

PROJECT: PROPOSED DESIGN OF FAMILY QUARTER AT GELEPHU AIRPORT.

CLIENT: DEPARTMENT OF AIR TRANSPORT.

BUILDING: FAMILY QUARTER.

ARCHITECTURAL DRAWINGS

SUBMITTED BY:

Gyaltshen consultancy

PROJECT: PROPOSED DESIGN OF FAMILY QUARTER AT GELEPHU AIRPORT.
CLIENT: DEPARTMENT OF AIR TRANSPORT.
BUILDING: FAMILY QUARTER.

PLUMBING AND SEWER DRAWINGS

SUBMITTED BY:

Gyaltshen consultancy

NOTE:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SPECIFIED OTHERWISE
- ALL RELATIVE LEVELS ARE IN METERS UNLESS SPECIFIED OTHERWISE
- ALL DIMENSIONS MEASURE UNFINISHED SURFACES UNLESS SPECIFIED OTHERWISE
- ALL DIMENSIONS ARE TO BE READ AND NOT SCALED OFF
- ANY DISCREPANCY IN DRAWING IS TO BE BROUGHT TO THE IMMEDIATE NOTICE OF THE CONSULTANTS/SUPERVISION TEAM
- MINOR ADJUSTMENTS NEED TO BE CARRIED OUT ON SITE TO MATCH WITH BUILDING

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| | Client |
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Royal Government of Bhutan Civil Aviation Dep

Aviation Planners & Engineers

Leading Edge Aviation Planning Professionals

Civil Engineering Consultant

Gyaltshen Consultancy

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| Project Title |
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GELEPHU DOMESTIC AIRPORT
DESIGN & SUPERVISION

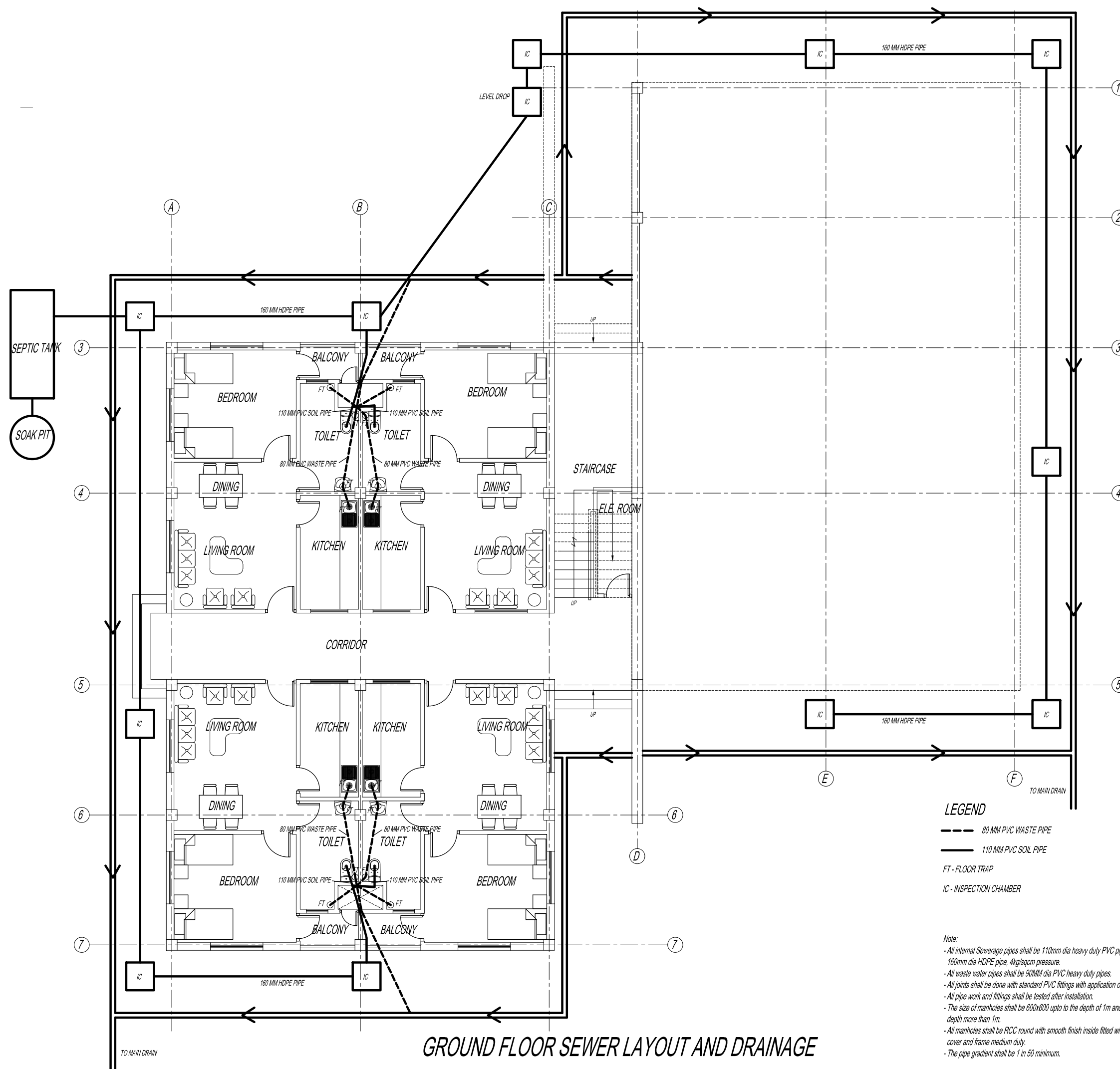
DESIGN OF SECURITY QUARTERS.

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| Drawing Title |
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FAMILY QUARTER

SEWERAGE LAYOUT

| | |
|--------------------|---------------------|
| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSSEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ SW01 |
| LEAPP Project Code | |



GROUND FLOOR SEWER LAYOUT AND DRAINAGE

NOTE:

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Legend

| No. | Revision | Date |
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Client
Royal Government of Bhutan Civil Aviation Dep
Aviation Planners & Engineers
Leading Edge Aviation Planning Professionals
Civil Engineering Consultant
Gyaltshen Consultancy

Project Title

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

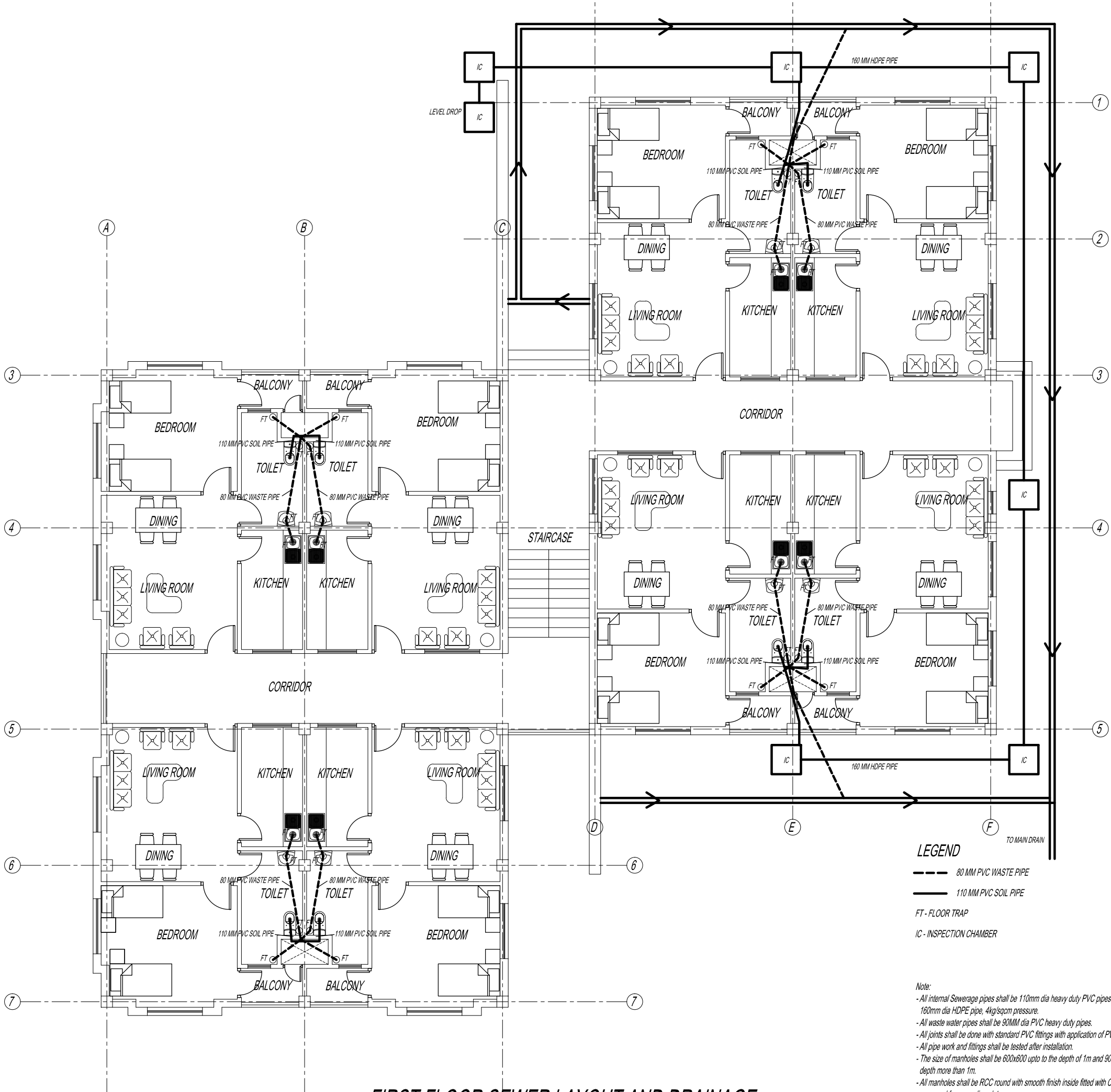
DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

SEWERAGE LAYOUT

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|--------------------|---------------------|
| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ SW02 |
| LEAPP Project Code | ---- |



LEGEND

- 80 MM PVC WASTE PIPE
- 110 MM PVC SOIL PIPE
- FT - FLOOR TRAP
- IC - INSPECTION CHAMBER

Note:

- All internal Sewerage pipes shall be 110mm dia heavy duty PVC pipes & external 160mm dia HDPE pipe, 4kg/sqcm pressure.
- All waste water pipes shall be 90MM dia PVC heavy duty pipes.
- All joints shall be done with standard PVC fittings with application of PVC solutions.
- All pipe work and fittings shall be tested after installation.
- The size of manholes shall be 600x600 upto to the depth of 1m and 900x900 for depth more than 1m.
- All manholes shall be RCC round with smooth finish inside fitted with CI manhole cover and frame medium duty.
- The pipe gradient shall be 1 in 50 minimum.

FIRST FLOOR SEWER LAYOUT AND DRAINAGE

NOTE:

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Client
Royal Government of Bhutan Civil Aviation Dep
Aviation Planners & Engineers
Leading Edge Aviation Planning Professionals
Civil Engineering Consultant
Gyaltshen Consultancy

Project Title

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

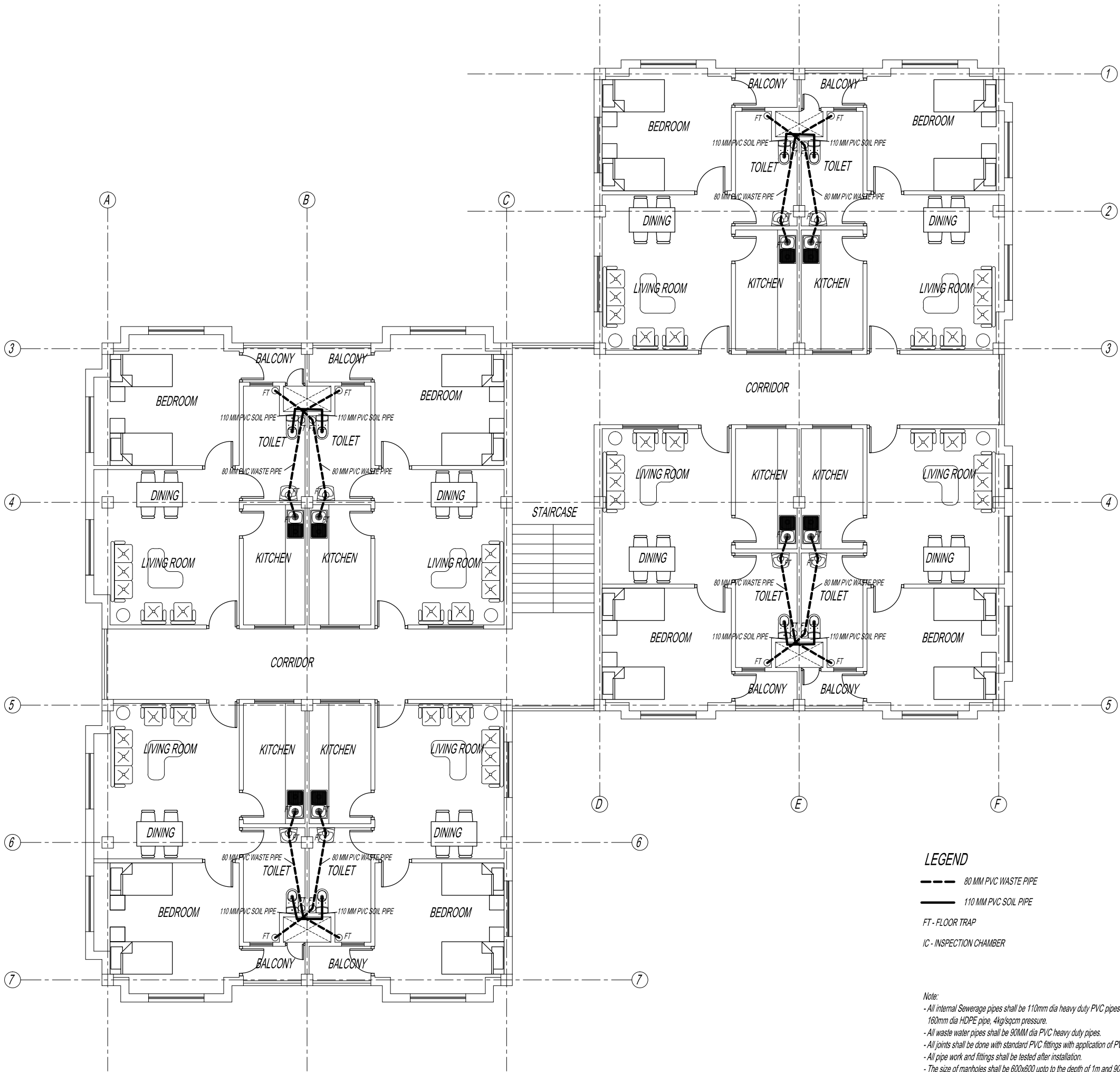
DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

SEWERAGE LAYOUT

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| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ SW03 |
| LEAPP Project Code | ---- |



LEGEND

- 80 MM PVC WASTE PIPE
- 110 MM PVC SOIL PIPE
- FT - FLOOR TRAP
- IC - INSPECTION CHAMBER

Note:

- All internal Sewerage pipes shall be 110mm dia heavy duty PVC pipes & external 160mm dia HDPE pipe, 4kg/sqm pressure.
- All waste water pipes shall be 90MM dia PVC heavy duty pipes.
- All joints shall be done with standard PVC fittings with application of PVC solutions.
- All pipe work and fittings shall be tested after installation.
- The size of manholes shall be 600x600 upto to the depth of 1m and 900x900 for depth more than 1m.
- All manholes shall be RCC round with smooth finish inside fitted with CI manhole cover and frame medium duty.
- The pipe gradient shall be 1 in 50 minimum.

SECOND FLOOR SEWER LAYOUT



ROYAL GOVERNMENT OF BHUTAN
CIVIL AVIATION DEPARTMENT

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Client
Royal Government of Bhutan Civil Aviation Dep
Aviation Planners & Engineers
Leading Edge Aviation Planning Professionals
Civil Engineering Consultant
Gyaltshen Consultancy

Project Title

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

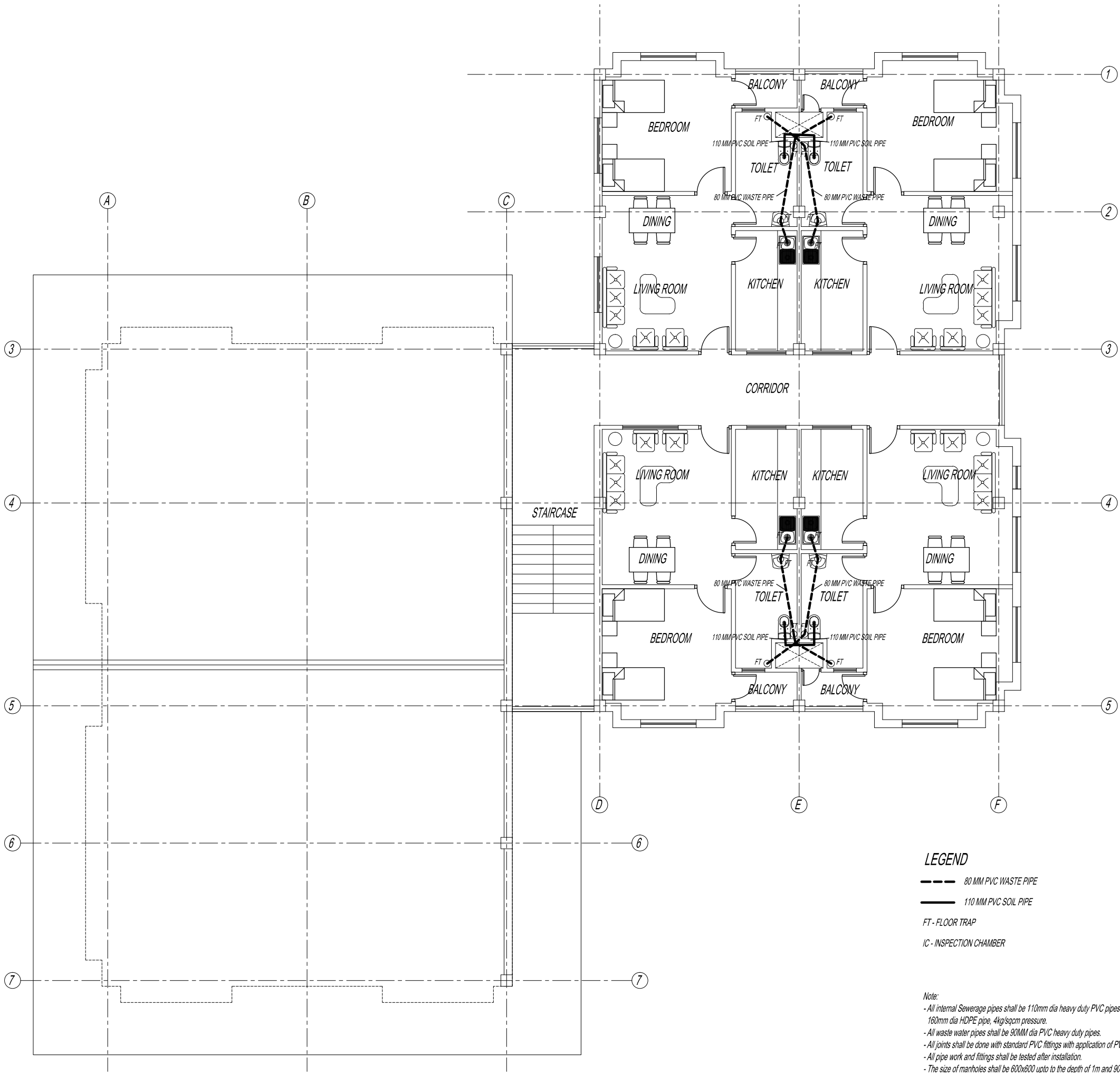
DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

SEWERAGE LAYOUT

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| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | T SHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ SW04 |
| LEAPP Project Code | ---- |



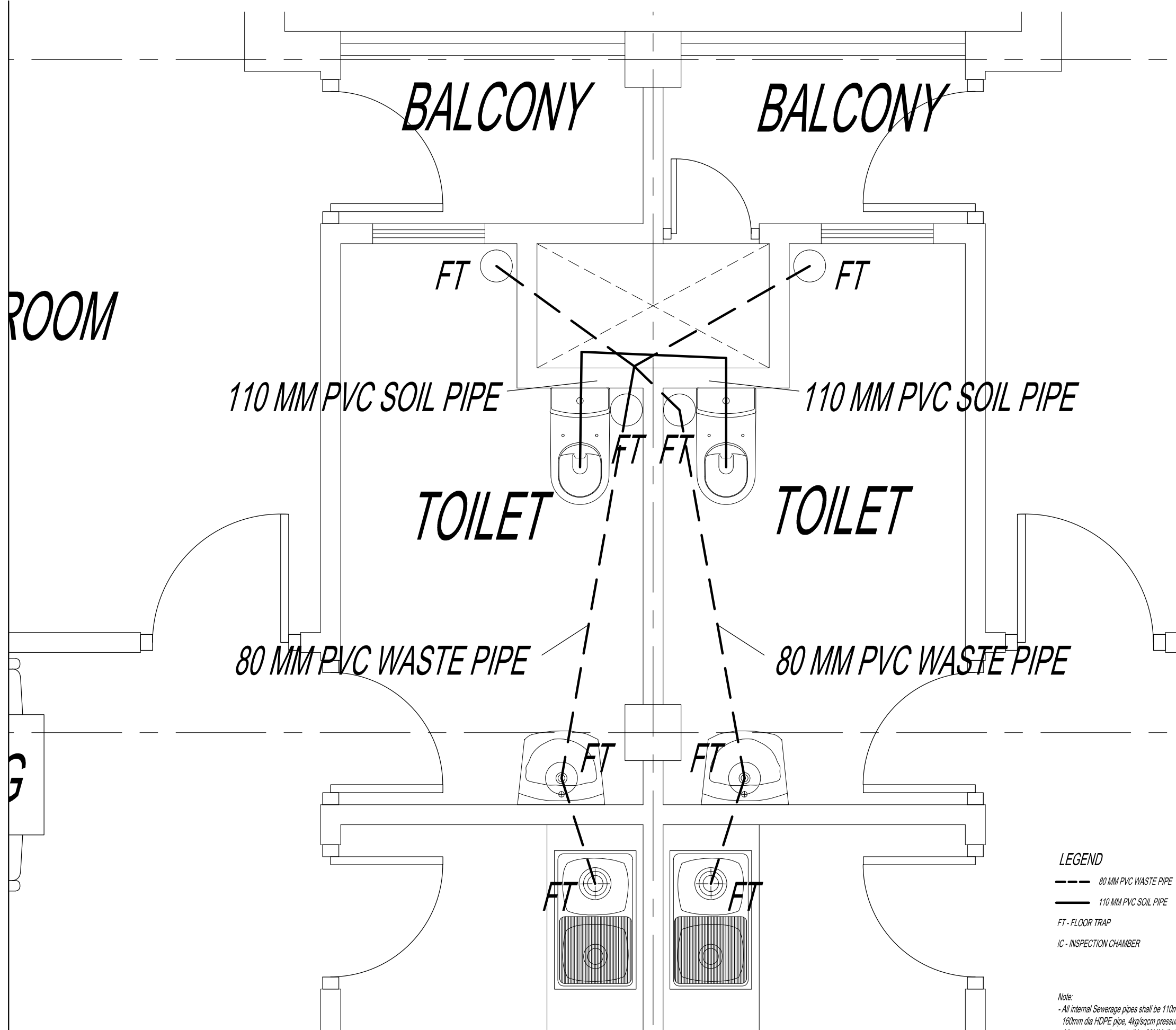
LEGEND

- 80 MM PVC WASTE PIPE
- 110 MM PVC SOIL PIPE
- FT - FLOOR TRAP
- IC - INSPECTION CHAMBER

Note:

- All internal Sewerage pipes shall be 110mm dia heavy duty PVC pipes & external 160mm dia HDPE pipe, 4kg/sqcm pressure.
- All waste water pipes shall be 90MM dia PVC heavy duty pipes.
- All joints shall be done with standard PVC fittings with application of PVC solutions.
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- The size of manholes shall be 600x600 upto to the depth of 1m and 900x900 for depth more than 1m.
- All manholes shall be RCC round with smooth finish inside fitted with CI manhole cover and frame medium duty.
- The pipe gradient shall be 1 in 50 minimum.

THIRD FLOOR SEWER LAYOUT



ROOM

G

BALCONY

BALCONY

FT

FT

110 MM PVC SOIL PIPE

110 MM PVC SOIL PIPE

TOILET

TOILET

80 MM PVC WASTE PIPE

80 MM PVC WASTE PIPE

FT

FT

FT

FT

LEGEND

--- 80 MM PVC WASTE PIPE

— 110 MM PVC SOIL PIPE

FT - FLOOR TRAP

IC - INSPECTION CHAMBER

Note:

- All internal Sewerage pipes shall be 110mm dia heavy duty PVC pipes & external 160mm dia HDPE pipe, 4kg/sqcm pressure.
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- The pipe gradient shall be 1 in 50 minimum.

TYPICAL SEWER LAYOUT



ROYAL GOVERNMENT OF BHUTAN
CIVIL AVIATION DEPARTMENT

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| Client | Royal Government of Bhutan Civil Aviation Dep |
| Aviation Planners & Engineers | Leading Edge Aviation Planning Professionals |
| Civil Engineering Consultant | Gyaltshen Consultancy |
| Project Title | |

GELEPHU DOMESTIC AIRPORT
DESIGN & SUPERVISION

DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

SEWERAGE LAYOUT

| | |
|--------------------|---------------------|
| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ SW05 |
| LEAPP Project Code | ---- |



ROYAL GOVERNMENT OF BHUTAN
CIVIL AVIATION DEPARTMENT

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| Client |
| Royal Government of Bhutan Civil Aviation Dep |
| Aviation Planners & Engineers |
| Leading Edge Aviation Planning Professionals |
| Civil Engineering Consultant |
| Gyaltshen Consultancy |
| Project Title |

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

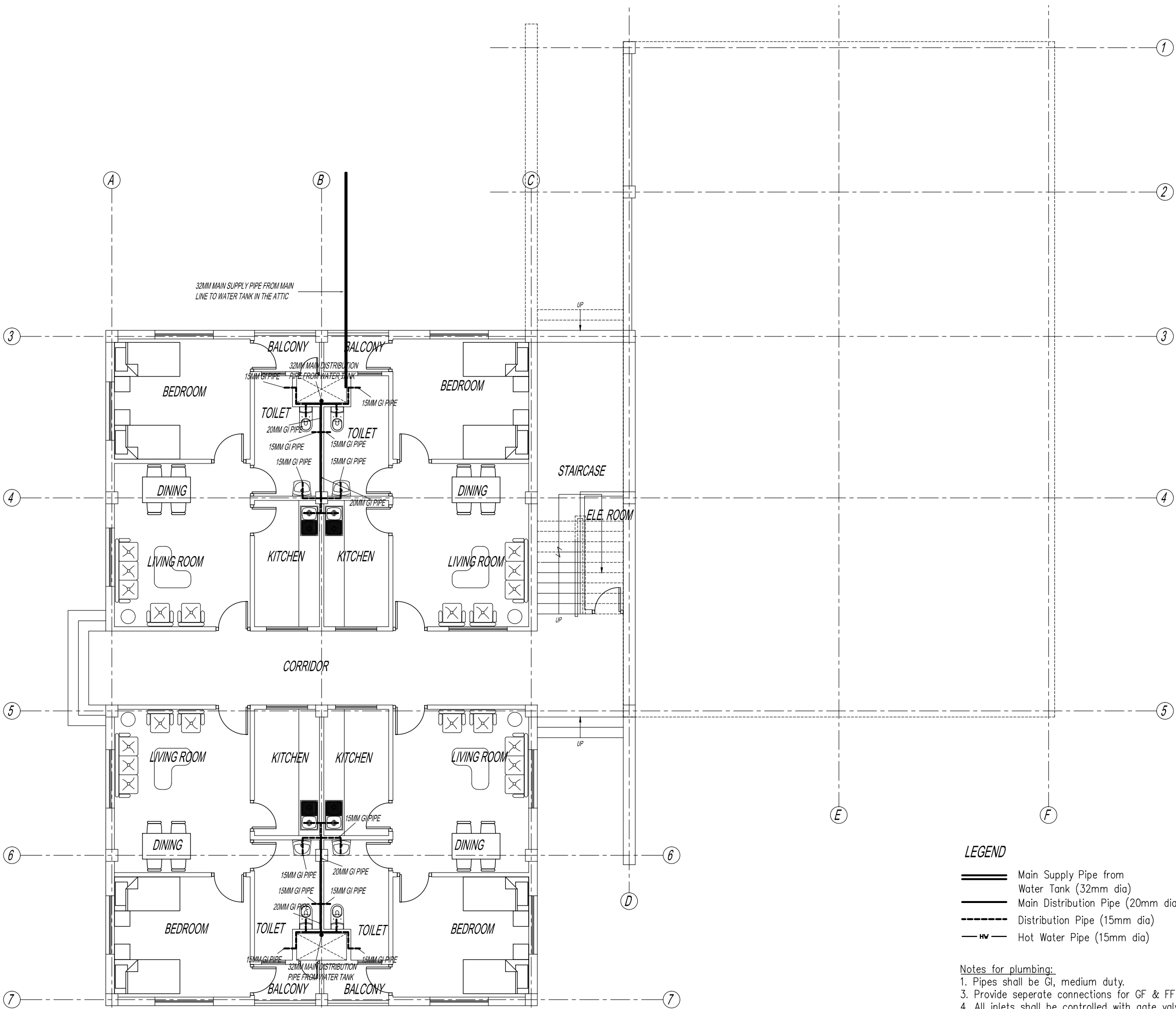
DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

PLUMBING LAYOUT

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| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ PL01 |
| LEAPP Project Code | ---- |



LEGEND

- Main Supply Pipe from Water Tank (32mm dia)
- Main Distribution Pipe (20mm dia)
- Distribution Pipe (15mm dia)
- Hot Water Pipe (15mm dia)

Notes for plumbing:
1. Pipes shall be GI, medium duty.
3. Provide separete connections for GF & FF
4. All inlets shall be controlled with gate valve as shown in site plan
5. Pressure testing shall be done before concealing the pipes

GROUND FLOOR PLUMBING LAYOUT

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Client

Royal Government of Bhutan Civil Aviation Dep

Aviation Planners & Engineers

Leading Edge Aviation Planning Professionals

Civil Engineering Consultant

Gyaltshen Consultancy

Project Title

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

PLUMBING LAYOUT

Scale NTS

Date SEPTEMBER 1ST 2016

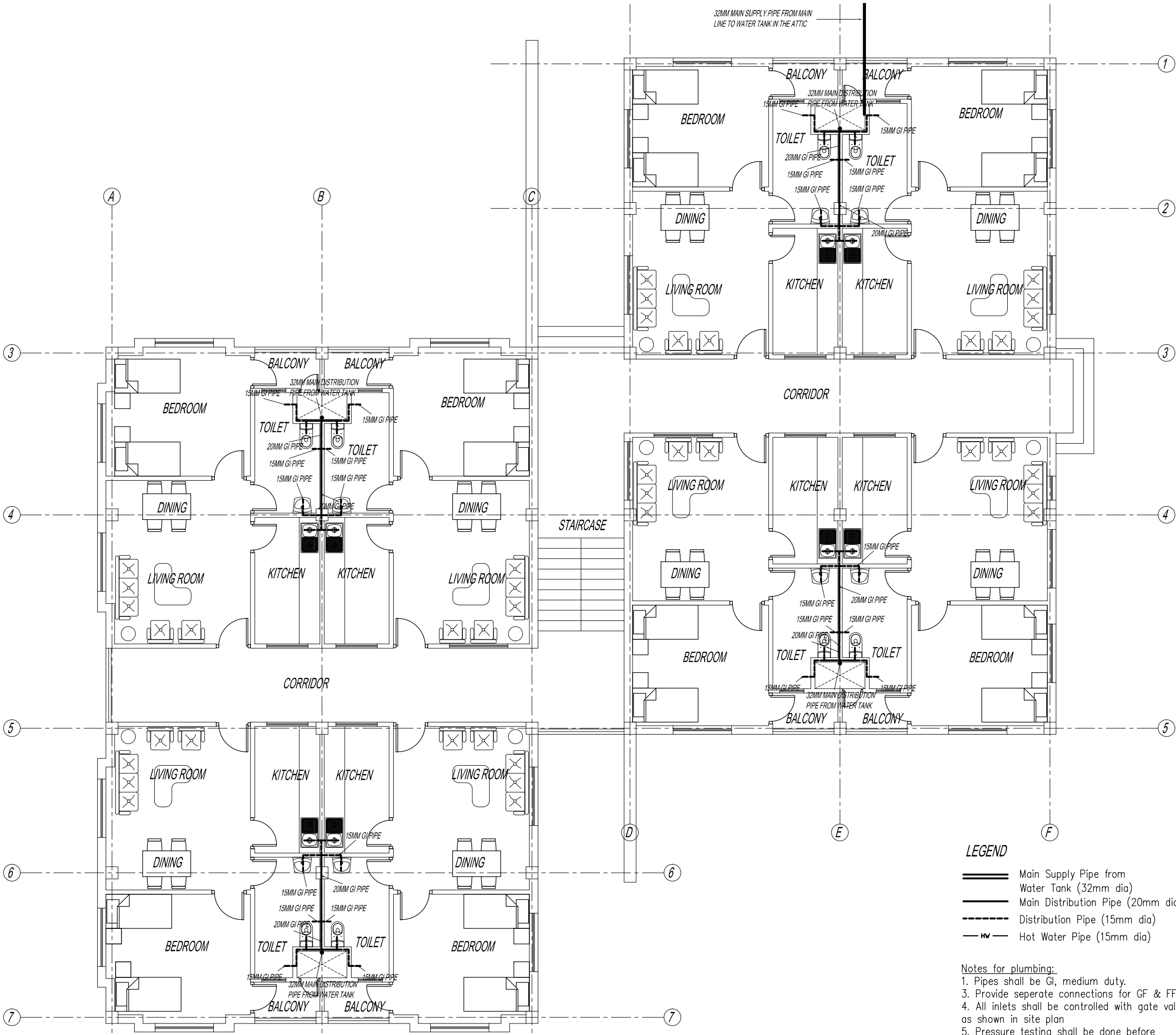
Drawn By TSHEWANG GYELTSSEN

Design By DINESH

Drawing Number

GEL AIRPORT FQ PL02

LEAPP Project Code



FIRST FLOOR PLUMBING LAYOUT

LEGEND

- Main Supply Pipe from Water Tank (32mm dia)
- Main Distribution Pipe (20mm dia)
- - - Distribution Pipe (15mm dia)
- HW — Hot Water Pipe (15mm dia)

Notes for plumbing:

1. Pipes shall be GI, medium duty.
2. Provide separate connections for GF & FF
3. Provide separate connections for GF & FF
4. All inlets shall be controlled with gate valve as shown in site plan
5. Pressure testing shall be done before concealing the pipes



ROYAL GOVERNMENT OF BHUTAN
CIVIL AVIATION DEPARTMENT

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Client
Royal Government of Bhutan Civil Aviation Dep
Aviation Planners & Engineers
Leading Edge Aviation Planning Professionals
Civil Engineering Consultant
Gyaltshen Consultancy

Project Title

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

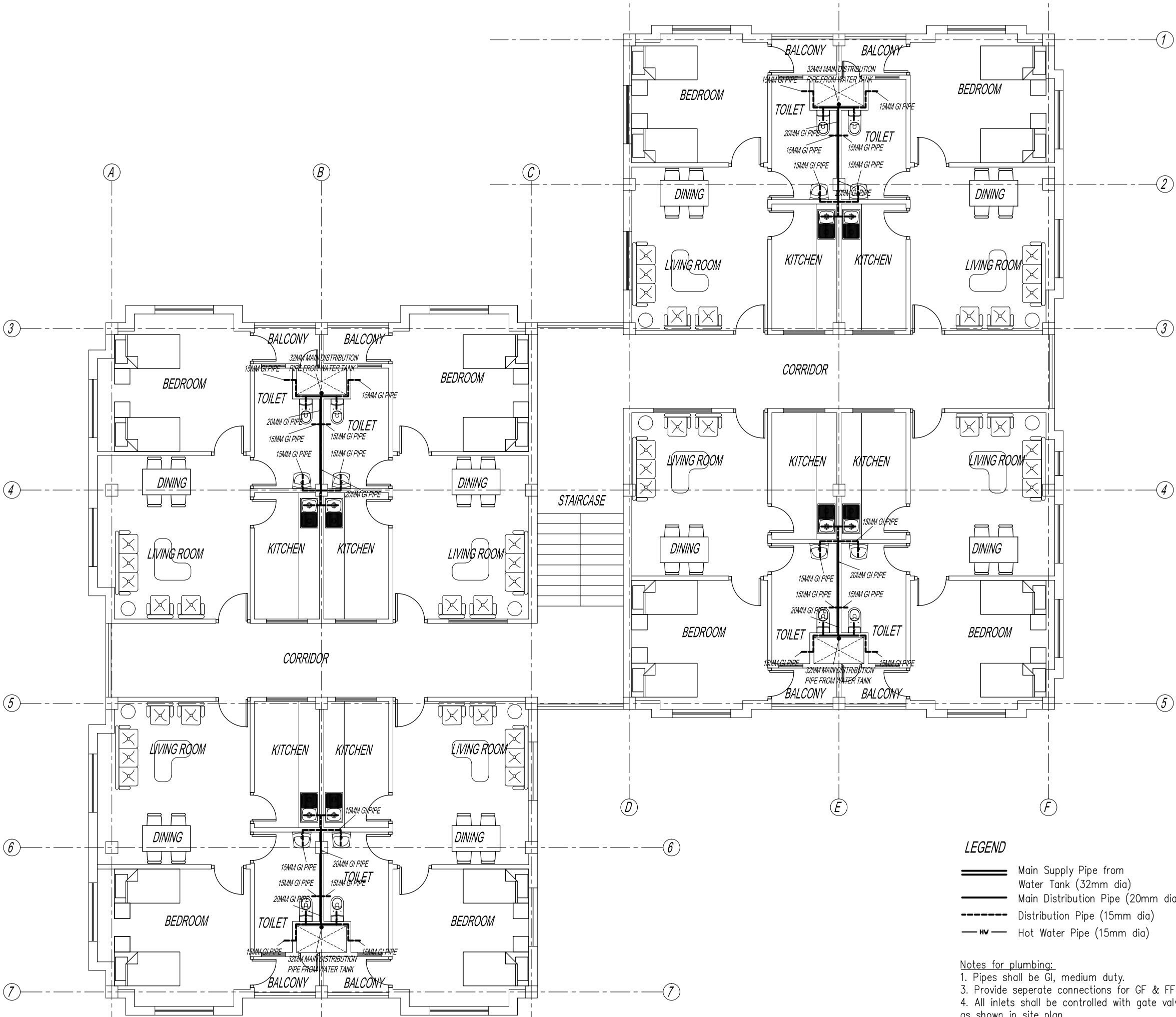
DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

PLUMBING LAYOUT

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| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ PL03 |
| LEAPP Project Code | ---- |

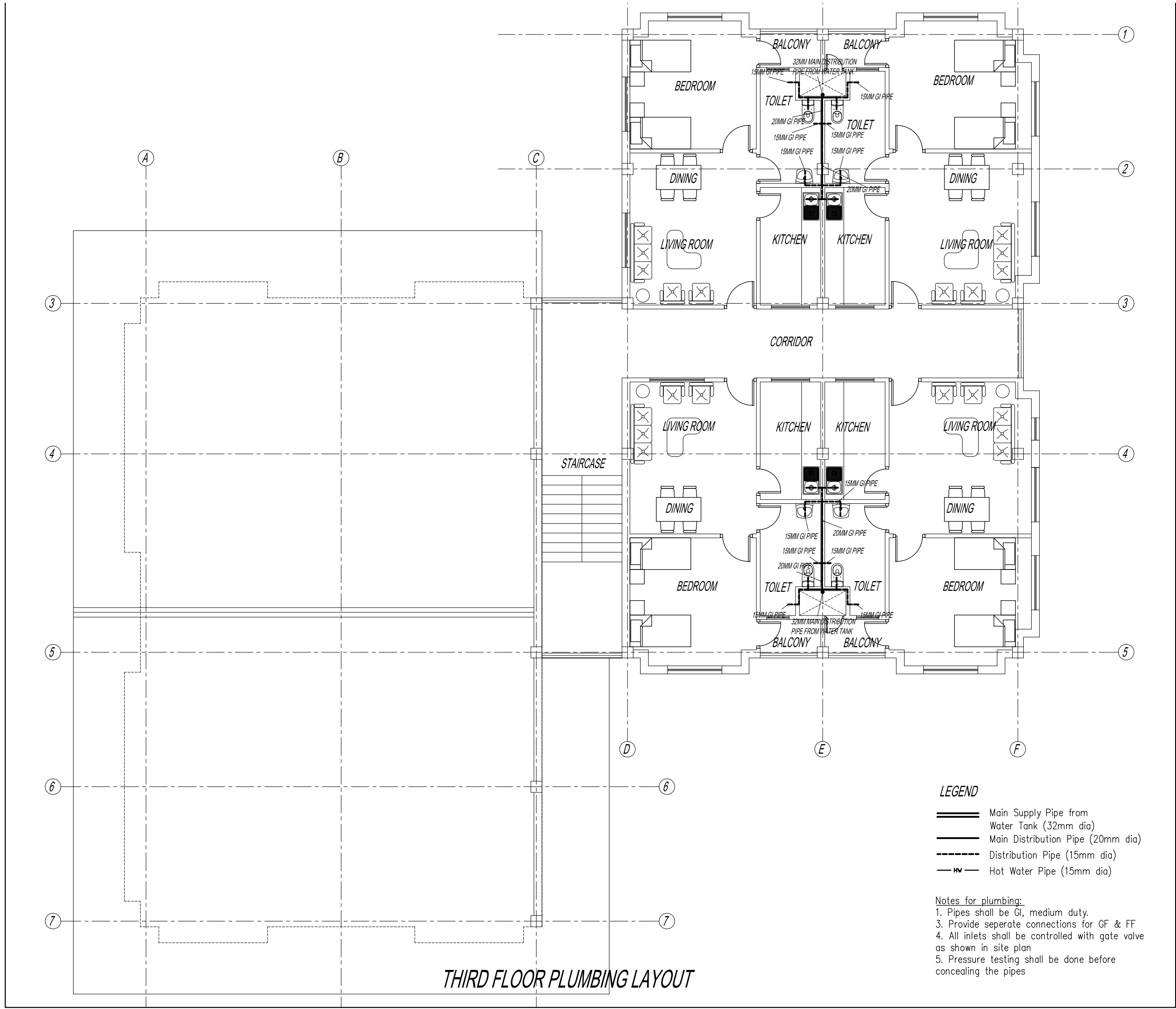


SECOND FLOOR PLUMBING LAYOUT

LEGEND

- Main Supply Pipe from Water Tank (32mm dia)
- Main Distribution Pipe (20mm dia)
- Distribution Pipe (15mm dia)
- Hot Water Pipe (15mm dia)

Notes for plumbing:
1. Pipes shall be GI, medium duty.
3. Provide separete connections for GF & FF
4. All inlets shall be controlled with gate valve as shown in site plan
5. Pressure testing shall be done before concealing the pipes



THIRD FLOOR PLUMBING LAYOUT

LEGEND

- Main Supply Pipe from Water Tank (32mm dia)
- Main Distribution Pipe (20mm dia)
- Distribution Pipe (15mm dia)
- Hot Water Pipe (15mm dia)

Notes for plumbing:
1. Pipes shall be GI, medium duty.
3. Provide separete connections for GF & FF
4. All inlets shall be controlled with gate valve as shown in site plan
5. Pressure testing shall be done before concealing the pipes



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CIVIL AVIATION DEPARTMENT

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| Client | Royal Government of Bhutan Civil Aviation Dep |
| Aviation Planners & Engineers | Leading Edge Aviation Planning Professionals |
| Civil Engineering Consultant | Gyaltshen Consultancy |
| Project Title | |

GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

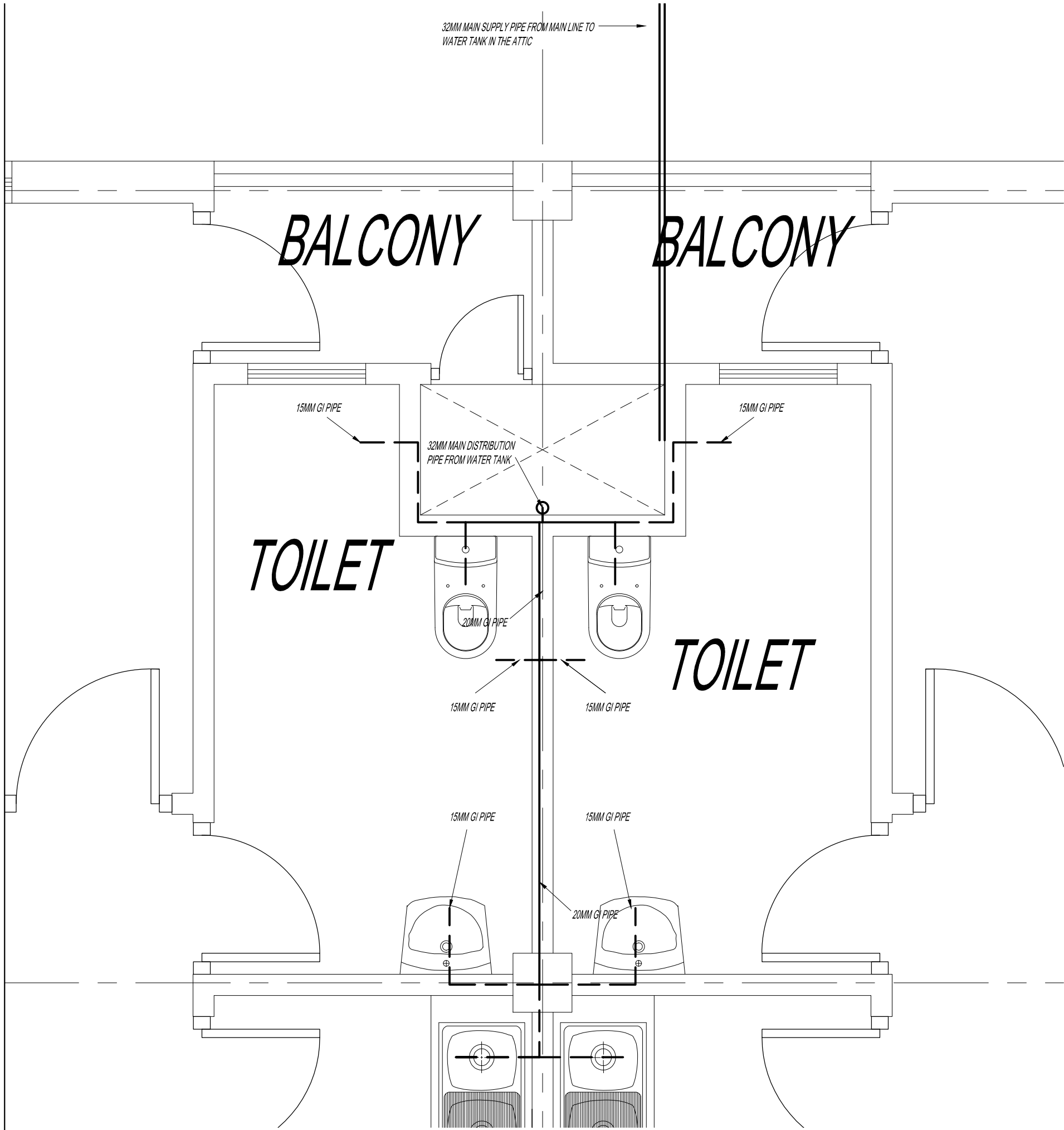
DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

PLUMBING LAYOUT

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| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSHEWANG GYELTSHEN |
| Design By | DINESH |
| Drawing Number | GEL AIRPORT FQ PL04 |
| LEAPP Project Code | ---- |



TYPICAL PLUMBING LAYOUT DETAIL

LEGEND

- Main Supply Pipe from Water Tank (32mm dia)
- Main Distribution Pipe (20mm dia)
- Distribution Pipe (15mm dia)
- Hot Water Pipe (15mm dia)

Notes for plumbing:
1. Pipes shall be GI, medium duty.
3. Provide separete connections for GF & FF
4. All inlets shall be controlled with gate valve as shown in site plan
5. Pressure testing shall be done before concealing the pipes



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CIVIL AVIATION DEPARTMENT

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GELEPHU DOMESTIC AIRPR
DESIGN & SUPERVISION

DESIGN OF SECURITY
QUARTERS.

Drawing Title

FAMILY QUARTER

PLUMBING LAYOUT

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| Scale | NTS |
| Date | SEPTEMBER 1ST 2016 |
| Drawn By | TSEHWANG GYELTSSEN |
| Design By | DINESH |
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