

NOTES:

REV.	DESCRIPTION OF REVISIONS	DATE	CHECK
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CLIENT:

SURAT MUNICIPAL CORPORATION

JOB:  
PROVIDING CONSULTANCY SERVICE FOR PREPARATION OF  
DPR/ DESIGN/ ESTIMATE /TENDER OF SEWERAGE SYSTEM  
FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF  
OF THE SURAT MUNICIPAL CORPORATION, SURAT

DRAWING TITLE:  
TYPICAL DRAWING FOR BARRICADING DRAINAGE WORK

CHECKED BY:	HIREN NAIK	APPROVED BY:	MAYANK MITHAIWALA
DRAWN	TUSHAR	SCALE	N.T.S
DESIGNED	GREENDES	DATE	21-06-2023
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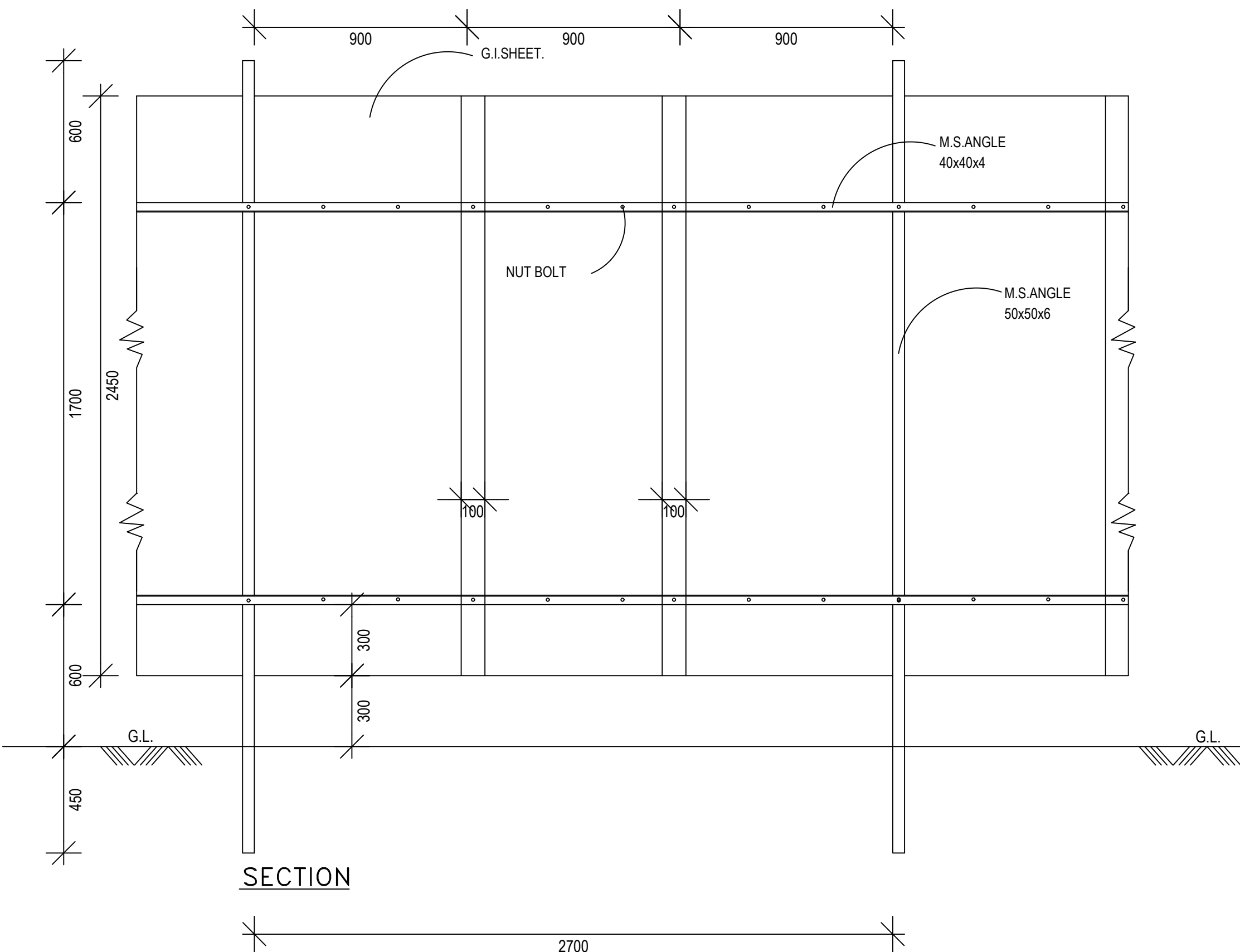
DRAWING NO.  
GREEN/DNG/SEW/STD/BARRICADING/009



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PLAN  
TYPICAL DRAWING FOR G.I. SHEETING  
TYPE BARRICADING FOR THE DRAINAGE WORK

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FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF  
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DRAWING TITLE:  
**TYPICAL DETAILS OF BARRICADING-GI**

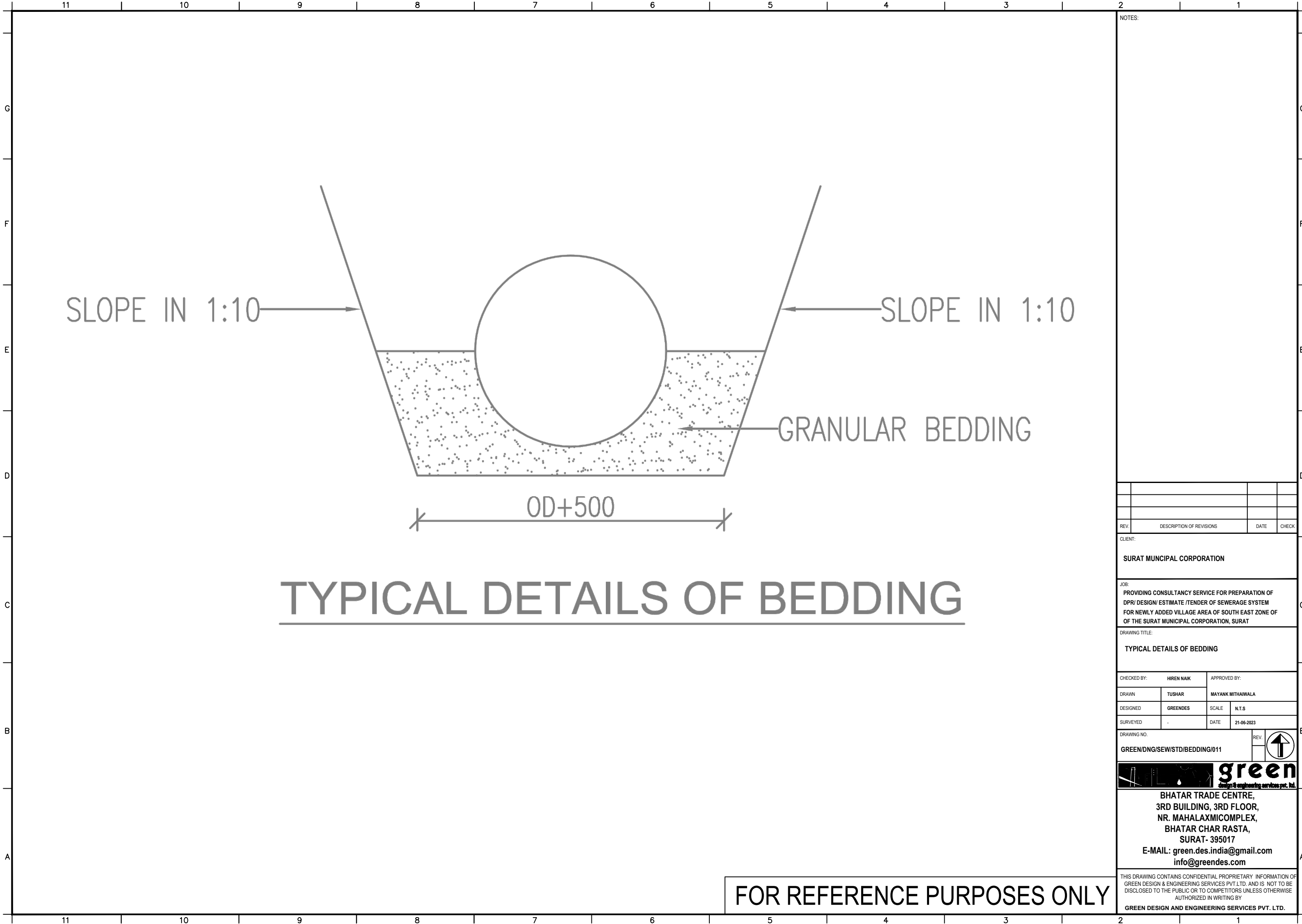
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DRAWING TITLE:  
TYPICAL DETAILS OF BEDDING

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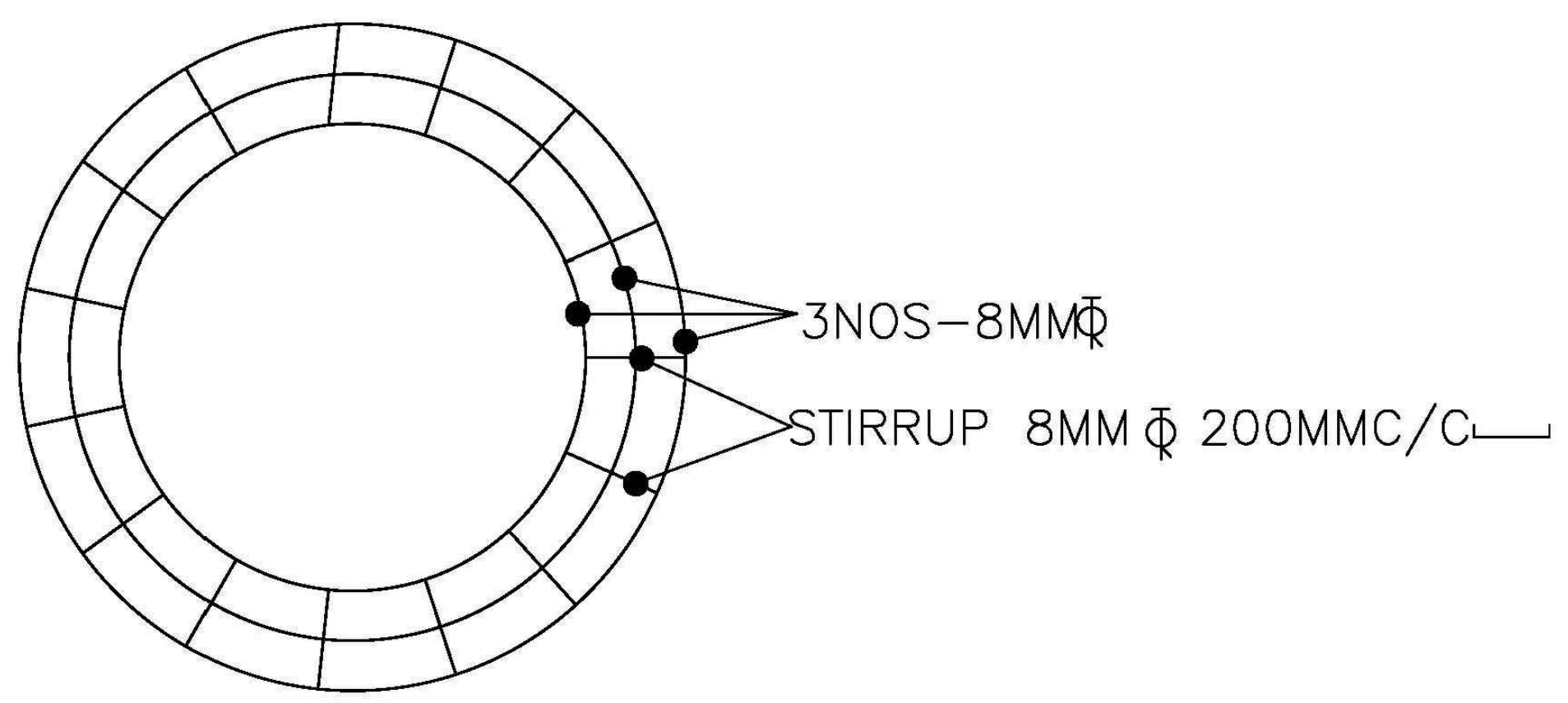


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# STEEL DETAIL OF COPING



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FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF  
OF THE SURAT MUNICIPAL CORPORATION, SURAT

DRAWING TITLE:  
COPING STEEL DETAILS DRAWING

CHECKED BY:	HIREN NAIK	APPROVED BY:	MAYANK MITHAIWALA
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DESIGNED	GREENDES	DATE	21-06-2023
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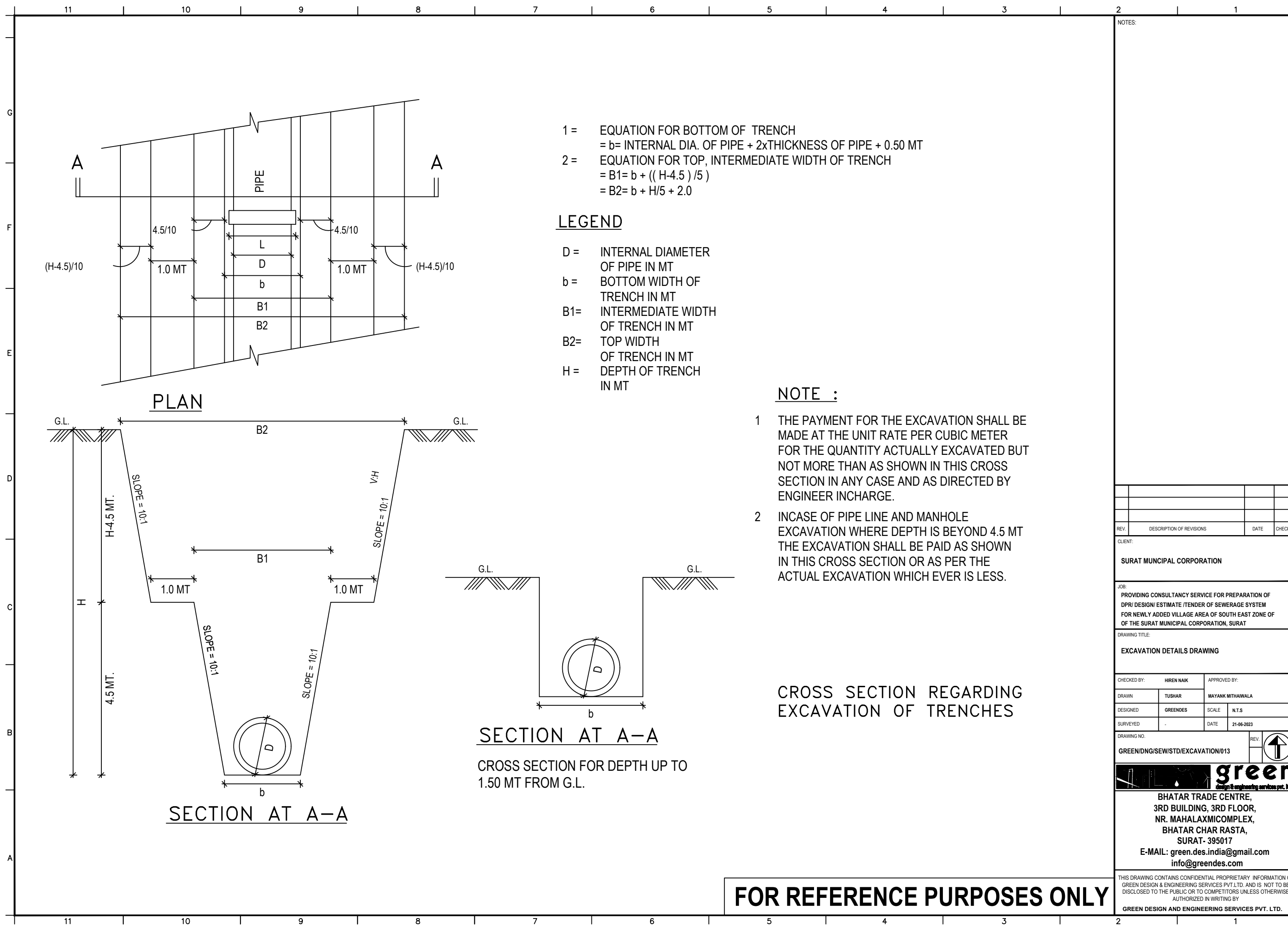
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- 1 = EQUATION FOR BOTTOM OF TRENCH  
=  $b = \text{INTERNAL DIA. OF PIPE} + 2 \times \text{THICKNESS OF PIPE} + 0.50 \text{ MT}$
- 2 = EQUATION FOR TOP, INTERMEDIATE WIDTH OF TRENCH  
=  $B1 = b + ((H - 4.5) / 5)$   
=  $B2 = b + H/5 + 2.0$

LEGEND

- D = INTERNAL DIAMETER OF PIPE IN MT
- b = BOTTOM WIDTH OF TRENCH IN MT
- B1= INTERMEDIATE WIDTH OF TRENCH IN MT
- B2= TOP WIDTH OF TRENCH IN MT
- H = DEPTH OF TRENCH IN MT

NOTE :

- 1 THE PAYMENT FOR THE EXCAVATION SHALL BE MADE AT THE UNIT RATE PER CUBIC METER FOR THE QUANTITY ACTUALLY EXCAVATED BUT NOT MORE THAN AS SHOWN IN THIS CROSS SECTION IN ANY CASE AND AS DIRECTED BY ENGINEER INCHARGE.
- 2 INCASE OF PIPE LINE AND MANHOLE EXCAVATION WHERE DEPTH IS BEYOND 4.5 MT THE EXCAVATION SHALL BE PAID AS SHOWN IN THIS CROSS SECTION OR AS PER THE ACTUAL EXCAVATION WHICH EVER IS LESS.

CROSS SECTION REGARDING EXCAVATION OF TRENCHES

SECTION AT A-A

CROSS SECTION FOR DEPTH UP TO 1.50 MT FROM G.L.

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DRAWING TITLE:

EXCAVATION DETAILS DRAWING

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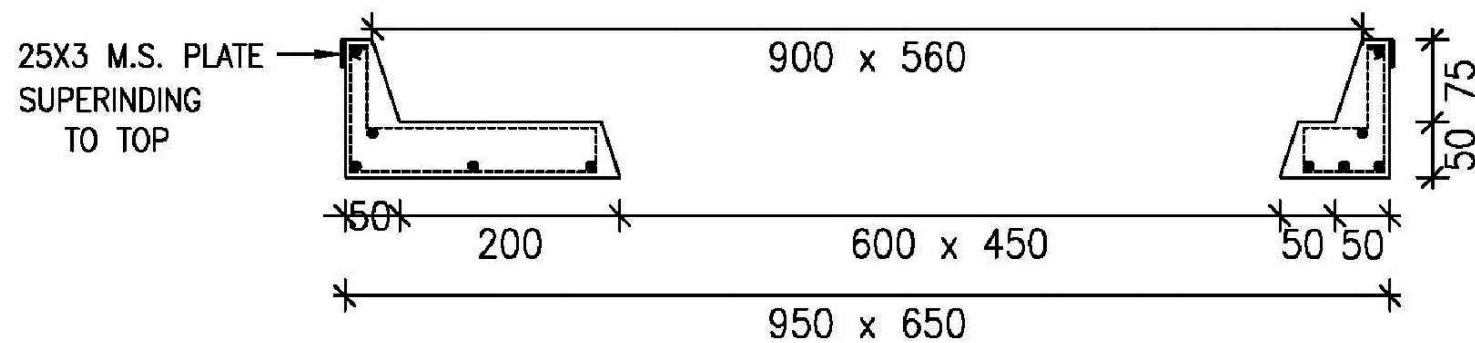
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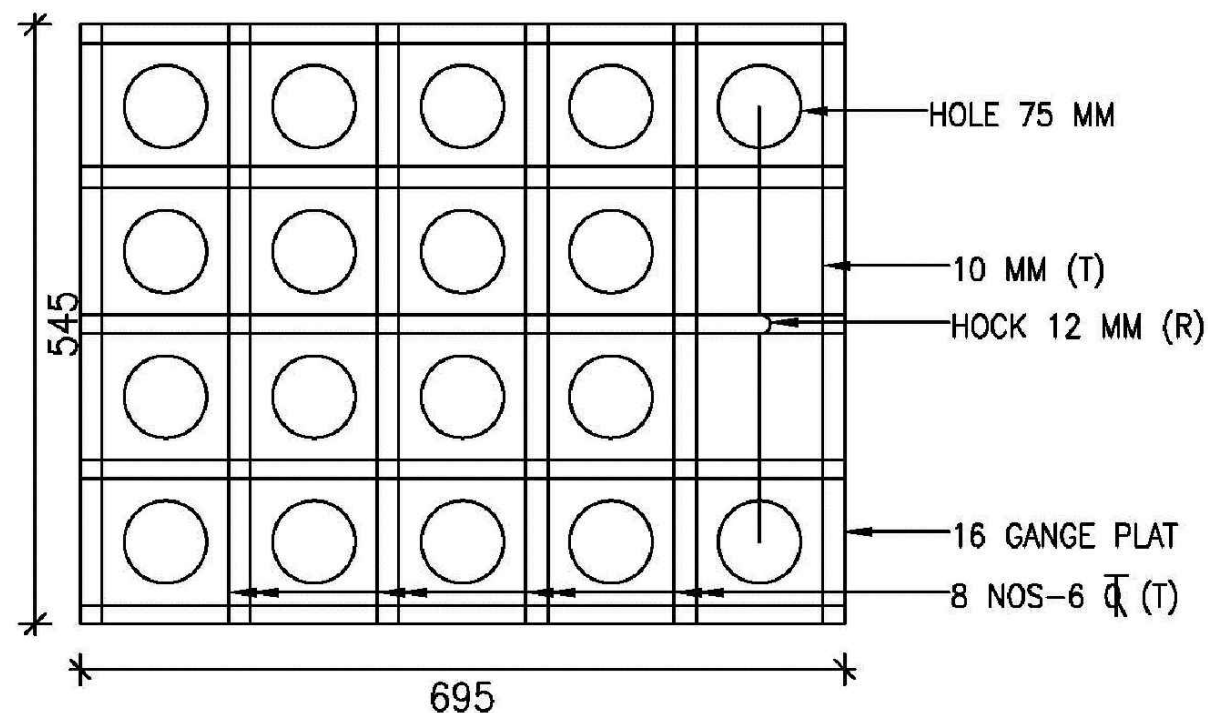
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**SLIDING TYPE R.C.C. PRECAST JALI**  
**SIZE OF INLET CHEMBER 450 x 600 MM**  
**SKETCH:- FRAME & COVER**



**FRAME OF JALI**  
**SIZE:- 950 x 650**  
**SCALE:- 1:50**



**SIZE OF COVER**  
**695MM x 545MM x 75MM**  
**SCALE:- 1:50**

**TECHNICAL SPECIFICATION:-**

TYPE OF PRODUCT :- STEEL FIBER REINFORCED CONCRET  
 MODEL OF PRODUCT :- RECTANGULAR  
 PRODUCT DESCRIPTION :- HEAVY MEDIUM DUTY  
 LOAD CAPACITY :- 10 METRIC TONE  
 UNIT WEIGHT :- 150 Kg ( $\pm 2/3$  Kg.)  
 FRAME CLEAR OPENING :- 600X450 MM  
 FRAME OVERALL SIZE :- 950X650 MM  
 COVER OVER ALL SIZE :- 695X545 MM  
 FRAME THICKNESS :- 125 MM  
 COVER THICKNESS :- 75 MM

**STEEL DESIGN:-**  
**COVER**

16 GAUGE FLATE :- 2300 Kg (APRO)  
 8 MM TOR :- 4.000 Kg (+ 200 gm)  
 10 MM TOR :- 2.000 Kg (+ 200 gm)  
 ALL RODS AREA WELDED ON BOTH SIDE  
 12 MM ROUND BAR (HOOK) 0.400 Kg. :- 1 NOS.  
 PLASTIC BOWL 70 MMX35 MM :- 1 NOS

**FRAME:-**

25X3 DIS FLAT :- 2.000 Kg  
 6 MM & COIL :- 6.000 Kg (+ 200 gm)

**MIX DESIGN:-**

CONCRETE GRADE :- M-300 AS PER IB 125  
 MINIMUM CEMENT CONTENT :- 400 Kg/M<sup>3</sup>  
 AS PER IS 12592  
 CEMENT :- GRADE 53  
 WATER CEMENT RATIO :- MAXIMUM WATER  
 CEMENT RATIO OF 0.45  
 AS PER IS 12592  
 STEEL FIBER :- 50 MM TO 75 MM IN LENGTH

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DRAWING TITLE:

SLIDING TYPE RCC PRECAST JALI SIZE OF INLET CHEMBER 450 X 600 MM

SKETCH:- FRAME & COVER

CHECKED BY:		APPROVED BY:	
DRAWN	TUSHAR	MAYANK MITHAWALA	
DESIGNED	GREENDES	SCALE	N.T.S
SURVEYED		DATE	21-06-2023

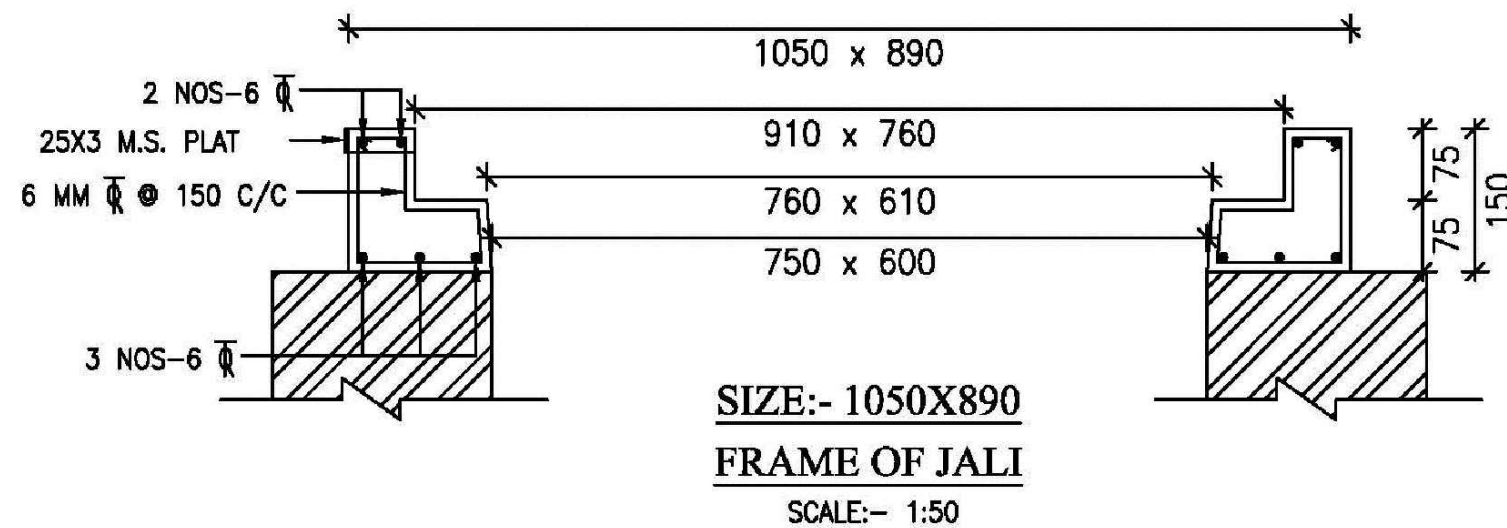
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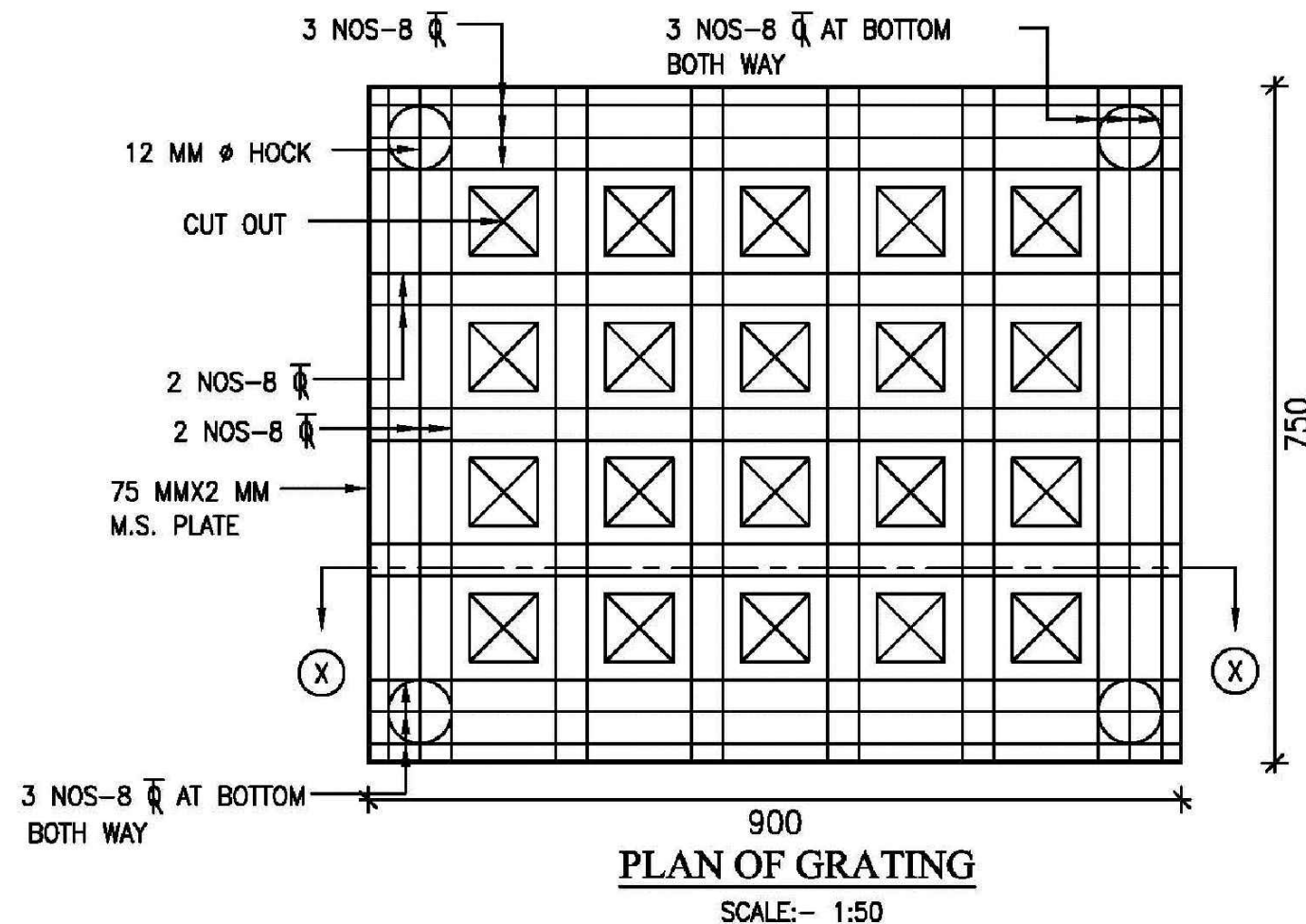
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**SKETCH:- FRAME & COVER**



### TECHNICAL SPECIFICATION:-

TYPE OF PRODUCT	:- STEEL FIBER REINFORCED CONCRETE
LYOPEL OF PRODUCT	:- RECTANGULAR
PRODUCT DESCRIPTION	:- HEAVY MEDIUM DUTY
LOAD CAPACITY	:- 15 TO 20 METRIC TONE
UNIT WEIGHT	:- 262 Kg (+2/3_Kg.)
FRAME CLEAR OPENING	:- 750X600 MM
FRAME OVERALL SIZE	:- 1050X890 MM
COVER OVER ALL SIZE	:- 900X750 MM
FRAME THICKNESS	:- 150 MM
COVER THICKNESS	:- 75 MM



### STEEL DESIGN:-

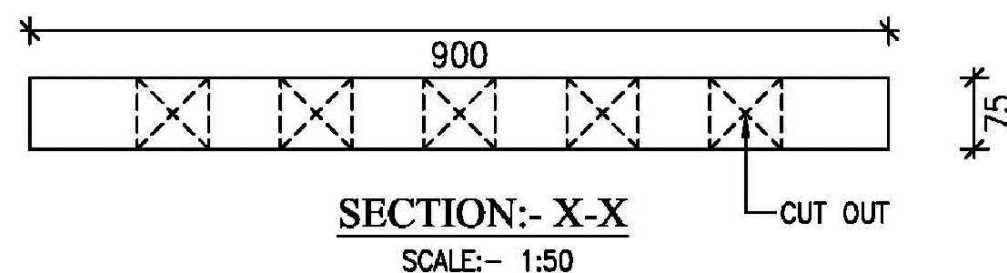
**COVER**  
 16 GAUGE FLATE :- 240 Kg (APRO)  
 8 MM TOR :- 6.700 Kg (+ 200 gm)  
 ALL RODS AREA WELDED ON BOTH SIDE  
 12 MM ROUND BAR (HOOK) 1.400 Kg. :- 4 NOS.  
 PLASTIC BOWL 70 MMX30 MM :- 4 NOS

### STEEL DESIGN:-

**FRAME**  
25X3 MS PLAT:- 2.200 Kg (+ 200 gm)  
6 MM :- 6.500 Kg (+ 200 gm)

**MIX DESIGN:-**

CONCRETE GRADE :- M-300 AS PER IS 12592  
MINIMUM CEMENT CONTENT :- 400 Kg/M<sup>3</sup>  
AS PER IS 12592  
CEMENT :- GRADE 53  
WATER CEMENT RATIO :- MAXIMUM WATER  
CEMENT RATIO OF 0.45  
AS PER IS 12592  
STEEL FIBER :- 50 MM TO 75 MM IN LENGTH



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OF THE SURAT MUNICIPAL CORPORATION, SURAT

DRAWING TITLE:

RCC PRECAST JALI SIZE OF INLET CHAMBER 750X 600 MM  
SKETCH:- FRAME & COVER

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DRAWN	TUSHAR		
DESIGNED	GREENDES	SCALE	N.T.S
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GREEN/DNG/SEW/STD/RCC-JALI-2/015



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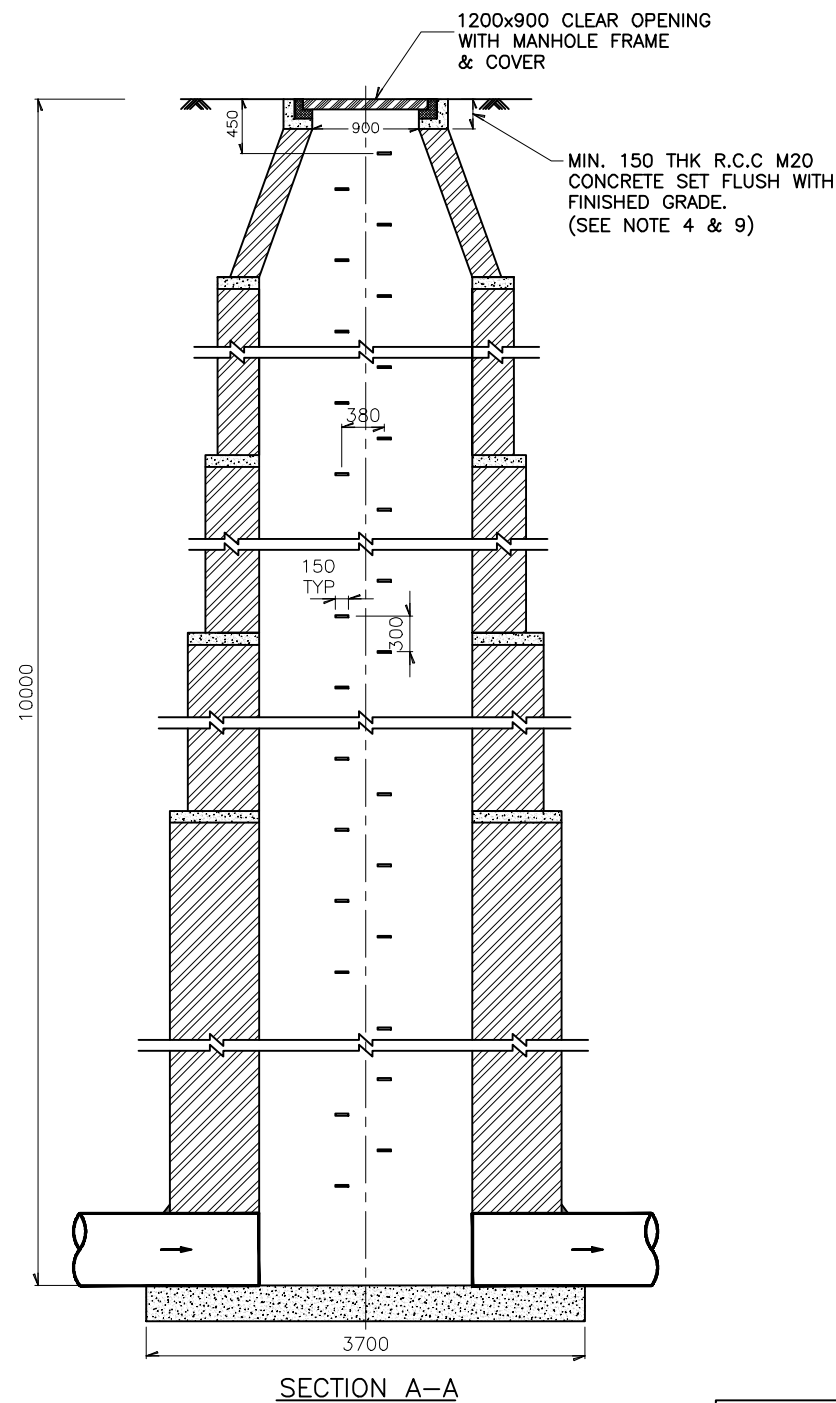
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## NOTES

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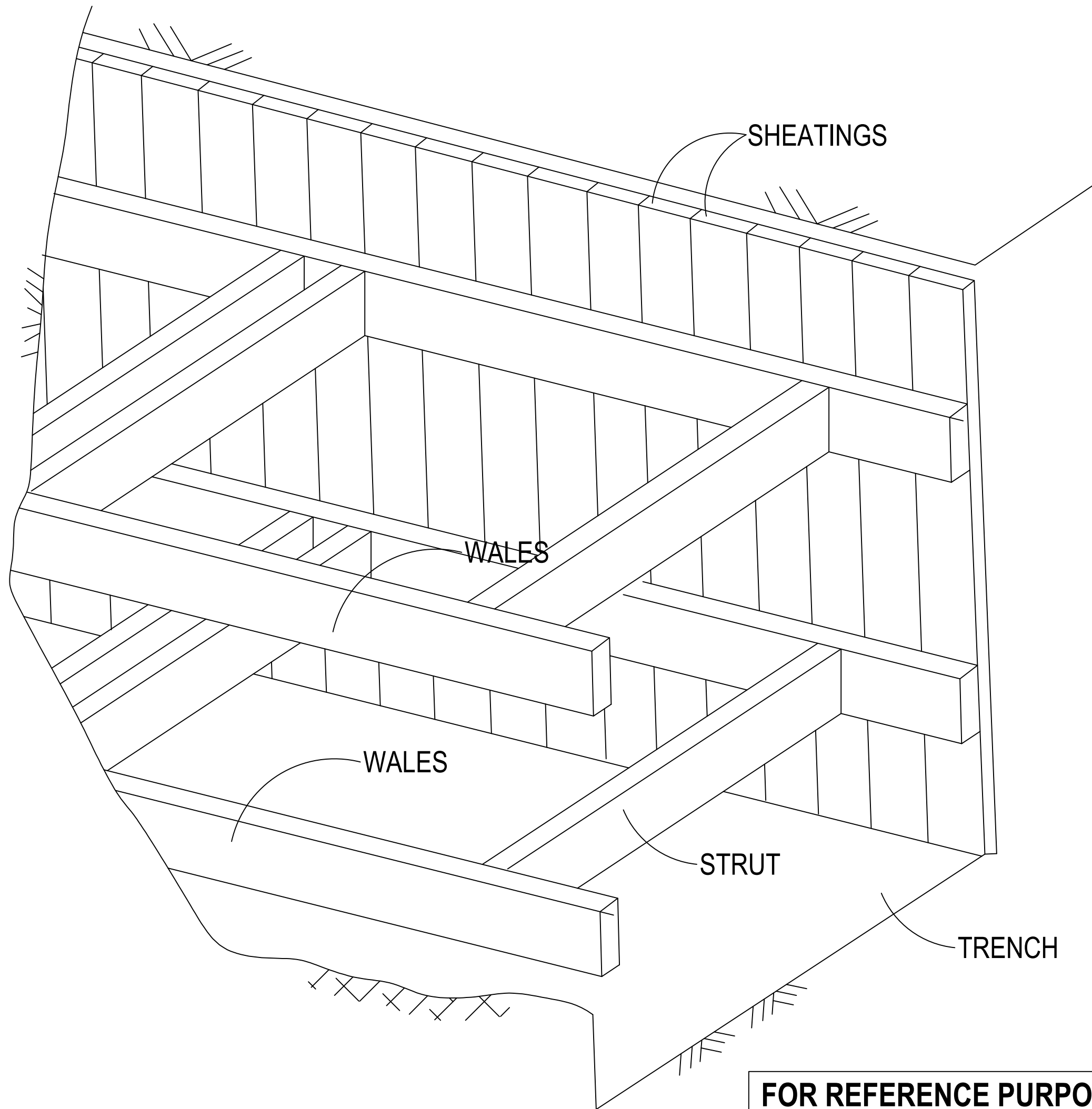
TYP	-----	TYPICAL
DIA	-----	DIAMETER
UN	-----	UNLESS NOTED
THK	-----	THICK
PCC	-----	PLAIN CEMENT CONCRETE
EQ	-----	EQUAL
C.I.	-----	CAST IRON
SFRC	-----	STEEL FIBRE REINFORCED CONCRETE



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CLIENT: SURAT MUNICIPAL CORPORATION					
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DRAWING TITLE:  TYPICAL DETAIL OF SCRAPER MANHOLE					
CHECKED BY:		HIREN NAIK	APPROVED BY:		
DRAWN	TUSHAR		MAYANK MITHAIWALA		
DESIGNED	GREENDES		SCALE	N.T.S	
SURVEYED	-		DATE	21-06-2023	
DRAWING NO.				REV.	
GREEN/DNG/SEW/STD/SC/008					
					
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DRAWING TITLE:  
**DETAILS OF SHORING-STRUTING**

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DESIGNED	<b>GREENDES</b>	SCALE	<b>N.T.S</b>
SURVEYED	<b>-</b>	DATE	<b>21-06-2023</b>

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**GREEN/DNG/SEW/STD/SHORING-STRUTING/016**

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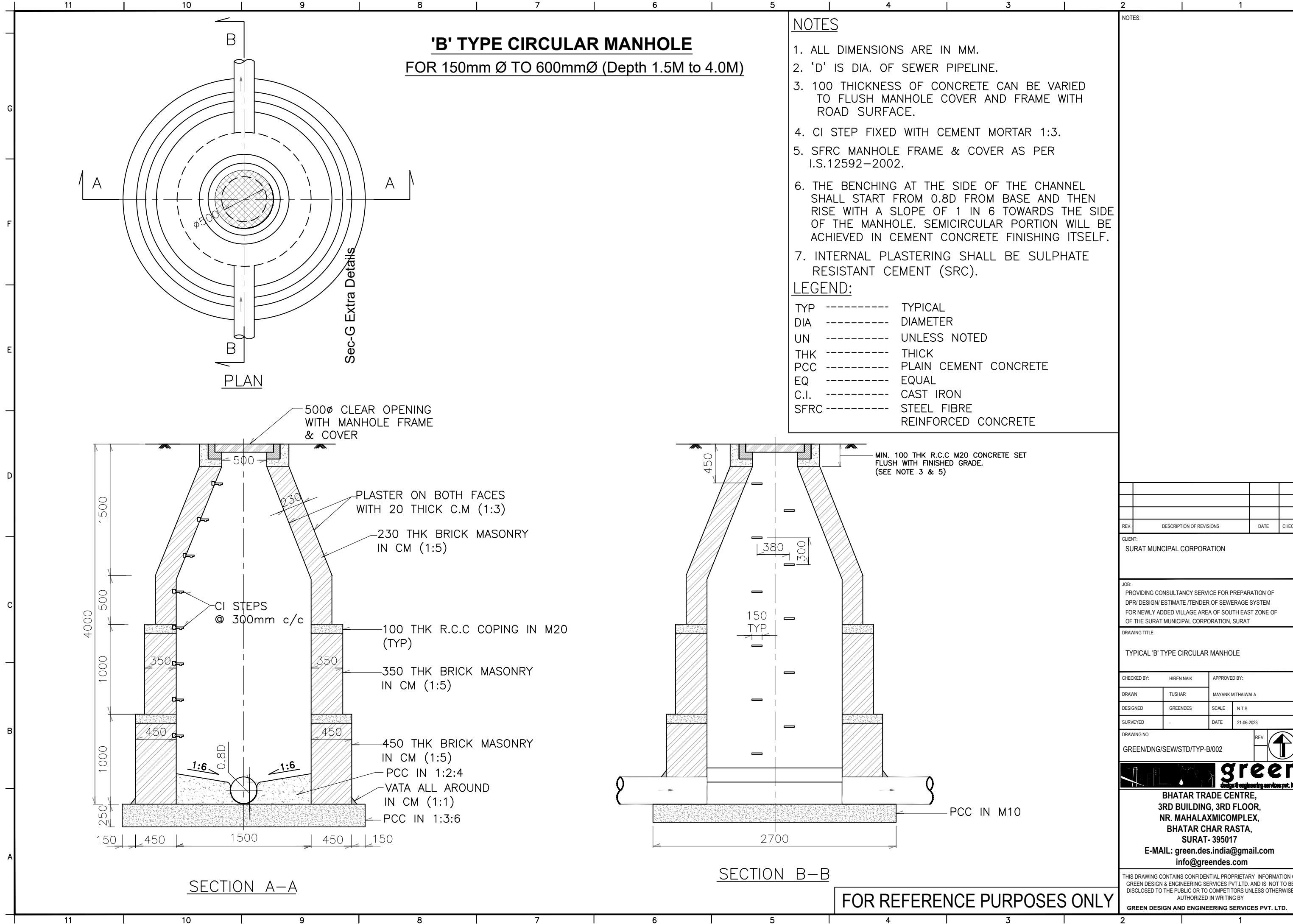
Technical drawing of a circular structure, likely a cross-section of a pipe or a well. The drawing shows concentric circles representing different layers. The outermost circle is labeled 'A' on the left and 'B' on the right. The innermost circle is labeled 'A' on the left and 'B' on the right. The central area is shaded with a cross-hatch pattern and contains the text '2500' and 'Sec-G Extra Details'. The drawing is oriented vertically with 'A' on the left and 'B' on the right.

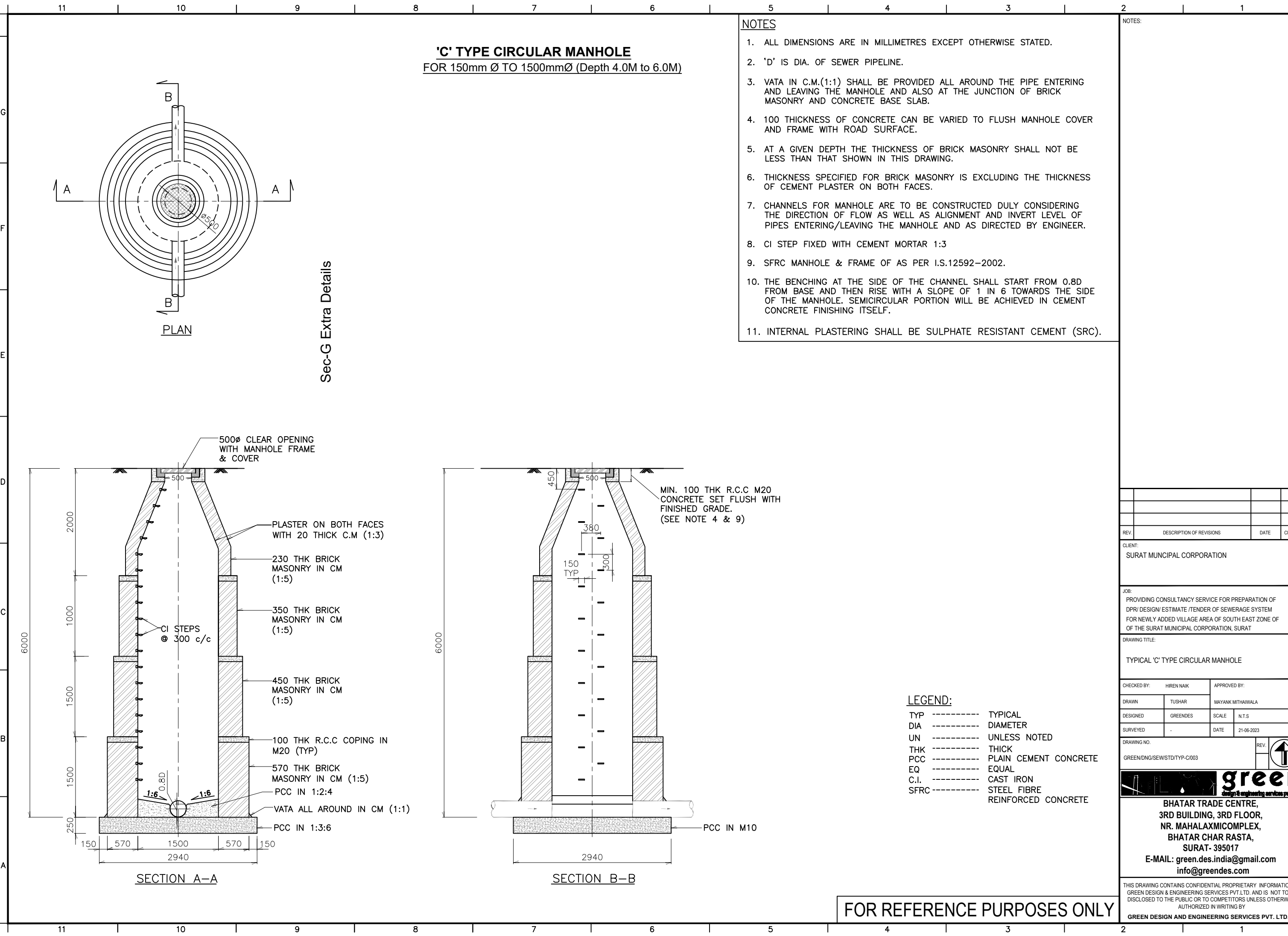
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|------|-------|------------------------------------|
| TYP  | ----- | TYPICAL                            |
| DIA  | ----- | DIAMETER                           |
| UN   | ----- | UNLESS NOTED                       |
| THK  | ----- | THICK                              |
| PCC  | ----- | PLAIN CEMENT CONCRETE              |
| EQ   | ----- | EQUAL                              |
| C.I. | ----- | CAST IRON                          |
| SFRC | ----- | STEEL FIBRE<br>REINFORCED CONCRETE |

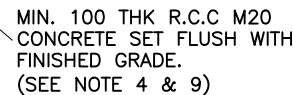
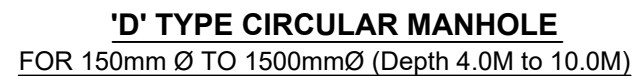
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1. ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT OTHERWISE STATED.
2. 'D' IS DIA. OF SEWER PIPELINE.
3. VATA IN C.M.(1:1) SHALL BE PROVIDED ALL AROUND THE PIPE ENTERING AND LEAVING THE MANHOLE AND ALSO AT THE JUNCTION OF BRICK MASONRY AND CONCRETE BASE SLAB.
4. 100 THICKNESS OF CONCRETE CAN BE VARIED TO FLUSH MANHOLE COVER AND FRAME WITH ROAD SURFACE.
5. AT A GIVEN DEPTH THE THICKNESS OF BRICK MASONRY SHALL NOT BE LESS THAN THAT SHOWN IN THIS DRAWING.
6. THICKNESS SPECIFIED FOR BRICK MASONRY IS EXCLUDING THE THICKNESS OF CEMENT PLASTER ON BOTH FACES.
7. CHANNELS FOR MANHOLE ARE TO BE CONSTRUCTED DULY CONSIDERING THE DIRECTION OF FLOW AS WELL AS ALIGNMENT AND INVERT LEVEL OF PIPES ENTERING/LEAVING THE MANHOLE AND AS DIRECTED BY ENGINEER.
8. CI STEP FIXED WITH CEMENT MORTAR 1:3
9. SFRC MANHOLE & FRAME OF AS PER I.S.12592-2002.
10. THE BENCHING AT THE SIDE OF THE CHANNEL SHALL START FROM 0.8D FROM BASE AND THEN RISE WITH A SLOPE OF 1 IN 6 TOWARDS THE SIDE OF THE MANHOLE. SEMICIRCULAR PORTION WILL BE ACHIEVED IN CEMENT CONCRETE FINISHING ITSELF.
11. INTERNAL PLASTERING SHALL BE SULPHATE RESISTANT CEMENT (SRC).

TYP	-----	TYPICAL
DIA	-----	DIAMETER
UN	-----	UNLESS NOTED
THK	-----	THICK
PCC	-----	PLAIN CEMENT CONCRETE
EQ	-----	EQUAL
C.I.	-----	CAST IRON
SFRC	-----	STEEL FIBRE REINFORCED CONCRETE

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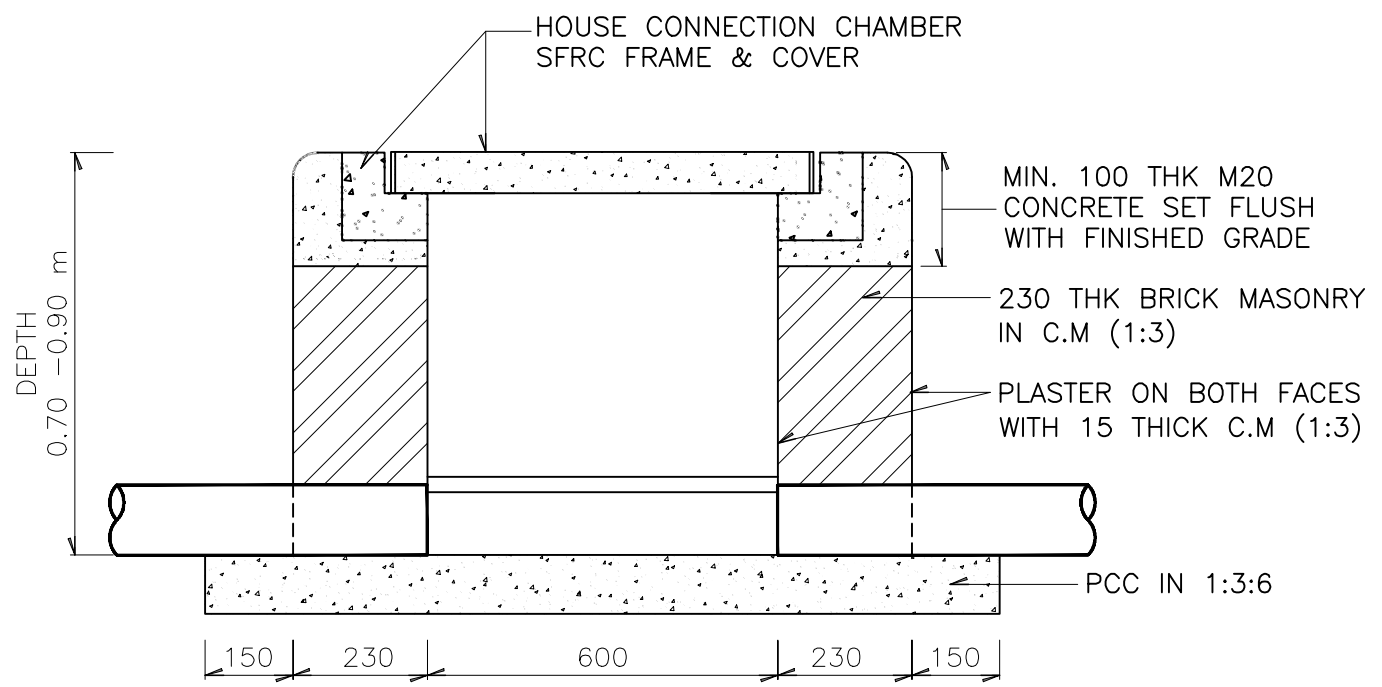
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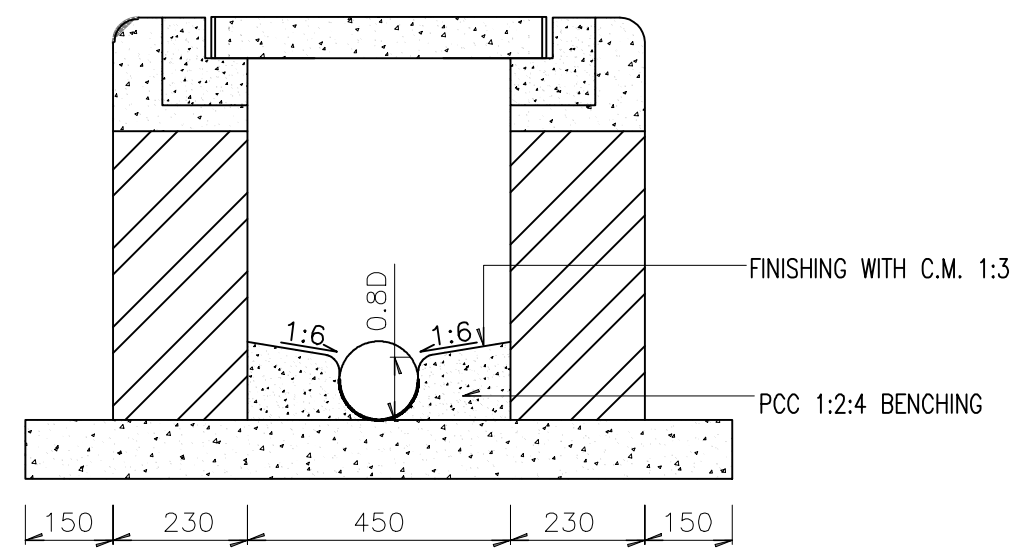
G  
F  
E  
D  
C  
B  
A

11 10 9 8 7 6 5 4 3 2 1

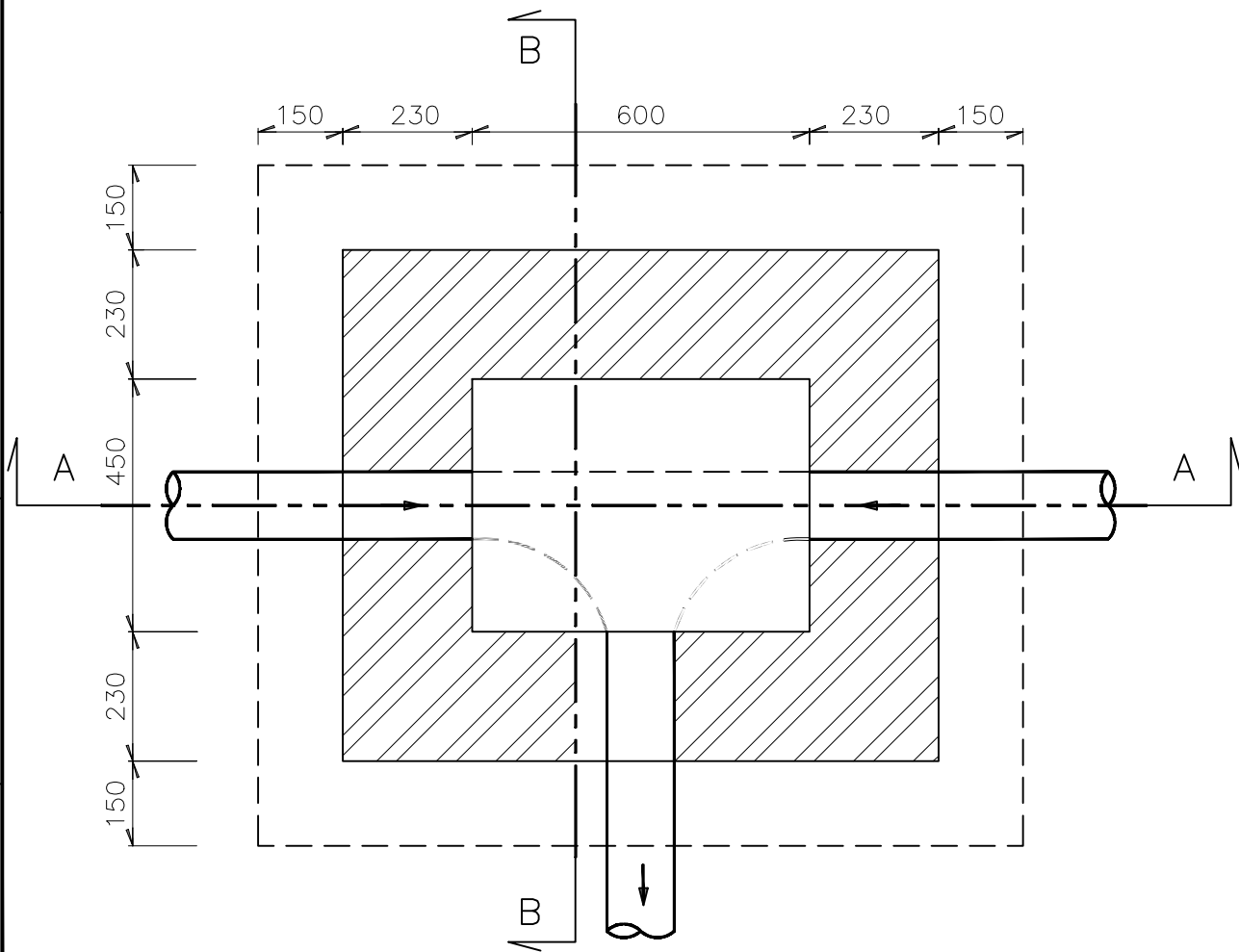
TYPICAL DETAILS OF HOUSE CONNECTION CHAMBER



SECTION A-A



SECTION B-B



PLAN

NOTES

1. ALL DIMENSIONS ARE IN MM.
2. INTERNAL PLASTERING SHALL BE SULPHATE RESISTANT CEMENT (SRC).

LEGEND:

TYP	_____	TYPICAL
DIA	_____	DIAMETER
UN	_____	UNLESS NOTED
THK	_____	THICK

NOTES:

REV.	DESCRIPTION OF REVISIONS	DATE	CHECK
CLIENT: SURAT MUNICIPAL CORPORATION			
JOB: PROVIDING CONSULTANCY SERVICE FOR PREPARATION OF DPR/ DESIGN/ ESTIMATE /TENDER OF SEWERAGE SYSTEM FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF OF THE SURAT MUNICIPAL CORPORATION, SURAT			
DRAWING TITLE: TYPICAL DETAILS OF HOUSE CONNECTION CHAMBER			
CHECKED BY: HIREN NAIK		APPROVED BY:	
DRAWN: TUSHAR		MAYANK MITHAIWALA	
DESIGNED: GREENDES		SCALE: N.T.S	
SURVEYED: -		DATE: 21-06-2023	
DRAWING NO. GREEN/DNG/SEW/STD/HC-CHAMBER/005		REV.	
BHATAR TRADE CENTRE, 3RD BUILDING, 3RD FLOOR, NR. MAHALAXMICOMPLEX, BHATAR CHAR RASTA, SURAT- 395017 E-MAIL: <a href="mailto:green.des.india@gmail.com">green.des.india@gmail.com</a> <a href="mailto:info@greendes.com">info@greendes.com</a>			
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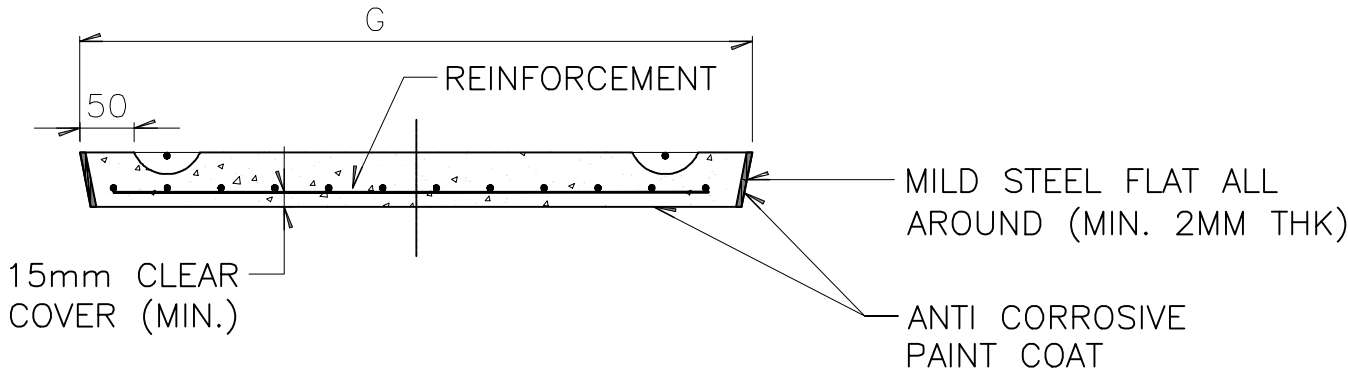
FOR REFERENCE PURPOSES ONLY

TYPICAL DETAILS OF R.C.C FRAME & COVER

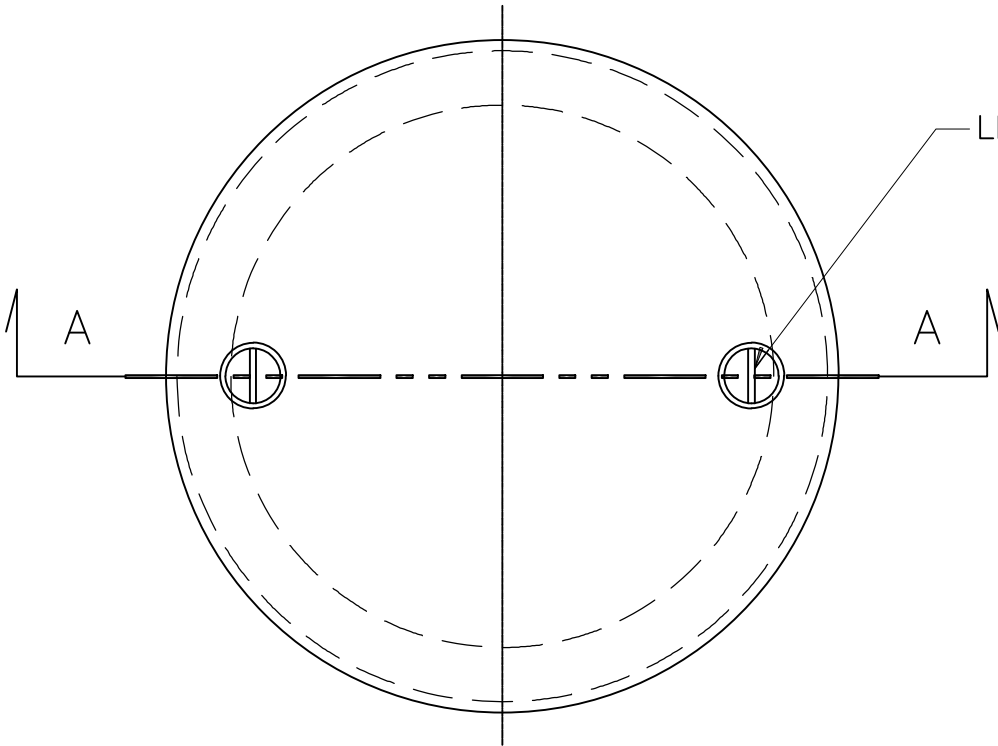
NOTES

- 1. ALL DIMENSIONS ARE IN MM.
- 2. THE MANHOLE FRAME AND COVER SHALL BE DULY MARKED BY BIS CERTIFICATION MARKING.
- 3. OUTSIDE DIMENSION OF COVER AT TOP SHALL MATCH WITH THE CORRESPONDING FRAME SO THAT THE MAXIMUM CLEARANCE AT THE TOP BETWEEN THE FRAME AND THE COVER ALL AROUND THE PERIPHERY IS NOT MORE THAN 5MM.
- 4. THE TOP SURFACE OF FRAME AND COVER SHALL BE IN LEVEL WITH THE TOLERANCE OF ± 5MM.
- 5. TOLERANCE ON C SHALL BE ±5MM .
- 6. TOLERANCE ON A,B,D & E SHALL BE 0.0MM–5MM.
- 7. FOR FACILITY OF REMOVING MANHOLE COVER , SUIABLE UPWARD TAPER OF NOT MORE THAN 5° MAY BE PROVIDER TO THE INNER PERIPHERY OF THE FRAME.
- 8. IF REQUIRED FOR THE REMOVAL OF MOLDS,SUITABLE TAPER NOT MORE THAN 5° CAN BE GIVEN AT THE LOWER INNER PERIPHERY OF THE FRAME AS INDICATED.
- 9. LIFTING HOOKS SHALL BE HOT DIP GALVANISED AND PROVIDED AS FOLLOWS:

LIGHT AND MEDIUM DUTY – 12MM (MIN.)  
HEAVY DUTY – 16MM (MIN.)  
EXTRA HEAVY DUTY – 16MM (MIN.)



SECTION A–A



PLAN

S.No	Grade	Description	A	B	C	D	E (Min)	F (Min)	G
1	LD - 2.5	Light Duty Circular	500	50	50	50	50	608	600
2	LD - 2.5	Light Duty Rectangular	450 x 600	50	50	50	50	558 x 708	550 x 700
3	MD - 10	Medium Duty Circular	500	70	50	50	50	610	602
4	MD - 10	Medium Duty Rectangular	450 x 600	70	50	50	50	560 x 710	552 x 702
5	HD - 20	Heavy Duty Circular	500	90	75	75	75	660	652

FOR REFERENCE PURPOSES ONLY

NOTES:

REV.	DESCRIPTION OF REVISIONS	DATE	CHECK
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CLIENT:

SURAT MUNICIPAL CORPORATION

JOB:

PROVIDING CONSULTANCY SERVICE FOR PREPARATION OF DPR/ DESIGN/ ESTIMATE /TENDER OF SEWERAGE SYSTEM FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF OF THE SURAT MUNICIPAL CORPORATION, SURAT

DRAWING TITLE:

TYPICAL DETAILS OF R.C.C FRAME & COVER

CHECKED BY:	HIREN NAIK	APPROVED BY:	
DRAWN	TUSHAR	MAYANK MITHAVALA	
DESIGNED	GREENDES	SCALE	N.T.S
SURVEYED	-	DATE	21-06-2023

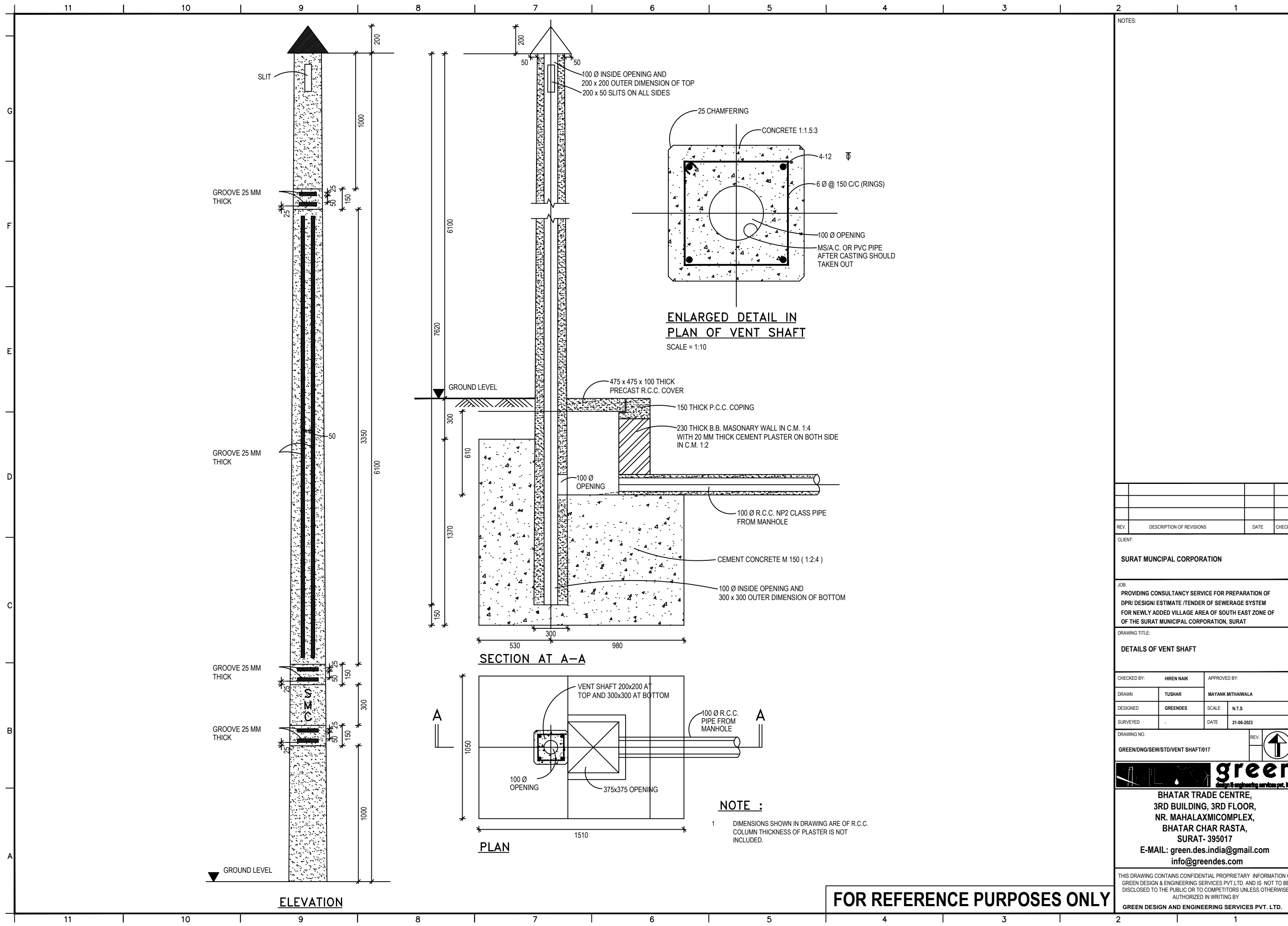
DRAWING NO.

GREEN/DNG/SEW/STD/FRAME-COVER/006

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PROVIDING CONSULTANCY SERVICE FOR PREPARATION OF DPR/ DESIGN/ ESTIMATE /TENDER OF SEWERAGE SYSTEM FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF THE SURAT MUNICIPAL CORPORATION, SURAT

DRAWING TITLE:

**DETAILS OF VENT SHAFT**

CHECKED BY:	HIREN NAIK	APPROVED BY:		
DRAWN	TUSHAR	MAYANK MITHAIWALA	SCALE	N.T.S
DESIGNED	GREENDES		DATE	21-06-2023
SURVEYED	-			

DRAWING NO. GREEN/DWG/SEW/STD/VENT SHAFT/017

REV.

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SURAT- 395017

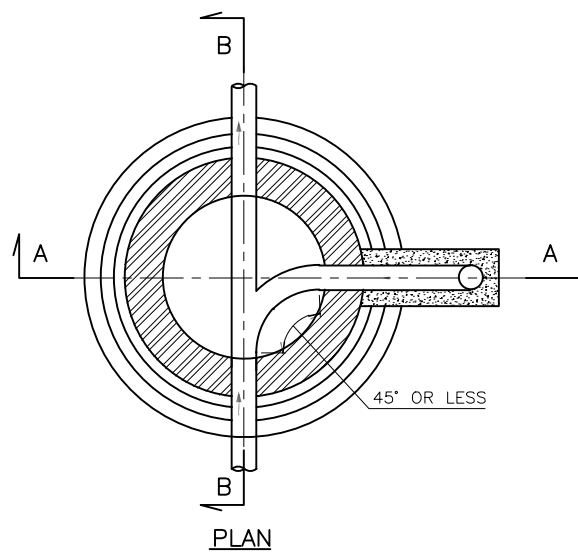
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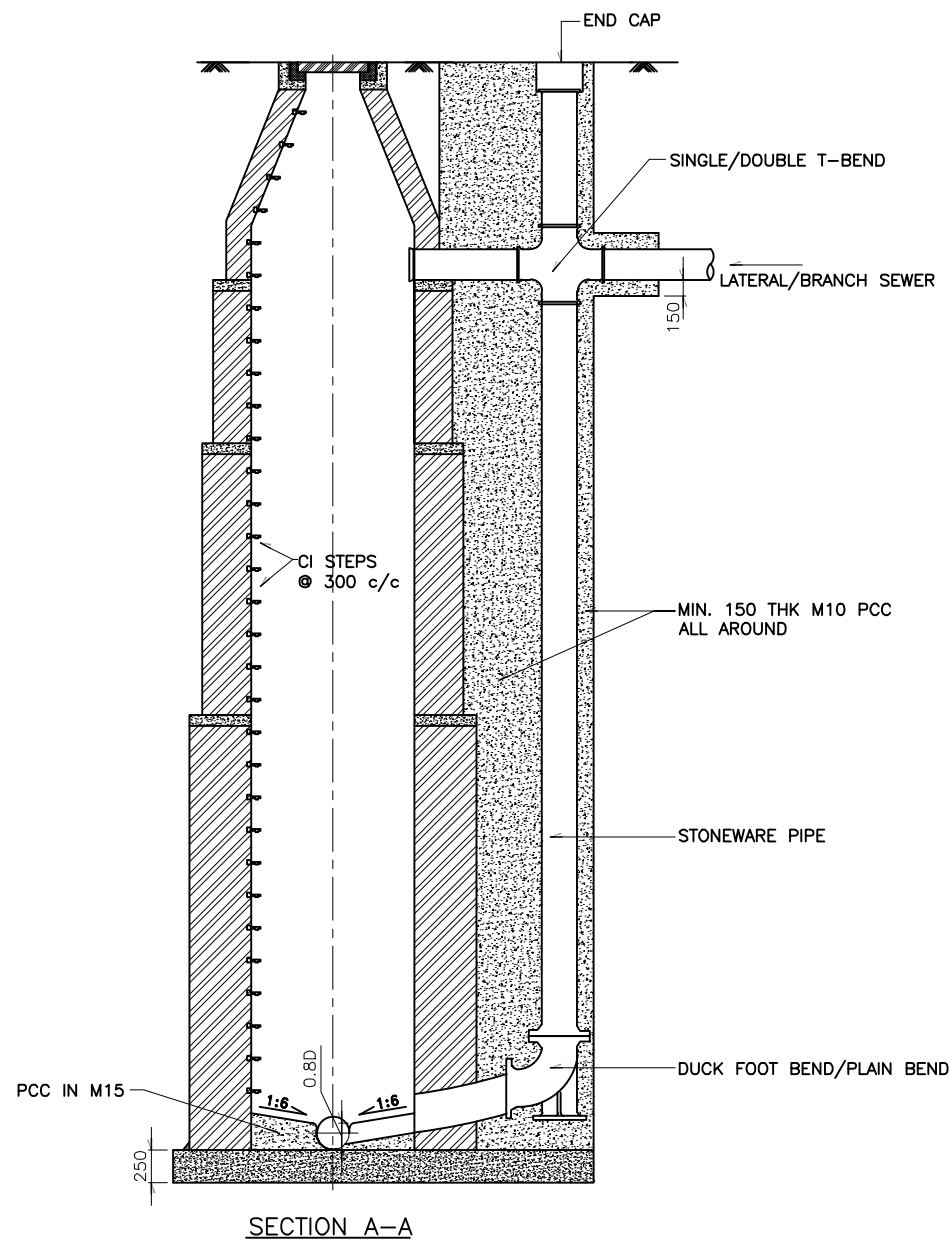
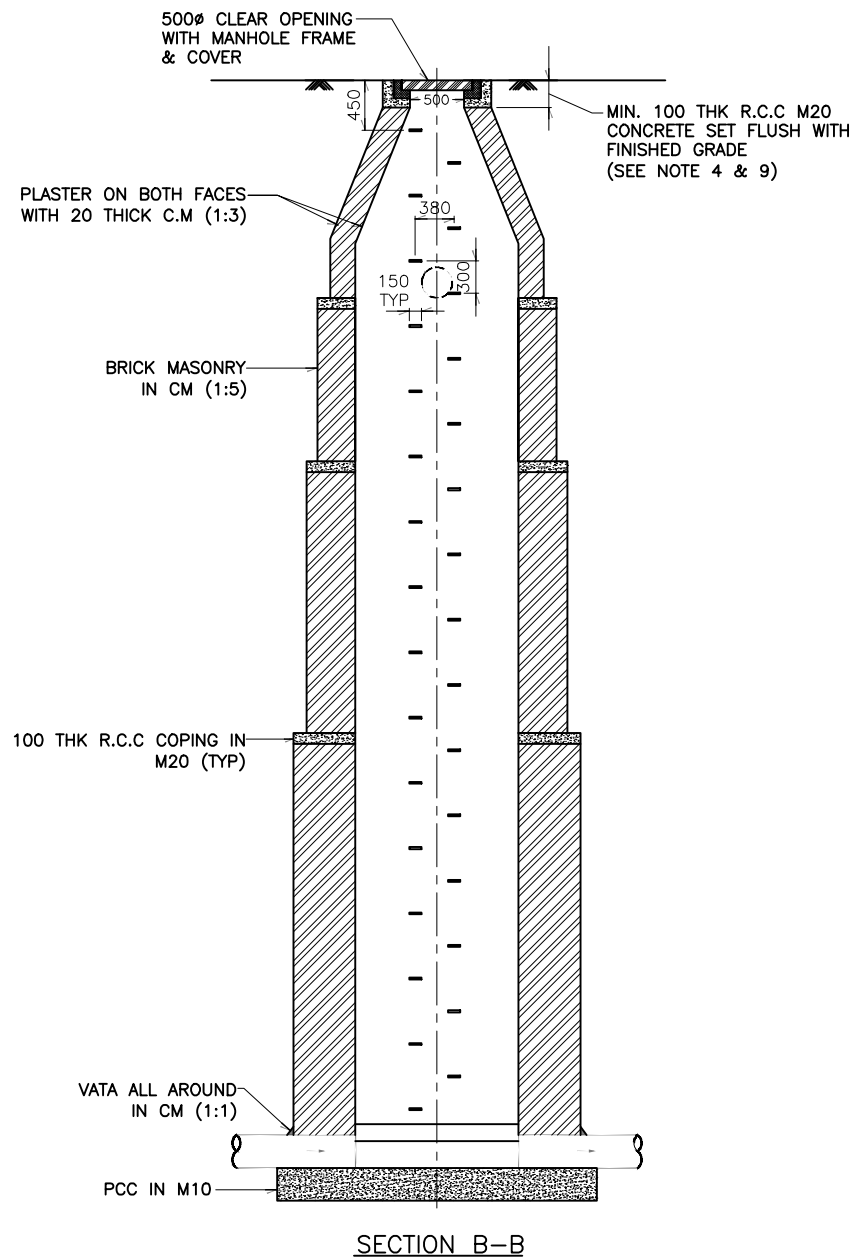




- NOTES

LEGEND:

TYP	-----	TYPICAL
DIA	-----	DIAMETER
UN	-----	UNLESS NOTED
THK	-----	THICK
PCC	-----	PLAIN CEMENT CONCRETE
EQ	-----	EQUAL
C.I.	-----	CAST IRON
SFRC	-----	STEEL FIBRE REINFORCED CONCRETE



## VERTICAL DROP ARRANGEMENT FOR MANHOLES

FOR REFERENCE PURPOSES ONLY

<b>NOTES:</b>			

REV.	DESCRIPTION OF REVISIONS	DATE	CHECK

CLIENT:  
**SURAT MUNICIPAL CORPORATION**

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JOB:  
PROVIDING CONSULTANCY SERVICE FOR PREPARATION OF DPR/ DESIGN/ ESTIMATE /TENDER OF SEWERAGE SYSTEM FOR NEWLY ADDED VILLAGE AREA OF SOUTH EAST ZONE OF THE SURAT MUNICIPAL CORPORATION, SURAT

DRAWING TITLE:  
**VERTICAL DROP ARRANGEMENT FOR MANHOLES**

CHECKED BY: HIREN NAIK		APPROVED BY:	
DRAWN TUSHAR		MAYANK MITHAIWALA	
DESIGNED GREENDEES		SCALE	N.T.S
SURVEYED -		DATE	21-06-2023

DRAWING NO. <b>GREEN/DNG/SEW/STD/VTD/007</b>	REV.	
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