



MUNICIPAL CORPORATION OF GREATER MUMBAI

Mithi River Water Quality Improvement Project

Package3: Dry Weather Flow Interception at Tidal Outfalls (including Gate Pumps), Transfer Sewer, Training of River (Retaining wall and Service Road), Beautification including Promenades and Allied Works from CST Bridge to Prem nagar outfall, Kurla including Vakola River.

Design Build Operate Contract

Volume 2D – Contract Drawings

Employer:
Municipal Corporation of Greater Mumbai
Municipal Head Office Building,
Mahapalika Marg, Fort, Mumbai- 400001
India

Consultant:
Frischmann Prabhu (India) Pvt. Ltd.
315, Balgovind Wadi, New Prabhadevi Road,
Prabhadevi, Mumbai - 400 025.
India

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 General 1

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1 INTRODUCTION

General

This volume is provided in conjunction with the Employer's Requirements.

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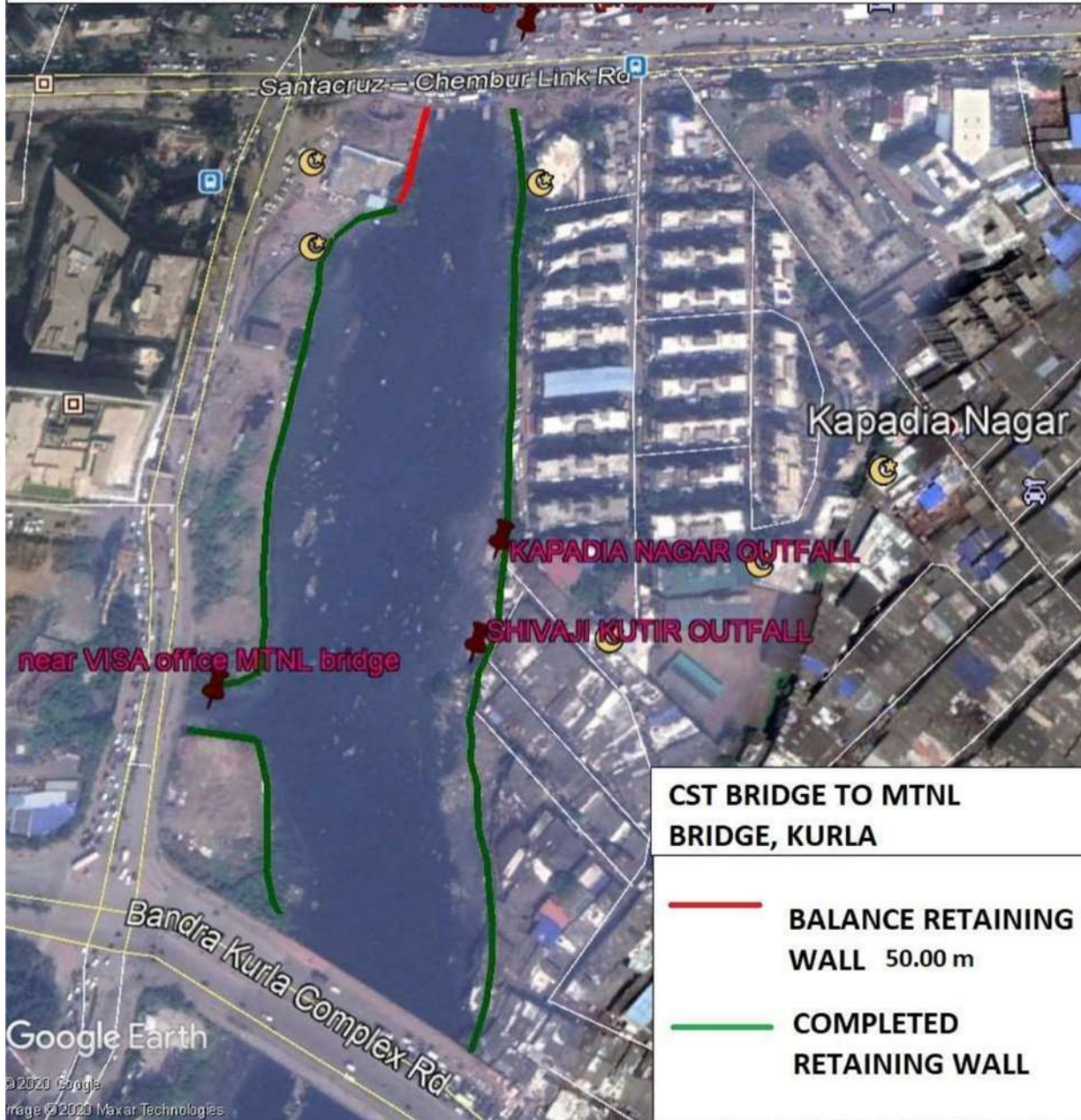
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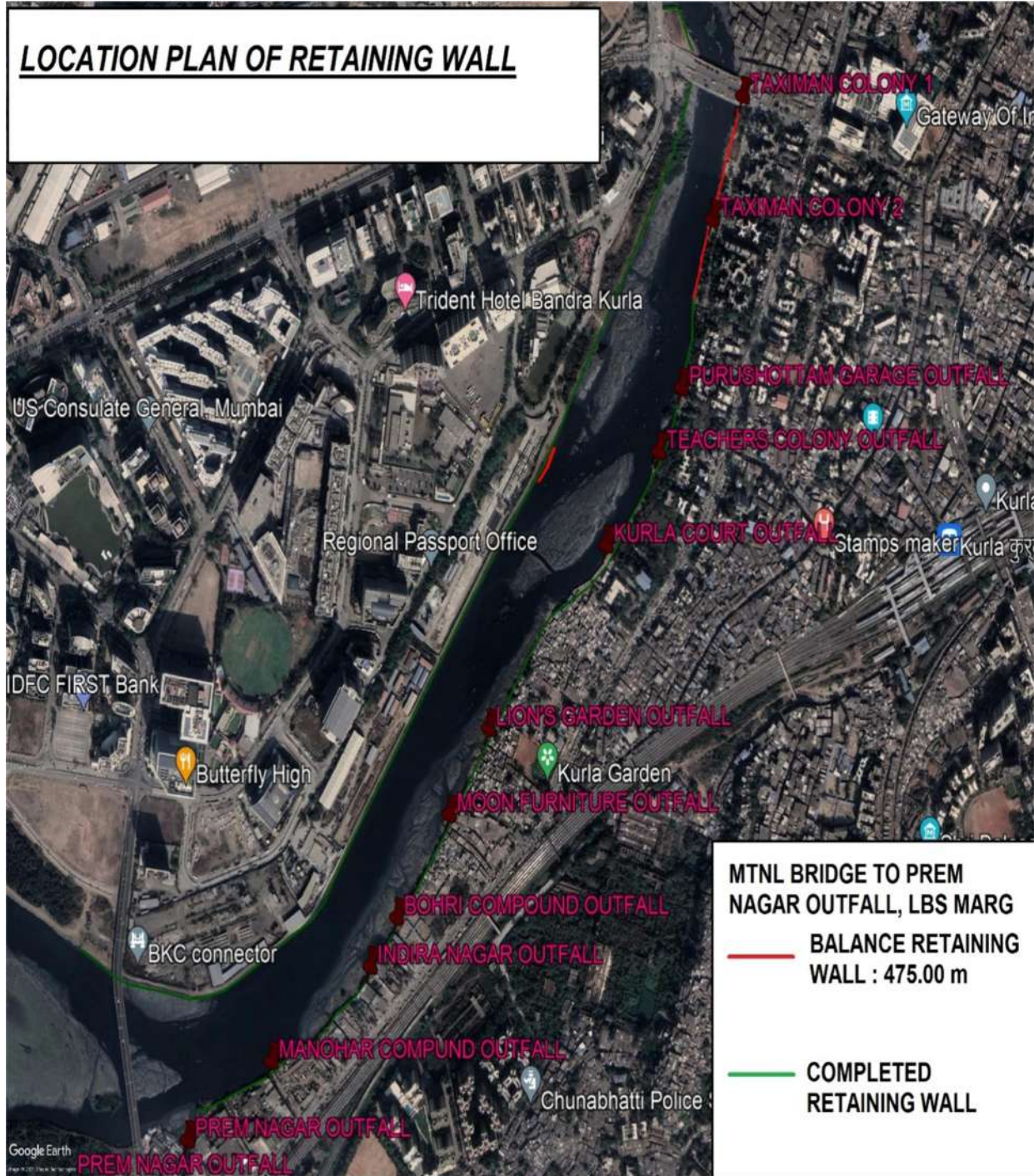
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SECTION – 1 RETAINING WALL

LOCATION PLAN OF RETAINING WALL



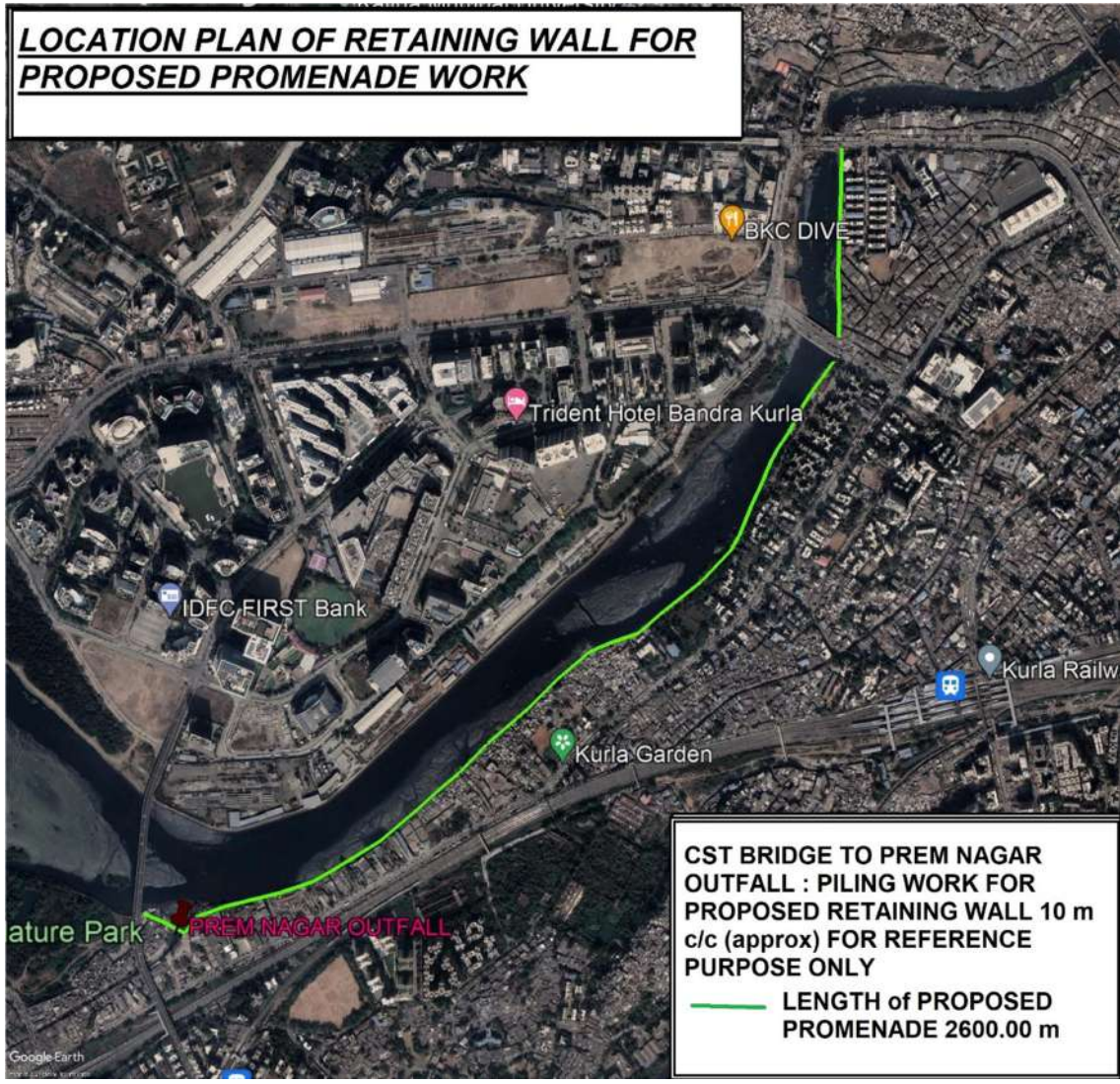
LOCATION PLAN OF RETAINING WALL

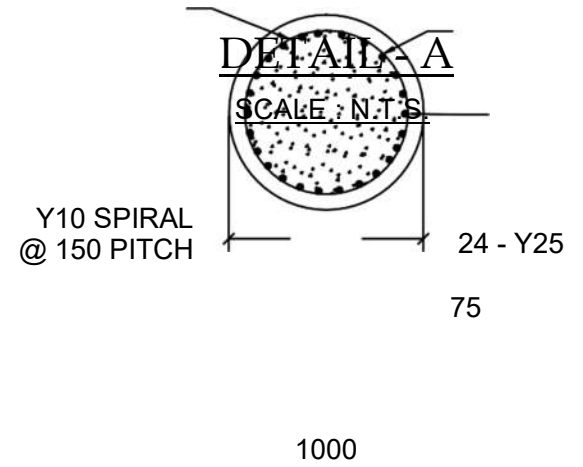
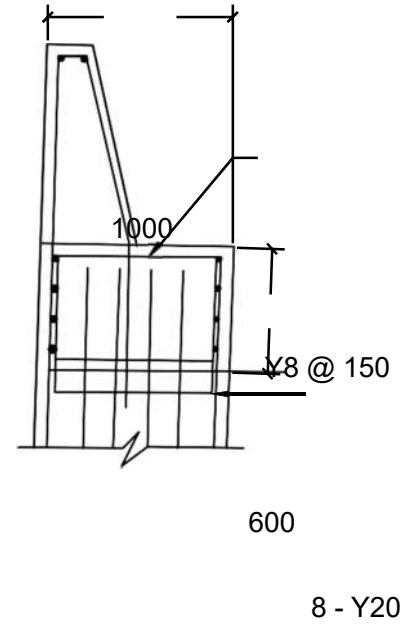
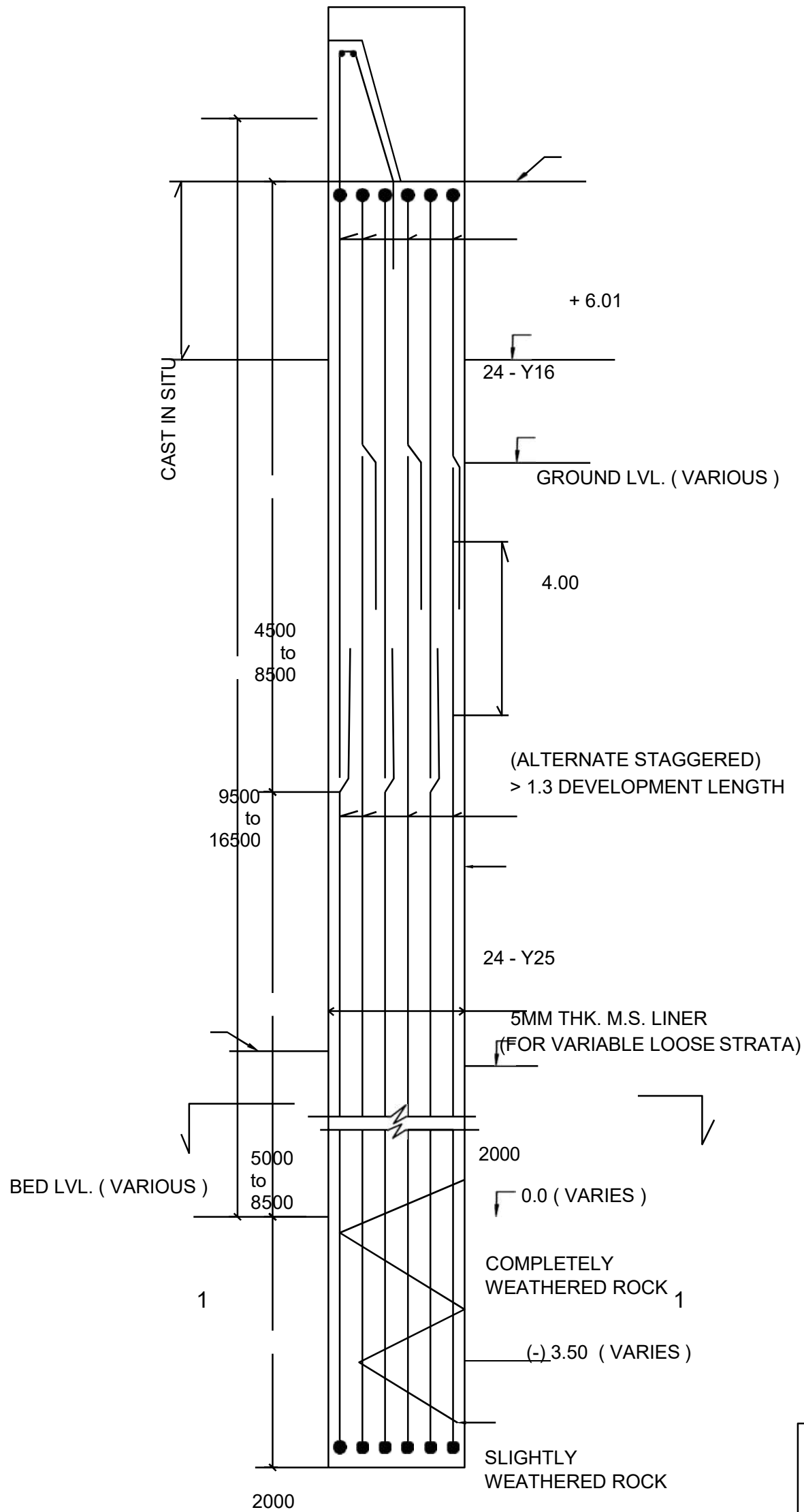


LOCATION PLAN OF RETAINING WALL



**LOCATION PLAN OF RETAINING WALL FOR
PROPOSED PROMENADE WORK**



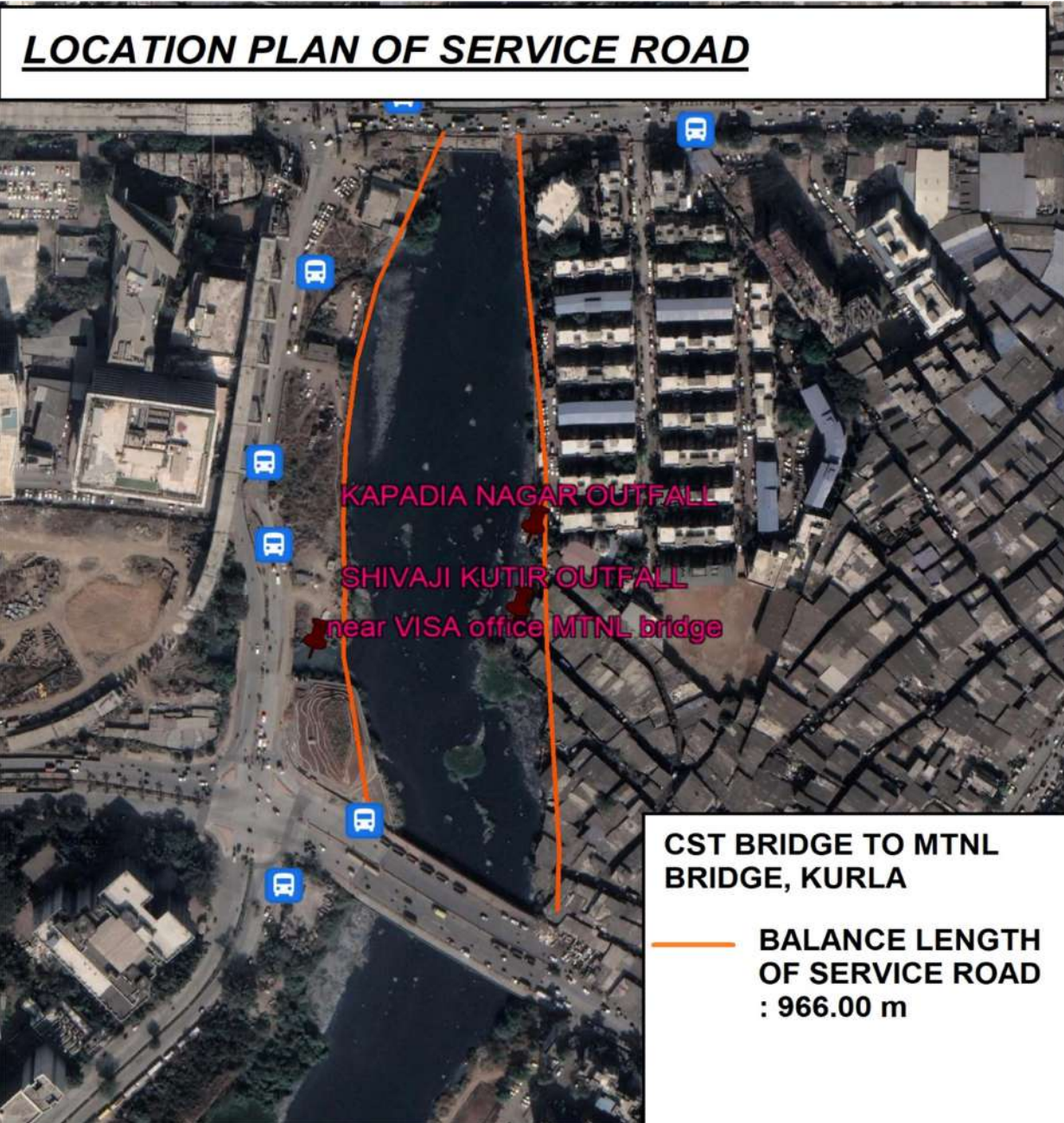


SECTION - 1 - 1
SCALE : N.T.S.

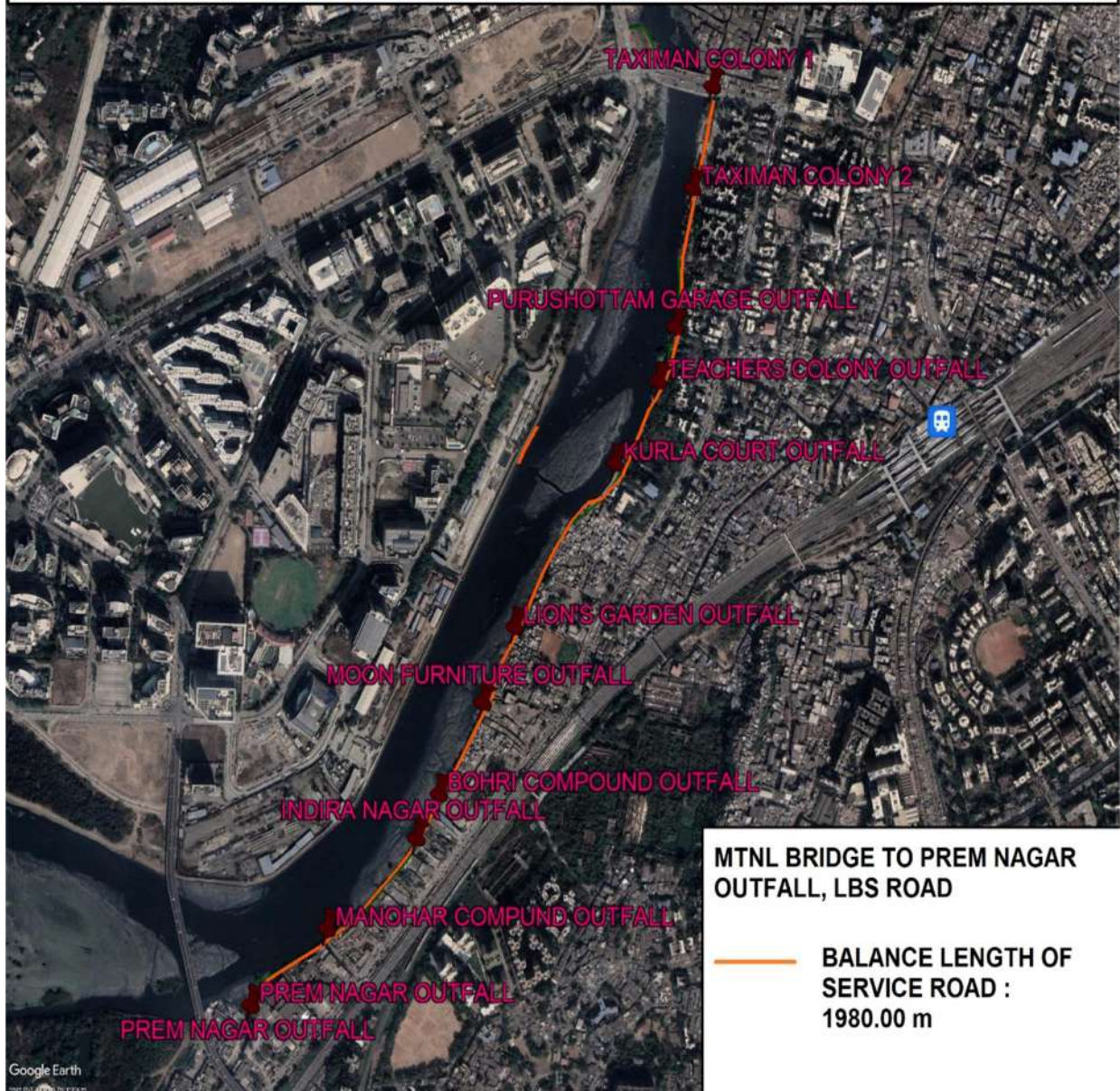
ELEVATION
SCALE : N.T.S.

TYPICAL CROSS SECTION OF PILE FOR MITHI RIVER WATER QUALITY IMPROVEMENT PROJECT PACKAGE III (FOR REFERENCE PURPOSE ONLY)

SECTION – 2 SERVICE ROAD

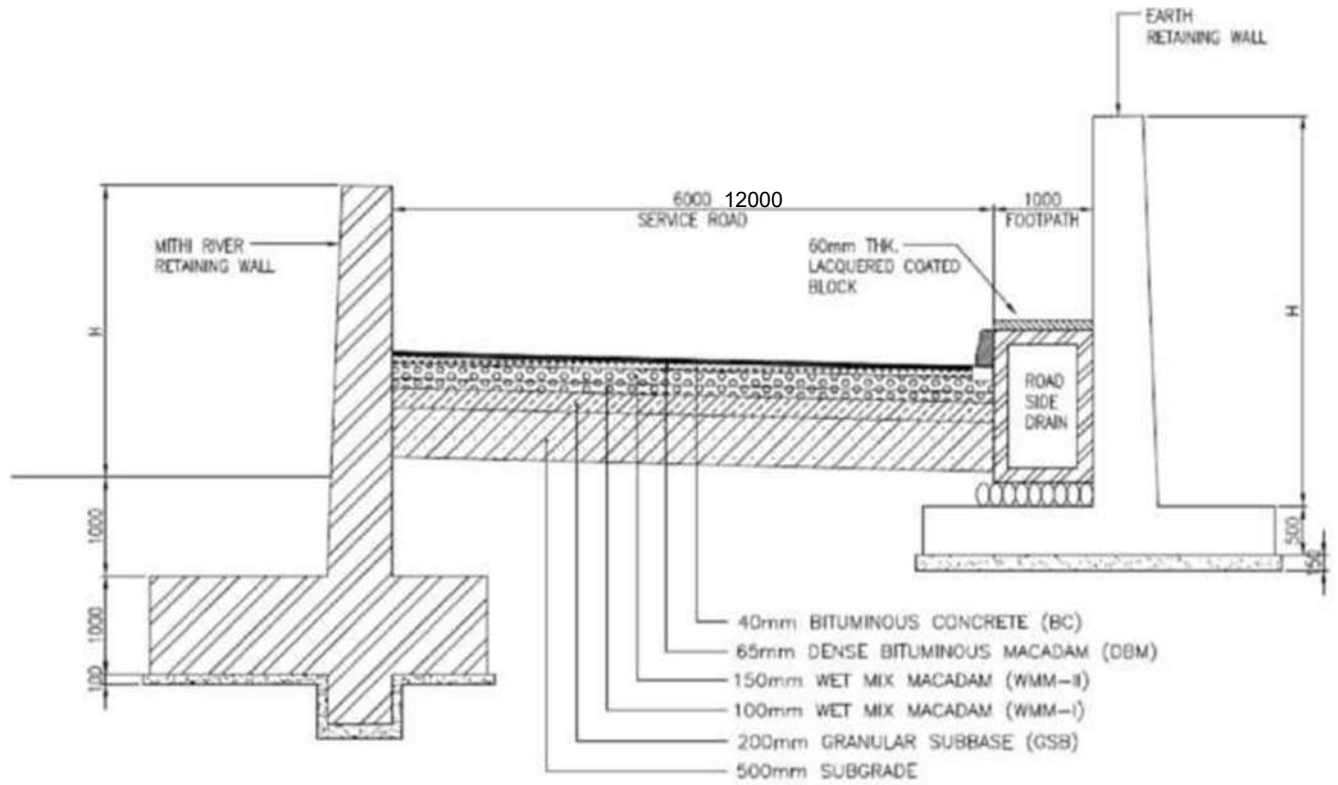


LOCATION PLAN OF SERVICE ROAD



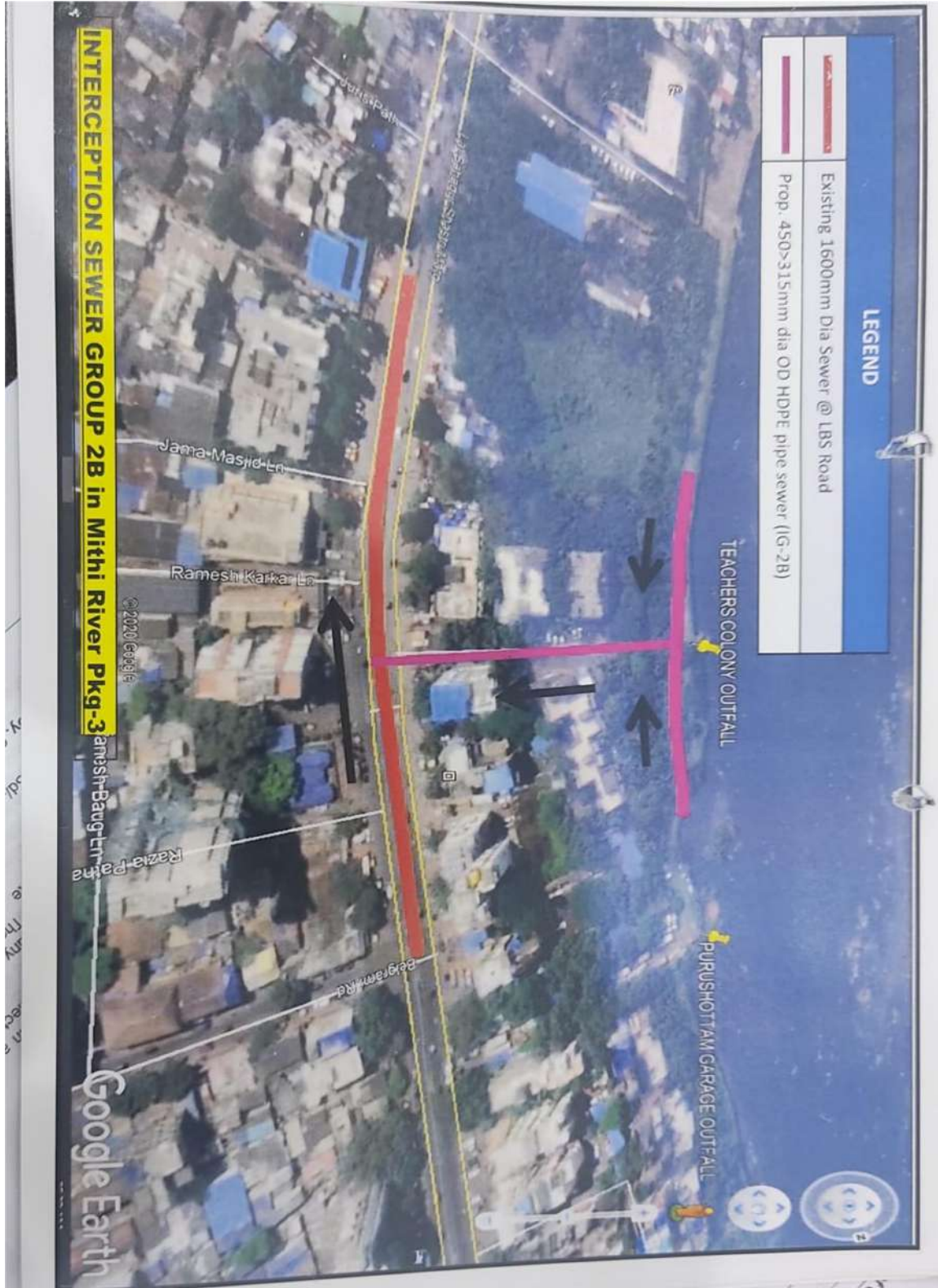
LOCATION PLAN OF SERVICE ROAD





CROSS SECTION OF SERVICE ROAD

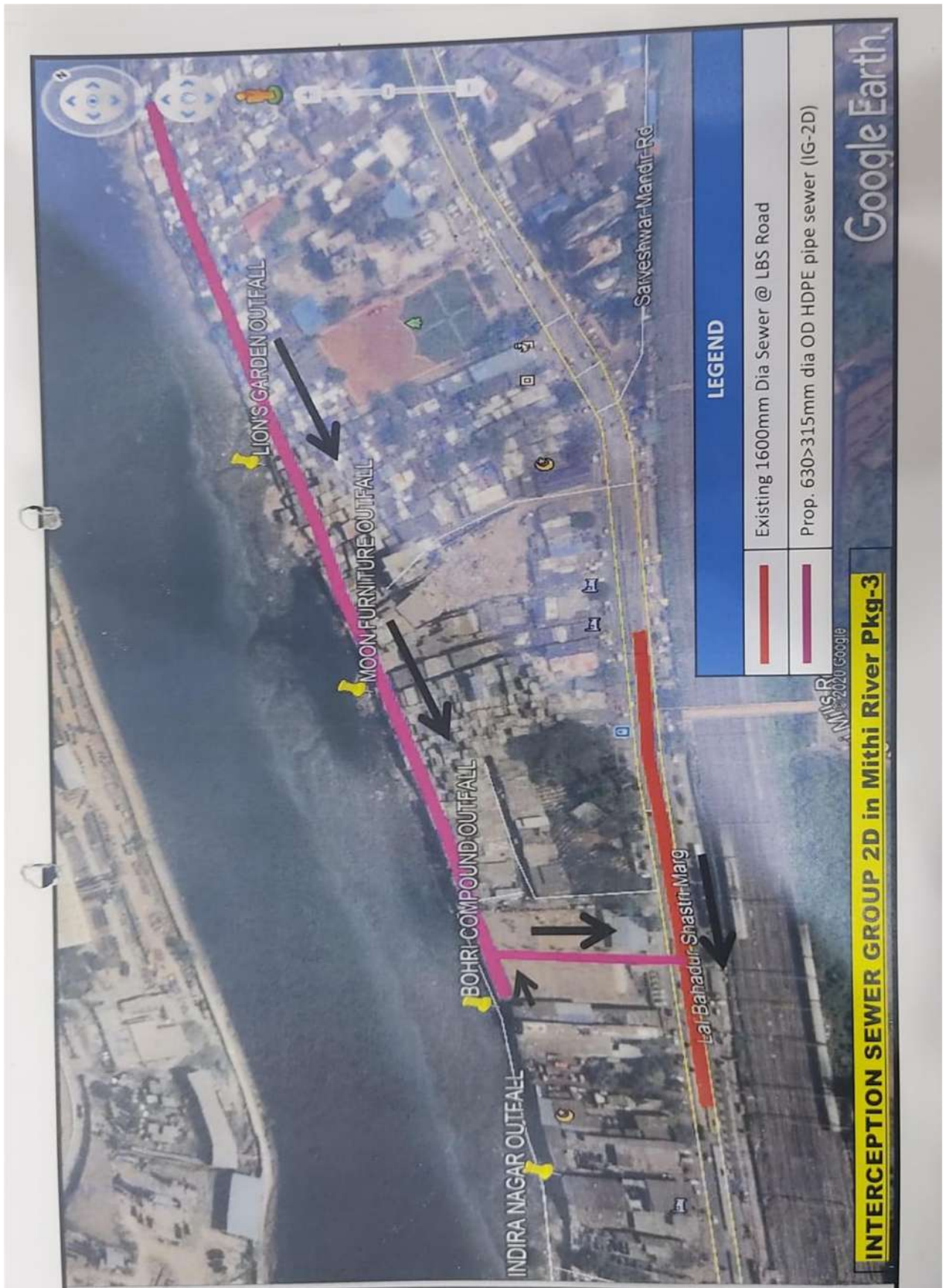
SECTION - 3 SEWER LINE















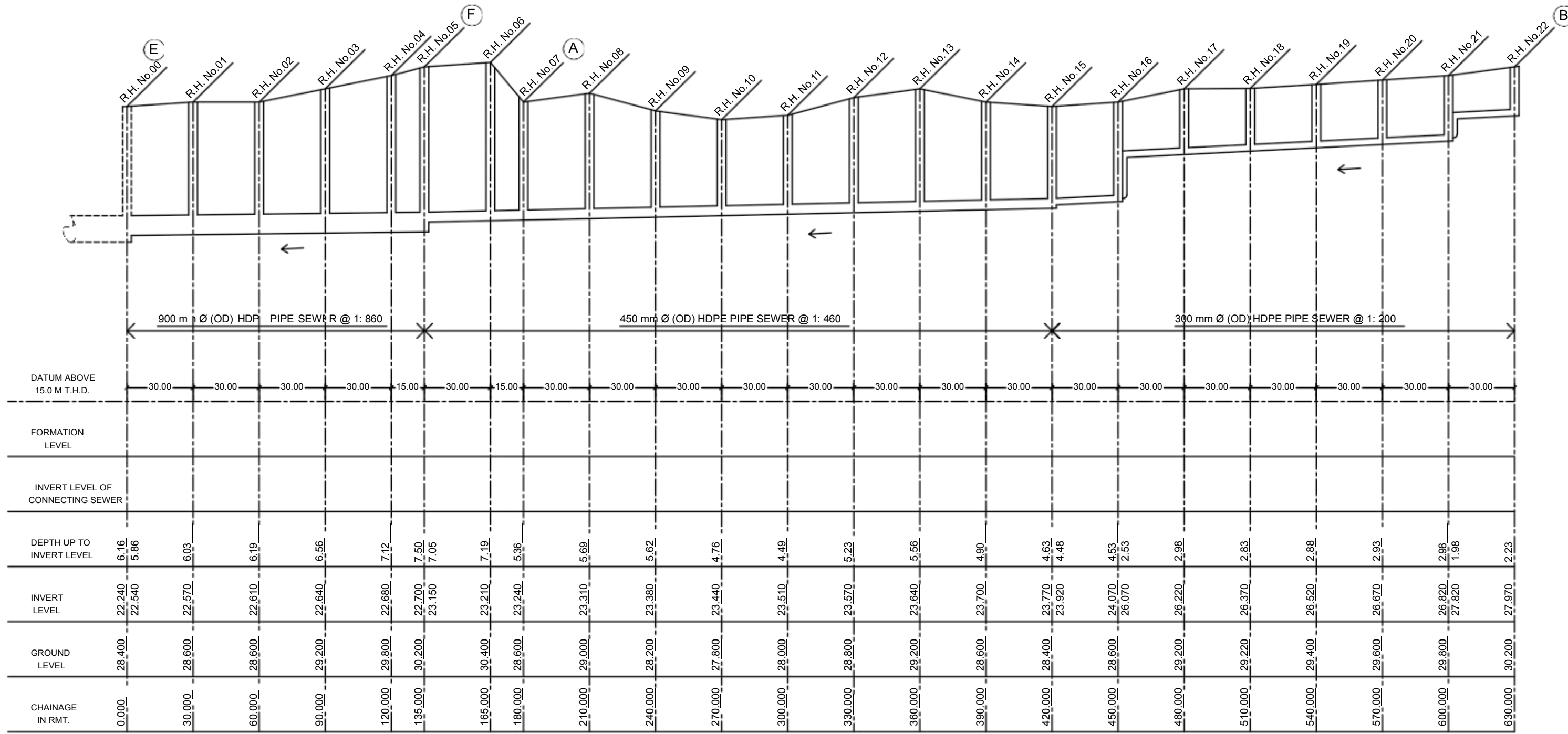




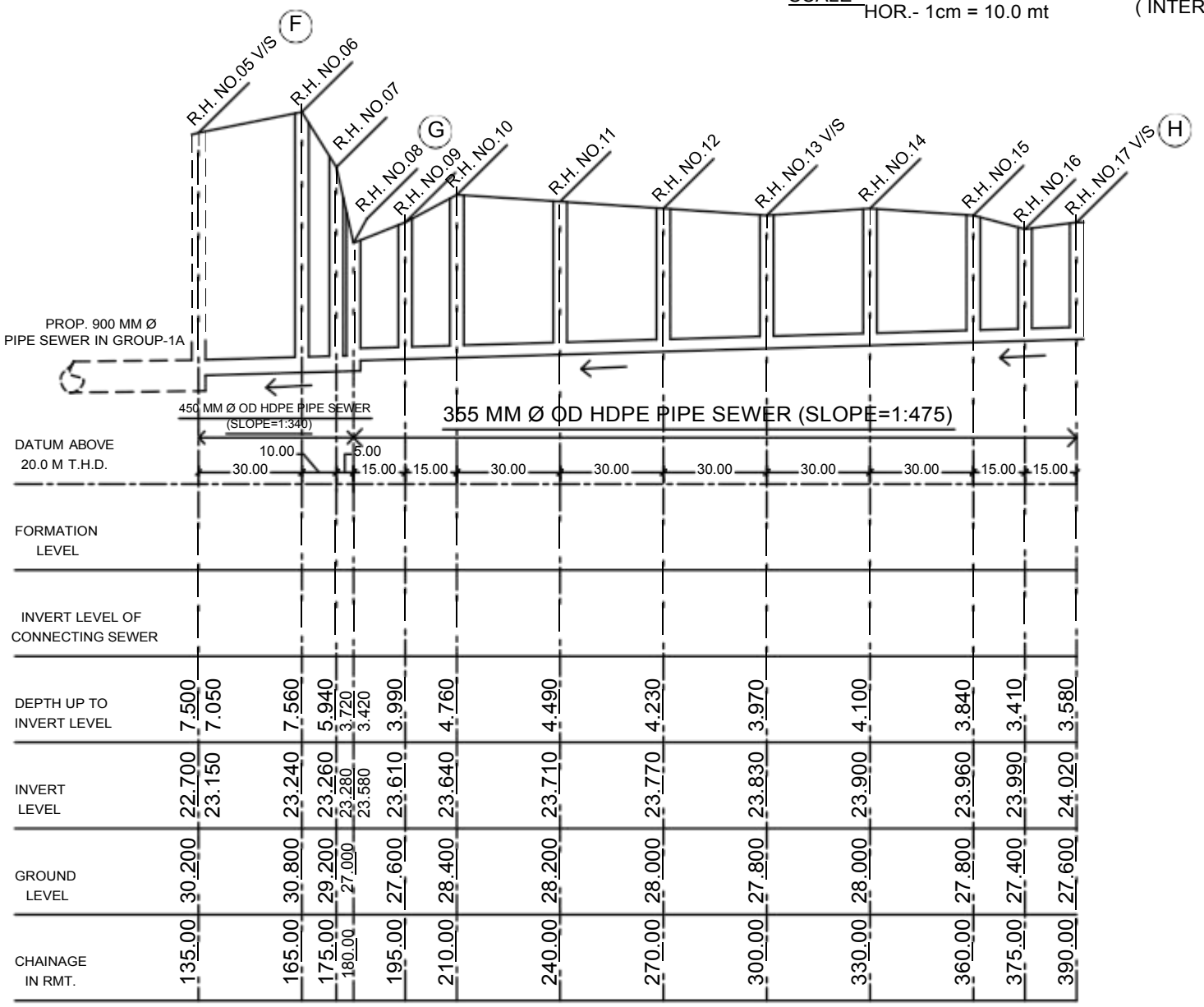
LOCATION PLAN :- Kranti Nagar to Wadia Estate road junction, Kurla (Mithi River crossing)



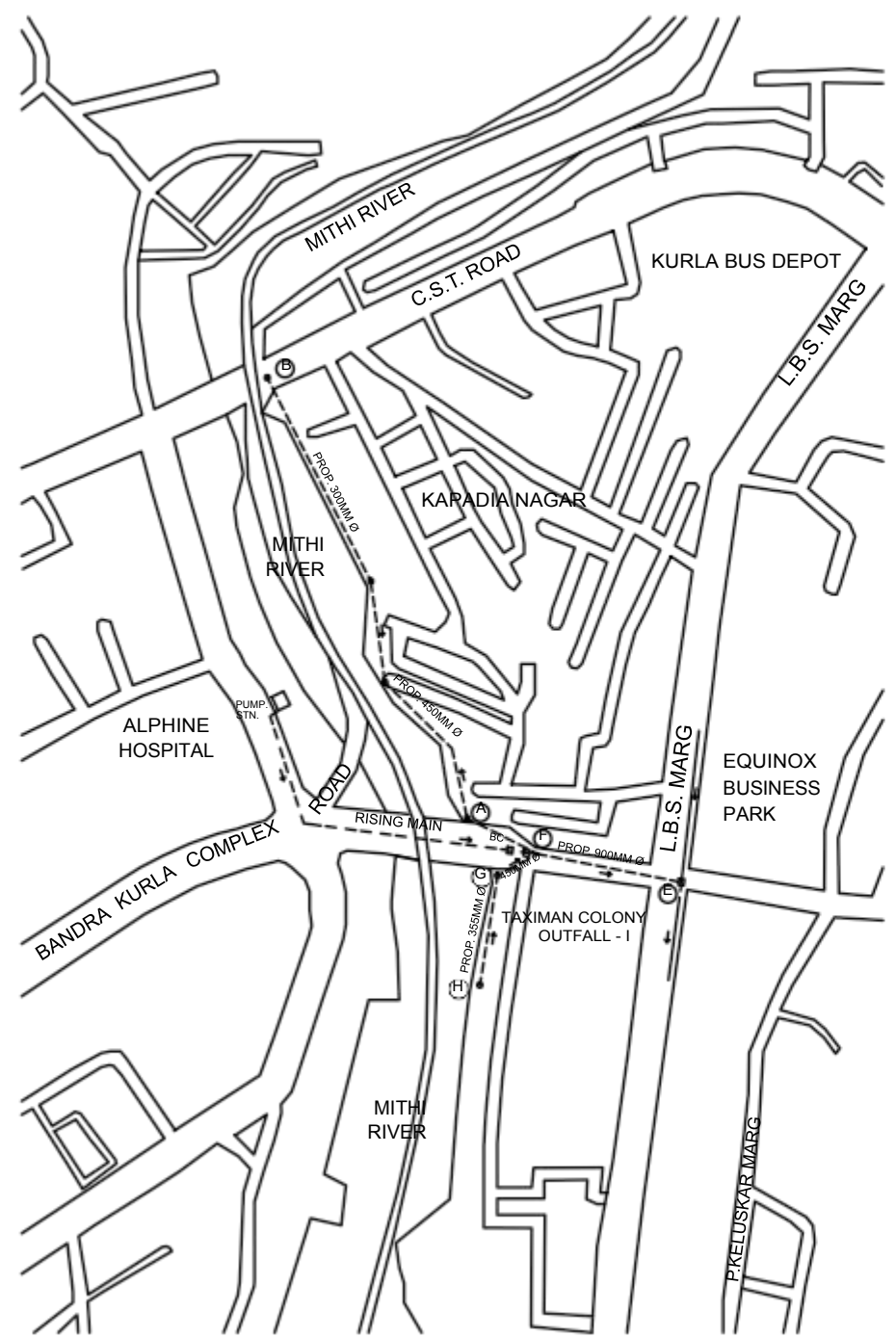
LOCATION PLAN :- BKC MMRDA Ground to LBS road (Mithi River crossing)



L - SECTION
 SCALE - VER.- 1cm = 1.0 mt
 HOR.- 1cm = 10.0 mt
LBS TO CST ROAD
 (INTERCEPTOR GROUP - 1A)



L - SECTION
 SCALE - VER.- 1cm = 1.0 mt
 HOR.- 1cm = 10.0 mt

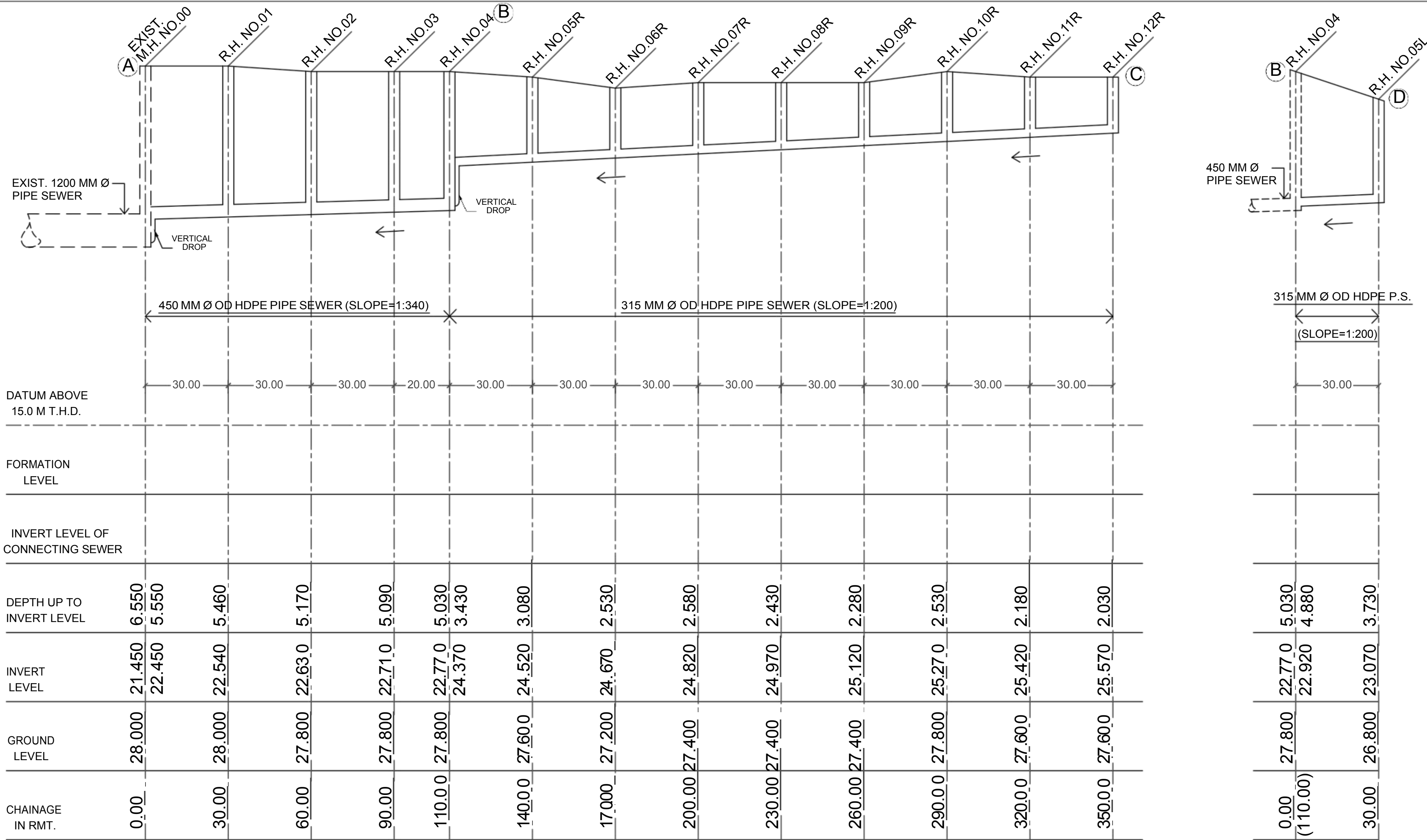


LOCATION PLAN
 SCALE - N.T.S.

MUNICIPAL CORPORATION OF GREATER MUMBAI

P/L 900>450>315MM DIA. OD HDPE PIPES OF PE-100 / PE-80 GRADE & PN-6 CLASS PIPE SEWER LINE FROM L.B.S. ROAD - SURVE CHOWK TO MTNL BRIDGE (EAST) TO SHIVAJI KUTIR TO KAPADIA NAGAR TO CST Rd. JUNCTION ALONG PROP. SERVICE RD. OF MITHI RIVER(EAST BANK) IN KURLA (E) IN "L" WARD. (INTERCEPTOR GROUP - 1A)

PROVIDING AND LAYING 450mm, & 355mm DIA. OD HDPE PIPES OF PE - 80 GRADE AND PN-6 CLASS PIPE SEWER LINE FROM MTNL BRIDGE (EAST) TO TAXIMEN COLONY OUTFALL-2 ALONG PROPOSED SERVICE ROAD OF MITHI RIVER (EAST BANK) IN KURLA (EAST) IN L-WARD. (INTERCEPTOR-GROUP - 1-B)

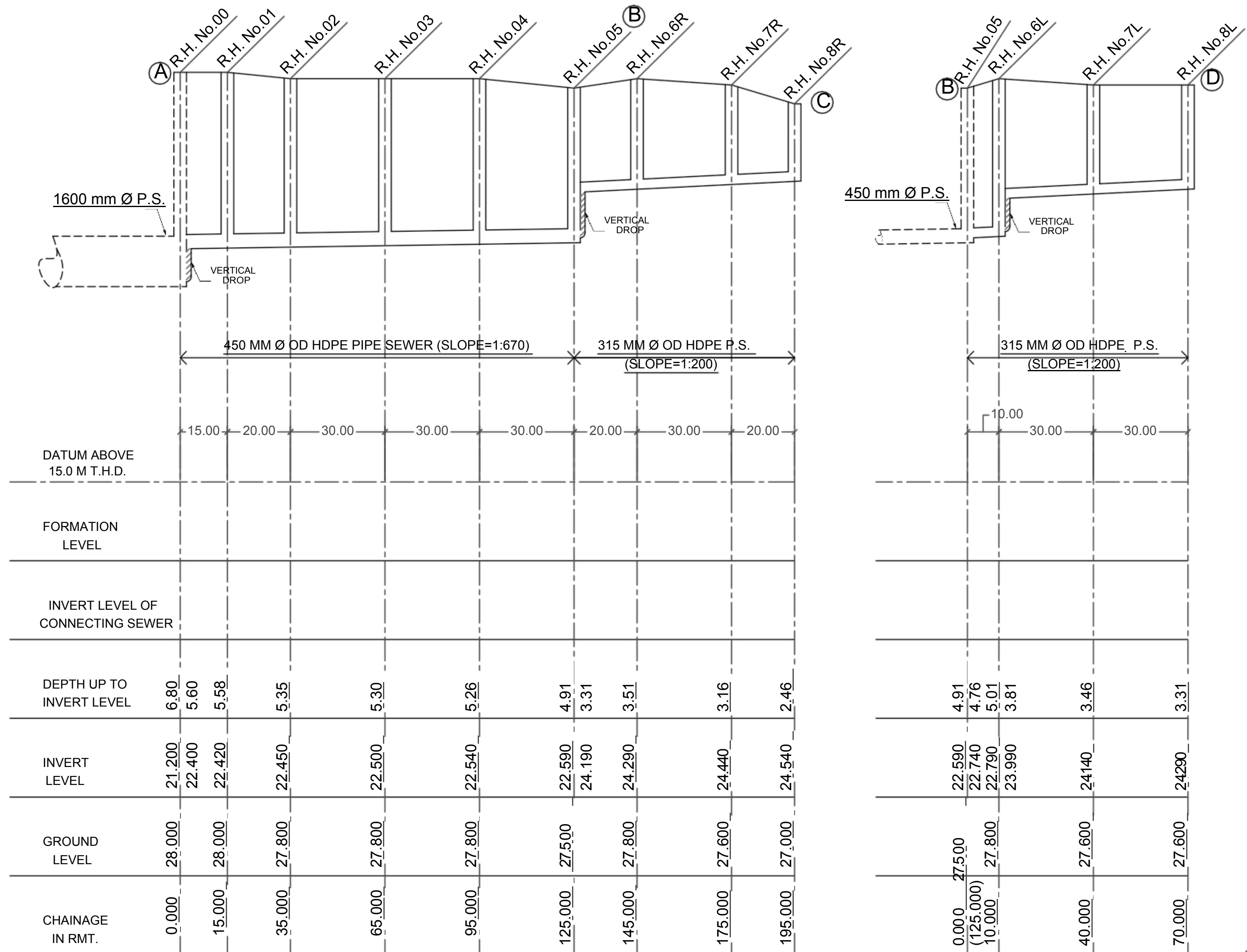


L - SECTION SCALE - VER.- 1cm = 1.0 mt
HOR.- 1cm = 10.0 mt

2A

MUNICIPAL CORPORATION OF GREATER MUMBAI

PROVIDING AND LAYING 450mm > 315mm DIA. OD HDPE PIPES OF PE-80 GRADE AND PN-6 CLASS PIPE SEWER LINE FROM L.B.S. ROAD TO PURUSHOTTAM GARAGE OUTFALL TO TAXIMEN COLONY OUTFALL-2/ TEACHER'S COLONY OUTFALL ALONG PROPOSED SERVICE ROAD OF MITHI RIVER (EAST BANK) IN KURLA (EAST) L WARD. (INTERCEPTOR GROUP - 2-A)

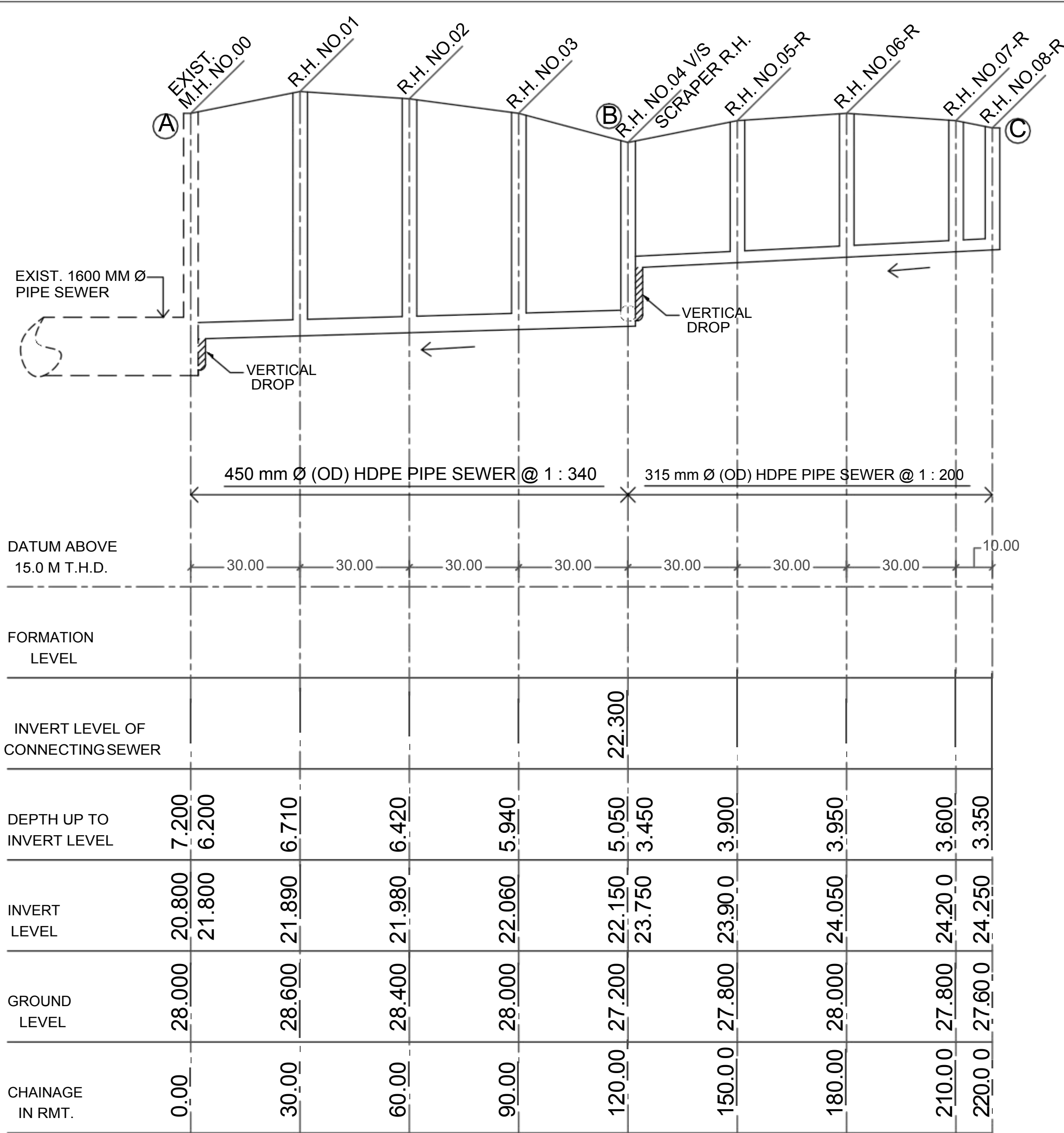


L - SECTION SCALE - VER.- 1cm = 1.0 mt
 HOR.- 1cm = 10.0 mt

2B

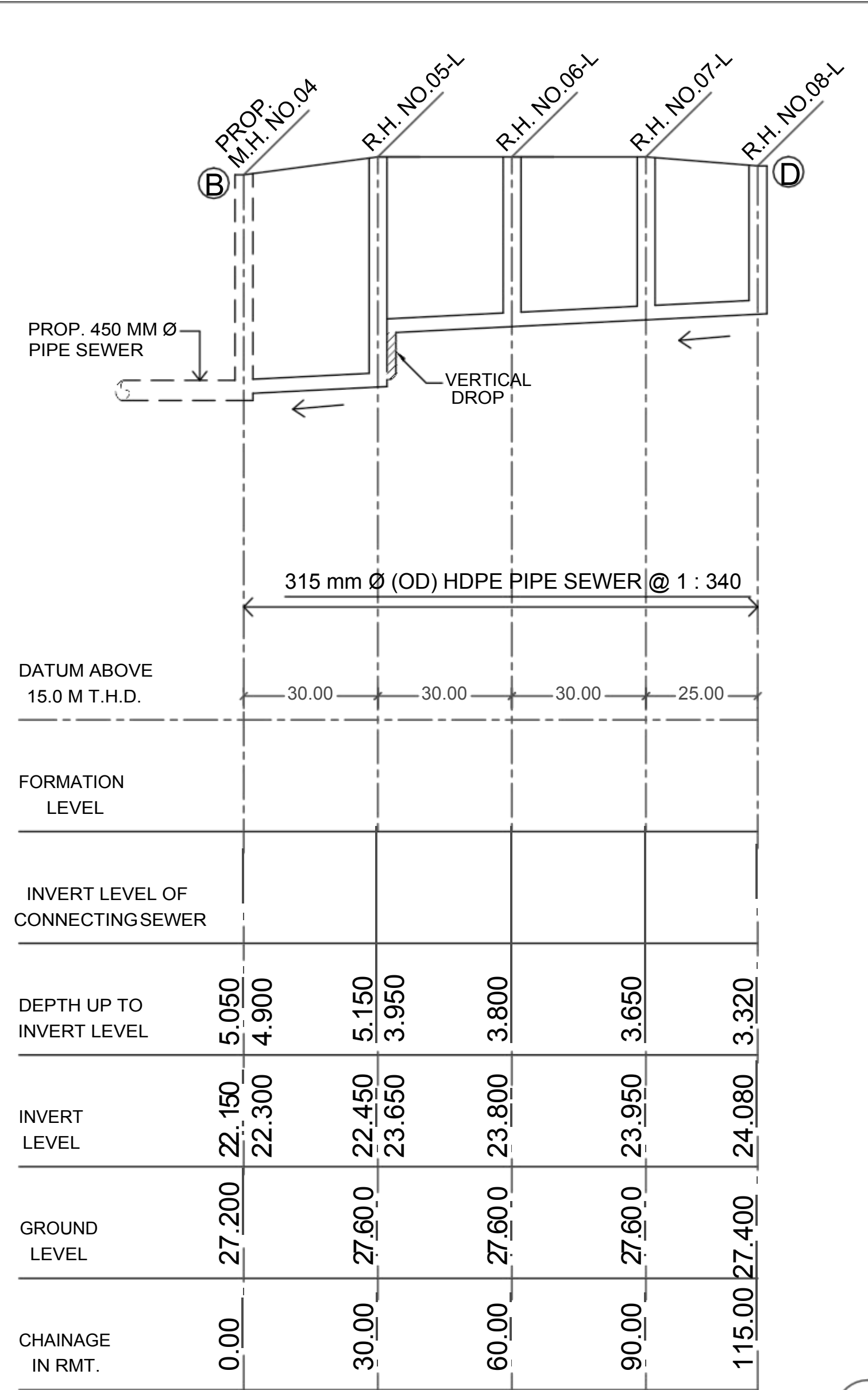
MUNICIPAL CORPORATION OF GREATER MUMBAI

PROVIDING AND LAYING 450mm > 315mm DIA. OD HDPE PIPES OF PE-80 GRADE AND PN-6 CLASS PIPE SEWER LINE FROM LBS ROAD TO TEACHER'S COLONY OUTFALL ALONG PROPOSED SERVICE ROAD OF MITHI RIVER (EAST BANK) IN KURLA (EAST) IN L - WARD. (INTERCEPTOR GROUP - 2-B)



L - SECTION

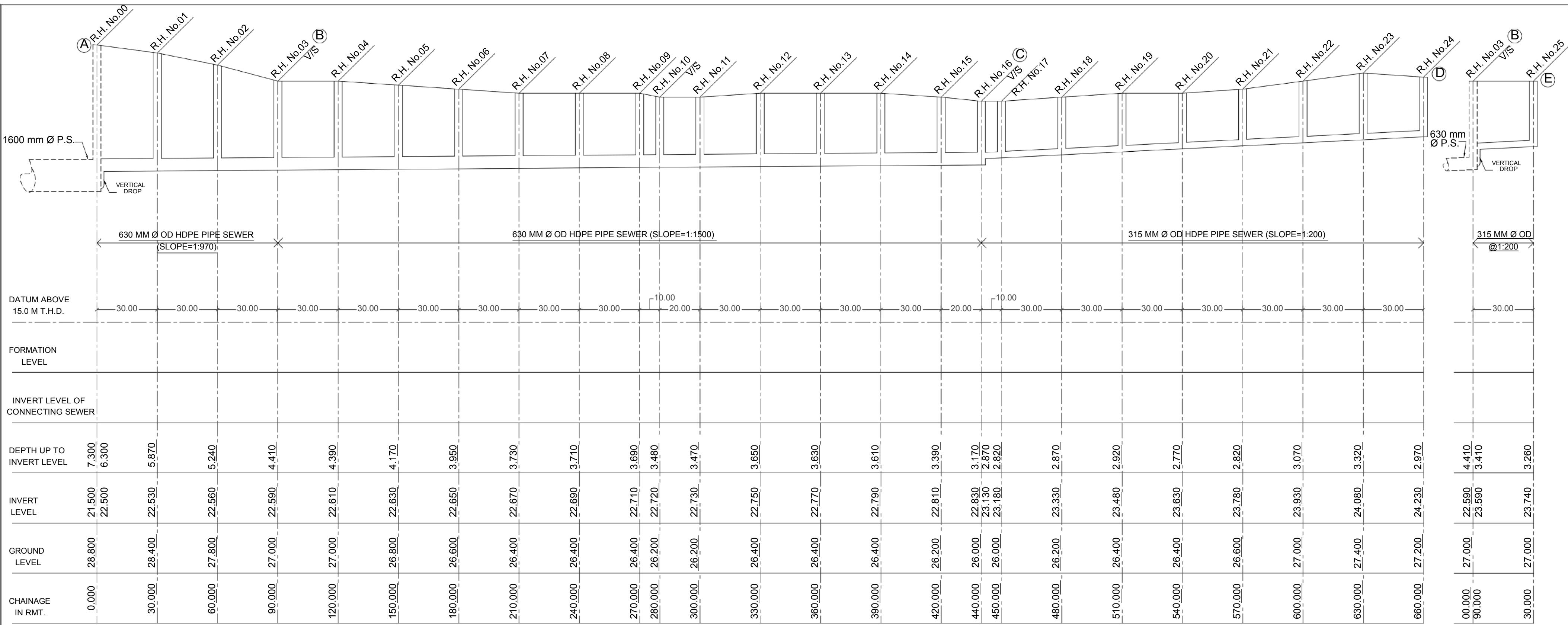
SCALE - VER.- 1cm = 1.0 mt
HOR.- 1cm = 10.0 mt



2C

MUNICIPAL CORPORATION OF GREATER MUMBAI

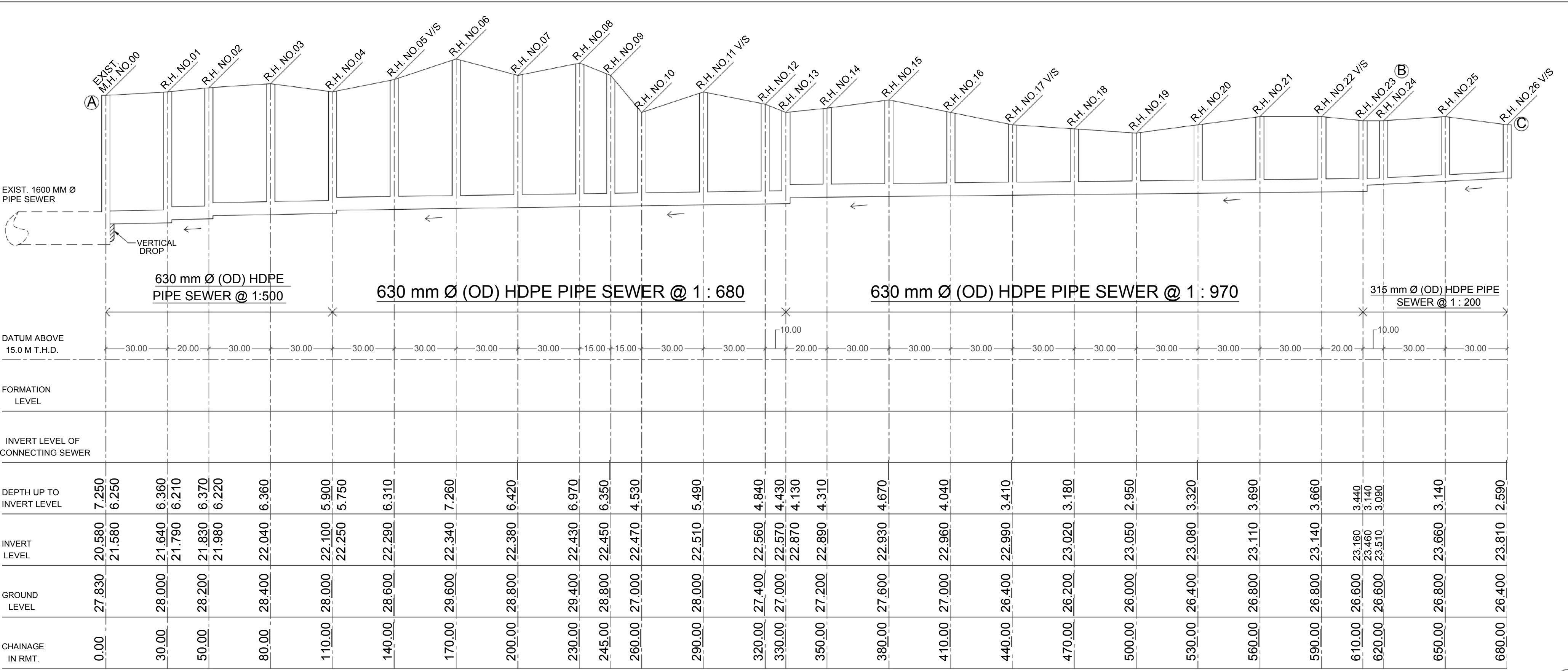
PROVIDING AND LAYING 450mm > 315mm DIA. OD HDPE PIPES OF PE-80 GRADE AND PN-6 CLASS PIPE SEWER LINE FROM L.B.S. ROAD TO KURLA COURT OUTFALL ALONG PROPOSED SERVICE ROAD OF MITHI RIVER (EAST BANK) IN KURLA (EAST) IN L - WARD.
(INTERCEPTOR GROUP - 2-C)



L - SECTION SCALE - VER - 1cm = 1.0 mt
 HOR - 1cm = 10.0 mt

MUNICIPAL CORPORATION OF GREATER MUMBAI

PROVIDING AND LAYING 630mm > 315mm DIA. OD HDPE PIPES OF PE-80 GRADE AND PN-6 CLASS PIPE SEWER LINE FROM LBS ROAD TO BOHRI COMPOUND OUTFALL TO MOON FURNITURE OUTFALL TO LIONS GARDEN OUTFALL ALONG PROPOSED SERVICE ROAD OF MITHI RIVER (EAST BANK) IN KURLA (EAST) IN L - WARD.(INTERCEPTORGROUP - 2-D)

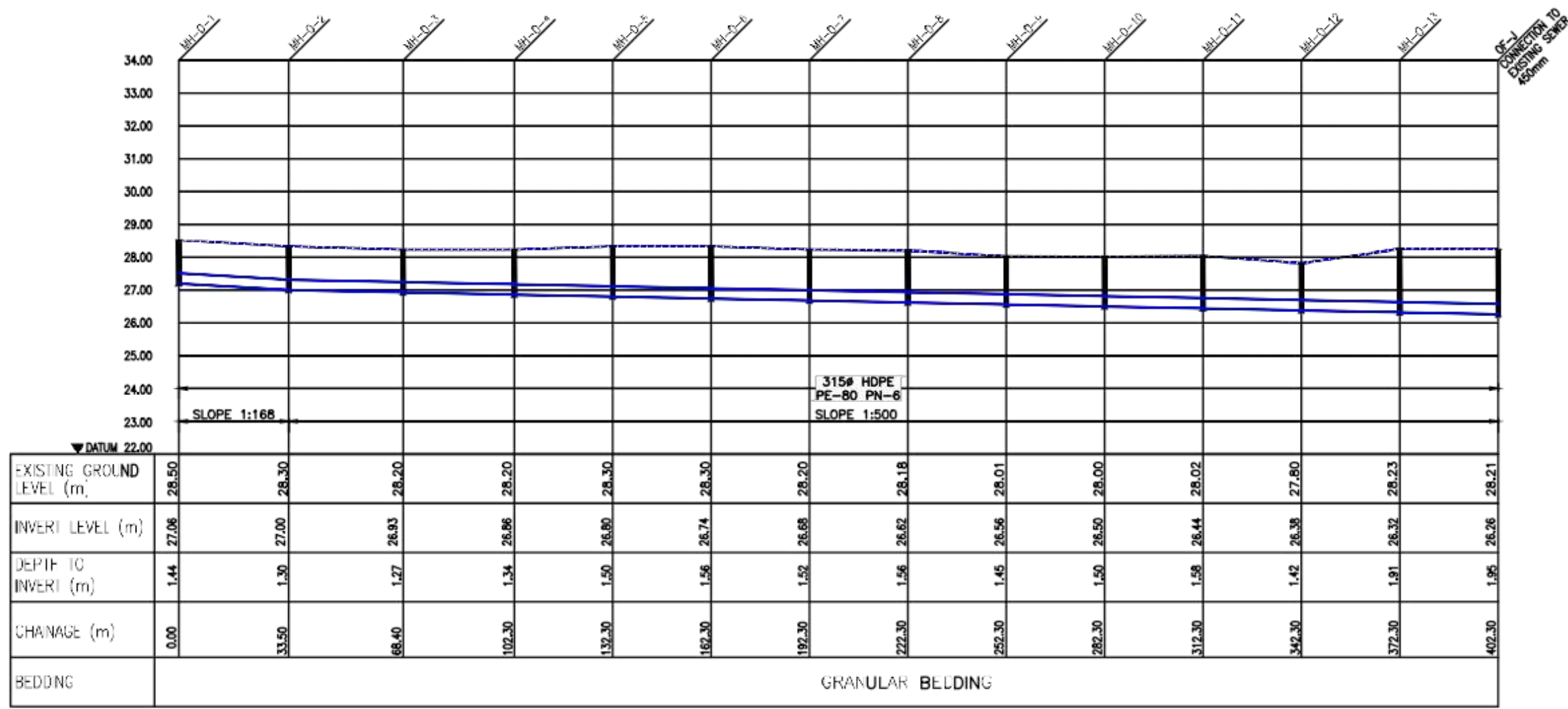


L - SECTION

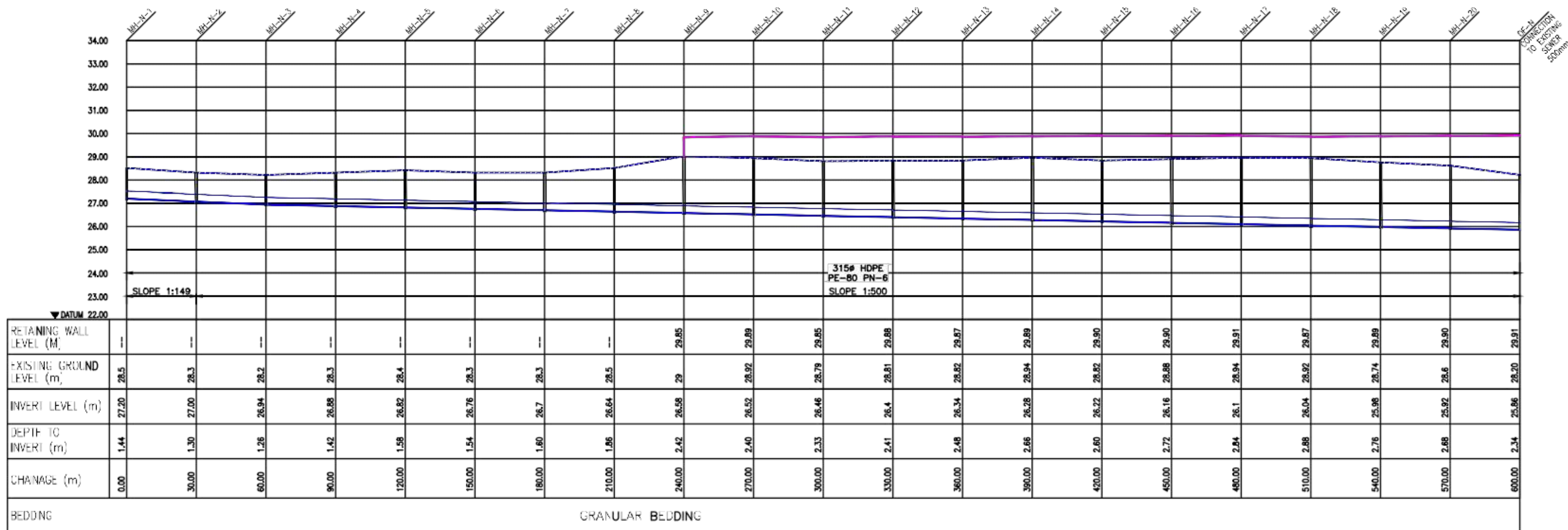
SCALE - VER.- 1cm = 1.0 mt
 HOR.- 1cm = 10.0 mt

MUNICIPAL CORPORATION OF GREATER MUMBAI

PROVIDING AND LAYING 630mm > 315mm DIA. OD HDPE PIPES OF PE-80 GRADE AND PN-6 CLASS PIPE SEWER LINE FROM L.B.S. ROAD (NEAR NAIK NAGAR) TO PREM NAGAR OUTFALL TO MANOHAR COMPOUND OUTFALL TO INDRA NAGAR OUTFALL TO BOHARI COMPOUND OUTFALL ALONG PROPOSED SERVICE ROAD OF MITHI RIVER (EAST BANK IN KURLA (EAST) IN L-WARD. (INTERCEPTOR GROUP - 2-E)



PLAN INTERCEPTION IG-O



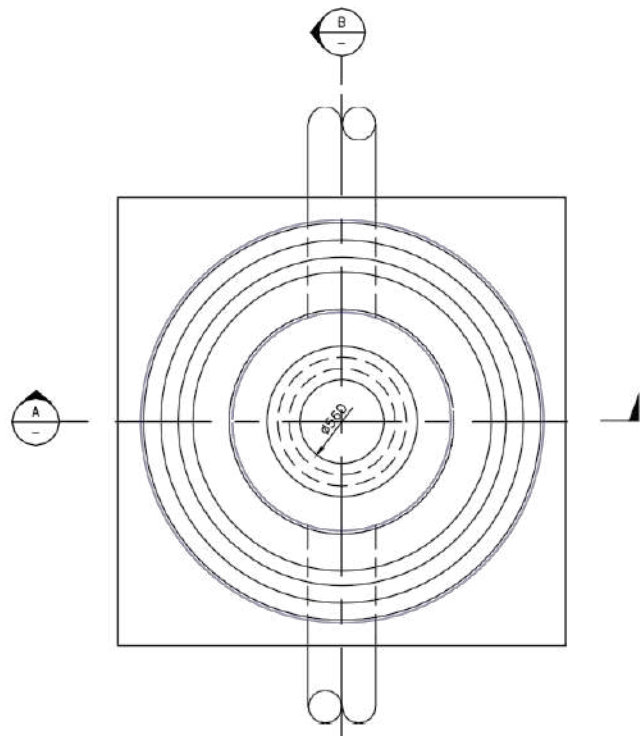
PLAN INTERCEPTION IG-N

SCHEDULE OF MANHOLE

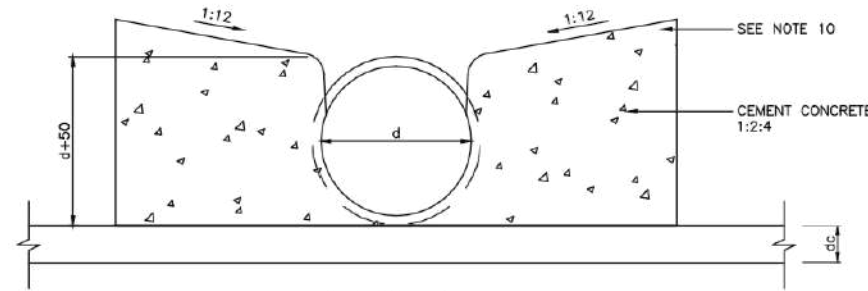
MAN-HOLE TYPE	DIA MAN-HOLE(D)	DEPTH OF MAN-HOLE	H1	H2	H3	H4	T1	T2	T3	T4	PCC (dc)
A	900	UP TO 1650	900	MAX. 750	-	-	1Bk	1Bk	-	-	150
B	1200	1660 TO 2300	1500	MAX. 800	-	-	1Bk	1Bk	-	-	150
C	1500	2310 TO 3300	1500	800	700	300	1Bk	1½ Bk	2Bk	2½ Bk	200

LEGEND & ABBREVIATIONS

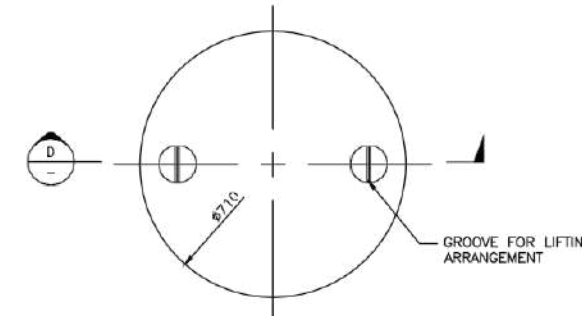
TYP - TYPICAL
 DIA - DIAMETER
 UN - UNLESS NOTED
 THK - THICK
 PCC - PLAIN CEMENT CONCRETE
 EQ - EQUAL
 C.I. - CAST IRON
 SFRC - STEEL FIBRE REINFORCED CONCRETE
 dc - DEPTH OF PCC
 CM - CEMENT MORTAR
 GL - GROUND LEVEL
 d - DIA OF PIPE
 D - DIA OF MANHOLE
 Bk - BRICK



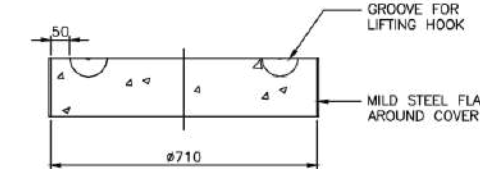
PLAN
SCALE 1:25



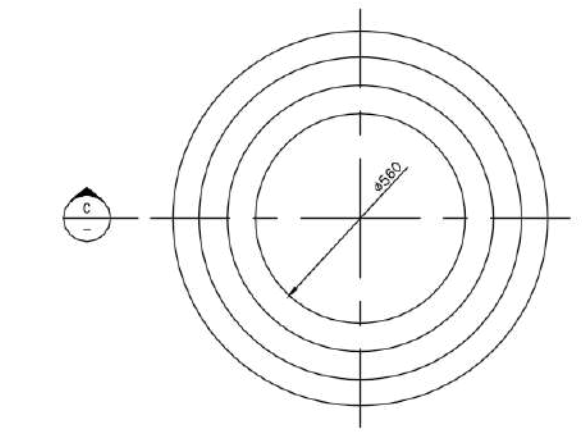
DETAIL-A
SCALE 1:10



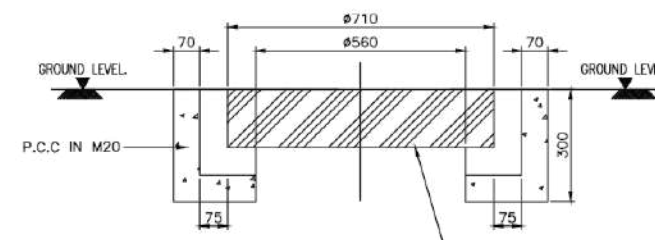
DETAIL-B
PLAN OF MANHOLE COVER
SCALE 1:10



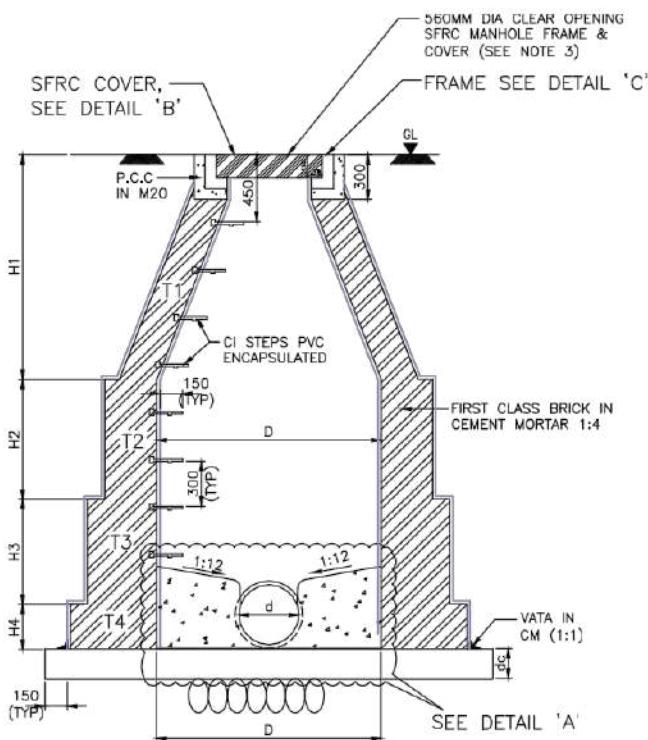
SECTION D-D
SCALE 1:10



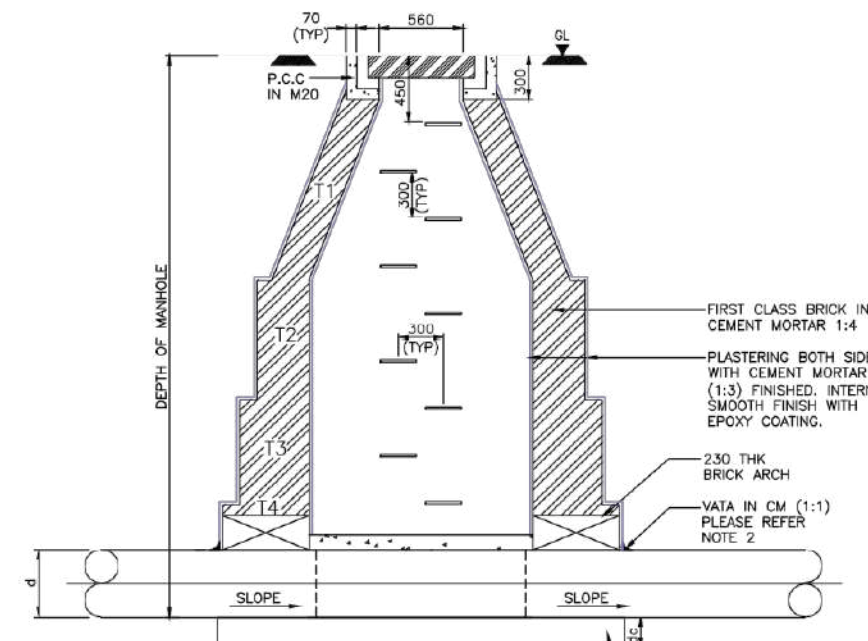
DETAIL-C
PLAN OF MANHOLE COVER FRAME
SCALE 1:10



SECTION C-C MANHOLE COVER
SCALE 1:10



SECTION A-A
SCALE 1:25



SECTION B-B
SCALE 1:25

KEY PLAN

NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES EXCEPT OTHERWISE STATED.
- 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.
- MANHOLE LOCATED ON ROAD SHALL HAVE MANHOLE COVER FLUSH WITH FINISHED ROAD SURFACE. 300 THICKNESS OF CONCRETE CAP CAN BE VARIED TO FLUSH MANHOLE COVER AND FRAME WITH ROAD SURFACE.
- AT A GIVEN DEPTH, THE THICKNESS OF BRICK MASONRY SHALL NOT BE LESS THAN THAT SHOWN IN THIS DRAWING.
- THICKNESS SPECIFIED FOR BRICK MASONRY IS EXCLUDING THE THICKNESS OF CEMENT PLASTER ON BOTH FACES.
- 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-IN-CHARGE.
- SFRC COVER & FRAME SHALL BE PROVIDED AS PER IS.12592-2002. EXTRA HEAVY DUTY SHALL BE PROVIDED FOR MANHOLE ON ROADS AND MEDIUM DUTY FOR THE MANHOLE WHICH ARE NOT SUBJECTED TO VEHICULAR LOADING.
- CI STEP FIXED WITH CEMENT MORTAR 1:3.
- HDPE PE-100 PN-6 PIPE SHALL CONFIRM IS 14333:1998.
- THE BENCHING AT THE SIDE OF THE CHANNEL SHALL BE 50MM ABOVE THE CROWN OF THE PIPE AND THEN RISE WITH A SLOPE OF 1 IN 12 TOWARDS THE SIDE OF THE MANHOLE. SEMICIRCULAR PORTION WILL BE ACHIEVED IN CEMENT CONCRETE FINISHING ITSELF.
- SOIL BELOW FOUNDATION TO BE COMPACTED AT 95% MODIFIED PROCTOR DENSITY.
- SOIL BEARING CAPACITY OF SOIL SHALL BE MINIMUM 20 T/M.
- GROOVE FOR LIFTING HOOK IS ARRANGEMENT IS VENDOR SPECIFIC AND SHALL BE APPROVED BY ENGINEER IN CHARGE.
- 1Bk = 230 THK. BRICK WALL
 1½Bk = 345 THK. BRICK WALL
 2Bk = 460 THK. BRICK WALL
 2½Bk = 575 THK. BRICK WALL
 3Bk = 690 THK. BRICK WALL

REV	DATE	DRAWN	DESCRIPTION	CHKD.	APPD.
R3	29.11.2017	PSS	TENDER DRAWING PACKAGE-2	SL	MH
R2	28.09.2017	PSS	ISSUE FOR FINAL FEASIBILITY REPORT	SL	MH
R1	22.08.2017	PSS	ISSUE FOR FEASIBILITY REPORT	SL	MH
RO	07.06.2017	SMR	BD DOCUMENT FOR SHORT TERM WORKS (FOR COMMENTS)	SL	MH

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 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902
 E-mail: pfmumbai@fpindia.com www.fpindia.com

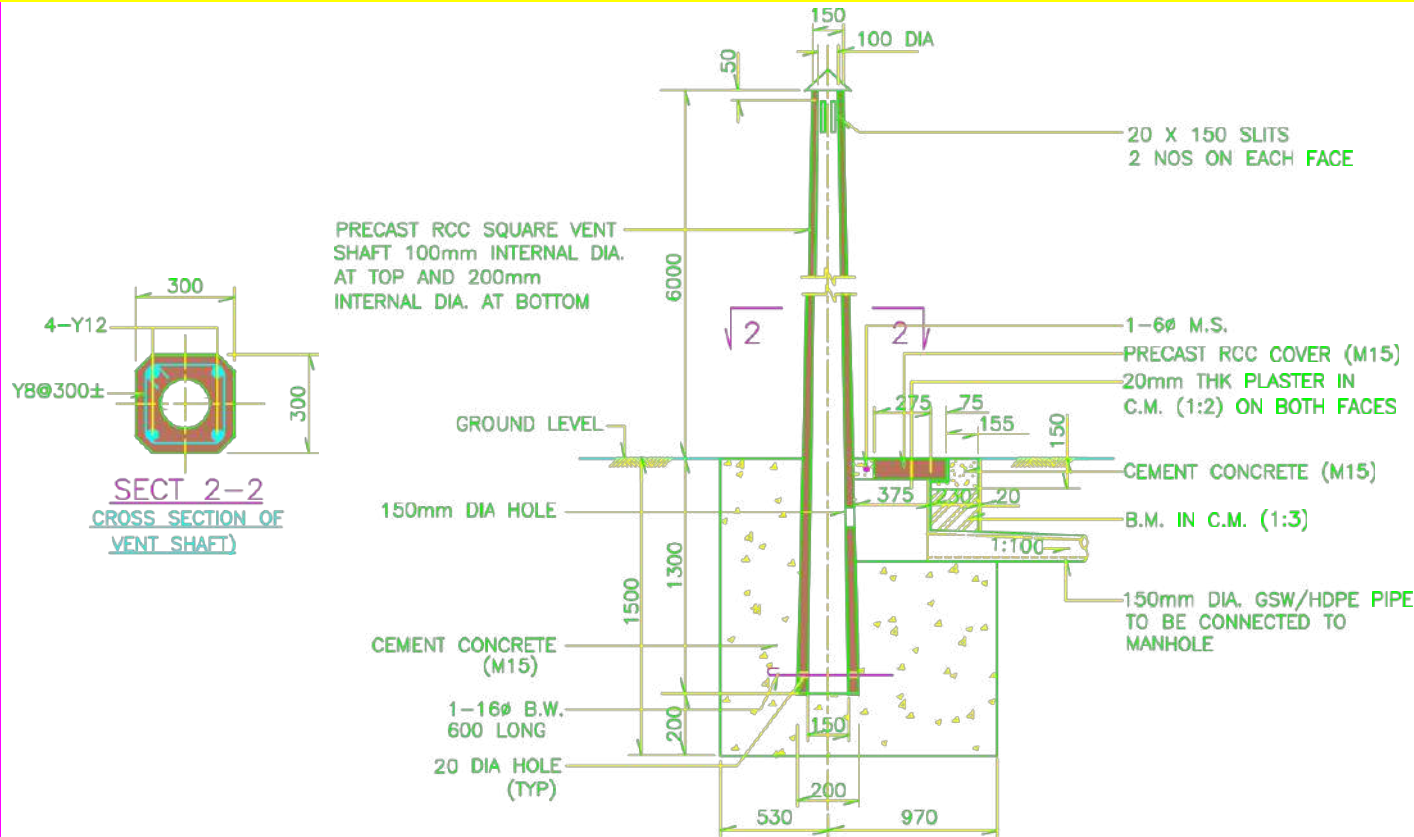
CLIENT

Municipal Corporation of Greater Mumbai
 SW Department

PROJECT
CONSULTANCY SERVICES FOR PREPARATION OF DETAIL PROJECT REPORT ON MITHI RIVER

TITLE
TYPICAL DETAILS OF MANHOLE

DESIGNED	AK	CHECKED	SL
DRAWN	SMR	APPROVED	MH
SCALE	AS SHOWN	DATE	19.05.2017
DRAWING NO	DE178004C020		REV
			R3

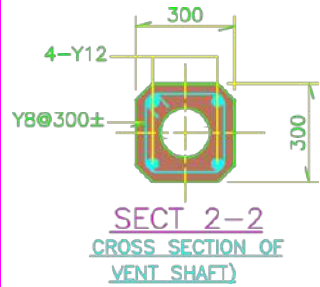


LEGEND

- THK — THICK
- C.M — CEMENT MORTAR
- GSW — GLAZED STONWARE PIPE
- UN — UNLESS NOTED
- I.D — INTERNAL DIAMETER
- C.P — CENTRALLY PLACED
- B.W — BOTHWAYS
- TYP — TYPICAL
- DIA — DIAMETER
- M.S — MILD STEEL

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. VENT SHAFT TO BE CONNECTED TO THE MANHOLE BY 150 mm DIA STONWARE/HDPE PIPE ENCASED BY M15 CEMENT CONCRETE.
3. R.C.C. VENT SHAFT SHALL BE OF M20 GRADE CONCRETE AND REINFORCED WITH 4 NOS OF 12 mm DIA. HYSD BARS, CONFORMING TO THE RELEVANT IS AND SHALL BE OF APPROVED MAKE.



SECTION 1-1

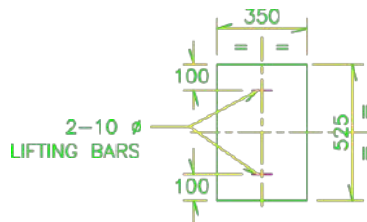
1:25

Ø OF RCC SHAFT

970

530 150 375 445

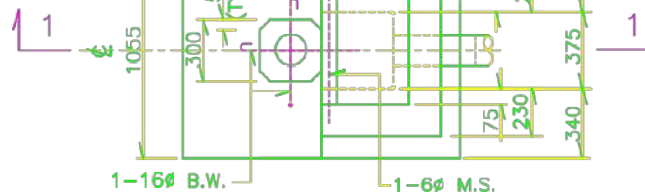
300 275 230



PLAN

PRECAST R.C.C. COVER (100 THK)

1:20



PLAN

1:25

DO NOT SCALE



MUNICIPAL CORPORATION OF
GREATER MUMBAI

TYPE R.C.C VENT SHAFT WITH
FLUE CHAMBER

ASSIST.ENGR
(PLANNING)

EXENGR.
(PLANNING)

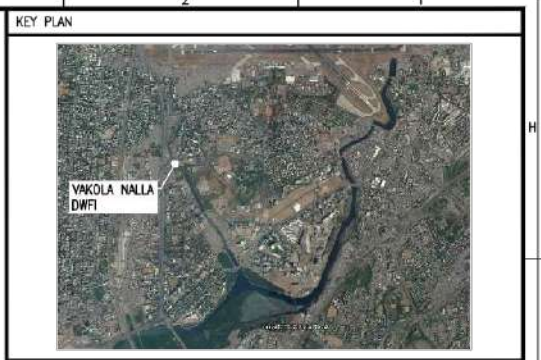
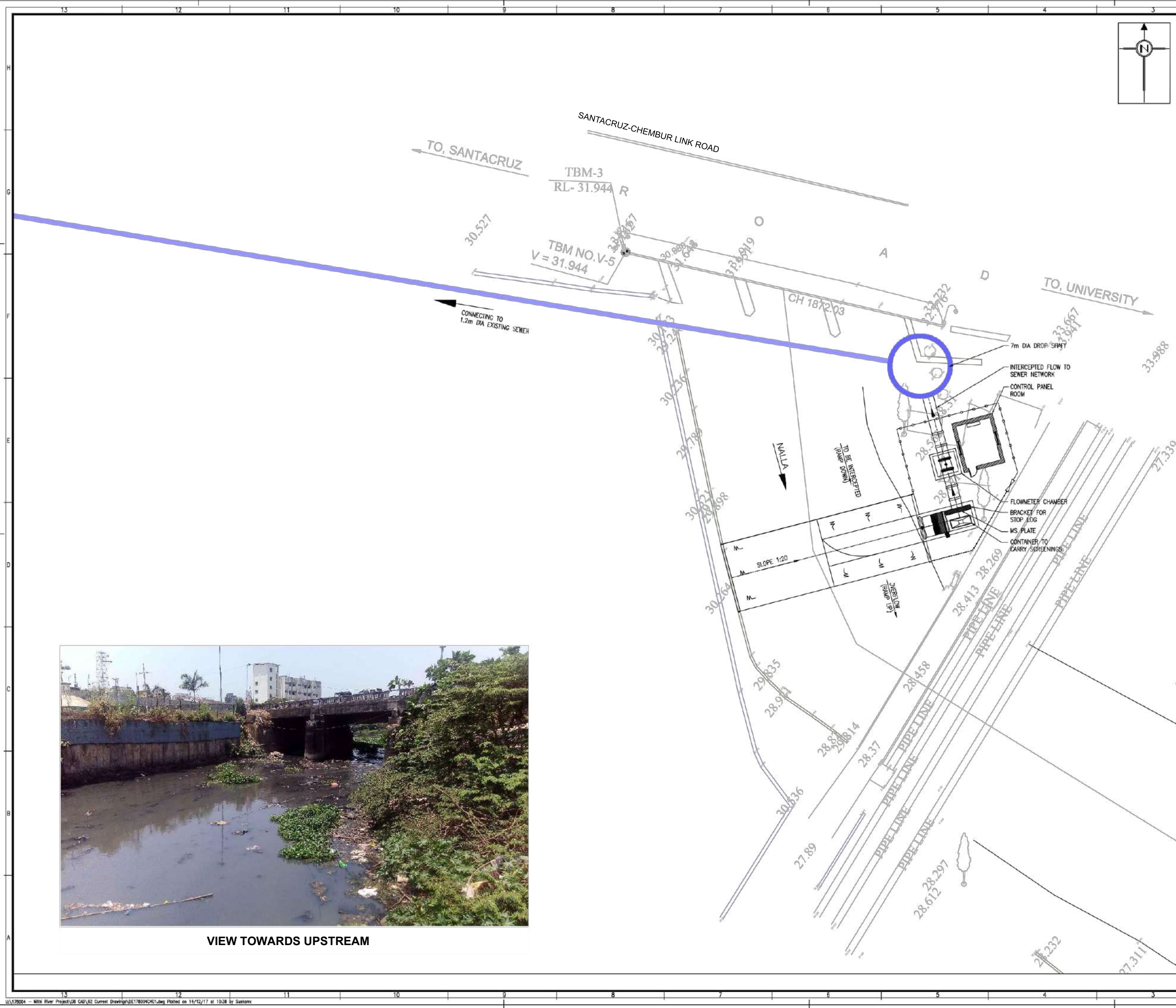
DY.PROJ ENGR.
(SEWERAGE) P&G

DWG
NO

DY/CHE/S/S/230

DATE

ISSUE P0



- NOTES
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
 2. LATITUDE / LONGITUDE ARE AS PER DEGREES, MINUTES, SECONDS COORDINATE SYSTEM.
 3. REFER DRAWINGS DE178004C004 AND DE178004C005 FOR PLAN AND SECTION STANDARD DETAILS OF DWF INTERCEPTOR.

LEGENDS:-

- NULLAH COMPOUND WALL
- NULLAH BOUNDARY
- EXISTING SEWER
- PROPOSED SEWER
- MANHOLE

SCALE 1:200



VIEW TOWARDS UPSTREAM

RO	29.11.2017	HPP	TENDER DRAWING PACKAGE-2	SL	MH
REV	DATE	DRAWN	DESCRIPTION	CHKD.	APPD.
CONSULTANT					
Frischmann Prabhu <small>PLANNING - DESIGN - PROJECT MANAGEMENT</small> 315, Balgovind Wadi, New Prabhadevi Road, Prabhadevi, Mumbai - 400 025 Tel: +91-22-6660 3901 Fax: +91-22-6660 3902 E-mail: pfmumbai@fpindia.com www.fpindia.com					

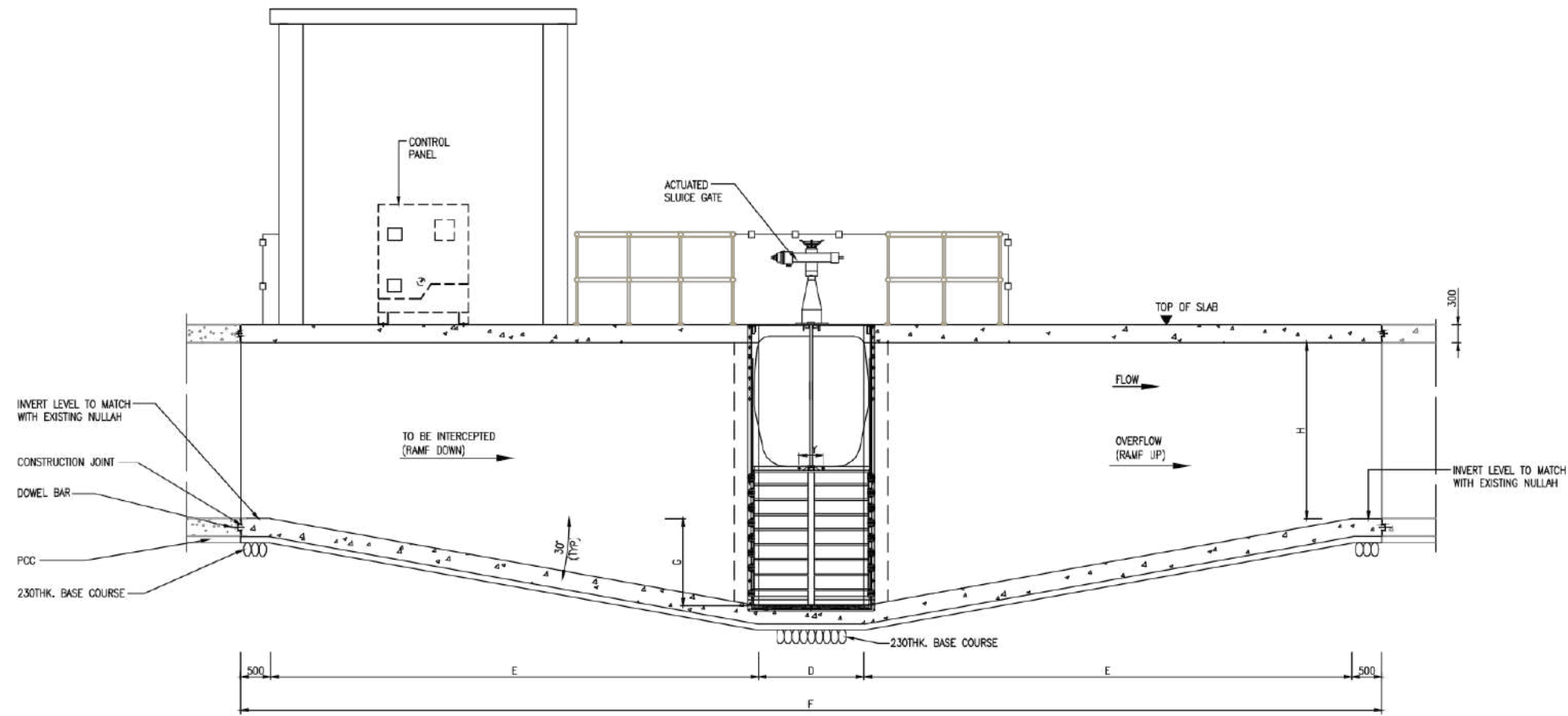
CLIENT

Municipal Corporation of Greater Mumbai
SW Department

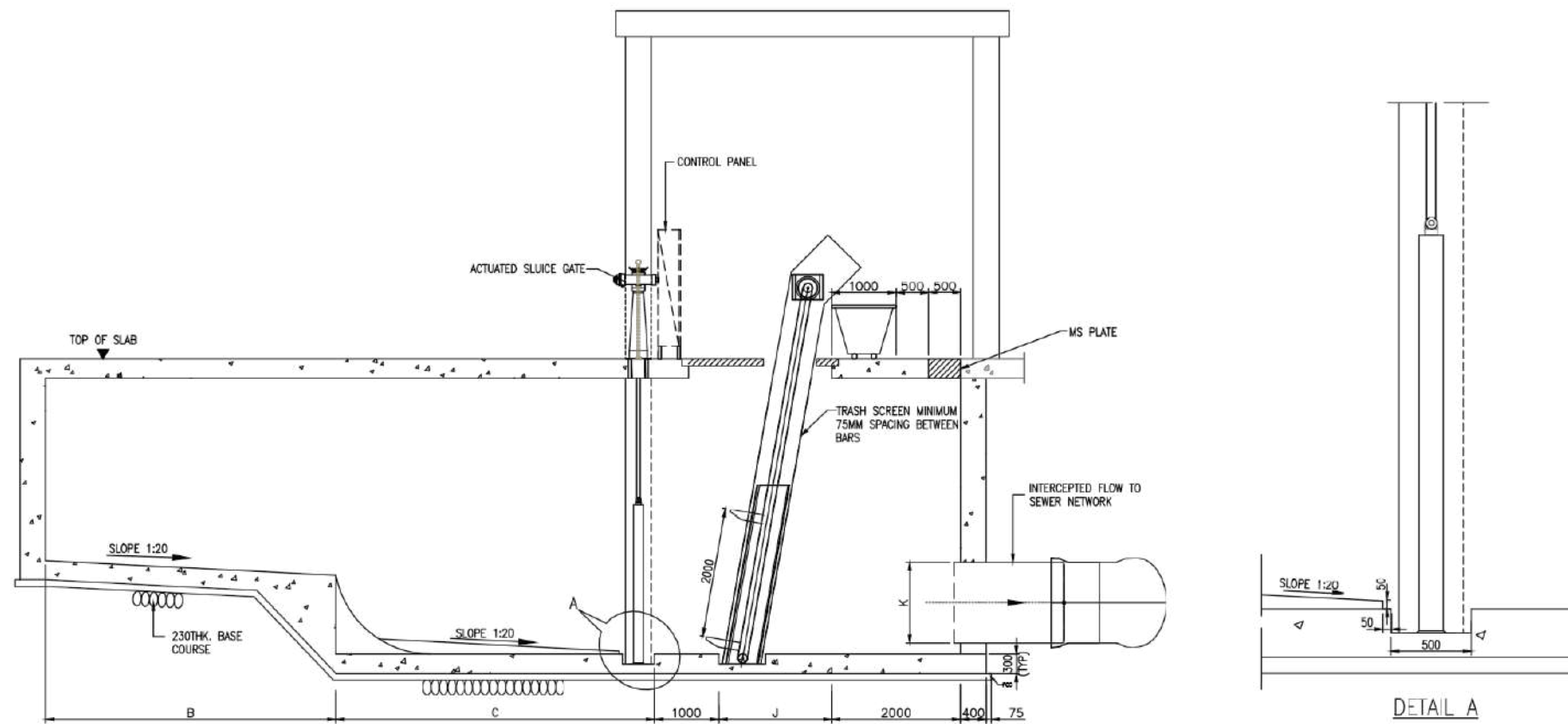
PROJECT
CONSULTANCY SERVICES FOR PREPARATION OF DETAIL PROJECT REPORT ON MITHI RIVER

TITLE
**SITE LAYOUT
 MAJOR DRY WEATHER FLOW INTERCEPTION FACILITY AT VAKOLA NALLA**

DESIGNED	AK	CHECKED	SL
DRAWN	HPP	APPROVED	MH
SCALE	1:200	DATE	29.11.2017
DRAWING NO	DE178004C401		REV R0



SECTION A-A
SCALE 1:50



SECTION B-B
SCALE 1:50

DETAIL A
SCALE 1:20

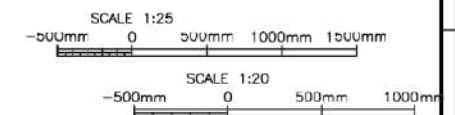
KEY PLAN

NOTES

1. STRUCTURAL STABILITY OF EXISTING STORM WATER DRAIN MUST BE CHECKED BEFORE EXECUTION OF WORK.
2. PRESENCE OF FOUL GASES IN EXISTING STORM WATER DRAIN AND SEWER SHALL BE CHECKED BEFORE ENTERING FOR WORK WITH PROPER SAFETY.
3. PROPER SHORING SHALL BE PROVIDED FOR DEEP EXCAVATION.
4. TO ENSURE PROPER FUNCTIONING OF INTERCEPTOR CHAMBER, REGULAR CLEANING OF BAR SCREEN SHALL BE CARRIED OUT.
5. WALL THICKNESS OF DWFI-1 SHALL BE SAME AS THAT OF EXISTING STORMWATER DRAINAGE.
6. ALL STRUCTURAL CONCRETE SHALL BE M-30 GRADE AND PCC SHALL BE M-20.
7. PENSTOCK ARRANGEMENT AND SPINDLE SUPPORT SHALL BE CONFIRMED BY MANUFACTURER DURING CONSTRUCTION.
8. SCREEN ARRANGEMENT AND FITTING DETAILS SHALL BE CONFIRMED BY MANUFACTURER DURING CONSTRUCTION.


LEGEND

- EXISTING
- PROPOSED



R2	29.11.2017	SD	TENDER DRAWING PACKAGE-2	SL	MH
R1	28.09.2017	PSS	ISSUE FOR FINAL FEASIBILITY REPORT	SL	MH
RO	22.08.2017	PSS	ISSUE FOR FEASIBILITY REPORT	SL	MH
REV	DATE	DRAWN	DESCRIPTION	CHKD.	APPD.

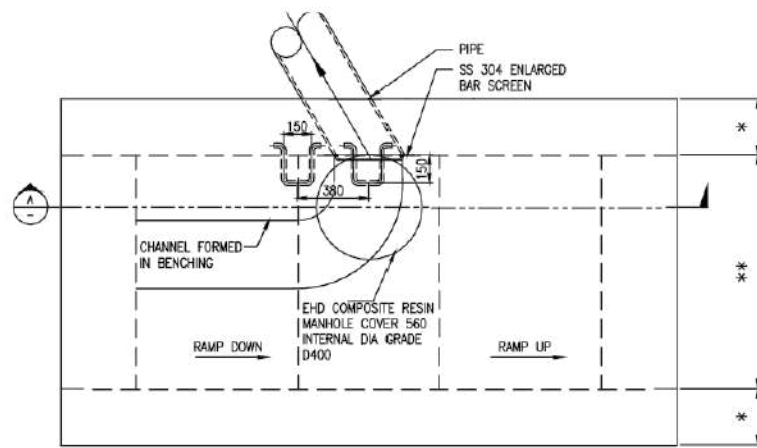
CONSULTANT
Frischmann Prabhu
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315, Balgovind Wadi, New Prabhadevi Road,
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CLIENT
 **Municipal Corporation of Greater Mumbai**
SW Department

PROJECT
CONSULTANCY SERVICES FOR PREPARATION OF DETAIL PROJECT REPORT ON MITHI RIVER

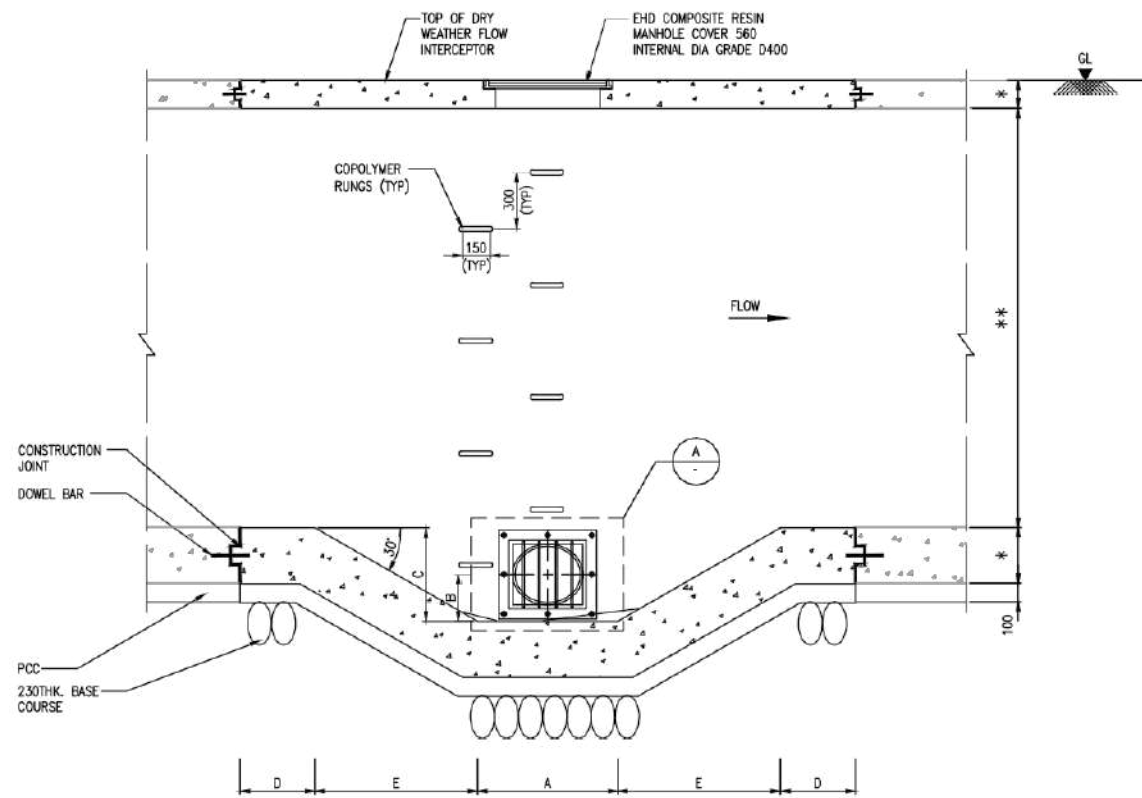
TITLE
**STANDARD DETAIL
MAJOR DRY WEATHER FLOW
INTERCEPTION FACILITY
SHEET 02 OF 02**

DESIGNED	SM	CHECKED	SL
DRAWN	PSS	APPROVED	MH
SCALE	1:25	DATE	22.08.2017
DRAWING NO	DE178004C005		
			REV R2



PLAN AT DRY WEATHER FLOW INTERCEPTOR

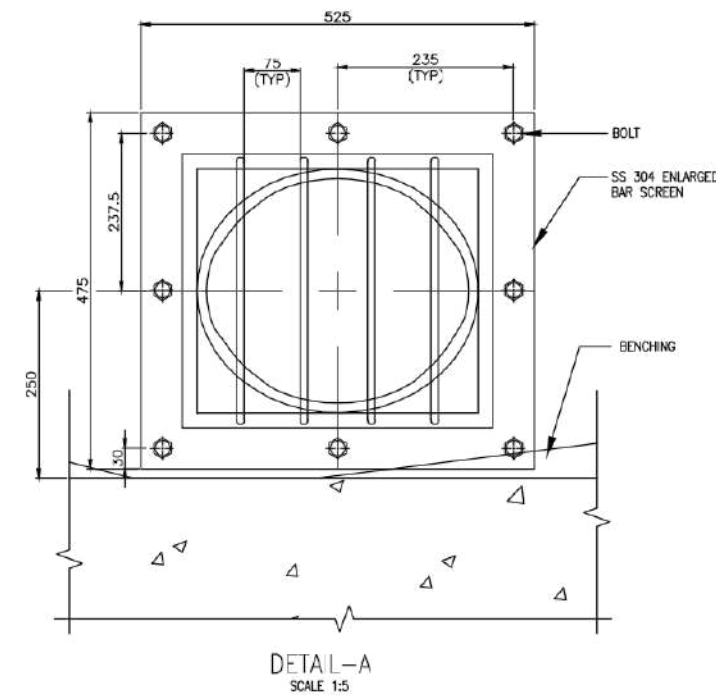
SCALE 1 : 20



SECTION A-A
SCALE 1 : 20

SCHEDULE					
PIPE DIA (MM)	A (MM)	B (MM)	C (MM)	D (MM)	E (MM)
300	750	250	500	400	870
350	800	275	550	400	960
400	850	300	600	400	1040
450	900	325	650	400	1130
500	950	350	700	400	1220
550	1000	375	750	400	1300
600	1050	400	800	400	1390

* VARIES AS PER STRUCTURAL REQUIREMENTS.
** VARIES AS PER SITE CONDITIONS.

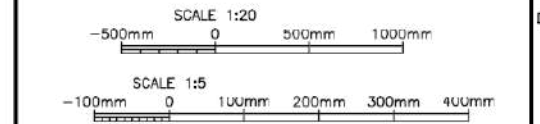


DETAIL-A
SCALE 1:5

KEY PLAN

- NOTES
- STRUCTURAL STABILITY OF EXISTING STORM WATER DRAIN SHALL BE CHECKED BEFORE EXECUTION OF WORK.
 - PRESENCE OF FOUL GASES IN EXISTING STORM WATER DRAIN AND SEWER SHALL BE CHECKED BEFORE ENTERING FOR WORK WITH PROPER SAFETY.
 - PROPER SHORING SHALL BE PROVIDED FOR DEEP EXCAVATION.
 - TO ENSURE PROPER FUNCTIONING OF INTERCEPTOR CHAMBER, WEEKLY CLEANING OF BAR SCREEN SHALL BE CARRIED OUT.
 - WALL THICKNESS OF DWFI-1 SHALL BE THE SAME AS THAT OF THE EXISTING STORMWATER DRAINAGE.
 - ALL STRUCTURAL CONCRETE SHALL BE M-30 GRADE AND PCC SHALL BE M-20.

LEGEND
 ——— EXISTING
 ——— PROPOSED



REV	DATE	DRAWN	DESCRIPTION	CHKD.	APPD.
R6	29.11.2017	PSS	TENDER DRAWING PACKAGE-2	SL	MH
R5	05.10.2017	PSS	FOR TENDER	SL	MH
R4	28.09.2017	PSS	ISSUE FOR FINAL FEASIBILITY REPORT	SL	MH
R3	22.08.2017	PSS	ISSUE FOR FEASIBILITY REPORT	SL	MH
R2	17.07.2017	PSS	TENDER DOCUMENT PACKAGE -1	SL	MH
R1	02.06.2017	PSS	BD DOCUMENTS FOR SHORT TERM WORKS (FOR COMMENTS)	SL	MH
R0	23.03.2017	PSS	BD DOCUMENTS FOR SHORT TERM WORKS (DRAW)	SL	MH

CONSULTANT
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CLIENT

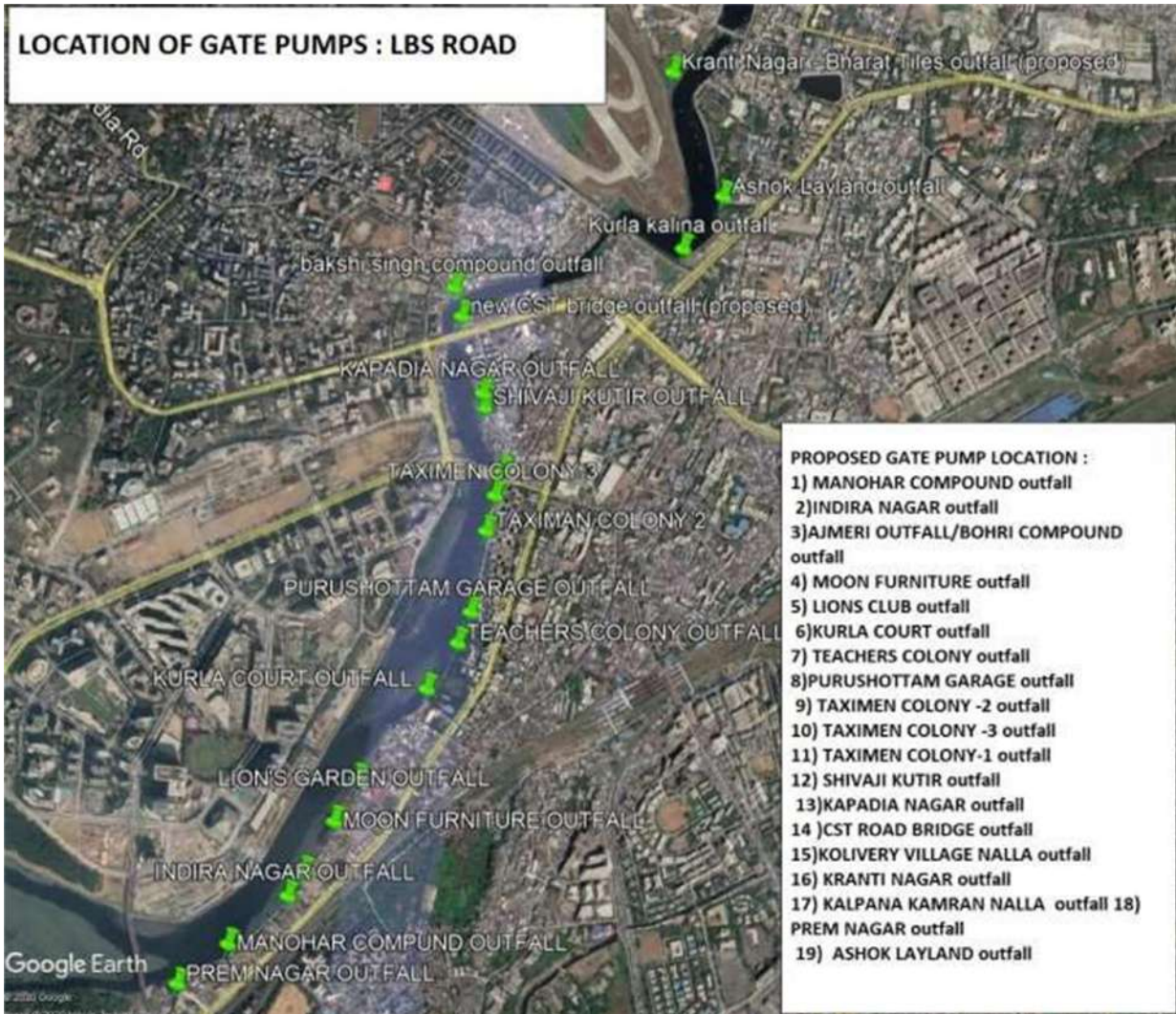
Municipal Corporation of Greater Mumbai
 SW Department

PROJECT
CONSULTANCY SERVICES FOR PREPARATION OF DETAIL PROJECT REPORT ON MITHI RIVER

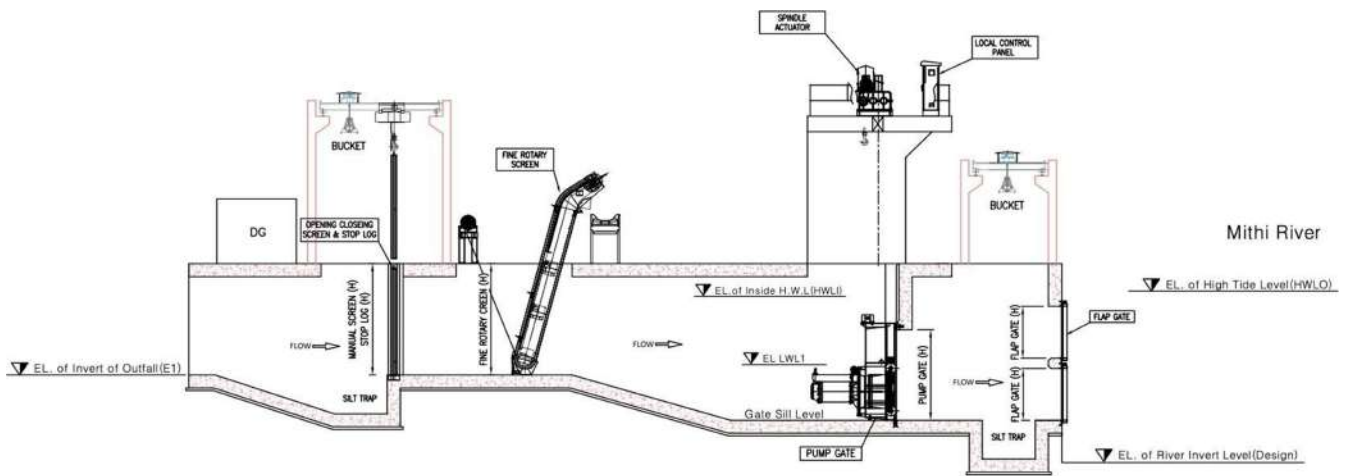
TITLE
**STANDARD DETAIL
 MINOR SEWER INTERCEPTOR**

DESIGNED	SM	CHECKED	SL
DRAWN	PSS	APPROVED	MH
SCALE	AS SHOWN	DATE	23.03.2017
DRAWING NO	DE178004C003		
REV	R6		

SECTION : 5 GATE PUMP

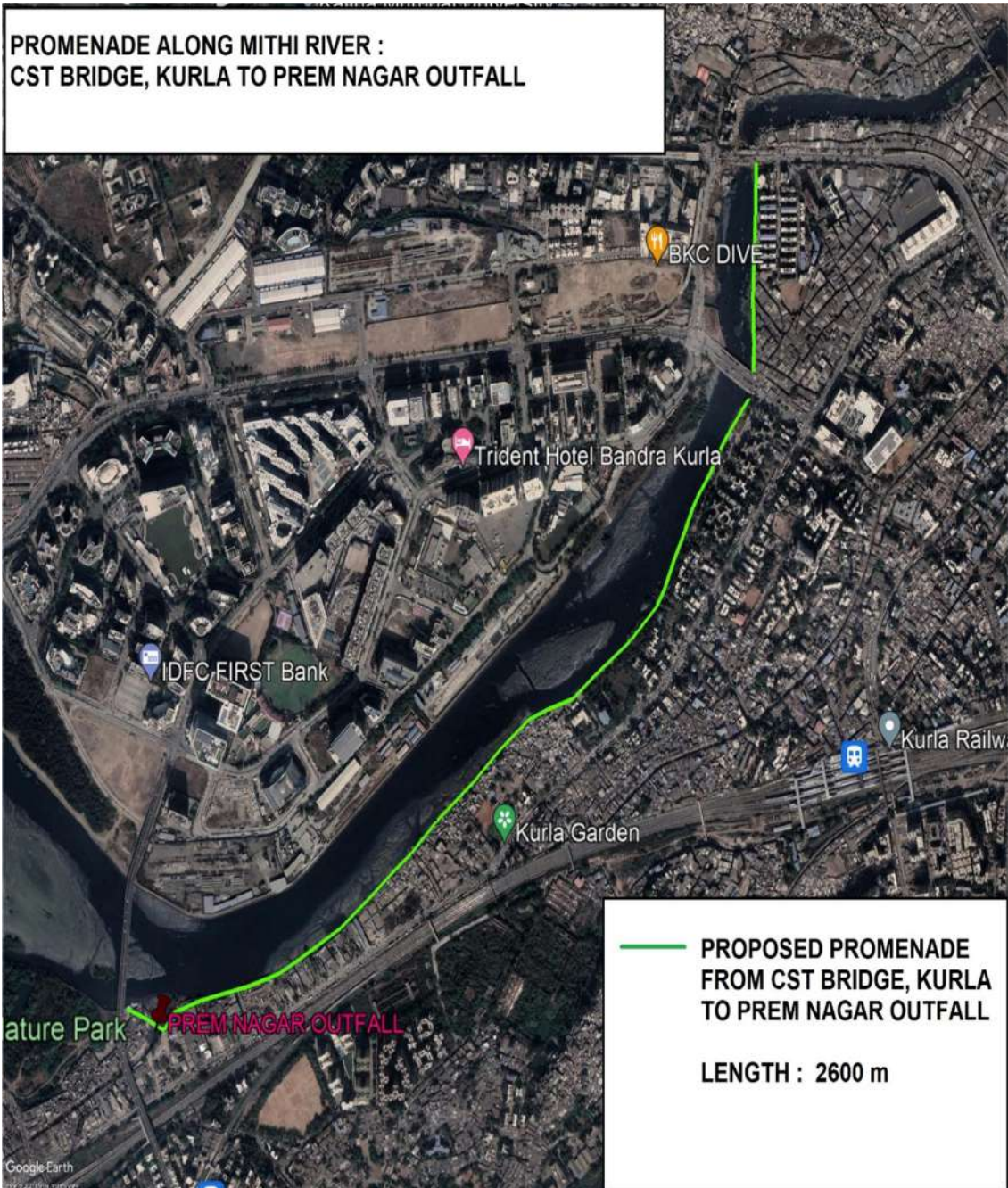


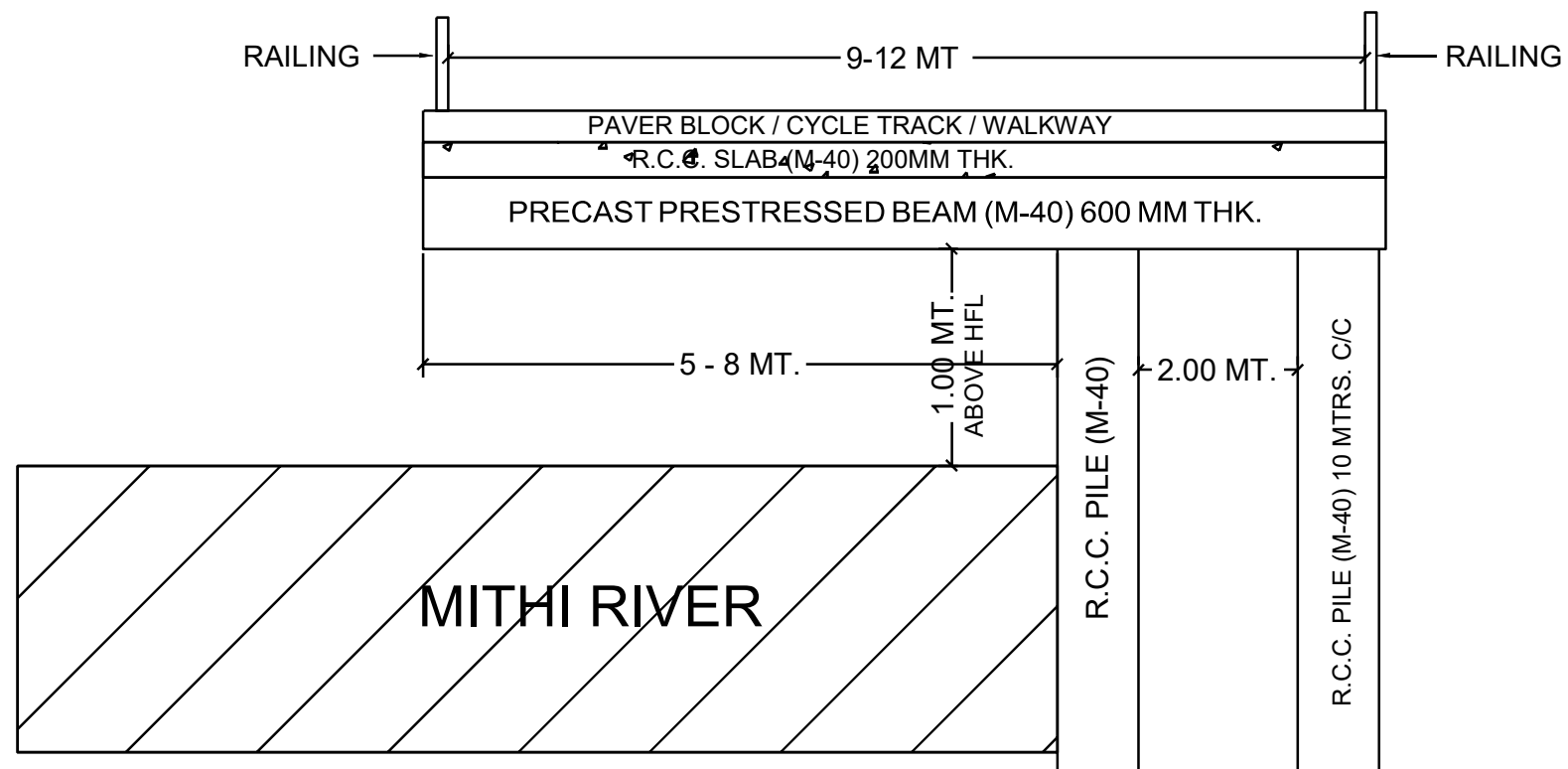
Typical Cross Section of Gate Pump (For Reference Purpose Only)



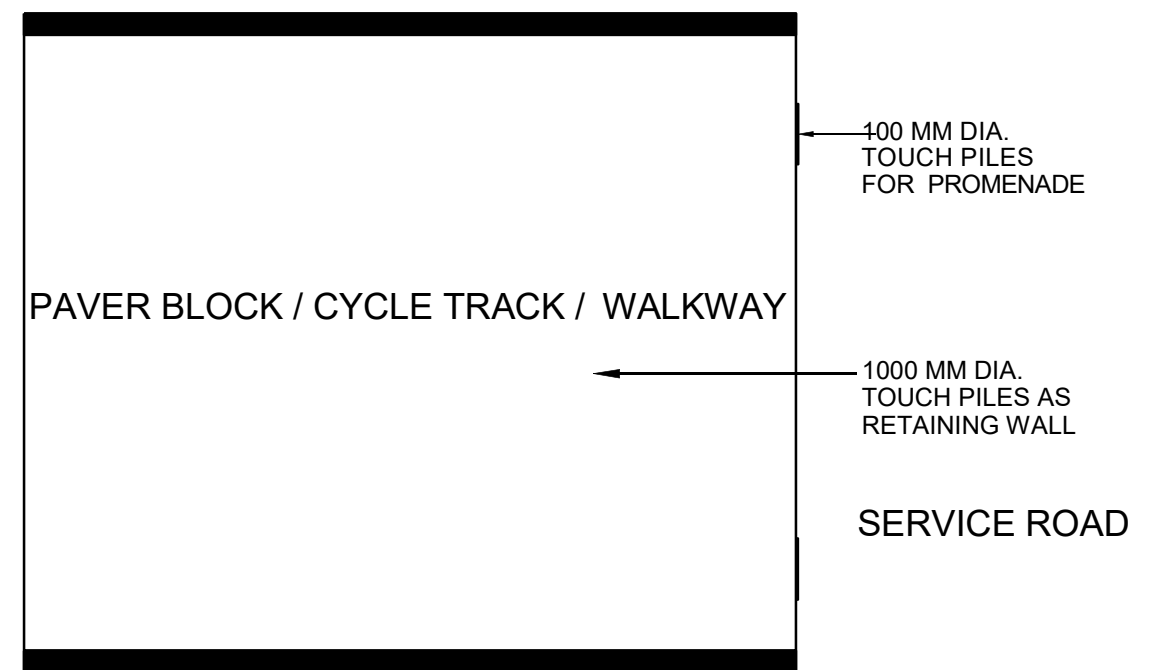
PUMP GATE SECTION VIEW

SECTION : 6 PROMENADE





CROSS SECTION DRG. OF PROMENADES
SCALE : N.T.S.



CONSTRUCTION PROCEDURE OF PROMENADES
SCALE : N.T.S.

**LOCATION PLAN OF PROPOSED
BRIDGES FOR PROMENADE WORK**

