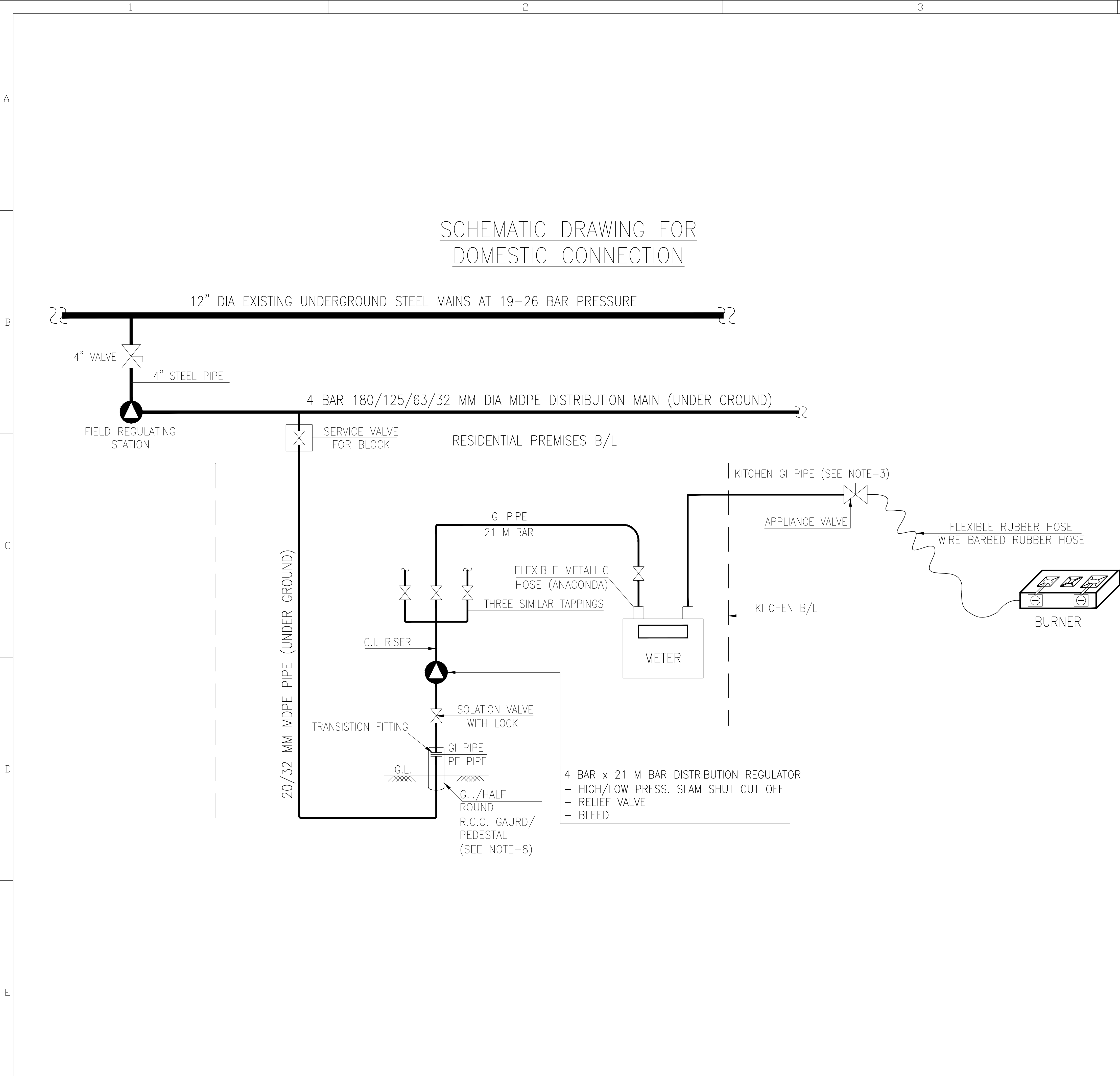
SCHEMATIC DIAGRAM OF SINGLE STREAM SERVICE REGULATOR

NOTES

- 1. ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.
- 2. FOLLOW WRITTEN DIMENSION ONLY, DO NOT SCALE.

0	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
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CUSTOMER					
CUEI CENTRAL UP GAS LIMITED					
PROJECT					
CITY GAS DISTRIBUTION PROJECT					
SUBJECT					
SCHEMATIC DIAGRAM OF SINGLE STREAM SERVICE REGULATOR					
TRACTEBEL		Size	Scale	Sheet	Rev.
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Project No.		Discipline Code		System Code	Serial No.
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4

NOTES

1.

ALL DIMENSIONS ARE IN MM UNLESS NOTED OTHERWISE.

2.

THE SIZES SHOWN IN THE DRAWING ARE TENTATIVE.IT SHALL BE DECIDED DURING DETAIL ENGINEERING.

3.

PIPING DOWN STREAM METER SHALL BE OF COPPER IN CASE METER IS INSTALLED WITHIN THE KITCHEN.

4.

TENTATIVE RISER LENGTH (FROM OUTLET OF TRANSITION FITTINGS TO INLET OF ISOLATION VALVE) SHALL BE 1.5m, ANY CHANGES IN RISER LENGTH SHALL BE AFTER APPROVAL FROM EIC.

5.

G.I. INSTALLATION/METER INSTALLATION SHALL BE DECIDED BY OWNER/OWNER’S REPRESENTATIVE AS PER SITE CONDITIONS.

6.

IF COPPER PIPE GOES TO THE APPLIANCE VALVE THEN BRASS FITTING SHALL BE USED AT THE OUTLET OF METER OR IF GI PIPE GOES TO THE APPLIANCE VALVE THEN GI FITTING SHALL BE USED AT THE OUTLET THE METER.

7.

MAXIMUM DISTANCE BETWEEN CLAMPS SHALL BE 1.5M WHEN PIPE GOES IN THE STRAIGHT LENGTH, IF ANY TEE OR ANY FITTING LIES IN BETWEEN THE PIPE THEN CLAMP SHALL BE PLACED 150MM FAR AWAY FROM CENTER LINE OF FITTINGS AT EVERY SIDE. HOW EVER, THE SAME MAY BE CHANGED AS PER SITE CONDITIONS/AS DIRECTED BY EIC.

8.

G.I./HALF ROUND R.C.C. GUARD INSTALLATION SHALL BE DECIDED BY OWNER/OWNER’S REPRESENTATIVE AS PER SITE CONDITIONS.

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CUSTOMER



CENTRAL UP GAS LIMITED

PROJECT

CITY GAS DISTRIBUTION PROJECT

SUBJECT

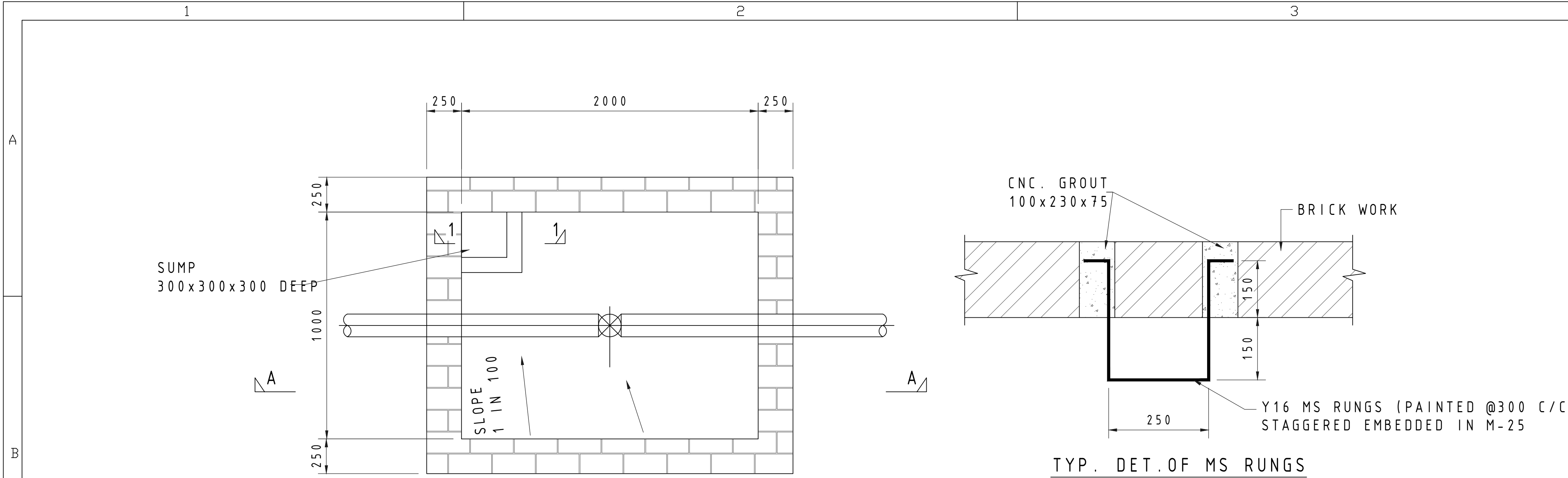
SCHEME FOR DOMESTIC CONSUMER CONNECTION

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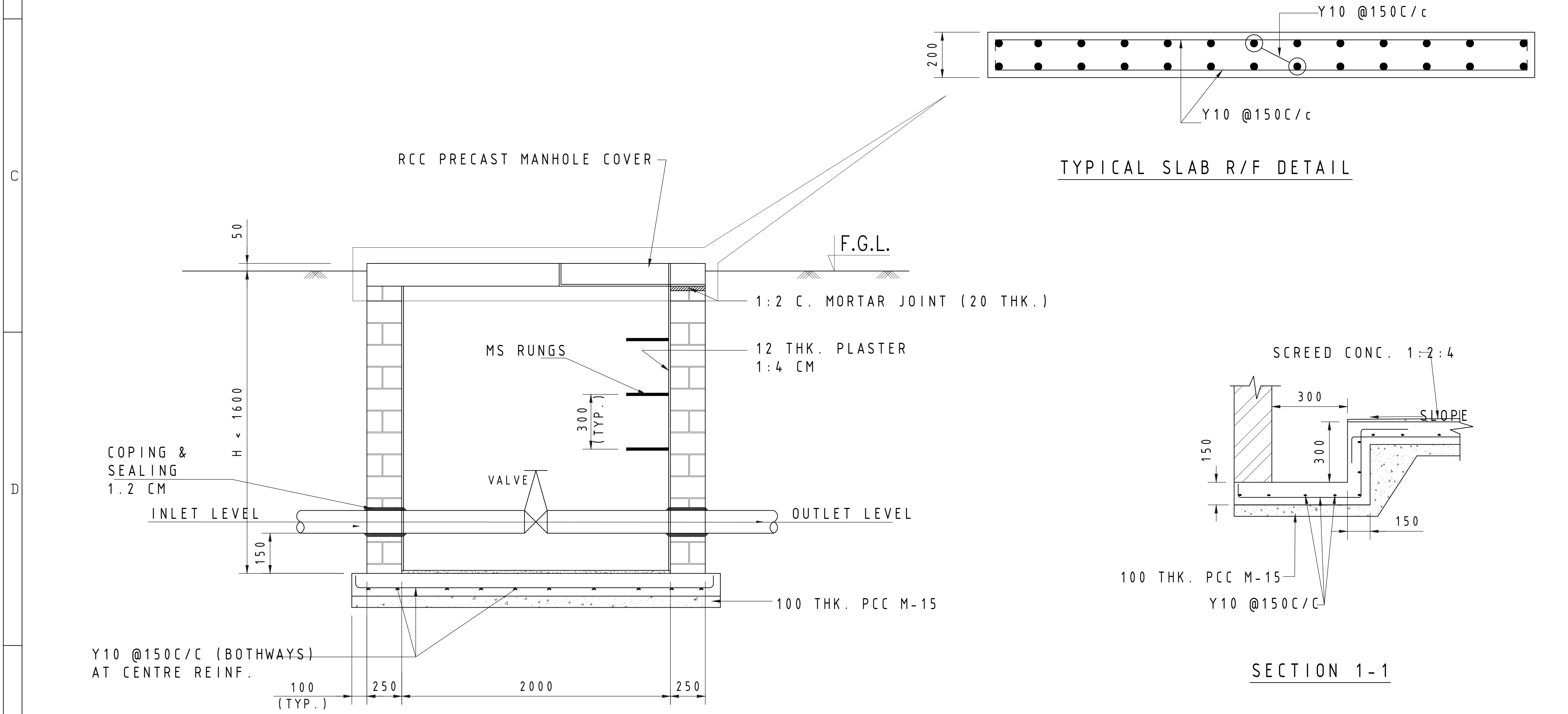
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Project No.		Discipline Code System Code	Serial No.
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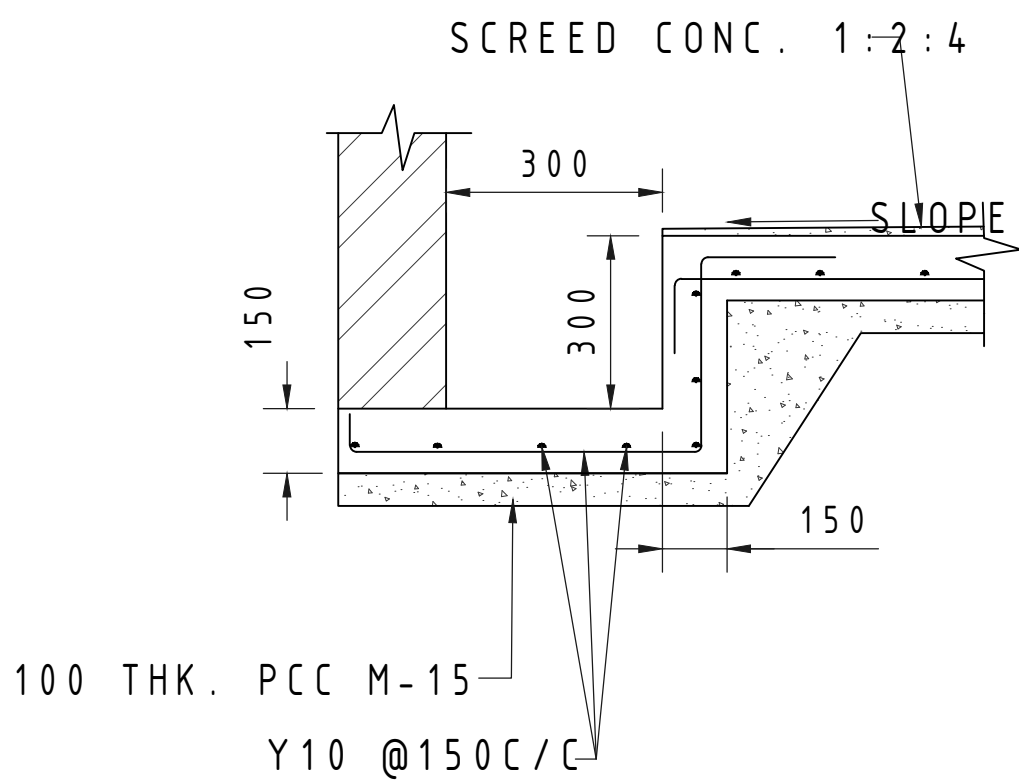
VALVE PIT PLAN

TYP. DET.OF MS RUNGS



SECTION A-A

TYPICAL SLAB R/F DETAIL

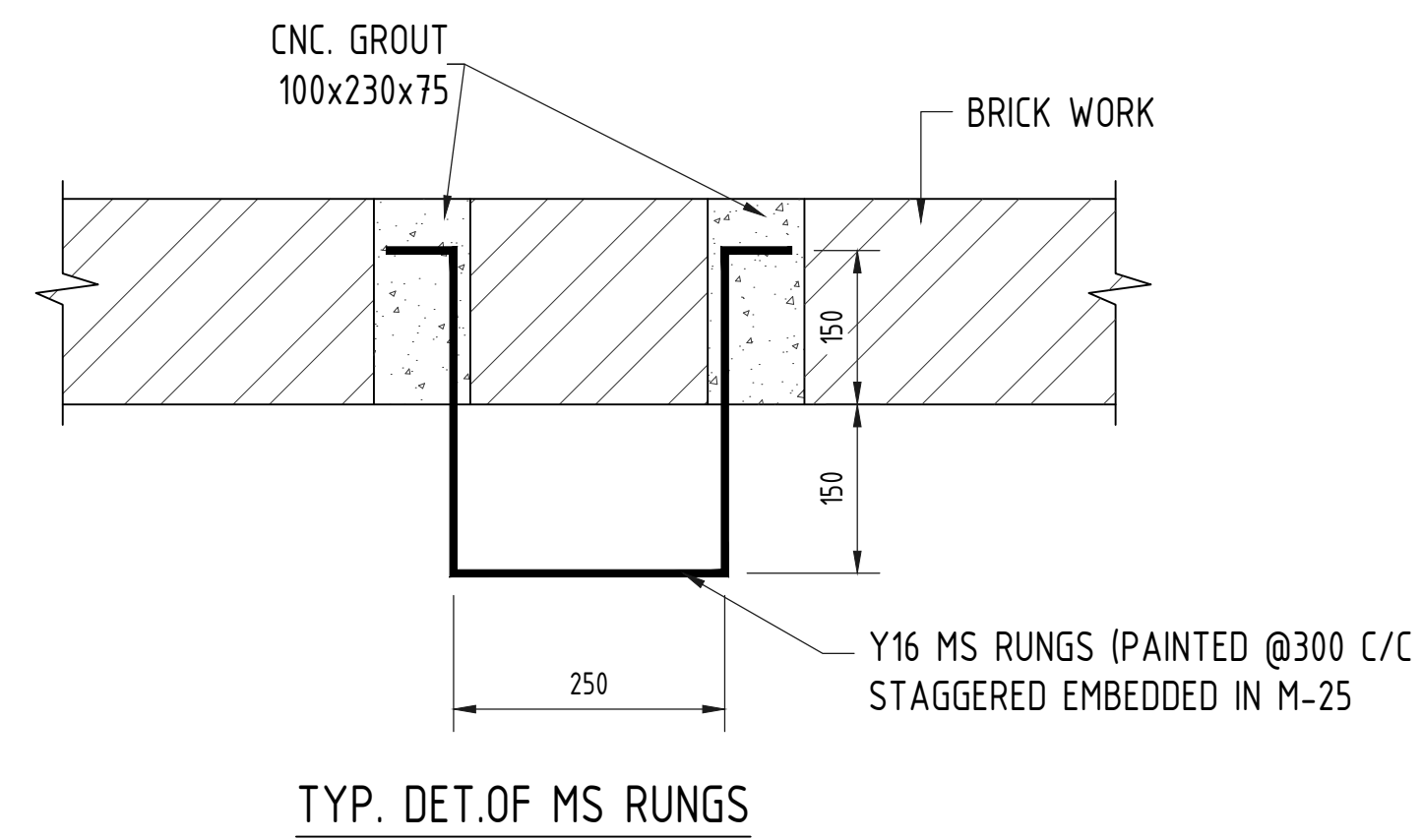


SECTION 1-1

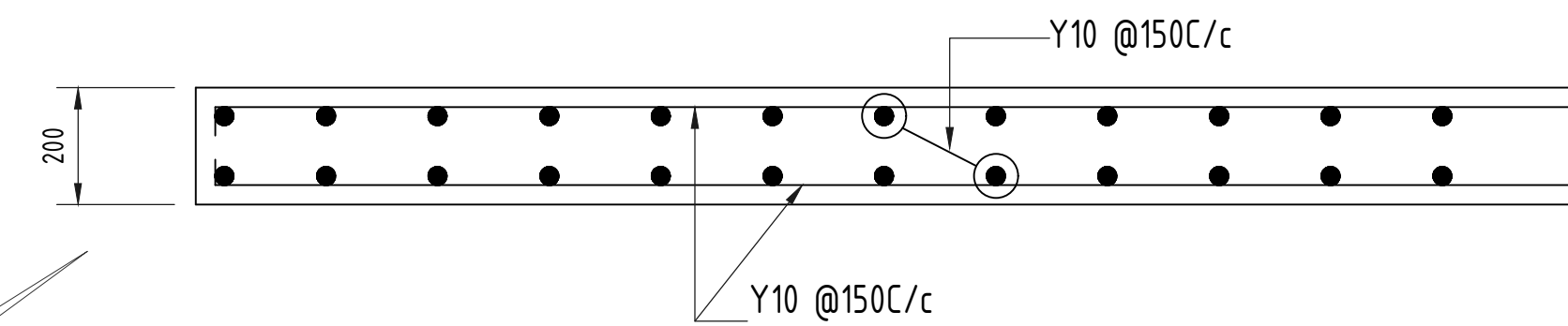
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DIMENSIONS.
3. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE: (a) SLAB = 20mm
4. BRICK SHALL BE OF 75 CLASS, RCC OF M-25 & PCC OF M-15.
5. REINFORCEMENT SHALL BE OF HYSD (GRADE Fe 415) CONFORMING TO IS:1786.

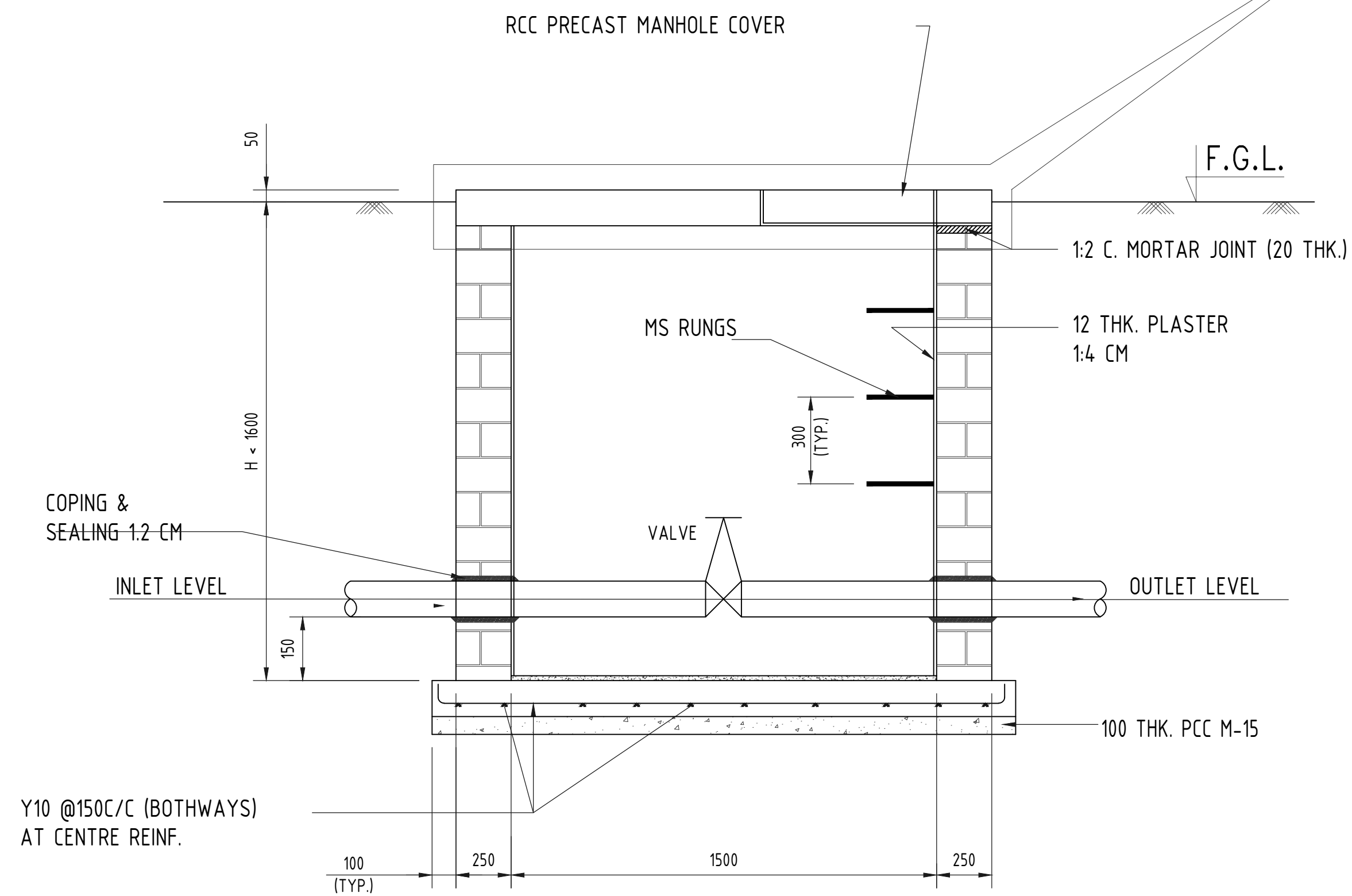
O	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
Rev.	D M Y	Modifications	Drawn By	Checked By	Approved By
CUSTOMER					
CENTRAL UP GAS LIMITED					
PROJECT					
CITY GAS DISTRIBUTION PROJECT					
SUBJECT					
BRICK VALVE CHAMBER TYPE-1 (2.0M X 1.0M)					
TRACTEBEL					
TRACTEBEL Engineering pvt. Ltd.					
Size	Scale	Sheet	Rev.		
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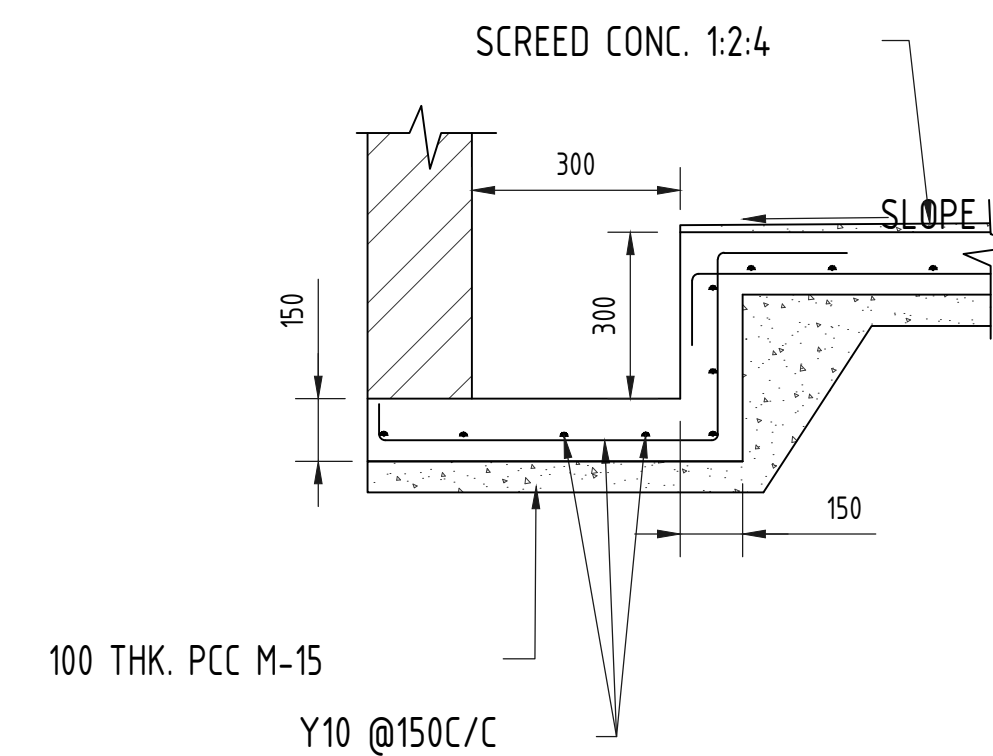
VALVE PIT PLAN



TYPICAL SLAB R/F DETAIL






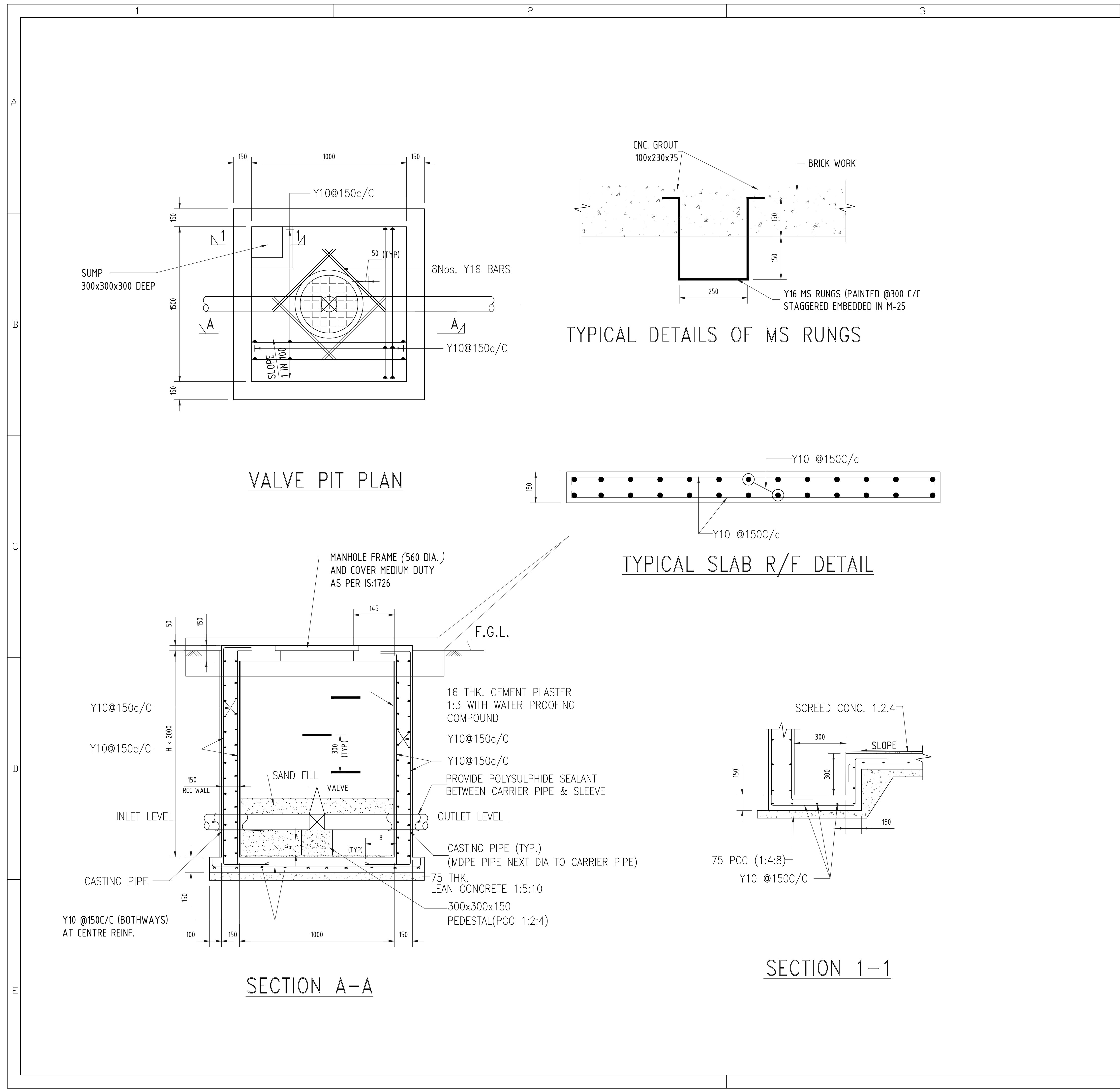
SECTION A-A



SECTION 1-1

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DIMENSIONS.
3. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE: (a) SLAB = 20mm
4. BRICK SHALL BE OF 75 CLASS, RCC OF M-25 & PCC OF M-15.
5. REINFORCEMENT SHALL BE OF HYSD (GRADE Fe 415) CONFORMING TO IS:1786.

O		22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS	
Rev.	D	M	Y	Modifications	Drawn By	Checked By	Approved By
CUSTOMER							
 CENTRAL UP GAS LIMITED							
PROJECT							
CITY GAS DISTRIBUTION PROJECT							
SUBJECT							
BRICK VALVE CHAMBER TYPE-2 (1.5M X 1.0M)							
  TRACTEBEL Engineering pvt. Ltd.				Size	Scale	Sheet	Rev.
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				P.014714	D	20749	015



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

2. FOLLOW WRITTEN DIMENSIONS ONLY. DO NOT SCALE THE DIMENSIONS.

3. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE: (a) SLAB = 20mm GRADE OF CONCRETE SHALL BE M-25.

4. REINFORCEMENT SHALL BE OF HYSD (GRADE Fe 415) CONFORMING TO IS:1786.

O	22.10.20	ISSUED FOR TENDER	MHL	AMK	KNS
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CUSTOMER

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PROJECT

CITY GAS DISTRIBUTION PROJECT

SUBJECT

**RCC VALVE CHAMBER
(1.5M X 1.0M)**

TRACTEBEL

Size

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Project No.

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Serial No.

TRACTEBEL Engineering pvt. Ltd.

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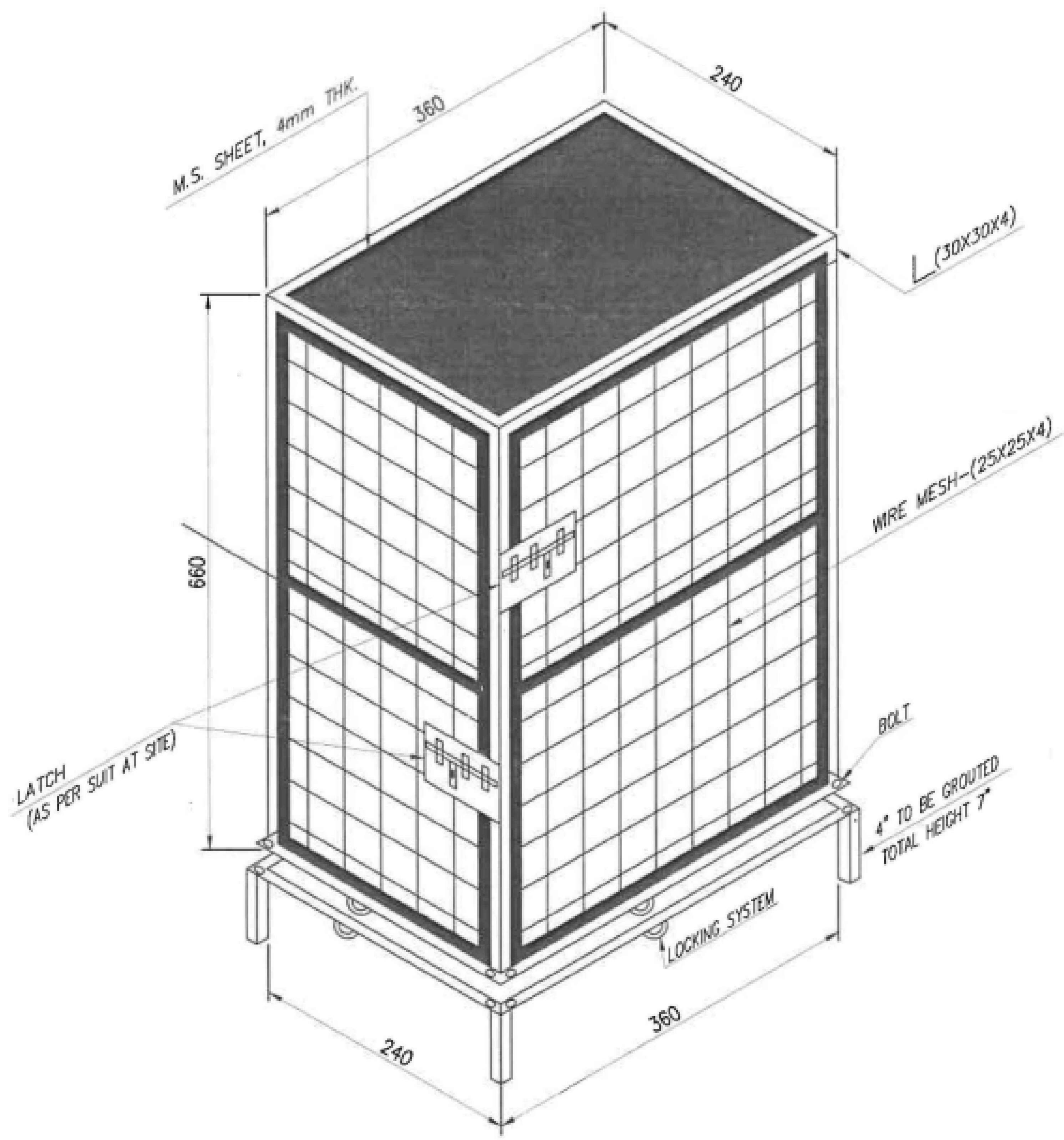
A
B
C
D
E

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2



3

4



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
2. 40MM GROUTING WITH NON-SHRINKAGE COMPOUND SHALL BE PROVIDED AT BOTTOM OF SERVICE REGULATOR.
3. WIRE MESH AND MS ANGLE/PLATES SHOULD BE PAINTED WITH PRIMER & GOLDEN YELLOW PAINT OF REPUTATED MAKE.

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CUSTOMER		 CENTRAL UP GAS LIMITED				
PROJECT		CITY GAS DISTRIBUTION PROJECT				
SUBJECT		SCHEMATIC DIAGRAM OF HOUSING FOR SINGLE SERVICE REGULATOR				
 TRACTEBEL Engineering pvt. Ltd.		Size	Scale	Sheet	Rev.	
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		Project No.	Discipline	Code	System	Code
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TRACTEBEL ENGINEERING PVT. LTD.

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