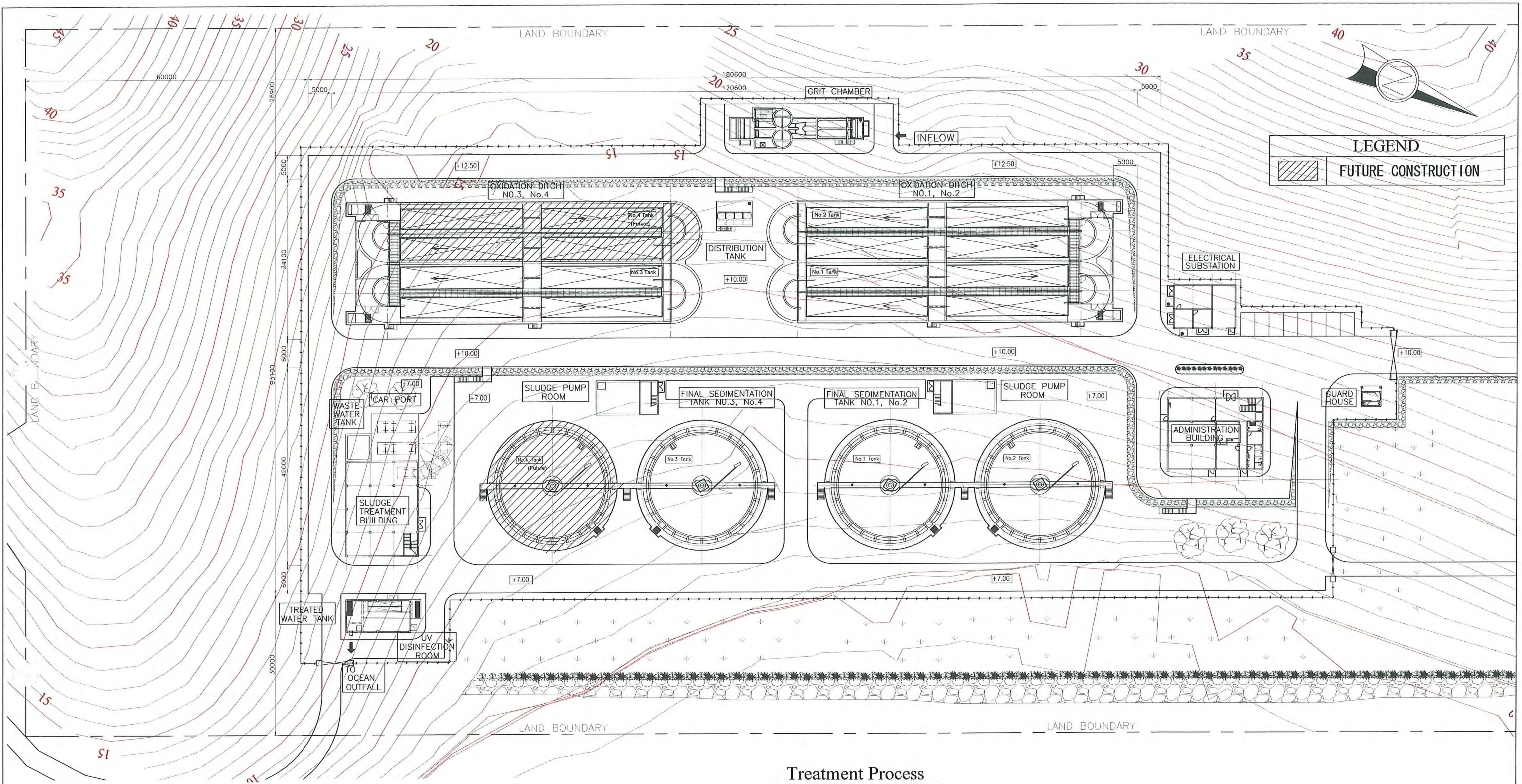


LIST OF TENDER DRAWINGS

| Drawing No. | Title   | Scale     | Drawing No.  | Title   | Scale       |
|-------------|---|-----------|--------------|---|-------------|
|             | <b>&lt;SEWAGE TREATMENT PLANT&gt;</b>                       |           |              | <b>&lt; ADMINISTRATION BUILDING cont'd &gt;</b>               |             |
|             | <b>General</b>  |           | STP-AB-A008  | Doors/Windows Schedule  | 1/25, 1/50  |
|             |   |           | STP-AB-A009  | Step & Furniture Details                                      | 1/25, 1/50  |
|             |   |           | STP-AB-A010  | Gr. Floor Ceiling grid & framing                              | 1/100       |
| STP-GE-001  | General Layout Plan   | 1/800     | STP-AB-A011  | Upper Floor Ceiling grid & framing                            | 1/100       |
| STP-GE-002  | Process Flow Diagram  | Non       |              |   |             |
| STP-GE-003  | Hydraulic Profile   | (H) 1/100 |              | <b>&lt; ELECTRICAL SUB STATION &gt;</b>                       |             |
|             |   |           | STP-ES-A001  | Floor Plan  | 1/100       |
|             | <b>Civil Works</b>  |           | STP-ES-A002  | Elevations  | 1/100       |
|             |   |           | STP-ES-A003  | Section A & Details   | 1/50        |
| STP-GC-C001 | Grit Chamber - Plan   | 1/150     |              |   |             |
| STP-GC-C002 | Grit Chamber - Sections                                     | 1/150     |              | <b>&lt; BLOWER / LOCAL CONTROL ROOM &gt;</b>                  |             |
| STP-GC-C003 | Grit Chamber - Corrosion Protection                         | 1/150     | STP-OD-A001  | Floor Plan & Section A  | 1/100       |
| STP-OD-C001 | Oxidation Ditch - Base Plan (Tank No.1 & 2)                 | 1/300     | STP-OD-A002  | Elevations  | 1/100       |
| STP-OD-C002 | Oxidation Ditch - Top Plan (Tank No.1 & 2)                  | 1/300     | STP-OD-A003  | Section B, C & Details  | 1/20, 1/50  |
| STP-OD-C003 | Oxidation Ditch - Sections                                  | 1/300     |              |   |             |
| STP-OD-C004 | Oxidation Ditch - Details                                   | 1/200     |              | <b>&lt; SLUDGE PUMP ROOM &gt;</b>                             |             |
| STP-OD-C005 | Oxidation Ditch - Plan and Section (Tank No.3 & 4)          | 1/300     | STP-SP-A001  | Floor Plan & Elevations                                       | 1/100       |
| STP-FS-C001 | Final Sedimentation Tank - Base Plan (Tank No.1 & 2)        | 1/250     | STP-SP-A002  | Section A, B & Details  | 1/25, 1/50  |
| STP-FS-C002 | Final Sedimentation Tank - Top Plan (Tank No.1 & 2)         | 1/250     |              |   |             |
| STP-FS-C003 | Final Sedimentation Tank - Sections                         | 1/250     |              | <b>&lt; SLUDGE TREATMENT BUILDING &gt;</b>                    |             |
| STP-FS-C004 | Final Sedimentation Tank - Details                          | 1/100     | STP-ST-A001  | Ground Floor Plan   | 1/100       |
| STP-FS-C005 | Final Sedimentation Tank - Plan and Section (Tank No.3 & 4) | 1/400     | STP-ST-A002  | Upper Floor Plan  | 1/100       |
| STP-TW-C001 | UV Disinfection Room & Treated water Tank - Plan            | 1/150     | STP-ST-A003  | Elevations  | 1/150       |
| STP-TW-C002 | UV Disinfection Room & Treated water Tank - Section         | 1/150     | STP-ST-A004  | Section A & C   | 1/100       |
| STP-SD-001  | Steel Grating Cover Details                                 | As Shown  | STP-ST-A005  | Section B & D   | 1/100       |
| STP-SD-002  | FRP Cover Details   | As Shown  | STP-ST-A006  | Mezzanane Floor & Escape Ladder Details                       | 1/50        |
| STP-SD-003  | Steel handrail Details                                      | As Shown  | STP-ST-A007  | Wastewater Tank Detail  | 1/100       |
| STP-SD-004  | Staircase Antiskid & Step Ladder Details                    | 1/15      |              |   |             |
| STP-SD-005  | Hoist rail Details  | 1/20      |              | <b>&lt; UV DISINFECTION ROOM &gt;</b>                         |             |
| STP-SD-006  | Wooden Stop Logs Details 1/2                                | 1/10      | STP-UV-A001  | Floor Plans   | 1/25, 1/100 |
| STP-SD-007  | Wooden Stop Logs Details 2/2                                | 1/10      | STP-UV-A002  | Elevations & Sections   | 1/50, 1/100 |
| STP-SD-008  | Expansion and Contraction Joint Details                     | 1/10      |              |   |             |
|             |   |           | STP-GU-A001  | GUARD HOUSE - Plan, Elevations & Sections                     | 1/50, 1/100 |
|             | <b>Building Works</b>                                       |           |              |   |             |
|             |   |           | STP-CP-A001  | CAR PORT ROOF - Plan, Elevations & Sections                   | 1/100       |
|             | <b>&lt; ADMINISTRATION BUILDING &gt;</b>                    |           | STP-GC-A001  | GRIT CHAMBER STEP ROOF - Plan, Elevations, Sections & Details | 1/50        |
| STP-AB-A001 | Ground Floor Plan   | 1/100     |              |   |             |
| STP-AB-A002 | Upper Floor Plan  | 1/100     | STP-STD-A001 | STANDARD DRAWING - Doors / windows & Hood details             | 1/25        |
| STP-AB-A003 | Elevations  | 1/150     |              |   |             |
| STP-AB-A004 | Sections A & B  | 1/100     |              |   |             |
| STP-AB-A005 | Upper Floor, Free Access floor framing det.                 | 1/100     |              |   |             |
| STP-AB-A006 | Entry Sections & Details                                    | 1/50      |              |   |             |
| STP-AB-A007 | Toilet & Shower Details                                     | 1/25      |              |   |             |





**General Notes**

1. Survey Datum is using PAGA GRID as horizontal datum and CDW as vertical datum established by Common Wealth Department of Works.
2. HWL +1.0m (High Water Level) has defined by JICA study team with site survey.

**Treatment Process**

Oxidation Ditch Process

**Design Sewage Flow**


| Item          | Ultimate (2020) | Proposed Project |
|---------------|-----------------|------------------|
| Daily Average | 18,400 ml/day   | 13,800 ml/day    |
| Peak Flow     | 36,800 ml/day   | 27,600 ml/day    |

**Design Sewage Quality**

| Item     | BOD (mg/l) | SS (mg/l) | T-N (mg/l) | Coli-Group (MPM/cm <sup>3</sup> ) | Oil&Grease (mg/l) |
|----------|------------|-----------|------------|-----------------------------------|-------------------|
| Influent | 190        | 180       | 45         | -                                 | -                 |
| Effluent | 20         | 20        | 20         | 3,000                             | 10                |

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - GENERAL LAYOUT PLAN

CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

| REVISIONS |      |             |
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APPROVED by PMU:  
Project Director  
Lot G.Zauya

CHECKED by CONSULTANT  
Project Manager  
T.Fuji

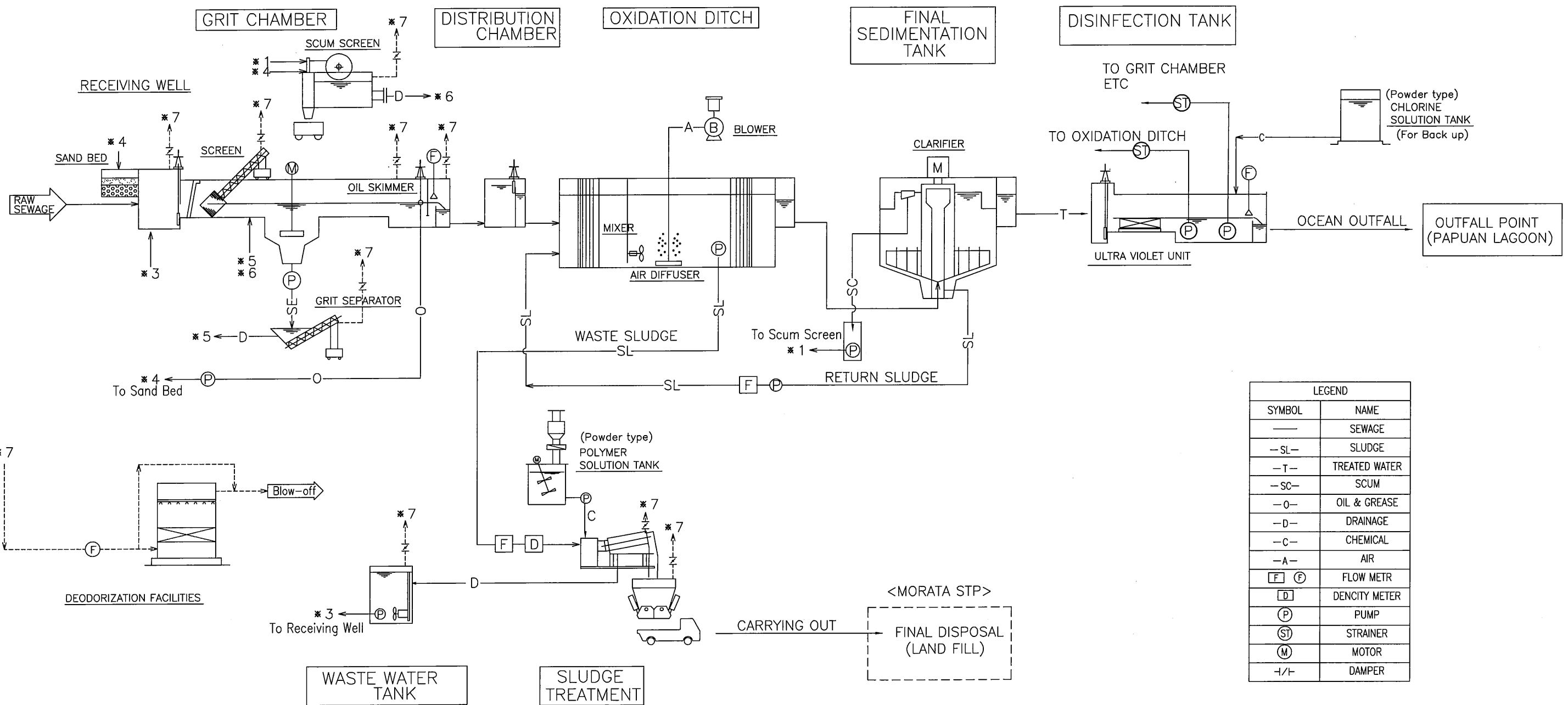
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DATE: 1. Dec 2011

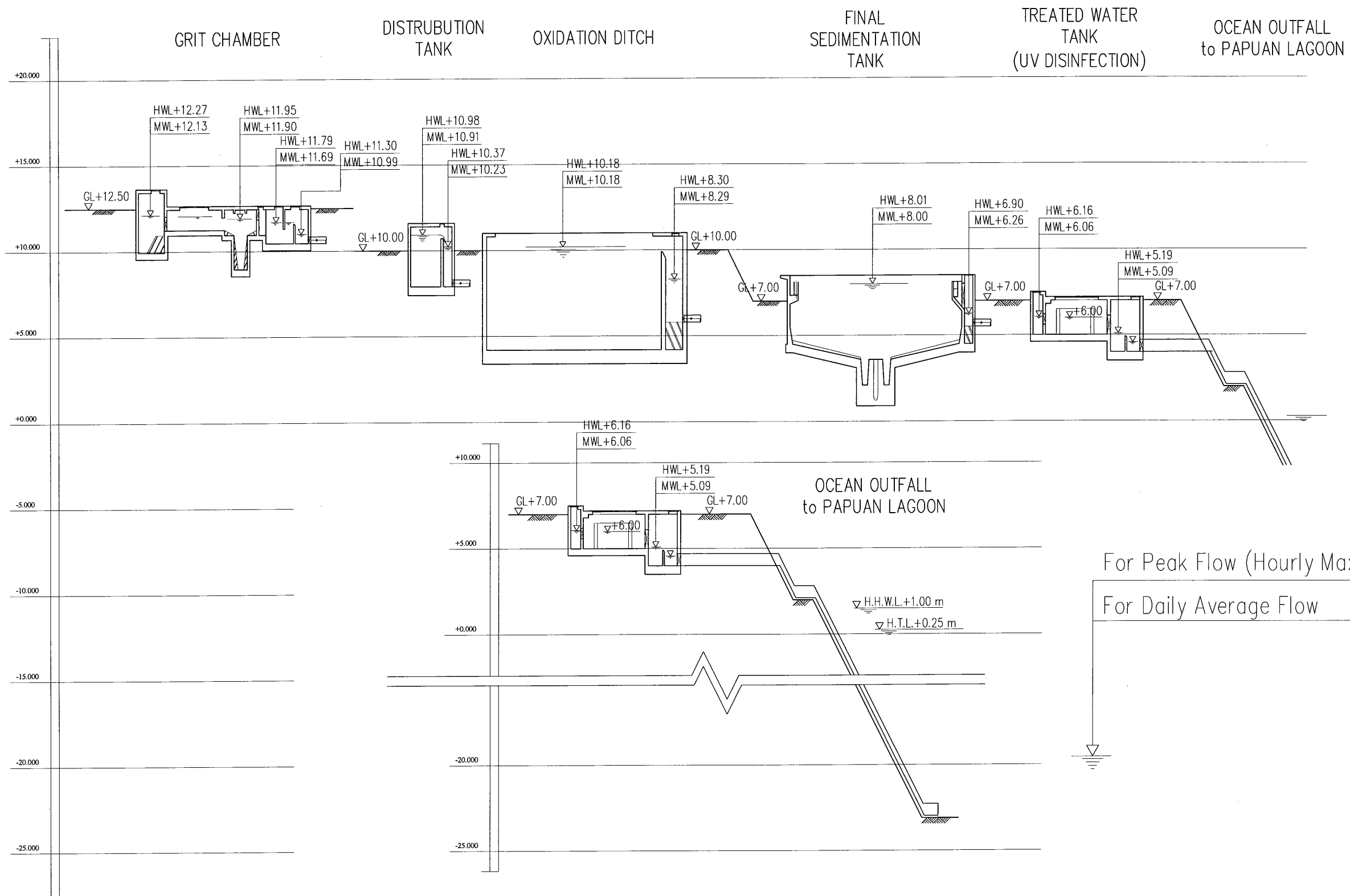
DRAWING NO.: STP-GE-001





| LEGEND  |               |
|---------|---------------|
| SYMBOL  | NAME          |
| —       | SEWAGE        |
| -SL-    | SLUDGE        |
| -T-     | TREATED WATER |
| -SC-    | SCUM          |
| -O-     | OIL & GREASE  |
| -D-     | DRAINAGE      |
| -C-     | CHEMICAL      |
| -A-     | AIR           |
| [F] [P] | FLOW METR     |
| [D]     | DENCITY METER |
| [P]     | PUMP          |
| [ST]    | STRAINER      |
| [M]     | MOTOR         |
| -I/-    | DAMPER        |

| <b>PROJECT:</b> PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |  | <b>TITLE:</b> Kila Kila STP - PROCESS FLOW DIAGRAM   |  |  |                             |                      |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| <b>CLIENT:</b><br>INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU) | <b>CONSULTANTS:</b><br>NJS CONSULTANTS CO., LTD. - JAPAN | <b>NOTES:</b>  |  | <b>APPROVED by PMU:</b><br>Project Director<br>Lot G.Zauya | <b>DATE:</b><br>1. Dec 2011 | <b>SCALE:</b><br>NON |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| JAPAN INTERNATIONAL COOPERATION AGENCY   |  |  |  |  |                             |                      |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP) TITLE: Kila Kila STP - HYDRAULIC PROFILE

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

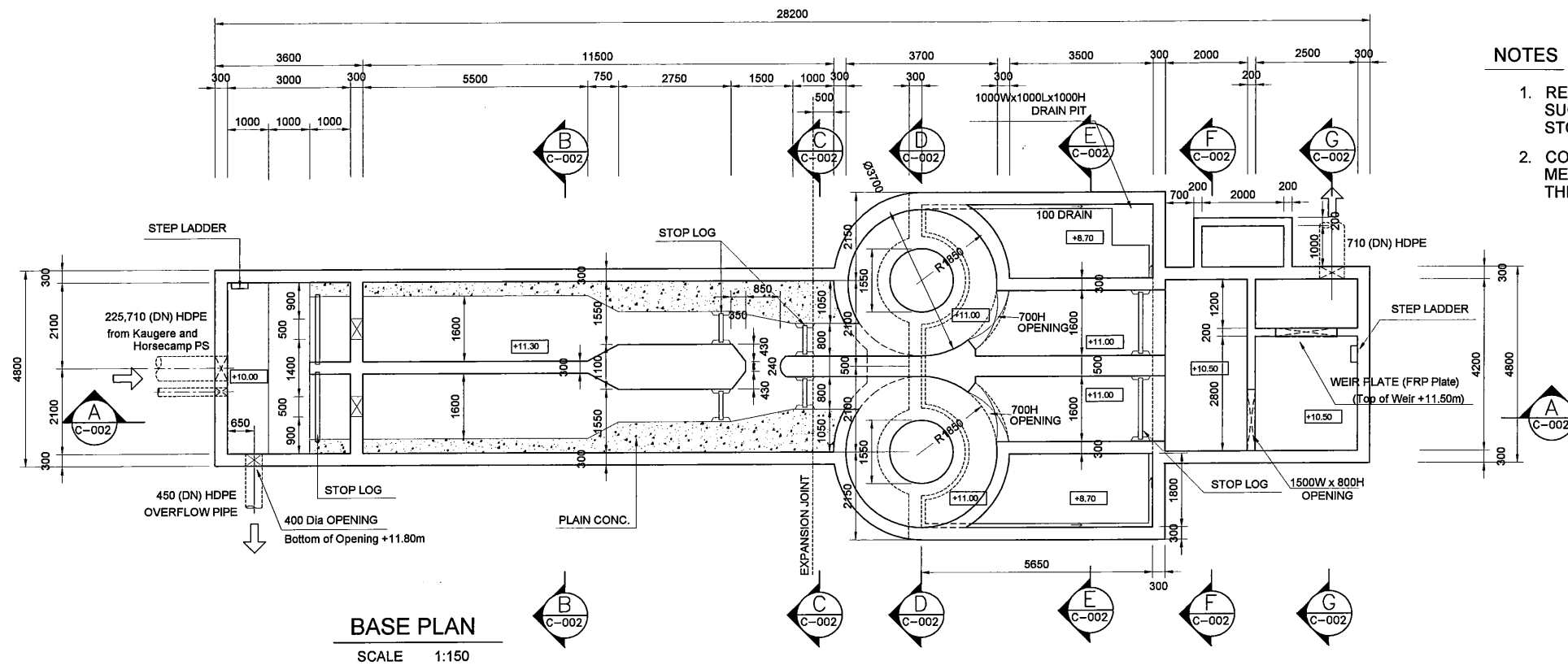
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APPROVED by PMU:  
 Project Director  
 Lot G.Zauya  
 CHECKED by CONSULTANT  
 Project Manager  
 T.Fuji

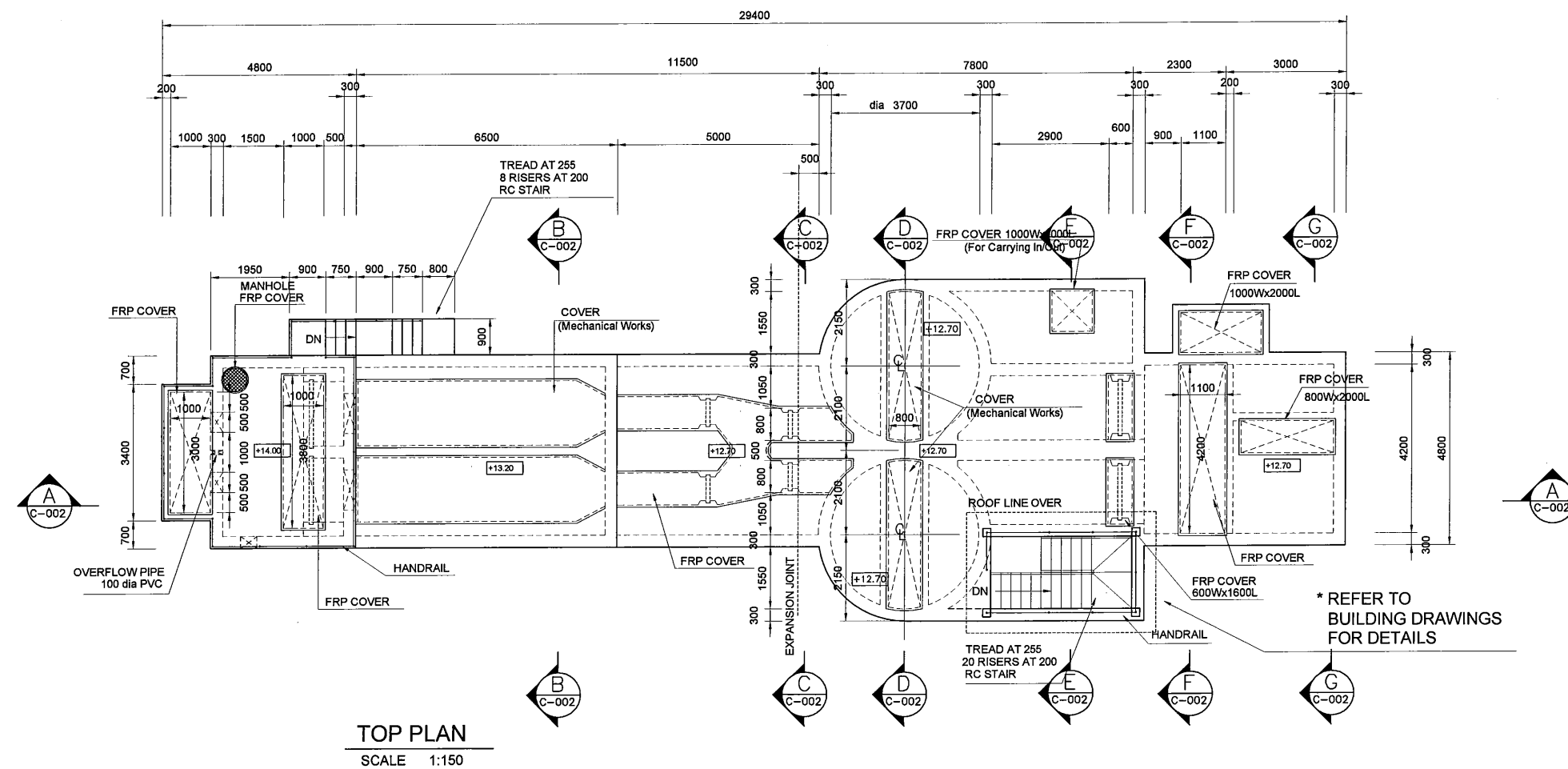
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**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



\* REFER TO BUILDING DRAWINGS FOR DETAILS

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP) TITLE: Kila Kila STP - GRIT CHAMBER PLAN

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS CONSULTANTS CO., LTD. - JAPAN**

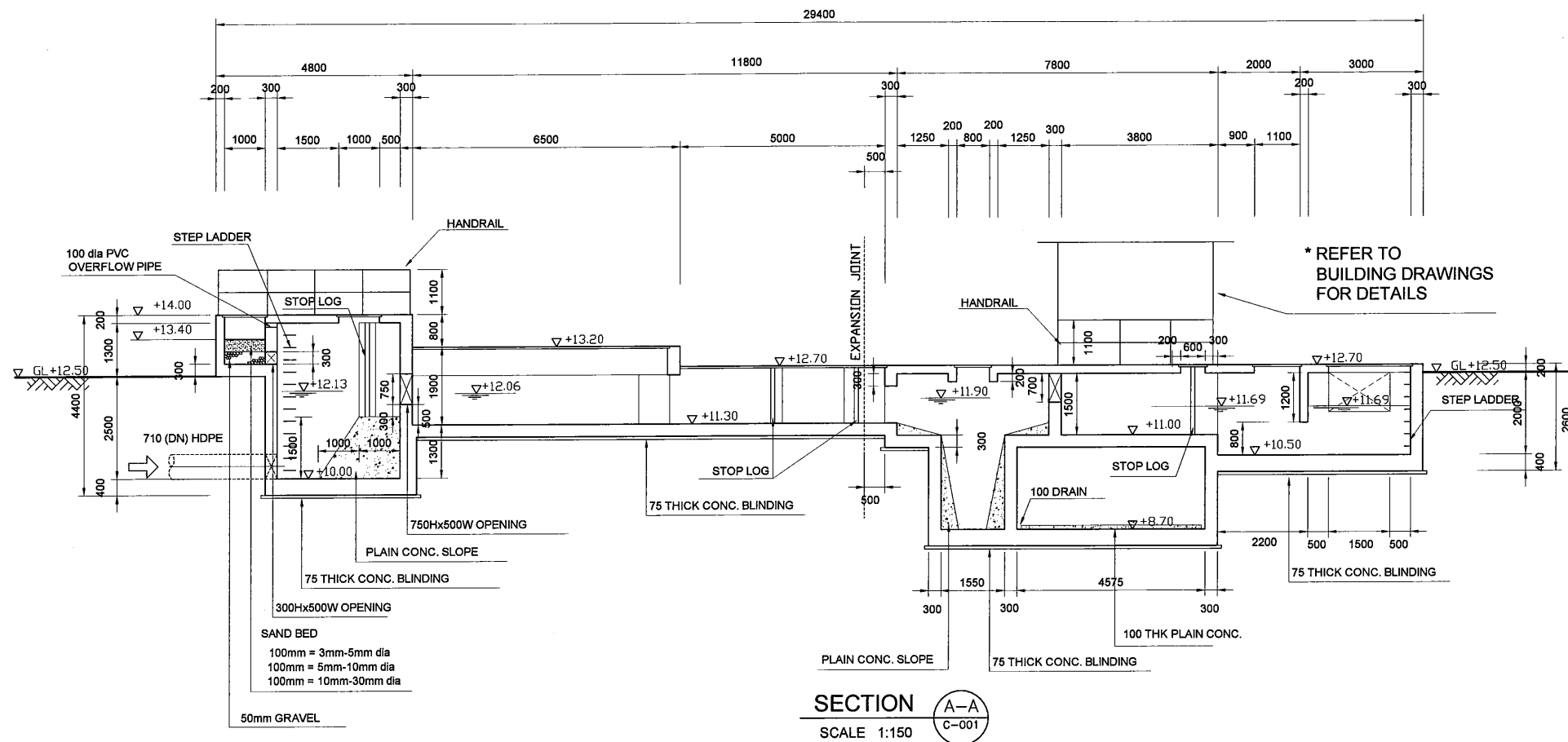
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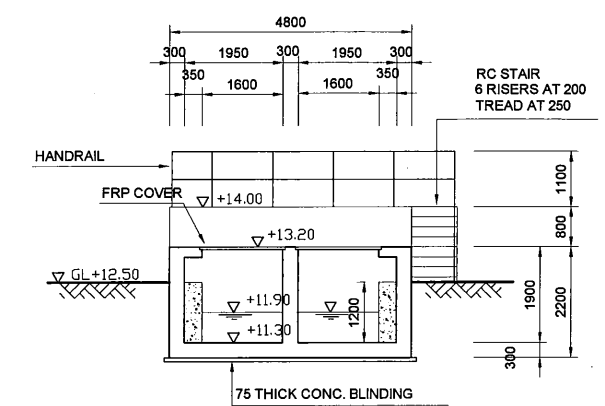
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| CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  | DATE:<br>1. Dec 2011 | DRAWING NO.:<br>STP-GC-C001 |

**NOTES**

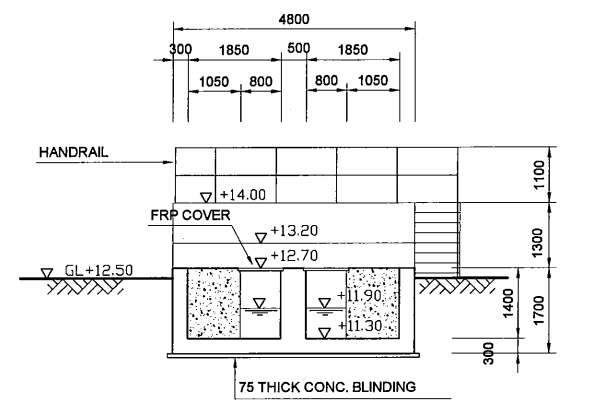
1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



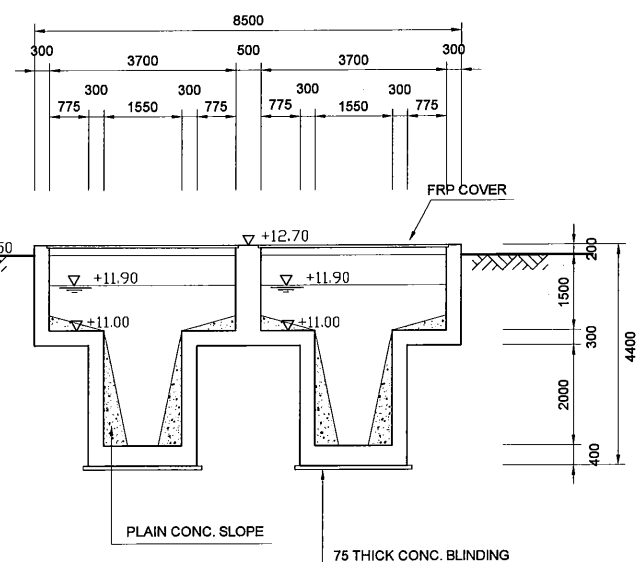
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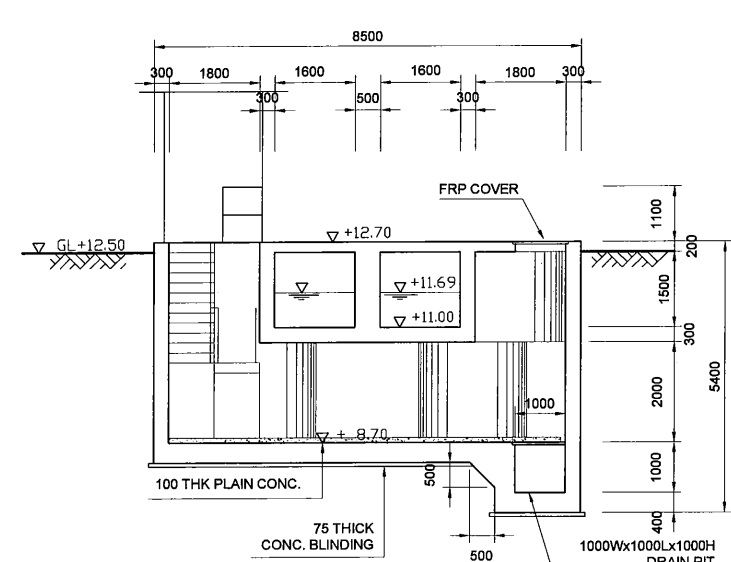
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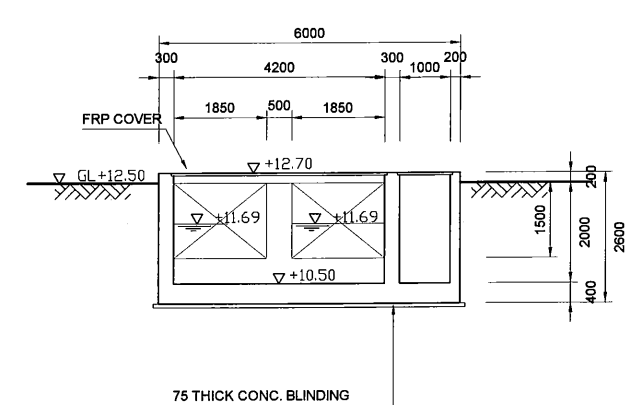
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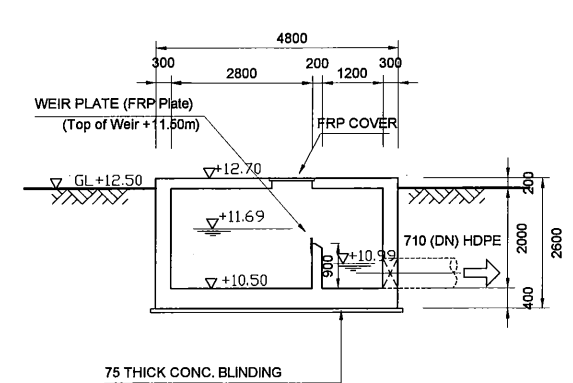
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**SECTION E-E**  
SCALE 1:150  
C-001



**SECTION F-F**  
SCALE 1:150  
C-001



**SECTION G-G**  
SCALE 1:150  
C-001

**PROJECT:** PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

**CLIENT:** INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)

**CONSULTANTS:** NJS CONSULTANTS CO., LTD. - JAPAN

**CLIENT LOGOS:** IPBC, JICA

**CLIENT ADDRESS:** JAPAN INTERNATIONAL COOPERATION AGENCY

**TITLE:** Kila Kila STP - GRIT CHAMBER SECTION

**NOTES:**

| REVISIONS |      |             |
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**APPROVED BY PMU:** Project Director Lot G.Zauya

**CHECKED BY CONSULTANT:** Project Manager T.Fuji

**DATE:** 1. Dec 2011

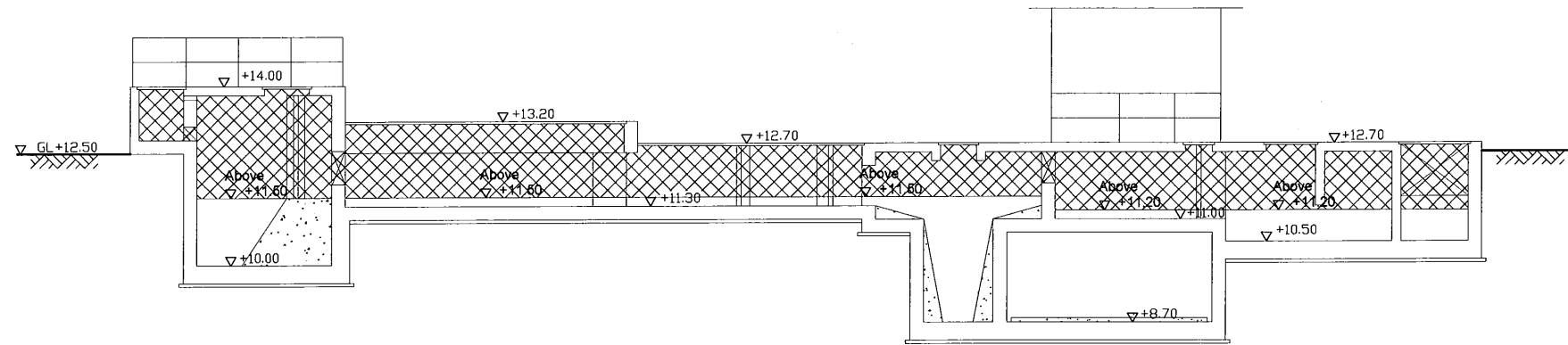
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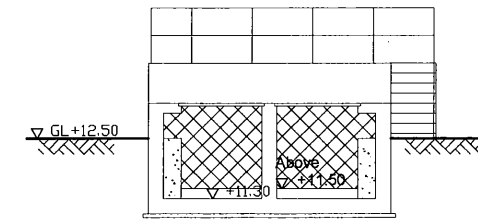
**NOTES**

 AREA of CORROSION PROTECTION

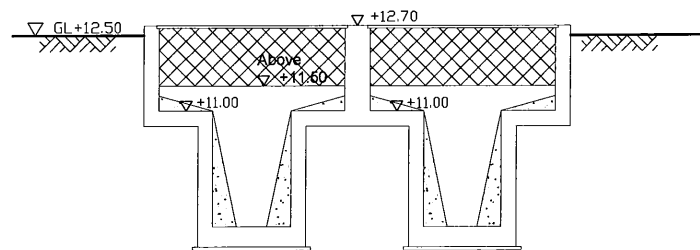
- CORROSION PROTECTION AREA COVERS ALL CONCRETE SURFACE OF TOP, SIDE AND BOTTOM. IT SHALL BE PAINTED BY VINYL ESTER RESIN OR EQUIVALENT, WITH 1mm THICKNESS AFTER HARDENING.



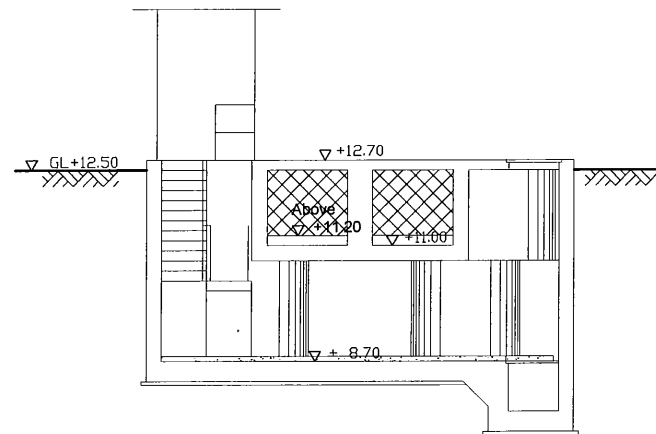
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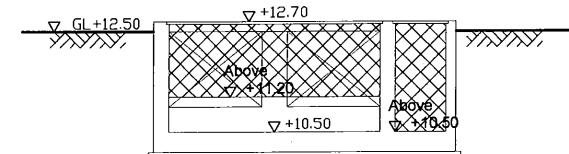
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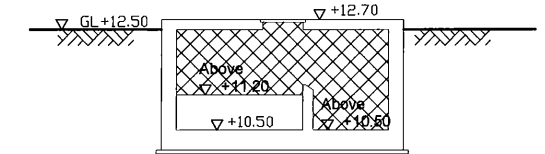
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SECTION E-E  
SCALE 1:150  
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SECTION F-F  
SCALE 1:150  
C-001



SECTION G-G  
SCALE 1:150  
C-001

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - GRIT CHAMBER CORROSION PROTECTION

CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

| REVISIONS |      |             |
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APPROVED by PMU:  
Project Director  
Lot G.Zauya

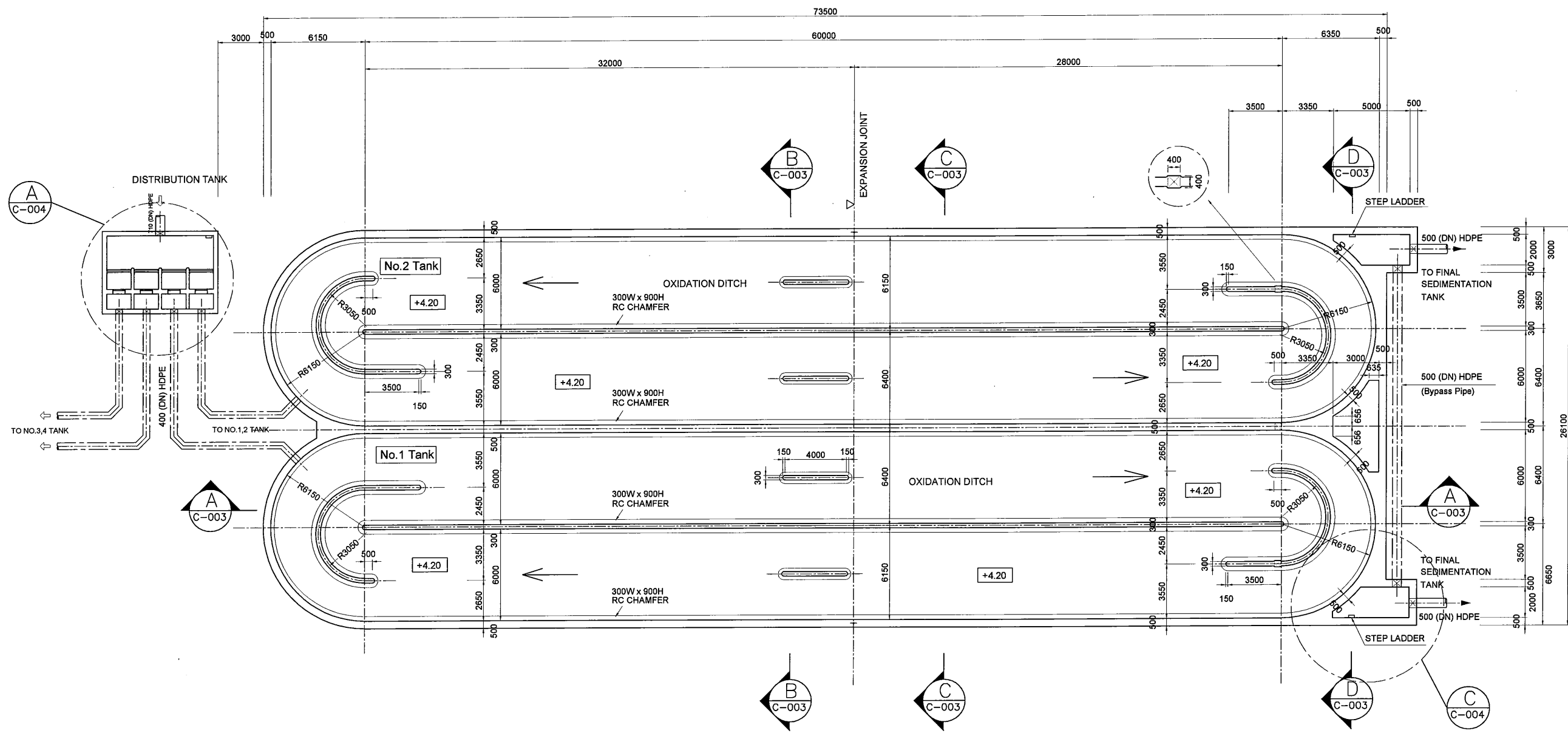
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Project Manager  
T.Fuji

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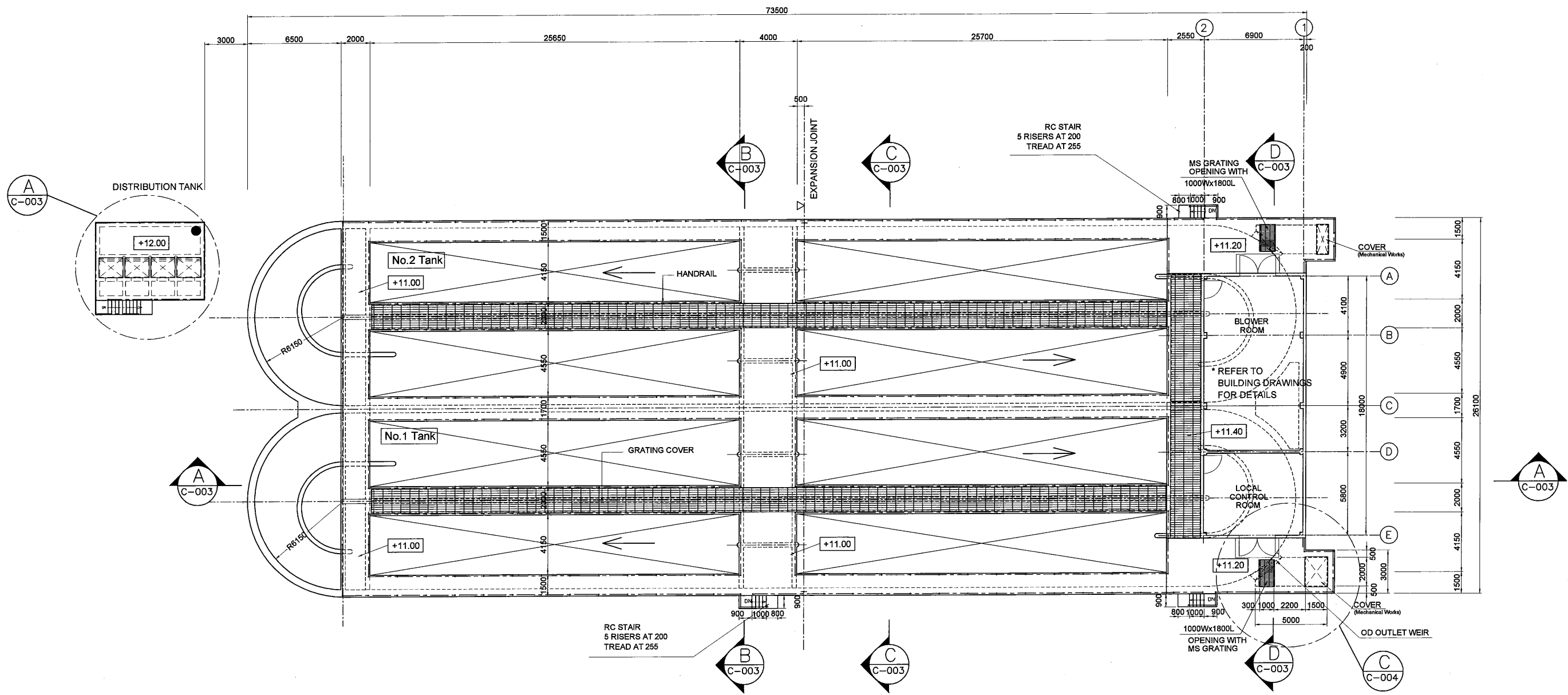
**BASE PLAN**  
SCALE 1:300

**NOTES**

- REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
- CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.

| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - OXIDATION DITCH BASE PLAN (TANK 1,2)   |  |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|--|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | APPROVED by PMU:<br>Project Director<br>Lot G. Zauya |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   | <table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | REVISIONS  |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |
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TOP PLAN  
SCALE 1:300

NOTES

- REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
- CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

TITLE: Kila Kila STP - OXIDATION DITCH TOP PLAN (TANK 1,2)

NOTES:

| REVISIONS |      |             |
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APPROVED by PMU:  
Project Director  
Lot G.Zauya

CHECKED by CONSULTANT  
Project Manager  
T.Fuji

DATE: 1. Dec 2011

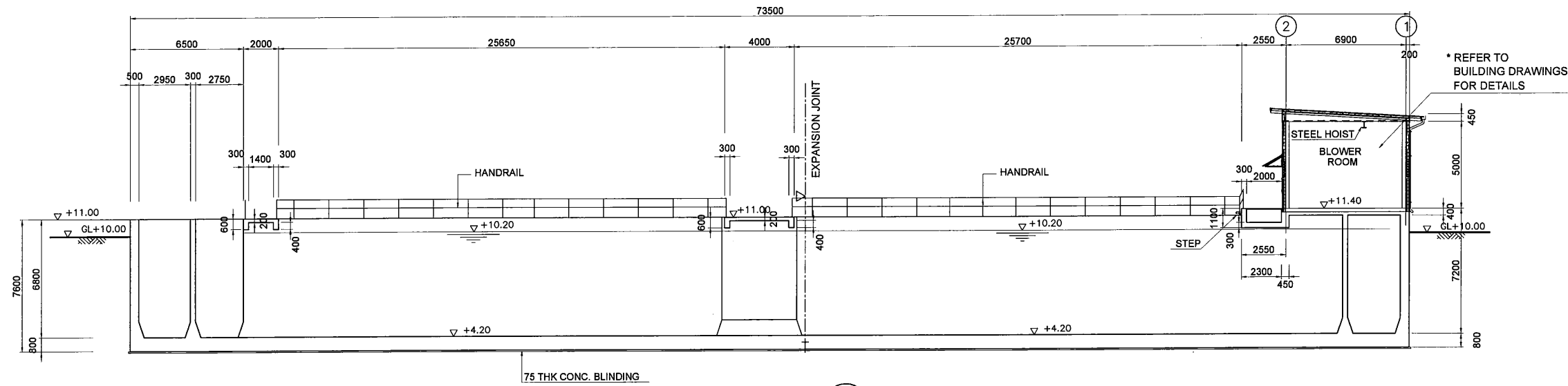
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DATE: 1. Dec 2011

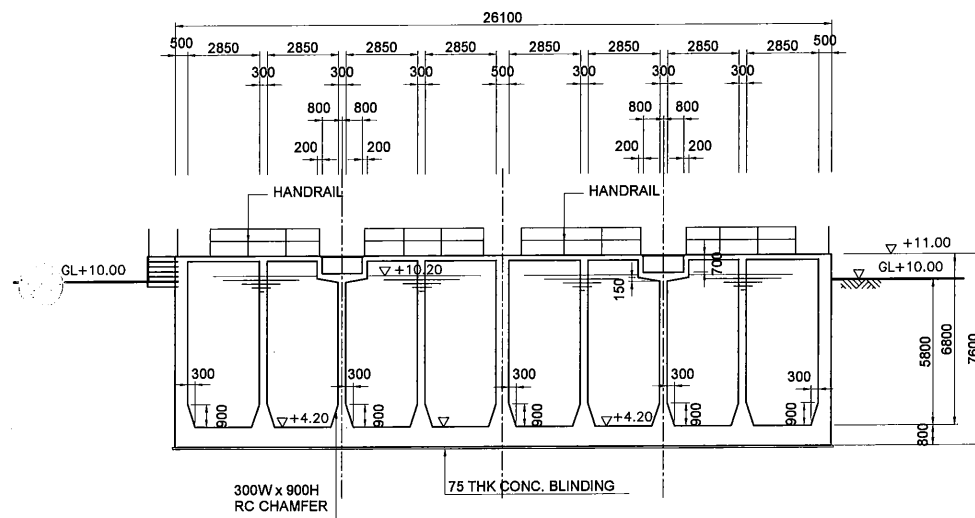
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**NOTES**

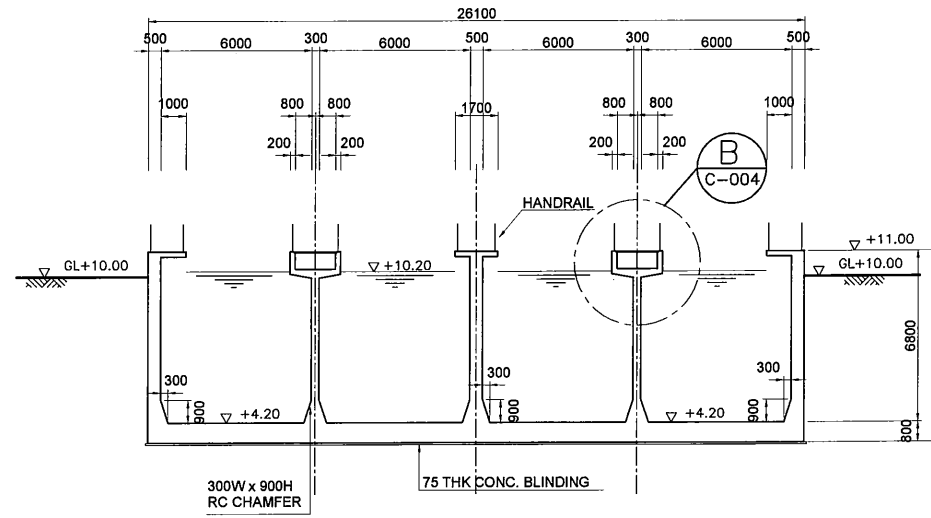
1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



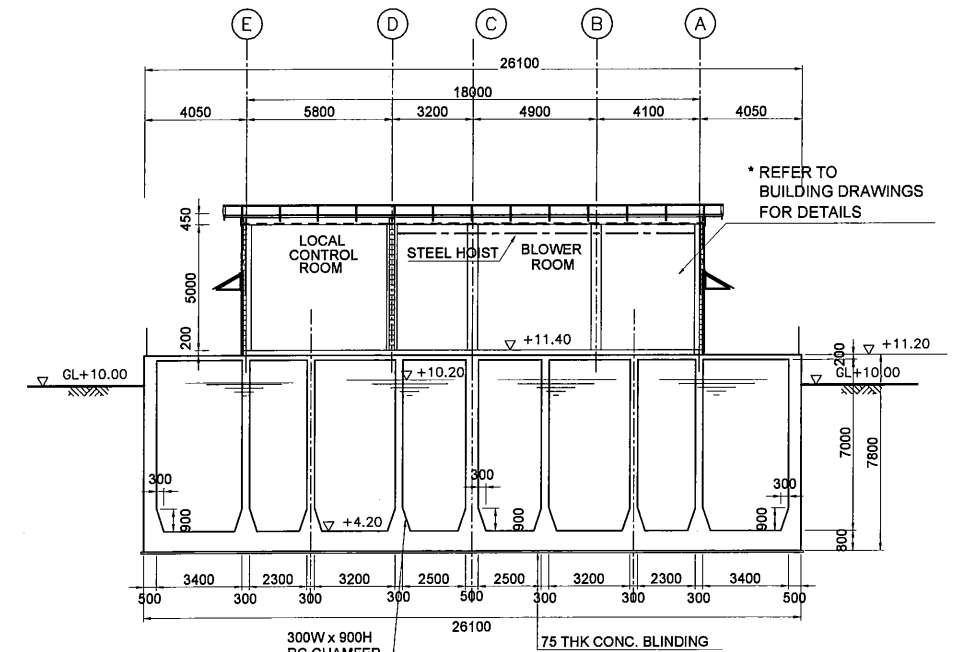
**SECTION A-A**  
SCALE 1:300  
C-001.2



**SECTION B-B**  
SCALE 1:300  
C-001.2



**SECTION C-C**  
SCALE 1:300  
C-001.2

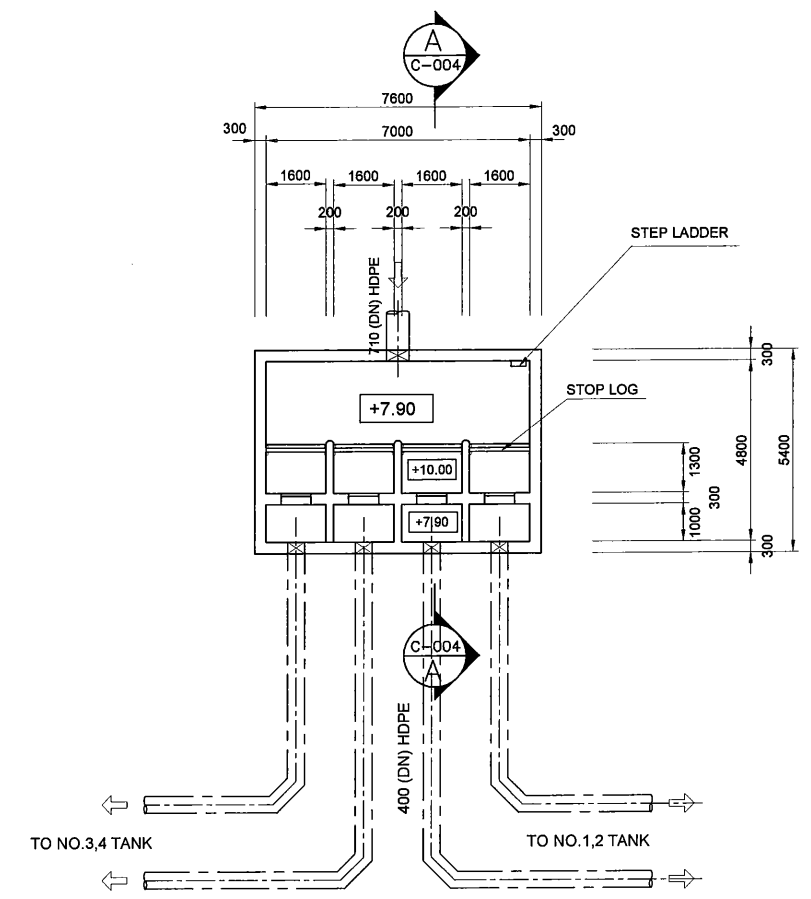


**SECTION D-D**  
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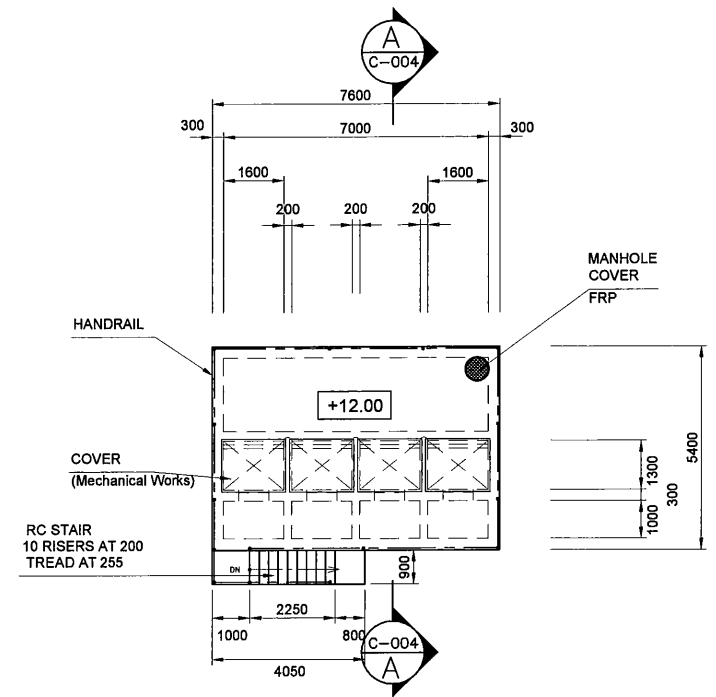
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|---|---|--|---|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - OXIDATION DITCH SECTION |   |
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:   | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya |
|   |   | REVISIONS                                      | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  |
|   |   | DATE: 1. Dec 2011                              | SCALE: 1/300  |
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**NOTES**

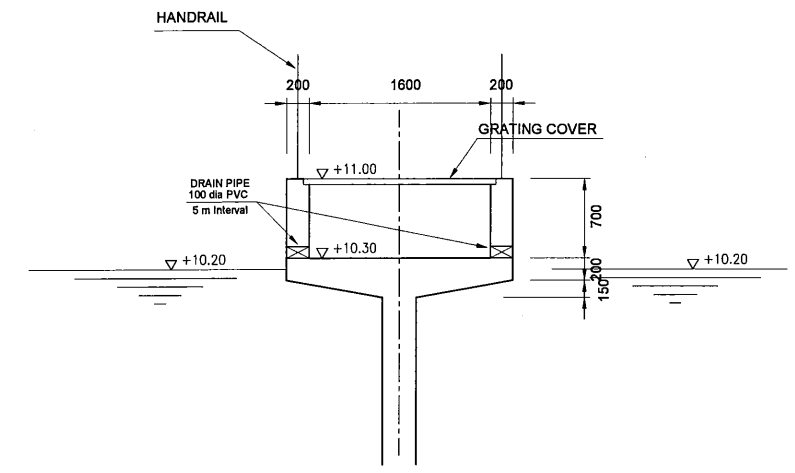
1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



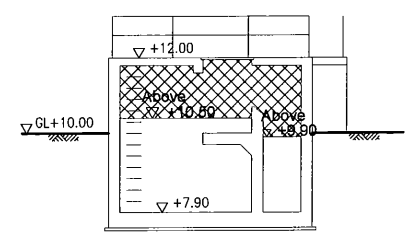
**"A" DETAIL BASE PLAN**  
DISTRIBUTION TANK SCALE 1:200



**"A" DETAIL TOP PLAN**  
DISTRIBUTION TANK SCALE 1:200



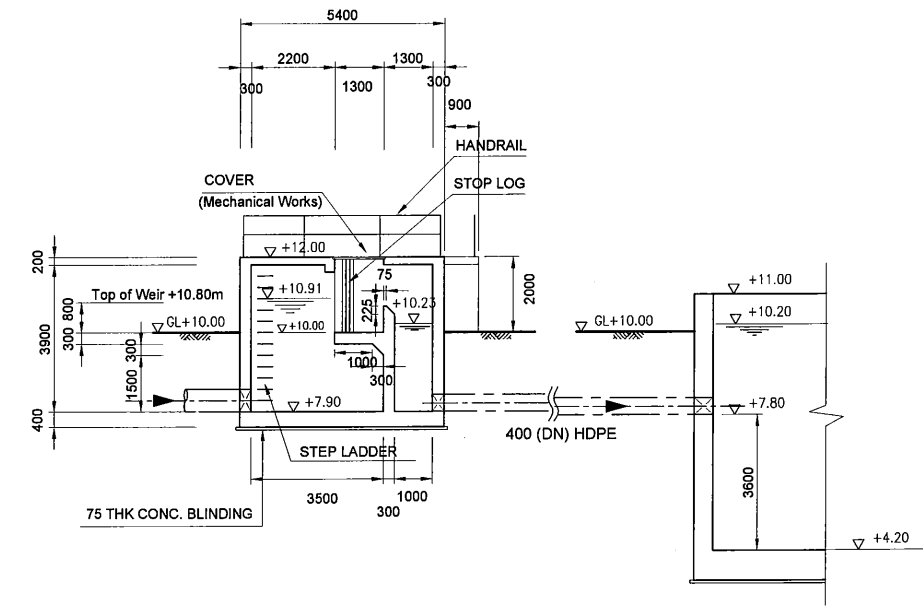
**"C" DETAIL**  
OUTLET PIT SCALE 1:70



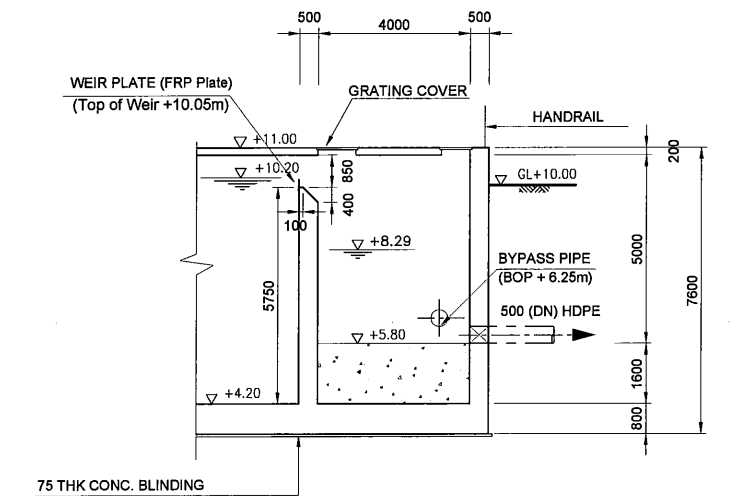
**CORROSION PROTECTION FOR DISTRIBUTION TANK**

AREA of CORROSION PROTECTION

CORROSION PROTECTION AREA COVERS ALL CONCRETE SURFACE OF TOP, SIDE AND BOTTOM. IT SHALL BE PAINTED BY VINYL ESTER RESIN OR EQUIVALENT, WITH 1mm THICKNESS AFTER HARDENING.



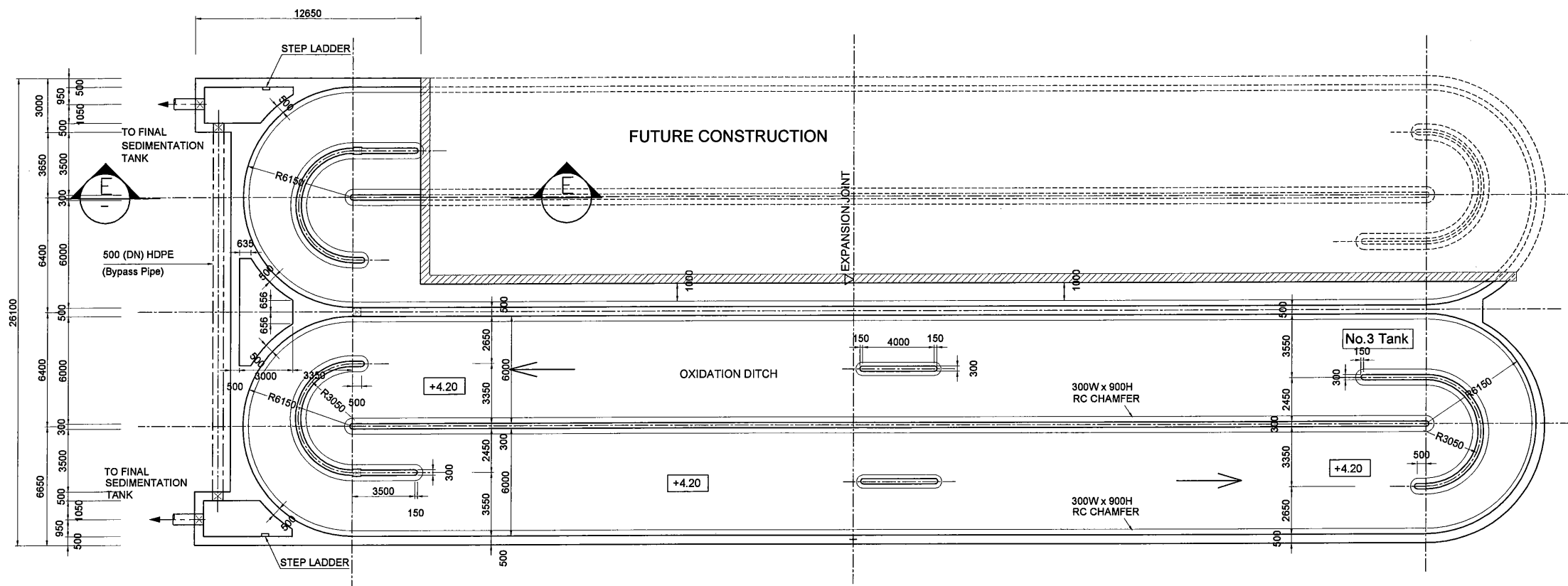
**"A" DETAIL SECTION**  
DISTRIBUTION TANK SCALE 1:200



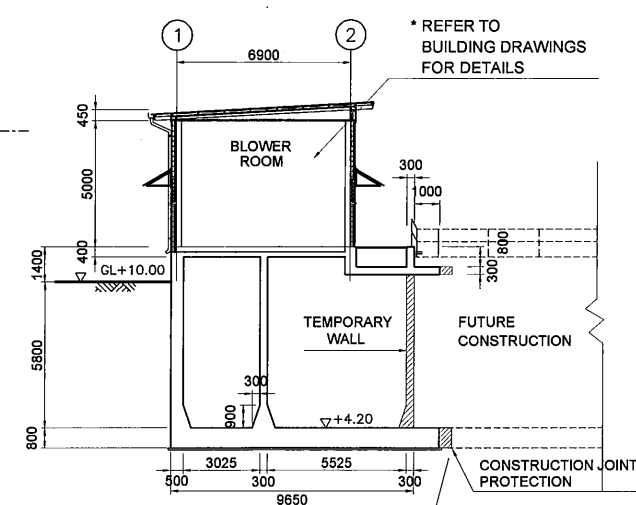
**"C" DETAIL**  
OUTLET PIT SCALE 1:200

| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)  |  | TITLE: Kila Kila STP - OXIDATION DITCH DETAILS  |  |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |
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| CLIENT: IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JICA JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | APPROVED by PMU: Project Director Lot G.Zauya<br>CHECKED by CONSULTANT: Project Manager T.Fuji |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |
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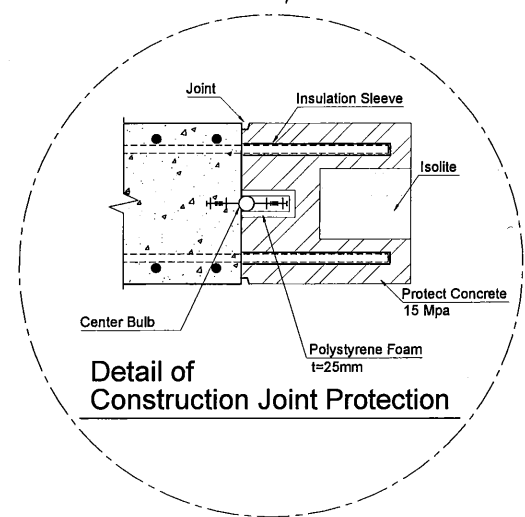




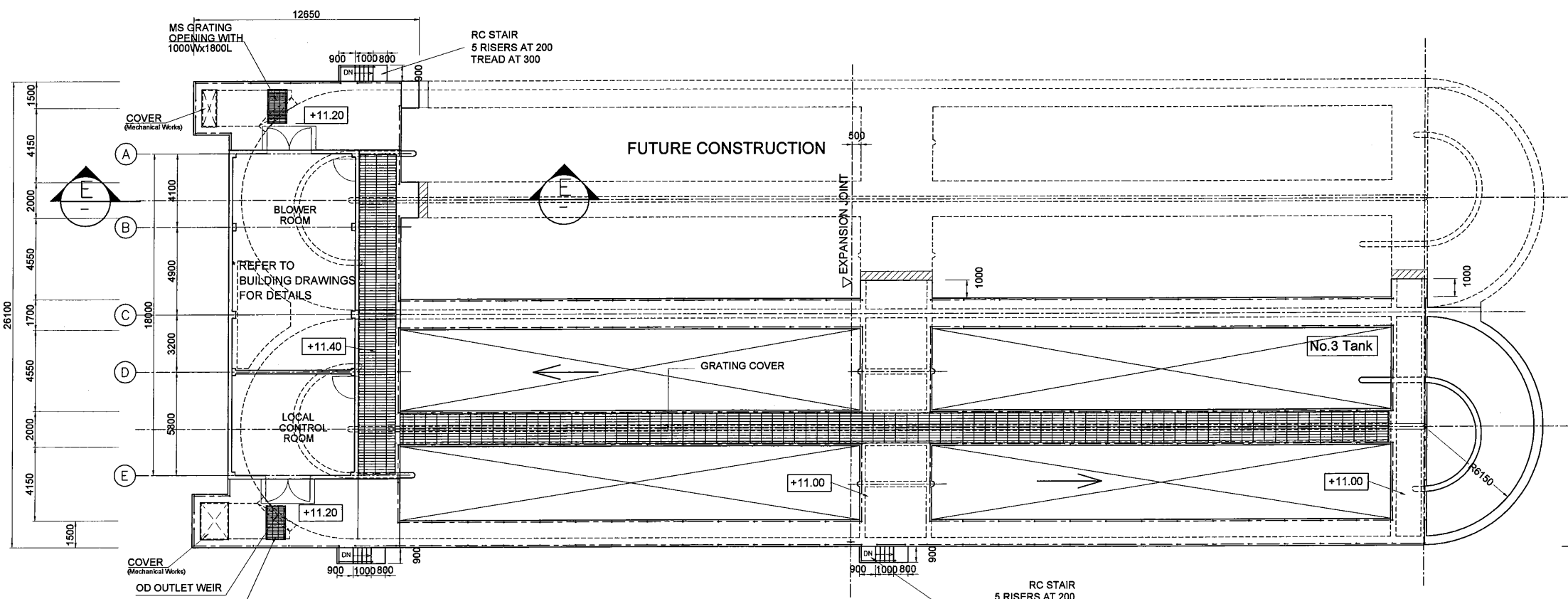
**BASE PLAN**  
SCALE 1:300



**SECTION E-E**  
SCALE 1:300



**Detail of Construction Joint Protection**



**TOP PLAN**  
SCALE 1:300

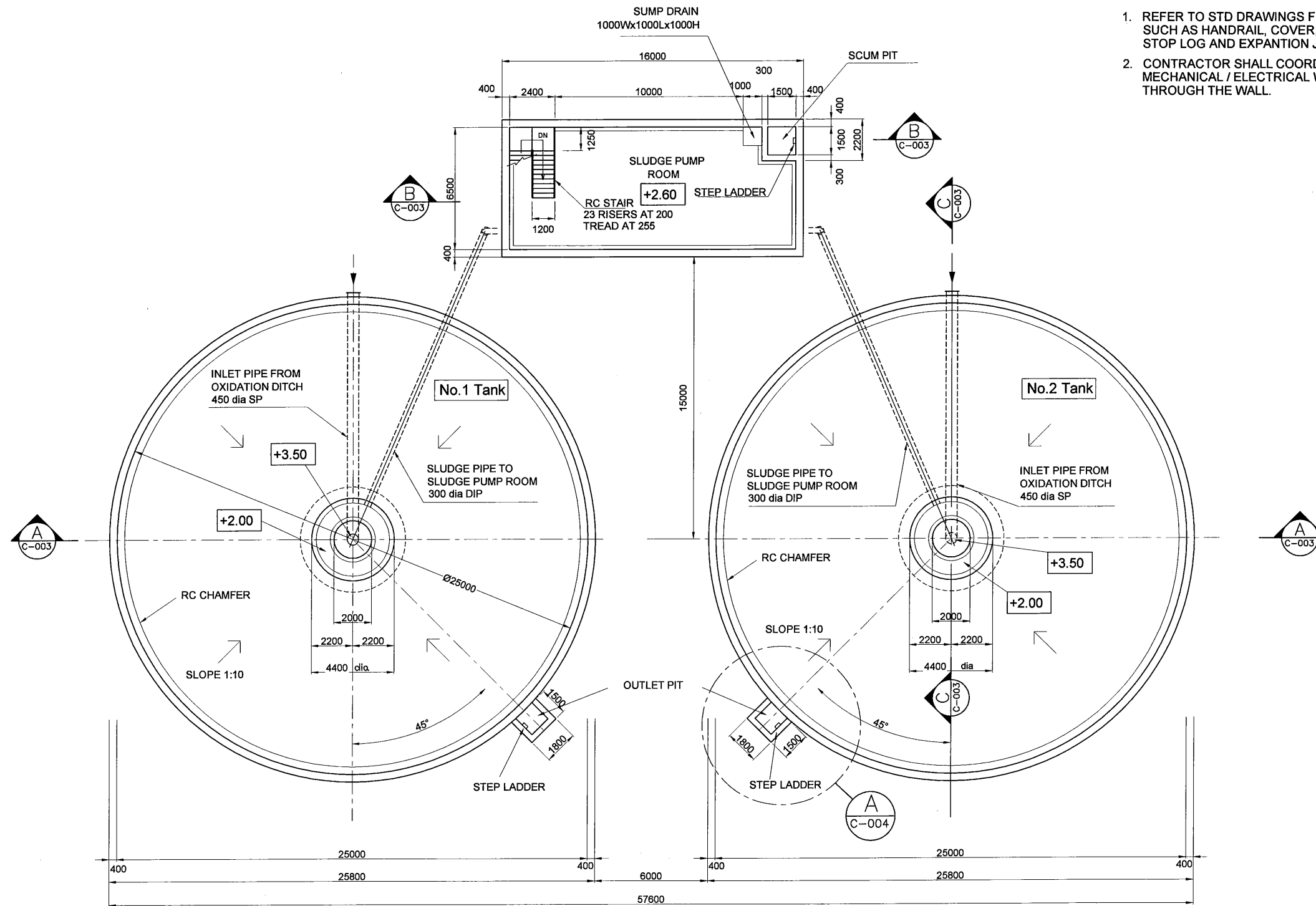
**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.

|   |   |   |   |
|---|---|---|---|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - OXIDATION DITCH PLAN and SECTION (TANK3,4) |   |
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU) | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | APPROVED by PMU:<br>Project Director<br>Lot G. Zauya              | DATE: 1. Dec 2011<br>SCALE: 1/300             |
| JAPAN INTERNATIONAL COOPERATION AGENCY  |   | CHECKED by CONSULTANT<br>Project Manager<br>T. Fuji               | DATE: 1. Dec 2011<br>DRAWING NO.: STP-OD-C005 |

**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



**BASE PLAN**

SCALE 1:250

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP) TITLE: Kila Kila STP - FINAL SEDEMENTATION TANK BASE PLAN (TANK 1,2)

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

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| REV.      | DATE | DESCRIPTION |
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APPROVED BY PMU:  
Project Director  
Lot G.Zauya

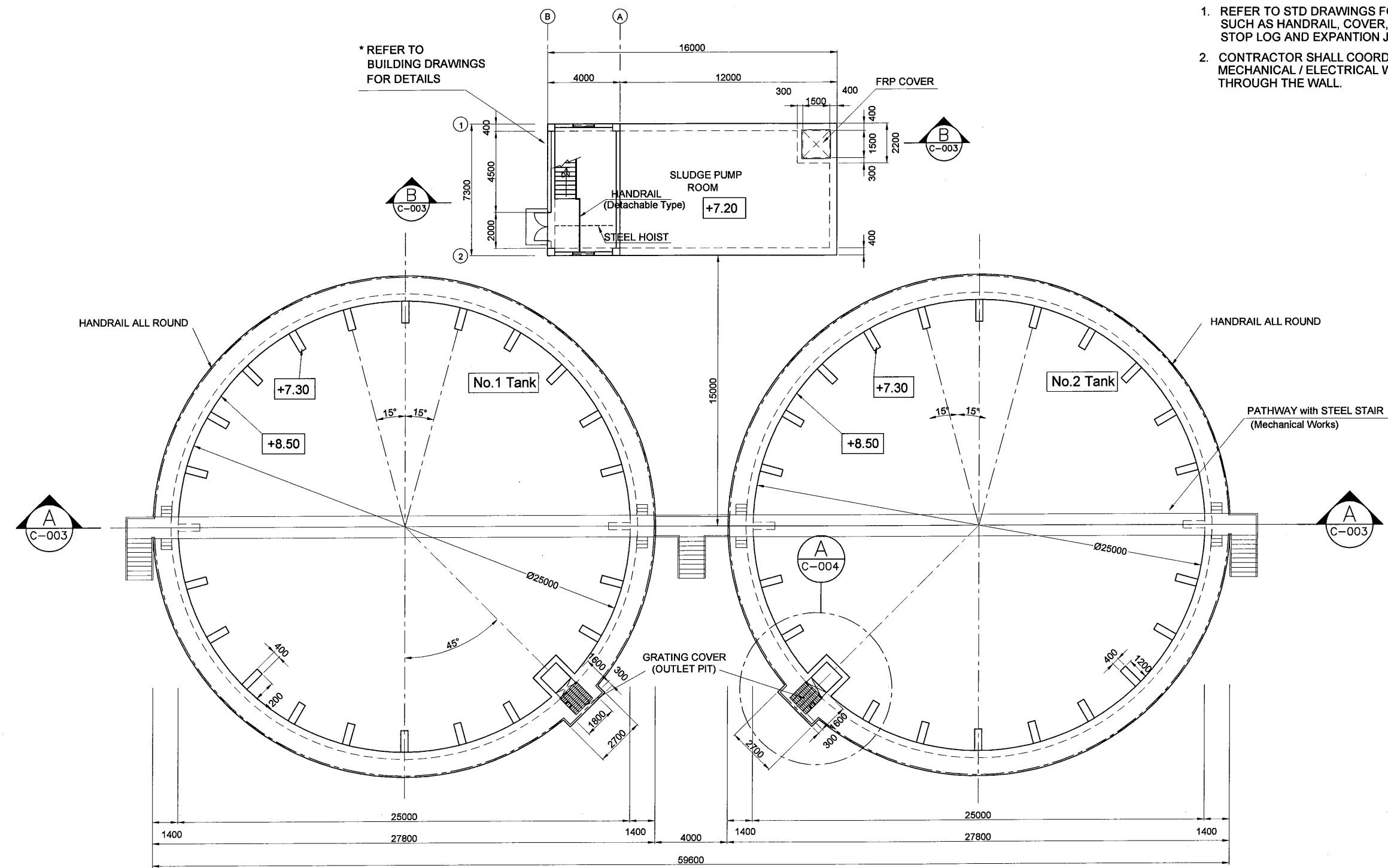
CHECKED BY CONSULTANT  
Project Manager  
T.Fuji

DATE: 1. Dec 2011 SCALE: 1/250

DATE: 1. Dec 2011 DRAWING NO.: STP-FS-C001

**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



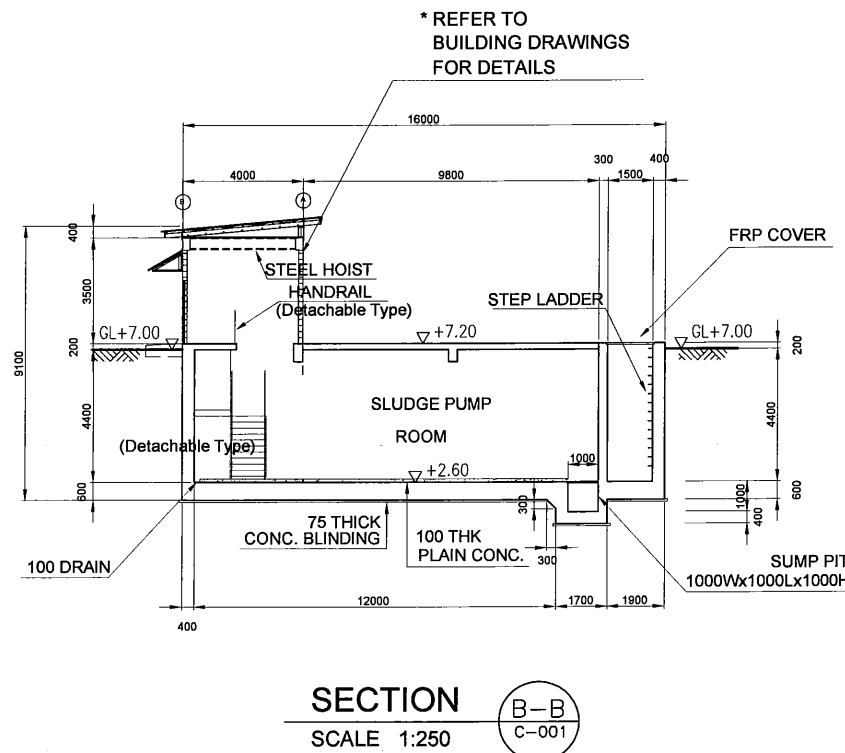
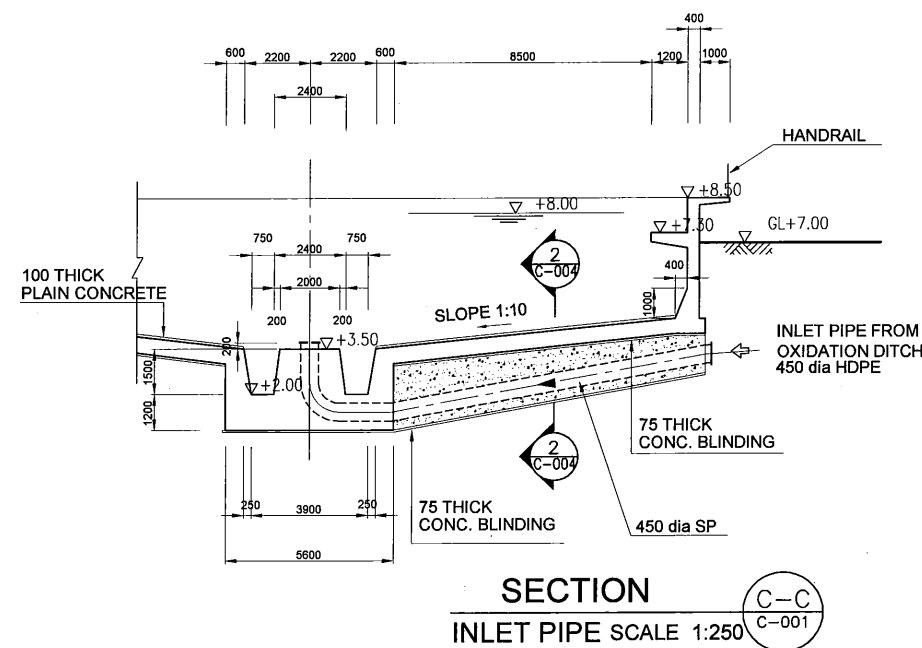
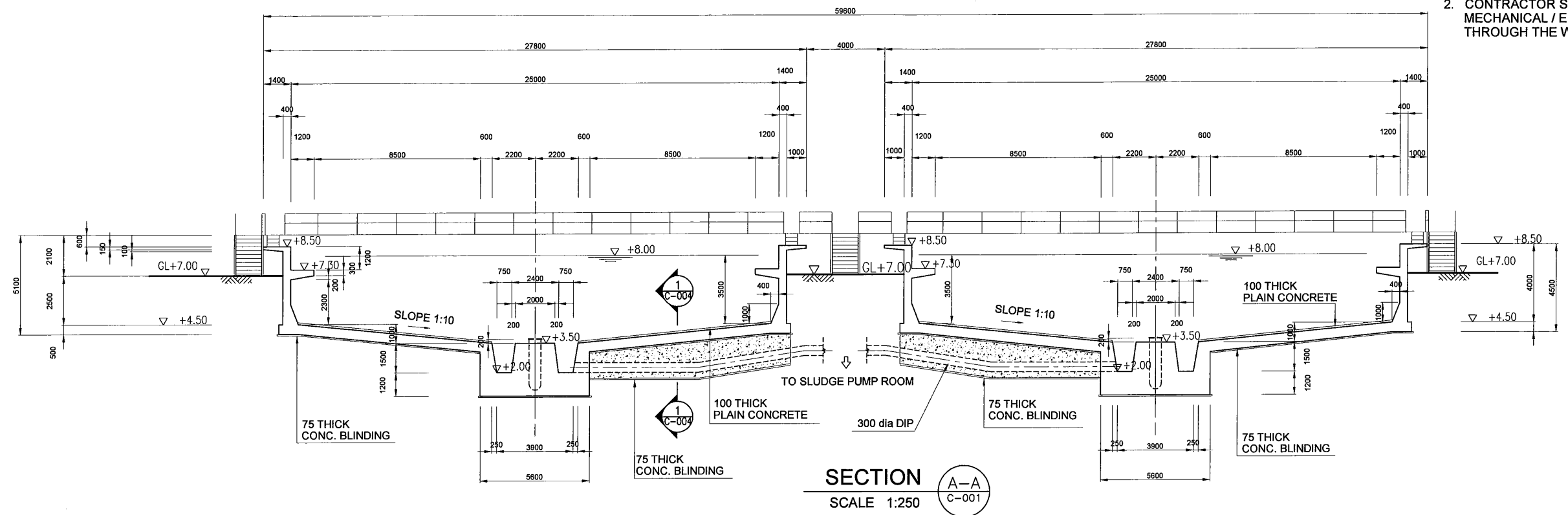
**TOP PLAN**  
SCALE 1:250

| <b>PROJECT:</b> PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |  | <b>TITLE:</b> Kila Kila STP - FINAL SEDEMENTATION TANK TOP PLAN (TANK 1,2) |   |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |   |  |                             |                        |  |                             |                                    |
|--|--|--|---|-----------|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|---|--|-----------------------------|------------------------|--|-----------------------------|------------------------------------|
| <b>CLIENT:</b><br>INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | <b>CONSULTANTS:</b><br>NJS CONSULTANTS CO., LTD. - JAPAN | <b>NOTES:</b>  | <table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> | REVISIONS |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  | <table border="1"> <tr> <td> <b>APPROVED by PMU:</b><br/>                     Project Director<br/>                     Lot G.Zauya                 </td> <td> <b>DATE:</b><br/>                     1. Dec 2011                 </td> <td> <b>SCALE:</b><br/>                     1/250                 </td> </tr> <tr> <td> <b>CHECKED by CONSULTANT:</b><br/>                     Project Manager<br/>                     T.Fuji                 </td> <td> <b>DATE:</b><br/>                     1. Dec 2011                 </td> <td> <b>DRAWING NO.:</b><br/>                     STP-FS-C002                 </td> </tr> </table> | <b>APPROVED by PMU:</b><br>Project Director<br>Lot G.Zauya | <b>DATE:</b><br>1. Dec 2011 | <b>SCALE:</b><br>1/250 | <b>CHECKED by CONSULTANT:</b><br>Project Manager<br>T.Fuji | <b>DATE:</b><br>1. Dec 2011 | <b>DRAWING NO.:</b><br>STP-FS-C002 |
|  |  | REVISIONS  |   |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |   |  |                             |                        |  |                             |                                    |
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| <b>APPROVED by PMU:</b><br>Project Director<br>Lot G.Zauya   | <b>DATE:</b><br>1. Dec 2011                              | <b>SCALE:</b><br>1/250   |   |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |   |  |                             |                        |  |                             |                                    |
| <b>CHECKED by CONSULTANT:</b><br>Project Manager<br>T.Fuji   | <b>DATE:</b><br>1. Dec 2011                              | <b>DRAWING NO.:</b><br>STP-FS-C002   |   |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |   |  |                             |                        |  |                             |                                    |



**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



**CORROSION PROTECTION FOR SCUM PIT**

AREA of CORROSION PROTECTION

CORROSION PROTECTION AREA COVERS ALL CONCRETE SURFACE OF TOP, SIDE AND BOTTOM. IT SHALL BE PAINTED BY VINYL ESTER RESIN OR EQUIVALENT, WITH 1mm THICKNESS AFTER HARDENING.

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

TITLE: Kila Kila STP - FINAL SEDEMENTATION TANK SECTIONS

NOTES:

| REVISIONS |      |             |
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APPROVED BY PMU:  
Project Director  
Lot G.Zauya

CHECKED BY CONSULTANT  
Project Manager  
T.Fuji

DATE: 1. Dec 2011

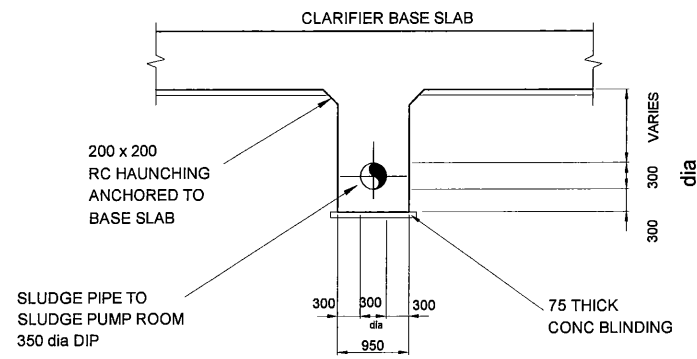
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DATE: 1. Dec 2011

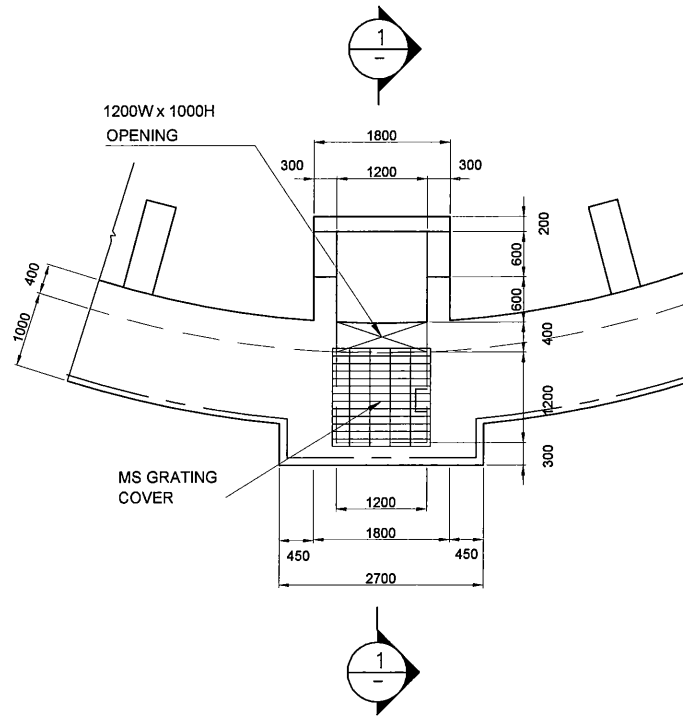
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**NOTES**

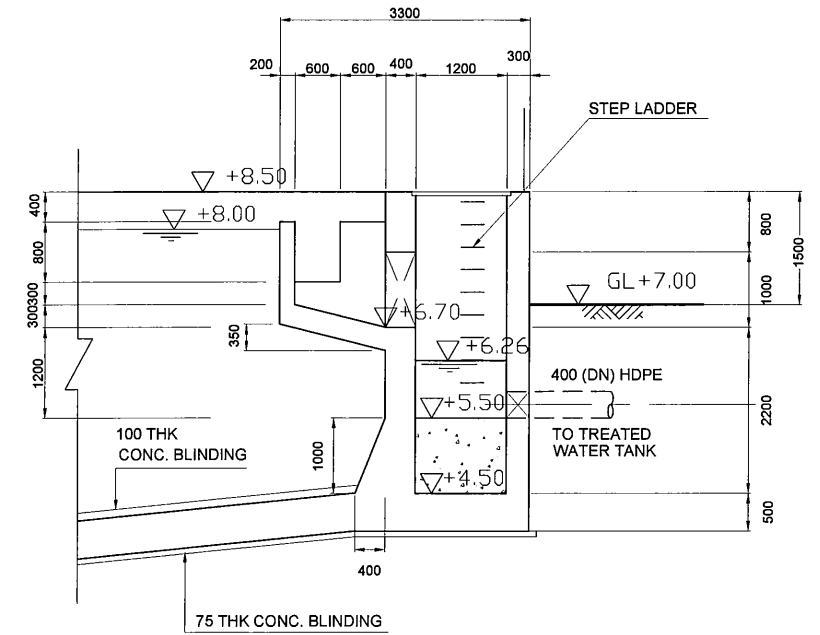
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2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



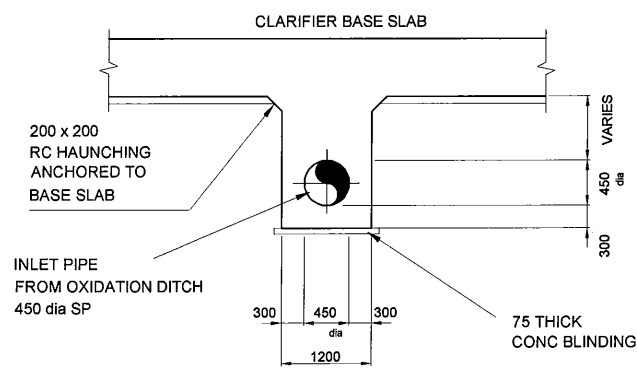
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SCALE 1:100 C-003



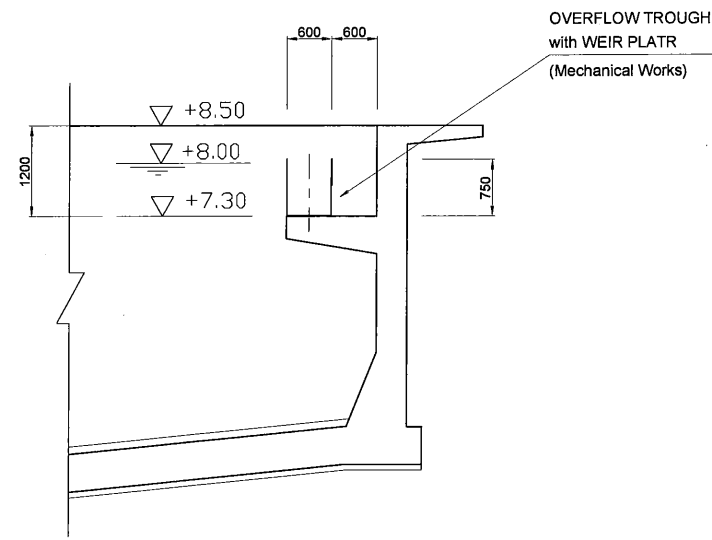
**'A' DETAIL PLAN**  
OUTLET PIT SCALE 1:100



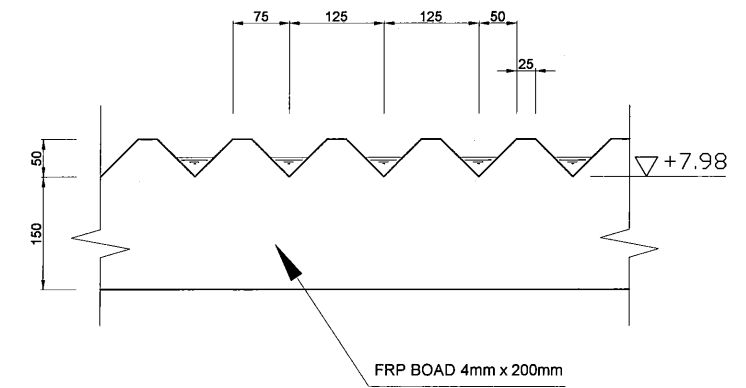
**'A' DETAIL SECTION**  
OUTLET PIT SCALE 1:100 1-1



**SECTION 2-2**  
SCALE 1:100 C-003



**OVERFLOW TROUGH DETAIL**  
SCALE 1:100



**WEIR PLATE DETAIL**  
SCALE 1:10

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - FINAL SEDEMENTATION TANK DETAILS

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

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APPROVED by PMU:  
Project Director  
Lot G Zauya

CHECKED by CONSULTANT  
Project Manager  
T. Fuji

DATE:  
1. Dec 2011

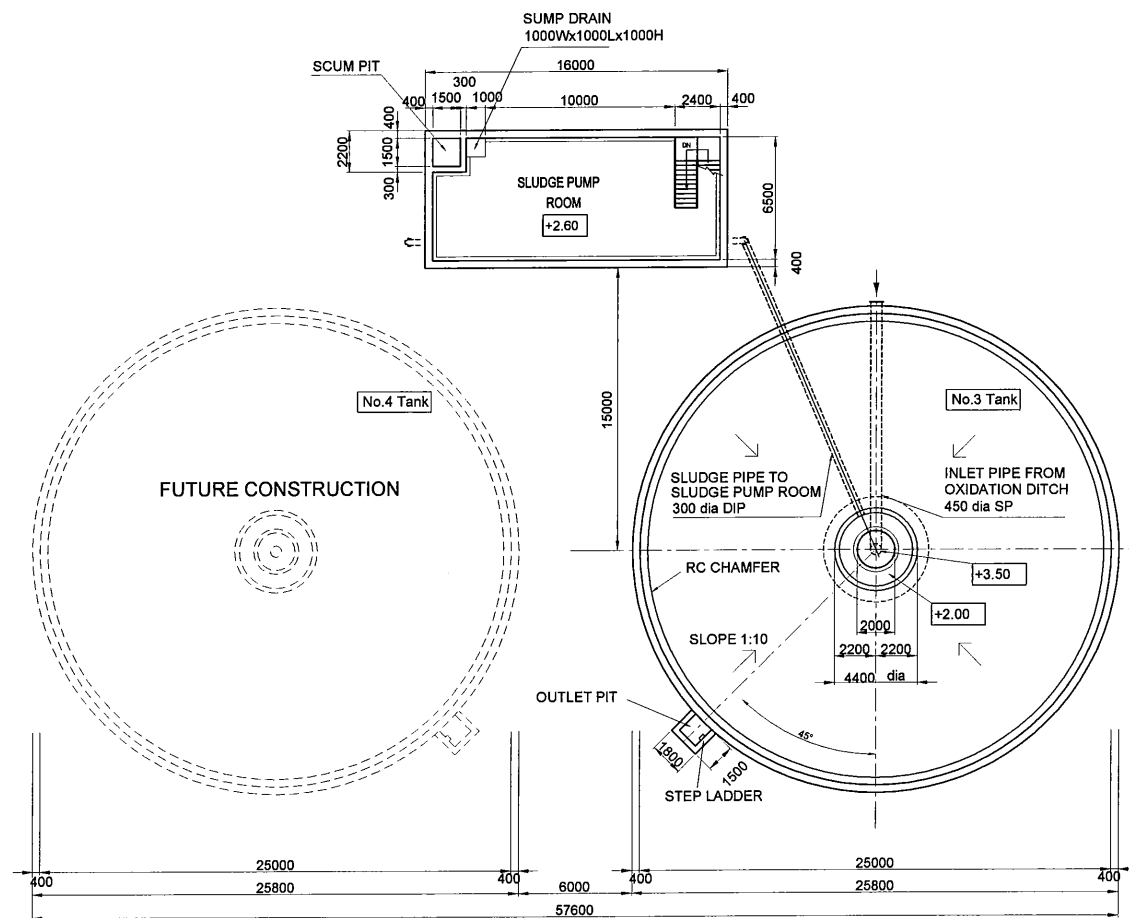
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1. Dec 2011

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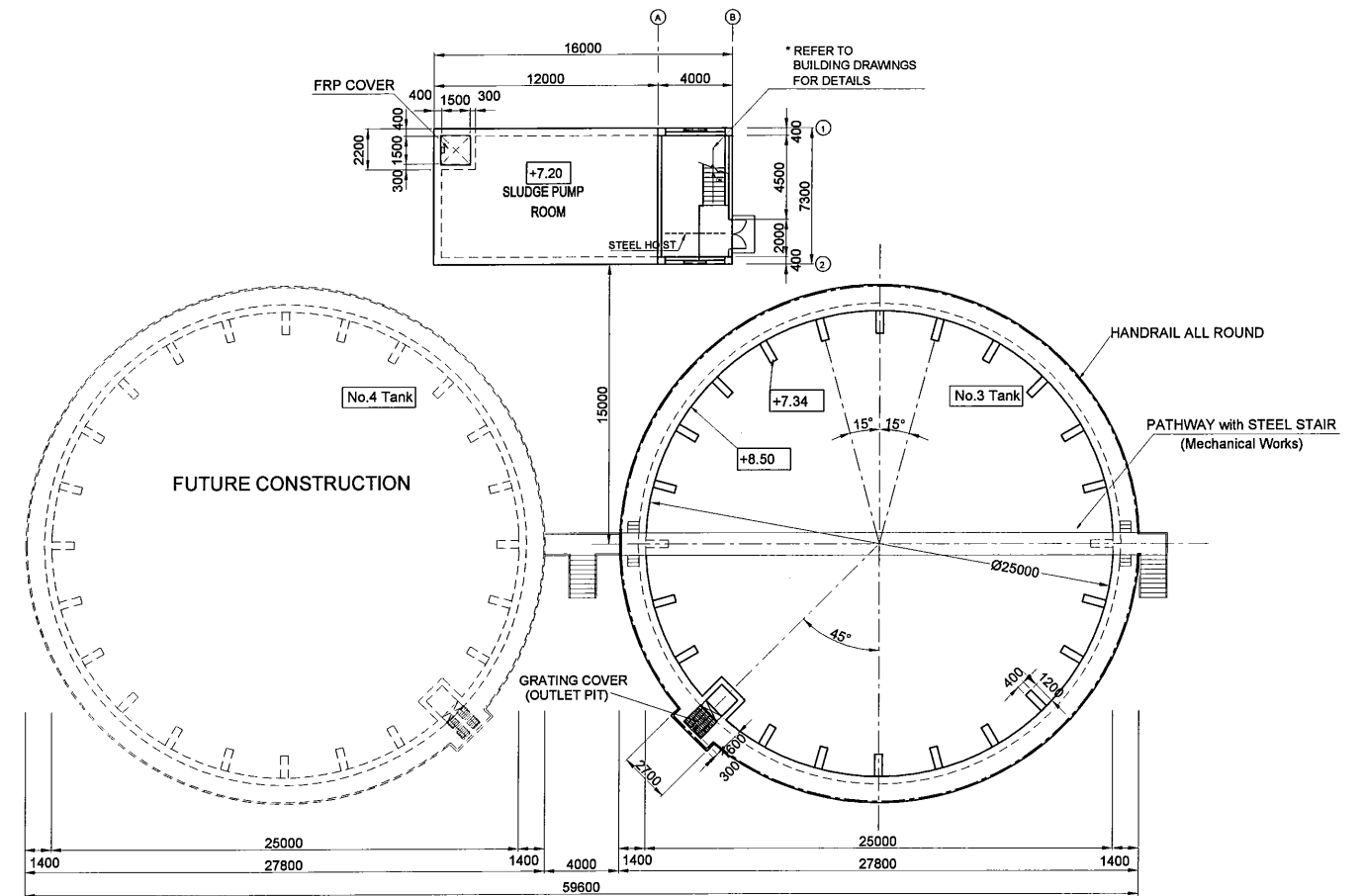
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STP-FS-C004

**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.





**BASE PLAN**  
SCALE 1:400



**TOP PLAN**  
SCALE 1:400

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - FINAL SEDEMENTATION TANK PLAN and SECTION (TANK 3,4)

CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

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APPROVED BY PMU:  
Project Director  
Lot G.Zauya

CHECKED BY CONSULTANT  
Project Manager  
T.Fuji

DATE:  
1. Dec 2011

DATE:  
1. Dec 2011

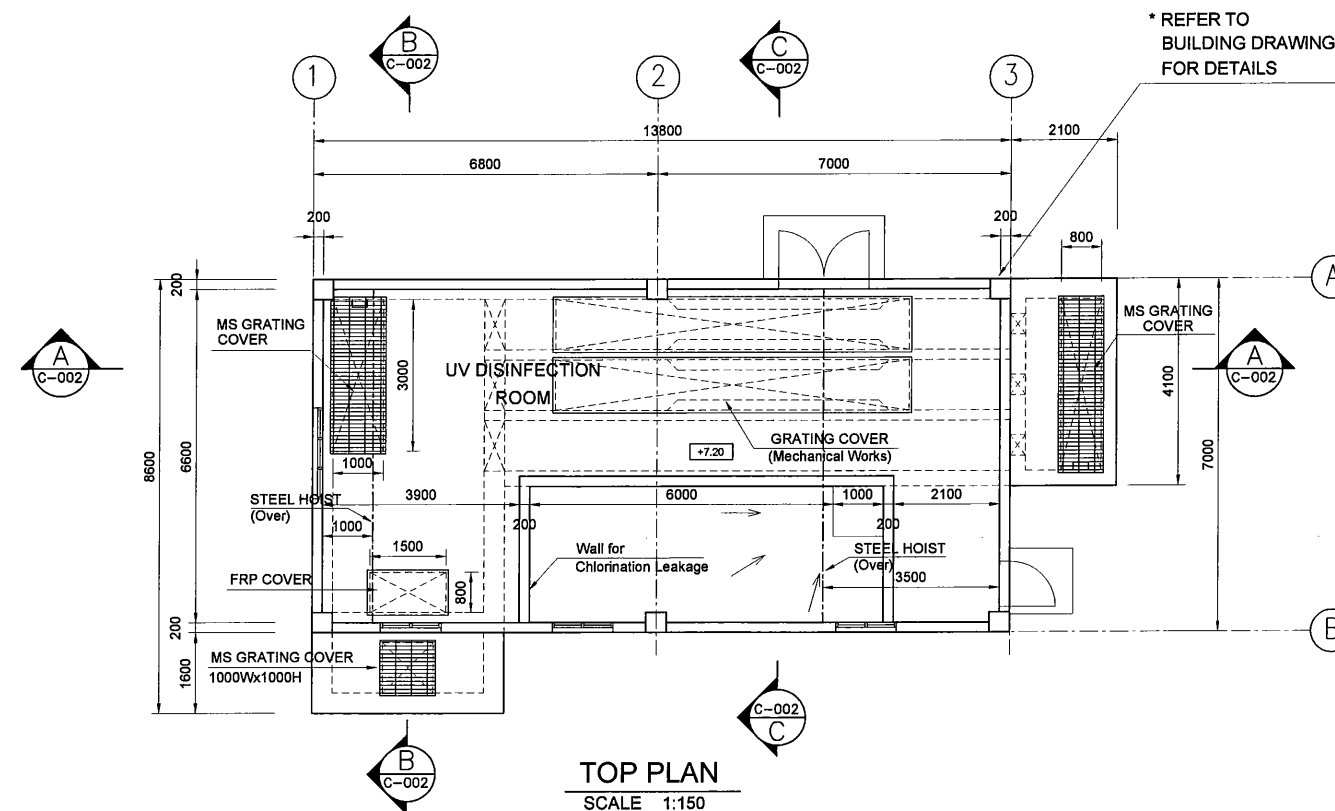
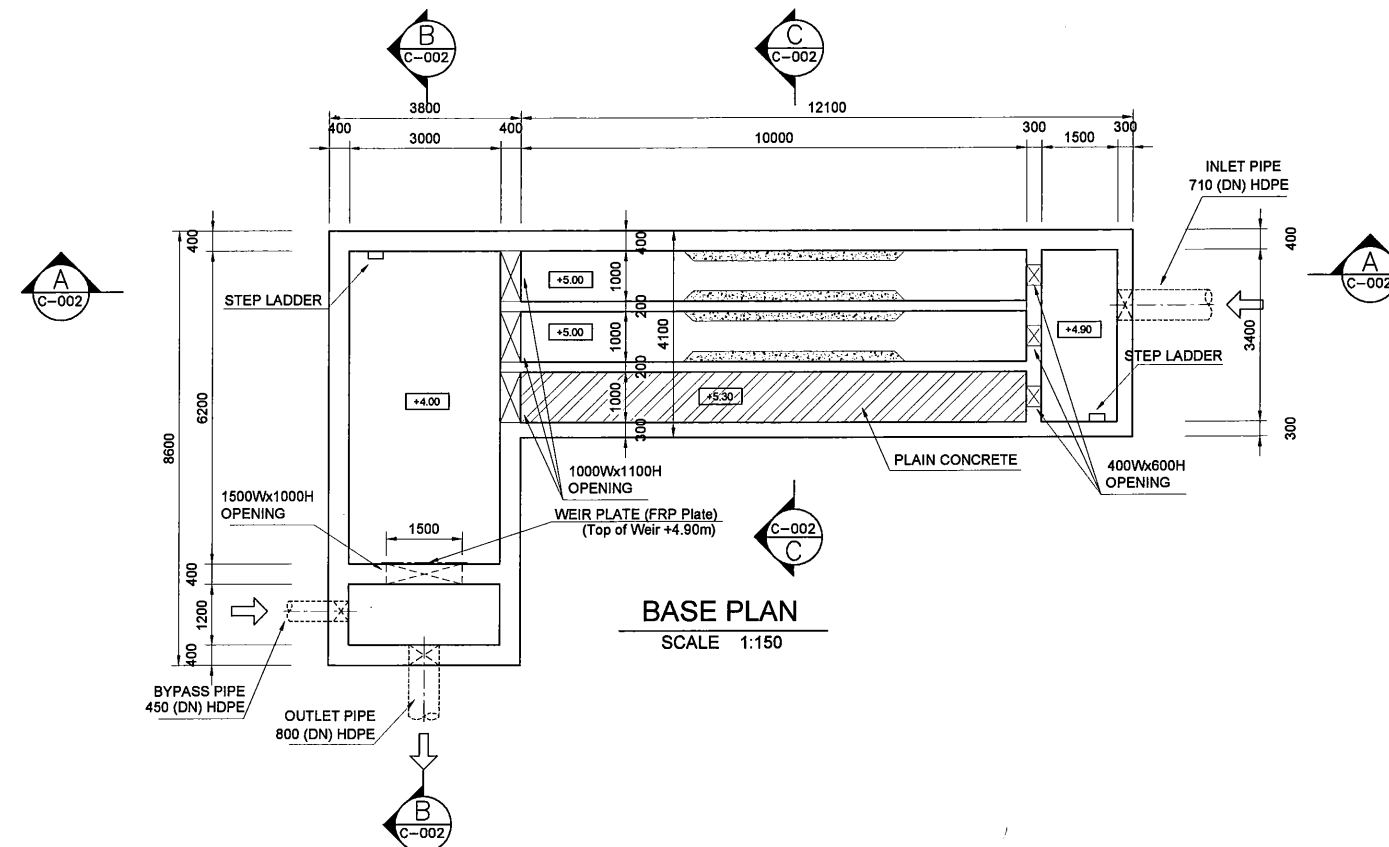
SCALE:  
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DRAWING NO.:  
STP-FS-C005



**NOTES**

1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - UV DISINFECTION ROOM and TREATED WATER TANK PLAN

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

| REVISIONS |      |             |
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| REV.      | DATE | DESCRIPTION |
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APPROVED by PMU:  
Project Director  
Lot G.Zauya

CHECKED by CONSULTANT  
Project Manager  
T.Fuji

DATE:  
1. Dec 2011

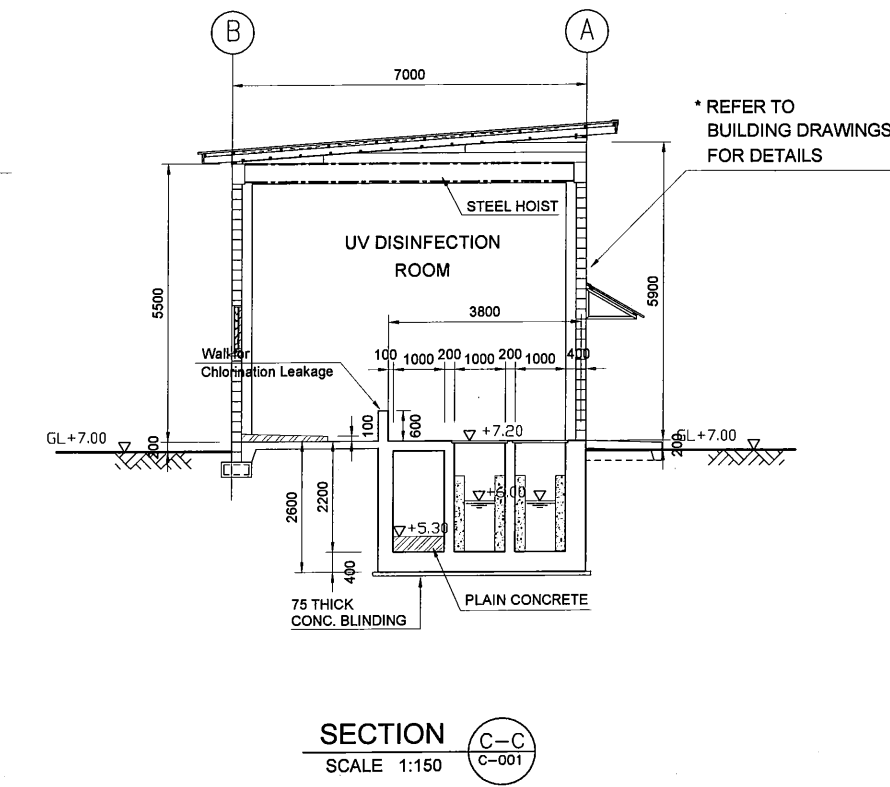
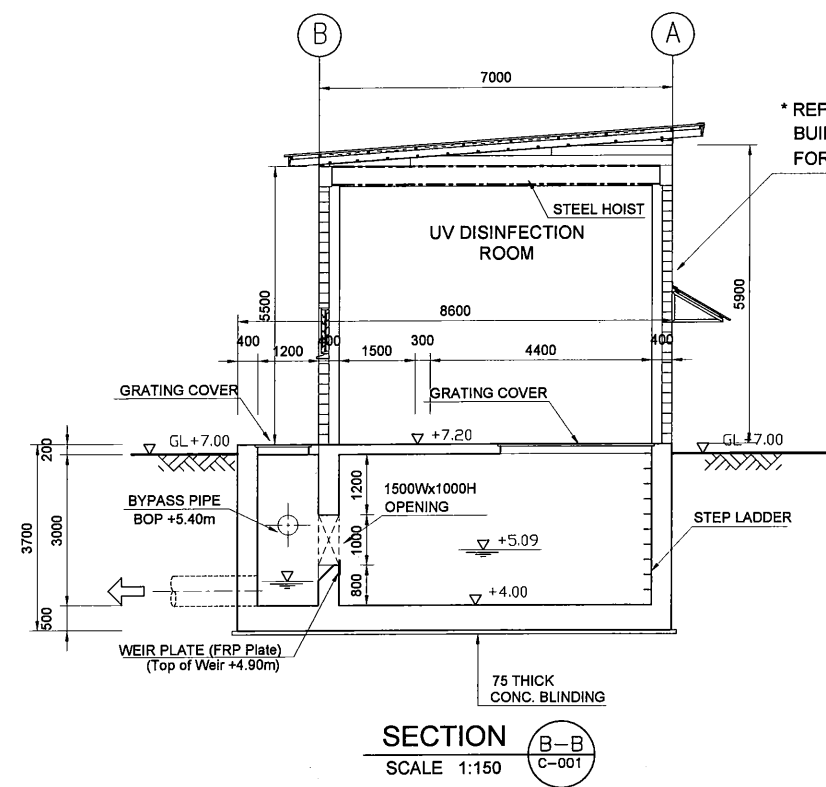
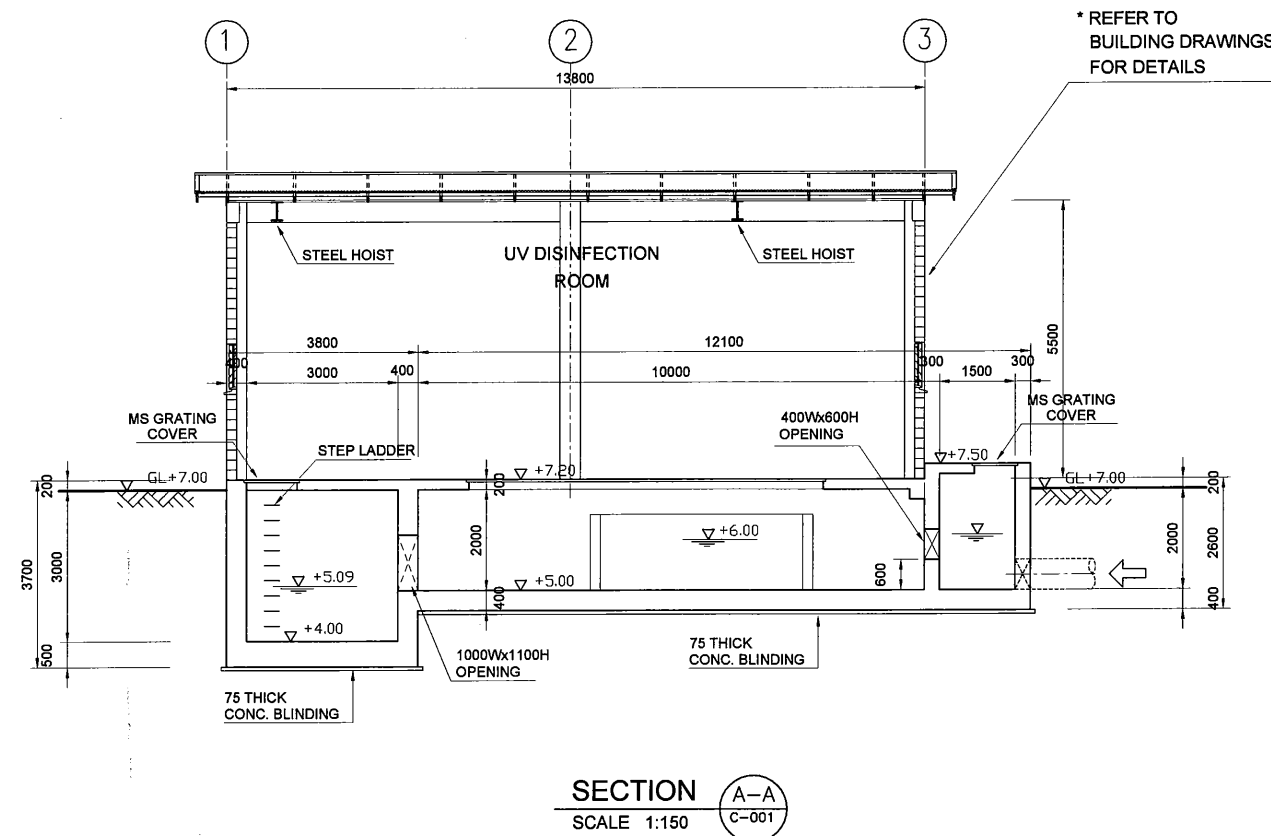
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1/150

DATE:  
1. Dec 2011

DRAWING NO.:  
STP-TW-C001

**NOTES**

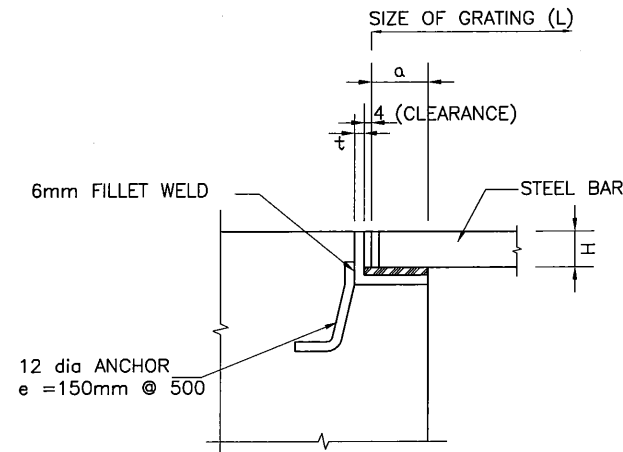
1. REFER TO STD DRAWINGS FOR MISCELLANEOUS WORKS SUCH AS HANDRAIL, COVER, STEP LADDER, STAIR, STOP LOG AND EXPANTION JOINT
2. CONTRACTOR SHALL COORDINATE WITH MECHANICAL / ELECTRICAL WORKS FOR PIPING PASS THROUGH THE WALL.



| <p>PROJECT: <b>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)</b></p> |  | <p>TITLE: <b>Kila Kila STP - UV DISINFECTION ROOM and TREATED WATER TANK SECTION</b></p>  |   |   |                              |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                              |                         |
|---|--|---|---|---|------------------------------|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------------------------------|-------------------------|
| <p>CLIENT:</p>  | <p><b>INDEPENDENT PUBLIC BUSINESS CORPORATION</b><br/>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br/>PROJECT MANAGEMENT UNIT (PMU)</p> <p><b>JICA</b><br/>JAPAN INTERNATIONAL COOPERATION AGENCY</p> | <p>CONSULTANTS:</p>   | <p><b>NJS CONSULTANTS CO., LTD. - JAPAN</b></p> | <p>NOTES:</p>   |                              |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                              |                         |
|   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> |   | REVISIONS   |                              |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | <p>APPROVED by PMU:<br/>Project Director<br/>Lot G.Zauya</p> | <p>DATE:<br/>1. Dec 2011</p> | <p>SCALE:<br/>1/150</p> |
| REVISIONS   |  |   |   |   |                              |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                              |                         |
| REV.  | DATE   | DESCRIPTION   |   |   |                              |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                              |                         |
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|   |  |   |   | <p>CHECKED by CONSULTANT<br/>Project Manager<br/>T.Fuji</p> | <p>DATE:<br/>1. Dec 2011</p> | <p>DRAWING NO.:<br/><b>STP-TW-C002</b></p> |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                              |                         |

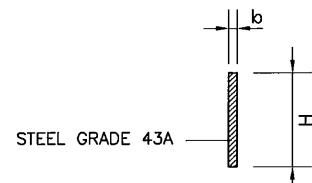
**NOTES**

1. CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.



**SEATING DETAILS**

SCALE 1:4

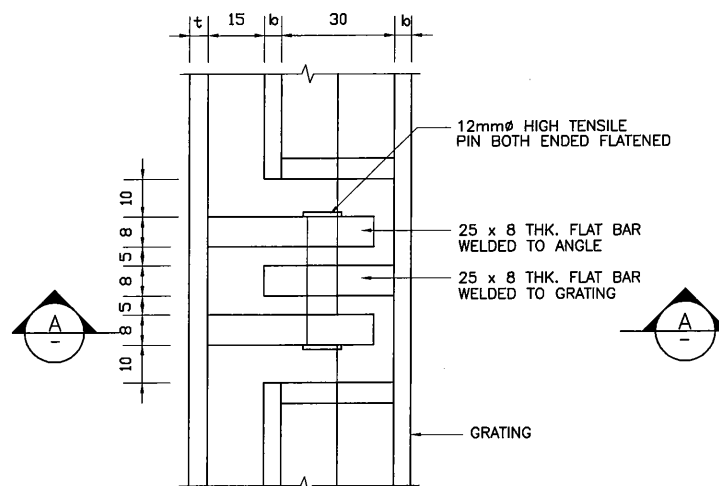


**STEEL BAR DETAILS**

(NO ANTI SKID)

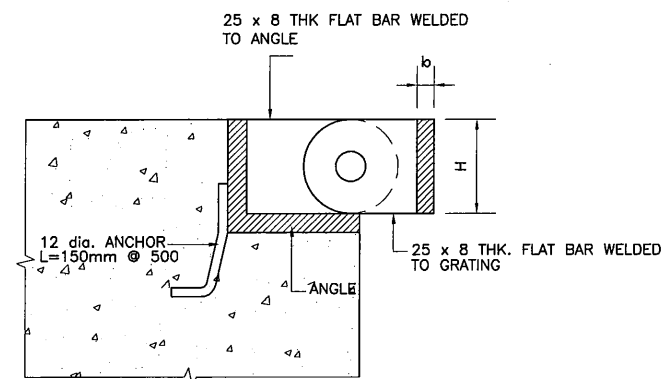
| L(mm)       | pitch(mm) | H(mm) | a(mm) | t(mm) | H X b    |
|-------------|-----------|-------|-------|-------|----------|
| ~ 500       | 30        | 19    | 50    | 5     | 19 x 4.5 |
| 501 ~ 1200  | 30        | 25    | 50    | 6     | 25 x 4.5 |
| 1201 ~ 1500 | 30        | 32    | 50    | 6     | 32 x 4.5 |
| 1501 ~ 1700 | 30        | 38    | 50    | 6     | 38 x 4.5 |
| 1701 ~ 1900 | 30        | 44    | 50    | 6     | 44 x 4.5 |
| 1901 ~ 2100 | 30        | 50    | 50    | 6     | 50 x 4.5 |

**GRATING STANDARD**



**PLAN**

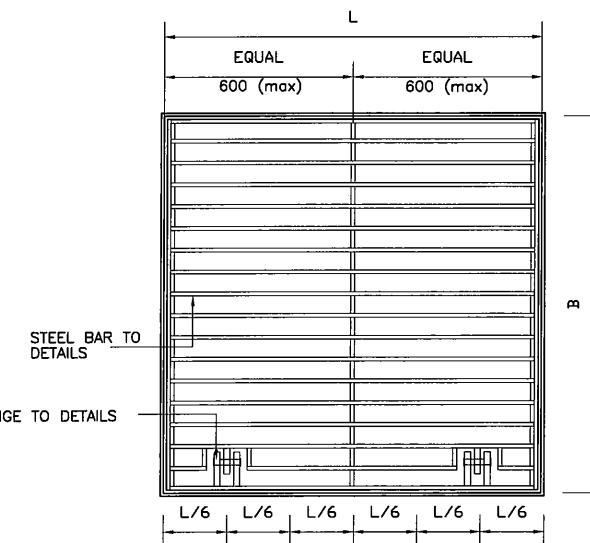
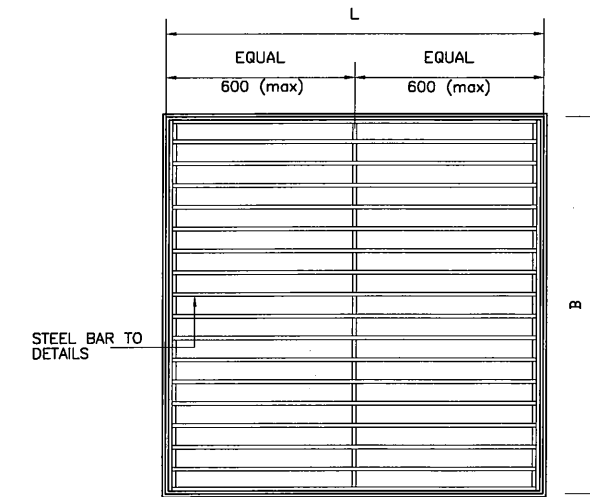
SCALE 1:2



**SECTION**

SCALE 1:2

**M.S. HINGE DETAIL**



**M.S GRATING**

SCALE 1:10

**General Note:**

1. GRATING SHALL BE HOT DIP GALVANISED STEEL
2. STEEL SHALL BE OF GRADE 43A
3. DESIGN LOSAD 3.5kN/m<sup>2</sup>
4. ALLOWABLE DEFLECTION L/200
5. MAXIMUM SIZE OF GRATING SHALL BE 1.5m<sub>2</sub>
6. JOINT SHALL BE DONE BY 6mm THK FILLET WELD UNLESS SHOWN OTHERWISE.

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - STEEL GRATING COVER DETAILS

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
**jica** JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

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APPROVED by PMU:  
 Project Director  
 Lot G.Zauya  
 CHECKED by CONSULTANT  
 Project Manager  
 T.Fuji

DATE:  
1. Dec 2011

SCALE:  
As Shown

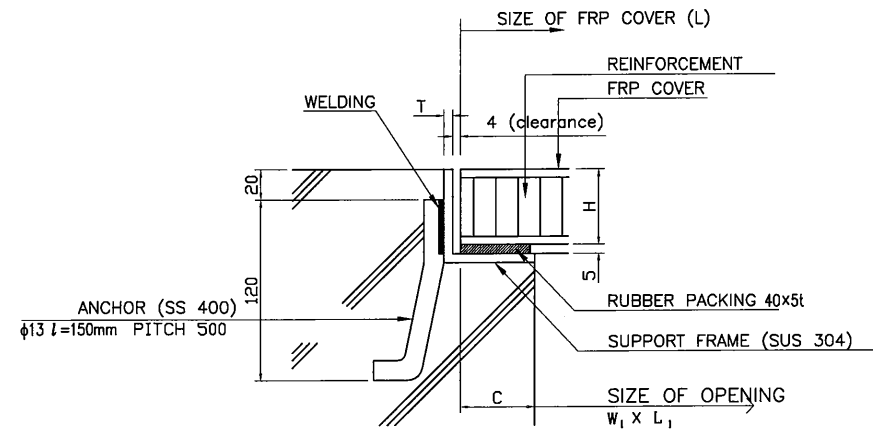
DATE:  
1. Dec 2011

DRAWING NO.:  
STP-SD-001

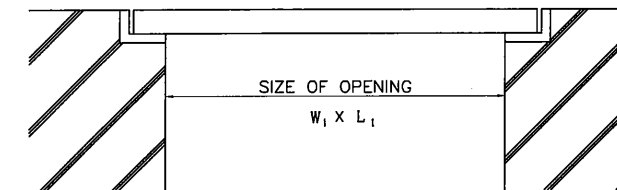
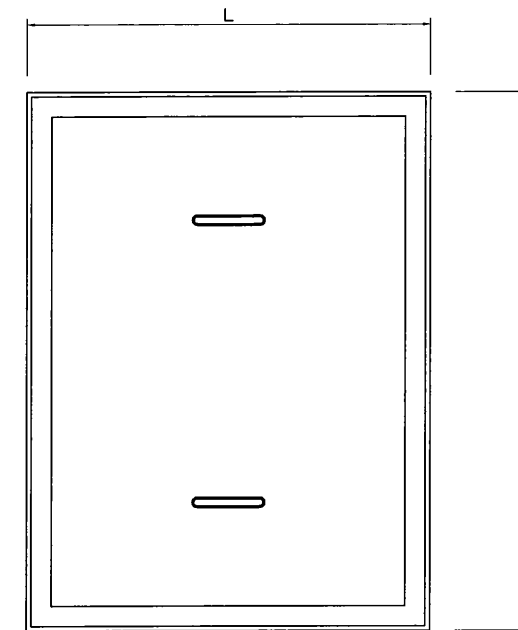


**NOTES**

1. CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.



**SUPPORT DETAIL**  
SCALE 1:5



**FRP COVER**

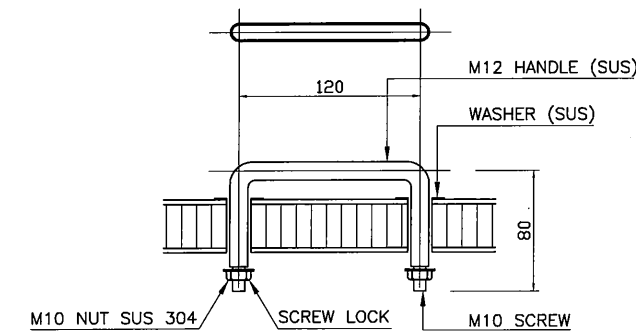
**General Note**

1. SUPPORT FRAME SHALL BE MADE BY ROCESSING STEEL PLATE OR ANGLE STEEL. SUPPORT FRAME SHALL BE STICKED ANOHOR ( 13mm) BY WELDING. STICKING SHALL BE DONE AT INTERVALS OF 500mm
2. COVER SHALL BE EQUIPPED TWO HANDLES FOR ONE COVER

**FRP COVER STANDARD (FOR REFERENCE)**

| OPENING SIZE (L1) | SIZE OF COVER (mm) |     |    | FRAME THICKNESS (T mm) | WEIGHT of COVER (kg/m <sup>2</sup> ) | NOTE  |
|-------------------|--------------------|-----|----|------------------------|--------------------------------------|---|
|                   | L                  | H   | C  |                        |                                      |   |
| ~ 800             | OPENING +70        | 30  | 35 | 3                      | 12.5                                 | 1. DESIGN LOAD: 3.5kN/m <sup>2</sup><br>a). FOR SIDEWALK: 3.5kN/m <sup>2</sup><br>b). FOR ROADWAY: LIVE LOAD FOR CAR AND DUMP TRUCK<br>2. ALLOWABLE DEFLECTION: L/200 |
| ~ 1000            | OPENING +90        | 35  | 45 | 4                      | 13.3                                 |   |
| 1,001 ~ 1,300     | OPENING +120       | 50  | 60 | 4                      | 14.0                                 |   |
| 1,301 ~ 1,800     | OPENING +140       | 75  | 70 | 5                      | 15.5                                 |   |
| 1,801 ~ 2,300     | OPENING +140       | *75 | 70 | 5                      | 20.5                                 |   |
| 2,301 ~ 2,900     | OPENING +140       | *75 | 70 | 5                      | 28.5                                 |   |

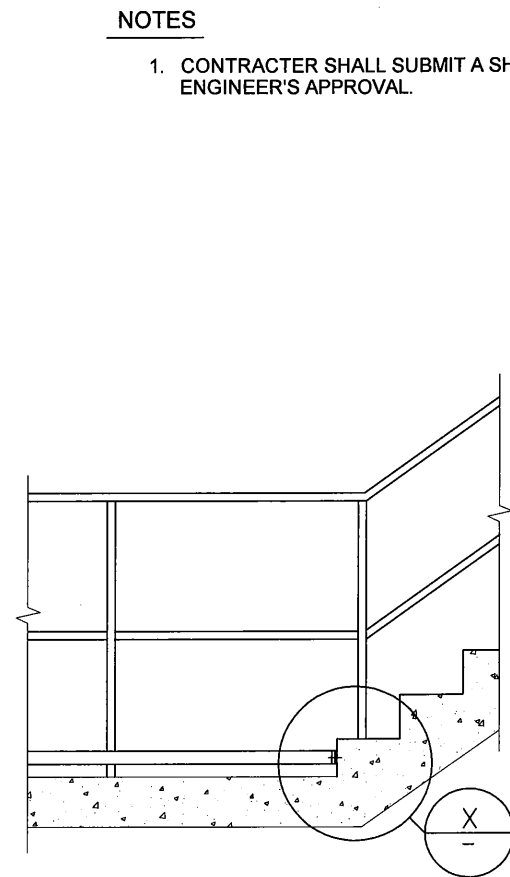
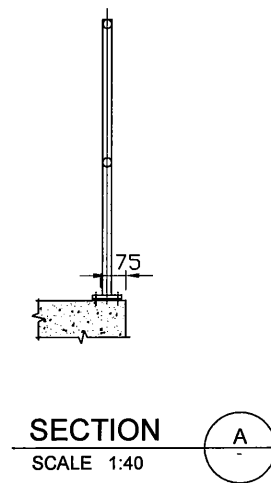
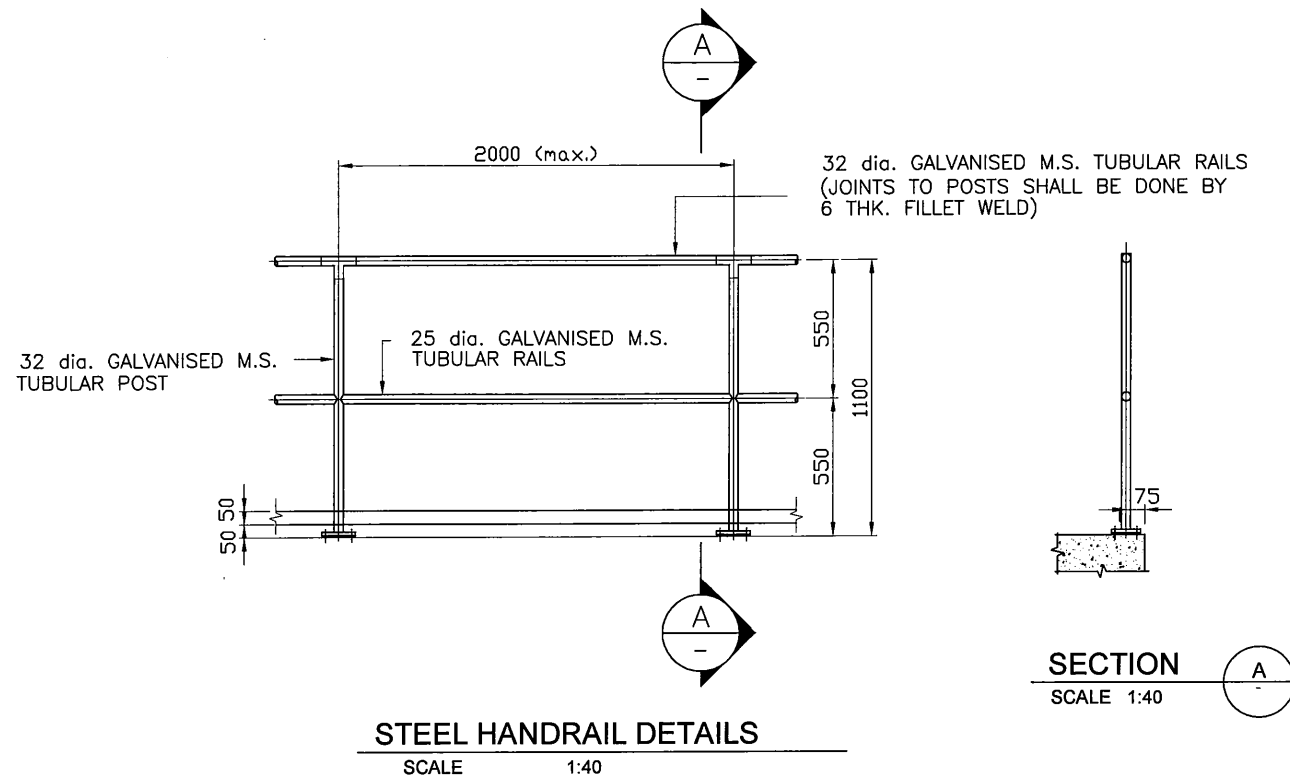
\* REINFORCE SHALL BE NECESSARY



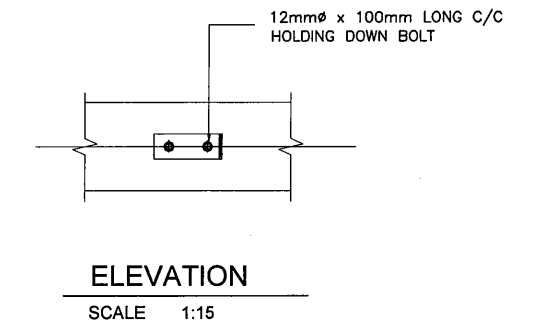
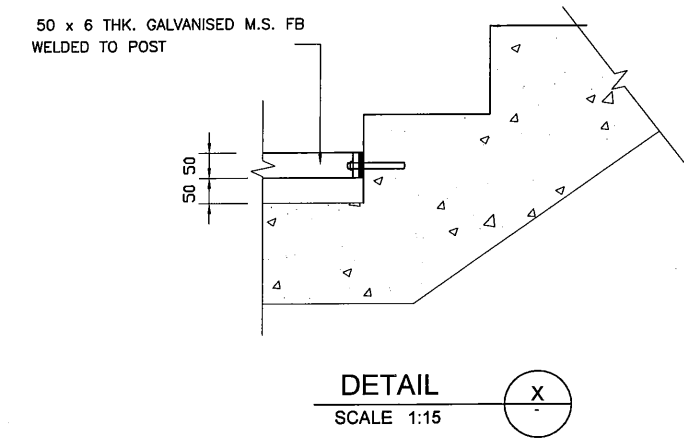
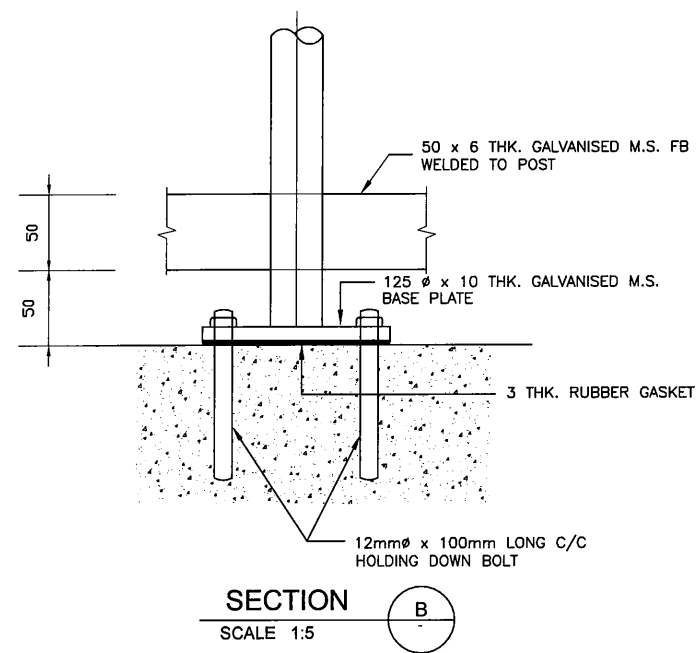
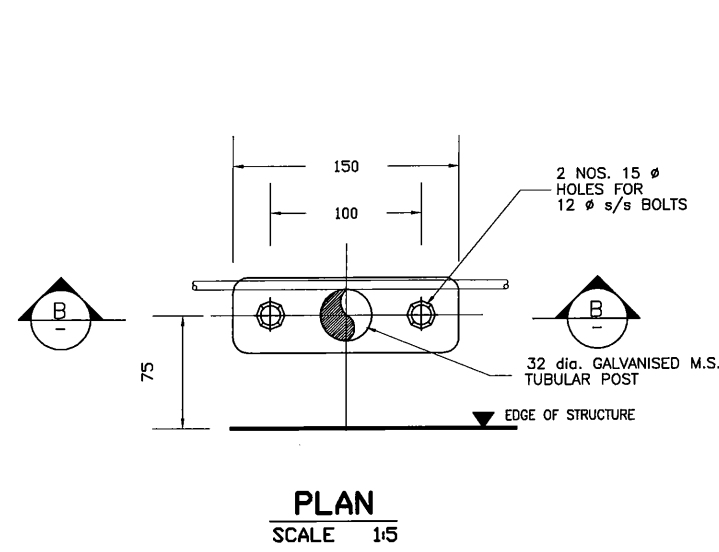
**HANDLE DETAIL**

SCALE 1:5

| <b>PROJECT:</b> PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |  | <b>TITLE:</b> Kila Kila STP - FRP COVER DETAILS                    |  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                             |  |                             |
|--|--|--|--|-----------|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------------------|--|-----------------------------|
| <b>CLIENT:</b><br><br>INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU) | <b>CONSULTANTS:</b><br><br>NJS CONSULTANTS CO., LTD. - JAPAN | <b>NOTES:</b>  | <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | REVISIONS |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |  | <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"> <b>APPROVED by PMU:</b><br/>                     Project Director<br/>                     Lot G.Zauya                 </td> <td style="width:50%;"> <b>DATE:</b><br/>                     1. Dec 2011                 </td> </tr> <tr> <td> <b>CHECKED by CONSULTANT:</b><br/>                     Project Manager<br/>                     T.Fuji                 </td> <td> <b>DATE:</b><br/>                     1. Dec 2011                 </td> </tr> </table> | <b>APPROVED by PMU:</b><br>Project Director<br>Lot G.Zauya | <b>DATE:</b><br>1. Dec 2011 | <b>CHECKED by CONSULTANT:</b><br>Project Manager<br>T.Fuji | <b>DATE:</b><br>1. Dec 2011 |
| REVISIONS  |  |  |  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                             |  |                             |
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| <b>APPROVED by PMU:</b><br>Project Director<br>Lot G.Zauya   | <b>DATE:</b><br>1. Dec 2011                                  |  |  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                             |  |                             |
| <b>CHECKED by CONSULTANT:</b><br>Project Manager<br>T.Fuji   | <b>DATE:</b><br>1. Dec 2011                                  |  |  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                             |  |                             |
| <br>JAPAN INTERNATIONAL COOPERATION AGENCY   |  | <b>SCALE:</b><br>As Shown<br><br><b>DRAWING NO.:</b><br>STP-SD-002 |  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                             |  |                             |



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1. CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.

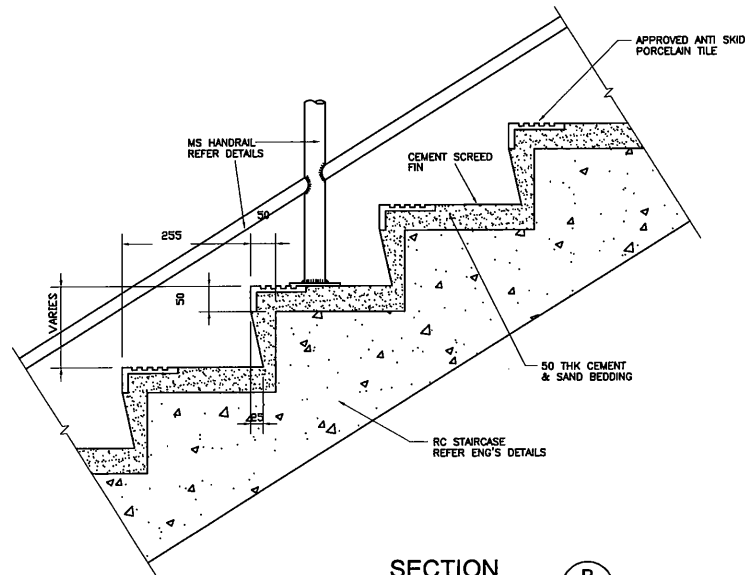


**BASE DETAIL**

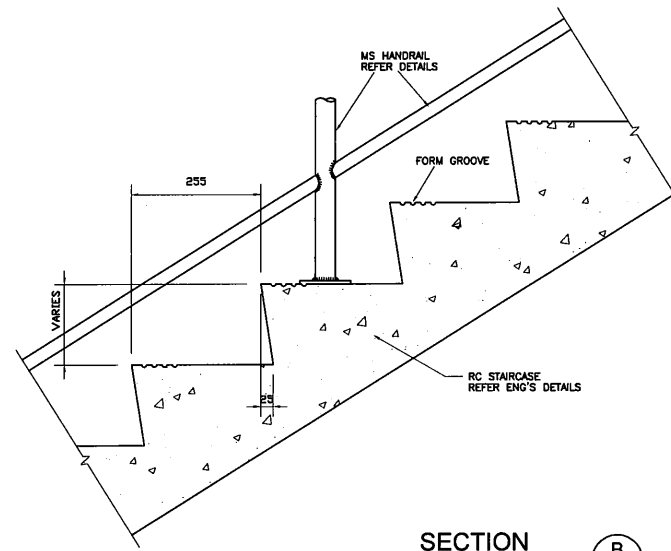
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - STEEL HANDRAIL DETAILS   |  |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|--|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | APPROVED by PMU:<br>Project Director<br>Lot G. Zauya |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
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|   |   | DATE: 1. Dec 2011   | SCALE: As Shown                                      |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   | DATE: 1. Dec 2011   | DRAWING NO.: STP-SD-003                              |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |

**NOTES**

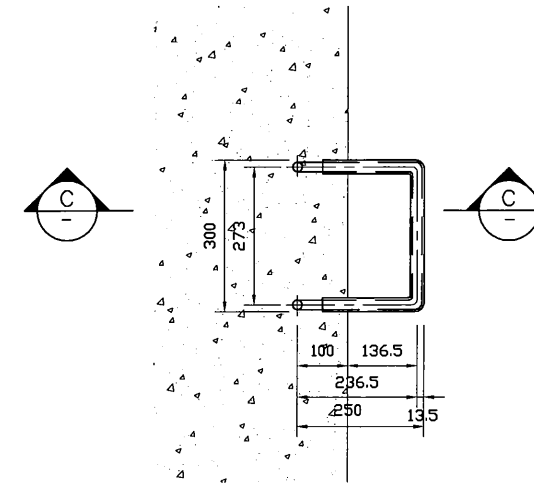
- CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.



**SECTION B**  
SCALE 1:15

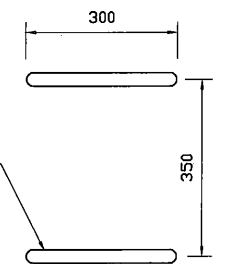


**SECTION B**  
SCALE 1:15



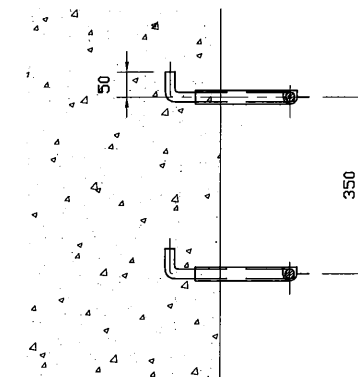
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SCALE 1:15

**SECTION**  
SCALE 1:15



**ELEVATION**  
SCALE 1:15

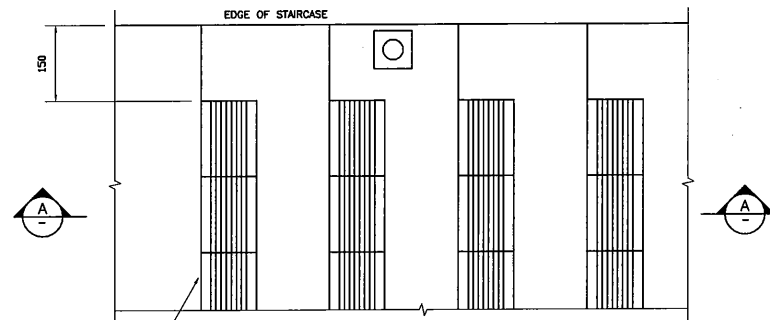
22mm dia. SS 304 with POLYPROPYLENE COVER



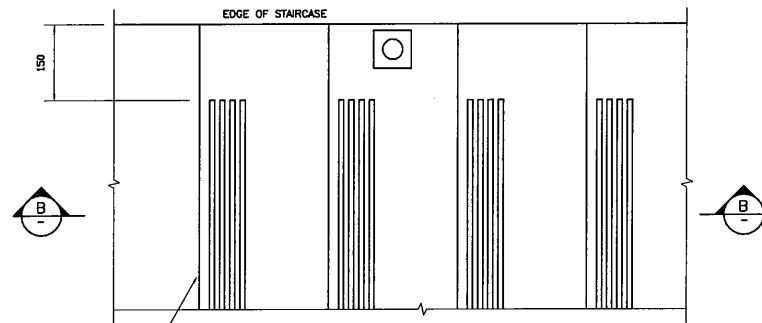
**SECTION A**  
SCALE 1:15

**STEP LADDER DETAILS**

(Stainless Steel 304 with Polypropylene cover)



**PLAN**  
SCALE 1:15



**PLAN**  
SCALE 1:15

**STAIRCASE ANTI SKID DETAILS**  
(INTERNAL STAIRCASE)

**STAIRCASE ANTI SKID DETAILS**  
(EXTERNAL STAIRCASE)

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - STAIRCASE ANTI SKID AND STEP LADDER DETAILS

CLIENT: **IPBC** INDEPENDENT PUBLIC BUSINESS CORPORATION  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: **NJS** NJS CONSULTANTS CO., LTD. - JAPAN

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T.Fuji

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1. Dec 2011

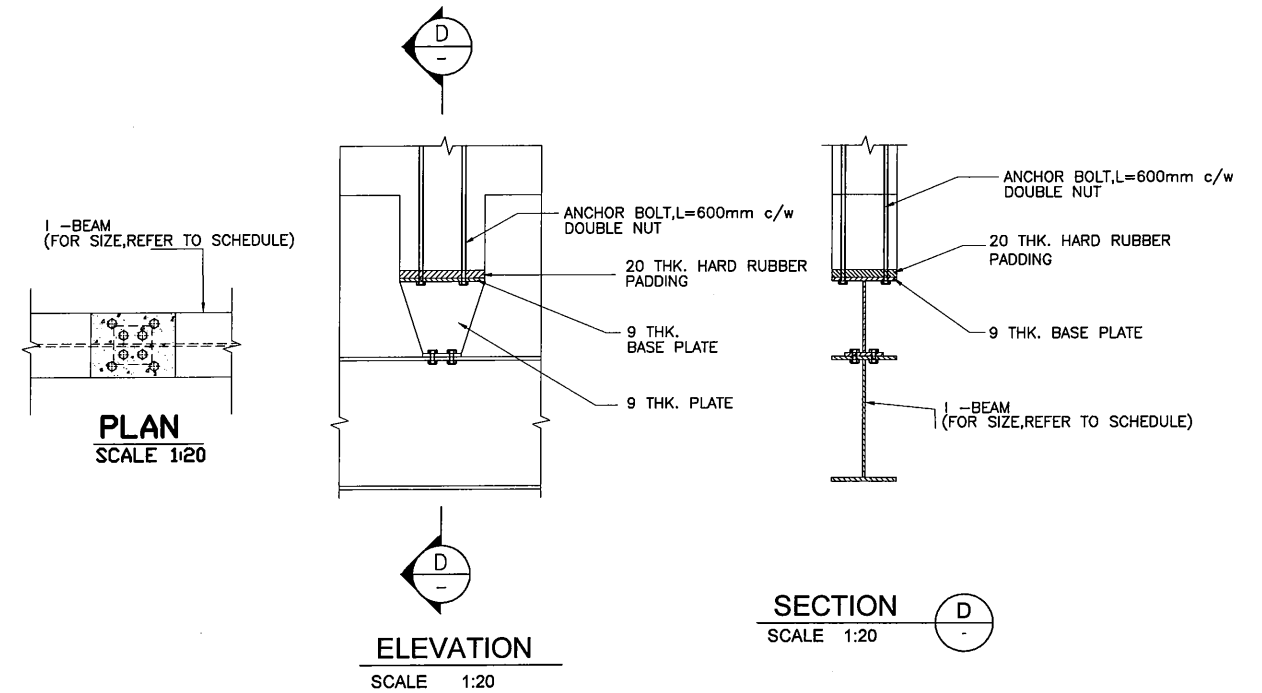
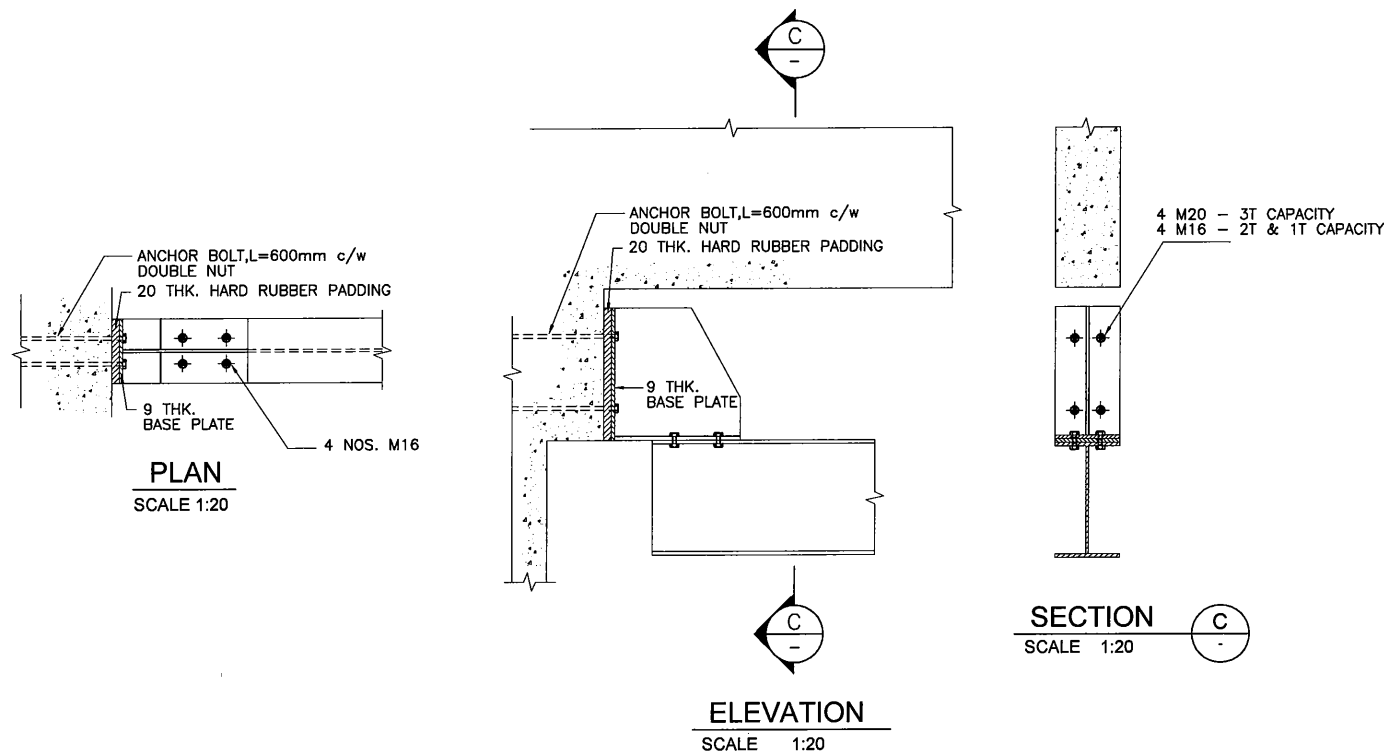
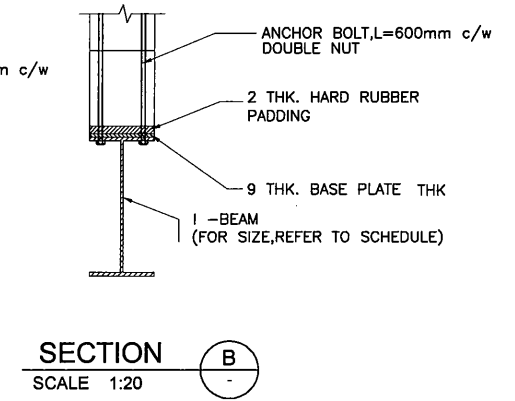
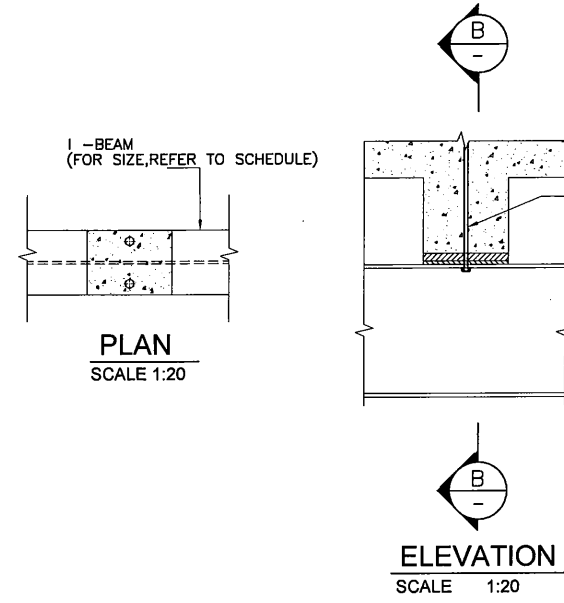
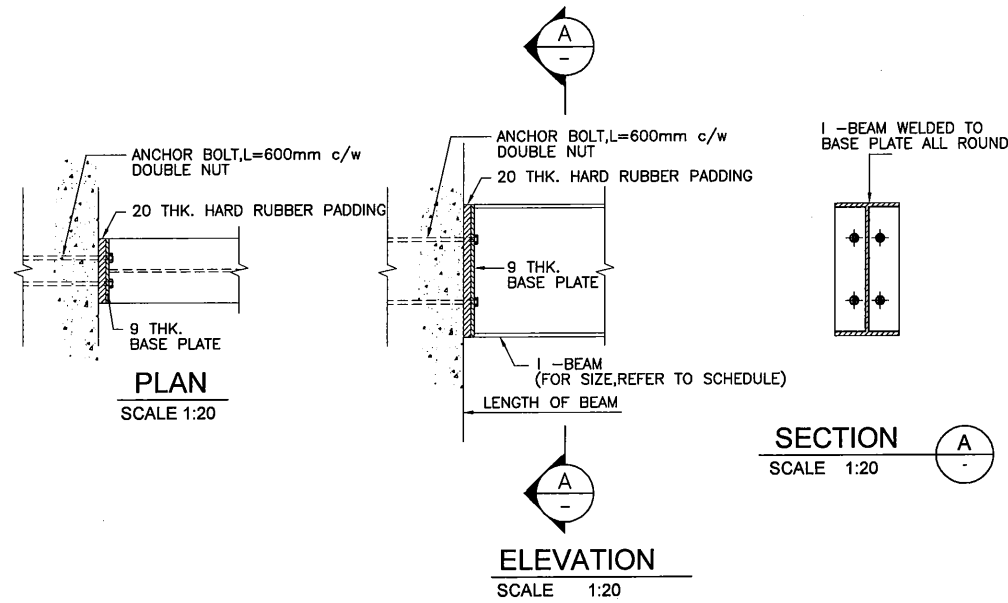
SCALE:  
1/15

DATE:  
1. Dec 2011

DRAWING NO.:  
STP-SD-004

**NOTES**

1. CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.
2. CONTRACTOR SHALL CONFIRM THE SAFETY STRENGTH OF I-BEAM AND ITS CONNECTION AGAINST ACTUAL MECHANICAL LOADINGS



**STANDARD SIZE OF I BEAM FOR HOIST RAIL**

| CRANE CAPACITY | HOIST RAIL SIZE     |                     |                      |
|----------------|---------------------|---------------------|----------------------|
|                | 1.0m ~ 5.0m         | 5.0m ~ 7.5m         | 7.5m ~ 10.0m         |
| 1.0T           | 254 x 146 x 31 Kg/m | 356 x 171 x 51 Kg/m | 406 x 178 x 74 Kg/m  |
| 2.0T           | 305 x 165 x 40 Kg/m | 356 x 171 x 67 Kg/m | 457 x 191 x 89 Kg/m  |
| 3.0T           | 356 x 171 x 45 Kg/m | 457 x 191 x 74 Kg/m | 533 x 210 x 109 Kg/m |

**BOLT SIZE**

|               |       |
|---------------|-------|
| 1.0T CAPACITY | 4 M16 |
| 2.0T CAPACITY | 4 M16 |
| 3.0T CAPACITY | 4 M20 |

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

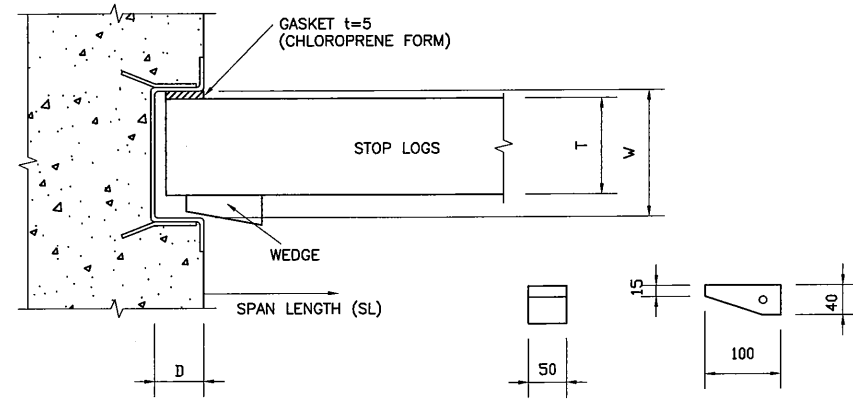
TITLE: Kila Kila STP - HOIST RAIL DETAILS

NOTES:

| REVISIONS |      |             | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE:<br>1. Dec 2011 | SCALE:<br>1/20             |
|-----------|------|-------------|---|----------------------|----------------------------|
| REV.      | DATE | DESCRIPTION |   |                      |                            |
|           |      |             | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  | DATE:<br>1. Dec 2011 | DRAWING NO.:<br>STP-SD-005 |
|           |      |             |   |                      |                            |

**NOTES**

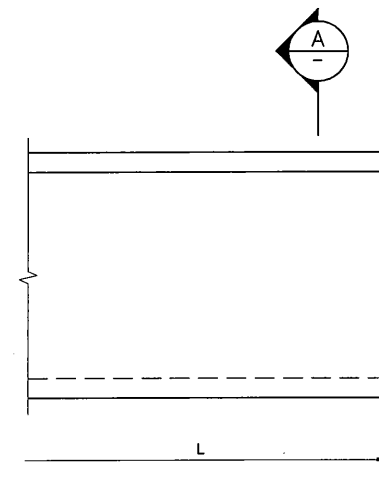
- CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.



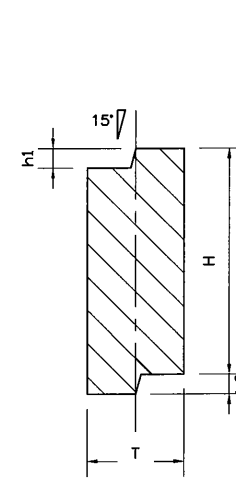
**WEDGE FORM**

**A WEDGE FOR THE BUOYANCY PREVENTION**

SCALE 1:10

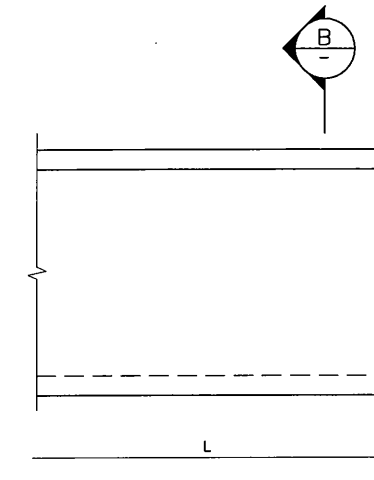


**ELEVATION**  
SCALE 1:10

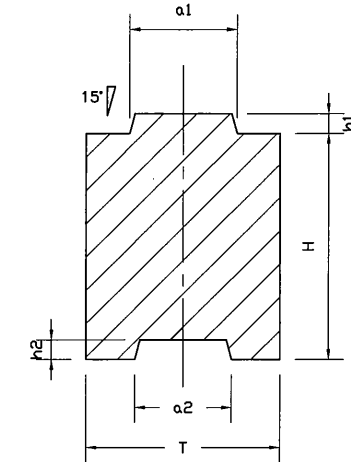


**SECTION**  
SCALE 1:10

**t < 50mm (TYPE A)**  
SCALE 1:10



**ELEVATION**  
SCALE 1:10



**SECTION**  
SCALE 1:10

**t > 59mm (TYPE B)**  
SCALE 1:10

(UNIT : mm)

| TYPE | NAME | LOG THICKNESS T | INSERT CHANNEL |                |                |                | AVAILABleness HEIGHT H | LENGTH L | REFERENCE WEIGHT ( kgf/m <sup>2</sup> ) |                       | FRAME SIZE |     |
|------|------|-----------------|----------------|----------------|----------------|----------------|------------------------|----------|---|-----------------------|------------|-----|
|      |      |                 | a <sub>1</sub> | a <sub>2</sub> | h <sub>1</sub> | h <sub>2</sub> |                        |          | SPECIFIC GRAVITY 0.5                    | SPECIFIC GRAVITY 0.74 | W          | D   |
| A    | 50   | 49              | -              | -              | 20             | 21             | 170-600                | SL + 160 | 25.0                                    | 37.0                  | 75         | 100 |
| B    | 60   | 59              | 20             | 20.5           | 20             | 21             | 170-600                |          | 30.0                                    | 44.4                  | 85         | 100 |
|      | 70   | 69              | 25             | 25.5           | 20             | 21             | 170-600                |          | 35.0                                    | 51.8                  | 95         | 100 |
|      | 80   | 78              | 25             | 25.5           | 20             | 21             | 170-600                |          | 39.0                                    | 57.7                  | 105        | 100 |
|      | 100  | 98              | 35             | 35.5           | 20             | 21             | 170-600                |          | 49.0                                    | 72.5                  | 125        | 100 |
|      | 120  | 118             | 40             | 40.5           | 20             | 21             | 170-600                |          | 59.0                                    | 87.3                  | 145        | 100 |
|      | 140  | 138             | 45             | 45.5           | 30             | 31             | 160-600                |          | 69.0                                    | 102.1                 | 165        | 100 |
|      | 150  | 147             | 45             | 45.5           | 30             | 31             | 160-300                | SL + 200 | 73.5                                    | 108.7                 | 175        | 120 |

**SELECTION TABLE FOR FORM AND DIMENSION**

(UNIT : mm)

| SL       | 750                                   | 1000 | 1500 | 2000 | 2500 |
|----------|---------------------------------------|------|------|------|------|
| H        |                                       |      |      |      |      |
| 1000     | 49                                    | 49   | 59   | 78   | 98   |
| 1500     | 49                                    | 49   | 69   | 98   | 118  |
| 2000     | 49                                    | 49   | 69   | 98   | 118  |
| 2500     | 49                                    | 49   | 78   | 98   | 118  |
| 3000     | 49                                    | 59   | 78   | 118  | 138  |
| 3500     | 49                                    | 59   | 98   | 118  | 138  |
| 4000     | 49                                    | 59   | 98   | 118  | 138  |
| 4500     | 49                                    | 59   | 98   | 118  | 147  |
| 5000     | 49                                    | 69   | 98   | 138  | 147  |
| MATERIAL | SPECIFIC GRAVITY = 0.74               |      |      |      |      |
|          | [Hatched Box] SPECIFIC GRAVITY = 0.50 |      |      |      |      |

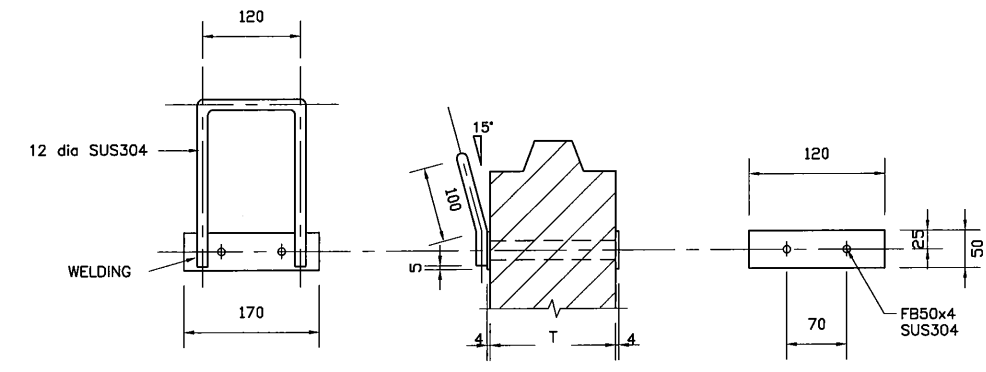
**SELECTION TABLE FOR THICKNESS**

SL - SPAN LENGTH  
H - WATER DEPTH

| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |                            |   |  | TITLE: Kila Kila STP - WOODEN STOP LOGS DETAILS 1/2   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
|---|----------------------------|---|--|---|--|---|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|----------------------|----------------|----------------------------|
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU) |                            | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN |  | NOTES:  |  | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
| JAPAN INTERNATIONAL COOPERATION AGENCY  |                            |   |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> |  | REVISIONS   |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">CHECKED by CONSULTANT<br/>Project Manager<br/>T.Fuji</td> <td style="width: 50%; padding: 5px;">DATE:<br/>1. Dec 2011</td> </tr> <tr> <td style="padding: 5px;">SCALE:<br/>1/10</td> <td style="padding: 5px;">DRAWING NO.:<br/>STP-SD-006</td> </tr> </table> |  | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji | DATE:<br>1. Dec 2011 | SCALE:<br>1/10 | DRAWING NO.:<br>STP-SD-006 |
| REVISIONS   |                            |   |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
| REV.  | DATE                       | DESCRIPTION                                     |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
|   |                            |   |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
|   |                            |   |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
|   |                            |   |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
| CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  | DATE:<br>1. Dec 2011       |   |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |
| SCALE:<br>1/10  | DRAWING NO.:<br>STP-SD-006 |   |  |   |  |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |                      |                |                            |

**NOTES**

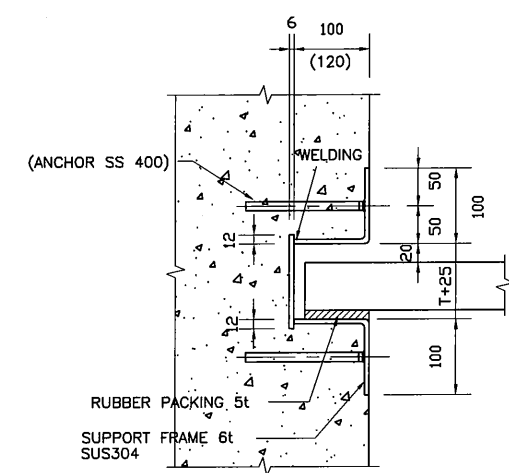
1. CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.



**HANDLE DETAILS - (TYPE I)**

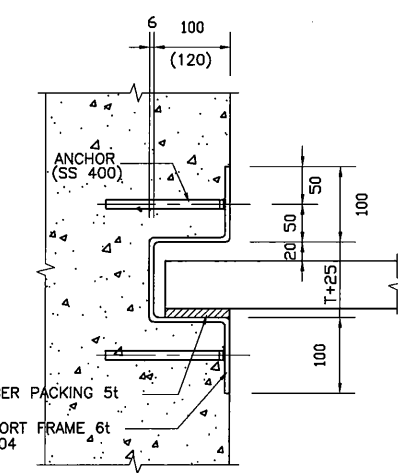
SCALE 1:10

( FOR T < 100mm )



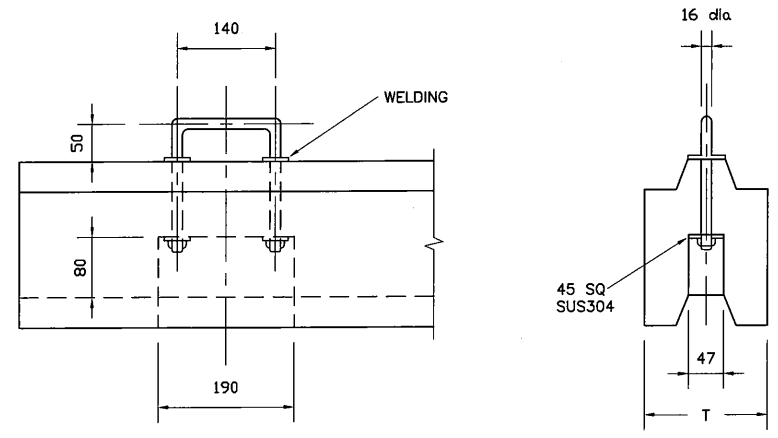
**TYPE A**

SCALE 1:10



**TYPE B**

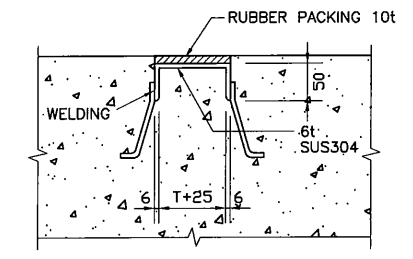
SCALE 1:10



**HANDLE DETAILS - (TYPE II)**

SCALE 1:10

( FOR T > 100mm )



**BOTTOM PAVING METAL**

SCALE 1:10

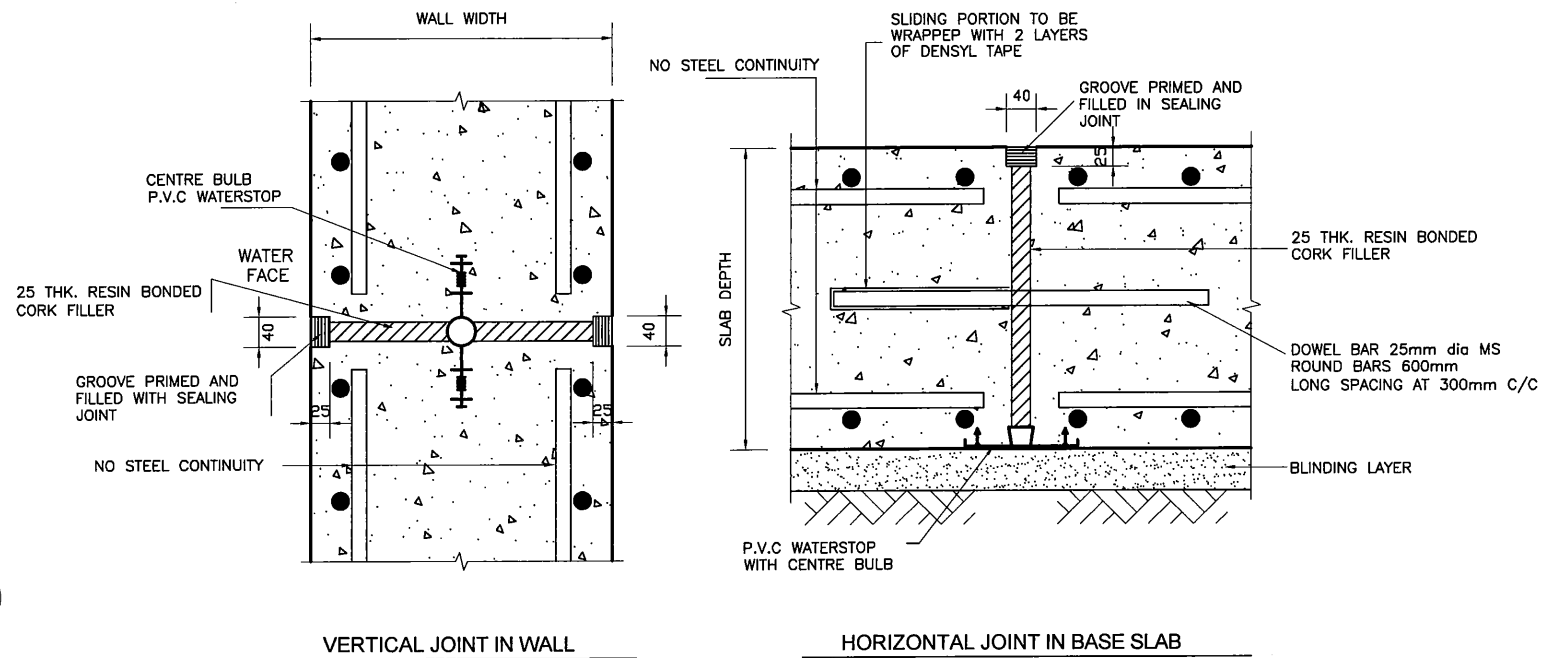
**SUPPORT FRAME DETAILS**

| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - WOODEN STOP LOGS DETAILS 2/2   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   | <table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | REVISIONS   |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |
| REVISIONS   |   |   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
| REV.  | DATE  | DESCRIPTION   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   |   |   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   | DATE: 1. Dec 2011   | SCALE: 1/10   |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |
|   |   | DATE: 1. Dec 2011   | DRAWING NO.: STP-SD-007                             |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |

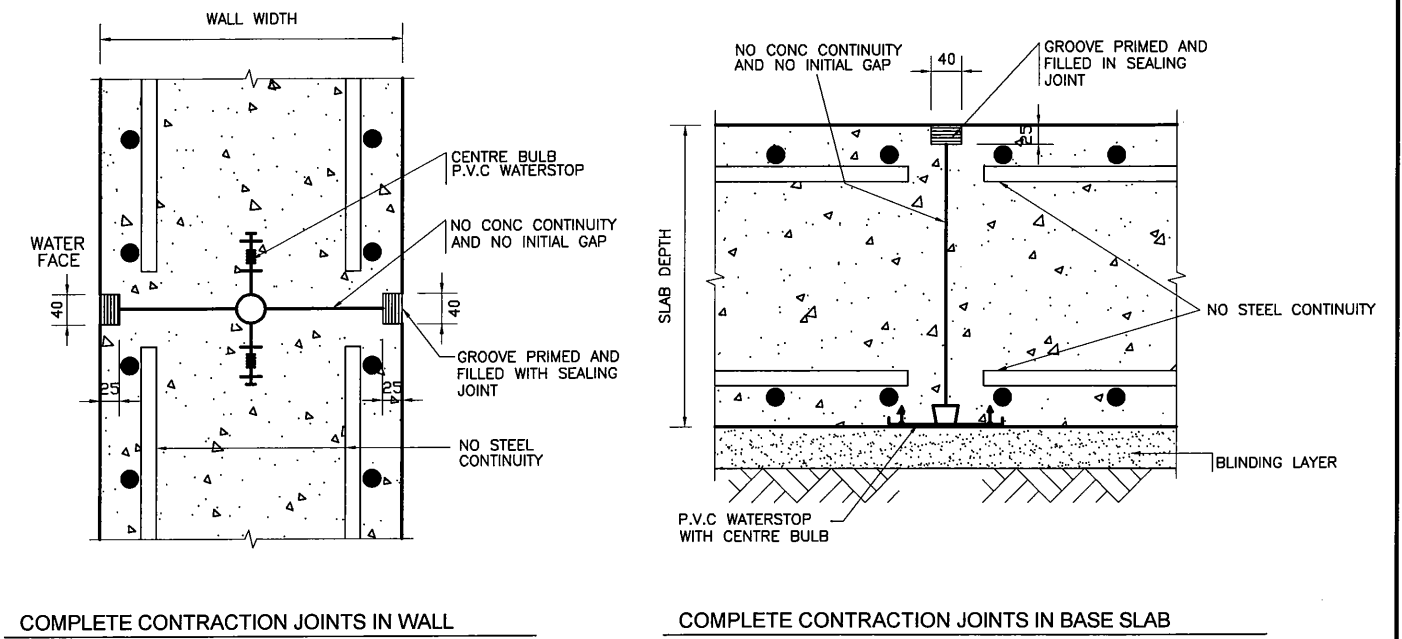


**NOTES**

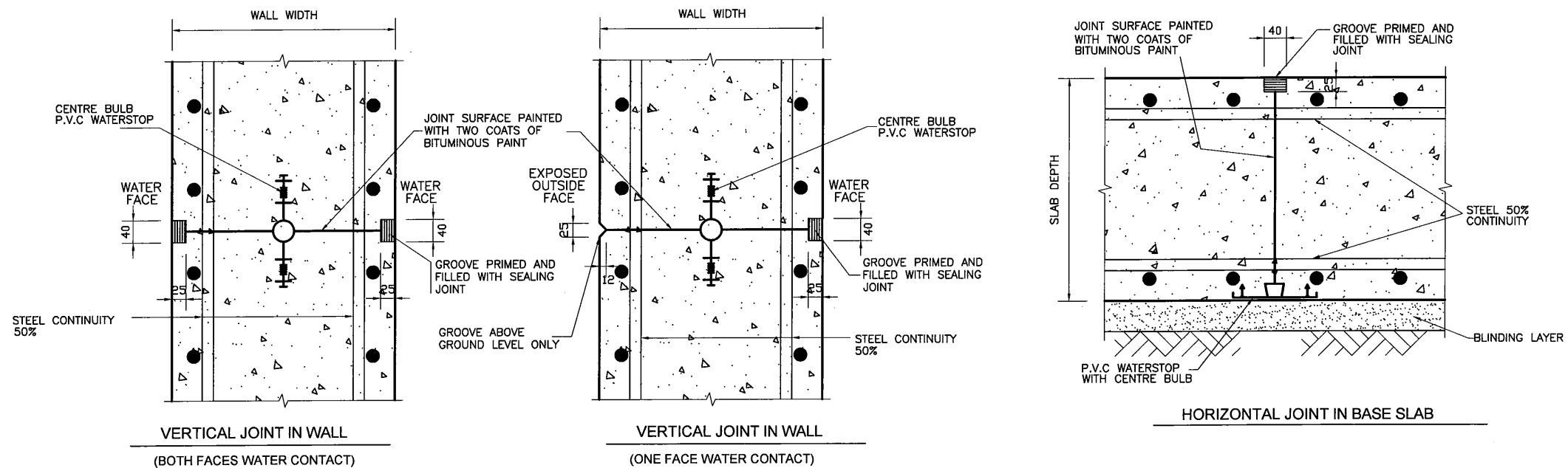
1. CONTRACTOR SHALL SUBMIT A SHOP DRAWINGS FOR ENGINEER'S APPROVAL.



**(a) EXPANSION JOINTS**

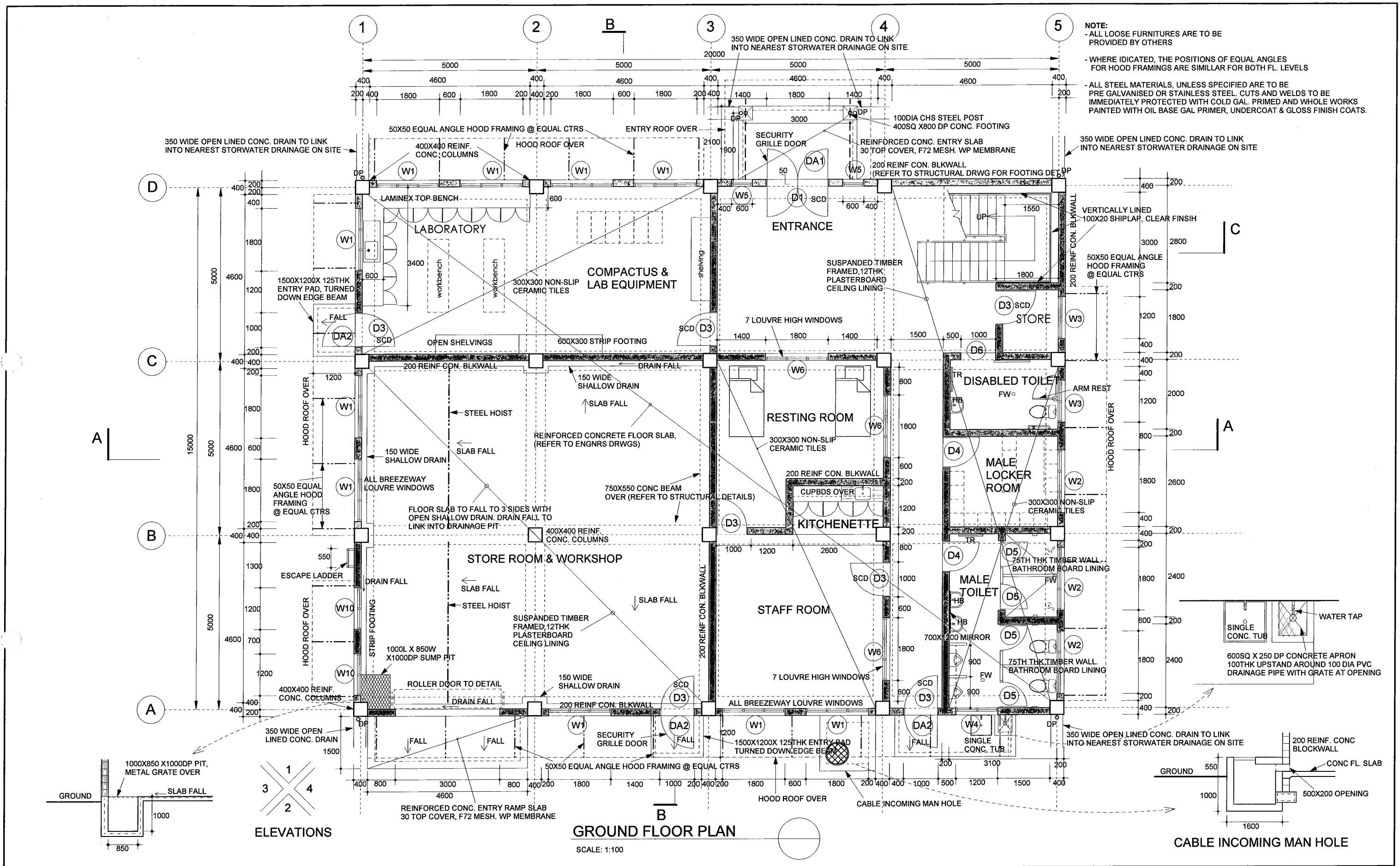


**(b) COMPLETE CONTRACTION JOINTS**



**(c) PARTIAL CONTRACTION JOINTS**

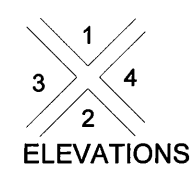
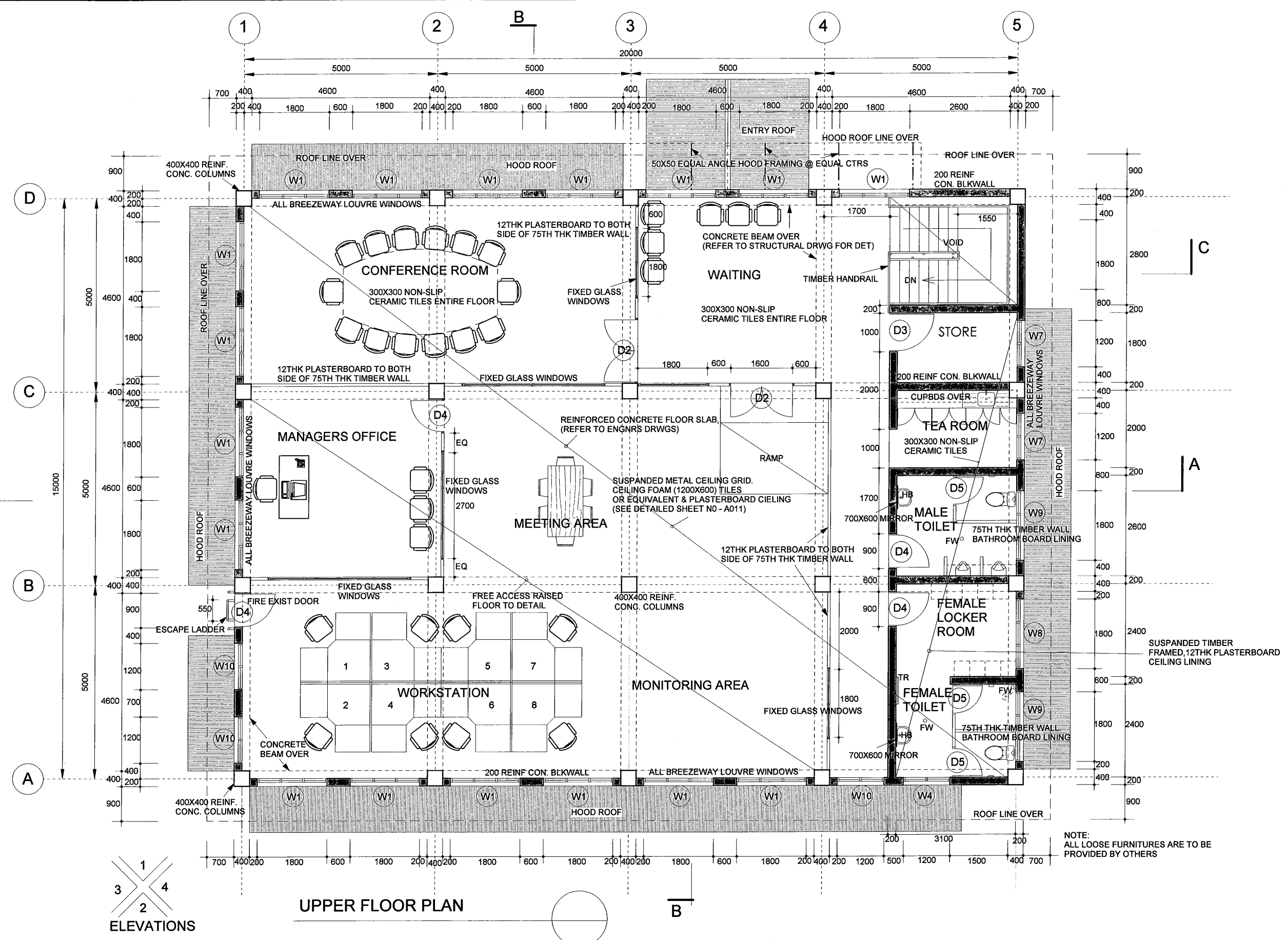
|   |   |  |           |      |   |  |                      |
|---|---|--|-----------|------|---|--|----------------------|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - EXPANSION AND CONTRACTION JOINT DETAILS |           |      |   |  |                      |
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:   | REVISIONS |      | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE:<br>1. Dec 2011                               | SCALE:<br>1/10       |
|   |   |  | REV.      | DATE | DESCRIPTION   | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji | DATE:<br>1. Dec 2011 |



**GROUND FLOOR PLAN**

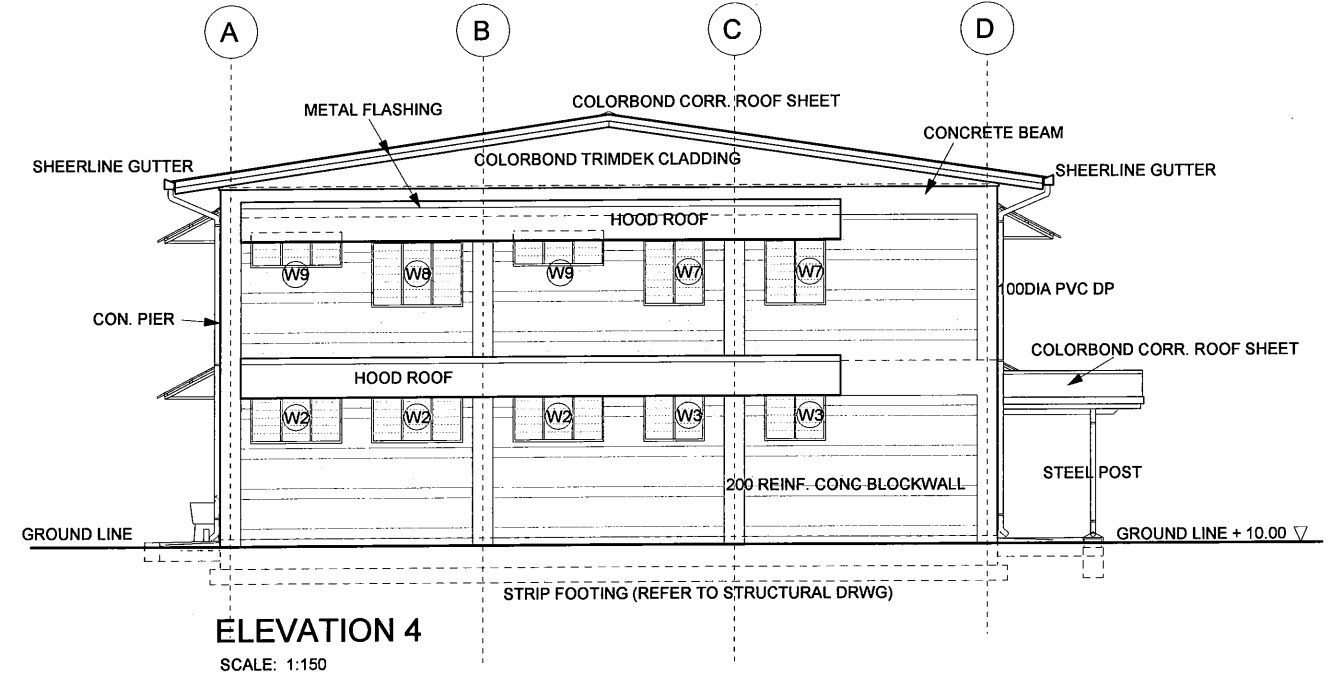
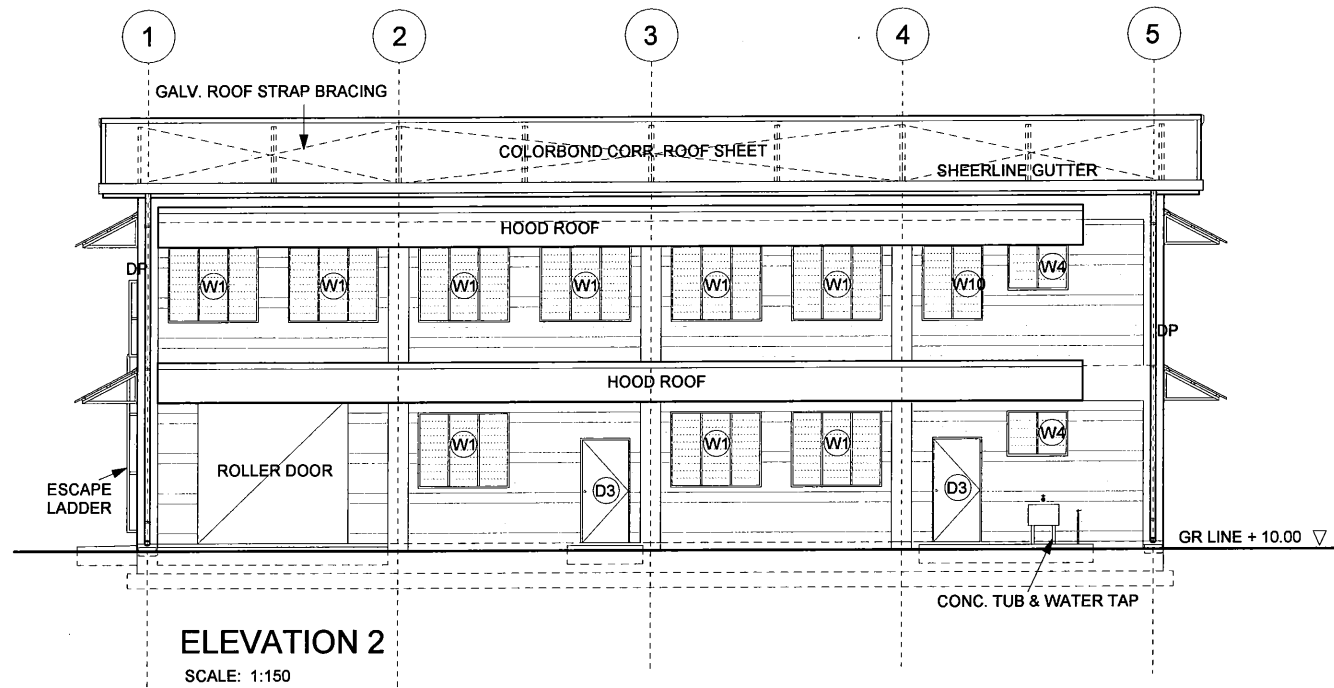
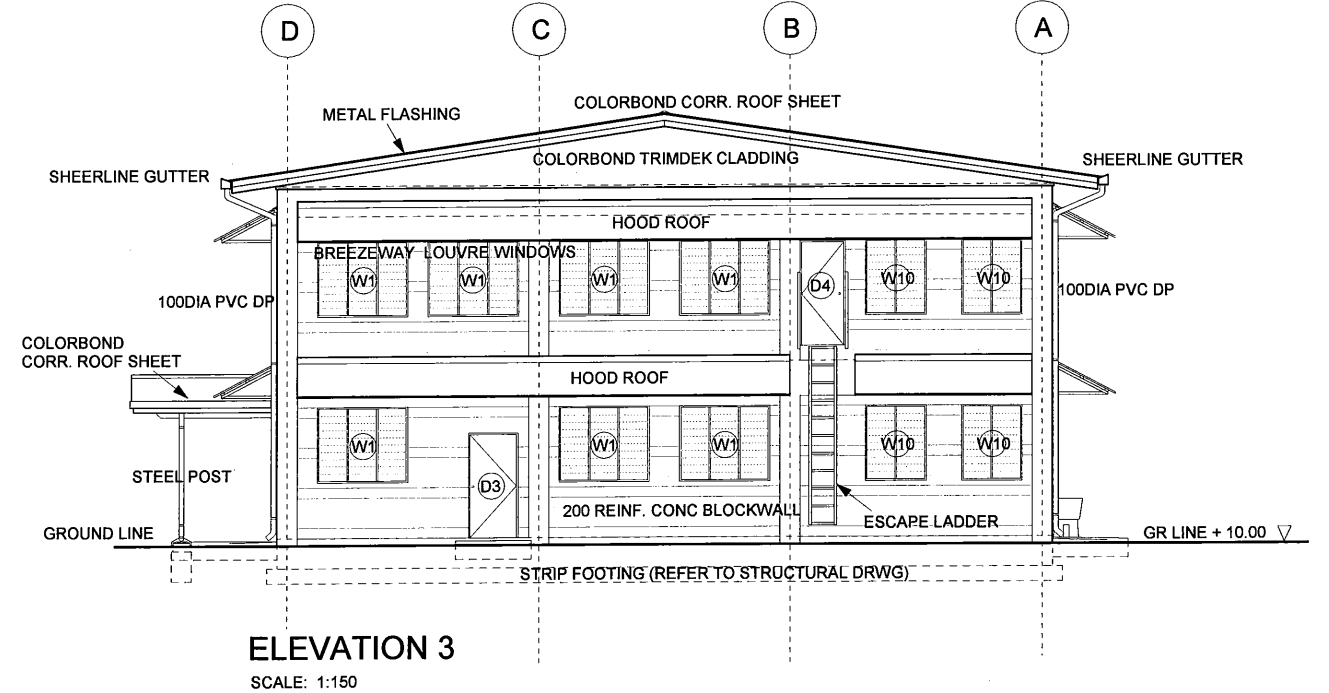
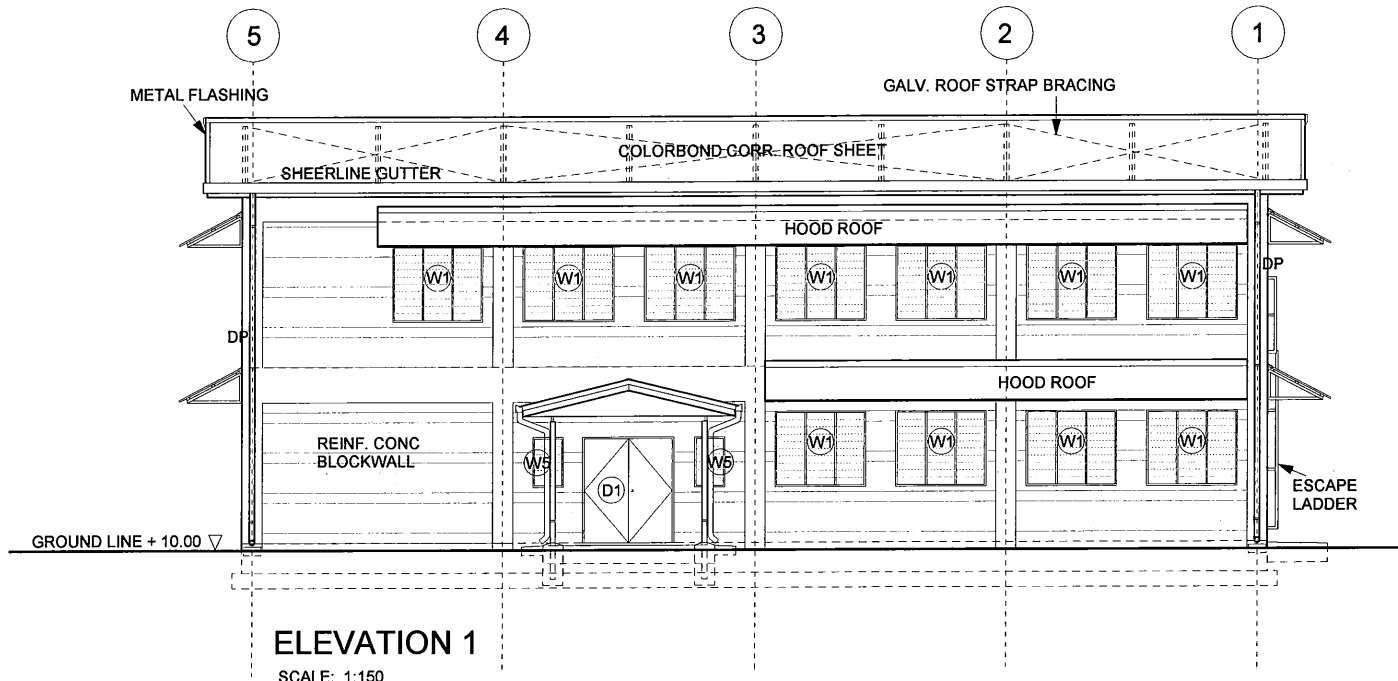
SCALE: 1:100

|  |   |  |      |   |                   |                          |
|--|---|--|------|---|-------------------|--------------------------|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)  |   | TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Ground Floor Plan |      |   |                   |                          |
| CLIENT: <b>IPBC</b> INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br><b>JICA</b> JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS: <b>NJS</b> NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:   |      | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE: 1. Dec 2011 | SCALE: 1/100             |
|  |   |  |      | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  | DATE: 1. Dec 2011 | DRAWING NO.: STP-AB-A001 |
|  |   | REVISIONS  |      |   |                   |                          |
|  |   | REV.   | DATE | DESCRIPTION   |                   |                          |
|  |   |  |      |   |                   |                          |



UPPER FLOOR PLAN

|   |   |   |           |      |   |  |                   |
|---|---|---|-----------|------|---|--|-------------------|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Upper Floor Plan |           |      |   |  |                   |
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | REVISIONS |      | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE: 1. Dec 2011                                  | SCALE: 1/100      |
|   |   |   | REV.      | DATE | DESCRIPTION   | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji | DATE: 1. Dec 2011 |



PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Elevations

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

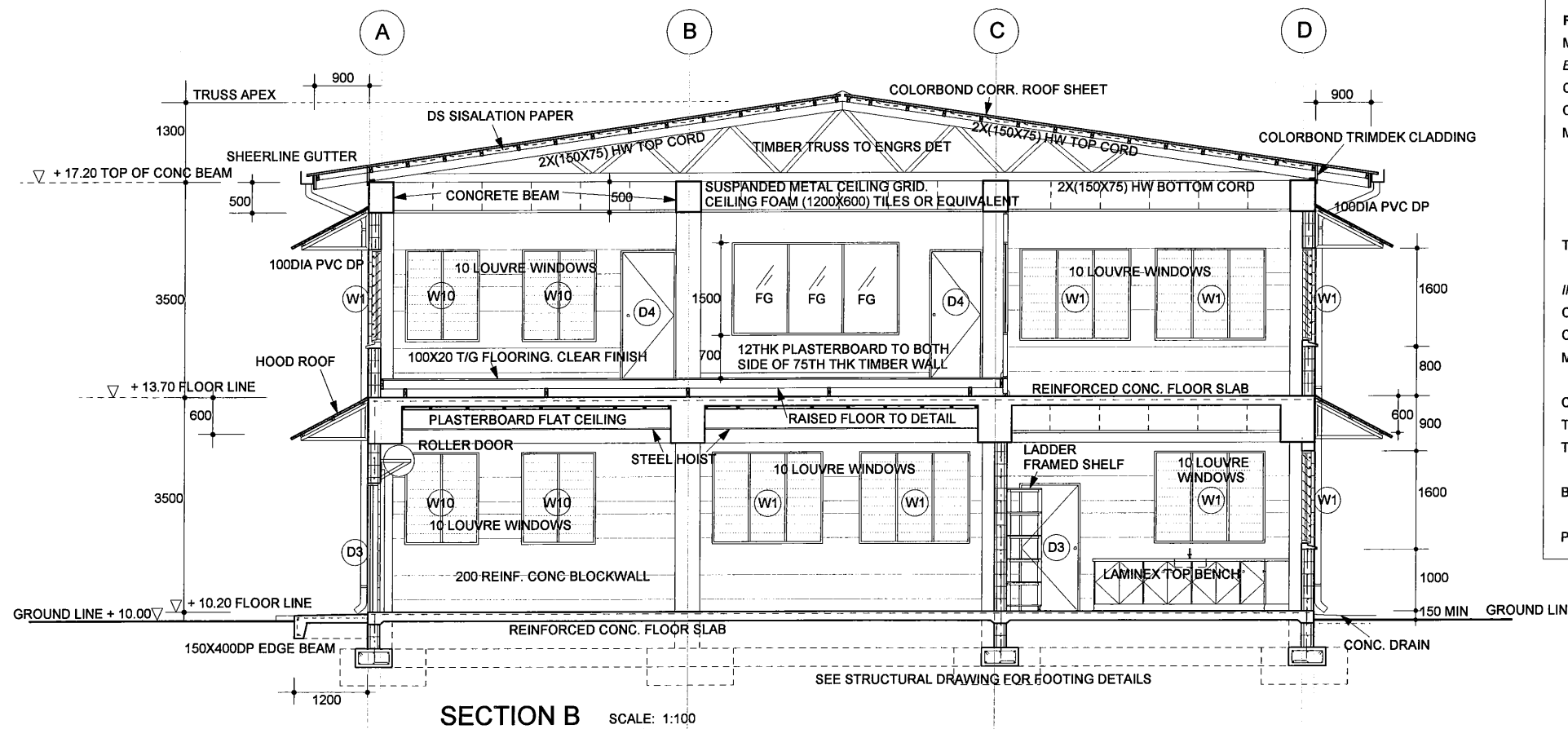
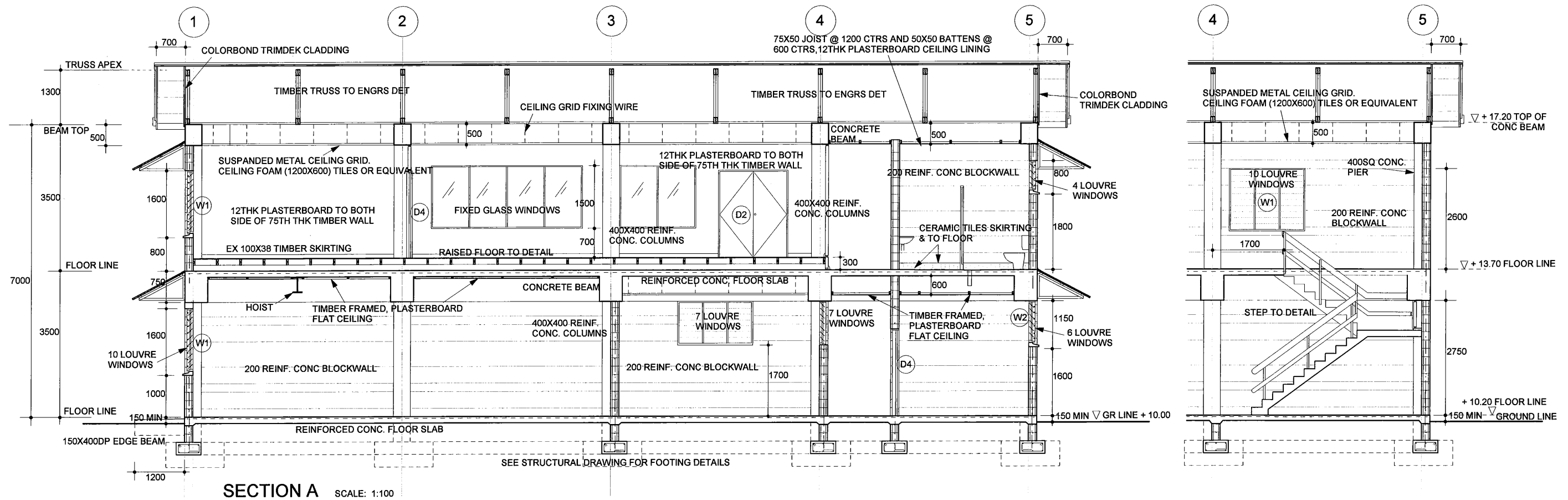
CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

| REVISIONS |      |             |
|-----------|------|-------------|
| REV.      | DATE | DESCRIPTION |
|           |      |             |
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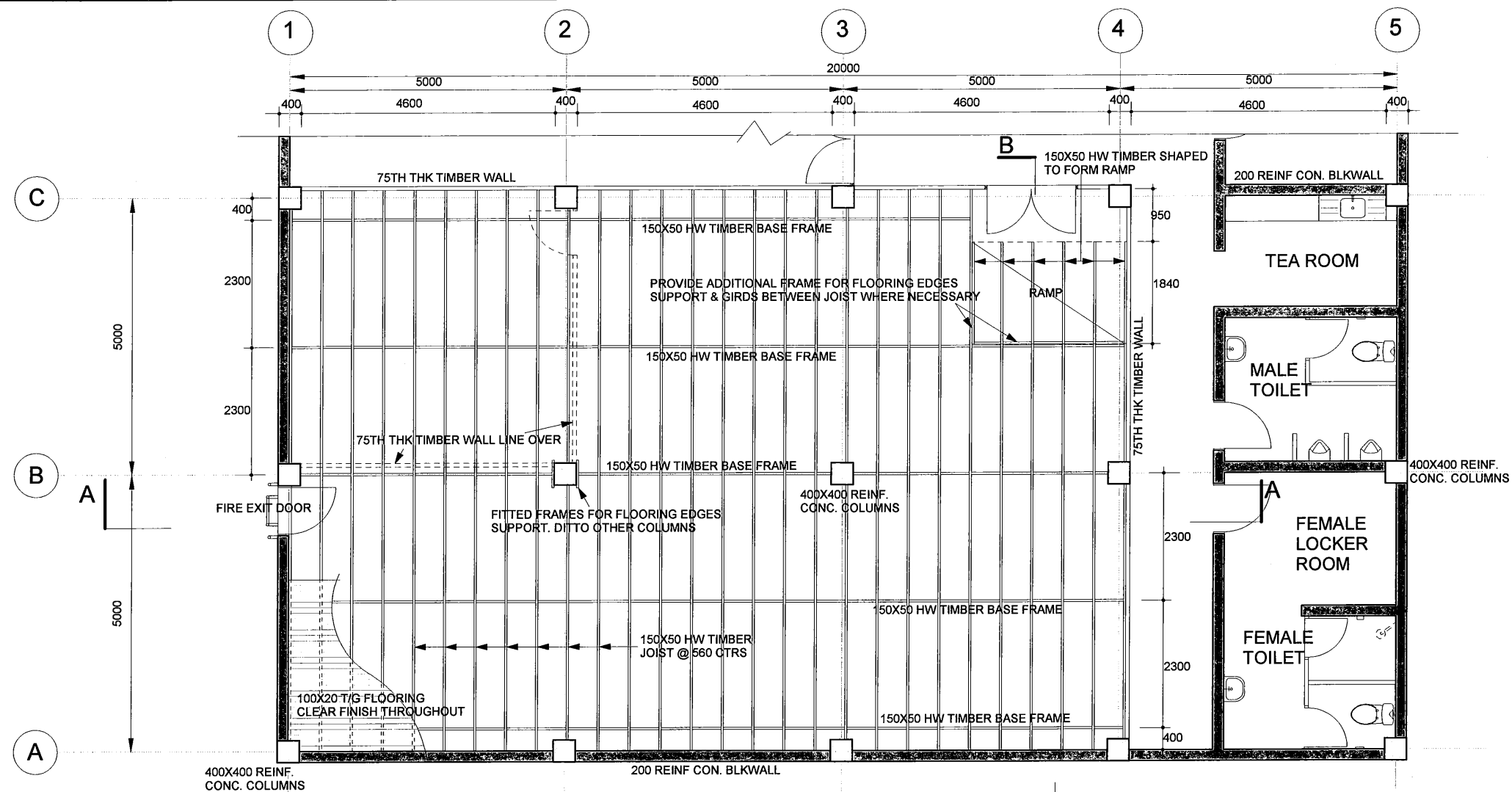
APPROVED by PMU:  
 Project Director  
 Lot G. Zauya  
 CHECKED by CONSULTANT  
 Project Manager  
 T. Fuji

DATE: 1. Dec 2011  
 SCALE: 1/150  
 DATE: 1. Dec 2011  
 DRAWING NO.: STP-AB-A003



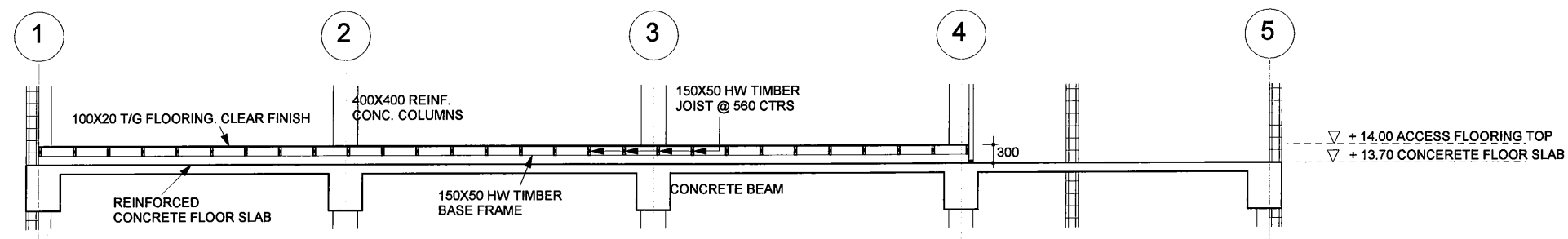
| FINISHES SCHEDULE |                                   |                                       |                |
|-------------------|-----------------------------------|---------------------------------------|----------------|
| MATERIAL          | LOCATION                          | FINISH                                | COLOUR         |
| <b>EXTERNAL</b>   |                                   |                                       |                |
| CONC.             | ENTRY PAD                         | BROOM FINISH                          |                |
| CONC.             | BLK WALLS                         | 2X ACRYLIC GLOSS TO BE SELECTED       |                |
| METAL             | POST, LADDER, GAL SECURITY FRAMES | GAL PRIME, UNDERCOAT & 2 GLOSS ENAMEL | TO BE SELECTED |
|                   | WALL CLADDING & TRIM              | TRIMDEK 0.48 BMT                      | COLORBOND      |
|                   | ROOF SHEETING                     | CORRUGATED                            | COLORBOND      |
|                   | FASCIA & BARGE                    | COLORBOND                             | COLORBOND      |
| TIMBER            | DOOR/WINDOW FRAMES                | UNDERCOAT & 2 ACRYLIC SEMI GLOSS      | TO BE SELECTED |
|                   | FASCIA & BARGE                    | OIL PRIME, 2 ACRYLIC SEMI GLOSS       | TO BE SELECTED |
| <b>INTERNAL</b>   |                                   |                                       |                |
| CONC.             | FLOOR                             | STEEL TROWEL FINISH                   |                |
| CONC. BLK WALLS   |                                   | PLASTERED & 2X ACRYLIC GLOSS          | TO BE SELECTED |
| METAL             | GAL SECURITY FRAMES               | GAL PRIME, UNDERCOAT & 2 GLOSS ENAMEL | TO BE SELECTED |
|                   | RAFTERS & FRAMES                  | GAL PRIME, UNDERCOAT & 2 GLOSS ENAMEL | TO BE SELECTED |
| CERAMIC TILES     | FLOOR & WALL (INDICATED)          | (300 X 300) & 150X100                 | TO BE SELECTED |
| TIMBER            | DOOR/WINDOW FRAMES                | UNDERCOAT & 2 GLOSS ENAMEL            | TO BE SELECTED |
| TIMBER            | BENCHES & SHELVES                 | 2X ACRYLIC SEMI GLOSS                 | TO BE SELECTED |
|                   | SHIPLAP                           | CLEAR FINISH                          |                |
| BENCH TOP         |                                   | LAMINEX TOP                           | GREY           |
| PLASTIC           | WALL & PLASTERBD CEILING LINING   | 2X ACRYLIC SEMI GLOSS                 | TO BE SELECTED |
|                   | WALLS - SHOWER/TOILET             | BATHROOM BOARDS                       | WHITE          |

| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)  |  | TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Sections A & B |   |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |
|--|--|---|---|-----------|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|
| CLIENT: IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>jica JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | <table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | REVISIONS |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  |
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| APPROVED by PMU: Project Director Lot G Zauya  |  | DATE: 1. Dec 2011   | SCALE: 1/100  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |
| CHECKED by CONSULTANT: Project Manager T. Fuji   |  | DATE: 1. Dec 2011   | DRAWING NO.: STP-AB-A004  |           |  |  |      |      |             |  |  |  |  |  |  |  |  |  |

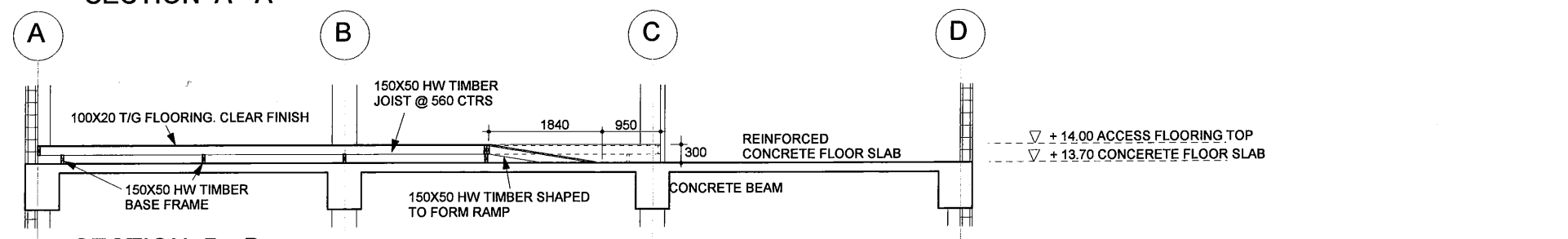


**UPPER ACCESS FLOOR FRAMING PLAN**

SCALE: 1: 100



**SECTION A - A**



**SECTION B - B**

PROJECT: **PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)**

TITLE: **Kila Kila STP - ADMINISTRATION BUILDING - Upper Floor, Access floor framing detail**

CLIENT: **INDEPENDENT PUBLIC BUSINESS CORPORATION**  
**PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT**  
**PROJECT MANAGEMENT UNIT (PMU)**  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

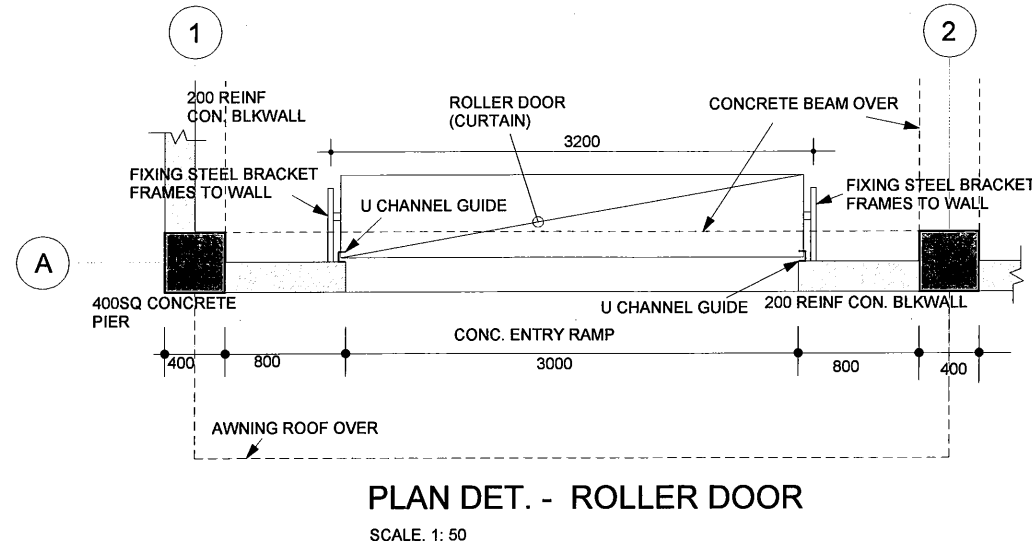
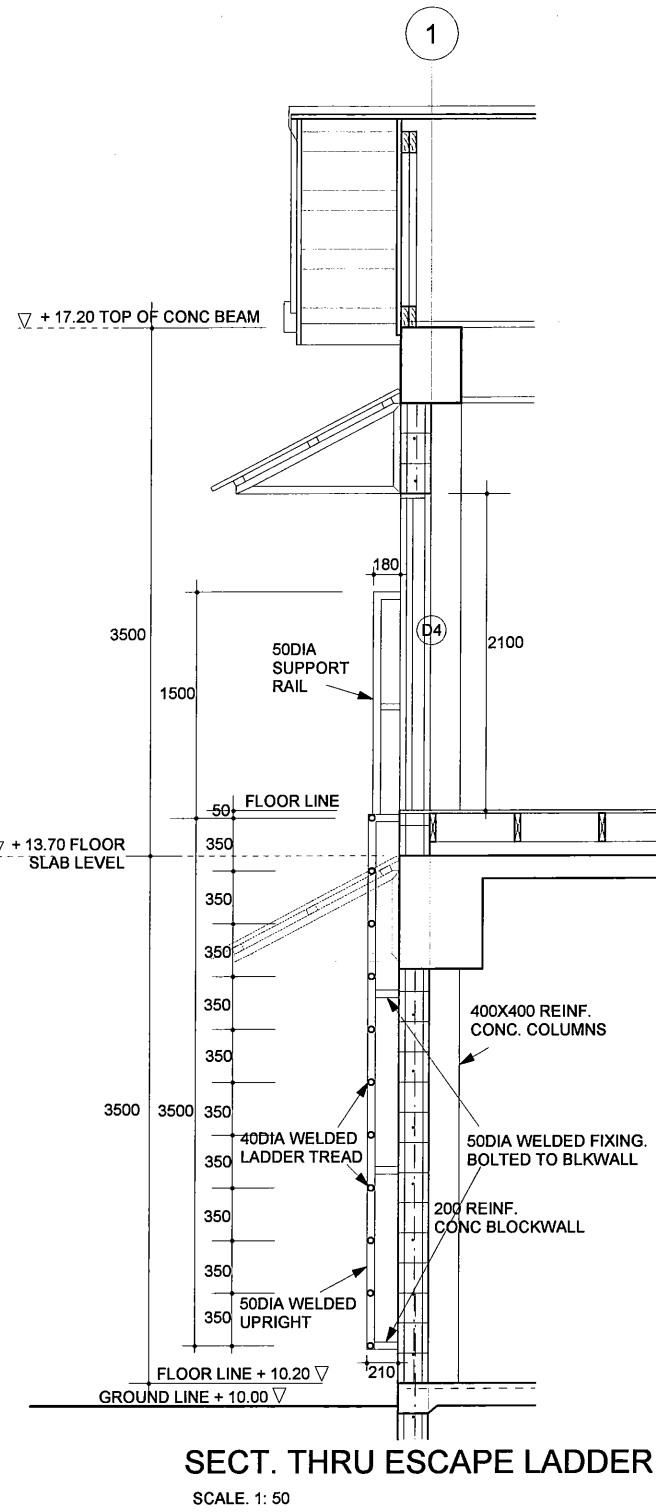
CONSULTANTS: **NJS CONSULTANTS CO., LTD. - JAPAN**

NOTES:

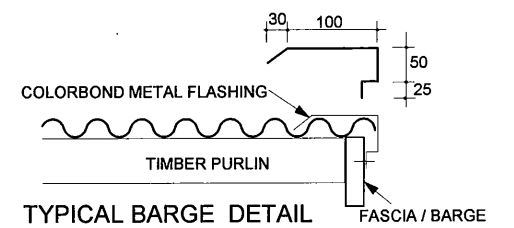
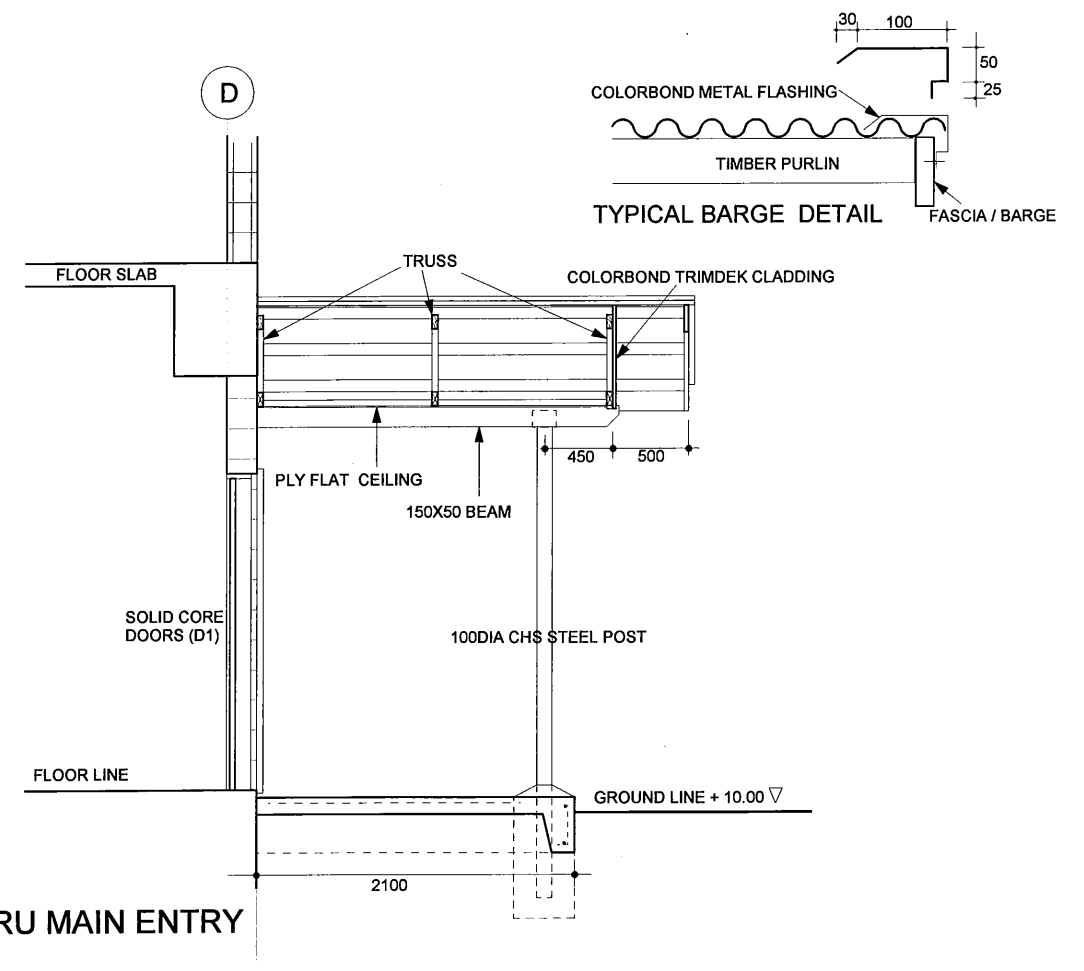
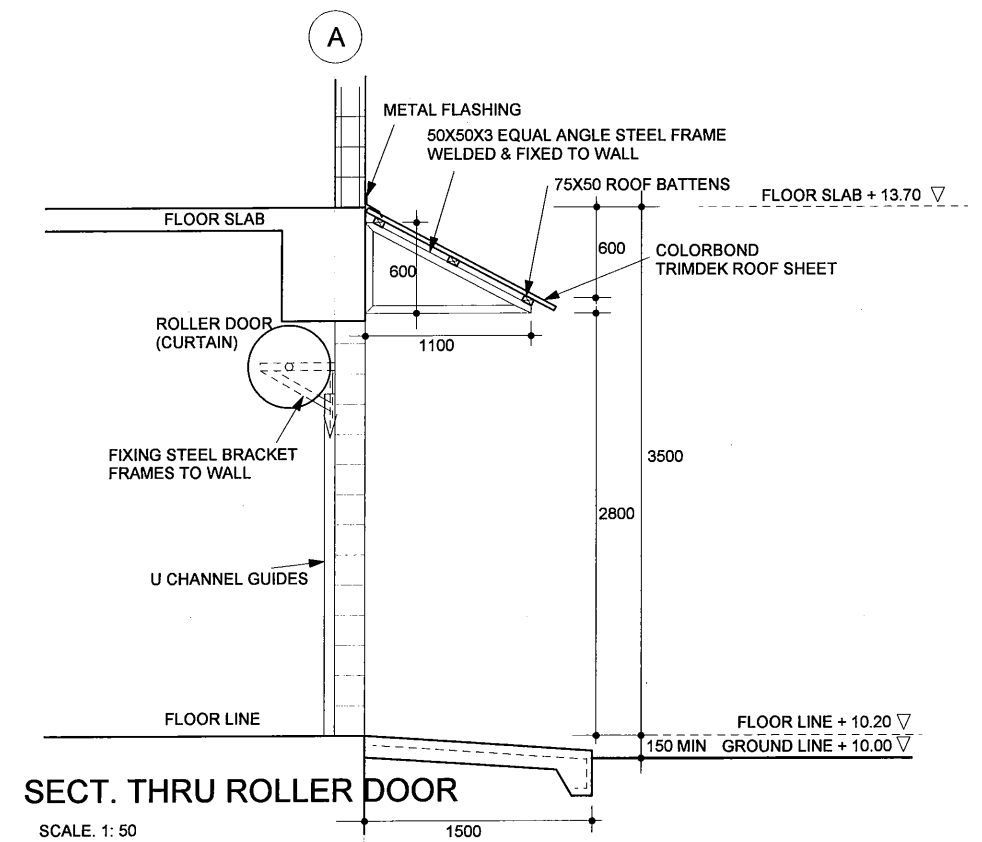
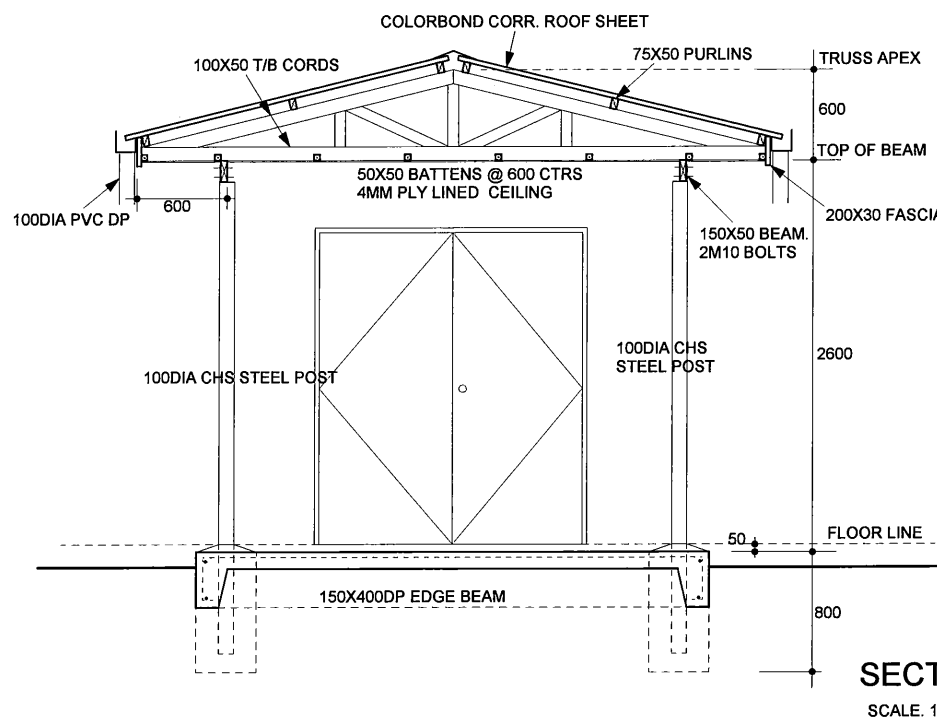
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| REV.      | DATE | REVISIONS | DESCRIPTION |
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APPROVED by PMU:  
 Project Director  
 Lot G.Zauya  
 DATE: 1. Dec 2011  
 SCALE: 1/100  
 CHECKED by CONSULTANT  
 Project Manager  
 T.Fuji  
 DATE: 1. Dec 2011  
 DRAWING NO.: **STP-AB-A005**

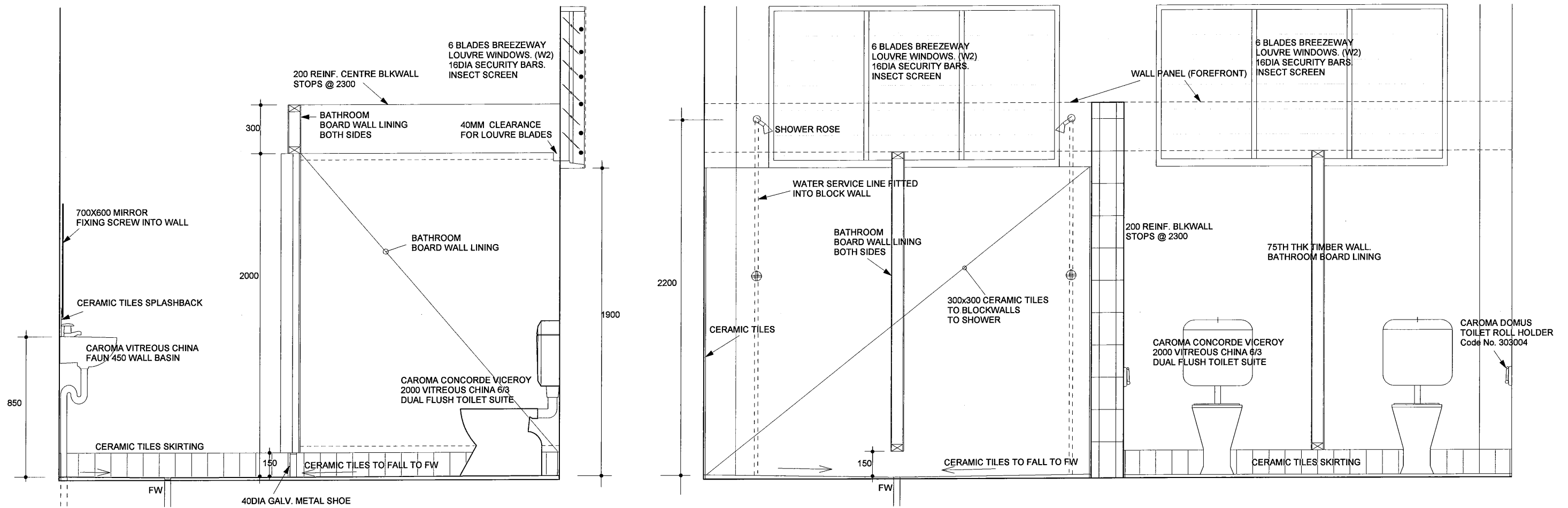




**NOTE:**  
- ALL STEEL MATERIALS, UNLESS SPECIFIED ARE TO BE PRE GALVANISED.  
CUTS AND WELDS TO BE IMMEDIATELY PROTECTED WITH COLD GAL. PRIMED  
AND WHOLE WORKS PAINTED WITH OIL BASE GAL. PRIMER, UNDERCOAT &  
GLOSS FINISH COATS.

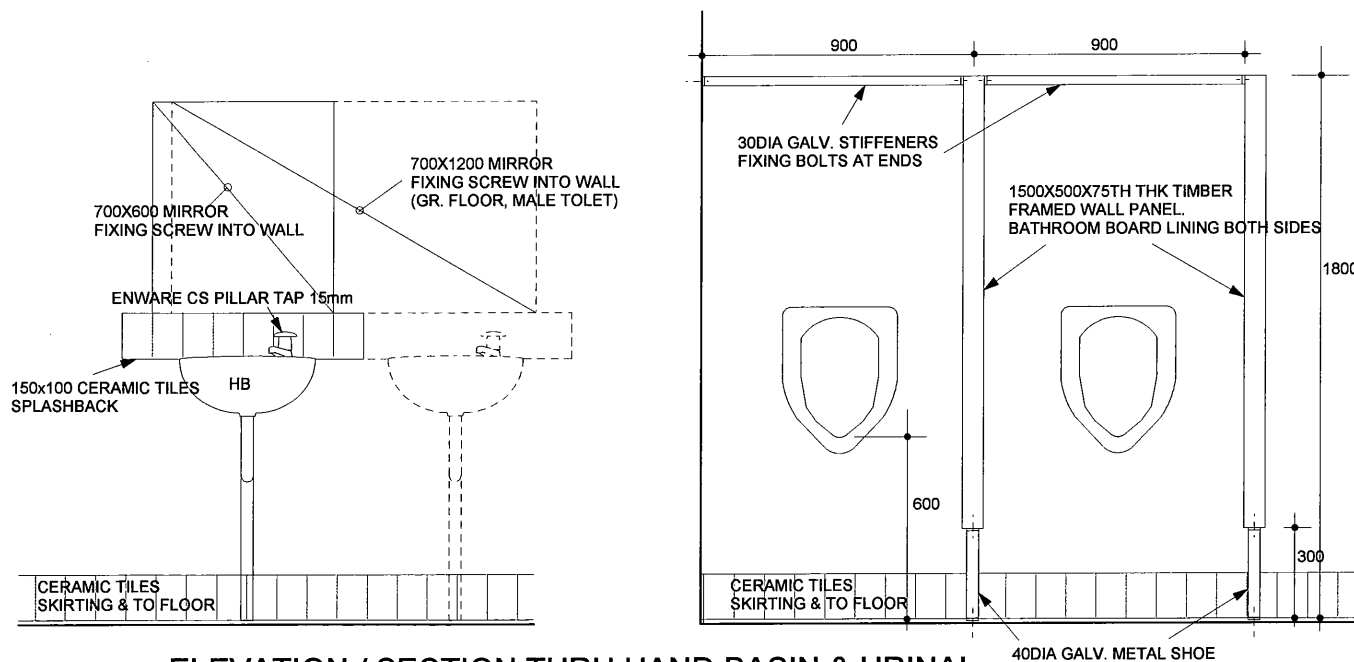


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|---|--|---|-----------|------|---|--|-------------------|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |  | TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Entry Sections & Details |           |      |   |  |                   |
| CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>jica JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | REVISIONS |      | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE: 1. Dec 2011                                  | SCALE: 1/50       |
|   |  |   | REV.      | DATE | DESCRIPTION   | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji | DATE: 1. Dec 2011 |



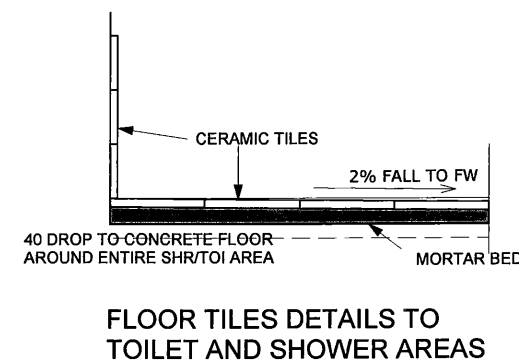
SECTION THRU GR. FLOOR TOILETS & SHOWER (UPPER FLOOR SIMILLAR)

SCALE: 1: 25

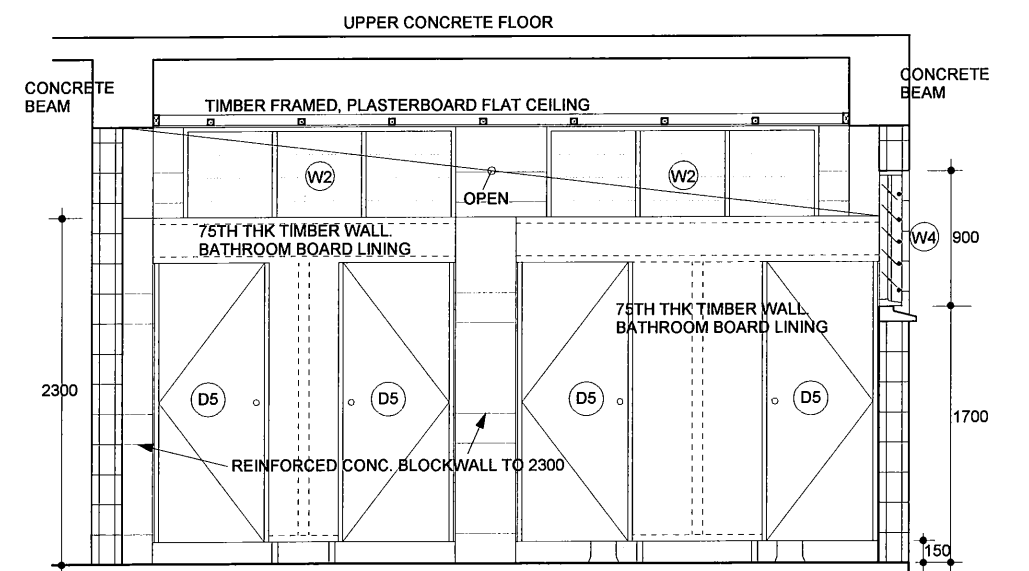


ELEVATION / SECTION THRU HAND BASIN & URINAL

SCALE: 1: 25



FLOOR TILES DETAILS TO TOILET AND SHOWER AREAS



SECTION /ELEVATION, GR. FLOOR TOILETS & SHOWER

SCALE: 1: 50

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Toilet & Shower Details

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

| REVISIONS |      | DESCRIPTION |
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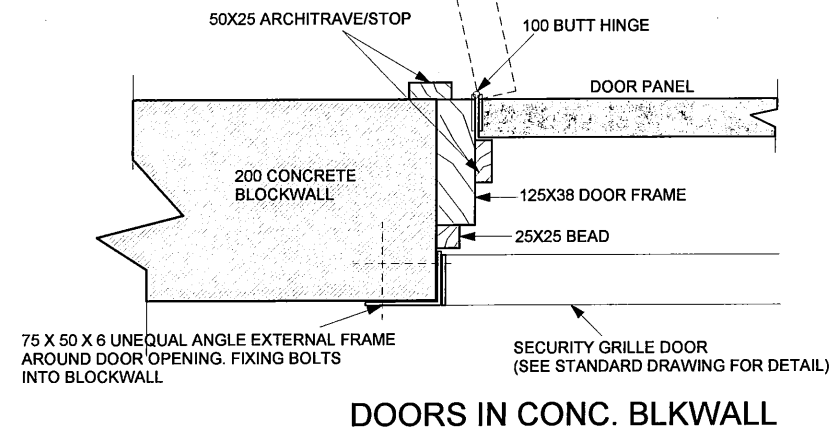
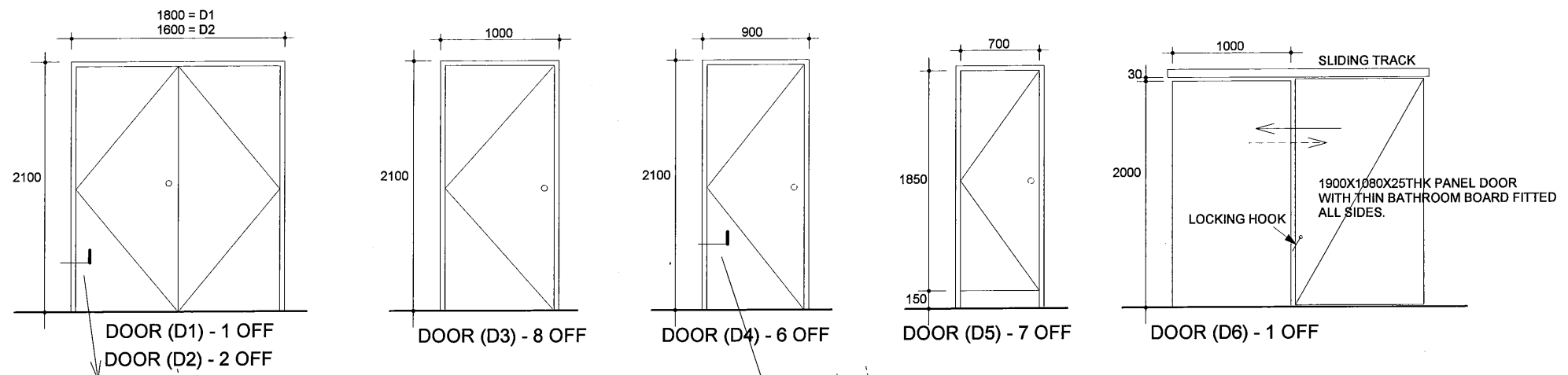
APPROVED by PMU:  
 Project Director  
 Lot G. Zauya  
 CHECKED by CONSULTANT  
 Project Manager  
 T. Fuji

DATE: 1. Dec 2011

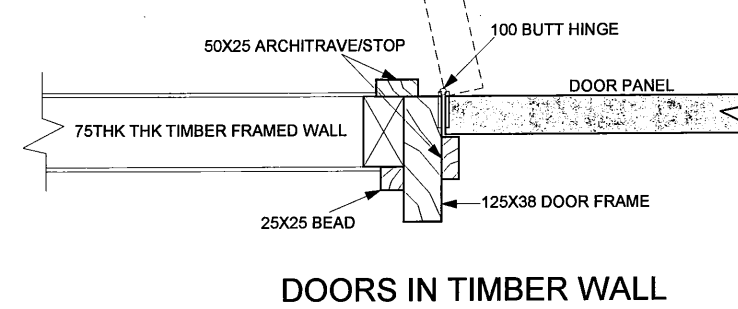
SCALE: 1/25

DATE: 1. Dec 2011

DRAWING NO.: STP-AB-A007



DOORS IN CONC. BLKWALL

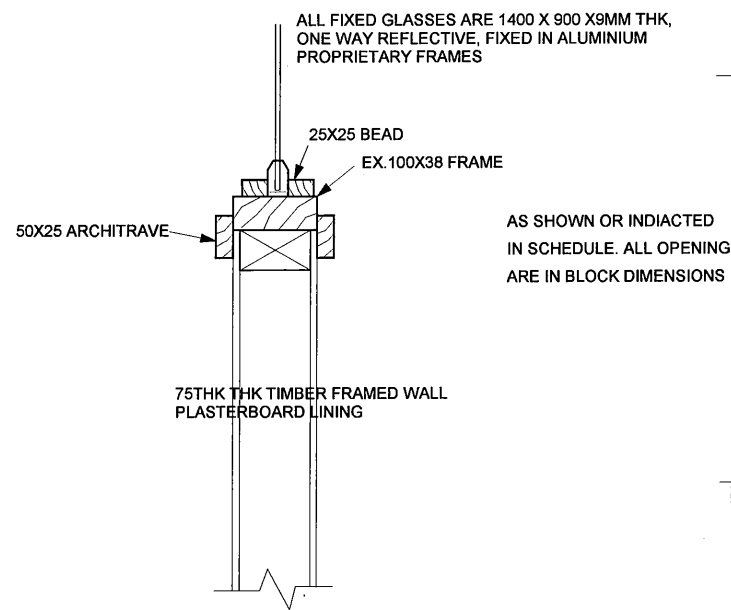


DOORS IN TIMBER WALL

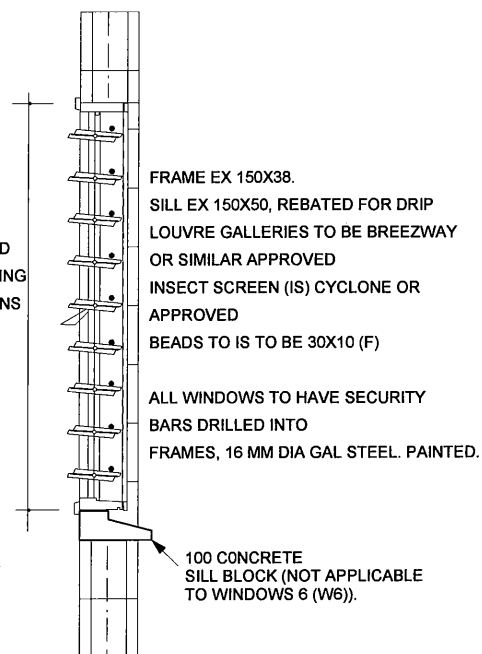
**DOOR & LOCK SCHEDULE, ALL LOCK FURNITURES TO BE SATIN & CHROME FINISH**

- WHERE INDICATED WITH INITIAL SCD, ARE SOLID CORE DOORS, OTHERS ARE HOLLOW CORE DOORS.  
 ALL DOOR 1 (D1) - DOOR 4(D4) - 536 ESCAPE SET & 007 ROUND EXT. CYLINDER, TUBULAR DEADBOLTS. KEYED ALIKE FOR EACH DOOR BUT DIFFERS TO OTHERS  
 - 3X 100 STEEL BUTT HINGES FOR EXTERNAL DOORS & 2 X 100 STEEL BUTT HINGES FOR INTERNAL DOORS  
 - BARREL LOCKING BOLTS OR EQUIVALENT.  
 DOOR 5 (D5) - SEE DETAILS  
 DOOR 6 (D6) - SEE DETAILS  
 DOOR CLOSERS - 401 DOOR CLOSERS TO ALL DOORS EXCEPT (2XD3 TO STORES), (D5) & (D6).

SECURITY GRILLE DOORS (SEE STANDARD DRAWING SHEET NO STP-STD047 FOR DETAILS)  
 DOOR TYPE (DA1) - 1 OFF  
 DOOR TYPE (DA2) - 3 OFF



FIXED GLASS DETAIL



WINDOW FRAME (TYPICAL)

| WINDOWS TYPE     | OPENING SIZE  | NO. OF BLADES      | TOTAL NUMBER |
|------------------|---------------|--------------------|--------------|
| WINDOWS 1 (W1)   | 1800W X 1500H | - 10 LOUVRE BLADES | - 27 OFF     |
| WINDOWS 2 (W2)   | 1800W X 1000H | - 6 LOUVRE BLADES  | - 3 OFF      |
| WINDOWS 3 (W3)   | 1200W X 1000H | - 6 LOUVRE BLADES  | - 2 OFF      |
| WINDOWS 4 (W4)   | 1200W X 900H  | - 5 LOUVRE BLADES  | - 2 OFF      |
| WINDOWS 5 (W5)   | 600W X 1000H  | - 6 LOUVRE BLADES  | - 2 OFF      |
| WINDOWS 6 (W6)   | 1800W X 1100H | - 7 LOUVRE BLADES  | - 3 OFF      |
| WINDOWS 7 (W7)   | 1200W X 1300H | - 8 LOUVRE BLADES  | - 2 OFF      |
| WINDOWS 8 (W8)   | 1800W X 1300H | - 8 LOUVRE BLADES  | - 1 OFF      |
| WINDOWS 9 (W9)   | 1800W X 700H  | - 4 LOUVRE BLADES  | - 2 OFF      |
| WINDOWS 10 (W10) | 1200W X 1500H | - 10 LOUVRE BLADES | - 5 OFF      |

FIXED GLASS PANELS - 1400X900X9MMTHK - 17 PANELS  
 ALL IN PROPRIETARY ALUMINIUM FRAMES AND BEADED WITH TIMBER STRIPS

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Door/Windows Schedule

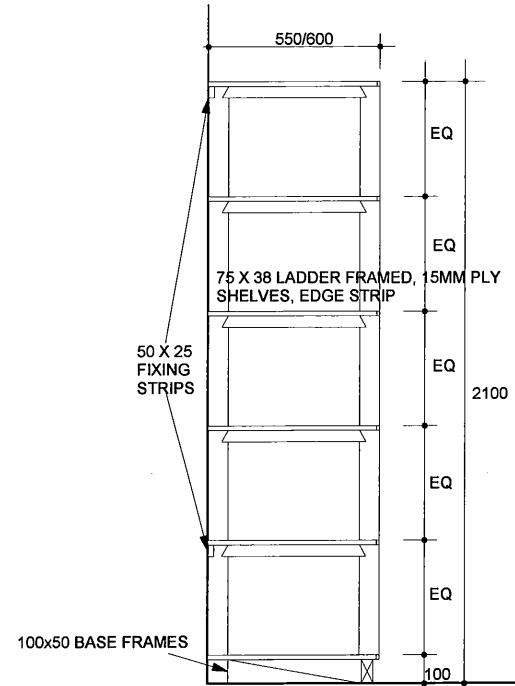
CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

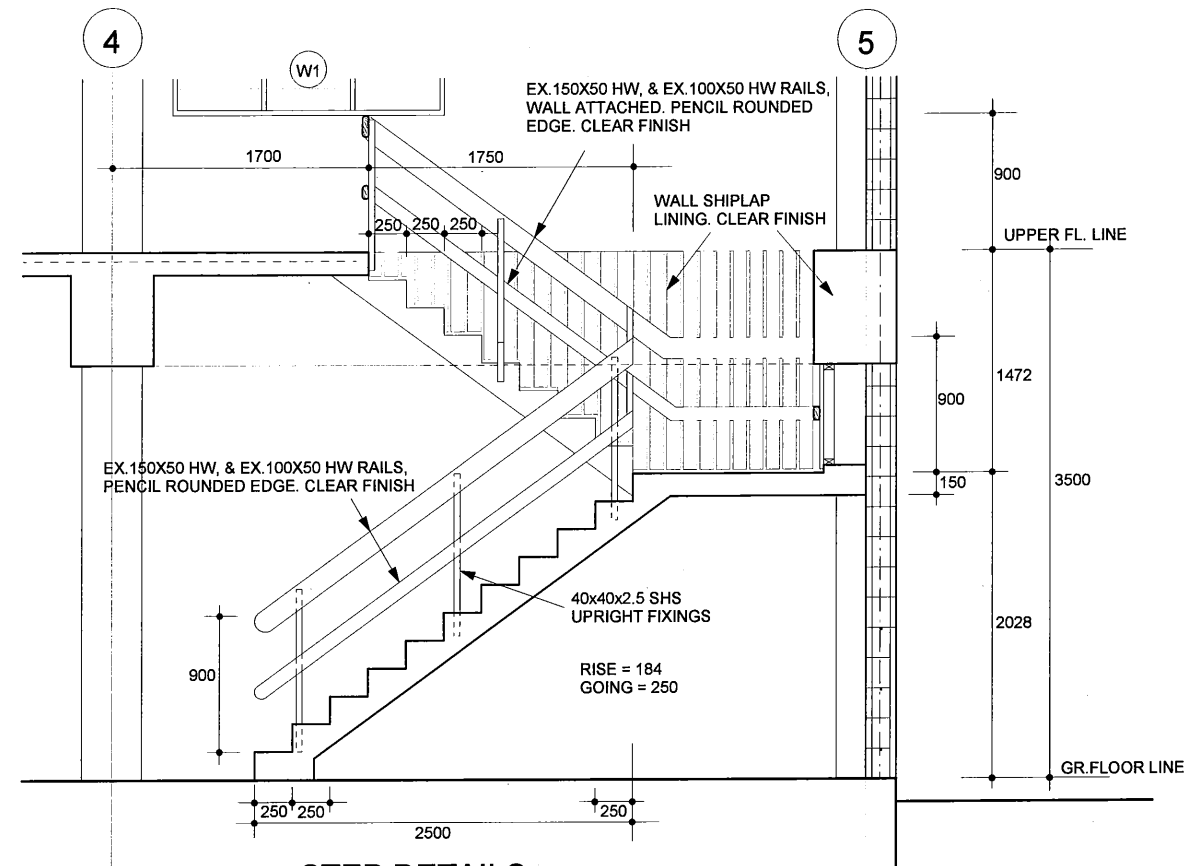
NOTES:

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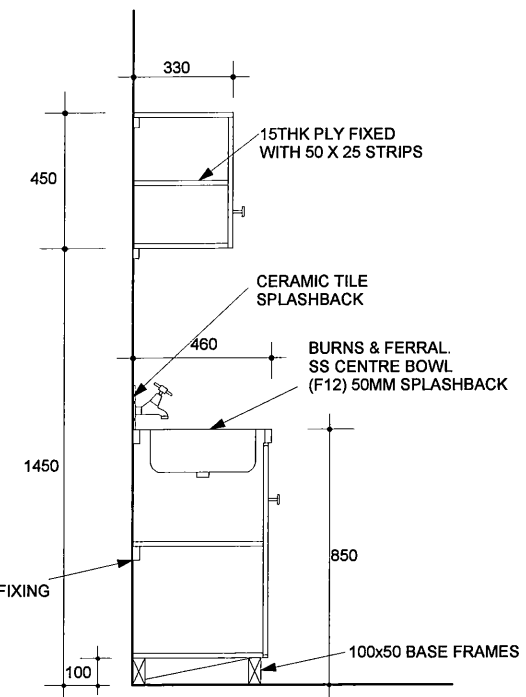
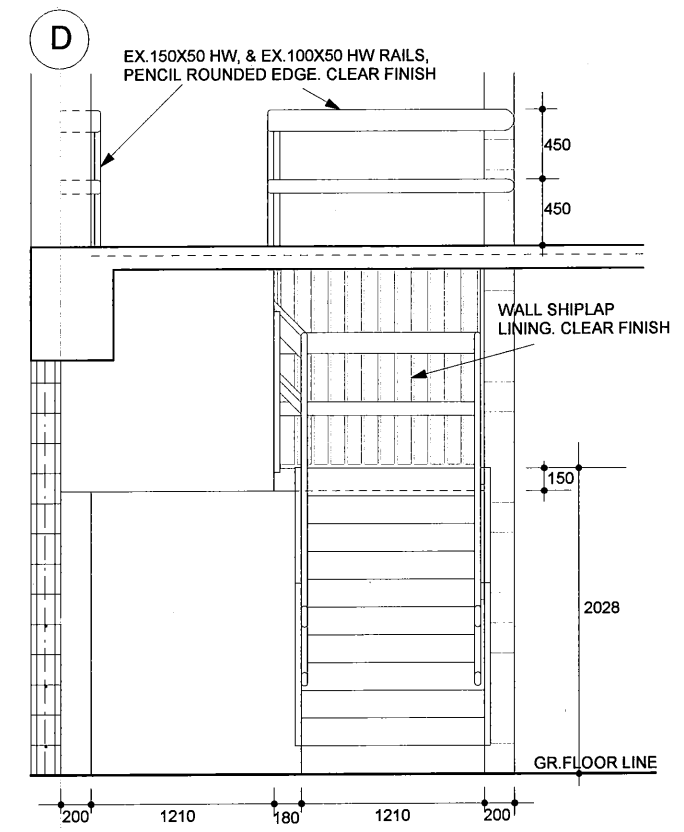
APPROVED by PMU: Project Director Lot G.Zauya  
 CHECKED by CONSULTANT Project Manager T.Fuji  
 DATE: 1. Dec 2011  
 SCALE: 1/25 & 1/50  
 DRAWING NO.: STP-AB-A008



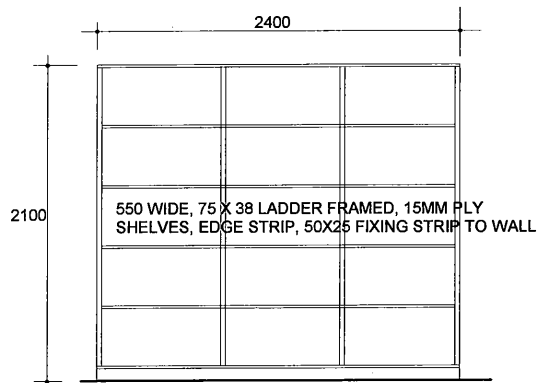
**LADDER FRAMED SHELVES DET (TYPICAL SECTION)**  
SCALE: 1: 25



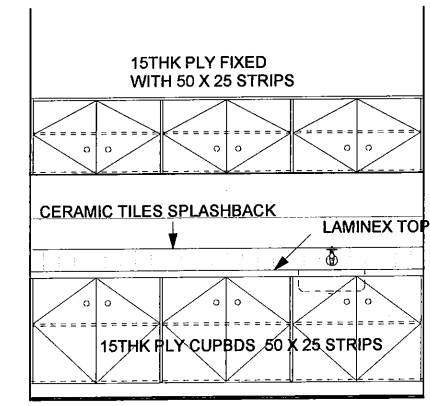
**STEP DETAILS** SCALE: 1: 50



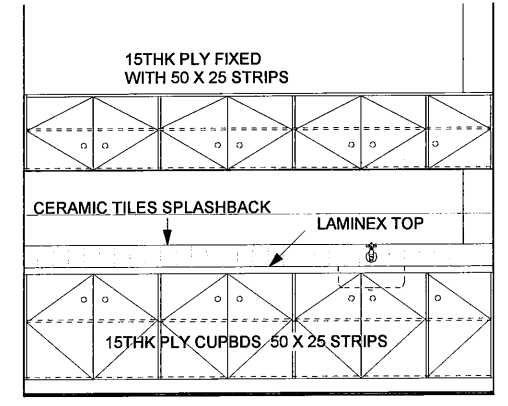
**SINK & CUPBOARDS DETAIL**  
SCALE: 1: 25



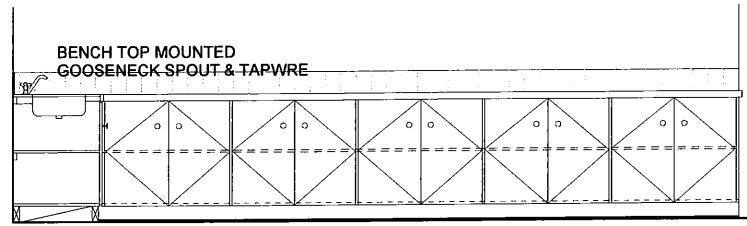
**ELEVATION - LABORATORY SHELVES**  
SCALE: 1: 50



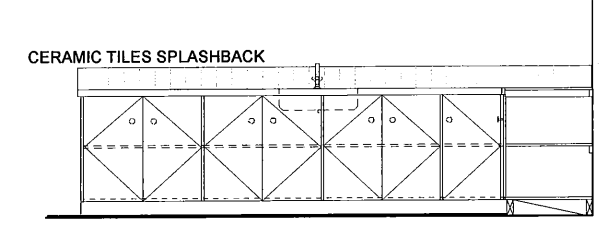
**KITCHENETTE - GR. FLOOR**  
SCALE: 1: 50



**TEA ROOM - UPPER FLOOR**  
SCALE: 1: 50



**LABORATORY BENCHES** SCALE: 1: 50



PROJECT: **PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)**

CLIENT: **INDEPENDENT PUBLIC BUSINESS CORPORATION**  
PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
PROJECT MANAGEMENT UNIT (PMU)  
**JICA** JAPAN INTERNATIONAL COOPERATION AGENCY

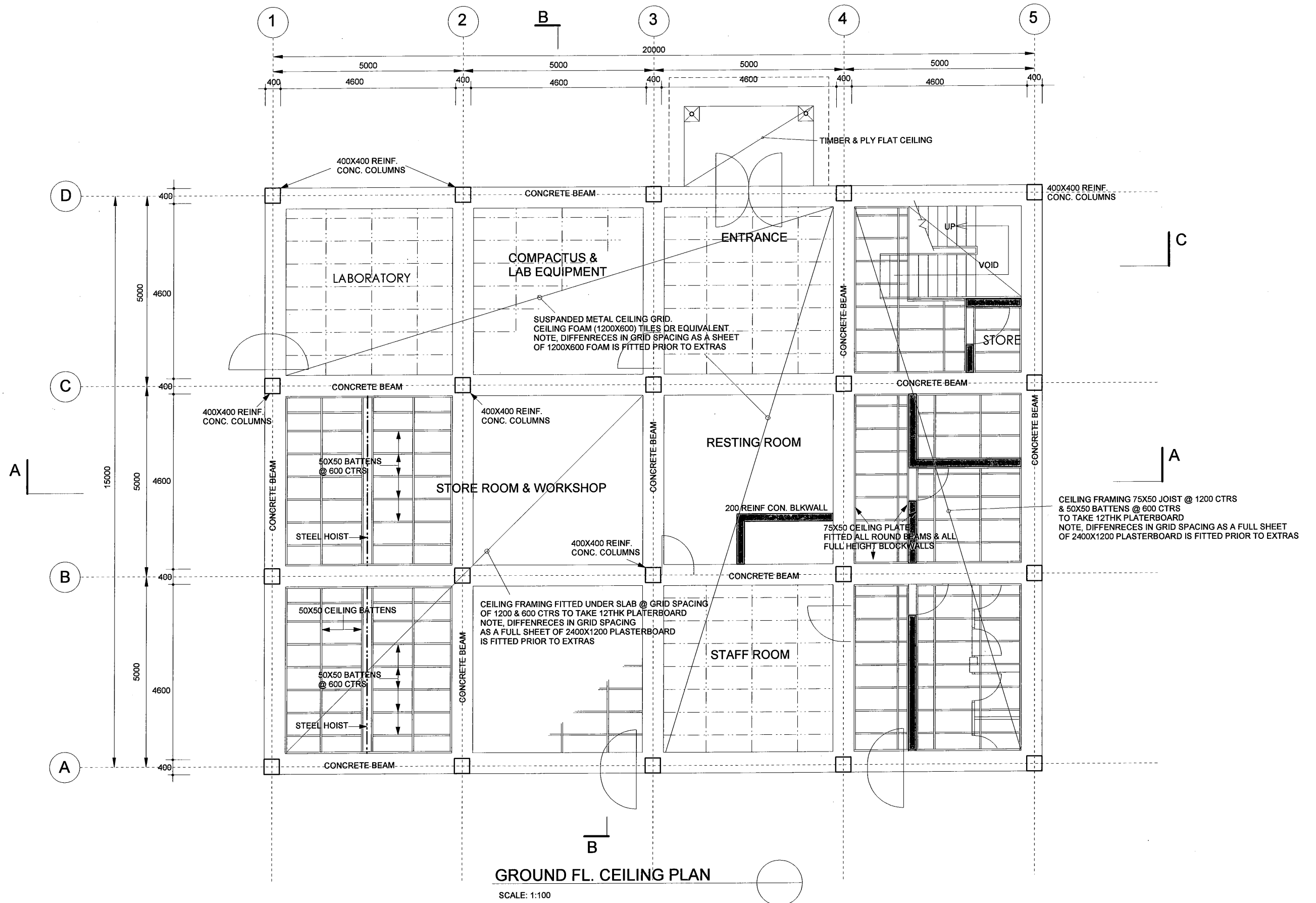
CONSULTANTS: **NJS CONSULTANTS CO., LTD. - JAPAN**

TITLE: **Kila Kila STP - ADMINISTRATION BUILDING - Step Furniture & Details**

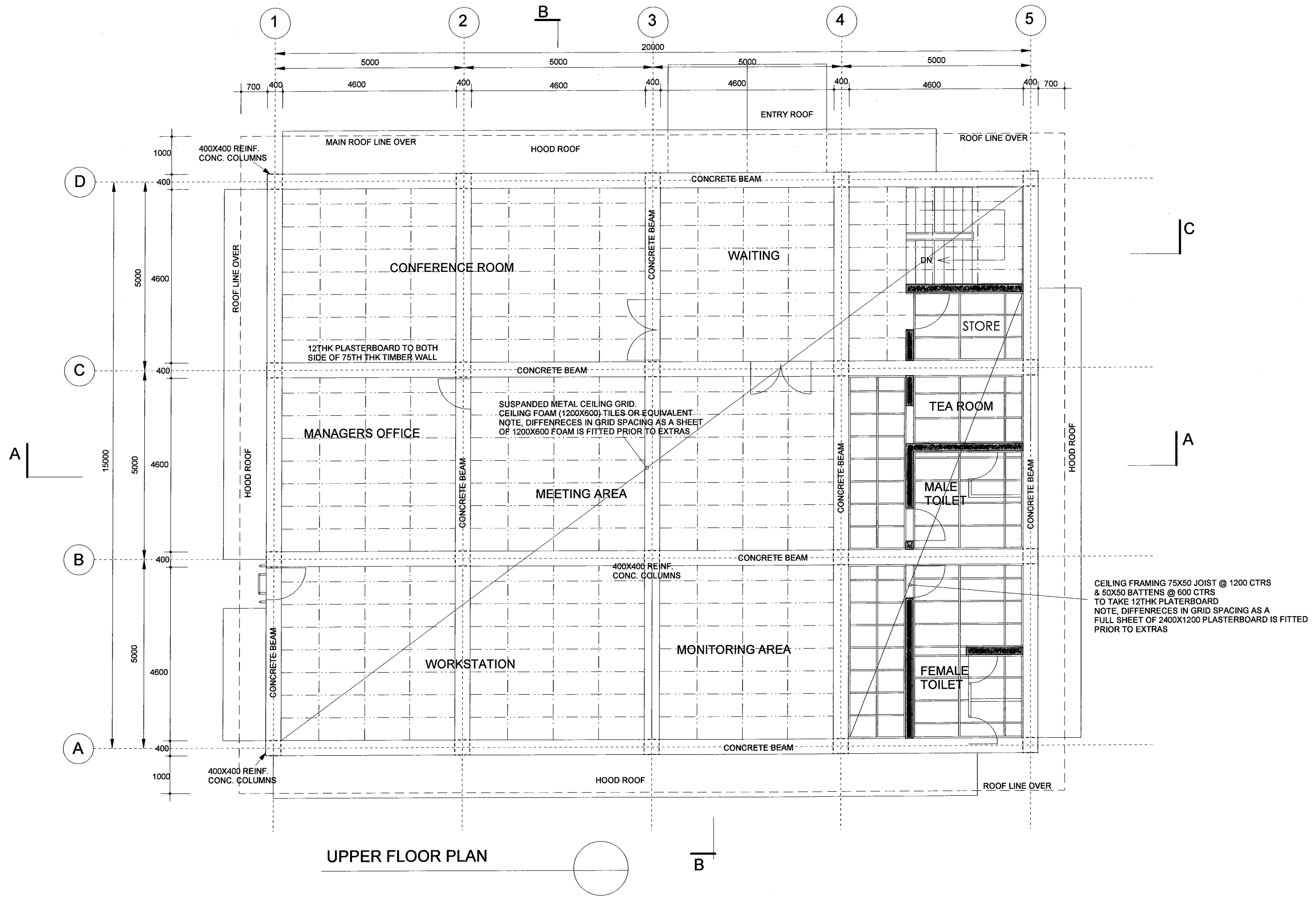
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| REVISIONS |      |             |
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| REV.      | DATE | DESCRIPTION |
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|---|----------------------|-----------------------------|
| APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE:<br>1. Dec 2011 | SCALE:<br>1/25 & 1/50       |
| CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  | DATE:<br>1. Dec 2011 | DRAWING NO.:<br>STP-AB-A009 |

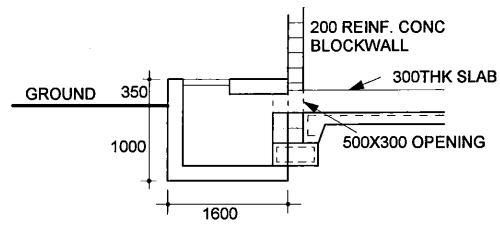


|   |   |   |           |      |   |  |                      |
|---|---|---|-----------|------|---|--|----------------------|
| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Gr. Floor Ceiling grid & framing |           |      |   |  |                      |
| CLIENT:  INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:  NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | REVISIONS |      | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE:<br>1. Dec 2011                               | SCALE:<br>1/100      |
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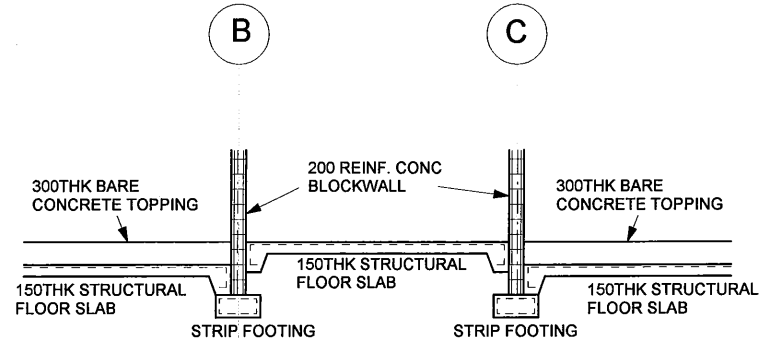


| PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)   |   | TITLE: Kila Kila STP - ADMINISTRATION BUILDING - Upper Floor Ceiling grid & framing |   |                   |                          |  |  |      |      |             |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |              |
|---|---|---|---|-------------------|--------------------------|--|--|------|------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|---|-------------------|--------------|
| CLIENT:<br>IPBC INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>jica JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:<br>NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:  | <table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> |                   | REVISIONS                |  |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  |  |  |  | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE: 1. Dec 2011 | SCALE: 1/100 |
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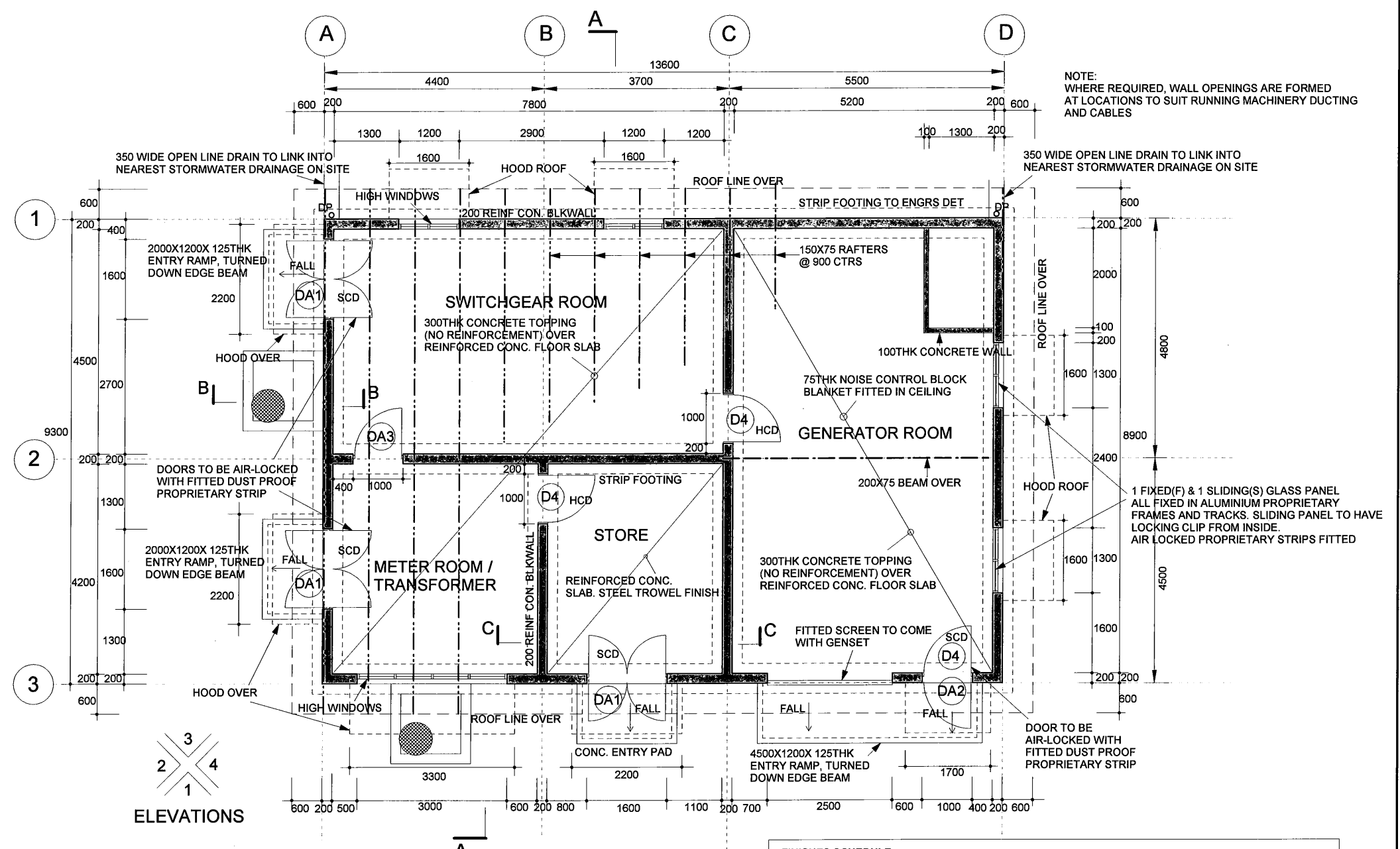




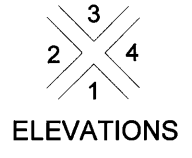
SECT. B-B  
CABLE INCOMING MAN HOLE



SECT. C-C  
SHOWING SLAB POSITIONING



FLOOR PLAN  
SCALE: 1:100



ELEVATIONS

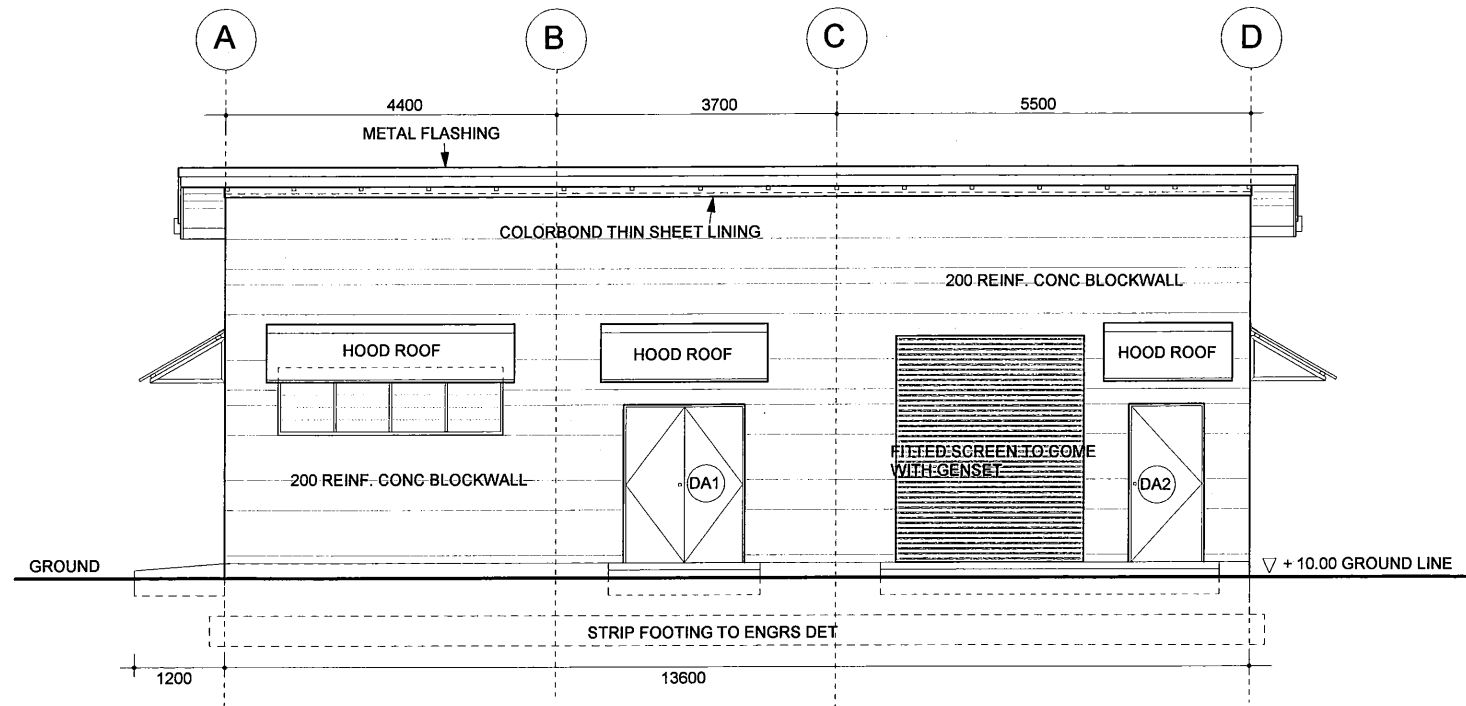
NOTE:  
WHERE REQUIRED, WALL OPENINGS ARE FORMED  
AT LOCATIONS TO SUIT RUNNING MACHINERY DUCTING  
AND CABLES

**DOOR & LOCK SCHEDULE, ALL LOCK FURNITURES TO BE SATIN & CHROME FINISH**

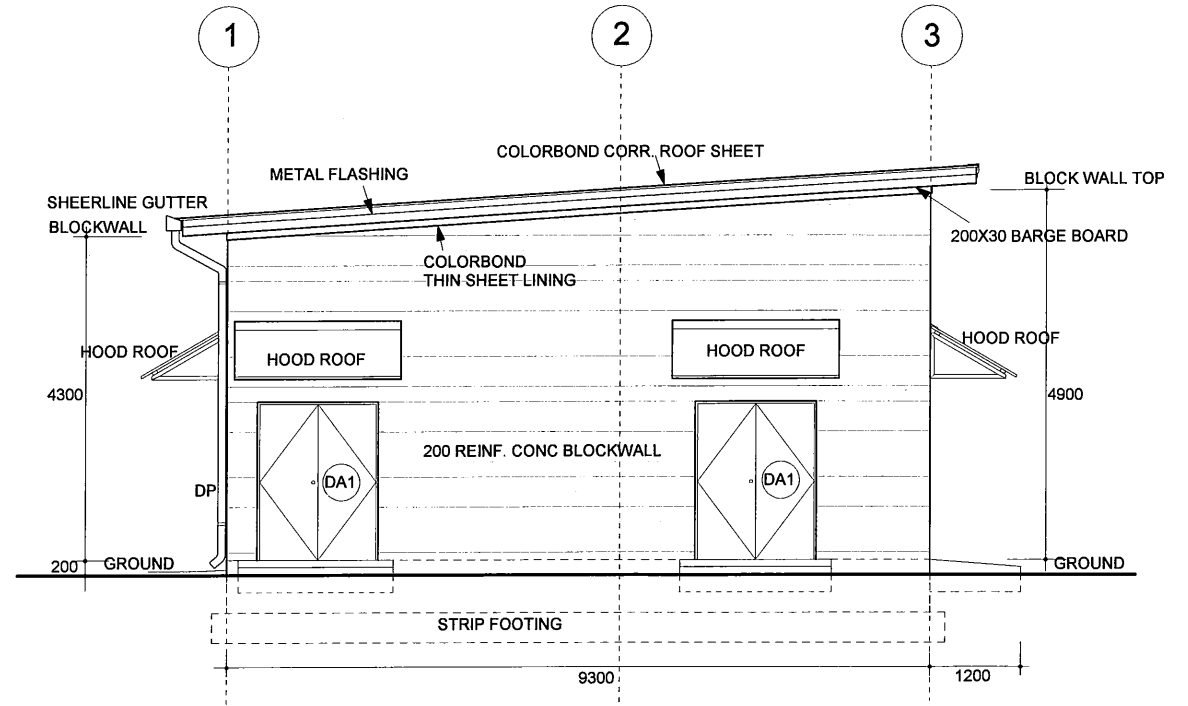
- WHERE INDICATED WITH INITIAL SCD, ARE SOLID CORE DOORS, OTHERS ARE HOLLOW CORE DOORS.  
DOUBLE DOORS (1600W X 2100H) - 3 OFF - 536 ESCAPE SET & 007 ROUND EXT. CYLINDER, TUBULAR DEADBOLTS.  
KEYED ALIKE FOR EACH DOOR BUT DIFFERS TO OTHERS  
- 3X 100 STEEL BUTT HINGES  
- 401 DOOR CLOSERS TO ALL EXTERNAL DOORS EXCEPT SECURITY GRILLE DOORS  
SINGLE DOOR (D4) - 3 OFF - SEE DETAIL  
SECURITY GRILLE DOORS (SEE STANDARD DRAWING SHEET NO STP-STD-A001 FOR DETAILS)  
DOOR TYPE (DA1) - 3 OFF  
DOOR TYPE (DA3) - 1 OFF

| FINISHES SCHEDULE |                       |                                  |                |
|-------------------|-----------------------|----------------------------------|----------------|
| MATERIAL          | LOCATION              | FINISH                           | COLOUR         |
| <b>EXTERNAL</b>   |                       |                                  |                |
| CONC.             | ENTRY PAD             | BROOM FINISH                     |                |
| CONC.             | BLK WALLS             | 2X ACRYLIC GLOSS                 | TO BE SELECTED |
| METAL             | WALL CLADDING & HOOD  | TRIMDEK 0.48 BMT                 | COLORBOND      |
|                   | ROOF SHEETING         | CORRUGATED                       | COLORBOND      |
|                   | FLASHING              | COLORBOND                        | COLORBOND      |
| TIMBER            | EXPOSED ROOF FRAMES   | 2 COATS ACRYLIC MATT             | TO BE SELECTED |
| TIMBER            | WINDOW FRAMES         | UNDERCOAT & 2 ACRYLIC SEMI GLOSS | TO BE SELECTED |
|                   | FASCIA & BARGE        | OIL PRIME, 2 ACRYLIC SEMI GLOSS  | TO BE SELECTED |
| <b>INTERNAL</b>   |                       |                                  |                |
| CONC.             | FLOOR                 | STEEL TROWEL FINISH              |                |
| CONC. BLK WALLS   |                       | PLASTERED & 2X ACRYLIC GLOSS     | TO BE SELECTED |
| TIMBER            | DOORS, WINDOW FRAMES  | 2X ACRYLIC SEMI GLOSS            | TO BE SELECTED |
|                   | WALL & CEILING LINING | 2X ACRYLIC SEMI GLOSS            | TO BE SELECTED |

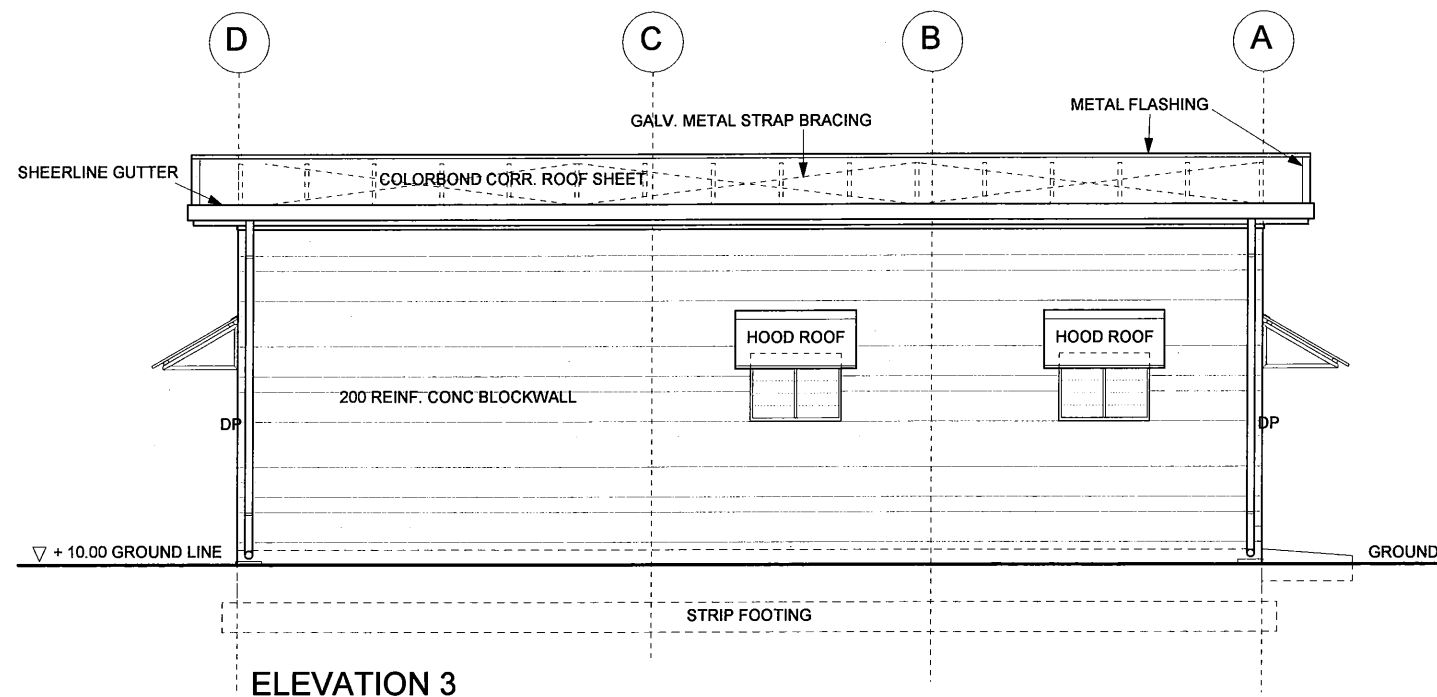
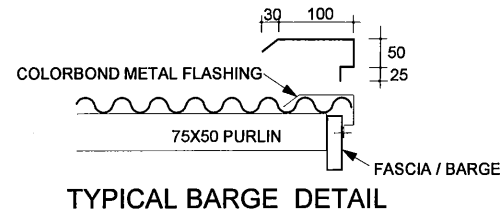
| PROJECT:<br><b>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)</b>   |   | TITLE:<br><b>Kila Kila STP - ELECTRICAL SUB-STATION - Floor Plan</b> |   |                      |                                    |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |
|---|---|--|---|----------------------|------------------------------------|--|------|------|-------------|--|--|--|--|--|--|--|--|--|---|----------------------|-----------------|
| CLIENT:<br>INDEPENDENT PUBLIC BUSINESS CORPORATION<br>PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT<br>PROJECT MANAGEMENT UNIT (PMU)<br>JAPAN INTERNATIONAL COOPERATION AGENCY | CONSULTANTS:<br>NJS CONSULTANTS CO., LTD. - JAPAN | NOTES:   | <table border="1"> <thead> <tr> <th colspan="3">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> | REVISIONS            |                                    |  | REV. | DATE | DESCRIPTION |  |  |  |  |  |  |  |  |  | APPROVED by PMU:<br>Project Director<br>Lot G.Zauya | DATE:<br>1. Dec 2011 | SCALE:<br>1/100 |
| REVISIONS   |   |  |   |                      |                                    |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |
| REV.  | DATE  | DESCRIPTION  |   |                      |                                    |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |
|   |   |  |   |                      |                                    |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |
|   |   |  |   |                      |                                    |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |
|   |   |  |   |                      |                                    |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |
|   |   |  | CHECKED by CONSULTANT<br>Project Manager<br>T.Fuji  | DATE:<br>1. Dec 2011 | DRAWING NO.:<br><b>STP-ES-A001</b> |  |      |      |             |  |  |  |  |  |  |  |  |  |   |                      |                 |



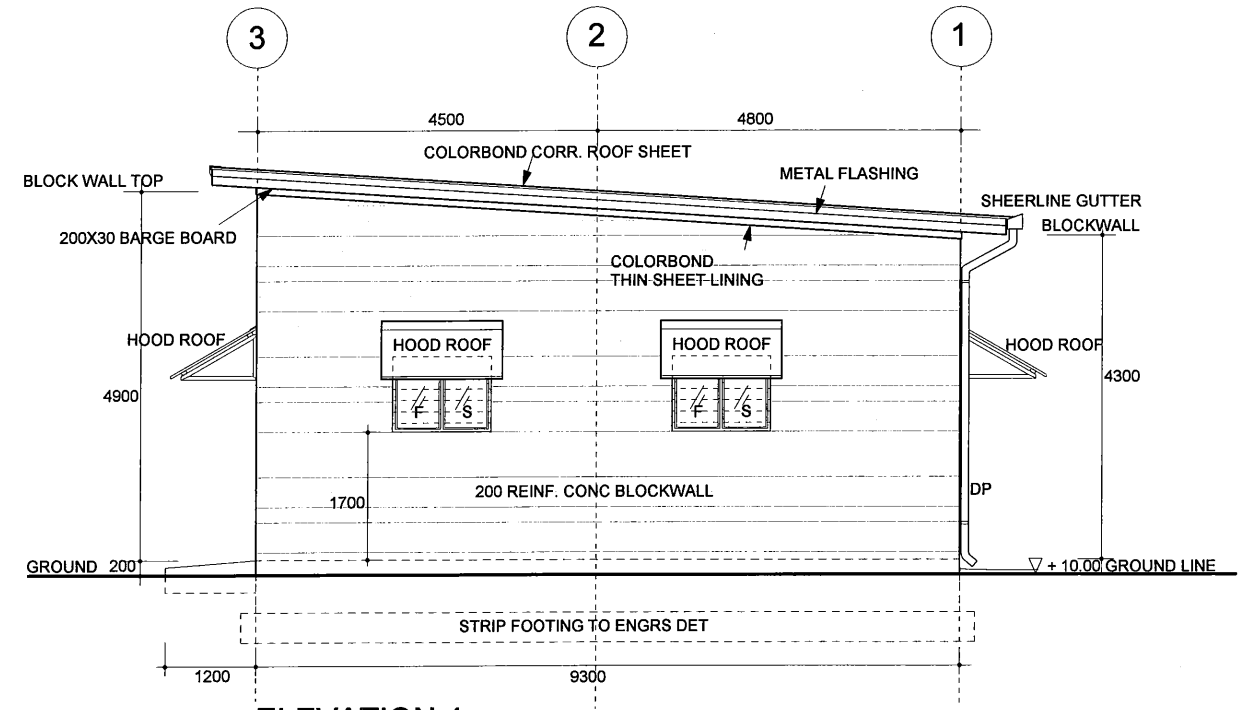
**ELEVATION 1**  
SCALE: 1:100



**ELEVATION 2**  
SCALE: 1:100



**ELEVATION 3**  
SCALE: 1:100



**ELEVATION 4**  
SCALE: 1:100

PROJECT: PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT (POMSSUP)

TITLE: Kila Kila STP - ELECTRICAL SUB-STATION - Elevations

CLIENT: INDEPENDENT PUBLIC BUSINESS CORPORATION  
 PORT MORESBY SEWERAGE SYSTEM UPGRADING PROJECT  
 PROJECT MANAGEMENT UNIT (PMU)  
 JICA JAPAN INTERNATIONAL COOPERATION AGENCY

CONSULTANTS: NJS CONSULTANTS CO., LTD. - JAPAN

NOTES:

| REVISIONS |      |             |
|-----------|------|-------------|
| REV.      | DATE | DESCRIPTION |
|           |      |             |
|           |      |             |
|           |      |             |

APPROVED by PMU:  
 Project Director  
 Lot G.Zauya  
 CHECKED by CONSULTANT  
 Project Manager  
 T.Fuji  
 DATE: 1. Dec 2011  
 SCALE: 1/100  
 DATE: 1. Dec 2011  
 DRAWING NO.: STP-ES-A002