

Request For Proposal

for

Selection of Primary Engineering Consultant

for

Development of BSL-4 Greenfield Bio Containment Research Laboratory with ABSL facility meeting all national and international statutory and regulatory standards/guidelines of Gujarat Biotechnology

Research Centre (GBRC) at Gandhinagar

Pre-Bid Meeting, Reply to Queries and Corrigendum-1

Dated 20<sup>th</sup> September 2022

(RFP No: GBRC BSL-4/02/2022)

Gujarat Biotechnology Research Centre (GBRC)

Department of Science & Technology,

Govt. of Gujarat

### Minutes of Pre-Bid Meeting

1. This is with reference to the RFP for Appointment of Primary Engineering Consultant for Development of BSL-4 Greenfield Bio Containment Research Laboratory with ABSL facility meeting all national and international statutory and regulatory standards/guidelines of Gujarat Biotechnology Research Centre (GBRC) at Gandhinagar published on the n-procurement portal on 2<sup>nd</sup> September 2022.
2. In this regard, a Pre-Bid Meeting for the new GBRC building at Gandhinagar was held on 20<sup>th</sup> September 2022 at 1600 hrs at GBRC office, Gandhinagar for discussion on the various aspects with regard to the tender document and scope of works with the prospective bidders.
3. Based on the discussion held and Pre-Bid queries received till 20<sup>th</sup> September 2022 from the prospective bidders, a response to the Pre-Bid queries has been prepared as per the conditions of the RFP document.
4. The response to the Pre-Bid along with the Corrigendum-1 is enclosed for ready reference.
5. The list of participants who attended the Pre-Bid meeting via offline and online mode is also enclosed for reference.

The meeting ended with a vote of thanks.

### Reply to Queries

Sr. No.	Page No. / Volume / Ref. Clause No.	Text provided in the RFP	Clarification sought with justification, if any	Response to the Queries
1.	Page No 18- Vol I Clause 2.1.4	Team Leader- With experience in design/engineering of at least 2 numbers of BSL 3 facility	We request you to consider experience in design / engineering of at least 1 number of BSL 3 facility.	No change
2.	Page No -37 Vol I Clause 2.20	The Applicant shall furnish as part of its Proposal, a bid security of INR 22,50,000 (Rs. Twenty-Two Lakh Fifty Thousand Only) in the form of Demand Draft or a bank guarantee issued by a Nationalised Banks or any other	We request you to allow MSME exemption. "Bidder(s) registered with MSME, Govt. of India for this category of work will be exempted from payment of Bid Security subject to submission of valid registration with MSME, Govt. of India".	Please refer Clause 2.20.5 of the Vol I.
3.	General	Escalation / Enhancement factor for value of work.	We request you to consider as below : The value of executed works shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum, calculated from the date of completion to last date of submission of tenders.	Please refer Corrigendum-1
4.	Page 38 Vol. 1 Clause 2.21.2	An amount equal to 5% (five per cent) of the Contract Fee shall be deemed to be the Performance Security	We request you to consider and amount equal to 3% of the Contract fee towards the Performance security as per the Performance security reduction circular No. No. F.9/4/2020-PPD Dated the 12th November, 2020 of Government of India Ministry of Finance Department of Expenditure Procurement Policy Division. Request you to incorporate the same.	No change

Sr. No.	Page No. / Volume / Ref. Clause No.	Text provided in the RFP		Clarification sought with justification, if any	Response to the Queries
5.	Page 45 Vol I 3.1.8	Experience of the Agency in the Eligible Assignments. Meeting the Minimum Eligibility Criteria – 10 Marks Score for each additional Eligible Assignment shall be as below, subject to maximum 30 marks. For each additional Eligible Assignment with Total Project Cost >=INR 40 Crore – 15 Marks		We request you to consider as below: Meeting the Minimum Eligibility Criteria – 20 Marks For each additional Eligible Assignment with Total Project Cost >=INR 40 Crore – 20 Marks	No Change
6.	Page 47  Vol II Annexure - 4	Design Phase		We request you to consider as below to maintain the good cash flow: Design Phase	No Change
		Preparation and approval of Design Memorandum comprising the principles and Basis of planning, functional requirements of the project	15%	Preparation and approval of Design Memorandum comprising the principles and Basis of planning, functional requirements of the project	
		Submission and approval of technical documents including project reports, basic engineering drawings, technical specifications for tender towards appointment of CMA	60%	Submission and approval of technical documents including project reports, basic engineering drawings, technical specifications for tender towards appointment of CMA	
		Upon successful onboarding of CMA	25%	Upon successful onboarding of CMA	

Sr. No.	Page No. / Volume / Ref. Clause No.	Text provided in the RFP		Clarification sought with justification, if any		Response to the Queries
7.	Page 47  Vol II  Annexure - 4	Implementation Phase		We request you to consider as below to maintain the good cash flow: Implementation Phase		Please refer Corrigendum-1
		Vetting of the Detailed Design drawings and specifications of each component of the Project	50%	Vetting of the Detailed Design drawings and specifications of each component of the Project	90%	
		Upon commissioning of the project and successful certification a competent third-party agency/authorized regulatory body	40%	Upon commissioning of the project and successful certification a competent third-party agency/authorized regulatory body	5%	
		Final acceptance payment – 90 days after commissioning of the Project	10%	Final acceptance payment – 90 days after commissioning of the Project	5%	
8.	Page 41  Vol II  Clause 13	PEC shall be responsible for liaisoning and obtaining all statutory clearance including but not limited to environmental clearance, consent to establish, approval for construction, consent to operate NOCs (Electrical safety, Pollution safety, Fire safety).		Any cost related to any statutory approvals will be borne by Employer. Kindly confirm.		Your understanding is correct.
9.	Page 15  Clause 1.8	Proposal Due Date or PDD (for Online submission): On or before 6th October 2022 at 1800 hours		We request you to extend the date of submission by 3 weeks after release of Pre- bid Clarifications, as per standard practice.		Please refer Corrigendum-1

Sr. No.	Page No. / Volume / Ref. Clause No.	Text provided in the RFP	Clarification sought with justification, if any	Response to the Queries
10.	Page No 22 Vol-1 Clause 2.2.2	(A) Technical Capacity: The Applicant shall have, over the past 10 (ten) years preceding the PDD, undertaken "Eligible Assignments"	We request you to allow over the past 15 (fifteen) years of experience preceding the PDD undertaken as these kinds of projects are very unique and niche Internationally and also in INDIA.	No change
11.	Page No 47-48 Vol -1 Clause 3.5	Experience of Providing Primary Engineering Consultancy Services for Basic design engineering, detailed engineering design, technical specifications and construction drawings and/or vetting and approval of engineering designs and drawings based on Indian/American/ British Standards (as applicable) in the fields of civil, architectural, structural, electromechanical engineering for Good Manufacturing Practices (GMP)/ Good Laboratory Practices (GLP) compliant Biosafety level 3 and above Lab with supporting building utilities & infrastructure / Animal Biosafety Laboratory level 3 and above facilities with supporting building utilities & infrastructure	We request you to consider nuclear safety projects in eligible works as this works also have similar importance, complexity and criticality.	No change
12.	Page No. 42 of RFP Clause 2.27	"The PEC shall, subject to the provisions of the Agreement, indemnify the Authority for an amount not exceeding 3 (three) times the value of the Agreement for any direct loss or damage that is caused due to any deficiency in services"	We request to GBRC please modify the clause as below: "The PEC shall, subject to the provisions of the Agreement, indemnify the Authority for an amount not exceeding the value of the quoted fee / Agreement for any direct loss or damage that is caused due to any deficiency in services"	Kindly refer Corrigendum-1

Sr. No.	Page No. / Volume / Ref. Clause No.	Text provided in the RFP	Clarification sought with justification, if any	Response to the Queries
13.	Page No. 42 of RFP Clause 3.5	Eligible Assignments- a) For the purposes of determining Conditions of Eligibility and for evaluating the Proposals under this RFP, consultancy assignments as eligible assignments (the "Eligible Assignments") "Experience of Providing Primary Engineering Consultancy Services for Basic design Engineering, detailed engineering design, technical specifications and construction drawings and/or vetting and approval of engineering designs and drawings based on Indian/American/ British Standards (as applicable) in the fields of civil, architectural, structural, electro mechanical engineering for Good Manufacturing Practices (GMP)/ Good Laboratory Practices (GLP) compliant Biosafety level 3 and above Lab with supporting building utilities & infrastructure / Animal Biosafety Laboratory level 3 and above facilities with supporting building utilities & infrastructure during the last 7 (seven years immediately preceding the PDD"	We are requesting to GBRC please modify the clause as below:  "Experience of Providing Primary Engineering Consultancy Services for Basic design engineering, detailed engineering design, technical specifications and construction drawings and/or vetting and approval of engineering designs and drawings based on Indian/American/ British Standards (as applicable) in the fields of civil, architectural, structural, electro mechanical engineering for Good Manufacturing Practices (GMP)/ Good Laboratory Practices (GLP) compliant Biosafety level 3 and above Lab / <b>Hospitals projects comprising lab facility with supporting building utilities &amp; infrastructure / Animal Bio safety Laboratory level 3</b> and above facilities with supporting building utilities & infrastructure during the last 7 (seven years immediately preceding the PDD Please also confirm GBRC will consider the relevant project of duration last 7 years or 10 years. It is stated on page no. 22 of RFP under clause 2.2.2 that "The Applicant shall have, over the past 10 (ten) years preceding the PDD, undertaken" Kindly confirm.	No change

Sr. No.	Page No. / Volume / Ref. Clause No.	Text provided in the RFP	Clarification sought with justification, if any	Response to the Queries
14.	General Duration of the Project		As we found the duration of Primary Engineering Services are missing in RFP. Kindly confirm the duration of assignment and input of Key Personnel in project.	Please refer Clause 2.2 subclause a) and subclause b) under Commencement of Services in Vol II of the RFP.
15.	General		Looking to the quantum of work for the proposal preparation, we request you to extend the bid submission date till 28th October, 2022.	Kindly refer Corrigendum-1



### Corrigendum-1

S.N.	Clause No.	Original Clause	Modified Clause/New Clause
1.	Vol-I New Clause Appendix IV		Schematic Layout of the Facility (Kindly refer Annexure I)
2.	Page 18 Vol. I 1.8	Schedule of Selection Process 5a. Proposal Due Date or PDD(Online) - On or before 6th October, 2022 at 1800 hours 5b. Proposal Due Date or PDD (hard copy) - On or before 7th October, 2022 at 1800 hours	Schedule of Selection Process 5a. Proposal Due Date or PDD(Online) - On or before <del>6th</del> 01st November, 2022 at 1800 Hours 5b. Proposal Due Date or PDD (hard copy) - On or before <del>7th</del> 01st November, 2022 at 1800 hours
3.	Page 47 Vol I 3.5	3.5 Eligible Assignments  Experience of Providing Primary Engineering Consultancy Services for Basic design engineering, detailed engineering design, technical specifications and construction drawings and/or vetting and approval of engineering designs and drawings based on Indian/American/ British Standards (as applicable) in the fields of civil, architectural, structural, electro mechanical engineering for Good Manufacturing Practices (GMP)/ Good Laboratory Practices (GLP) compliant Biosafety level 3 and above Lab with supporting building utilities & infrastructure / Animal Biosafety Laboratory level 3 and above facilities with supporting building utilities & infrastructure during the last 7 (seven years immediately preceding the PDD	3.5 Eligible Assignments  Experience of Providing Primary Engineering Consultancy Services for Basic design engineering, detailed engineering design, technical specifications and construction drawings and/or vetting and approval of engineering designs and drawings based on Indian/American/ British Standards (as applicable) in the fields of civil, architectural, structural, electro mechanical engineering for Good Manufacturing Practices (GMP)/ Good Laboratory Practices (GLP) compliant Biosafety level 3 and above Lab with supporting building utilities & infrastructure / Animal Biosafety Laboratory level 3 and above facilities with supporting building utilities & infrastructure during the last <del>7 (seven)</del> 10 (ten) years immediately preceding the PDD
4.	Vol I New Clause Appendix IV		List of Pathogens (Kindly refer Annexure II)

S.N.	Clause No.	Original Clause		Modified Clause/New Clause	
5.	Page 47 Vol II Annexure - 4	Implementation Phase		Implementation Phase	
		Vetting of the Detailed Design drawings and specifications of each component of the Project	50%	Vetting of the Detailed Design drawings and specifications of each component of the Project	70% 50%
		Upon commissioning of the project and successful certification a competent third-party agency/authorized regulatory body	40%	Upon commissioning of the project and successful certification a competent third-party agency/authorized regulatory body	20% 40%
		Final acceptance payment – 90 days after commissioning of the Project	10%	Final acceptance payment – 90 days after commissioning of the Project	10%
6.	General			Read “statutory” instead of “statuary” in the Vol I and Vol II of the RFP.	
7.	New Clause			Following enhancement factors will be applied to the completion cost of works to bring them to the base year. The current financial year in which bid is invited shall be considered as the base year.	
				Year	Financial Year
				Enhancement factor	
				Base (Inviting Year)	2022-23
				1	2021-22
				2	2020-21
				3	2019-20
				4	2018-19
				5	2017-18
				6	2016-17
				7	2015-16
				8	2014-15
				9	2013-14
				10	2012-2013

S.N.	Clause No.	Original Clause	Modified Clause/New Clause
8.	Page No. 42 Vol-I Clause 2.27	"The PEC shall, subject to the provisions of the Agreement, indemnify the Authority for an amount not exceeding 3 (three) times the value of the Agreement for any direct loss or damage that is caused due to any deficiency in services"	"The PEC shall, subject to the provisions of the Agreement, indemnify the Authority for an amount not exceeding <b>1 (one)</b> <del>3 (three)</del> times the value of the Agreement for any direct loss or damage that is caused due to any deficiency in services"
9.	Vol II Schedule 2 3.5.1 d	Except in case of Third Party liabilities, the insurance policies so procured shall mention the Authority as the beneficiary of the Consultant and the Consultant shall procure an undertaking from the insurance company to this effect; provided that in the event the Consultant has a general insurance policy that covers the risks specified in this BSC Contract and the amount of insurance cover is equivalent to 3 (three) times the cover required hereunder, such insurance policy may not mention the Authority as the sole beneficiary of the Consultant or require an undertaking to that effect.	Except in case of Third Party liabilities, the insurance policies so procured shall mention the Authority as the beneficiary of the Consultant and the Consultant shall procure an undertaking from the insurance company to this effect; provided that in the event the Consultant has a general insurance policy that covers the risks specified in this BSC Contract and the amount of insurance cover is equivalent to <b>1 (one)</b> <del>3 (three)</del> times the cover required hereunder, such insurance policy may not mention the Authority as the sole beneficiary of the Consultant or require an undertaking to that effect.

Pre-Bid Meeting: Attendance Sheet

Sr. No	Name	Designation	Online/Offline	Organization	Contact Number	Email Id
1.	Chaitanya G Joshi	Director	Offline	GBRC		dir-gbrc@gujarat.gov.in
2.	Madhavi Joshi	Joint Director	Offline	GBRC		dir-gbrc@gujarat.gov.in
3.	Jasbir Singh	DGM	Online	NDDB		jasbir@nddb.coop
4.	Sunanda Kumar Nayani	Manager	Online	NDDB		sunand@nddb.coop
5.	H. Zaidi	Manager	Offline	Assystem STUP	7863024214	hzaidi@assystem.com
6.	Dhawal Ghee Wala	Business Dev	Offline	Elomatic	9974969820	Dhawal.gheewala@elomatic.com
7.	Rakesh. V. Varadkar	Director	Offline	Spectrum Techno Consultant Pvt Ltd	9820797697	rvv@spectrumworld.net
8.	S S Bhowmik	Associate Director	Online	IPS International	9953148917	sbhowmik@ipsintl.net
9.	Anita Pawar	Sr. Manager - Marketing	Online	Spectrum Pharmatech Consultants Pvt. Ltd	9819570213	anita.pawar@spectrumpharmatech.com

10.	R Shyam Sundar	Director	Online	Precision Scientific Co.	09940444115	shyam@precision-scientific.com
11.	Anuvrat Singal	Managing Director	Online	GIE	8588811864	Anuvrat.singal@glatt-india.com
12.	Prem Shankar Sharma	Senior Urban & Regional Planner	Online	AECOM India Pvt Ltd	7878716181	prem.sharma@aecom.com
13.	Dr. B.K.Doshi Mr. Kelly & Mr. Benoit		Online	Doshi Consultants Pvt. Ltd.	9893053844	Marketing@doshicon.com
14.	Priyanka Roy Bardhan	Senior Account Manage	Online	NNE	9880541921	pnrb@nne.com
15.	Ujjal Dutta	Vice President - Business Development	Online	Elomatic-Pharmalab	9833700500	ujjal.dutta@elomatic.com
16.	Nishant Mishra	Senior Manager	Online	EY India LLP	+91 9958877219	nishant2.mishra@in.ey.com
17.	Srikar Sandilya	Senior Manager	Online	EY India LLP	+91 8939022196	srikar.sandilya@in.ey.com
18.	Logeshwaran V Durai	Manager	Offline	EY India LLP	+91 9003723840	logeshwaran.d@in.ey.com
19.	Divyanshu Bhatt	Manager	Offline	EY India LLP	+91 8320836442	divyanshu.bhatt@in.ey.com

20.	Supriya Swaroop	Sr. Associate	Online	EY India LLP	+91 9839234615	supriya.swarup@in.ey.com
21.	Sourabh Anand	Associate	Offline	EY India LLP	+91 840141628	sourabh.anand@in.ey.com

## Appendix IV Annexure 1



AREA STATEMENT	
FACILITY NAME	AREA
ABSL 3 ANIMAL FACILITY	450 SQMT
ABSL 4 ANIMAL FACILITY	500 SQMT
ABSL 3 ANIMAL VIRUS TESTING	450 SQMT
BSL3 HUMAN VIRUS TESTING FACILITY	500 SQMT
BSL4 HUMAN VIRUS TESTING FACILITY	450 SQMT
BSL3 RENTAL LABORATORY	450 SQMT
BSL2 LABORATORY	650 SQMT

ALL DIMENSIONS IN METERS



NATIONAL DAIRY DEVELOPMENT BOARD  
ANAND (GUJARAT) INDIA

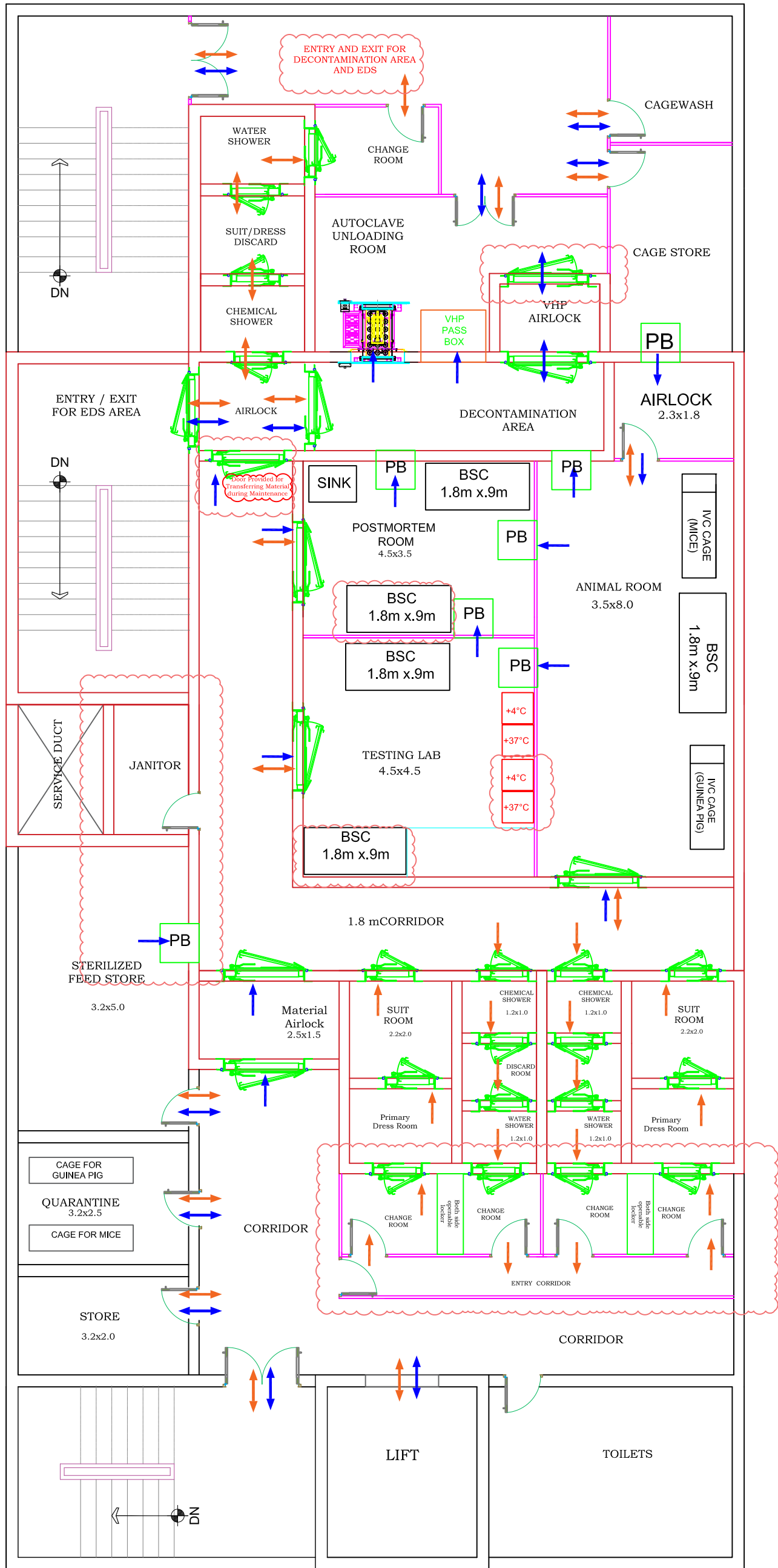
	NAME	DATE	PROJECT NAME  <b>BSL-4 GREENFIELD BIO CONTAINMENT RESEARCH LABORATORY GBRC, GANDHINAGAR</b>
DRN	DIVYESH	13-09-2022	
CKD	SUNAND	13-09-2022	
APR			

DRAWING NAME

## CONCEPTUAL LAYOUT

SHEET NO.

1 of 1



ABSL 3 LABORATORY  
WITH PROVISION FOR  
CHALLENGE  
450 Sqmt

LEGEND

- MAN MOVEMENT
- MATERIAL MOVEMENT
- RCC WALL
- BRICKWAL
- AIRTIGHT DOOR
- MODULAR PARTITIONS
- PASS BOX
- EDS Effluent Decontamination System

ALL DIMENSIONS IN METERS



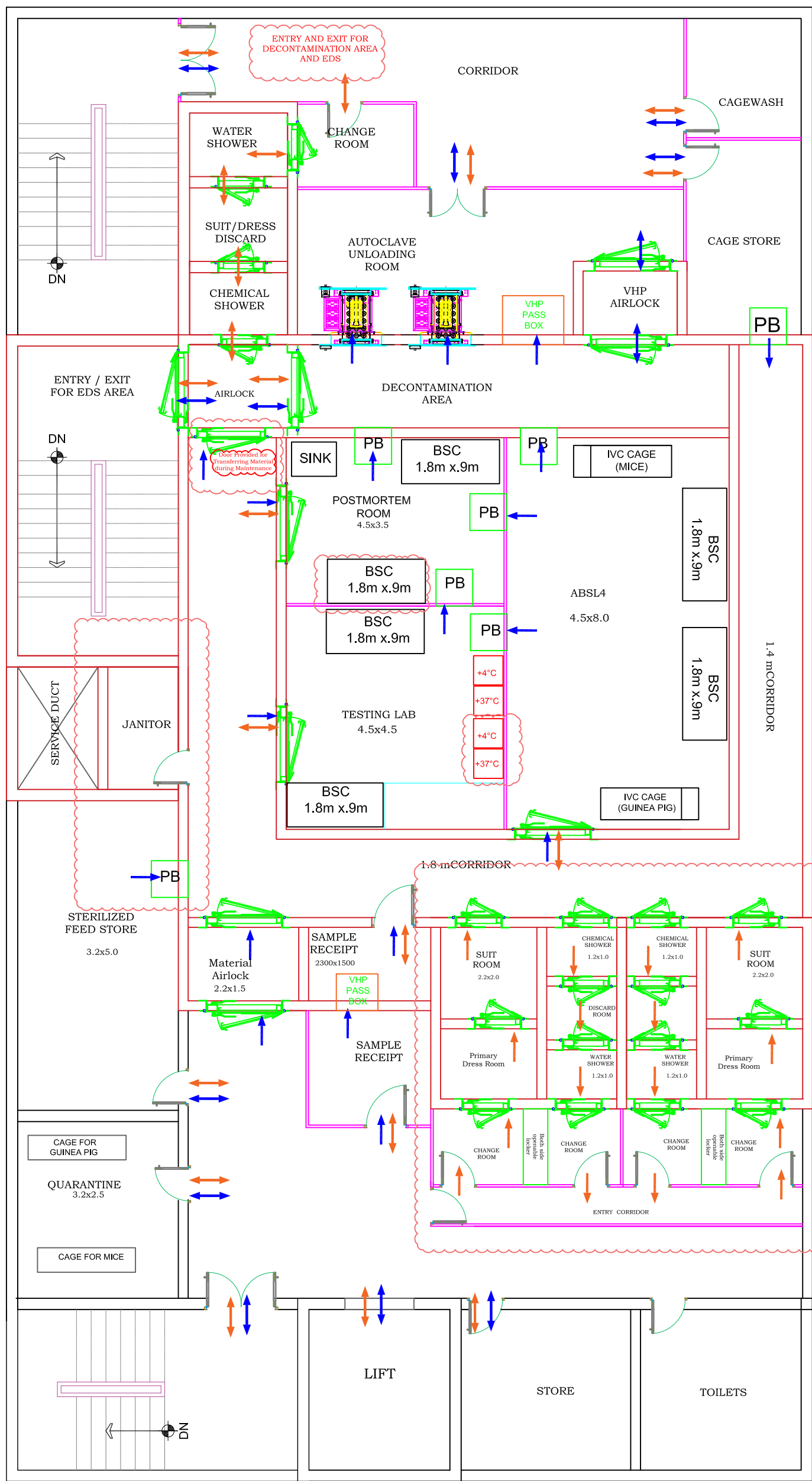
NATIONAL DAIRY DEVELOPMENT BOARD  
ANAND (GUJARAT) INDIA

NAME	DATE
DRN	DIVYESH
CKD	SUNAND
APR	

PROJECT NAME  
**BSL-4 GREENFIELD BIO CONTAINMENT  
RESEARCH LABORATORY  
GBRC, GANDHINAGAR**

DRAWING NAME	SHEET NO.
CONCEPTUAL LAYOUT ABSL 3 LABORATORY WITH PROVISION FOR CHALLENGE	1 of 1





**LEGEND**

MAN MOVEMENT

MATERIAL MOVEMENT

RCC WALL

BRICKWAL

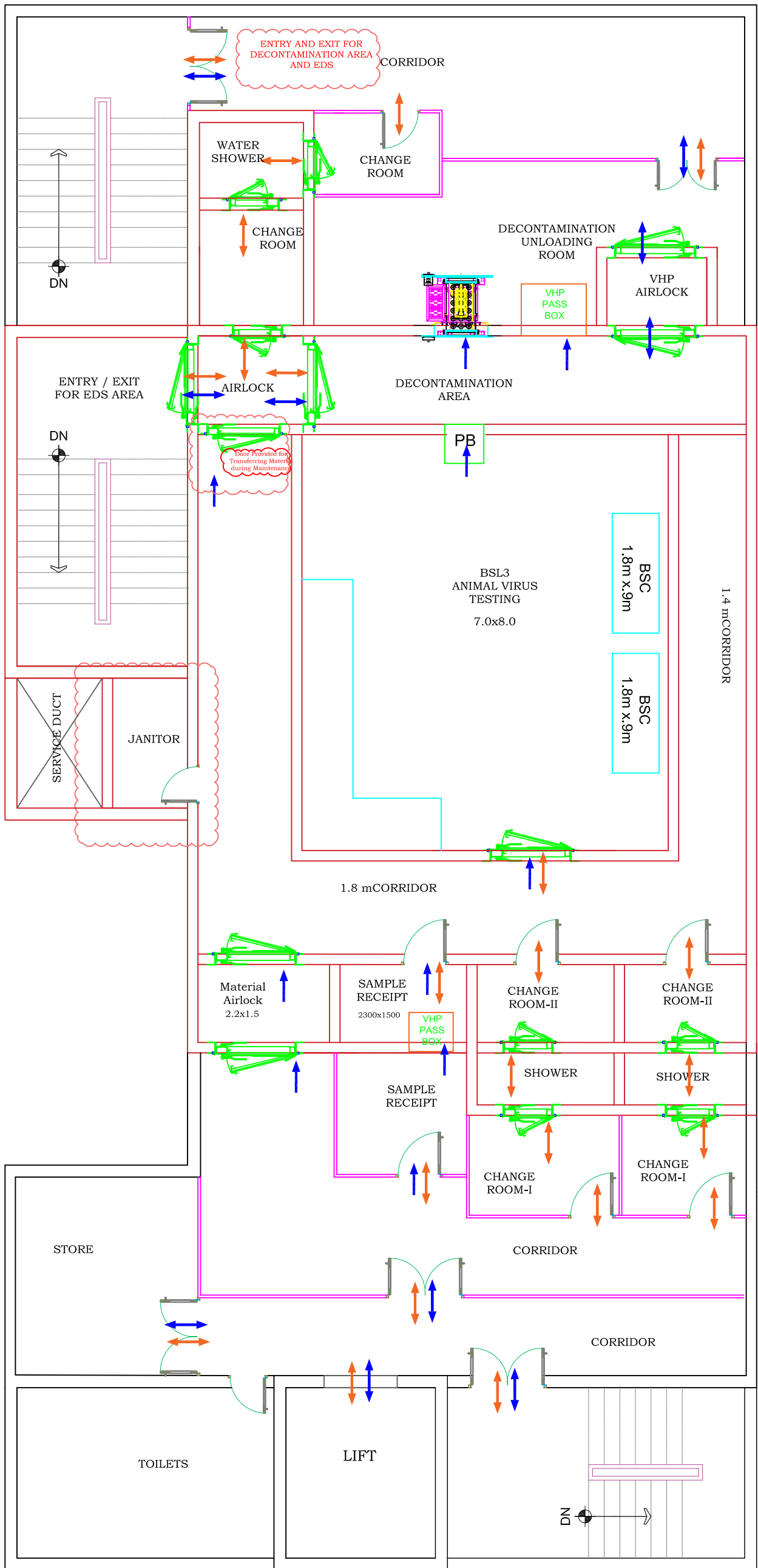
AIRTIGHT DOOR

MODULAR PARTITIONS

PB PASS BOX

EDS Effluent Decontamination System

ABSL 4 LABORATORY  
WITH PROVISION FOR  
CHALLENGE (500 Sqmt)



ABSL3 LABORATORY  
ANIMAL VIRUS TESTING  
450 SQMT

LEGEND

- ← MAN MOVEMENT  
← MATERIAL MOVEMENT
- RCC WALL  
□ BRICKWAL
- AIRTIGHT DOOR
- MODULAR PARTITIONS
- PB PASS BOX
- EDS Effluent Decontamination System

ALL DIMENSIONS IN METERS



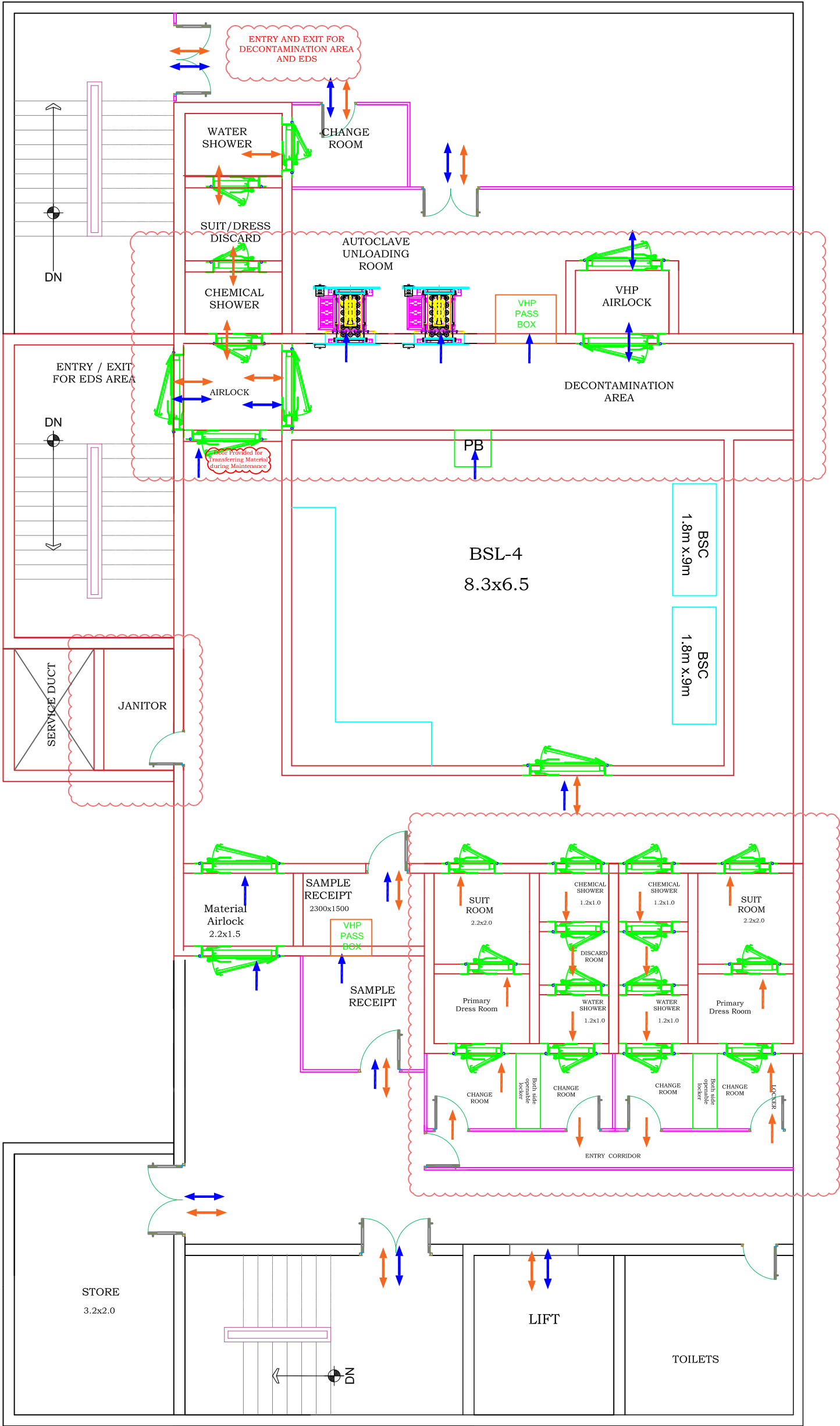
NATIONAL DAIRY DEVELOPMENT BOARD  
ANAND (GUJARAT) INDIA

NAME	DATE
DRN DIVYESH	13-09-2022
CKD SUNAND	13-09-2022
APR	

PROJECT NAME  
**BSL-4 GREENFIELD BIO CONTAINMENT  
RESEARCH LABORATORY  
GBRC, GANDHINAGAR**

DRAWING NAME  
CONCEPTUAL LAYOUT ABSL 3 LABORATORY

SHEET NO.  
1 of 1



LEGEND

- ← MAN MOVEMENT  
← MATERIAL MOVEMENT

- RCC WALL  
□ BRICKWAL  
🚪 AIRTIGHT DOOR  
▬ MODULAR PARTITIONS  
PB PASS BOX

EDS Effluent Decontamination System

ALL DIMENSIONS IN METERS



NATIONAL DAIRY DEVELOPMENT BOARD  
ANAND (GUJARAT) INDIA

NAME	DATE
DRN	DIVYESH 13-09-2023
CKD	SUNAND 13-09-2023
APR	

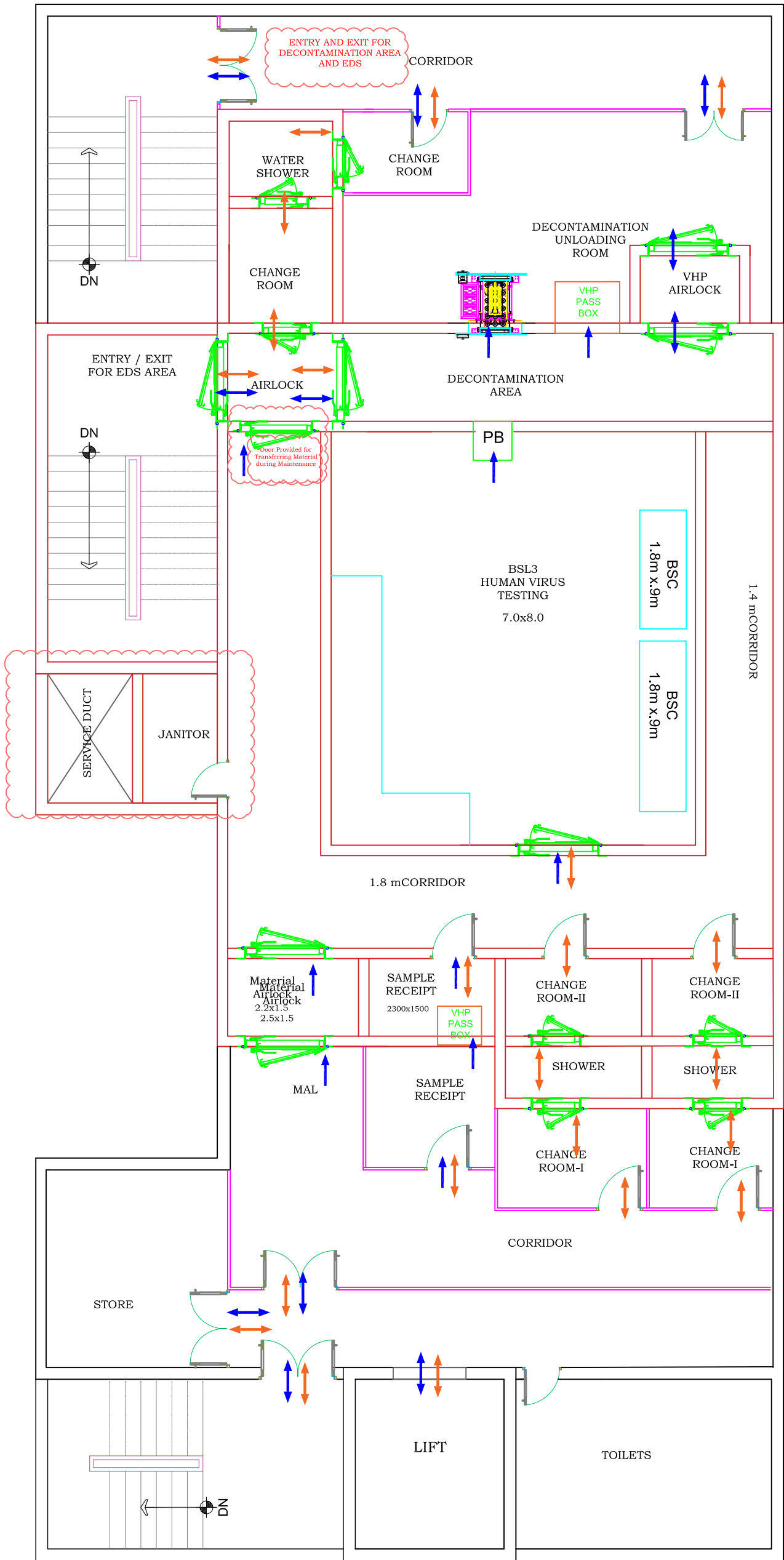
PROJECT NAME  
**BSL-4 GREENFIELD BIO CONTAINMENT  
RESEARCH LABORATORY  
GBRC, GANDHINAGAR**

DRAWING NAME  
CONCEPTUAL LAYOUT BSL 4 LABORATORY

SHEET NO.  
1 of 1

BSL 4 LABORATORY  
HUMAN VIRUS TESTING

500 Sqmt



LEGEND

- ← MAN MOVEMENT  
← MATERIAL MOVEMENT

- RCC WALL  
— BRICKWAL  
— AIRTIGHT DOOR  
— MODULAR PARTITIONS  
— PASS BOX

EDS Effluent Decontamination System

ALL DIMENSIONS IN METERS



NATIONAL DAIRY DEVELOPMENT BOARD  
ANAND (GUJARAT) INDIA

NAME	DATE
DRN	DIVYESH 13-09-2022
CKD	SUNAND 13-09-2022
APR	

PROJECT NAME  
**BSL-4 GREENFIELD BIO CONTAINMENT  
RESEARCH LABORATORY  
GBRC, GANDHINAGAR**

DRAWING NAME  
CONCEPTUAL LAYOUT ABSL 3 LABORATORY

SHEET NO.  
1 of 1

**BSL 3 LABORATORY  
HUMAN VIRUS TESTING  
(450 Sqmt)**



## Appendix IV Annexure 2

### A. List of Human Virus to be Handled in proposed BSL-4 Lab

SL No	Name of organism`	Natural Host	Route of exposure	Mortality Rate	Activity to be performed
1	Monkeypox	Monkey		3-6%	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Crimean-Congo haemorrhagic fever virus	Hyalomma Ticks	Aerosol	10-50%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Ebola virus	Unknown	Direct Contact	50-90%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Marburg Virus	Unknown	Direct Contact	23-25%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Nipah virus	Fruit Bat		60%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	Hendra virus	Fruit Bat		60%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
7	Yellow Fever virus	Aedes and Haemogogusspecies mosquitoes		3-9%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal 8antibody neutralising 9molecule testing

8	Kyasanur Forest Disease Virus	Tick		60%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
9	Rift Valley Fever Virus	Domesticated Animal		1%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
10	Omsd Hemragic Fever Virus	Rodents		0.5-3%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
11	Lassa Virus	Rodent	Aerosol	15%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
12	Hanta Virus	Rodents		5-15%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
13	Mammarena Viruses	Rodents		15%	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
14	Tick – borne encephalitis virus	Tick			Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

**B. List of Human Viruses to handled in proposed BSL 3.**

SL No	Name of organism`	Activity to be performed
1	SARS-associated coronavirus (SARS-CoV)* 5	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	SARS-associated coronavirus 2 (Novel coronavirus, SARS-CoV2)* 5	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Middle East respiratory syndrome coronavirus (MERS-CoV)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Meningitis virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Rabies virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	Swine Fever virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
7	Chandipura vesiculovirus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal 8antibody neutralising 9molecule testing
8	CCHF	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal 8antibody neutralising 9molecule testing
9	Ebola virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal 8antibody neutralising 9molecule testing
10	Nipah virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal 8antibody neutralising 9molecule testing



### C. List of Human Bacteria to handled in proposed BSL 3.

SL No	Name of organism`	Activity to be performed
1	Bacillus anthracis*5	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Mycobacterium spp	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Yersinia pestis	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Burkholderia mallei	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Bartonelia sp.	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	Clostridium botulinum	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
7	Brucella abortus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
8	Monkeypox virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

**D. List of Animal Virus to handled in proposed BSL 3.**

SL No	Name of organism`	Activity to be performed
1	Avian influenza virus A (Fowl plague virus)	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Foot and Mouth Disease virus Influenza viruses	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Lumpy skin disease virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Newcastle disease virus (Asiatic strains)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Monkeypox virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	CCHF	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

### E. List of Animal Bacteria to handled in proposed BSL 3.

SL No	Name of organism`	Activity to be performed
1	Brucella abortus* 5	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	B. canis	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	, B. melitensis* 5	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	, B. suis* 5	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Actinobacillus mallei (BSL-2 pathogen)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	Bartonella species (BSL-2 pathogen)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
7	Clostridium tetani & Clostridium botulinum (BSL-2 pathogen)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

**F. Diagnosis of Emerging pathogens of RG-4 to be done in proposed BSL 3.**

SL No	Name of organism`	Activity to be performed
1	Human Immunodeficiency virus (HIV)	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	SARSCOV	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	MERSCOV	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Meningitis virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Rabies virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	Swine Fever virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
7	Chandipura vesiculovirus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

G. List of Human Virus to handled in proposed BSL 2.

SL No	Name of organism`	Activity to be performed
1	Rotavirus	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Papillomaviruses (HPV)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Cytomegalovirus (CMV)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Hepatitis B Virus, Hepatitis C Virus, Hepatitis D Virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

#### H. List of Human Bacteria to handled in proposed BSL 2.

SL No	Name of organism`	Activity to be performed
1	Campylobacter coli	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Campylobacter jejuni	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Clostridium difficile	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Enterobacter sp	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
5	Klebsiella pneumoniae	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
6	Leptospira sp	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

I. List of Animal Virus to handled in proposed BSL 2.

SL No	Name of organism	Activity to be performed
1	Buffalopox virus	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Goat pox virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Avian herpesvirus 1 (ILT)	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Canine distemper virus	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing

J. List of Animal Bacteria to handled in proposed BSL 2.

SL No	Name of organism	Activity to be performed
1	Corynebacterium bovis	Isolation, sub-culturing, Adaptation, Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
2	Listeria monocytogenes	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
3	Corynebacterium renale	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing
4	Ehrlichia canis	Isolation, sub-culturing, Adaptation Bio-Banking, Anti Viral Drug Testing , Polyclonal/Monoclonal antibody neutralising molecule testing