

**OCG-NJSEI-TCE-BV**

Oriental Consultants Global Co., Ltd. Japan (FCRN - F04883)  
 NJS Engineers India Pvt Ltd, India (CIN - U74210PN2007PTC129798)  
 Tata Consulting Engineers Limited, India (CIN- U74210MH1999PLC123010)

and Associate

Black and Veatch represented by Black and Veatch Private Ltd  
 (CIN- U74210MH2003FTC138678)

9<sup>th</sup> Floor, Cauvery Bhavan, KG Road, Bangalore 560009, INDIA,

Phone : 080-29701327; email : tl@ontbbwssp.com

Ref: ONTB/BWSSB/BWSSP/III/CP-13/2021/1534

Date: 16<sup>th</sup> January 2021

Executive Engineer (K-4),  
 Bangalore Water Supply & Sewerage Board (BWSSB)  
 1<sup>st</sup> Floor, Suvama Bhavan,  
 18<sup>th</sup> Cross, Malleshwaram,  
 Bangalore - 560012

o/c

Subject: JICA Assisted Bengaluru Water Supply & Sewerage Project (III) [Cauvery Water Supply Scheme (CWSS) Stage V]-Ground Level Reservoirs along Western Route [at Lingadernahalli (18 ML), Singapura (20 ML) Vasudevpura (11 ML), Chhokanahalli (65 ML)] (Contract Package - BWSSP (III)/JICA/CP-13)-Reg: Submission of Construction Drawings: 20ML Singapura GLR (Plum Concrete Retaining Wall)

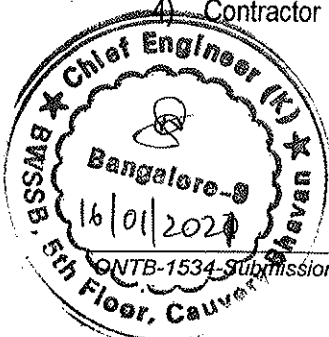
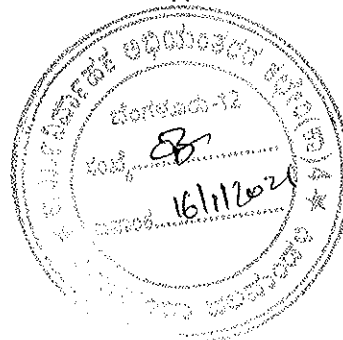
Dear Sir,

We herewith submit signed 6 sets of the following 20ML Singapura GLR (Plum Concrete Retaining Wall) drawings for Ground Level Reservoirs along Western Route [at Lingadernahalli (18 ML), Singapura (20 ML) Vasudevpura (11 ML), Chhokanahalli (65 ML)] under CP-13 as mentioned below:

Sl. No.	Drawing Nos.	Drawings Name	No. of Copies
1	ONTB.BWSSP(3).CP13-CV-3553_GA-35201_R0	Singapura GLR 20 ML Layout and Details of Retaining Wall Foundations for Plum Concrete	6
2	ONTB.BWSSP(3).CP13-CV-3553_GA-35202_R0	Singapura GLR 20 ML Longitudinal and Cross Sectional Details of Retaining Walls (Sheet 01 of 02)	6
3	ONTB.BWSSP(3).CP13-CV-3553_GA-35203_R0	Singapura GLR 20 ML Longitudinal and Cross Sectional Details of Retaining Walls (Sheet 02 of 02)	6
4	ONTB.BWSSP(3).CP13-CV-3553_RC-35204_R0	Singapura GLR 20 ML Reinforcement Details for Retaining Walls	6
5	ONTB.BWSSP(3).CP13-CV-3553_GA-35205_R0	Singapura GLR 20 ML Typical Sectional Detail of Retaining Walls for Plum Concrete (Sheet 01 of 02)	6
6	ONTB.BWSSP(3).CP13-CV-3553_GA-35206_R0	Singapura GLR 20 ML Typical Sectional Detail of Retaining Walls for Plum Concrete (Sheet 02 of 02)	6

We request you to obtain approval from the Chief Engineer (K) and distribute the approved construction drawings as mentioned below:

- |               |   |        |
|---------------|---|--------|
| 1) CE (K)     | - | 1 set  |
| 2) EE (K-4)   | - | 1 set  |
| 3) ONTB       | - | 3 sets |
| 4) Contractor | - | 1 set  |



ONTB-1534 Submission of 20ML Singapura (Plum Concrete Retaining Wall)

1/CP-13  
 NN

Very truly yours,

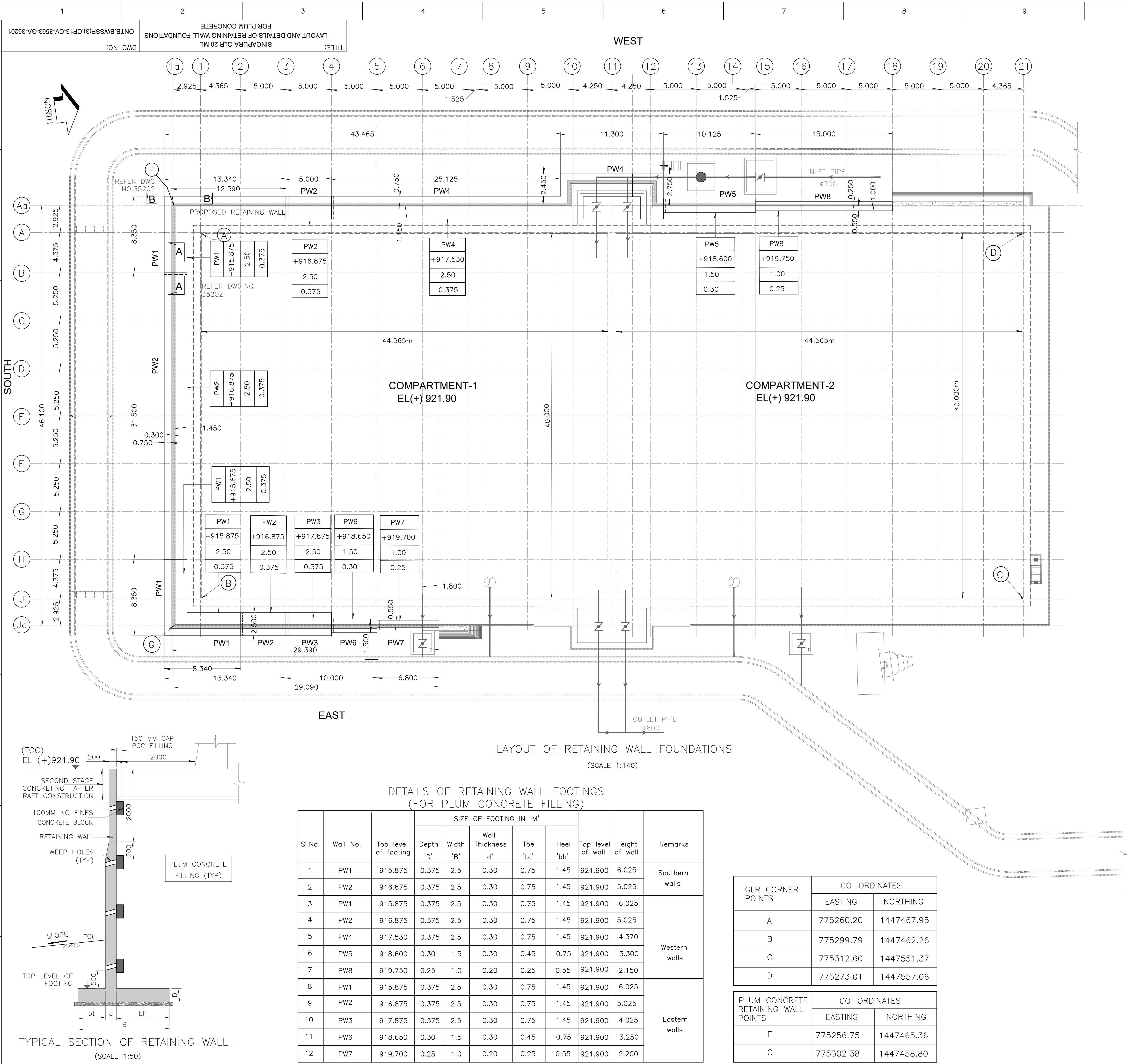
OCG-NJSEI-TCE and Associate B&V



Dr. Uday G Kelkar  
Team Leader (Design) – Overall Management

Encl: Drawing Nos.: ONTB.BWSSP(3).CP13-CV-3553\_GA-35201\_R0 - 6 copies  
ONTB.BWSSP(3).CP13-CV-3553\_GA-35202\_R0 - 6 copies  
ONTB.BWSSP(3).CP13-CV-3553\_GA-35203\_R0 - 6 copies  
ONTB.BWSSP(3).CP13-CV-3553\_RC-35204\_R0 - 6 copies  
ONTB.BWSSP(3).CP13-CV-3553\_GA-35205\_R0 - 6 copies  
ONTB.BWSSP(3).CP13-CV-3553\_GA-35206\_R0 - 6 copies

c.c: CE (K), Cauvery Bhavan, BWSSB, for kind information (without enclosure)  
ACE (K-1), Cauvery Bhavan, BWSSB for information (without enclosure)



NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METRES.
- DO NOT SCALE THE DRAWING. FOLLOW FIGURED DIMENSIONS ONLY.
- CONCRETE MIX SHALL BE M25 WITH MINIMUM CEMENT CONTENT OF 360 Kg/CUM WITH 20 mm DOWNGRADED AGGREGATES.
- STEEL FOR REINFORCEMENT SHALL BE TMT BARS OF Fe500D CONFORMING TO IS:1786.
- DEVELOPMENT LENGTH (Ld) = 50D
- CLEAR COVER TO REINFORCEMENT  
RETAINING WALL 45MM  
FOOTING 50MM

LEGENDS

PW1 TO PW8-RETAINING WALLS FOR PLUM CONCRETE FILLING BELOW GLR.

WALL NUMBER
TOP LEVEL OF FOUNDATION
WIDTH-'B'
BASE SLAB DEPTH-'D'

ENGINEERING REFERENCE DRAWINGS :


- ONTB.BWSSP(3).CP13-CV-3553-GA-35001---TOPOGRAPHICAL SURVEY OF PROPOSED GROUND LEVEL RESERVOIR (GLR) SITE
- ONTB.BWSSP(3).CP13-CV-3553-GA-35002---PLOT PLAN FOR GROUND LEVEL RESERVOIR AT SINGAPURA(20ML CAPACITY)
- ONTB.BWSSP(3).CP13-CV-3553-GA-35101---LAYOUT PLAN OF PROPOSED GROUND LEVEL RESERVOIR AT SINGAPURA.

CONSTRUCTION REFERENCE DRAWINGS :

- ONTB.BWSSP(3).CP13-CV-3553-RC-35202-35203---LONGITUDINAL AND CROSS SECTIONAL DETAILS OF RETAINING WALLS. (SH 01 OF 02 & SH 02 OF 02)
- ONTB.BWSSP(3).CP13-CV-3553-RC-35204---REINFORCEMENT FOR RETAINING WALL OF PROPOSED GLR AT SINGAPURA
- ONTB.BWSSP(3).CP13-CV-3553-RC-35205-35206---TYPICAL SECTIONAL DETAIL OF RETAINING WALLS FOR PLUM CONCRETE (SH 01 OF 02 & SH 02 OF 02)
- ONTB.BWSSP(3).CP13-CV-3553-GA-35102 TO 35109---GENERAL ARRANGEMENT DRAWING OF GROUND LEVEL RESERVOIR AT SINGAPURA.
- ONTB.BWSSP(3).CP13-CV-3553-GA-35003---STANDARD CIVIL DETAILS (SH 01 OF 02 & SH 02 OF 02)

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REVISIONS									

ISSUE	DRN	DSN	CHD	CV	EL	ME	IC	APPD	DATE

	<b>BANGALORE WATER SUPPLY AND SEWERAGE BOARD</b>	
	<b>BENGALURU WATER SUPPLY AND SEWERAGE PROJECT ( PHASE 3 )</b>	

TITLE: SINGAPURA GLR 20 ML  
LAYOUT AND DETAILS OF RETAINING WALL FOUNDATIONS FOR PLUM CONCRETE

PROJECT MANAGEMENT CONSULTANTS:  
ORIENTAL CONSULTANTS GLOBAL CO. LTD.,  
NJS ENGINEERS INDIA PVT. LTD.,  
TATA CONSULTING ENGINEERS LIMITED,  
IN ASSOCIATION WITH BLACK & VEATCH

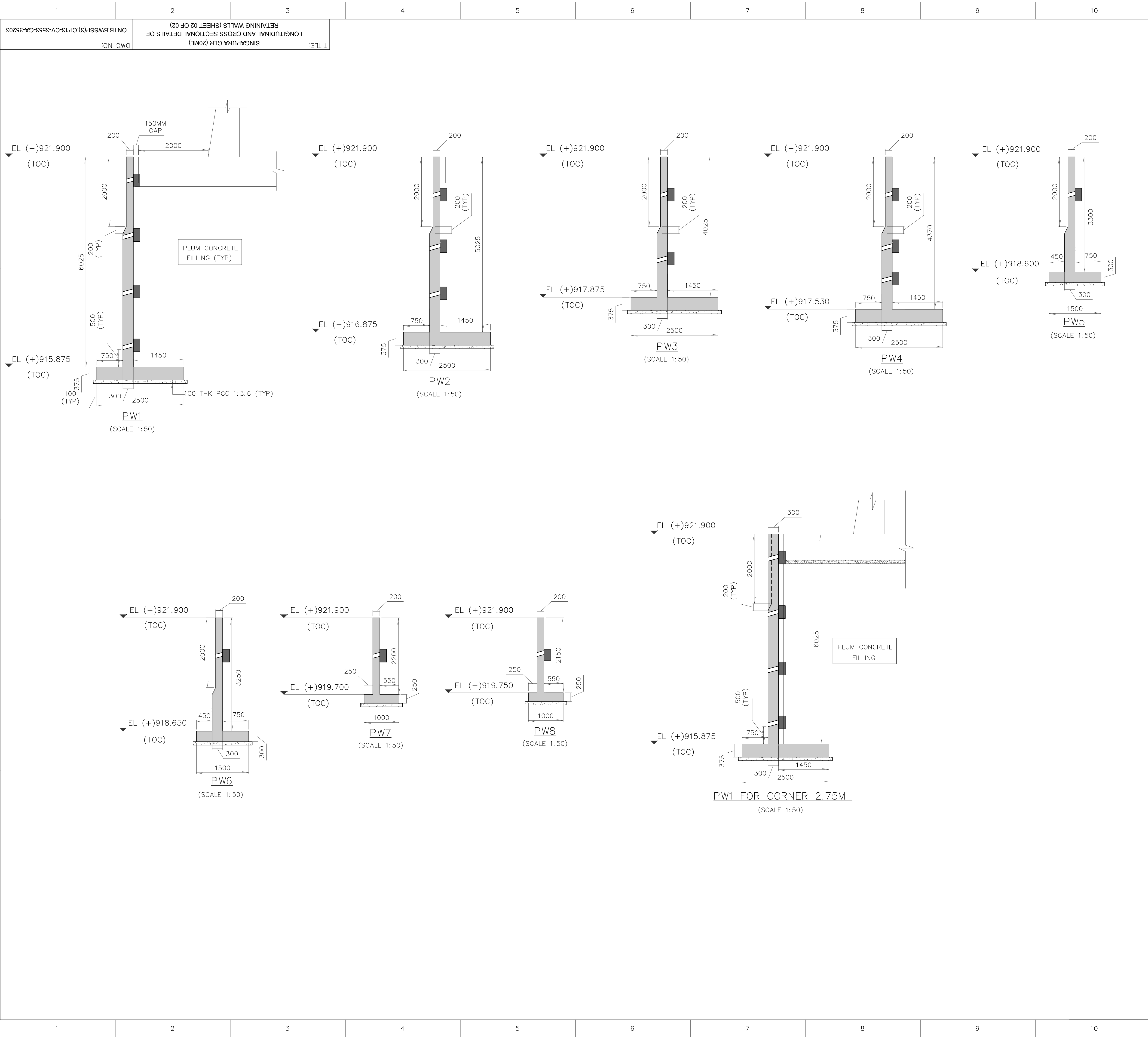
SCALE: NTS DATE:(RO ISSUE) 15-01-2021 ISSUE: R0  
DIVISION: CV DATE:(CURRENT ISSUE) 15-01-2021

DWG. NO. ONTB.BWSSP(3).CP13-CV-3553-GA-35201

ONTB	B W S S B			
	CHECKED BY	REVIEWED BY	RECOMMENDED BY	APPROVED BY
TEAM LEADER	AEE(K-4)	EE(K-4)	ACE(K-1)	CE(K)

FILE NAME: ONTB.BWSSP(3).CP13-CV-3553-GA-35201,205 & 206.dwg  
11 12 ONTB-A1-RO-13





NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METRES.
- DO NOT SCALE THE DRAWING. FOLLOW FIGURED DIMENSIONS ONLY.

ENGINEERING REFERENCE DRAWINGS :

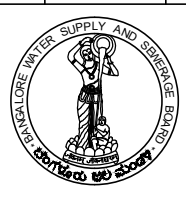
- ONTB.BWSSP(3).CP13-CV-3553-GA-35001---TOPOGRAPHICAL SURVEY OF PROPOSED GROUND LEVEL RESERVOIR (GLR) SITE
- ONTB.BWSSP(3).CP13-CV-3553-GA-35002---PLOT PLAN FOR GROUND LEVEL RESERVOIR AT SINGAPURA(20ML CAPACITY)
- ONTB.BWSSP(3).CP13-CV-3553-GA-35101---LAYOUT PLAN OF PROPOSED GROUND LEVEL RESERVOIR AT SINGAPURA.

CONSTRUCTION REFERENCE DRAWINGS :

- ONTB.BWSSP(3).CP13-CV-3553-RC-35201---LAYOUT AND DETAILS OF RETAINING WALL FOUNDATIONS FOR PLUM CONCRETE.
- ONTB.BWSSP(3).CP13-CV-3553-RC-35204---REINFORCEMENT FOR RETAINING WALL OF PROPOSED GLR AT SINGAPURA
- ONTB.BWSSP(3).CP13-CV-3553-RC-35205-35206---TYPICAL SECTIONAL DETAIL OF RETAINING WALLS FOR PLUM CONCRETE (SH 01 OF 02 & SH 02 OF 02)
- ONTB.BWSSP(3).CP13-CV-3553-GA-35102 TO 35109---GENERAL ARRANGEMENT DRAWING OF GROUND LEVEL RESERVOIR AT SINGAPURA.
- ONTB.BWSSP(3).CP13-CV-3553-GA-35003-----STANDARD CIVIL DETAILS (SH 01 OF 02 & SH 02 OF 02)

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**BANGALORE WATER SUPPLY AND SEWERAGE BOARD**  
BENGALURU WATER SUPPLY AND SEWERAGE PROJECT ( PHASE 3 )

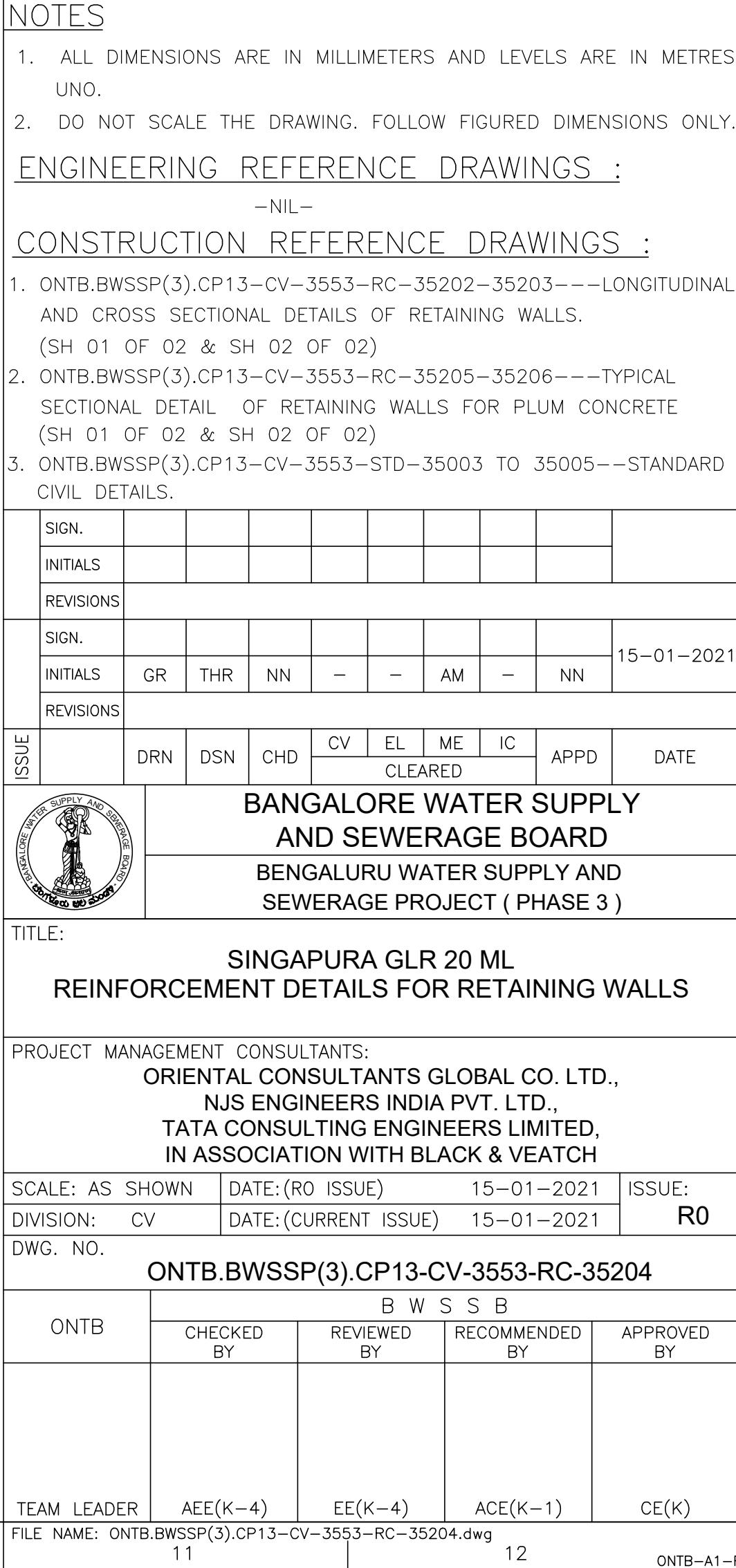
TITLE: **SINGAPURA GLR (20ML)  
LONGITUDINAL AND CROSS SECTIONAL DETAILS OF  
RETAINING WALLS (SHEET 02 OF 02)**

PROJECT MANAGEMENT CONSULTANTS:  
**ORIENTAL CONSULTANTS GLOBAL CO. LTD.,  
NJS ENGINEERS INDIA PVT. LTD.,  
TATA CONSULTING ENGINEERS LIMITED,  
IN ASSOCIATION WITH BLACK & VEATCH**

SCALE: AS SHOWN	DATE:(RO ISSUE)	15-01-2021	ISSUE:
DIVISION: CV	DATE:(CURRENT ISSUE)	15-01-2021	<b>R0</b>

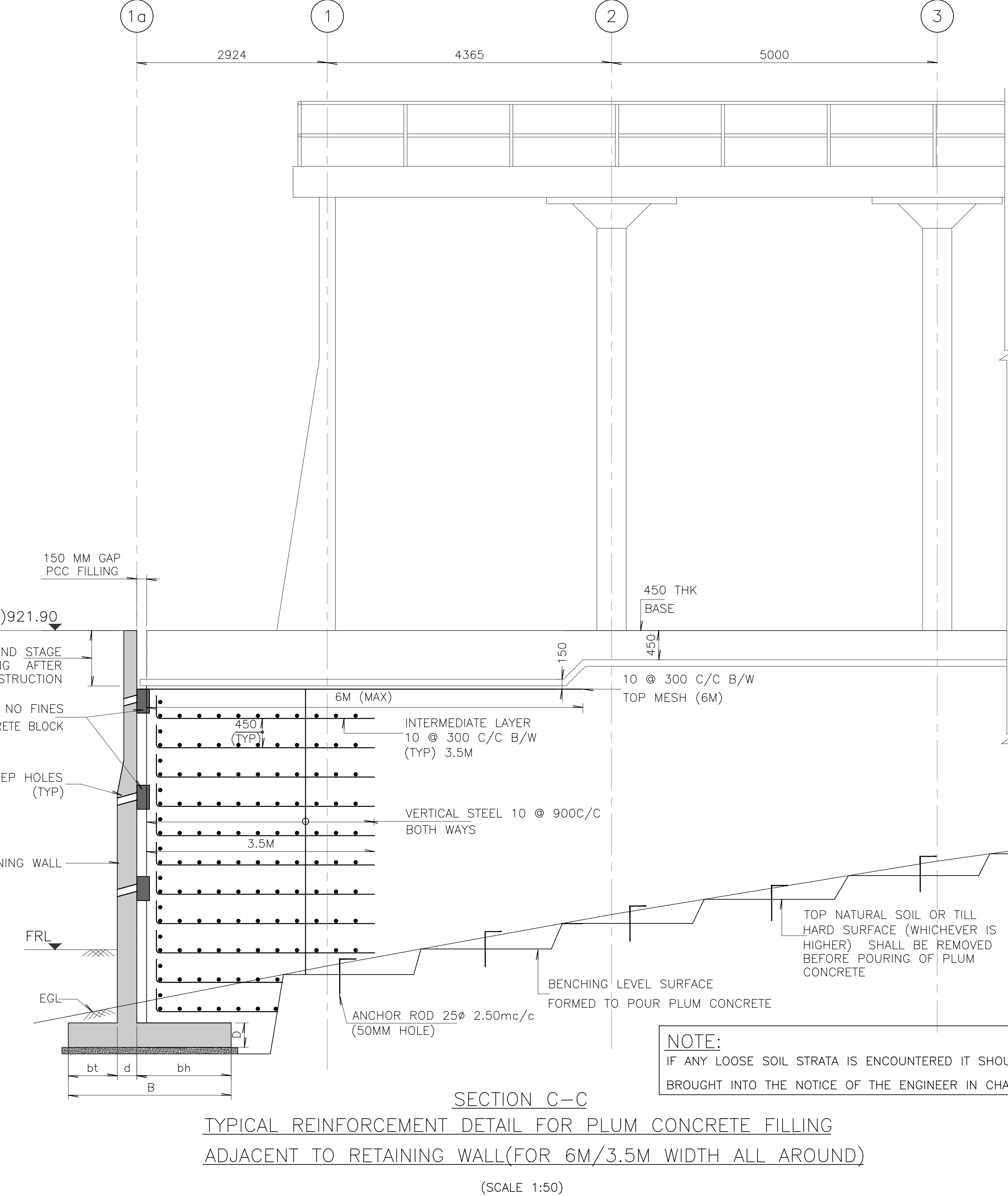
DWG. NO. **ONTB.BWSSP(3).CP13-CV-3553-GA-35203**

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	CHECKED BY	REVIEWED BY	RECOMMENDED BY	APPROVED BY
TEAM LEADER	AEE(K-4)	EE(K-4)	ACE(K-1)	CE(K)







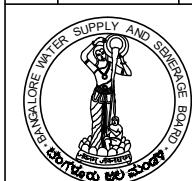



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3. ONTB.BWSSP(3).CP13-CV-3553-GA-35101--LAYOUT PLAN OF PROPOSED GROUND LEVEL RESERVOIR AT SINGAPURA.

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2. ONTB.BWSSP(3).CP13-CV-3553-RC-35202-35203---LONGITUDINAL AND CROSS SECTIONAL DETAILS OF RETAINING WALLS.  
(SH 01 OF 02 & SH 02 OF 02)
3. ONTB.BWSSP(3).CP13-CV-3553-RC-35204---REINFORCEMENT FOR RETAINING WALL OF PROPOSED GR at SINGAPURA
4. ONTB.BWSSP(3).CP13-CV-3553-GA-35102 TO 35109---GENERAL ARRANGEMENT DRAWING OF GROUND LEVEL RESERVOIR AT SINGAPURA
5. ONTB.BWSSP(3).CP13-CV-3553-GA-35003----STANDARD CIVIL DETAILS (SH 01 OF 02 & SH 02 OF 02)

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REVISIONS									
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REVISIONS									

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	<p align="center"><b>BANGALORE WATER SUPPLY AND SEWERAGE BOARD</b></p>
	<p align="center"><b>BENGALURU WATER SUPPLY AND SEWERAGE PROJECT ( PHASE 3 )</b></p>

TITLE: SINGAPURA GLR (20ML)  
TYPICAL SECTIONAL DETAIL OF RETAINING WALLS  
FOR PLUM CONCRETE(SHEET 02 OF 02)

PROJECT MANAGEMENT CONSULTANTS:  
ORIENTAL CONSULTANTS GLOBAL CO. LTD.,  
NJS ENGINEERS INDIA PVT. LTD.,  
TATA CONSULTING ENGINEERS LIMITED,  
IN ASSOCIATION WITH BLACK & VEATCH

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DWG. NO.			

ONTB.BWSSP(3).CP13-CV-3553-GA-35206

ONTB	B W S S B			
	CHECKED BY	REVIEWED BY	RECOMMENDED BY	APPROVED BY
TEAM LEADER	AAE(K-4)	EE(K-4)	ACE(K-1)	CE(K)